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INDEX

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1944

No. 379

COLORADO INTERSTATE GAS COMPANY, PETITIONER,

vs.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, ET AL.

No. 380

CANADIAN RIVER GAS COMPANY, PETITIONER,

vs.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, ET AL.

ON WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE TENTH CIRCUIT

PETITIONS FOR CERTIORARI FILED AUGUST 22, 1944.

CERTIORARI GRANTED { **NOVEMBER 13, 1944.** / **JANUARY 2, 1945.**

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TRANSCRIPT OF RECORD

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No. 2550.

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Vol. I

TRANSCRIPT OF RECORD

(Pages 1 to 624)

Supreme Court of the United States

OCTOBER TERM, 1944

No. 379

COLORADO INTERSTATE GAS COMPANY, PETITIONER,

vs.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, ET AL.

No. 380

CANADIAN RIVER GAS COMPANY, PETITIONER,

vs.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, ET AL.

ON WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE TENTH CIRCUIT

PETITIONS FOR CERTIORARI FILED AUGUST 22, 1944.

CERTIORARI GRANTED { NOVEMBER 13, 1944.
JANUARY 2, 1945.

Volume 1
TRANSCRIPT OF RECORD

United States Circuit Court of Appeals
TENTH CIRCUIT.

No. 2550.

COLORADO INTERSTATE GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

No. 2551.

CANADIAN RIVER GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; PUBLIC SERVICE COMPANY OF COLORADO; and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

ON PETITION TO REVIEW AND SET ASIDE ORDERS OF THE FEDERAL POWER COMMISSION.

FILED SEPTEMBER 9, 1942.

United States Circuit Court of Appeals

TENTH CIRCUIT.

No. 2550.

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Petition of Colorado Interstate Gas Company to Review and Set Aside an Order of the Federal Power Commission, Case No. 2550.

Colorado Interstate Gas Company, a Delaware corporation, herein referred to as Petitioner, being aggrieved by an Order of the Federal Power Commission dated March 18, 1942, as amended April 22, 1942, respectfully petitions this Honorable Court to review and set aside said Order; and in support of its petition respectfully represents and shows:

A.

The Nature of the Proceedings as to Which Review is Sought.

The Order of the Federal Power Commission which your Petitioner now seeks to have reviewed and set aside, was entered after a hearing in three consolidated proceedings brought against Petitioner and others. The proceedings were instituted and the Order made purportedly under the authority of and in accordance with the terms of the Act of Congress known as the Natural Gas Act (Act of June 21, 1938, c. 556, 52 Stat. 824). These proceedings were entitled and docketed before the Commission as follows: "City and County of Denver, Complainant v. Public Service Company of Colorado, Colorado Interstate Gas Company, et al., Defendants, Docket No. G-118"; "Public Service Commission of Wyoming, Complainant v. Colorado-Wyoming Gas Company, et al., Defendants, Docket No. G-121"; and "In the Matter of the Canadian River Gas Company, Colorado Interstate Gas Company and Colorado-Wyoming Gas Company, Docket No. G-124."

Case No. G-118 was instituted December 22, 1938, by the filing of a complaint by the City and County of Denver against Public Service Company of Colorado, Canadian River Gas Company and your Petitioner. The City alleged that the prices being charged by your Petitioner for wholesale deliveries of natural gas at the city gate to the Public Service Company of Colorado, an independent distributing company operating in Denver under a franchise from that City, were unreasonably high, and prayed that such rates be reduced. In that case your Petitioner filed its answer setting forth the fact that the taxpaying electors of the City, acting pursuant to Article XX of the Constitution of the State of Colorado, and the Denver Charter, had, on February 8, 1927, voted a twenty-year franchise to the said Public Service Company of Colorado for the distribution of gas within said city. The answer set out the following provision contained in said franchise:

"If at any time during the first ten (10) years of this franchise the Mayor and Council of the City, after investigation and upon competent engineering advice, taking into consideration all the economic factors involved, shall by

majority vote of the Council with approval of the Mayor determine that it is feasible to bring natural gas to Denver and shall give notice to the Company of their findings, together with engineering information upon which such determination was based, and provided a fair and reasonable rate is established for such service, then within two years thereafter the Company shall make such supply available to the City."

(This franchise was received as Exhibit 24 before the Commission.)

Your Petitioner then alleged the fact that pursuant to said franchise the Mayor and the City Council had employed one A. C. King, an independent engineer; that the said King had investigated the feasibility of bringing natural gas from the Texas Panhandle field to Denver by pipeline; that he had reviewed such a project then proposed by the parties who later organized and financed Petitioner, Colorado Interstate Gas Company, and that the said King, so acting for said City, had concluded that said project was feasible on the basis of a 40 cent gate rate, and that said King had found such a 40 cent gate rate to be reasonable.

Your Petitioner further alleged that on September 14, 1927, Denver passed its Ordinance No. 178, Series 1927, and that Section 2 of said ordinance provided:

"That after investigation and upon competent engineering advice, taking into consideration all the economic factors involved, it has been and hereby is now found and determined that it is feasible to bring natural gas to Denver; that said Public Service Company of Colorado be and it is hereby given notice of said findings and determination, together with the engineering information upon which such determination was based, and that the Clerk of the Council be and he hereby is directed forthwith, upon the final passage, publication, and approval of this Ordinance by the Mayor, to deliver to said Public Service Company of Colorado a duly certified copy thereof, together with a verified copy of the 'Report on Proposed Natural Gas Rates for Denver,' dated August 10, 1927, which was prepared, after investigation, by A. C. King, Consulting Engineer of Chicago, Illinois, and which said report constitutes

the engineering advice and information upon which said findings and determination are based, and the original copy of which is now on file in the office of the Clerk of the Council of the City and County of Denver, to which reference is had for particularity and notice of which is hereby given to said Public Service Company of Colorado in conformity to the provisions of said Section IV-c of said above mentioned Franchise."

(This Ordinance was received as Exhibit 25 before the Commission.)

In the answer in said case it was further alleged that Section 2 of said Ordinance granted to the Public Service Company of Colorado the right to sell natural gas in place of manufactured gas under a schedule of rates, which rates were prescribed for the full "unexpired term of said franchise," that is, until February 8, 1947. Section 3 of said Ordinance provided, in part, as follows:

"Under said Franchise said Public Service Company of Colorado is required to supply said City and County and its inhabitants with natural gas as long as the same is available, during the unexpired term of said Franchise, and a reserve acreage of gas leaseholds in the State of Texas, from which natural gas may be supplied sufficient for the uses of said City and County of Denver and its inhabitants during the unexpired term of said Franchise, by contract, has been rendered available to said Public Service Company of Colorado."

The contract for the supply of gas referred to in said Denver Ordinance, was the contract negotiated by the parties who organized and financed your Petitioner, and is more particularly referred to hereinafter.

Your Petitioner in said case further alleged that the aforesaid action by the City of Denver induced the persons who formed and financed your Petitioner to negotiate and enter into a contract with said Public Service Company of Colorado, dated January 3, 1928, for the sale of gas to that distributing company at the city gate at 40 cents per Mcf for the full unexpired term of that company's franchise, that is, until February 8, 1947; to enter into a contract with the Colorado Fuel and Iron Company for the direct

sale of gas to that company at Pueblo, Colorado, on an interruptible or cut-off basis or off-peak load basis for industrial purposes, for substantially the same period of time, and to enter into a contract with the Canadian River Gas Company for a supply of gas from the Texas Panhandle gas field to be delivered to your Petitioner at Clayton Junction, New Mexico, and to venture their capital and construct the pipe line, with its laterals and other equipment, from Clayton Junction, New Mexico, northward to Denver, Colorado, at a cost for the whole project in excess of $20,000,000, and that in building said line and entering into said contracts such action by the City was relied upon.

Your Petitioner in its answer in said case further alleged that it was wholly independent of the Public Service Company of Colorado; that it entered no municipalities and possessed no public franchises. It further alleged that in its articles of incorporation, and in all of its subsequent conduct, it had disclaimed both the obligations and the rights of a common carrier or public utility; that it had exercised no right of eminent domain or condemnation, but had purchased and paid for at negotiated prices all of its necessary rights of way, and that it had procured under contract from public authorities, and had paid for, where demanded, the right to place its pipelines beneath public highways and lands. It set forth the fact that it had limited its business to the sale of gas to a few selected customers under negotiated contracts; and that all of such contracts were approximately coterminus with its contract with the Public Service Company of Colorado, terminating in 1948.

Your Petitioner then asserted that the City of Denver, by reason of its actions, was, in equity and good conscience, estopped from questioning the legality of the gate rate being charged to Public Service Company of Colorado prior to the expiration of your Petitioner's contract with said Public Service Company, which contract was coterminus with the distributing company's franchise from the City of Denver for the distribution of said gas.

Your Petitioner further asserted that under the facts, the Commission was without power to abrogate the contract prices prior to the termination of the contract in 1948.

Finally, your Petitioner denied, in any event, that said contract prices were unjust, unreasonable or unduly discriminatory.

Case No. G-124 was instituted January 9, 1939, by the filing by the Public Service Commission of Wyoming of a complaint with the Federal Power Commission alleging that the charges for natural gas to the distributing company at Cheyenne, Wyoming, by Colorado-Wyoming Gas Company, an independent pipeline and distributing company, to which your Petitioner sold some gas under contract, were unreasonably high, and asking that the same be reduced. In this case, your Petitioner, although not a named defendant, filed an answer setting forth the nature of its business in allegations similar to those contained in its answer in Docket No. G-118 above described, and alleging that it had negotiated a contract for the sale of gas to the Colorado-Wyoming Gas Company at a specified price until 1948, and that such contract was not subject to abrogation prior to its expiration, and denying, in any event, that the price charged was unjust or unreasonable.

Case No. G-124 was instituted by the Federal Power Commission on its own motion by its Order of March 14, 1939. This was an investigation of all of the contracts of your Petitioner for the sale of gas for resale in interstate commerce, but was not directed to the contracts of your Petitioner for the direct sale of gas to its few industrial customers such as the Colorado Fuel & Iron Company, as aforesaid, which direct sales are not subject to regulation under the Natural Gas Act. In that case, your Petitioner filed an answer setting forth the facts already set forth in its answer in Docket No. G-118 above described. In addition, in its answer in Docket No. G-124, your Petitioner alleged that while it relied principally upon its twenty-year contract dated January 3, 1928, with Public Service Company of Colorado in venturing its capital and building its line, it, also, relied upon a few additional contracts, all approximately coterminus with its twenty-year contract with Public Service Company, but covering the sale of much smaller quantities of gas. It alleged that these additional contracts were entered into to make the project feasible, and to guarantee, as far as possible by means

of such contracts, the protection of its ventured capital. In its answer it set out its other contracts as follows: Contract with The Arkansas Valley Natural Gas Company, terminating June 23, 1948, for the sale of gas to be distributed by that company to a few small villages in the Arkansas River Valley, Colorado; contract with Citizens Utilities Company, terminating May 1, 1942, for gas to be distributed by that company at La Junta, Colorado, and neighboring villages; contract with the city of Colorado Springs, terminating June 19, 1948, for the distribution by that city, through its municipally owned system, of gas to its customers; contract with the Natural Gas Pipeline Company of America, continuing to September 30, 1946, and thereafter subject to certain limitations, at the election of the buyer; and contract with Pueblo Gas & Fuel Company, terminating June 21, 1948, for the sale of gas to be distributed by that company in Pueblo, Colorado. It alleged that each of said contracts prescribed a fixed price for the full term of the contract, and that the contracts to the distributing companies were generally at the rate of 40 cents per Mcf. Further, Petitioner asserted that, under the circumstances, none of the contracts were subject to abrogation by the Commission prior to their termination dates.

Finally, Petitioner denied, in any event, that the contract prices were unjust, unreasonable or unduly discriminatory.

Prior to entering the Order of March 14, 1939, in its case No. G-124, the Federal Power Commission had sent out to all natural gas companies, including your Petitioner, certain questionnaires as to their status and nature of their business. These questions were answered by your Petitioner. The Commission's Order, in addition to ordering a hearing, purported to make certain findings of fact and conclusions of law with respect to your Petitioner's status, business and contracts. Your Petitioner, believing said findings and conclusions to be erroneous, and fearing that they would become res adjudicata unless challenged within the time and in the manner provided by the Natural Gas Act, filed with this Court a petition for review in Cause No. 1931 of this Court's docket. This Court held in Opinion reported in 110 Fed. (2d) at page 350 et seq., and, upon rehearing, in Opinion reported in Vol. 113 Fed. (2d) at

page 1010 et seq., that the Power Commission's Order of March 14, 1939, was merely preliminary and procedural, and that the purported findings, included in said Order with respect to your Petitioner's status and business and contracts, were not and would not become, res adjudicata or conclusive, pending a hearing on the merits.

Thereafter, on September 13, 1940, the Commission entered an Order consolidating the three said Causes for hearing. The hearing was held before Norman B. Gray, an Examiner of said Commission, beginning October 28, 1940, and finally terminating the 21st day of April, 1941. The City and County of Denver appeared, but offered no evidence in support of its complaint, except certified copies of certain annual reports of Petitioner to the Secretary of State of Colorado, showing summaries of its assets and habilities, and profit and loss, and the testimony of one Tamblyn, an employee in the office of its Tax Assessor, as to the cost of reproducing certain of this Petitioner's buildings housing compressor stations and certain employee residences. No other municipality complained or appeared. No distributing company or individual customer of the Petitioner, and no other consumer of natural gas complained or appeared. All the evidence in support of the complaint was adduced by the Commission itself through its own full time employees. The record consists of 103 volumes of testimony and 323 exhibits in addition to pleadings and orders.

Thereafter, on the 11th day of March, 1942, your Petitioner filed with the Commission its "Petition of Colorado Interstate Gas Company to Reopen the Above Entitled Proceedings to Take Further Evidence." This petition averred that the acceleration of the national defense program and finally the declaration of war in December, 1941, all intervening between the time of the closing of the hearing on April 21, 1941, and the date of the petition, March 11, 1942, had caused drastic increases in its operating expense, substantial increases in the cost of necessary additions to its plant and property, and offered to introduce evidence as to such increases.

Thereafter, on March 25, 1942, the Commission served upon your Petitioner its final rate order in said consolidated

dockets, dated March 18, 1942. This Order included a denial of Petitioner's petition of March 11, 1942, to reopen and take further evidence. In its Order, the Commission purported to find that the prices being charged by Petitioner to the six distributing companies and one pipeline company, under long-term contracts terminating as aforesaid, and which had been negotiated and substantially performed some ten years prior to the Natural Gas Act of June, 1938, were all unjust and unreasonable. Basing its conclusions on operating revenues and expenses for the pre-war year 1939, it found that Petitioner's net revenues were excessive in the aggregate amount of $2,065,000 per annum, and directed that Petitioner file with it on or before April 25, 1942, schedules of rates in lieu of contract prices, which for the future would reflect an annual reduction in its revenues of not less than said $2,065,000 per annum so found to be excessive for the year 1939.

On April 14, 1942, your Petitioner filed with the Commission its "Petition of Colorado Interstate Gas Company for Rehearing and to Reopen," and also its "Motion of Colorado Interstate Gas Company for Stay of the Commission's Order of March 18, 1942." On April 22, 1942, the Commission denied Petitioner's motion for a stay, except that it did modify its Order of March 18, 1942, to the extent of providing that Petitioner should file with it the new schedules on or before May 19, instead of April 25, 1942, to be effective as to all bills regularly rendered on and after May 20, 1942. On May 13, 1942, the Commission denied Petitioner's petition for a rehearing.

On May 16, 1942, this court granted your Petitioner's petition for stay pending judicial review of said Order herein.

B.

The Facts and Statute Upon Which Venue is Based.

The statute upon which venue in this case is based, is Section 19(b) of the Natural Gas Act; Act of June 21, 1938, c. 556, 52 Stat. 833; Section 717 r (b), Title 15 USCA, the pertinent part of which reads:

"Any party to a proceeding under this chapter aggrieved by an order issued by the Commission in such proceeding,

may obtain a review of such order in the Circuit Court of Appeals of the United States for any circuit wherein the natural gas company to which the order relates is located or has its principal place of business * * *."

Petitioner is a private corporation organized and existing under the laws of the State of Delaware. It owns and operates a main transmission natural gas pipeline extending from Clayton Junction, New Mexico, to a point just outside the city limits of the City and County of Denver, State of Colorado. Its General Manager and other representatives have their offices at Colorado Springs, Colorado. All of its physical properties are located, and all of its sales take place within territory comprising the Tenth Circuit.

C.

The Points on Which the Petitioner Intends to Rely.

At the outset, and to avoid unnecessary repetition, Petitioner asserts that each of the errors hereinafter specifically assigned under the following Points operates to confiscate and to take Petitioner's property without just compensation, and to deprive Petitioner of such property without due process of law, contrary to the Fifth Amendment to the Constitution of the United States, and that none of the Findings of the Commission hereinafter challenged is based upon the substantial evidence required by the Natural Gas Act, and each is contrary to the evidence.

First Point.

Conceding the constitutionality of the Natural Gas Act on its face, and its applicability in the ordinary case, nevertheless, the Commission erred in retrospectively applying the Act so as to abrogate prices agreed upon in contracts of Petitioner, made and substantially performed prior to its enactment, and which prices, for the full terms of such contracts, constituted the inducement for the building of the pipeline and the investment of Petitioner's money, and which contracts were made and substantially performed by Petitioner when it was not, either in fact or in law, a public utility or a common carrier, and when it disclaimed all the privileges and obligations of such utilities and carriers. Such construction and application of the Act with respect to

Petitioner and its contracts, and the action of the Commission in setting aside such contract prices, is erroneous.

On this point, the Commission erred in failing to make specific findings upon the undisputed evidence (apparently because it deemed such findings immaterial); which errors may be summarized as follows:

(a) The Commission erred in refusing to find that in its Articles of Incorporation, and in all of its subsequent conduct, Petitioner disclaimed both the obligations and privileges of a common carrier or public utility; that it purchased all its rights of way, and procured by contract with public authorities, and paid for, when demanded, the right to cross with its pipeline underneath public highways and lands; that it possessed no municipal franchises or other special privileges; that it refused to sell gas generally; that its sales were limited to six distributing companies and one pipeline company, and to a few direct sales (even now excluded from regulation by the terms of the Act) to industries on an off-peak load and interruptible basis, and that all of said contracts were privately negotiated.

(b) The Commission erred in refusing to find that all of Petitioner's contracts were made and substantially performed at a time when neither it nor any other contracting party contemplated any change or modification through the regulatory process, or otherwise, and long prior to the effective date of the Natural Gas Act.

(c) The Commission erred in refusing to find that since said contracts were made, no material change in the extent or character of Petitioner's business or operations had occurred.

(d) The Commission erred in refusing to find that the contract with Public Service Company, fixing the price for gas at the Denver gate, was negotiated over a period lasting more than a year, and after many discussions and conferences with the Mayor and other representatives of the City of Denver, and that the gate rate therein prescribed was fixed only after independent investigation by the City of Denver, taking into consideration all economic factors involved, including said gate rate, and after rates of Public Service Company to its consumers had been fixed by Denver

for the full unexpired term of its twenty-year franchise, based on said gate rate.

(e) The Commission erred in refusing to find that the contract with Pueblo Gas & Fuel Company fixing the price for gas at the city gate was negotiated over several months between Petitioner and that company, and that the gate rate was fixed with the full knowledge of the officials of Pueblo, and only after the City had granted a franchise to that company, and had adopted rates to be charged by said distributing compapy to its consumers for the full term of said franchise, which rates were based upon said gate rate.

(f) The Commission erred in refusing to find that the City of Colorado Springs, as owner and operator of its municipal distribution system, had a contract with one Arthur K. Lee for its supply of gas at the city gate from the Hugoton Kansas field, and guaranteed by a $25,000 performance deposit, but, before any gas under said contract was delivered, the City modified the contract with Lee to provide a 40 cent gate rate in contemplation of and upon the condition that he assign said contract to Petitioner, and that such was done.

(g) The Commission erred in refusing to find that in making all of its contracts and investing its money, and in the substantial performance of said contracts, Petitioner relied upon the prices to be paid for gas during the full term of said contracts, and would not have made the contracts and would not have built, and made the investment in, its pipeline, except upon the basis of said contract prices for the full terms of said contracts.

Second Point.

Assuming its power to abrogate contract prices, if found to be unreasonable, nevertheless, the Commission erred in refusing to consider any test of the reasonableness of Petitioner's contract prices other than that of its net income (erroneously determined as hereinafter assigned) and erred in refusing to find that such present contract prices were reasonable as evidenced (1) by the fact that they were arrived at after long negotiation between adverse parties, and after full and independent investigation by the Cities of Denver, Pueblo and Colorado Springs, respectively; (2)

by the fact that such prices have permitted the ultimate consumer to purchase from the distributing companies heat units at much less cost than was the case when manufactured gas was sold to them; (3) by the fact that they have permitted the ultimate consumer to purchase heat units at costs that compare favorably with the cost of coal, fuel oil and other fuels, after taking into consideration the convenience factors in favor of natural gas, and (4) by the fact that such prices have permitted substantial increases in the use of natural gas, despite competition with other fuels.

On this point, although the evidence was admitted without contradiction, the Commission erred in failing to make the findings summarized as follows:

(a) The Commission erred in refusing to find that each of Petitioner's contracts fixing the price of gas were arrived at after full investigation between competent and well-informed parties, free to contract or not, and that the contracts with the distributors in the case of Denver, Pueblo and Colorado Springs were arrived at after full investigation by those cities respectively, as set forth above under First Point (d), (e) and (f).

(b) The Commission erred in refusing to find that the gas now being sold displaced manufactured gas in Denver, Pueblo and Colorado Springs and the savings to the consumers for the same heat units under the cost of manufactured gas range from 32% to 86%, depending upon volumes used.

(c) The Commission erred in refusing to find that for house heating purposes alone in Denver, the present cost per therm to the consumer of natural gas is 6c compared to 14c per therm for manufactured gas prior to the change-over.

(d) The Commission erred in refusing to find that natural gas is being sold in this territory in competition with abundant, accessible and cheap supplies of coal, fuel oil and to a lesser extent in competition with other fuels.

(e) The Commission erred in refusing to find that Colorado produces more coal than any other state west of the Mississippi River, of which 50% to 60% is mined within 50 miles of the consuming area centering in Denver, Colorado Springs and Pueblo, and that this consuming area is also

within economic transportation distance of large reserves of fuel oil.

(f) The Commission erred in refusing to find that the cost to the consumer for house heating in the Denver area per therm of natural gas is 25% to 30% more than the less convenient coal, which represents the difference the consumer, free to purchase coal, is willing to pay for the convenience factors in favor of natural gas and to be relieved from the investment and supply of coal for future use and for storage facilities.

(g) The Commission erred in refusing to find that the cost to consumer for house heating in the Denver area is the same per therm as that for heating with Grade No. 1 fuel oil; that is, 6c per therm, and by the use of Grade No. 2 fuel oil, such heat units may be had at 5c per therm.

(h) The Commission erred in refusing to find that the sales of natural gas by distributing companies supplied by Petitioner have increased substantially despite competition with other fuels.

(i) The Commission erred in refusing to find that sales by Petitioner for the year 1929, the first full year of sales after the cut-over of Mcf at contract pressure base, amounted to 3,534,927 of resale domestic gas and 776,291 of resale industrial gas. Sales for 1939 were 6,818,497 of resale domestic and 4,779,573 of resale industrial.

(j) The Commission erred in refusing to find that house heating customers in the Denver area have increased from less than 1,000 in 1927, prior to the cut-over, to approximately 17,000 at this time, and the market for domestic cooking and water heating in the Denver area is now "sold" or "saturated."

(k) The Commission erred in refusing to find that aggregate sales of Petitioner's three distributing company customers in Denver, Colorado Springs and Pueblo were 3,488,019.6 Mcf in 1927 and 9,376,232 Mcf in 1939, with 1,150,887 Million Btu. heat units in 1927 and 7,612,048 Million Btu. heat units in 1939, for which they received in the aggregate $2,731,739.35 in revenue in 1927 and $5,048,972.48 in revenue in 1939; that is, such aggregate sales in-

creased by 2.69 times in volume, and by 6.61 times in heat units, but only by 1.85 times in revenue.

Third Point.

The Commission erred in basing its findings and order upon conditions existing and the operations of Petitioner for the pre-war year 1939; in determining that Petitioner's net income was excessive for said year 1939 in the amount of $2,065,000, or in any amount, and in attempting to regulate reasonable rates for the future, effective May 20, 1942, and for an indefinite period thereafter, by the requirement that such rates be lowered to reflect a reduction in net revenue in such an amount for each future year. The Commission erred in not finding, on the basis of the evidence introduced by the Petitioner, that there was an ascending trend of cost and expense, particularly an ascending trend in taxes, even before giving effect to increases brought about by war.

Fourth Point.

The Commission erred in eliminating from the rate base, and from the base used for calculating and allowing annual amortization expense, the unamortized portion of $2,000,000 cash value of property, originally paid by Petitioner to Southwestern Development Company, a wholly independent company, for a gas supply contract "used and useful" and essential in supplying the gas involved in this controversy; erred in not finding that the sales of gas now being made by Petitioner would not have been possible but for the execution of said contract and the payment of said consideration, and erred in failing to find that only by reason of said contract and said payment are the gas supplies, all wholly located within the state of Texas, now reserved for Petitioner and its customers.

The error on this point may be further summarized as follows:

(a) The Commission erred in its Finding No. 4 and in its statements in its Opinion respecting the true nature of the contract, and the relationship of the parties thereto. The Commission erred in not finding that Standard Oil Company (N. J.), said Southwestern Development Company and Cities Service Company, were wholly independent of each other, and that after prolonged negotiations and arm's

length dealing, each being free to contract or not, they entered into a contract on or about April 5, 1927 (Exhibit 1 before the Commission); that said Southwestern Development Company, through a wholly owned subsidiary, Amarillo Oil Company, owned a supply of natural gas, located wholly within the state of Texas; that Southwestern Development Company agreed to form another subsidiary (which later become Canadian River Gas Company), and to transfer to it title to said gas property; that Standard Oil Company (N. J.) agreed to form a subsidiary company to transport and sell the gas (which later became your Petitioner, Colorado Interstate Gas Company); that Standard Oil Company (N. J.) financed your Petitioner in part by purchasing part of its common and preferred stock for cash; that said Southwestern Development Company would not agree to put its gas supply into the project, nor enter into a contract for the supply of gas, nor permit its subsidiary to supply the gas, unless, among other considerations, there was issued to it, or its nominee, as consideration or payment, $1,000,000 par value of the preferred stock, and 42½ per cent, or 531,250 shares, of the non par value common stock of Petitioner. The Commission erred in failing to find that simultaneously, and for precisely the same amount of preferred and common stock, Standard Oil Company (N. J.) agreed to pay, and later did pay, $2,000,000 in cash, and erred in failing to find that this property so issued to Southwestern Development Company had, at the time of the transaction, a cash value of not less than $2,000,000. The Commission erred in failing to find that in accordance with said agreement, and in consideration of the receipt of said property of said cash value, said Southwestern Development Company obligated itself, through its subsidiary, so to be formed, to own, and, if necessary, acquire additional gas property, gas leaseholds and fee gas, to drill and equip the necessary wells, from time to time, and to construct the necessary pipelines and gathering facilities, to maintain all such property free from liens, debts and encumbrances, and to transport and deliver, for the full term of the project, the necessary gas to your Petitioner at an agreed junction point, which became Clayton, New Mexico, and at "cost" as in the contract defined. The Commission erred in failing to find that this obligation of Southwestern Development

Company, in the contract of April 5, 1927, and for which said consideration was paid, was made definitive by the execution of a contract between Petitioner and Southwestern Development Company's subsidiary, Canadian River Gas Company, as of January 3, 1928 (Exhibit 16 before the Commission).

(b) The Commission erred in failing to find that all of the gas reserves, and all of the pipelines and other facilities for the production and gathering thereof, all located in the state of Texas, are reserved for and made available to Petitioner and its customers only by reason of said gas supply contract and the performance thereof.

(c) The Commission erred in holding that the transaction above described was an "unjustified and fictitious increase of book cost of plant," between affiliates, and erred in eliminating the unamortized portion of such original cost for such reason or any other reason.

(d) The Commission erred in eliminating the cost of such contract, especially in view of the fact that Petitioner does not additionally or separately or otherwise claim any amount or allowance for "establishing the business," or for "going concern value," or the like.

Fifth Point.

The Commission erred in eliminating from the rate base, and from the base used for calculating and allowing annual amortization expense, the unamortized portion of $352,940 cash value of property, originally paid by Petitioner to Cities Service Company, a wholly independent company, for gas sales contracts with that company's subsidiary distribution companies in Denver and Pueblo, and as consideration for procuring the necessary changes in and additions to the distribution plants of the distributing companies so as to make possible the distribution of natural in place of manufactured gas at adequate and uniform pressure; erred in not finding that Petitioner would not now be in business and rendering its service except for the execution of said contracts and the payment of said consideration, and erred in not finding that said contracts, and the cost thereof and the cost of procuring the conversion of the distribution systems into systems adequate for the

distribution of natural gas, were, and are "used and useful" and essential in the sale of gas now subjected to regulation.

On this point, the error may be further summarized as follows:

(a) The Commission erred in its Finding No. 4, and in its statements in its Opinion respecting the true nature of the contract, and the relationship of the parties thereto, all as set forth in the preceding Fourth Point, reference to which is made. The Commission erred in not finding that the Public Service Company of Colorado, the distributing company in Denver, and the Pueblo Gas & Fuel Company, the distributing company in Pueblo, were subsidiaries of the said Cities Service Company, and were engaged in distributing manufactured gas; that the plants and systems of the distributing companies were not fit or adequate for the distribution of natural gas; that the subsidiaries and Cities Service Company were considering procuring supplies of natural gas from sources other than those contracted for by Petitioner and hereinabove described in the Fourth Point; that Cities Service Company, and its subsidiaries, would not incur the expense necessary to convert their distribution systems into systems adequate for the distribution of natural gas, nor enter into contracts with Petitioner for their supplies of natural gas, unless Standard Oil Company (N. J.) and Southwestern Development Company, wholly independent companies, would agree to issue to Cities Service Company, as a consideration therefor, 187,500 shares of the non par common stock of your Petitioner; the company which Standard Oil Company (N. J.) agreed to form to transport and sell the gas involved. The Commission erred in not finding that after prolonged, arm's length dealing between said parties, the contract of April 5, 1927, including the obligation to pay to Cities Service Company 187,500 shares of such stock, as such consideration, was entered into (Exhibit 1 before the Commission). The Commission erred in not finding that the agreement of April 5, 1927, was made definitive by the execution of supply contracts with said Public Service Company of Colorado (Exhibit 7-I before the Commission, and with Pueblo Gas & Fuel Company (Exhibit 7-H before the Commission), and that 187,500 shares of non par stock were issued to Cities Service as

agreed. The Commission erred in not finding that at the time of the issuance of said stock it had a full cash value of not less than $352,940, as measured by the cash simultaneously paid for a like amount of stock by Standard Oil Company (N. J.).

(b) The Commission erred in failing to find that but for the execution of the said contracts with Cities Service Company, Public Service Company of Colorado and Pueblo Gas & Fuel Company, respectively, and the payment of the consideration therefor above described, the conversion of the distribution plants and systems of said companies into systems adequate for the distribution of natural gas, would not have taken place, and Petitioner would not be in business and selling the gas at the Denver and Pueblo city gates, and, in fact, the whole project of bringing gas from Texas to Colorado would have been impossible of realization.

(c) The Commission erred in holding or implying that the transaction above described was an "unjustified and fictitious increase of book cost of plant," and erred in eliminating the unamortized portion of such original cost for such or any other reason.

(d) The Commission did include the unamortized balance of the payment made for a similar supply contract at Colorado Springs, as a part of the rate base (Op., p. 19; Order, Finding Nos. 6 and 7), and did allow annual expense to amortize the balance (Op., pp. 19 and 34; Order, Finding No. 9), but the Commission erred in not finding that the said contracts and the said payments are all alike in principle, and erred in not treating the contracts for Denver and Pueblo in the same manner.

(e) The Commission erred in eliminating the cost of such contracts, especially in view of the fact that Petitioner does not additionally or separately or otherwise claim any amount or allowance for "establishing the business," or for "going concern value," or the like.

Sixth Point.

The Commission erred in eliminating from "legitimate original cost," and from the rate base, and the base upon

which depreciation expense is determined, $440,050 which Petitioner originally and legitimately paid or incurred for gas plant "used and useful" in the sale of gas now subjected to regulation.

This error of the Commission may be further summarized as follows:

(a) In its Finding No. 4, and in its statement on page 19 of its Opinion, the Commission, as a ground for this elimination, erroneously states that such sum "represents items originally charged to expense, in accordance with good accounting principles." The Commission fails to disclose, by proper subsidiary findings, the true facts with respect to such items. The Commission should have found, upon the testimony of its own witness Schutte, and his Exhibit 196 before the Commission, that Petitioner actually spent, in the necessary construction and additions to its pipeline, the following sums for the following items:

1.	Flood and Washout Control	$ 26,637.68
2.	Rock Weighting	46,683.72
3.	Cattle Guards	4,923.70
4.	Bridges	8,052.93
5.	Rip Rap and Revetments—River and Stream Crossings	24,400.99
6.	Roads and Culverts	32,380.69
7.	Gravel, Rock and Shale for Main Line	9,921.87
8.	Cathodic Protection	49,935.20
9.	Profile Maps	2,989.53
10.	Lowering Lines	638.33
11.	Spare Parts	5,623.84
12.	All other, Miscellaneous	72,617.88
	Total	$284,806.36

The Commission further failed to find that the balance of said $440,050, so eliminated, consisted of $155,244 for general construction costs, engineering and administrative costs, applicable to net property additions and capital items.

(b) The Commission erred in failing to disclose, by a

proper finding, that all these items had been erroneously charged to expense, rather than to capital, by Petitioner long prior to regulation, and at a time when such accounting was of no consequence to anyone but Petitioner, and at a time when Petitioner was obligated, under its contracts, to deliver gas at the contract price, regardless of the state or nature of its expense or capital accounts; and the Commission erred in concluding, or implying, that the expensing of such items in the past had operated to increase the charges to the consumers, and that the capitalizing of such items at this time, would thus result in duplicate imposition upon the consumers.

Seventh Point.

In arriving at its rate base, the Commission erred in deducting on account of depreciation the amount of a hypothetical and synthetic reserve for such depreciation, constructed by the Commission for that purpose; erred in not ascertaining with respect to depreciable property "the depreciation therein," as required by Section 6(a) of the Act, and erred in rejecting the uncontradicted evidence of Petitioner showing the actual depreciation in such property.

On this point, the findings and conclusions of the Commission were erroneous in the following particulars:

(a) The Commission misconstrued the Natural Gas Act, particularly Section 6(a) thereof, which requires it to determine with respect to depreciable property for rate making purposes, "the depreciation therein."

(b) Neither the Commission nor any complainant offered evidence as to the actual depreciation in the depreciable properties. Petitioner offered complete evidence on this point which was not contradicted, and the Commission erred in refusing to find that the actual depreciation accumulated in Petitioner's portion of the physical properties of the Denver line at December 31, 1938 (January 1, 1939) as determined by a field inspection and observation and the correlative present condition of such properties were as follows:

Description	Accumulated Depreciation Per Cent	Condition of Properties Per Cent
Land	00.00%	100.00%
Land Rights (Rights of Way)	00.0	100.0
Pumping Station Structures	14.0	86.0
Measuring and Regulating Station Structures	13.0	87.0
Other Transmission Systems Structures	13.0	87.0
Mains	5.0	95.0
Pumping Station Equipment	12.0	88.0
Measuring and Regulating Station Equipment	10.0	90.0
Office Furniture & Equipment	20.0	80.0
Transportation Equipment	49.0	51.0
Tools and Work Equipment	20.0	80.0
Communication Equipment	16.0	84.0

(c) The Commission erred in not finding on the basis of undisputed evidence that the amount of actual depreciation, as determined by such field inspection and observation, was as of January 1, 1939 (December 31, 1938) no more than $763,591, and that the original cost of the depreciable properties, less such actual depreciation, was $11,289,055 ($12,055,646 minus $763,591), and that such original cost, less such observed depreciation, at December 31, 1939 (January 1, 1940) was $11,317,551.

(d) The Commission erred in its Findings numbered 5 and 6, and in its statements on pages 24 to 35, inclusive, of its Opinion, with respect to accrued depreciation; erred in developing and constructing a purely hypothetical and synthetic reserve of $2,674,805 (in addition to its accrued reserve for amortization in the amount of $118,605) for accrued depreciation in the property as of December 31, 1939, and erred in deducting said $2,674,805 in arriving at its rate base, and erred in deducting any amount on said account in excess of the observed depreciation set forth above.

Eighth Point.

As cost of necessary additions to property, the Commission erred in allowing only $337,000 (Finding No. 7) on

that account to December 31, 1941; erred in not allowing $590,460.30 actually spent by Petitioner on that account up to December 31, 1941, and erred in refusing to permit Petitioner to introduce evidence as to the substantial cost of necessary additions and work in progress to date, which it requested in its verified application of March 10, 1942.

Ninth Point.

For working capital, the Commission erred in finding (Finding, No. 7) that $109,065 was sufficient and reasonable, and erred in eliminating all allowances for minimum bank balances, and erred in not allowing at least $120,000 as the necessary working capital for 1939, $127,000 for 1940, $134,000 for 1941 and $142,000 for 1942.

Tenth Point.

Assuming the Commission's own theory of "prudent investment" or "original cost" for the determination of the maximum rate base (before separation, segregation or allocation made necessary by the fact that most of the property is used in transporting and selling gas subject to regulation as well as that not subject to regulation), the Commission erred in finding (Finding, No. 7) that $9,532,064, accepted as $9,535,000, was the maximum, and in failing to find that at least $13,146,072 was a minimum, the difference between the Petitioner and the Commission on this point being summarized as follows:

Commission	
Original Cost as of Dec. 31, 1939	$11,879,409
Less: Accrued Depreciation, Depletion and Amortization	2,793,410
Depreciated Original Cost	9,085,999
Plus: Working Capital	109,065
Additions to Dec. 31, 1941	337,000
Prudent Investment	$ 9,532,064

(The above summary is taken from page 38 of the Commission's Opinion.)

Petitioner

Original Cost (Physical Property Only) as of Dec. 31, 1939 (See Sixth and Seventh Points, supra)	$12,081,142
Less: Actual Depreciation of Physical Properties (See Seventh Point, supra)	763,591
Depreciated Original Cost of Physical Properties Only (See Seventh Point, supra)	11,317,551
Plus: Working Capital (See Ninth Point, supra)	120,000
Additions to Property to Dec. 31, 1941 (See Eighth Point, supra)	590,460
Unamortized Balance of Original Cost of Contracts (See Fourth and Fifth Points, supra)	1,118,061
Prudent Investment	$13,146,072

The Commission further erred in not increasing said rate base of $13,146,072 by the amount already spent to date to take care of necessary additions in 1942, and by an additional amount to take care of such additions now in the form of "work in progress," evidence of which Petitioner offered to prove in its application of March 10, 1942, prior to the Order herein of March 18, 1942, but which application was denied.

In support of this assignment, there is adopted by reference, the assignments already made in Points Fourth to Ninth, inclusive.

Eleventh Point.

The Commission erred in refusing to find, upon the uncontradicted evidence, that the cost of reproduction new less observed actual depreciation of Petitioner's physical properties alone (exclusive of working capital, subsequent additions to property and unamortized balance of original cost of contracts), as of December 31, 1938, or January 1, 1939, was at least $11,385,356, and was as of June 30, 1940, at least $11,431,077, based on costs obtaining at the time of the hearing, and erred in refusing to find that the fair

value of such property was not less than said sums on said dates, respectively. The Commission erred in failing to give any weight, as it admits it did (Op., p. 13) to this evidence in the determination of the fair value of such property.

Twelfth Point.

As operating expenses for the year 1939, incurred in all of its business, regulated and unregulated, the Commission found and allowed $475,643 (Order, Finding No. 9; Opinion, page 46), which is approximately correct for that year, but the Commission erred in assuming that such amount would be the same in the future, and erred in not finding, on the basis of the evidence, that there was an ascending trend in expense, without taking into account current increases occasioned, first, by the defense program, and, lastly, by war conditions—all of which was sought to be brought to the Commission's attention by Petitioner's application of March 10, 1942, prior to the Order herein, showing that such operating expenses had further increased on account of the defense program and war conditions, all transpiring since the closing of the hearing on April 21, 1941.

Thirteenth Point.

As tax expense with respect to all of its business, regulated and unregulated, the Commission found and allowed for the year 1939, $637,641 (Order, Finding No. 9; Opinion, page 46), which is approximately correct, but the Commission erred in assuming that such amount would continue over subsequent years, and erred in not finding, on the basis of the evidence, that there was an ascending trend in taxes prior to the enactment of present tax laws; erred in basing the tax expense on laws applicable to 1939, and in not making a greater allowance on the basis of tax increases which were certain, and erred in not granting Petitioner's application of March 10, 1942, prior to the Order herein, to show that for the year 1940 Federal taxes alone were $684,608, and for 1941 $1,600,000, or an increase of 134%, and that Federal taxes payable with respect to earnings from the Denver line alone were $493,290 for 1940, and $1,233,779 for 1941, or an increase of 150%.

Fourteenth Point.

As cost of purchased gas, regulated and unregulated, the Commission first assumed for the year 1939 the sum of $2,112,951, which is approximately correct (Order, Finding No. 9; Opinion, page 46), but then erroneously found that such costs of purchased gas would be reduced by $551,000 annually, which error is covered by Petition for Review by Canadian River Gas Company, in Docket No. 2551, reference to which is hereby made.

Fifteenth Point.

As annual depreciation expense, on account of depreciable physical property, the Commission erred in allowing only $268,305 for 1939, and the same amount per annum indefinitely for the future (Order, Finding No. 9; Opinion, pages 24 to 35, inc.). The Commission erred in assuming for such purpose; that Petitioner could remain in business, so far as its gas supply was concerned, for 53 more years from December 31, 1939, or until 1992; in assuming that its markets would continue for the same period, and in assuming that its main pipeline would have a total service life, from the beginning of the project, of 50 years, and a remaining service life from December 31, 1939, of 38 years, after giving proper consideration to the exhaustion of natural resources constituting Petitioner's gas supply. The Commission erred in not allowing for such annual depreciation expense an amount large enough to restore, if not the present fair value, at least Petitioner's actual legitimate original cost of depreciable property by the end of the term of its useful economic life. The Commission erred in failing to find that such useful life would expire by June, 1948, when the last of Petitioner's contracts for the sale of gas expires, or at least by 1956, when its supply of gas will end. The Commission erred in assuming the longer life, under which, if it is mistaken, the injury will be irreparable to Petitioner, rather than the shorter life, under which, if it is mistaken, such expense may then be adjusted downward, without injury to either Petitioner or its customers or the ultimate consumers.

The erroneous conclusions and findings of the Commission on this point may be further summarized as follows:

(a) The Commission erred in eliminating from the base, upon which it calculated annual depreciation expense, $440,050, actually and legitimately spent for depreciable properties, as hereinabove assigned under Sixth Point.

(b) The Commission erred in not including in the cost of such depreciable properties, and in the base, for the calculation of depreciation expense, $590,460.30, actually and legitimately spent by Petitioner for such property up to December 31, 1941; and erred in not adding a reasonable sum to cover further necessary additions to the property, some of which is now in the form of "work in progress," evidence of which Petitioner offered to show, all as assigned hereinabove under Eighth Point.

(c) The Commission erred in not basing its annual depreciation expense upon the present fair value of Petitioner's properties. In substantiation of this error Petitioner adopts the assignment in the Seventh and Tenth Points, supra.

(d) The Commission erred in not finding that the salvage value of Petitioner's depreciable properties would be "nominal," as testified by Commission's witnesses, and would be a maximum of $131,020 for the whole system, as testified by Petitioner's witnesses.

(e) The Commission erred in not calculating such annual expense over a short enough term, and at a high enough annual rate, as would assure the restoration of Petitioner's capital investment, measured by actual, legitimate original cost, by the time it was compelled to quit business, and erred in not finding that such term would end by June, 1948. The Commission erred in not finding that Petitioner's principal contract for the sale of gas to Public Service Company of Colorado was coterminus with that company's franchise from the City of Denver to distribute gas, and which expires February 7, 1947, and that a renewal of such franchise depends upon the uncertain vote of the taxpaying electors of said City, and further erred in assuming that even though a franchise was renewed, the distributing company would not be free to purchase gas from sources other than Petitioner. To this same point,

the Commission erred in not finding that Petitioner's contract with Pueblo Gas & Fuel Company was likewise coterminus with that company's franchise to distribute gas in Pueblo, which would expire in June, 1948, and that the renewal of such franchise was likewise dependent upon the uncertain vote of the taxpaying electors, and that, in any event, there was no assurance that gas would be purchased from Petitioner after that date. Likewise, the Commission also erred in failing to find that Petitioner's contract with the municipality of Colorado Springs, for the sale of gas to its municipally owned distribution system, also terminates on June 19, 1948, and that all other such contracts of Petitioner for the sale of much smaller amounts of gas, also terminate in June, 1948, or at an earlier date.

(f) In any event, the Commission erred in not finding the maximum period for the depreciation term to be the 18-year period from 1939 to 1956, in which last year the gas supply would terminate. Petitioner refers to and adopts Canadian River Gas Company's Petition for Review on this point, in Docket No. 2551 in this court.

(g) The Commission erred in failing to make the necessary findings as to the service lives of the several items of property which it did use, and erred in failing to disclose by its Opinion or Findings the manner in which it calculated the depreciation expense allowance. For this reason, Petitioner is unable to make more specific assignments of error, but it appears that the Commission has erroneously assumed a 50-year life, at the rate of approximately 2% per annum on most of the depreciable items. It further appears that the Commission assumes that such rate would be applied up to the very date when Petitioner goes out of business. In this respect, the Commission erred in that such property cannot be operated to the date of expiration, without the expenditure of large sums of money for replacements, betterments, additions and rehabilitations of the property in the latter years of its life and until just before the date of expiration, and the Commission makes no provision under its method by way of depreciation expense, or otherwise, to take care of the cost of such necessary additions.

(h) The Commission erred in not allowing for annual depreciation expense a minimum of $517,266 per annum, comprised of (1) $10,276 annually for depreciation on automobiles and trucks and like property subject to short term replacement, and (2) $506,990 as annual depreciation requirement for all of the other physical properties having a longer life.

Sixteenth Point.

As amortization expense for contracts, the Commission allowed $13,890 per annum to amortize the balance of the costs of the contract covering the sale of gas at the Colorado Springs city gate (Order, Finding No. 9; Opinion, page 46), but erred in failing to allow additional annual expense to amortize the balance of the costs of similar contracts covering the sale of gas at the Denver and Pueblo city gates, respectively, referred to hereinabove under Fifth Point, and to amortize the balance of the cost of its gas supply contract referred to hereinabove under Fourth Point. The Commission erred in not allowing, as additional amortization expense, $117,647, or a total of $131,536 per annum, on the same basis as it employed for amortizing the costs of the Colorado Springs contract.

On this point, there is also adopted by reference, the error assigned under Fourth and Fifth Points, and under paragraph (e) and paragraph (f) of the Fifteenth Point.

In this connection, the error of the Commission may be further summarized as follows:

(a) The Commission erred in not finding and allowing, even upon a sinking fund basis, an additional amortization expense of $16,445 per annum for the Denver and Pueblo sales contracts, or a total on such basis of $29,338 per annum for the Denver, Pueblo and Colorado Springs contracts, which amount would be necessary to amortize them to the dates of their expiration.

(b) Even upon a sinking fund basis, and upon the assumption that Petitioner can remain in business and procure and sell gas through 1956, the Commission erred in not allowing an additional amortization expense of $53,718, necessary to amortize its gas supply contracts by that date.

Seventeenth Point.

As a fair rate of return, the Commission erred in finding and allowing only 6½% (Order, Finding No. 8; Opinion, pages 49 to 53, inc.), and erred in not finding that such return, under all the evidence in this case, would necessitate rates for gas that were confiscatory and lower than the lowest reasonable rate, and erred in not finding that a rate of return of at last 8% was necessary.

In any event, the Commission erred in applying the 6½% rate to all of Petitioner's property and business, regulated and unregulated, which error is next assigned more specifically under Eighteenth and Nineteenth Points.

Eighteenth Point.

The Commission erred in concluding and finding that from all of its business, and upon all of its property, regulated and unregulated, the Petitioner had for the pre-war year 1939 "excessive returns" in the amount of $1,644,805 (called $1,645,000), and of $2,195,800 (called $2,196,000), after assuming and reflecting the reduction of $551,000 per annum in cost of gas purchased from Canadian (Op. pp. 53, 58). The Commission erred in assuming and applying for the purpose of arriving at such "excessive returns" a rate of return of 6½% upon all of the company's property, and with respect to all of its business, without regard to whether it was subject to regulation or not. As more particularly set out in the succeeding Nineteenth Point, the Commission erred in failing to make a separation and allocation of the property as between that used in the business subject to regulation, and that used in the business not subject to regulation, and this failure to make such a separation, coupled with the imposition or limitation of a 6½% return to all of the property, regulated and unregulated, operates to apply in part, the earnings from the unregulated business in excess of 6½%, and over which the Commission has no jurisdiction, so as to inflate and erroneously enlarge the Commission's so-called "excessive returns" applicable to the regulated business. These errors ultimately and necessarily result in the use, in part, of earnings on the unregulated business over 6½% to the reduc-

tion of rates for the regulated business, all contrary to the Act, in excess of the Commission's jurisdiction. The Commission's conclusion and finding with respect to such "excessive return" also depends upon and results from the erroneous conclusions and findings with respect to operating expenses, taxes, depreciation expenses and amortization expense, hereinabove assigned under Points Third to Sixteenth, inclusive.

Nineteenth Point.

After concluding that Petitioner's returns were "excessive" for the year 1939, in the amount of $2,196,000 including therein the excess over 6½% upon the property and business not subject to regulation, the Commission then purports to allocate such excessive" revenue or returns to the several customers of the Petitioner (Op., pp. 53 to 59, inc., and Exhibit "A"; Order, Findings No. 11, 12 and 13), but the Commission's "allocation" is erroneous in that, (1) it is not based, as the Commission admits (Op., p. 55), on any separation of the properties or plant of the Petitioner, as between regulated and unregulated business; (2) its method ignores the priority which the regulated business has over the unregulated business in the use of the property; (3) it arbitrarily results in assigning larger cost to gas delivered hundreds of miles closer to the source of supply than to deliveries requiring more compression and more transportation, and results in purported costs to the several customers that bear no reasonable relation to actual costs, and (4), to the extent that the Petitioner can discern from the vague and general statements in the Commission's Opinion and Order, it is erroneous in the other particulars hereinafter more specifically stated.

The errors of the Commission may be more specifically summarized as follows:

(a) Except for specifically admitting (Op., p. 55) that its method did not contain a separation of the plant or properties of the Petitioner, as between regulated and unregulated business, the Commission failed to make basic and subsidiary findings, but has resorted to vague generalities, which in itself constitutes reversible error.

(b) The Commission erred as a matter of law in con-

cluding that it could exercise its jurisdiction under the Statute, and determine a reasonable rate for sales of gas subject to its regulation, without making any separation or allocation of the physical properties used in such business from those used in whole or in part in the sales of gas which are not subject to the jurisdiction of the Commission under the Act.

(e) The Commission erred in not finding a rate base, and the other components of a rate case, with respect to the property and business devoted to or involved in the sale of gas subject to its jurisdiction.

(d) The Commission erred in stating (Op., p. 55) that Petitioner did not submit in evidence a complete presentation of its entire operations, broken down as between the jurisdictional and nonjurisdictional operations, and in stating (Op., p. 56) that Petitioner's evidence did not "square with realities," and was "patently unreasonable," which errors more specifically assigned hereinafter in subsequent Points.

(e) The Commission erred in lumping together the properties, business, revenues and expenses pertaining to the sale of gas for resale with those pertaining to the direct sale of gas, without regard to the jurisdictional boundary line separating the two businesses, and attempted to extract from that conglomerate the cost of resale gas primarily on a straight volume basis.

(f) The Commission erred in its method by ignoring the fact that the sale of gas for resale for domestic purposes, that is the regulated business, is given priority use of all the property and facilities of Petitioner over the direct sales for industrial purposes, that is the unregulated business.

(g) The Commission erred in not recognizing or finding that the costs for the production and transmission of gas depend directly and primarily upon load factors rather than volume.

(h) The Commission erred in not making a finding as to the amount used by the Commission as fixed costs, and the amounts used as variable costs.

(i) The Commission erred in its method of allocation in that the allocation of transmission line costs between capacity costs and volumetric costs has been made in a manner that is arbitrary and discriminatory, in that volumetric costs have been unduly increased and capacity costs unduly decreased, thereby favoring or minimizing the costs charged to resale gas.

(j) The Commission erred in the allocation of transmission line capacity costs, particularly with reference to fixed charges and return on the investment. Failure to make property allocations on which to base return and depreciation charges lead only to incorrect, arbitrary and discriminatory allocations of costs.

(k) The Commission erred in adopting the allocation exhibit of the Commission's staff because the allocation of that portion of transmission line costs alleged to apply to capacity costs has been improperly allocated as between resale and direct sale gas. The percentage distribution used applies only to that portion of the property situated at and immediately north of Bivins Compressing Station, whereas the main line has at least four different ratios that should have been used.

(l) The Commission erred in lumping together the properties, business, revenues and expenses of the Petitioner with those of Canadian River Gas Company and the Colorado-Wyoming Gas Company as if they were one company, whereas, the evidence shows that they are not, and that their interests in many particulars are adverse; and that they entered into this project and carried on their business as separate entities, with adverse interest.

(m) The Commission's method is erroneous in that it gives no weight, in the determination of costs, either to the distance the gas is transported, or the number of times it must be compressed or handled before arriving at its several points of delivery. In its Order and Opinion, and as Exhibit "A" thereto, the Commission sets out, under the title "Allocated Cost of Service," the final result of its regulatory process. This result is arbitrary on its face in that it finds that the "cost of gas" to the customer, Citi-

zens Utilities Company, is 24.3 cents per Mcf as against 15.4 cents per Mcf for cost to Public Service Company of Colorado, at Denver, although the deliveries to Citizens Utilities Company take place only after two compressions, and at delivery points approximately 150 miles closer to the source of supply than Denver. The other costs arrived at in the Opinion and Order are equally arbitrary on their face, and none of them bear any reasonable relation to actual costs.

Twentieth Point.

The Commission erred in failing to find, upon evidence submitted by Petitioner, that on the basis of priority use of the facilities in the sale of gas subject to regulation, a fair apportionment of the property and expenses of Petitioner is as follows:

	Use in Sales for Resale. Regulated	Use in Direct Sales. Not Regulated
Transmission lines	82.51%	17.49%
Clayton and Canyon Compressor Stations	72.80	27.20
Devine Compressor Station	94.40	5.60
All other general property	80.25	19.75
Working capital	79.80	20.20
Contracts with Canadian for the purchase of gas	52.78	47.22
Sales contracts with Public Service Company and with Pueblo Gas and Fuel Company	100.00	0.0
Sales contracts with City of Colorado Springs for its municipal distribution system	78.46	21.54
Operating and maintenance expense of transmission lines	82.51	17.49
General expense and operating taxes	80.25	19.75

In addition to the foregoing separation of the existing property on a use basis, Petitioner also submitted, by way of a check and in confirmation of such foregoing separation, full evidence as to the equivalent original cost, and the other components of a rate case, with respect to a line for

resale gas only. Such evidence, based on pre-war prices, showed that such a line would cost at December 31, 1939 at least $11,412,163, and then increase to $11,637,163 by 1943, principally upon account of additional compressor stations, and the Commission erred in wholly discarding and ignoring this evidence, as well as the evidence of a separation based on use as above set forth.

Twenty-First Point.

The Commission erred in not finding that the present contract prices are reasonable, and in not allowing the present contracts for the purchase and sale of gas to be performed to the several dates of their expiration in 1947 and 1948, in that said contract prices are reasonable when tested, (1) on the basis of a rate base, and the other components of a rate case, separated and allocated to the sales subject to regulation, in accordance with the prior use of such facilities by such regulated business, and (2) on the basis of the equivalent original cost, and the other components of a rate case, of a line necessary for the sale of gas for resale, that is, the regulated business only. In support of this assignment, Petitioner adopts errors assigned in each and all of the foregoing Points.

Twenty-Second Point.

The Commission erred in not finding, in any event, and without regard to present contracts, and upon the assumption that Petitioner can remain in business beyond 1948, and until its markets or supply, or both, are lost, that present prices are reasonable when tested, (1) on the basis of a rate base, and the other components of a rate case, separated and allocated to the sales subject to regulation, in accordance with the prior use of such facilities by the regulated business, and (2) on the basis of the equivalent original cost rate base, and the other components of a rate case, of a line necessary for the sale of gas for resale, that is, the regulated business, only.

In support of this assignment, Petitioner adopts errors assigned in Points First to Twentieth, inclusive.

Twenty-Third Point.

The Commission erred in finding that the rates and charges, after reflecting the reduction ordered, will be just and reasonable.

Twenty-Fourth Point.

The Commission erred in making each of its Findings numbered 1 to 14, inclusive, in that none of said Findings is supported by substantial evidence, and each is contrary to the evidence in this case; and erred in making each of its Orders lettered (A) to (E) inclusive, in that each of said Orders is contrary to law and the evidence in this case.

Wherefore, Petitioner prays:

(a) That a copy of this petition forthwith be served upon some member of Respondent, Federal Power Commission, in pursuance of Section 19 (b) of the Natural Gas Act (Act of June 21, 1938 c. 556, 52 Stat. 833; Sec. 717 r (b) Title 15 U. S. C. A.), and that all parties respondent herein be served with a copy of said petition, as provided by Rule 34 of this court.

(b) That Respondent, Federal Power Commission, be required, in conformity with said Act, to certify and file with the court, a transcript of the record upon which the Order now sought to be reviewed was entered, including the testimony, evidence, exhibits, pleadings, opinions, findings, conclusions and orders of said Respondent in the three dockets above referred to.

(c) That pursuant to Rule 34 of this court, Petitioner be notified by the Clerk when said transcript has been received, and that because of the extent of the record herein as above set out, an order be entered herein allowing Petitioner thirty (30) days from the time of such notice, or such other time as to the court may seem proper, within which to designate the portions of the transcript to be contained in the printed record, unless, in the meantime, the parties hereto have stipulated as to the contents of the printed record.

(d) That this court review said proceedings, and that said Order of March 18, 1942, as supplemented by the Order

dated April 22, 1942, be reversed, vacated, set aside and held for naught.

(e) That, pending such review, and until final determination of such proceedings, the stay heretofore granted by this court on May 16, 1942, staying said Order of the Commission, pending judicial review, be continued in full force and effect.

(f) That this court exercise its jurisdiction over the parties and subject matter of this petition, and grant to Petitioner such other and further relief in the premises as the rights and equities of the cause may require.

COLORADO INTERSTATE GAS COMPANY, Petitioner,
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[Verification omitted.]

Filed July 10, 1942. Robert B. Cartwright, Clerk.

Petition of Canadian River Gas Company to Review and Set Aside an Order of the Federal Power Commission. Case No. 2551.

Canadian River Gas Company, a Delaware corporation, (hereinafter sometimes referred to as Petitioner and sometimes as Canadian), believing itself aggrived by a final Order of the Federal Power Commission, dated the 18th day of March, 1942, as amended by Supplemental Order, dated the 22d day of April, 1942, in three consolidated proceedings against the Petitioner and others, appearing upon the docket of said Federal Power Commission (hereinafter sometimes referred to as the Commission) as Cases Nos. G-124, G-118, and G-121, said Case No. G-124 being entitled, "In the Matter of Canadian River Gas Company, Colorado Interstate Gas Company and Colorado-Wyoming

Gas Company"; said Case No. G-118 being entitled, "City and County of Denver, Colorado, Complainant, v. Public Service Company of Colorado, et al., Defendants"; and said Case No. G-121 being entitled, "Public Service Commission of Wyoming, Complainant, v. Colorado-Wyoming Gas Company, et al., Defendants," respectfully petitions this Honorable Court to review and set aside said Order, and in support of its Petition, respectfully represents and shows:

I.

The Nature of the Proceedings as to Which Review Is Sought.

This is a petition to review and set aside a final Order of the Respondent, Federal Power Commission, purported to be entered under the Natural Gas Act against the Petitioner in the above-entitled and numbered cases before the Federal Power Commission, which Order is dated the 18th day of March, 1942, as amended by Supplemental Order dated the 22d day of April, 1942, this petition being filed pursuant to subdivision (b) of Section 19 of the "Natural Gas Act," 52 Stat. 833, Title 15 U. S. C. A., Sec. 717 r. Said Natural Gas Act is sometimes hereinafter referred to as the "Act."

On December 22, 1938, the Respondent, City and County of Denver, Colorado, filed a complaint with the Commission against Canadian and the Respondent, Colorado Interstate Gas Company, and Respondent, Public Service Company of Colorado, asking the Commission to investigate and determine the reasonable cost and charge for gas used in the City and County of Denver, and other related matters, alleging that the contract price for gas to the Public Service Company of Colorado at the Denver gate was unjust, unreasonable and discriminatory, and praying that the contract price be abrogated and that the Commission fix reasonable rates. This is Cause appearing on the Commission's docket as No. G-118. Canadian, on or about the 30th day of January, 1939, filed its answer to said complaint of the City and County of Denver, Colorado, and the said Colorado Interstate Gas Company and the said Public Service Company of Colorado likewise filed their answers thereto.

On or about January 9, 1939, Respondent, Public Service Commission of Wyoming, filed its complaint with the Commission in Cause No. G-121 on the docket of the Commission, complaining of the rates and charges for natural gas in Cheyenne, Wyoming, made by the Respondent, Colorado-Wyoming Gas Company, and related matters, to which Canadian filed its answer on or about February 25, 1939.

On or about the 14th day of March, 1939, the Commission, in Cause No. G-124 on the docket of the Commission, ordered upon its own motion an investigation by the Commission of and concerning all rates, charges, classifications, rules, regulations, practices or contracts of Canadian and of Colorado Interstate Gas Company and Colorado-Wyoming Gas Company, to which Canadian filed its answer on or about October 10, 1940.

On or about April 12, 1939, Canadian and Colorado Interstate Gas Company filed with the Commission their petition for rehearing and stay of the said Order of investigation of March 14, 1939, which petition the Commission did deny on or about the 9th day of May, 1939.

Thereupon, Canadian and Colorado Interstate Gas Company did file in this court in Cause No. 1931 on the docket of this court their petition for review pursuant to Section 19 of the Natural Gas Act, 15 USCA, Sec. 717r, and the Commission did file its motion to dismiss said petition for review which this court did sustain on or about the 4th day of March, 1940. This court did deny the petition for rehearing of Canadian and Colorado Interstate Gas Company on or about July 24, 1940. The opinions of this court in said proceedings are reported in Volume 110 Fed. (2d) 350 and Volume 113 Fed. (2d) 1010. Said opinions contain a summary of the facts in these cases up to said time.

Thereafter, and on or about the 13th day of September, 1940, the Commission did enter its order providing that said Causes numbered G-118, G-121, and G-124 be consolidated for hearing and setting the 28th day of October, 1940, in Denver, Colorado, as the time and place for the start of said hearing.

Thereafter a hearing in said consolidated causes was

held by and before Norman B. Gray, an examiner duly appointed and designated for said purpose by the Commission, said hearing consuming 102 hearing days and continuing from the 28th day of October, 1940, to the 21st day of April, 1941. Extensive evidence, consisting of oral testimony, exhibits and other documentary evidence, was introduced. The transcript of the testimony comprise 103 volumes and is in excess of 15,000 pages. In addition to this testimony, 323 exhibits were introduced.

Thereafter the various parties to said proceeding filed their briefs with the Commission, aggregating in excess of 2200 pages. Canadian's reply and last brief was filed on or about the 19th day of August, 1941. The last of all of said briefs filed with the Commission by any of the parties to said proceeding was filed in the month of September, 1941.

Thereafter, and on or about the 11th day of March, 1942, Canadian did file with the Commission its "Petition of Canadian River Gas Company to Reopen the Above-Entitled Proceedings to Take Further Evidence," dated March 10, 1942, in which Canadian did among other things, point out that the evidence introduced before the Examiner of the Commission was to the greatest extent based upon actual facts only up to and including the year 1939 and estimated facts for years 1940 and 1941 and years subsequent thereto, and that due to war conditions, taxes and other expenses of Canadian had greatly increased since the evidence was introduced. Said Petition to Reopen pointed out that the record before the Commission was based upon peace-time operations, and that the war had seriously affected Canadian's operations and would continue to do so in the future; and Canadian stated its desire to introduce further evidence as to the effect of the war upon Canadian's operation.

Thereafter the Commission did enter and issue its "Order Reducing Rates," dated the 18th day of March, 1942, and served upon Canadian on or about the 25th day of March, 1942, which order contains a number of findings of fact, made by the Commission upon which said Order is based, and incorporates therein as a part thereof the Commis-

sion's Opinion No. 73, dated the 18th day of March, 1942. Said Commission's Order of March 18, 1942, did deny Canadian's petition of March 10, 1942, to reopen said proceedings for the purpose of taking further evidence, and did order Canadian to file with the Commission, on or before April 25, 1942, new schedules of rates and charges for and in connection with the transportation and sale of natural gas in interstate commerce for resale to become effective as to all bills regularly rendered on and after May 15, 1942, and to reflect an aggregate annual reduction in Canadian's rates and charges of not less than $561,000 per year, being $551,000 per year on gas sold to Colorado Interstate Gas Company, and $10,000 per year for gas sold to Clayton Gas Company.

Thereafter, and on April 14, 1942, Canadian filed with the Commission its Petition for Rehearing and to Reopen directed to the Commission's Order, dated March 18, 1942, and the findings and the Commission's opinion incorporated therein. At the same time that Canadian filed said Petition for Rehearing it did also file with the Commission its Motion for Stay of the Commission's Order of March 18, 1942, pending a ruling upon Canadian's Motion for Rehearing and to Reopen and, if said motion should be denied by the Commission, then pending the filing in this court of a petition to review pursuant to the provisions of Subdivision (b) of Section 19 of the Natural Gas Act and the decision of this court on such Petition to Review.

Thereafter, and on the 22d day of April, 1942, the Commission did deny Canadian's Motion for Stay; except that the Commission did, by its said Supplemental Order of April 22, 1942, postpone the time that Canadian should file said new schedules of rates and charges to May 19, 1942, to become effective as to all bills regularly rendered on and after May 20, 1942.

Thereafter, and on the 13th day of May, 1942, the Commission did enter its Order denying Canadian's Petition for Rehearing and to Reopen and did in connection therewith render its Opinion No. 73-A.

It is to the Order reducing rates and the findings therein and the Commission's Opinion No. 73 incorporated therein,

dated the 18th day of March, 1942, as amended by the Commission's Order of April 22, 1942, extending the time for filing of the new schedule of rates and charges to May 19, 1942, and to the Order of the Commission of May 13, 1942 and its Opinion No. 73-A denying Canadian's Petition for Rehearing and to Reopen, to which this Petition to Review is directed. By its Order entered herein on May 16, 1942, this court has stayed and suspended the Commission's Order against Canadian pending this review.

The Facts and Statute Upon Which Venue is Based.

The statute upon which venue in this case is based is Section 717 r (b), Title 15 USCA, of the "Natural Gas Act," (Act of June 21, 1938, c. 556, 52 Stat. 833), and the pertinent part reads:

"Any party to a proceeding under this chapter aggrieved by an order issued by the Commission in such proceeding, may obtain a review of such order in the Circuit Court of Appeals of the United States for any circuit wherein the natural gas company to which the order relates is located or has its principal place of business * * *."

Canadian is engaged in the production and gathering of natural gas in what is known as the Amarillo, Texas, or Texas Panhandle Gas Field, and the transportation thereof to certain points for sale as follows:

Substantially all of such gas so produced is sold to the Colorado Interstate Gas Company at a point near Clayton, New Mexico, or at Gray, Oklahoma. A small portion of such gas is sold and delivered to Clayton Gas Company at Clayton, New Mexico, and Amarillo Oil Company in Texas. The production and gathering of such natural gas and the facilities used by Canadian River for such purpose are in Texas, but such property and transactions are exempted from the provisions of the Natural Gas Act by Section 1 thereof (Title 15 USCA, Sec. 717). Substantially all of the gas sold by Canadian is sold, as aforesaid, within the territory of this Circuit. The General Manager and other representatives of Canadian have their office in Colorado Springs, Colorado.

The Points On Which the Petitioner Intends to Rely.

In this review Petitioner intends to rely upon each and all of the following points, all of which were urged before the Commission in its Petition for Rehearing and to Reopen. For convenience purposes our various detailed specifications are grouped under general points. A specific detailed specification may be applicable to more than one general point, but, to avoid unnecessary repetition, is listed only one time, our intention, however, being to rely upon each detailed specification under all general points to which it may be pertinent. For the sake of brevity, Colorado Interstate Gas Company will sometimes hereinafter be referred to as Colorado.

Even though not expressly so stated in the body of each specific point and subdivision thereof hereinafter set forth, Canadian asserts and contends that each of the errors hereinafter specifically assigned operates to confiscate its property and to deprive it of its property without due process of law and to take its property for public use without compensation contrary to the Fifth Amendment to the Constitution of the United States, and asserts and contends that none of the findings of the Commission hereinafter challenged are based upon the substantial evidence required by the Natural Gas Act, and each is contrary to the evidence.

Point No. 1.

In view of the local character and private nature of Canadian's production and gathering properties, facilities and business, and in view of the provisions of Section 1 of the Natural Gas Act which, by their express affirmative language, make the Act apply only "to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural gas companies engaged in such transportation or sale," and the further express language of subdivision (b) of Section 1 of the Natural Gas Act that said Act "Shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the

production or gathering of natural gas," the Commission erred in finding and ruling that it has rate-regulatory jurisdiction over Canadian's production and gathering properties, facilities and business located wholly within the State of Texas, and in its exercise of this assumed jurisdiction in this case, in that

A. Canadian's production and gathering business is local in character, has not been declared to be and is not "affected with a public interest" and is not interstate in character, and the Natural Gas Act itself provides that it shall not be applicable to such production and gathering. The Commission's rate-regulatory jurisdiction at the most extends only to the transportation of natural gas in interstate commerce and to the sale in interstate commerce of natural gas for resale for ultimate public consumption, and therefore the Commission erred in each and all of its findings, rulings and orders in so far as they relate to and include Canadian's production and gathering properties, facilities, operations and business. The inclusion by the Commission of Canadian's production and gathering properties, facilities and business in its determination of the various constituent elements of a rate case, including rate base, revenues, expenses and rate of return, are erroneous and invalidate the entire order of the Commission, as directed to Canadian.

B. The statement or finding on page 11 of the Opinion that Canadian's production and gathering operations are an integral part of its total operations, including transportation in interstate commerce and the sale of natural gas for resale in interstate commerce, is not supported by substantial evidence.

C. The statement or finding on page 11 of the Opinion that the investigation of Canadian's production and gathering properties and operations is indispensable in regulating Canadian's rates and charges for the sale of natural gas in interstate commerce for resale and for the transportation of natural gas in interstate commerce is not supported by substantial evidence.

D. Each of said statements and findings referred to in Points 1 B and 1 C, even if true, is immaterial and erro-

neous as a matter of law, and forms no basis or justification for an assumption of jurisdiction by the Commission for fate-making purposes over Canadian's production and gathering properties, facilities, operations and business, which jurisriction is expressly negatived and withheld in and by the Natural Gas Act.

E. In any event, the Commission erred in not limiting its rate regulatory order as to gas sold by Canadian to Colorado to a proper rate for the transportation of gas by Canadian from the end of Canadian's gathering line at Bivins Compressing Station, Texas, to the point of delivery to Colorado at Clayton Junction, New Mexico, and in adding such proper transportation charge to the fair market value of the gas at the intake side of the Bivins Compressing Station, which fair market value, under the uncontradicted evidence is 7c per Mcf and in not limiting its action in a similar manner as to gas sold and delivered by Canadian to Clayton Gas Company at Clayton, New Mexico. Such action would avoid an assumpion of jurisdiction by the Commission over Canadian's production and gathering properties, facilities, operations and business, which jurisdiction is expressly withheld and negatived by the Natural Gas Act. The Commission committed error in going beyond this in its Opinion, Findings and Order.

F. As more particularly pointed out in Point No. 2 C, the Commission erred in changing the amount of compensation provided to be paid Canadian by Colorado under the contract of January 3, 1928, in so far, in any event, as such compensation includes compensation for the performance of obligations relating to production and gathering and other obligations not within the jurisdiction of the Commission.

Point No. 2.

The Commission in this case, acting beyond and in excess of any jurisdiction it may have over Canadian, has arbitrarily and capriciously, and without warrant of law, abrogated and changed the terms of the contract of January 3, 1928, between Canadian and Colorado, and particularly the amount of compensation to be paid by Colorado to Canadian as consideration for Canadian's performance under said contract, including the sale of gas and the payment therefor. In support of this point Canadian further shows:

A. The Commission erred in ordering a change in the price of gas provided to be paid Canadian by Colorado under the contract of January 3, 1928, between Canadian and Colorado, and in not finding and ruling that neither Canadian's contract with Colorado of January 3, 1928, nor the price of gas provided therein to be paid is subject to change by the Commission prior to the expiration of its term.

B. Said contract of January 3, 1928, between Canadian and Colorado obligates Canadian, among other things, to own, maintain and develop gas lands and leasehold or other interests therein and to develop, drill for, produce and gather gas therefrom. Canadian is then obligated under said contract to transport and deliver to Colorado certain quantities of the gas so produced and gathered. Canadian is prohibited from making any other sale or sales of gas or gas rights without the consent of Colorado. It can borrow money only from Colorado. Moreover, any cash received by Canadian from outside sources, whether through the sale of gas or other property; the borrowing of money, or otherwise, Canadian is obligated under said contract to credit to Colorado under said contract in reduction of the amount provided to be paid by Colorado to Canadian thereunder. The so-called purchase price to be paid Canadian under said contract of January 3, 1928, computed on the cost basis in said contract provided is the agreed compensation to Canadian for the performance of all its obligations under said contract, including the sale price of gas.

Irrespective of any general jurisdiction which the Commission might have to change the price of gas to be paid under contracts executed prior to the effective date of the Natural Gas Act, such jurisdiction does not extend to changing the compensation to be paid Canadian for the performance of its obligations under said contract of January 3, 1928, with Colorado relating to the acquisition and holding of gas lands and the drilling and development thereof and the production and gathering of gas therefrom, or for the performance of its various obligations under said contract, including its agreement not to sell gas to others or borrow money from others without the consent of Colorado and its agreement to credit on the amount of

compensation to be paid it by Colorado under said contract all moneys received by it from outside sources, whether through the sale of gas or other property, the borrowing of money, or otherwise. The necessary effect of the Commission's findings and orders in this case is an attempted extension of any jurisdiction it may have to matters not within its jurisdiction and to production and gathering, over which jurisdiction has been expressly withheld by the Natural Gas Act. The Commission, therefore, has clearly erred in changing the amount of compensation provided to be paid Canadian by Colorado under the contract of January 3, 1928, in so far in any event as such compensation includes compensation for the performance of obligations relating to production and gathering and other obligations not within the jurisdiction of the Commission.

C. Canadian's contract with Colorado of January 3, 1928, was entered into and was substantially performed long prior to the adoption of the Natural Gas Act, and under such circumstances the Commission is without power to change any of the terms, provisions or prices as specified in such contract during the life thereof, and its action in this case in so doing is error and deprives Canadian of its property in violation of the Fifth Amendment to the Constitution of the United States.

D. Even if it be assumed or held that the Commission has jurisdiction and power to change the price of gas provided to be paid under a contract negotiated, executed and substantially performed long prior to the adoption of the Natural Gas Act, and even if it be assumed that such power to change or modify the terms of a contract extends to a contract relating to production and gathering, the action of the Commission under the facts appearing in the record in this case in changing the price to be paid by Colorado to Canadian for gas delivered by Canadian to Colorado under said contract is unreasonable, capricious and arbitrary. As the evidence shows, under said contract Canadian cannot possibly make a profit from its operations, all the benefits of its operations being passed on to Colorado. It is entitled to receive only its actual costs including an amount sufficient to amortize the principal and interest of its bond and note indebtedness held by Colorado during the life of the contract. To deprive Canadian of any part of such

payments provided to be made under such contract must necessarily make it impossible for Canadian to pay its principal and interest on its bonds or to perform its other obligations under said contract necessary to produce and gather the gas which it has contracted to sell to Colorado. The necessary effect of such action will be to deprive Canadian of a substantial part of the consideration which induced it to enter into said contract and to render Canadian unable to pay principal or interest on its 6% bonds which, as shown by the evidence as of December 31, 1939, were outstanding in the principal sum of $5,057,000, with possibility or probability of foreclosure of Canadian's properties under the trust deed securing said bonds as a result of the default which will be forced by changing the amount of the payment which Colorado by the terms of said contract is obligated to make to Canadian. In addition to this outstanding bonded indebtedness as of December 31, 1939, Canadian was indebted to Colorado at said time in the amount of $1,384,254.14 on 6% notes sold from time to time at par for cash to finance Canadian's construction. Enforcement of the Commission's order will not only affect Canadian but also Colorado and will endanger the whole service to the ultimate consumers.

The enforcement of any order changing the contract price to be paid Canadian for its gas sold and delivered to Colorado under said contract will deprive Canadian of its property in violation of the Fifth Amendment to the Constitution of the United States.

Point No. 3.

Assuming, but not admitting, that the jurisdiction of the Commission extends to Canadian's production and gathering properties, facilities and business and to the abrogation of Canadian's contracts and that the Commission has full rate-regulatory jurisdiction over Canadian, it nevertheless clearly appears that the Commission in its determination of the rate base upon which Canadian is entitled to earn a return has committed numerous errors in violation of the Natural Gas Act which will result in the confiscation of Canadian's property and deprive it of its property in violation of the Fifth Amendment to the Constitution of the United States in the following particulars, to-wit:

A. The Commission erred in determining the rate base solely upon the basis of original cost.

B. The Commission erred in not giving any consideration to present fair value in determining Canadian's rate base, and further erred in not making any finding as to the present fair value of Canadian's properties subject to the jurisdiction of the Commission and using the amount so found as the rate base.

C. The Commission erred in rejecting Canadian's estimates of reproduction cost new less observed depreciation.

D. The Commission erred in not finding that the present market value of the gas leaseholds in the Texas Panhandle Field held by Canadian as of January, 1941, was the sum of $15,646,784.64, and in any event in not finding that the fair value of Canadian's leaseholds in said field is largely in excess of the cost thereof as shown on Canadian's books.

E. The Commission erred in not finding that the equivalent original cost of Canadian's production and gathering facilities, as would be required for the production and gathering of all gas delivered to Colorado at Clayton Junction, New Mexico, except Colorado's direct sale gas, extended through 1947, is not less than $11,811,410, and in not finding that the equivalent original cost of Canadian's transmission system, as would be required for the transmission of all gas delivered to Colorado at Clayton Junction, New Mexico, except Colorado's direct sale gas, extended through 1947, is not less than $4,307,737.

F. The Commission erred in not finding that the equivalent original cost of Canadian's production and gathering facilities, as would be required for the production and gathering of all gas delivered to Colorado at Clayton Junction, New Mexico, except Colorado's direct sale gas, less depreciation and depletion as of December 31, 1938, is not less than $7,001,667, and when extended through 1947, not less than $8,770,769, and in not finding that the equivalent original cost of Canadian's transmission system, as would be required for the transmission of all gas delivered to Colorado at Clayton Junction, New Mexico, except Colorado's direct sale gas, less depreciation as of December 31, 1938, is not less than $3,257,379, and when extended through 1947, not less than $3,914,220.

G. The Commission erred in not finding that the total equivalent original cost of Canadian's production, gathering and transmission system for all gas delivered to Colorado at Clayton Junction, New Mexico, except Colorado's direct sale gas, extended through 1947, is not less than $16,119,147.

H. The Commission erred in allowing only the sum of $150,738 as working capital instead of the sum of $190,000 claimed by Canadian, and in making its working capital allowance in the same amount for all future years based upon the amount found by the Commission to be proper for the year 1939, and in not finding that the proper working capital allowance for the years 1939 to 1947, both inclusive, is as follows:

1939	$190,000
1940	205,000
1941	220,000
1942	230,000
1943	245,000
1944	265,000
1945	275,000
1946	285,000
1947	275,000

I. The Commission erred (Op., p. 36) in finding that the probability of future additions to Canadian's properties for the years 1942 to 1947 are speculative. Such finding is not supported by substantial evidence. The Commission erred in not making findings and allowances for future property additions for the years 1942 to 1947 in the amounts for said respective years as to the production and gathering systems, as shown in Statement No. 3 of Exhibit No. 184, which statement shows necessary future property additions for said years 1942 to 1947 in the aggregate amount of $1,009,500.

J. In its consideration and findings as to depreciation and depletion in connection with its determination of Canadian's rate base, the Commission erred, as hereinafter set forth in Point No. 5.

K. The Commission erred (Op., p. 38, Finding No. 10), in finding that Canadian's proper rate base is the sum of $9,372,496.

L. The Commission erred in not finding that the present fair value of Canadian's property used and useful in the production, gathering and transmission of natural gas to Clayton Junction, New Mexico, extended through 1947, is not less than $13,135,965, exclusive of working capital.

M. The Commission erred in not finding that the present fair value of Canadian's property used and useful in the production, gathering and transmission of all gas to Clayton Junction, New Mexico, except Colorado's direct sale gas, extended through 1947, is not less than $12,684,989, exclusive of working capital.

Point No. 4.

Again assuming, but without admitting, that the jurisdiction of the Commission extends to Canadian's production and gathering properties, facilities and business, and further assuming, but without admitting, that it is proper in this case to determine the rate base solely upon the basis of original cost, it nevertheless clearly appears that the Commission's findings as to original cost are erroneous and the exclusive use of original cost in the determination of the rate base is in violation of the Act and will result in confiscation of Canadian's property and deprive it of its property in violation of the Fifth Amendment to the Constitution of the United States in the following respects, to-wit:

A. The Commission erred in deducting from the original cost of Canadian's properties as of December 31, 1939, (Op., pp. 15, 16), three items aggregating the sum of $3,370,817 upon the ground that said items constitute affiliated company profits, the first item being an alleged profit of $3,120,496 on the sale of property by Amarillo Oil Company to Canadian; the second item being an alleged profit of $121,787 on the sale of property by Master Oil and Gas Company to Canadian; and the third item being an alleged profit of $128,534 on the sale of property by Mission Oil Company to Canadian through Amarillo Oil Company. The Commission's findings with reference to these items are not supported by substantial evidence and are contrary to the evidence and the law, and each of said items should properly be included in the rate base.

B. The Commission erred in not properly or adequately setting up the facts appearing in the record showing the circumstances under which the item of $5,000,000 was paid by Canadian to Amarillo Oil Company for certain gas leaseholds and wells, and in not finding the following, namely: that when Canadian acquired its original gas leaseholds and wells from Amarillo Oil Company as of May 1, 1927, it actually paid therefor the sum of $5,000,000 in cash; which sum was actually advanced by Standard Oil Company (N. J.) pursuant to a contract, dated April 5, 1927, between Standard Oil Company (N. J.), Southwestern Development Company, and Cities Service Company; that the contract of April 5, 1927, between Standard Oil Company (N. J.), Southwestern Development Company, and Cities Service Company, pursuant to which Standard Oil Company (N. J.) advanced to Canadian the sum of $5,000,000 which Canadian used to purchase gas leaseholds and wells from Amarillo Oil Company, was executed only as the result of prolonged arm's-length negotiations and individual bargaining between adverse parties, Standard Oil Company (N. J.) and Southwestern Development Company; that said transaction was not an inter-company transaction between affiliated companies and should not be so treated, because, first, its terms were negotiated at arm's length and agreed upon by adverse parties; second, it was not a book transaction, since the purchase price was actually advanced and paid in dollars by a company which was outside the Southwestern's holding company system; third, no contingency whatever could arise in the future which would affect the right of Amarillo Oil Company to keep and retain the full purchase price; and fourth, under these circumstances all accepted rules of accounting require that the full purchase price paid by Canadian be treated as its cost. Said full sum of $5,000,000 was actually invested in and went into this project. It was new money and came from an entirely outside source. To secure this $5,000,000, plus an additional $6,000,000, it was necessary for Canadian to issue its $11,000,000 of bonds. The payment of this $5,000,000 of new money was an essential to the inauguration and consummation of the project. The transaction was actual, bona fide, complete and final between the parties. The Commission erred in not making findings in accordance with each and all of

the above statements. The Commission erred in not finding that the entire sum of $5,000,000 paid by Canadian to Amarillo Oil Company for said original leaseholds and wells was a fair and reasonable price therefor and was actually paid therefor, and in eliminating the sum of $3,120,496 therefrom, and in finding that said sum of $3,120,496 constituted a write-up, and in not finding that said entire sum should be included in Canadian's original cost.

C. The Commission erred in basing its elimination of the $3,120,496 upon the express or implied finding or assumption that the gas leaseholds and wells purchased with the $5,000,000 had prior to the time of such purchase been devoted to a public service and in not finding that in any event said properties had not been devoted to any public service until after the same had been purchased by Canadian.

D. The Commission erred in deducting from and not including in Canadian's original cost the item of $121,787 found by the Commission to be an alleged profit on the sale of property by Master Oil and Gas Company to Canadian, and in finding that this item represents a profit among affiliated companies. The Commission erred in finding that this Master Oil and Gas Company property had been devoted to a public service before the time Canadian acquired it. It erred in not finding that the sale by Master Oil and Gas Company to Canadian was negotiated at arm's length; that the purchase price was not exorbitant or in anywise unreasonable, and that the full purchase price for said property should be a part of Canadian's original cost.

E. The Commission erred in deducting from and not including in Canadian's original cost (Op., pp. 15-16) the item of $128,534 found by the Commission to be an alleged profit on the sale of property by Mission Oil Company to Canadian through Amarillo Oil Company upon the alleged ground that said payment constitutes a write-up and represents a price paid for properties not at arm's length which exceeded the original cost to the party first devoting them to the public service. Said finding (Op., p. 17) is not supported by any substantial evidence.

With further reference to the transaction referred to in

this Point, the Commission erred in not making any preliminary or basic findings of fact showing the items making up said aggregate item of $128,534 so that Canadian could properly direct specifications of error to the elimination of the different items aggregating said sum of $128,534.

In an attempt to ascertain the preliminary, primary or basic facts and figures upon which the Commission's ultimate findings as to this item and as to other matters are based, Canadian, as appears in Specification of Error No. 132 in its Petition for Rehearing and to Reopen filed with the Commission, requested a conference with the representatives of the Commission and the privilege of examining the Commission's working papers used in making the computations set forth in the Commission's findings, all for the purpose of attempting to ascertain the underlying facts or computations upon which the Commission's ultimate findings or computations were based. This request the Commission denied on April 1, 1942, and, in so doing, erred.

If, as Canadian believes, there is included in this elimination of $128,534 the sum of $51,839.04 representing the cost of the drilling of an exploratory well (Bivins 2) over 20 years ago which resulted in a dry hole, then the Commission erred in making such elimination.

If, as Canadian believes, the remaining portion of said sum of $128,534 eliminated by the Commission from Canadian's original cost, namely, the sum of $76,695, is eliminated by the Commission upon the ground that it represents an excess of original cost to the party first devoting the property to the public service, then the Commission erred in that said conclusion is not based upon any adequate finding and is not based upon substantial evidence in the record, and is contrary to law. The Commission erred in not finding that said purchase was made prior to the time that the property so purchased could possibly be said to have been first devoted to the public service, and the Commission erred in not finding that said sum is reflected in a sum actually paid by Canadian to Amarillo Oil Company for the property.

F. The Commission erred (Op., p. 15) in deducting from and not including in original cost of Canadian's properties

the item of $129,032 which the Commission has deducted upon the ground that said item represents reaccounting and not a correction of an accounting error. The finding of the Commission that the placing of said sum by Canadian in its capital account represents reaccounting, and not correction of an accounting error is not supported by substantial evidence. The Commission erred in not finding that said sum is properly placed in capital as a part of the actual legitimate cost of Canadian's property.

G. The Commission erred in deducting from and not including in Canadian's original cost (Op., pp. 15-17) the item of $366,507 representing interest during construction and in finding that any part of said sum represents interest upon "write-ups." Said finding is not supported by substantial evidence.

H. The Commission erred in not finding that the original cost and the actual legitimate cost of Canadian's properties for its production and gathering facilities as of December 31, 1939 is not less than the sum of $10,620,625, and in not finding that the original cost and the actual legitimate cost of Canadian's transmission system properties as of December 31, 1939, is not less than the sum of $4,028,196.

I. The Commission erred in finding the undepreciated original cost of Canadian's property (Op., p. 14 and Finding No. 4) as of December 31, 1939, to be $10,784,464. The Commission's finding to that effect is not supported by substantial evidence.

J. If it shall be finally held that the Commission has jurisdiction for rate-making purposes over all of Canadian's properties, including its production and gathering facilities, and if it shall be further finally held that the rate base is to be based upon original cost or actual legitimate cost, then the Commission erred in not finding that the total original cost or actual legitimate cost of Canadian's production, gathering and transmission properties, extended through 1947, is $16,626,957, and in not using said sum in computing Canadian's rate base.

Point No. 5.

The Commission misconstrued the Natural Gas Act, particularly Section 6 (a) thereof, which requires it to determine with respect to depreciable property for rate-making purposes "the depreciation therein." In its consideration and findings as to depreciation and depletion in arriving at its rate base for Canadian's properties the Commission erred in deducting on account of depreciation the amount of a hypothetical and synthetic reserve for such depreciation constructed by the Commission for that purpose; erred in not ascertaining in respect to depreciable property "the depreciation therein," as required by Section 6 (a) of the Act; and erred in rejecting the uncontradicted evidence of Petitioner showing the actual depreciation in such property. This error of the Commission deprives Canadian of its property without due process of law contrary to the Fifth Amendment to the Constitution of the United States. Under this Point Canadian further shows:

A. The Commission erred (Op., pp. 24-27) in ignoring and rejecting observed per cent condition of Canadian's depreciable property in determining the existing depreciation in said property as of December 31, 1939.

B. The Commission erred in not finding from the uncontradicted evidence in this case that, based upon actual observation and inspection of the present condition of Canadian's depreciable property, the percentage of accumulated depreciation and the percentage of condition of the depreciable properties of Canadian were, as of December 31, 1938, as set forth in Canadian's request for Finding of Fact No. 82 heretofore filed with the Commission as follows:

Description	Accumulated Depreciation Per Cent	Condition of Properties Per Cent
Land	0%	100%
Right of Ways	0%	100%
Drilling and Cleaning Equipment	0%	100%
Field Measuring Station Structures	17%	83%
Measuring Station Equipment (Field and Transmission)	11%	89%
Field Lines	7%	93%
Field Compressor Station Structures	18%	82%
Field Compressor Station Equipment	16%	84%
General Property	22%	78%
Compressor Station Structures	10%	90%
Compressor Station Equipment	17%	83%
Transmission Line Equipment	7%	93%
Other Transmission System Structures	19%	81%
Other Transmission System Equipment	18%	82%
Measuring Station Structures (Transmission)	11%	89%
Gasoline Plant Structures	15%	85%
Gasoline Plant Equipment	27%	73%
Telephone System Equipment	16%	84%

C. The Commission erred in not applying the percentages of depreciation set forth in Subdivision B of this Point No. 5 in determining the accrued or accumulated depreciation in Canadian's property, as required by Section 6(a) of the Act.

D. The Commission erred in finding the accrued depreciation as of December 31, 1939, on Canadian's depreciable property to be $1,480,948.

E. The Commission erred in finding that the accrued depletion of Canadian's properties as of December 31, 1939, is the sum of $653,681.

F. The Commission erred in finding that the total ac-

crued depletion and depreciation in Canadian's properties as of December 31, 1939, is the sum of $2,134,269.

Point No. 6.

In addition to errors hereinafter in Points Nos. 7 and 8 set forth relating to depreciation and depletion as an annual expense allowance, the Commission erred with reference to its findings and determination of Canadian's annual expense which should properly be considered in estimating Canadian's annual expense for the future in the following respects, to wit:

A. The Commission erred (Op., p. 42), in not setting forth and making a finding as to each of the deductions from Canadian's 1939 expense suggested by the Commission's staff and allowed by the Commission and found by the Commission to be reasonable. Canadian is absolutely unable, from the Commission's Opinion, to determine the items of its 1939 expense which the Commission has disallowed and cannot reconcile the total expense deductions made by the Commission with the adjustments made by the Commission's staff in exhibits introduced in evidence. Consequently, Canadian could not, and was deprived of the right to, direct proper specifications of error to the deductions from expenses made by the Commission and to the different items of deduction aggregating the total deduction made by the Commission. As pointed out in Subparagraph E of Point No. 4, within a few days after copy of the Commission's Order and Opinion of March 18, 1942, was received, Canadian, in an attempt to ascertain the preliminary, primary or basic facts and figures which are not set forth in the Commission's Opinion but upon which the Commission's order reducing rates must necessarily be based, requested a conference with representatives of the Commission and permission to examine the working papers used by the Commission in making its computations. This request the Commission promptly, and on March 30, 1942, denied. (See Specification No. 132, Petition for Rehearing filed with the Commission.) The failure of the Commission to make proper findings as to the expense deductions so made and the failure of the Commission to correct said

error by its denial of Canadian's request for a conference and examination of working papers are error and deprive Canadian of due process of law in violation of the Fifth Amendment to the Constitution of the United States.

B. In view of the evidence in the record and the common knowledge of the ascending trend in expense occasioned, first, by the defense program and, lastly, by war conditions, all of which was called to the attention of the Commission in Canadian's briefs filed with the Commission and in Canadian's Petition to Reopen, dated March 10, 1942, the Commission erred in basing its expense allowance for the future upon Canadian's expense for the pre-war year of 1939. It particularly erred in allowing as tax expense only the sum of $177,162 and in allowing income taxes as a deductible expense in the amount only of $66,403 based upon its findings as to income tax for the pre-war year of 1939. Said allowance for income tax expense is excessively low even if such allowance should properly be based upon the pre-war year of 1939. Furthermore, it is entirely improper to base such income tax expense allowance upon the pre-war year of 1939 when the income tax rate was only 16.5% as against a 24% rate for the year 1940 and as against the almost certain increase of the tax rate to 40% now being discussed in Congress. The findings upon which such allowances are based are not supported by substantial evidence. To allow Canadian for the future as an expense item only the amount of taxes paid in the pre-war year of 1939 and to ignore the increased rates of taxation, particularly in income taxes, which have become effective since the pre-war year of 1939 and the certain further increase in such taxes, which increases, together with further increases, will be of indefinite duration, and all of which increases the Commission recognized and, which likewise will be judicialy noticed by this Court, constitute error and necessarily deprive Canadian of its property in violation of the Fifth Amendment to the Constitution of the United States.

C. The Commission erred (Op., p. 44) in allowing as operating expense only the sum of $753,191.

Point No. 7.

In its findings and rulings relating to depreciation and depletion as an annual expense allowance the Commission committed error as follows:

A. The Commission erred, under the facts and circumstances appearing in this case in using the service life principle for the purpose of determining annual depreciation expense.

B. The Commission erred (Op., pp. 33, 34) in not stating and finding what service lives it has used in applying the service life principle to annual depreciation expense. It is impossible, from Commission's Opinion, for Canadian to know what service lives have been used so that it could properly direct specifications of error thereto.

C. The Commission erred under the facts and circumstances appearing in this case in using the service life principle for the purpose of determining future annual depreciation expense, which principle as applied by the Commission, erroneously assumes that the allowance, which was approximately 2% per annum on depreciable items, when applied up to the very date that the property is exhausted and theoretically will go out of service, will return the full investment in the property. This does not square with the realities. The property cannot be operated to the very date of exhaustion without the expenditure of large sums of money for the purpose of making replacements, betterments and rehabilitations of the property before the date of total exhaustion has been reached. The Commission has made no provision for these actualities, and in failing to do so, committed error.

D. The Commission erred in not determining and finding that the depreciation and depletion period to be used in determining Canadian's depreciation as an annual expense allowance should start in the year 1939, or such later commencement date as should properly be used in establishing the depreciation base, and end in the year 1947 inasmuch as the primary term of Canadian's contract with Colorado expires in 1947 the contract between Colorado and the Public Service Company of Colorado expires in the

year 1948, and the franchise of the Public Service Company of Colorado in the City of Denver expires in the year 1947, with the Public Service Company of Colorado not obligated to take gas after the expiration of its franchise on February 8, 1947, unless, in the meantime, the people of Denver shall have voted a new or extended franchise, and the contract between Colorado and Natural Gas Pipe Line expires September 30, 1946.

E. In any event, the Commission erred in not finding that the longest period which should properly be used in determining Canadian's annual depreciation and depletion allowance is the 18-year period starting in 1939 and terminating at the end of the year 1956, when the life of Canadian's gas reserves for long distance pipe line purposes will expire. In any event, whatever starting point is used for such depreciation and depletion period, the Commission erred in finding that the ending point should be later than the year 1956.

F. The Commission erred in finding that Canadian's depletion expense for the year 1939 was the sum of $80,969.

G. The Commission erred in finding that Canadian's depreciation expense for the year 1939 was the sum of $157,774.

H. The Commission erred in not finding that the salvage value of Canadian's depreciable properties would be "nominal," as testified by the Commission's witnesses, and would be a maximum of $198,384.69, as testified by Canadian's witnesses.

I. The Commission erred in not basing its annual depreciation and depletion expense upon the present fair value of Canadian's properties.

J. The Commission erred in any event in its computation of depletion allowances because it assumes that Canadian will recover all of the gas currently under its acreage as determined by the Commission, whereas all of the substantial evidence in this case points to the fact that it will not do so.

K. The Commission has made a finding that the life of

Canadian's gas reserves will continue for 53 years from December 31, 1939, or until the year 1992, as against the contention of Canadian that the life of Canadian's gas reserves for long distance pipe line purposes will not continue beyond the year 1956. This obviously has an important bearing as to the rate of depreciation and depletion to be used in determining proper depreciation and depletion allowances as annual expense. Due to the number of errors made by the Commission with reference to the life of Canadian's gas reserves we are setting them out in Point No. 8 next following.

Point No. 8.

The Commission, in this case, has arbitrarily and capriciously, and without substantial basis in the record, determined that the life of Canadian's gas reserves will continue for 53 years from December 31, 1939. As a basis for such determination the Commission has assumed a reserve figure for Canadian's acreage, which assumption is not supported by the record in view of the fact that the Commission discarded the reserve estimates of its own witnesses upon the ground that they were too high, and of Canadian's witnesses upon the ground that they were too low, which conclusions, if correct, would leave the record without any substantial evidence of any character whatsoever with respect to the volume of gas in place under Canadian's reserves, or in the field as a whole. The Commission then committed further error by simply dividing the arbitrary figure thus assumed by an estimated annual rate of withdrawal from Canadian's acreage without giving any effect whatsoever to the volume of gas that Canadian will necessarily lose by underground migration, all of the substantial evidence being to the effect that Canadian will lose large volumes of gas by drainage, and the evidence being uncontradicted that the entire Texas Panhandle gas field is interconnected by a system of porous spaces so that gas will migrate freely from one portion to the other. In support of this Point Canadian further shows:

A. The Commission erred in its finding that the life of Canadian's reserves would continue for 53 years from December 31, 1939 (Op. p. 31), because there is no substantial evidence that will support such finding.

B. As stated by the Commission in that portion of its opinion under the heading "Gas Reserves" (Op., pp. 27-33) the Commission witnesses based their testimony as to reserves upon the "pressure decline" method, whereas Canadian's witnesses based their testimony upon the "porosity sand thickness" method or "open flow" method. The Commission states in its opinion (Op., pp. 28-29) that the estimates of Commission staff, resulting from an application of the "pressure decline" method are too high and that Canadian's estimates, based upon applications of the "porosity sand thickness" or "open flow" methods, are too low, thereby condemning all methods as applied to the Texas Panhandle Field and rejecting the estimates both of Commission staff witnesses and Canadian's witnesses. Notwithstanding this, the Commission has made a purported finding as to Canadian's recoverable reserves. It is obvious that such findings is necessarily the arbitrary conclusion only of the Commission and is not supported by any substantial evidence in the case. The Commission erred in not basing its finding upon any evidence in the case and in making the finding that Canadian's recoverable reserves as of December 31, 1939, were 2,800,000,000 Mcf at 14.65 pound pressure base and at an assumed abandonment pressure of 50 pounds (Op., p. 31).

C. The Commission erred in holding that the method used by the Commission staff in dividing the entire field into quadrants favored the position of Canadian as to lower reserves, there being absolutely no substantial testimony to this effect and this finding, therefore, is a mere conclusion not even remotely supported by the record (Op., p. 30).

D. The Commission erred in making the statement that the method used by Commission staff of dividing the entire field into quadrants favored the position of Canadian as to lower reserves and in stating in effect that this was true because (1) Canadian's acreage is "considered among the very best in the entire field," (Op., p. 30) and (2) that the Commission staff had arrived "at an average of 15,400 Mcf of remaining reserves per acre (for the field as a whole) as compared with only 11,600 Mcf of remaining re-

serves per acre under Canadian's acreage (Op., p. 30). These findings are erroneous and are not supported by the record because the only testimony on these questions by the Commission staff shows an estimate for Canadian's reserves of 16,343 Mcf per acre, which is considerably higher than the estimate per acre for the field as a whole (see Hammer's Exhibit 180, page 4 of 4), and for the further reason that there is no substantial evidence whatsoever in the record to the effect that Canadian's acreage is among the most productive in the field, the evidence on this subject being merely that it is well blocked and among the most desirable acreage for this reason.

E. The Commission erred in holding that "the pressure decline method, theoretically, automatically accounts for any migration" (Op., p. 30) for the reason that there is no substantial evidence in the record to support any such finding with respect to migration that may occur in the future. It is undisputed in this record that the life of any acreage is determined by production and drainage in the future, and past drainage in any event has very little bearing upon this fact.

F. The Commission erred in its finding that "if isobaric maps are properly drawn this factor (drainage) is accounted for" (Op., p. 30) because there is absolutely no evidence in the record to support the statement that isobaric maps represent in any manner the drainage that may occur in the future.

G. The Commission erred in failing to find that Canadian would lose proportionately more gas in the future from drainage than it had lost in the past, since the uncontradicted testimony in this case demonstrated that this would be true because of the increased rate of production from lands adjacent to the acreage of Canadian coupled with the fact that the record shows without contradiction and based upon figures and studies furnished by Commission staff that it was not until midyear 1938 that adjacent acreage had produced as much gas in volume as Canadian's acreage and, further, that during the last year covered by the study of Commission staff only about half as much gas was produced from Canadian's acreage for

each acre pound lost in pressure as was produced for each acre pound lost in pressure during the first year covered by the study of Commission staff. The record is clear and uncontradicted in this respect.

H. The Commission erred in the determination of the life of Canadian's reserves by merely dividing its expected future annual rate of production into remaining recoverable reserves as found by it (Op., p. 31) because such method of computation necessarily assumes, in spite of the uncontradicted testimony to the contrary, that Canadian will produce every foot of gas found by the Commission to remain in place under its acreage as of the date of the computation, notwithstanding the fact that there is no substantial evidence to support this assumption, but on the contrary, the uncontradicted evidence in this case demonstrated that a computation of this character, which did not take the drainage into account, would give an erroneous answer.

I. The Commission erred in not considering the influence of drainage upon the life of Canadian's reserves because the overwhelming weight of the testimony shows that Canadian will lose far more gas by drainage than it will actually produce through its wells, there being no substantial evidence to the contrary.

J. The Commission erred in its finding that the life of Canadian's properties would be influenced by the life of the Hugoton Field (Op., p. 32), for the reason that the evidence shows affirmatively and without contradiction that Canadian has no reserves in the Hugoton Field and there is no showing that it is possible for Canadian either to acquire reserves in that field or purchase gas therein and finally, even if Canadian could rely upon the Hugoton Field as a source of supply it would be necessary for it to make larger additional capital expenditures, none of which are provided for in the rate base or anticipated by the Commission with respect to Canadian's future operations.

K. The Commission erred in failing to find that the life of Canadian's reserves depended upon and would be the same as the life of the field as a whole, this being the testimony of all of the witnesses who testified concerning

this matter and there being no substantial evidence to the contrary, all of the testimony being that the Texas Panhandle Field is interconnected by means of porous spaces and that production of gas from any point in the reservoir will affect the entire reservoir, and all of the witnesses also testified to the fundamental law of physics that gas under pressure will migrate from areas of higher pressure to areas of lower pressure in the process of equalization of pressures.

L. The Commission erred in failing to make any finding as to the total recoverable reserves of the Texas Panhandle Field and to recognize the necessity for such finding in order to arrive at a proper finding of the remaining life of Canadian's recoverable reserves.

M. The Commission erred in failing to find the remaining life of the Texas Panhandle Field as a whole.

N. The Commission erred in failing to find that from January 1, 1941, to the end of 1956, there will be withdrawn from the Texas Panhandle Field a total of 9,055,029,223 Mcf of gas, computed on a 16.4 pound pressure base.

O. The Commission erred in failing to find that the remaining life of the Texas Panhandle Gas Field as a source of supply for long distance pipe lines will not extend beyond the end of 1956.

P. The Commission erred in failing to find that the remaining life of Canadian's reserves as a source of supply for long distance pipe lines will not extend beyond the end of 1956, there being no substantial evidence to the contrary.

Q. The Commission erred in failing to find that the determination of average pressures in the Texas Panhandle Field by weighting on acreage alone does not give the correct equilibrium pressure, all of the substantial testimony in this case being to this effect.

R. The Commission erred in failing to find that the pressure decline method of estimating gas reserves in the Texas Panhandle Field gives an erroneously high answer

in the absence of the true equilibrium pressure, all of the substantial testimony in the case being to this effect.

S. The Commission erred in failing to find that the average pressure in the Texas Panhandle Field, determined by weighting on acreage alone, shows an accelerated drop in pressure from year to year as related to production, all of the substantial testimony in the case being to this effect.

T. The Commission erred in failing to find that the average pressure of Canadian's reserves, determined by weighting on acreage alone, shows an accelerated drop in pressure from year to year as related to production, all of the substantial evidence being to this effect.

U. The Commission erred in failing to find that any estimate of reserves in the Texas Panhandle Field, based upon the pressure decline method, is erroneously high, when the accelerated drop in pressure from year to year, as related to production, is ignored, the overwhelming weight of the testimony being to this effect and any contrary testimony, by inference or otherwise, is directly in conflict with the fundamental law of physics known as Boyle's Law.

V. The Commission erred in applying the pressure decline method to Canadian's acreage in any event for the purpose of determining the remaining recoverable reserves in place in view of its finding in this case to the effect that the pressure decline method of estimating reserves is satisfactory when "a field is depleted as much as 15% or more" (Op., p. 29), all of the testimony in this case being to the effect that at the time of the hearing and at the time the estimates of reserves were made Canadian's reserves had been depleted less than 10%.

Point No. 9.

The Commission erred in its findings as to Canadian's total operating costs, the proper amount of revenue deductions, and the amount of income available for return, in that

A. The Commission erred (Op., p. 44) in allowing

total revenue deductions only in the aggregate amount of $1,169,096.

B. The Commission erred (Op., p. 44) in finding that Canadian will have $1,224,291 income available for return based upon 1939.

C. The Commission erred in not finding that the reasonable estimated total operating costs of Canadian for the years 1940 to 1947, both inclusive, are not less than the following:

1940	$2,269,903
1941	2,166,294
1942	2,192,137
1943	2,246,717
1944	2,262,385
1945	2,254,260
1946	2,219,333
1947	2,043,837

D. The Commission erred in not finding that the reasonable estimated total operating costs of Canadian for the years 1940 to 1947, both inclusive, excluding Colorado's direct sale gas, are not less than the following:

1940	$2,194,419
1941	2,071,007
1942	2,075,867
1943	2,151,539
1944	2,200,274
1945	2,192,740
1946	2,160,467
1947	1,988,261

Point No. 10.

As a fair rate of return the Commission erred in finding and allowing only 6½%, and erred in finding that a rate of return of 6½% is fair and reasonable as applied to the properties and business of Canadian, and erred in not finding that a 6½% rate of return under all of the evidence in this case will necessitate rates for gas sold by Canadian that are confiscatory and lower than the lowest reasonable rate, and erred in not finding that a rate of return of at least 8% is the lowest reasonable rate.

In any event, the Commission erred in applying the 6½% rate to all of Canadian's properties and business, including both its regulated and unregulated business. The findings of the Commission are not supported by substantial evidence, and these errors deprive Canadian of its property without due process of law contrary to the Fifth Amendment to the Constitution of the United States.

Point No. 11.

It being conceded that the jurisdiction of the Commission does not in any event extend to all the gas sold by Canadian, it admittedly becomes necessary to make some proper allocation so as to keep the rate order within the limited confines of the Commission's jurisdiction. The Commission recognized the necessity for such allocation, but in doing so erroneously rejected Canadian's theory as to a proper basis of allocation and the evidence in support thereof, and erroneously adopted and applied a theory designated by the Commission as "Allocation of Costs." (Op., pp. 53-62.) In this connection the Commission erred in the following respects:

A. The Commission has purported to make an allocation which it calls an "Allocation of Costs." There are no sufficient preliminary findings of fact based upon evidence in the case and there is no sufficient explanation of what the Commission means by its "Allocation of Costs" and how it has applied this theory to enable Canadian properly to direct specifications of error to the general statements and findings made in this portion of the Commission's Opinion. As heretofore pointed out in Subparagraph E of Point No. 4 and Subparagraph A of Point No. 6, Canadian, in an attempt to ascertain the preliminary, primary or basic facts and figures which are not set forth in the Commission's Opinion but upon which the Commission's order reducing rates must necessarily be based, requested a conference with representatives of the Commission and permission to examine the working papers used by the Commission in making its computations. This request was promptly denied by the Commission. The failure of the Commission to make such proper preliminary findings and explanation of its "Allocation of Costs"

theory so as to enable Canadian properly to direct specifications of error thereto and the failure of the Commission to correct said error by its denial of Canadian's request for a conference and examination of working papers deprive Canadian of due process of law in violation of the Fifth Amendment to the Constitution of the United States.

B. The Commission erred (Op., p. 55) in finding that an allocation of physical property need not be made in arriving at a proper determination of rates for the sale of gas within the jurisdiction of the Commission, and in not making such allocation; and the Commission, in rejection of the uncontradicted evidence in the case, further erred in not making such physical allocation in accordance with the allocation exhibits introduced through Canadian's witnesses.

C. The Commission erred in not finding a rate base for that part of Canadian's property subject to the rate-regulatory jurisdiction of the Commission.

D. The Commission erred in not finding a rate base for that part of Canadian's property subject to the rate-regulatory jurisdiction of the Commission and then making an allocation of the physical properties and other values included in such rate base as between the portion or value thereof properly applicable to the gas over which the Commission has rate-regulatory jurisdiction and the portion of said gas over which the Commission does not have such rate-regulatory jurisdiction.

E. The Commission erred (Op., p. 55) in stating that Canadian did not submit in evidence a complete presentation of its entire operations broken down between jurisdictional and non-jurisdictional operations.

F. The Commission erred (Op., p. 55) in stating that all that can be accomplished by an allocation of physical properties can be attained by allocating costs, including the return.

G. The Commission erred (Op., p. 55) in stating that the cost allocation method adopted by its staff is by far the most practicable and business-like. Said method is not practicable or business-like, is contrary to law, and its

necessary effect is an assumption of jurisdiction by the Commission over properties, incomes and expenses over which it has no jurisdiction.

H. The Commission erred (Op., p. 56) in stating that Canadian's allocation evidence assumed a field price for gas as the prevailing market price. This statement is not supported by substantial evidence. The uncontradicted evidence in the case established the prevailing market price for said gas which was used by Canadian in its allocation exhibit.

I. The Commission erred (Op., p. 56) in stating that Canadian's evidence was based upon assumptions, without stating what those assumptions were, which are referred to by the Commission, and the Commission erred in stating that Canadian's exhibits do not square with realities or are patently unreasonable as applied to properties and operating conditions such as those concerned. None of said statements is supported by substantial evidence.

J. The Commission erred (Op., p. 56) in stating that the Commission's staff exhibits on cost allocation followed principles that have long been recognized as reasonable in the public utility field and are widely accepted. Said statement is not supported by substantial evidence and its application in this case is contrary to law and to the facts of the case and will necessarily result in depriving Canadian of its property without due process of law.

K. The Commission erred (Op., p. 56) in not showing what "peak day demand" it refers to as the basis of the allocation of fixed costs.

L. In any event, the Commission erred in basing its cost allocation on a "peak day demand" in one year only, to wit, the year 1939.

M. The Commission erred in not recognizing and finding that the costs for the production and transmission of gas depend primarily upon load factor rather than volume.

N. The Commission erred (Op., p. 56) in not making a finding as to the amounts used by the Commission as

fixed costs and the amounts used as variable costs, and the items thereof.

O. The Commission erred (Op., p. 57) in finding that the principles and methods of cost allocation presented by the Commission's staff are the most appropriate and reasonable for Canadian. Such finding is not supported by substantial evidence.

P. Assuming that the Commission used the allocation formula set up in Lyons' Exhibits Nos. 226 and 226-A, then it erred in accepting the allocation exhibit which it has adopted because the allocation of transmission line cost between volumetric costs and capacity costs have been made in a manner that is arbitrary and discriminatory in that volumetric costs have been increased and capacity costs decreased, thereby favoring or minimizing the costs charged to resale gas.

Q. The Commission erred in the allocation of transmission line capacity costs, particularly with reference to fixed charges and return on the investment. Failure to make property allocations on which to base return and depreciation charges lead only to incorrect, arbitrary and discriminatory allocations of costs.

R. Again assuming that the Commission used the allocation formula set up in Lyons' Exhibits Nos. 226 and 226-A, then it erred in adopting said allocation exhibits because the allocation of that portion of transmission line costs alleged to apply to capacity costs has been improperly allocated as between resale and direct sale gas. The percentage distribution used applies only to that portion of the property situated at and immediately north of Bivins Compressing Station, whereas the main line has at least four different ratios that should have been used.

S. Again assuming that the Commission used the allocation formula set up in Lyons' Exhibits Nos. 226 and 226-A, then it erred in the adoption of said allocation exhibits because no weight was given therein to the distance the gas is transported from the field to the several customers and the number of times the gas must be handled or compressed before arriving at its destination.

T. The Commission erred in making any findings as to cost allocations based upon Exhibits submitted by Commission's staff for the reason that none of such exhibits purported to make any cost allocation with respect to regulated and unregulated business, and therefore afforded no basis for allocation of costs with respect to regulated and unregulated business.

U. The Commission erred in making any findings as to cost allocations based upon exhibits submitted by Commission's staff for the reason that none of such exhibits took into account the service preference provided by contract which domestic and commercial gas has over industrial gas, and particularly direct sales gas.

V. The Commission erred in making any findings as to cost allocations based upon exhibits submitted by Commission's staff for the reason that such exhibits do not take into account the service preference which regulated gas sales have over the sales of unregulated gas, which service preference is provided by contract.

W. The Commission erred in making each and all of the allocations applicable to Canadian set forth on page 57 of its Opinion.

X. If the Commission is correct in its finding that Canadian and Colorado operations comprise a single operating system (Op., p. 11), then the Commission erred in ordering a total reduction of $551,000 in the price of gas to be paid by Colorado to Canadian in that said reduction applies to all gas sold by Canadian to Colorado, the record showing without question that approximately 25% of gas sold by Canadian to Colorado is direct sale gas and is not subject to the jurisdiction of the Commission. In that event there should be no reduction in Canadian's contract prices with respect to the volume of gas that is not sold by Colorado for resale.

Point No. 12.

The Commission erred in finding that Canadian's rates and charges under its contracts with Colorado and Clayton Gas Company heretofore filed with the Commission and

referred to by the Commission as FPC Rate Schedules Nos. 1 and 2 are unjust and unreasonable, and in not finding that said rates and charges are just and reasonable. In this connection, and in addition to each and all of the other errors and matters hereinabove set forth, Canadian shows:

A. Said contract of January 3, 1928, between Canadian and Colorado was the result of prolonged arm's-length private negotiations and individual bargaining between adverse parties, and the Commission erred in not so finding. There is no substantial evidence in the record to support any different finding or conclusion.

B. The finding of the Commission that the rates and charges under said contract of January 3, 1928 between Canadian and Colorado are unjust and unreasonable is unsupported by any substantial evidence and is erroneous. That said rates and charges are just and reasonable under the uncontradicted evidence in the case is further established by the facts set forth in Point 2 B, 2 C, and 2 D, supra, which points by this reference are hereby incorporated herein in support of this Point No. 12.

C. The Commission erred in not finding that the prevailing market value of gas in its natural state at the well-head in the Texas Panhandle Gas Field, including Canadian's portion thereof, is 4c per Mcf on a 16.4-pound pressure base.

D. The Commission erred in not finding that the prevailing market value of gas in its natural state at the intake side of the Bivins Compressing Station is 7c per Mcf on a 16.4-pound pressure base.

E. The Commission erred in not finding that the reasonable transportation cost per Mcf of transporting natural gas from the intake side of Bivins Compressing Station to Clayton Junction, New Mexico, for the different years 1939 to 1947, inclusive, is as follows:

1939	3.29c
1940	3.85c
1941	3.70c
1942	3.63c
1943	3.96c
1944	4.04c
1945	4.09c
1946	4.24c
1947	4.42c

F. The Commission erred in not finding that the estimated volume of gas to be delivered at Clayton Junction, New Mexico by Canadian to Colorado for the years 1939 to 1947, both inclusive, and the total and Mcf cost of said gas computed under the contract of January 3, 1928, between Canadian and Colorado and the total cost of Mcf cost of said volumes of gas using a 7-cent market value of said gas at the intake side of Bivins compressing station, plus a reasonable transportation cost therefrom to Clayton Junction, New Mexico, are as follows:

	Volume (Mcf delivered at Clayton Junction, N. M.) Mcf	Contract Cost of all gas delivered at Clayton Junction, N. M. Amount	Per Mcf.	Cost of all gas delivered at Clayton Junction, N. M., using 7c market value at Bivins intake plus transportation to Clayton Junction Amount	Per Mcf.
1939	18,377,500	$1,221,008	6.64c	$1,891,022	10.29c
1940	18,830,659	1,323,494	7.03c	2,043,286	10.85c
1941	20,345,148	1,293,088	6.35c	2,176,464	10.70c
1942	20,807,395	1,238,270	5.95c	2,211,063	10.63c
1943	20,915,828	1,244,759	5.95c	2,293,108	10.96c
1944	21,343,807	1,207,771	5.66c	2,355,481	11.04c
1945	21,767,854	1,175,875	5.40c	2,415,251	11.09c
1946	21,767,854	1,232,651	5.66c	2,447,015	11.24c
1947	21,767,854	1,733,845	7.97c	2,486,168	11.42c

G. The Commission erred in not finding that the price of gas to be delivered to Colorado at Clayton Junction, New Mexico, provided to be paid Canadian under its contract of January 3, 1928, is less than the prevailing market value for said gas at the intake side of the Bivins compressing station before the extraction of natural gaso-

line, plus a fair charge for transporting said gas between the intake side of said Bivins compressing station and Clayton Junction, New Mexico.

H. The Commission erred in finding (Op., p. 58) that Canadian's revenues from sales exceed costs by $561,000.

I. The Commission erred in finding that it should require Canadian to reduce its rates and charges by the amount of $561,000, or any other amount.

Point No. 13.

With reference to the formal "Order Reducing Rates Canadian River Gas Company" entered by the Commission under date of March 18, 1942, and the 14 formal findings of fact contained therein, as amended by the Supplemental Order, dated April 22, 1942, and the order of the Commission denying Canadian's Petition for Rehearing and to Reopen, because of each and all of the matters and things hereinabove set forth, Canadian states and shows that the Commission erred as follows:

A. The Commission erred in making Finding No. (1) in so far as it finds that Canadian owns and operates facilities for the production and gathering of natural gas in interstate commerce.

B. The Commission erred in making Finding No. (2) in so far as it finds that the entire system from the Texas Panhandle Field to Denver is operated as a single property.

C. As to the finding in Finding No. (3) that natural gas sold to Colorado and to Clayton Gas Company are sales for resale in interstate commerce, the Commission erred in so far as said finding covers gas sold by Canadian to Colorado and which gas is sold by Colorado to industrial purchasers, upon the ground that gas covered by Colorado's such direct sales are not sales by Canadian for resale in interstate commerce within the meaning of the Natural Gas Act.

D. The Commission erred in making each and every of its other findings in its Finding No. (3).

E. The Commission erred in making Findings Nos. (4) to (14), inclusive. Said findings are not supported by substantial evidence.

F. As to the six formal orders contained in the Commission's "Order Reducing Rates," Canadian states and shows that the Commission erred in making each and every of said orders lettered (A) to (F), inclusive.

G. The findings and conclusion of the Commission in its Supplemental Opinion No. 73-A, dated May 13, 1942, rendered in connection with the Commission's order denying Canadian's Petition for Rehearing and to Reopen are unsupported by and are contrary to the substantial evidence in the case and are based upon facts alleged to exist which are entirely dehors the record.

H. The Commission erred in denying Canadian's Petition for Rehearing and to Reopen filed with it.

As pointed out in the section of this Petition captioned, "The Nature of the Proceedings as to Which Review is Sought," the record in this case, in addition to the pleadings before the Commission, contains 103 volumes of transcript of testimony covering in excess of 15,000 pages, and, in addition thereto, 323 exhibits, some of which are several hundred pages in length.

Colorado Interstate Gas Company, in Cause No. 2550 on the docket of this court, is filing its petition to this court for review of the order of the Commission in these same cases in so far as said order affects said Colorado Interstate Gas Company.

It may be possible, as provided in Subsection 5 (e) of Rule 34 of the Rules of this court to stipulate with counsel for the Commission and counsel for Colorado Interstate Gas Company as to what portions of the transcript shall be printed. If such a stipulation, however, cannot be agreed upon, Canadian respectfully shows that due to the length of the record and the various matters to be submitted to this court for its decision it will not be reasonably feasible for Canadian, within ten days after the filing

with this court of the transcript, to prepare and serve upon all other parties and file with the court a designation of the portions of the transcript to be contained in the printed record, and not less than thirty days from and after the filing of the transcript should be allowed for such designation and service and filing thereof.

Wherefore, Canadian River Gas Company, Petitioner, prays:

1. That a copy of this Petition forthwith be served upon some member of Respondent, Federal Power Commission, in pursuance of Section 19 (b) of the Natural Gas Act (Act of June 21, 1938, c. 556, 52 Stat. 833; Section 717 r (b), Title 15 USCA), and that all parties respondent herein be served with a copy of said Petition, as provided by Rule 34 of the Rules of this court.

2. That Respondent, Federal Power Commission, be required, in conformity with said Act, to certify and file with the court a transcript of the record upon which the Order now sought to be reviewed was entered, including the testimony, evidence, exhibits, pleadings, opinions, findings, conclusions and orders of said Respondent in the three dockets above referred to.

3. That pursuant to Rule 34 of this court Petitioner be notified by the Clerk when said transcript has been received and that an order be entered herein allowing Petitioner thirty days from the time of such notice, or such other time as to the court may seem proper, within which to designate the portion of the transcript to be contained in the printed record unless, in the meantime, the parties hereto have stipulated as to what portions of the transcript shall be printed.

4. That this court review the Order of the Respondent, Federal Power Commission, of March 18, 1942, and the findings and opinion of the Commission incorporated therein, as supplemented by the Order of said Commission, dated April 22, 1942, and the Order of the Commission denying Petitioner's Petition for Rehearing and to Reopen filed with the Commission, and upon such review reverse, vacate, set aside and hold said Order for naught.

5. That pending such review and until final determination of such proceedings, the stay of the Commission's Order heretofore granted by this court on May 16, 1942, staying said Order of the Commission pending judicial review be continued in full force and effect.

6. That this court exercise its jurisdiction over the parties and subject matter of this Petition and grant to Petitioner such other and further relief in the premises as the rights and equities of the cause may require.

CANADIAN RIVER GAS COMPANY,
By P. C. SPENCER,
Its Vice President
Room 2759, 630 Fifth Avenue
New York, N. Y.

P. C. SPENCER,
Room 2759, 630 Fifth Avenue, New York, N. Y.
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SMITH, BROCK, AKOLT & CAMPBELL,
JOHN P. AKOLT,
931 Fourteenth Street, Denver, Colorado
Attorneys for Canadian River
Gas Company

[Verification omitted.]

Filed July 10, 1942. Robert B. Cartwright, Clerk.

Petition of Colorado Interstate Gas Company for Stay, Pending Review, of Rate Order of the Federal Power Commission, Case No. 2550.

Colorado Interstate Gas Company, a corporation, hereinafter called Petitioner, respectfully represents and shows unto the Court:

I.

Petitioner is a private corporation organized and existing under the laws of the State of Delaware. It owns and operates a main transmission natural gas pipeline, extend-

ing from Clayton Junction, New Mexico, to a point near the City of Denver, in the State of Colorado, and maintains its principal office and place of business at Colorado Springs, Colorado.

II.

Respondent, Federal Power Commission, hereinafter called Commission, is a statutory administrative body, created under the Act of Congress known as the Natural Gas Act (15 U.S.C.A. 717 et seq.) having its principal office and place of business in the City of Washington, District of Columbia. The Commissioners composing said Commission are: Leland Olds, chairman; Claude L. Draper; Basil Manley; John W. Scott and Clyde L. Seavey. Richard J. Connor is the General Counsel, and Edward H. Lange and Caso March are counsel of record for the Respondent, Federal Power Commission.

III.

On December 22, 1938, the Respondent, City and County of Denver, Colorado, a municipal corporation, filed a complaint with the Commission against this Petitioner, and against the Respondents, Canadian River Gas Company, a corporation, and Public Service Company of Colorado, a corporation, asking the Commission to investigate and determine the reasonable cost and charge for gas used in the City and County of Denver, and alleging that the contract price for gas sold by your Petitioner to the Public Service Company of Colorado, at the Denver gate, was unjust, unreasonable and discriminatory, and praying that said contract price be abrogated, and that the Commission fix in lieu thereof, reasonable rates. This cause appears on the Commission's docket as No. G-118. On or about January 30, 1939, this Petitioner and the said Canadian River Gas Company filed their separate answers, and at about the same time Public Service Company of Colorado likewise filed its answer to said complaint.

On or about January 9, 1939, Respondent, Public Service Commission of Wyoming, a public administrative body created by the statutes of the State of Wyoming, filed its complaint with the Commission, which was docketed as

cause No. G-121, wherein it complained against the rates and charges made in Cheyenne, Wyoming by the Respondent, Colorado-Wyoming Gas Company, a corporation. Your Petitioner sells gas to Colorado-Wyoming Gas Company, which is finally resold in Cheyenne, Wyoming, and your Petitioner filed its answer on or about February 17, 1939 in said docket.

On or about the 14th day of March, 1939, the Federal Power Commission instituted, upon its own motion, an investigation of and concerning all rates, charges, classifications, rules, regulations, practices and contracts of your Petitioner and of Canadian River Gas Company and of Colorado-Wyoming Gas Company, which cause is entered upon its docket No. G-124. Your Petitioner filed its answer in said docket on or about October 10, 1940.

The order of March 14, 1939 was made after your Petitioner had answered certain questionnaires sent out by the Commission as to its status and the nature of its business, and said order, in addition to ordering the hearing, contained certain purported findings of fact and conclusions of law with respect to your Petitioner's status, business and contracts, which it believed to be erroneous, and, fearing that said findings would become res adjudicata unless they were challenged within the time and in the manner provided by the Natural Gas Act, your Petitioner and the Canadian River Gas Company filed with the Commission, on or about April 12, 1939, a petition for a rehearing and stay of said order. This petition was denied by the Commission on or about the 9th day of May, 1939.

Thereupon your Petitioner and Canadian River Gas Company filed in this Court in Cause No. 1931 of this Court's docket, their petition for review of said order, pursuant to Section 19 of the Natural Gas Act (15 U.S.C.A., Sec. 717r). The Commission filed its motion to dismiss said petition for review, which this Court did sustain on or about the 4th day of March, 1940. This Court did thereafter, and on July 24, 1940, deny the petition for rehearing. The opinions of this Court in said proceedings are reported in Vol. 110 Fed. (2d) at page 350, et seq., and Vol. 113 Fed. (2d) at page 1010, et seq. Said opinions contain a summary of the facts in these cases up to that time, and hold

that said order of March 14, 1939 was merely preliminary and procedural, and that the purported findings included therein with respect to your Petitioner's status, business and contracts did not become res adjudicata or conclusive pending the hearing on the merits.

Thereafter, and on or about the 13th day of September, 1940, the Commission did enter its order consolidating said causes before it, docketed, G-118, G-121 and G-124, respectively, and set the hearing therein for October 28, 1940, in Denver, Colorado.

Thereafter a hearing in said consolidated causes was held by and before Norman B. Gray, an examiner of said Commission. Said hearings continued from the 28th day of October, 1940, to the 21st day of April, 1941, and occupied one hundred and two hearing days. Oral testimony, exhibits and other documentary evidence was introduced. The transcript of the testimony comprises one hundred three volumes, and is in excess of fifteen thousand pages. Three hundred twenty-three exhibits were introduced.

Thereafter the parties filed their briefs with the Commission, the last of all of said briefs being filed in the month of August, 1941.

On or about the 11th day of March, 1942, your Petitioner filed with the Commission its "Petition of Colorado Interstate Gas Company to Reopen the Above Entitled Proceedings to Take Further Evidence." This petition pointed out that the acceleration of the national defense program and the declaration of war in December, 1941, all intervening between the time of the closing of the hearing in April, 1941, and the date of the petition, March 11, 1942, had caused drastic increases in the operating expense, substantial increases in the cost of necessary additions to its plant and property, and offered to introduce evidence as to such increases. This petition is by reference made a part hereof, and marked Exhibit "A".

IV.

On or about March 25, 1942, the Commission served upon your petitioner its final rate order of said consolidated dockets, which bore the date March 18, 1942. This order is

by reference made a part hereof and is marked Exhibit "B".

V.

Petitioner seeks a stay, pending judicial review by this Court under Section 19 of the Natural Gas Act (15 U.S.C.A. 717r), of said final rate order entered and issued by the Commission and dated March 18, 1942. The jurisdiction and authority of this Court is invoked under Section 262 of the Judicial Code (28 U.S.C.A. 377) which provides that, " * * * The Supreme Court, the circuit courts of appeals, and the district courts shall have power to issue all writs not specifically provided for by statute, which may be necessary for the exercise of their respective jurisdictions, and agreeable to the usages and principles of law." (R.S. 716; Mar. 3, 1911, c. 231, Sec. 262, 36 Stat. 1162.)

VI.

In its order dated March 18, 1942, the Commission purported to find that the prices being charged by Petitioner to the six distributing companies and one pipeline company, hereinafter described, under long-term contracts terminating in 1948, and which had been negotiated and substantially performed some ten years prior to the enactment of the Natural Gas Act in 1938, were unjust and unreasonable within the meaning of the Act. The Commission overruled all of Petitioner's pleas to its jurisdiction and all of its defenses in law. In the hearings preceding the Order the Commission admitted extensive evidence as to the competitive conditions under which this fuel, natural gas, was sold, and in particular evidence as to the reasonableness of the prices being charged for said gas as compared to the prices in the same area of the competitive coal and oil and other fuels; but the Commission discarded all of such evidence and refused to make findings with respect thereto. The Commission based its findings as to the unreasonableness of said contract prices solely on its purported findings as to the earnings of your Petitioner for the pre-war year 1939. It discarded the evidence and made no findings with respect to the earnings of your Petitioner for the years prior to 1939 or for the years subsequent thereto. It purported to find that for such pre-war year 1939 the earnings of your Petitioner were ex-

cessive in the amount of $2,065,000. To arrive at its finding of excessive earnings in this amount for the year 1939 the Commission did, among other things, discard from the rate base for that year used and useful property of the original cost of $2,791,340. (Commission's Opinion, p. 19, and Finding No. 4) It made drastic reductions in the annual depreciation and amortization expense, contrary to law, which errors are included among the 87 Specifications of Error incorporated in the Petition for Rehearing before the Commission, hereinafter referred to, and which errors will be urged in its Petition for Review before this Court. Having found that your Petitioner's earnings, for said pre-war year 1939 were excessive in the amount of $2,065,000, the Commission thereupon ordered that your Petitioner file with it on or before April 25, 1942, schedules of rates in lieu of said contract prices, which would for the future reflect an annual reduction in the revenues of this Company of not less than said sum of $2,065,000 so found to be excessive for the year 1939. Your Petitioner shows that on the basis of its earnings for said pre-war year said sum amounts to a reduction in revenues of 46-1/2%.

VII.

The hearings before the Commission preceding said Order terminated on April 21, 1941, as aforesaid. This Company presented to the Commission full evidence as to its operations, including the original cost of its property, its revenues and expenses for all the years of its existence from 1928 through 1940, and part of the year 1941. Because additions to its plant and property were still in progress, and its books for 1940 not finally closed, some of the items of evidence with respect to plant, revenues and expenses for 1940 submitted by the Company were necessarily estimates. Evidence as to such items for 1941 were, also, based upon estimates. The Company, also, submitted estimates as to the cost of necessary additions to its plant and property through 1947, and it likewise introduced evidence as to its revenues and expenses, including taxes, for such years based upon a normal trend developed from past normal operating expenses and revenues. Between the closing of the hearings on April 21, 1941, and its Order of March 18, 1942, there intervened first an acceleration of

the defense program and then the declaration of war in December, 1941. These intervening circumstances caused a drastic increase in the operating expenses and taxes of this Company, as well as a substantial increase in the cost of necessary additions to its plant and property; all above said estimates. On March 14, 1942, as aforesaid, this Company filed with the Commission its "Petition of Colorado Interstate Gas Company to Reopen the Above Entitled Proceedings to Take Further Evidence." Thereby it offered to submit evidence that on account of new tax laws its Federal taxes for the year 1941 were $1,600,000, as against $684,608 paid for 1940, or an increase of $915,392, or an increase of 134%, and that as applicable to the earnings from the sale of gas from the so-called Denver line, the record showed $496,341 for such taxes payable for 1940, and $683,784 for 1941, whereas, $493,290 was actually paid for 1940, and $1,233,779 was payable for 1941. Such tendered evidence showed an increase of 150% in tax expense for 1941 over 1940. The Company also offered to submit evidence to show that additions to its necessary plant and property for 1940, 1941 and as estimated for 1942, cost $264,398.30 in excess of the estimate shown in the record. Likewise it offered to show that its other operating expenses had been greatly increased by such war conditions. This petition was denied by the Commission in its Order of March 18, 1942. A copy of this petition is by reference made a part hereof, and marked Exhibit "A".

VIII.

Within the period of thirty days after the issuance of the Commission's Order, allowed by Section 19 of the Natural Gas Act, for application for a rehearing, and, to-wit, on the 14th day of April, 1942; and within twenty days of the receipt of such Order, your Petitioner filed with the Commission its verified application or petition entitled, "Petition of Colorado Interstate Gas Company for Rehearing and to Reopen," a copy of which is by reference made a part hereof, and is marked Exhibit "C". Petitioner relies on the errors assigned in said petition or application as basis for this petition.

On April 14, 1942, your Petitioner also filed a verified motion entitled, "Motion of Colorado Interstate Gas Com-

pany for Stay of the Commission's Order of March 18, 1942," copy of which is by reference made a part hereof, and is marked Exhibit "D". Your petitioner relies upon the matters and things set out in said Motion as basis for this petition.

As of the date of filing this petition, the Commission has not acted upon said application for a rehearing and to reopen or said motion for stay.

Your Petitioner has thus exhausted all of its administrative remedies before the Commission.

IX.

The hearings before an examiner of the Commission were closed as aforesaid on April 21, 1941, and the testimony embraces 15,000 pages of transcript, comprising 103 volumes. In addition, there are 323 exhibits. Your Petitioner possesses these 103 volumes of testimony supplied by the official reporter of the Commission, and copies of the 323 exhibits. Your Petitioner has caused these volumes and exhibits to be verified by the affidavit of one of its counsel of record before the Commission, and herewith tenders said verified record in support of this petition.

Your Petitioner will, with all possible diligence, and within the time allowed by Section 19 of the Natural Gas Act, that is, within sixty days after the order of the Commission denying its application for a rehearing, file with this Honorable Court its petition to review said Order of the Commission. Such petition will be filed pursuant to and in conformity with Section 19 of the Natural Gas Act and the rules of this Court. The Commission will then be required, in conformity with subdivision (b) of Section 19 and Rule 34 of this Court, to file a transcript of the record with this Court. Thereupon, your Petitioner will, with all diligence and within the time allowed by the rules of this Court, extract from this voluminous record those matters constituting reviewable errors which the Congress has in said Natural Gas Act assigned and designated for judicial review by the Court.

Pending such judicial review by this Court, and in order to preserve the status quo, and to preserve to your Peti-

tioner the full right of such judicial review accorded by Congress in said Act, your Petitioner seeks a stay of said Order.

Your Petitioner also shows that pending such judicial review, and if such stay is granted, the rights of the several distributing companies, and the rights of the customers of the several distributing companies, that is, the ultimate consumers, can adequately be protected by the bond of your Petitioner to refund to the distributing companies, its customers, all or such part of the ordered reduction as may be ultimately affirmed upon judicial review, or by the impounding, subject to the control of the court, of an amount equivalent to the reduction in revenues ordered by the Commission. In this connection, your Petitioner shows that it is manifest from Section 1 of the Natural Gas Act that it was the objective of Congress, and it must be the objective of the Commission, in those cases where the sale of gas is subject to the jurisdiction of Congress and the Commission, to procure reasonable rates for the public, the ultimate consumers, and that it was not the objective of Congress to lower gate rates or wholesale rates for the benefit of the distributing companies. Your Petitioner shows that even though it is ultimately held that the sales by your Petitioner of gas at the city gates to such distributing companies and such pipeline companies are subject to the jurisdiction of the Commission, and even though the reduction now ordered, or a substantial part thereof, is affirmed, no advantage or benefit to the ultimate consumers can or will result unless and until the rates charged by the distributing companies are in turn reduced. Your Petitioner shows that until a judicial review of this Order is had by this court, no regulatory body having jurisdiction over the rates to the ultimate consumers, assuming that such rates to the ultimate consumer are not contractual and can now be changed, would be warranted in reducing such rates, pending such judicial review. The material facts as to the situation of your Petitioner and its present contract customers, the distributing companies, and of the ultimate consumers, customers of the several distributing companies, are set forth hereinafter.

X.

On February 8th, 1927, the taxpaying electors of the City and County of Denver, pursuant to Article 20 of the Constitution of the State of Colorado, and the Denver Charter (Exhibit 27 before the Commission), voted a twenty year franchise (Exhibit 24 before the Commission) to the Public Service Company of Colorado for the distribution of gas within said city. Section IV-c of said franchise (Exhibit 24, page 29 before the Commission) provided:

"If at any time during the first ten (10) years of this franchise the Mayor and Council of the City, after investigation and upon competent engineering advice, taking into consideration all the economic factors involved, shall by majority vote of the Council with approval of the Mayor determine that it is feasible to bring natural gas to Denver and shall give notice to the Company of their findings, together with engineering information upon which such determination was based, and provided a fair and reasonable rate is established for such service, then within two years thereafter the Company shall make such supply available to the City."

On September 14, 1927, Denver passed its Ordinance No. 178, Series 1927 (Exhibit 25 before the Commission), Section 1 of which provided:

"That after investigation and upon competent engineering advice, taking into consideration all the economic factors involved, it has been and hereby is now found and determined that it is feasible to bring natural gas to Denver; that said Public Service Company of Colorado be and it is hereby given notice of said findings and determination, together with the engineering information upon which such determination was based, and that the Clerk of the Council be and he hereby is directed forthwith, upon the final passage, publication, and approval of this Ordinance by the Mayor, to deliver to said Public Service Company of Colorado a duly certified copy hereof, together with a verified copy of the 'Report on Proposed Natural Gas Rates for Denver,' dated August 10, 1927, which was prepared, after investigation, by A. C. King, Consulting Engineer of Chicago, Illinois, and which said report constitutes the engineering advice and information upon which said findings

and determination are based, and the original copy of which is now on file in the office of the Clerk of the Council of the City and County of Denver, to which reference is had for particularity and notice of which is hereby given to said Public Service Company of Colorado in conformity to the provisions of said Section IV-c of said above mentioned Franchise."

Section 2 of said Ordinance (Exhibit 25 before the Commission) granted the right to Public Service Company of Colorado to sell natural gas in place of manufactured gas under a schedule of rates "for the unexpired term of said franchise," that is, until February 8, 1947 (Exhibit 24 before the Commission.) The Ordinance provided that the gas was to have a heating value of not less than 800 Btu. per cubic foot, and the rates to the consumer were then prescribed.

Section 3 provided in part:

"Under said Franchise said Public Service Company of Colorado is required to supply said City and County and its inhabitants with natural gas as long as the same is available, during the unexpired term of said Franchise, and a reserve acreage of gas leaseholds in the State of Texas, from which natural gas may be supplied sufficient for the uses of said City and County of Denver and its inhabitants during the unexpired term of said Franchise, by contract, has been rendered available to said Public Service Company of Colorado."

This action by Denver, plus the action of the City of Pueblo hereinafter alleged, plus the procurement by your Petitioner of a contract with the Colorado Fuel and Iron Company for the direct sale of gas on an interruptible or cut-off basis for industrial purposes (which sale is not covered by the Natural Gas Act nor subject to the jurisdiction of the Commission), induced your Petitioner to acquire the contract with the Canadian River Gas Company for a supply of gas from the Texas Panhandle gas field (Exhibits 1 and 16 before the Commission), and acquire a contract with Public Service Company of Colorado for the sale of gas to it at the city gate (Exhibit 7-I before the Commission), and to venture its capital and construct and operate its pipeline system.

On or about February 20, 1928, pursuant to its Charter and the Constitution of the State of Colorado, the City of Pueblo adopted Franchise Ordinance No. 1245 (Exhibit 39 before the Commission) entitled:

"An Ordinance Granting Franchise Rights to The Pueblo Gas and Fuel Company, Subject to the Vote of the Qualified Taxpaying Electors, Establishing Rates to Be Charged for Natural and Artificial Gas, and Calling a Special Election to Determine Whether or Not Such Franchise Shall Be Granted."

The Ordinance then recited:

"Whereas, The Pueblo Gas and Fuel Company has perfected arrangements for supplying natural gas to the people of the City of Pueblo, provided a schedule of rates which will justify its expenditures on this account is established for a term of twenty (20) years; and—

"Whereas, The Pueblo Gas and Fuel Company must make extensive changes in its distribution system to provide for natural gas and must agree to pay a fixed and unchanging price for such natural gas throughout said period of twenty (20) years."

Section 1 of this Ordinance provided:

"That subject to the approval of the qualified taxpaying electors of the City of Pueblo to be evidenced by their votes at the special election hereinafter provided for, the franchise is hereby granted by the City of Pueblo to The Pueblo Gas and Fuel Company, its successors and assigns, to construct, maintain and operate within the City of Pueblo, a plant for the manufacture and generation of gas with the right and privilege to distribute either natural or artificial gas to the City of Pueblo, its inhabitants and people in the vicinity by means of pipes, mains, . . . " etc.

Rates for manufactured gas then being furnished were continued in effect, but it was then provided in Section 6:

"In consideration of the agreement by The Pueblo Gas and Fuel Company—to be evidenced by its acceptance of this ordinance—to be prepared to furnish natural gas to the inhabitants of the City of Pueblo within two (2) years, to make, at its own expense, the alterations in its system and

in its customer's domestic gas appliances necessary for the distribution thereof, and to contract with the Colorado Interstate Gas Company for a large reserve acreage of gas leaseholds in the State of Texas to be made available for future use by the people of the City of Pueblo and other towns, cities and places to be served by the proposed pipe line without discrimination against the City of Pueblo or its inhabitants; subject, however, to requirements for gas by Amarillo and a number of small towns in the Panhandle of Texas, and for helium gas by the United States Government from the Cliffside Structure, the following schedule of rates to be charged domestic consumers of natural gas is hereby established and declared to be fair and reasonable when applied and averaged throughout a period of twenty (20) years."

Then followed the schedule of rates to be charged, and in Section 7 it was provided that the "foregoing schedule shall remain in effect for a term of twenty (20) years from the date on which said company turns natural gas into its distribution system."

On April 6, 1928, the taxpaying electors voted approval of the franchise, including such rate provisions, and gas deliveries began in the Summer of 1928 (Exhibit 40 before the Commission).

In contemplation of, and pursuant to such action by the City of Pueblo, your Petitioner entered into a contract with the Pueblo Gas and Fuel Company for the sale of gas at the Pueblo gate for a term of twenty years. (Exhibit 7-H before the Commission).

Your Petitioner also sells gas, under a contract (Exhibits 7-A, B, C and D before the Commission) to Citizens Utilities Company, which is the distributing company operating under franchise in La Junta, Rocky Ford, Las Animas, Swink, Ordway, Manzanola, Sugar City and Fowler; all small Colorado towns in the valley of the Arkansas River. Citizens Utilities Company is the successor to Public Utilities Consolidated Corporation, which went through bankruptcy. Some of these contracts were originally negotiated with Arkansas Valley Natural Gas Company, but were later assigned to the Citizens Company, or its bankrupt predecessor, the said Public Utilities Consolidated Corporation, and

your Petitioner now sells to Arkansas Valley Natural Gas Company under contract (Exhibit 7-C before the Commission) only an insignificant amount of gas necessary to permit that company to fulfill one contract with the Fountain Valley School, near Colorado Springs.

Sometime prior to June 15, 1931, the City of Colorado Springs, a municipal corporation, a charter city operating under Article 20 of the Colorado Constitution, which city is the proprietor of a municipal gas distribution system, entered into a contract with one *Arthus* K. Lee for a supply of natural gas at the city gate. The said Lee was unable to perform his contract, whereupon it was agreed between your Petitioner, the said Lee and the said City that the original contract would be amended so as to raise the gate rate or price for natural gas to 40c per thousand cubic feet, and that thereupon your Petitioner would take an assignment of said contract from the said Lee and perform the same. The said Lee and the City, by appropriate action, did amend said contract on June 12, 1931. This amended contract (Exhibit 7-E before the Commission) provided in Article 4th that the said Lee should

"On or before the first day of August, 1931, execute and deliver to Ford, Bacon & Davis, Inc., or to the Colorado Interstate Gas Company, an assignment of this contract, which assignment will obligate such assignee to perform the provisions of this contract."

The contract then set forth a schedule of rates to be charged by the City to the consumers, and Article 7th provided that "this contract shall continue until the 19th day of June, 1948."

On October 3, 1929, your Petitioner executed with the Colorado-Wyoming Gas Company a contract (Exhibit 7-F before the Commission) for the sale of gas for twenty years, subject, however, to prior termination at the option of your Petitioner on the 3rd day of January, 1948. Colorado-Wyoming Gas Company either itself sells such gas directly to industrial customers, or sells it to other distributing companies for resale, in certain Northern Colorado towns and in Cheyenne, Wyoming.

On or about October 15, 1931, your Petitioner made a

contract with Natural Gas Pipeline Company of America (Exhibit 7-G before the Commission) for the supply of natural gas to that pipeline company at Gray Junction, Oklahoma, for a period ending September 30, 1946, with options to renew the contract subject to the limitations therein stated.

None of the cities, towns or municipalities in which gas sold by your Petitioner is ultimately distributed by customers of your Petitioner, were complainants or parties of any kind in the proceedings before the Commission, except the City and County of Denver, which was a complainant. None of the distributing companies, nor the pipeline companies which purchase gas from your Petitioner were complainants or parties to the proceedings before the Commission, except the Public Service Company of Colorado, Colorado-Wyoming Gas Company and Cheyenne Light, Fuel and Power Company, a purchaser from the Colorado-Wyoming Gas Company; all of which companies were defendants or respondents.

Your Petitioner shows that if it is compelled, pending a judicial review of the Commission's Order to put into effect the reduced rates, then the money representing the reductions will be claimed as their property by the said pipeline and distributing companies, and that it will not automatically or immediately enure to the benefit of the ultimate consumers. Your Petitioner shows that even though the rates to the consumer may in all instances, or in some instances, be held not to be contractual as between the several distributing companies and the respective municipalities, and even though said rates to the consumer may ultimately be reduced through the regulatory process, or by voluntary agreement, yet such reductions are not now certain, and in any event the ultimate consumers will not be prejudiced by the stay of the Power Commission's Order, pending a judicial review by this court of said Order.

Your Petitioner further shows that if it is compelled, pending judicial review, to put into effect the reduced rates, and such reductions are in turn handed over, so to speak, by the distributing companies to the ultimate consumers, and said Order is then modified or reversed in whole or in part, then it will require a multiplicity of suits to recover the

said sums from the ultimate consumers, and in turn from the distributing companies, and that said recoveries are not at all certain.

In this connection, your Petitioner shows that of all of the distributing companies and pipeline companies, customers of your Petitioner, only two were parties to the proceedings before the Commission, but your Petitioner is now before this court, and that your Petitioner will, until the final disposition of this matter, be subject to the jurisdiction and orders of this court.

XI.

Your Petitioner shows, that if the Order of the Commissioner of March 18, 1942, be not stayed and its operation be not suspended, pending the judicial review thereof by this court, then your Petitioner will sustain irreparable damage and loss, and its property will be confiscated, contrary to the Fifth Amendment of the Constitution of the United States. The reduction of $2,065,000 per annum will be at the average rat of $172,083.33 per month. Should said Order be abrogated in whole or in part, as Petitioner earnestly urges and believes it will be, then the revenues of which your Petitioner will have been deprived up to the time of the abrogation of such Order will be lost to Petitioner. Your Petitioner shows that if it files the new schedules as now ordered, the money representing the reduction will irrevocably become the property of the several distributing companies. Your Petitioner shows that no provision is contained in the Natural Gas Act authorizing the Commission or this court to make provision for the recoupment by or reimbursement to the Petitioner of all or any part of said sum of money, and no provision is contained in said Act, or in any other law, whereby Petitioner could recover or recoup such losses as the result of further rate proceedings or otherwise. Your Petitioner shows that it is without protection against the irrevocable loss of the amount represented by the reduced revenues during the period pending the judicial review of said order by this court, except by declining to observe the Order during such period. Your Petitioner shows that if it declines to observe the Order then its officers and employees might be prosecuted under the severe penal provisions of Section 21

of the Natural Gas Act, which provides that any person who wilfully and knowingly does or causes, or suffers to be done, any act, matter or thing in the Natural Gas Act prohibited or declared unlawful shall, upon conviction thereof, be punished by a fine of not more than $5,000, or by imprisonment for not more than two years, or both. Said Section 21 further provides that any person who wilfully or knowingly violates any rule or order imposed by the Federal Power Commission under authority of the Act shall, in addition to other penalties, be punished upon conviction by a fine not exceeding $500 for each day during which such offense occurs. Without admitting that such officers and employees would be subject to such severe penalties under the circumstances confronting them, your Petitioner respectfully urges that they should not be put to the alternative of accepting the reduction of such revenue in such substantial amount without any assurance that it would ever be recovered in the event the Order is invalidated in whole or in part upon judicial review, or of defying said Order and thus taking the risk of becoming subject to such prosecution under such severe penalty provisions.

XII.

Your Petitioner shows that to compel it to submit to said Order and file the schedules of reduced rates, and to give up said sums pending judicial review, or to disobey said Order and run the risk of such penalties pending such judicial review, in practical effect nullifies such judicial review and operates to confiscate its property, and violates Due Process; all in violation of the Fifth Amendment of the Constitution of the United States.

XIII.

Your Petitioner shows that there exists no such emergency and no such public interest as would require that it be subjected, pending judicial review of such Order, to the peril of losing its revenues, or, in the alternative, to the peril of risking the severe penalties under Section 21 of the Natural Gas Act; and your Petitioner further shows that a failure to stay the Order will inflict irreparable damage on it, whereas, the rights of the respondent customers, the distributing companies, and the rights of the

ultimate consumers can be protected by the bond of your Petitioner to pay over to its customers, the distributing companies, all or such part of the reduction as is finally affirmed on judicial review, and may be protected by such other conditions as this court shall find just and equitable. Your Petitioner further shows that this petition is not made for delay, but that it is presented and urged only to the end that justice be done.

Wherefore, Petitioner prays that an immediate order be entered staying the operation and effect of the Federal Power Commission's Order dated March 18, 1942, pending the judicial review of said Order by this court in the manner provided by the Natural Gas Act. In the event that this court shall find it necessary to take this Petition for Stay under advice, Petitioner prays that an order be entered immediately, temporarily staying said Order of the Commission pending further consideration of and action by this court under this Petition. Petitioner prays for such other and further relief to which it may show it is entitled in the premises.

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[Exhibits and Verification omitted.]

Filed April 20, 1942.

Petition of Canadian River Gas Company for Stay, Pending Review, of Rate Order of Federal Power Commission, Case No. 2551.

Canadian River Gas Company, a corporation, hereinafter sometimes called Petitioner and sometimes called Canadian, respectfully represents and shows unto the court:

I.

Petitioner is a private corporation organized and existing under the laws of the State of Delaware. It owns certain gas leasehold interests in lands located in what is known as the Amarillo, Texas, or Texas Panhandle Gas Field located in the State of Texas, from which it produces and gathers natural gas. Substantially all of such natural gas so produced and gathered by Petitioner is by it sold to the Colorado Interstate Gas Company at a point near Clayton, New Mexico, or at Gray, Oklahoma. A small portion of such gas is sold and delivered to Clayton Gas Company at Clayton, New Mexico, and to Amarillo Oil Company in Texas. It owns and operates a transmission line extending from the end of its gathering lines in the gas field in Texas a distance of approximately 86 miles to a point in New Mexico known as Clayton Junction. Through its transmission line it transports the natural gas so produced and gathered by it and which is sold and delivered to Colorado Interstate Gas Company at Clayton Junction, New Mexico, and the gas sold and delivered at Gray, Oklahoma, is transported through leased facilities owned and operated by Texoma Natural Gas Company. The said Colorado Interstate Gas Company owns and operates a transmission line extending in a northerly direction from Clayton Junction into Colorado to the southerly end of the city limits of the City of Denver, through which transmission line the Colorado Interstate Gas Company transports the gas purchased by it from Canadian at Clayton Junction and distributes it to the customers of Colorado Interstate Gas Company at various points in Colorado. Substantially all of the gas sold by Canadian is sold, as aforesaid, within the territory of this Circuit. The General Manager and other representatives of Canadian have their offices in Colorado Springs, Colorado.

Respondent, Federal Power Commission, hereinafter called Commission, is a statutory administrative body created under the Act of Congress known as the Natural Gas Act (15 USCA 717, et seq.), having its principal office and place of business in the City of Washington, District of Columbia. The Commissioners composing the said Com-

mission are: Leland Olds, Chairman; Claude L. Draper, Basil Manley, John W. Scott; and Clyde L. Seavey, each of whom has an official residence and office in the City of Washington, District of Columbia. Richard J. Connor, as General Counsel, and Edward H. Lange and Caso March, all of whose offices are also in Washington, D. C., are counsel of record for the Respondent, Federal Power Commission, in the proceedings before that Commission hereinafter referred to.

III.

Petitioner seeks a stay, pending judicial review by this Court under Section 19 of the Natural Gas Act (15 USCA 717 r), of a final rate order entered and issued by the Commission. The jurisdiction and authority of this Court is invoked under Section 262 of the Judicial Code (28 USCA 377), which provides that "The Supreme Court, the circuit courts of appeals, and the district courts shall have power to issue all writs not specifically provided for by statute, which may be necessary for the exercise of their respective jurisdictions, and agreeable to the usages and principles of law." (R.S. 716; Mar. 3, 1911, c. 231, Sec. 262, 36 Stat. 1162).

IV.

On December 22, 1938 the Respondent, City and County of Denver, Colorado, filed a complaint with the Commission against Canadian and the Respondent, Colorado Interstate Gas Company, and Respondent, Public Service Company of Colorado, asking the Commission to investigate and determine the reasonable cost and charge for gas used in the City and County of Denver and other related matters, alleging that the contract price for gas to the Public Service Company of Colorado at the Denver gate was unjust, unreasonable and discriminatory, and praying that the contract price be abrogated and that the Commission fix reasonable rates. This is Cause appearing on the Commission's docket as No. G-118. Canadian, on or about the 30th day of January, 1939, filed its answer to said complaint of the City and County of Denver, Colorado, and the said Colorado Interstate Gas Company and the said Public Service Company of Colorado likewise filed their answers thereto.

On or about January 9, 1939 Respondent, Public Service Commission of Wyoming, filed its complaint with the Commission in Cause No. G-121 on the docket of the Commission, complaining of the rates and charges for natural gas in Cheyenne, Wyoming, made by the Respondent, Colorado-Wyoming Gas Company and related matters to which Canadian filed its answer on or about February 25, 1939.

On or about the 14th day of March, 1939, the Commission, in Cause No. G-124 on the docket of the Commission, ordered upon its own motion an investigation by the Commission of and concerning all rates, charges, classifications, rules, regulations, practices or contracts of Canadian and of Colorado Interstate Gas Company and Colorado-Wyoming Gas Company, to which Canadian filed its answer on or about October 10, 1940.

On or about April 12, 1939, Canadian and Colorado Interstate Gas Company filed with the Commission their petition for rehearing and stay of the said Order of investigation of March 14, 1939, which petition the Commission did deny on or about the 9th day of May, 1939.

Thereupon, Canadian and Colorado Interstate Gas Company did file in this Court in Cause No. 1931 on the docket of this Court their petition for review pursuant to Section 19 of the Natural Gas Act, 15 USCA, Sec. 717 r, and the Commission did file its motion to dismiss said petition for review which this Court did sustain on or about the 4th day of March, 1940. This Court did deny the petition for rehearing of Canadian and Colorado Interstate Gas Company on or about July 24, 1940. The opinions of this Court in said proceedings are reported in Volume 110 Fed. (2d) 350 and Volume 113 Fed. (2d) 1010. Said opinions contain a summary of the facts in these cases up to said time.

Thereafter, and on or about the 13th day of September, 1940, the Commission did enter its order providing that said Causes numbered G-118, G-121, and G-124 be consolidated for hearing and setting the 28th day of October, 1940, in Denver, Colorado, as the time and place for the start of said hearing.

Thereafter a hearing in said consolidated causes was

held by and before Norman B. Gray, an examiner duly appointed and designated for said purpose by the Commission, said hearing consuming 102 hearing days and continuing from the 28th day of October, 1940 to the 21st day of April, 1941. Extensive evidence, consisting of oral testimony, exhibits and other documentary evidence, was introduced. The transcript of the testimony comprises 103 volumes and is in excess of 15,000 pages. In addition to this testimony, 303 exhibits were introduced.

Thereafter the various parties to said proceeding filed their briefs with the Commission, aggregating in excess of 2200 pages. Canadian's reply and last brief was filed on or about the 19th day of August, 1941. The last of all of said briefs filed with the Commission by any of the parties to said proceeding was filed in the month of September, 1941.

Thereafter, and on or about the 11th day of March, 1942, Canadian did file with the Commission its "Petition of Canadian River Gas Company to Reopen the Above-Entitled Proceedings to Take Further Evidence," dated March 10, 1942, in which Canadian did, among other things, point out that the evidence introduced before the Examiner of the Commission was to the greatest extent based upon actual facts only up to and including the year 1939 and estimated facts for the years 1940 and 1941 and years subsequent thereto and that due to accelerated government defense and war and other conditions, taxes and other expenses of Canadian had greatly increased since the evidence was introduced. Said Petition to Reopen pointed out that the record before the Commission was based upon peacetime operations, and that accelerated government defense, war and other conditions occurring since the year 1939 had seriously affected Canadian's operations and would continue to do so in the future, evidence as to which Canadian offered to introduce in its Petition to Reopen.

V.

Thereafter, the Commission did enter and issue its "Order Reducing Rates" dated the 18th day of March, 1942, and served upon Canadian on or about the 25th day of March, 1942, which order contains a number of findings of fact made by the Commission upon which said Order is

based and incorporates therein as a part thereof the Commission's Opinion No. 73, dated the 18th day of March, 1942. Said Commission's Order of March 18, 1942 did deny Canadian's petition of March 10, 1942 to reopen said proceedings for the purpose of taking further evidence, and did order Canadian to file with the Commission, on or before April 25, 1942, new schedules of rates and charges for and in connection with the transportation and sale of natural gas in interstate commerce for resale to reflect an aggregate annual reduction in Canadian's rates and charges of not less than $561,000 per year, being $551,000 per year on gas sold to Colorado Interstate Gas Company, and $10,000 per year for gas sold to Clayton Gas Company, this aggregate reduction being at the average rate of $46,750 per month.

Thereafter and on April 14, 1942, Canadian filed with the Commission its Petition for Rehearing and to Reopen directed to the said Commission's Order, dated March 18, 1942, and the findings and the Commission's Opinion incorporated therein. At the same time that Canadian filed said Petition for Rehearing it did also file with the Commission its motion for stay of the Commission's Order of March 18, 1942, pending a ruling upon Canadian's Petition for Rehearing and to Reopen, and, if said motion should be denied by the Commission, then pending the filing in this Court of a petition for review pursuant to the provisions of Subdivision (b) of Section 19 of the Natural Gas Act and the decision of this Court on such petition for review.

As of the time of the filing of this petition the Commission has neither denied nor granted nor taken any other action in connection with Canadian's Petition for Rehearing and to Reopen or Canadian's motion for stay of the Commission's Order of March 18, 1942.

There is submitted herewith and by this reference incorporated herein and made a part hereof a copy of Canadian's Petition to Reopen and to take further evidence, dated March 10, 1942, marked Exhibit A, and a copy of the Commission's said Order, dated the 18th day of March, 1942, and its accompanying Opinion No. 73, marked Exhibit B, and a copy of Canadian's Petition for Rehearing

and to Reopen directed to the Commission's said Order of March 18, 1942, marked Exhibit C, and a copy of Canadian's motion for stay of the Commission's Order of March 18, 1942, heretofore filed with the Commission and denied, as aforesaid, marked Exhibit D:

Canadian has thus exhausted all its administrative remedies before the Commission.

Canadian relies upon the errors specified in its Petition for Rehearing and to Reopen filed with the Commission and upon the matters and things set out in its motion for stay filed with the Commission as basis for this petition.

VI.

Canadian will, with all possible diligence and within the time allowed by Section 19 of the Natural Gas Act, that is, within sixty (60) days after the Order of the Commission denying its Petition for Rehearing and to Reopen, file with this Honorable Court its petition to review said Order of the Commission. Such petition will be filed pursuant to and in conformity with Section 19 of the Natural Gas Act and the rules of this court. In its said petition for review to be so filed in this court Canadian will pray that the said Order of the Commission be vacated and set aside, and, as consideration for said petition, will rely upon its specification of errors set forth in its Petition for Rehearing and to Reopen filed with the Commission, as aforesaid.

Pending such judicial review by this court and in order to preserve to Canadian the full right of such judicial review accorded by Congress in said Natural Gas Act, Canadian seeks a stay of said Order of the Commission, dated the 18th day of March, 1942, by order of this court to be entered herein.

VII.

One hundred thirty-two grounds of error directed to the Commission's Order, dated March 18, 1942, and the findings of fact and the Commission's opinion incorporated therein are set forth in Canadian's Petition for Rehearing and to Reopen filed with the Commission and will be included within the specification of points to be set forth in Canadian's petition for review to be filed with this

court pursuant to Section 19 of the Natural Gas Act. Said Petition for Rehearing and to Reopen so filed with the Commission was filed in good faith and upon grounds which Canadian believes to be well founded, and Canadian's petition for review to be filed in this court will be filed in good faith and will set forth grounds of error in the Commission's order, findings and opinion which Canadian believes to be well founded. Canadian will not attempt in this application for stay to outline all of the errors in the Commission's order, findings and opinion raised in its Petition for Rehearing and to Reopen filed with the Commission or which will be raised in the petition for review to be filed in this court, but, as indicative of the seriousness and merit of Canadian's contentions, here points out that the following serious and important questions, among others, are raised by Canadian's Petition for Rehearing and to Reopen filed with the Commission and will be raised in Canadian's petition for review filed in this court.

Canadian calls the court's attention to Section 1 of the Natural Gas Act which reads as follows:

"Section 1. (a) As disclosed in reports of the Federal Trade Commission made pursuant to S. Res. 83 (Seventieth Congress, first session) and other reports made pursuant to the authority of Congress, it is hereby declared that the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest, and that Federal regulation in matters relating to the transportation of natural gas and the sale thereof in interstate and foreign commerce is necessary in the public interest.

"(b) The provisions of this Act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas."

Notwithstanding the above provisions of the Natural Gas Act, the Commission has held, erroneously, as Canadian contends, that the Commission has rate-regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, and the Commission in this case has exercised such assumed jurisdiction by including Canadian's production and gathering properties, facilities and business in all its computations for rate base, revenues, expenses and other matters used in determining what the Commission has found to be a proper charge on the rate-regulatory basis for Canadian to make for the gas which it sells.

Canadian's production and gathering business is local in character; has not been declared to be and is not "affected with a public interest," and is not interstate in character; and the Natural Gas Act itself provides that it shall not be applicable to such production and gathering. The Commission's rate-regulatory jurisdiction, at the most, extends only to the transportation of natural gas in interstate commerce and to the sale in interstate commerce of natural gas for resale for ultimate public consumption, and therefore Canadian contends that the Commission erred in each and all of its findings, rulings and orders in so far as they relate to and include Canadian's production and gathering properties, facilities, operations and business, and in so far as it covers gas not sold by Colorado Interstate Gas Company for resale.

As stated above, the hearing in this case before the Commission's Trial Examiner consumed 102 hearing days. The transcript of the testimony is covered by 103 volumes containing something over 15,000 pages. In addition to this, there are 303 exhibits. Practically one-half of all this transcript is directed to Canadian's production and gathering properties, facilities, operations and business.

The Commission has found a rate base for Canadian of $9,375,000 which is based upon the Commission's conception and findings as to Canadian's original cost. Canadian contends that such finding is not supported by substantial evidence and that the present fair value of its properties is not less than $13,135,965, exclusive of working capital. Approximately two-thirds of the total value included in Canadian's rate base as found by the Commission relates

to Canadian's production and gathering properties and facilities over which Canadian contends the Commission has no jurisdiction.

Even assuming that the Commission does have jurisdiction over the Canadian's production and gathering properties, facilities and business, Canadian contends that the Commission erred in its findings as to such values. The Commission has deducted $3,864,357 from Canadian's original cost as established by the evidence which includes the sum of $3,370,817 of actual cash money which was invested by Canadian in said production and gathering properties. The Commission has absolutely ignored uncontradicted evidence in the record showing the present fair value of Canadian's gas leasehold properties to be in excess of $15,000,000. The Commission absolutely ignored uncontradicted evidence in the case as to the market value of natural gas in the Texas Panhandle Field and as to market value of natural gas at the end of Canadian's gathering system which is the beginning of Canadian's transmission system.

In determining depreciation and depletion both in connection with the depreciation base and annual depreciation and depletion expense allowance, the Commission has found that the life of Canadian's gas reserves will continue until the year 1977. Canadian contends that such finding is not supported by any substantial evidence in the record and that the life of Canadian's reserves will not extend beyond the year 1956. The Commission has allowed in the rate base property additions for only the years 1940 and 1941, whereas Canadian contends that estimated property additions of the value in excess of $1,000,000 for the years 1942 to 1947 should properly be included.

The Commission has found Canadian's expenses as of the year 1939, and which it has used as the estimate of Canadian's expenses in the future, to be greatly below the amount Canadian contends as established by the evidence.

Admittedly all of Canadian's gas is not subject to the jurisdiction of the Commission. The Commission has used a so-called "allocation of costs" theory in purporting to determine what portion of Canadian's values, revenues, ex-

penses and net income are applicable to the properties over which the Commission has jurisdiction. Canadian contends that such "allocation of costs" theory is unsound in law and not justified by the facts in this case.

On January 3, 1928, some ten years before the adoption of the Natural Gas Act, Canadian entered into a contract with Colorado Interstate Gas Company. This contract, among other things, obligates Canadian to own, maintain and develop gas lands and leasehold or other interests therein and to develop, drill for, produce and gather gas therefrom. Certain quantities of the gas so produced and gathered Canadian is then obligated to transport and deliver to Colorado Interstate Gas Company under said contract. The so-called purchase price to be paid Canadian under said contract computed on the cost basis in said contract provided is the agreed compensation to Canadian for the performance of all its obligations under said contract.

Canadian's entire income is based upon the cost of gas computed under this January 3, 1928 contract with Colorado Interstate Gas Company, and amendments thereto. This cost is computed by deducting all outside revenues received by Canadian (including sales of gas to others) from the aggregate cost of producing and delivering all gas sold to purchasers. This cost includes interest and amortization of funded and other indebtedness of Canadian, but does not include depreciation and depletion.

The effect of the Commission's order of March 18, 1942 in this case is to change the contract price for gas or the amount of compensation to be paid Canadian by Colorado Interstate Gas Company under this contract. Canadian contends that the Commission has no power or right to so change said contract or the compensation to be paid by Colorado Interstate Gas Company thereunder during the life of said contract.

The Commission has ordered a reduction in the amount which Canadian is entitled to receive under said contract in the aggregate of $561,000 per year, or at the average rate of $46,750 per month. Canadian's total operating revenues for the year 1939, as found by the Commission, is

the sum of $2,393,387, from which it appears that the Commission has made a reduction of approximately 25% in Canadian's operating revenues based upon 1939 figures as found by the Commission.

The Commission has based its order entirely upon values, revenues, expenses and other related matters found by the Commission to exist in the one pre-war year of 1939. Canadian filed a petition to reopen to take further evidence to show Canadian's increased tax and other expenses since the year 1939 resulting from the defense program prior to December, 1941, and from the war program since December, 1941. While the Commission states in its opinion that it has taken cognizance of these increased expenses and of the effect of war conditions upon Canadian's business, it, nevertheless, overruled Canadian's petition to reopen and such cognizance as the Commission may have taken of the effect of war conditions upon Canadian's business is necessarily not based upon any evidence in the record in that the Commission refused to reopen the case to permit such evidence to be introduced.

As above indicated, Canadian will not herein further outline the various errors committed by the Commission in its order, findings and opinion, and the seriousness thereof. Canadian points out, however, that in the respects hereinabove outlined and in the various other respects set forth in its petition for rehearing filed with the Commission and which will be set forth in the petition for review to be filed with this court, the Commission's Order is erroneous and its enforcement will deprive Canadian of its property without due process of law in violation of the Fifth Amendment to the Constitution of the United States.

VIII.

If the Order of the Commission, dated March 18, 1942, be not stayed and its operation be not suspended pending the preparation and filing by Canadian of a petition for review in this court and pending the hearing and determination of said petition for review by this court, Canadian will sustain serious, substantial and irreparable damages and losses in this, among other things, to wit:

A. The operation of the Order will deprive Canadian of the sum of $561,000 per annum, or at the rate of $46,750 per month.

B. As the record shows without contradiction, Canadian's entire income is based upon the cost of gas computed under its contract of January 3, 1928, with Colorado Interstate Gas Company, and amendments thereto. Any income received by Canadian through sales of gas to Amarillo Oil Company and Clayton Gas Company or any other customer operates only to reduce the costs and prices paid by Colorado Interstate Gas Company under its said contract with Canadian. The cost of gas sold by Canadian to Colorado Interstate Gas Company is computed by deducting all outside revenues received by Canadian (including sales of gas to others) from the aggregate cost of producing and delivering all gas sold to purchasers. This cost includes interest and amortization of funded and other indebtedness of Canadian, but does not include depreciation and depletion.

C. As the record shows, as of June 1, 1928, Canadian issued its $11,000,000 of 6% sinking fund gold bonds under a trust indenture with Equitable Trust Company, now succeeded by Chase National Bank of New York as Successor Trustee. Beginning June 1, 1930, and periodically thereafter, bonds were redeemed through the sinking fund in accordance with the trust indenture, and at the present time the total amount of bonds outstanding is $3,868,000. All of said bonds are still owned by Colorado Interstate Gas Company, but are pledged by Colorado Interstate Gas Company as collateral security for its outstanding bonds, and said outstanding bonds of the Colorado Interstate Gas Company now in the amount of $6,864,000 are held by a third party or parties other than said Colorado Interstate Gas Company.

Interest at the rate of 6% per annum is payable on Canadian's outstanding bonds on June 1 and December 1 of each year. Said trust indenture securing said bonds obligates Canadian, in addition to the payment of interest, to pay to the Trustee, as a sinking fund, on June 1, 1942, and again on December 1, 1942, the sum of $303,243, and further obligates Canadian, on June 1, 1943, and semi-

annually thereafter on the 1st day of December and the 1st day of June in each year, to and including the 1st day of December, 1947, to pay into said sinking fund the sum of $300,270.

From the above it will be seen that on June 1, 1942, the Company is obligated, under said trust indenture, to pay the sum of $303,243 into the sinking fund, and $116,040 as interest, or a total of $419,283; and again on December 1, 1942, the sum of $303,243 in the sinking fund, and $107,130 as interest, or a total of $410,373.

Said trust indenture covers all the producing, gathering and transmission properties of Canadian and, by supplemental indenture thereto, also dated June 1, 1928, covers Canadian's contracts, including its contract of January 3, 1928 with Colorado Interstate Gas Company. Said trust indenture obligates Canadian to perform all the obligations of said contract of January 3, 1928 with Colorado Interstate Gas Company and its other outstanding contracts. Said trust indenture expressly provides that in case Canadian shall default in the payment of interest or sinking fund, or shall default in the performance of its other obligations which it has agreed to perform under said trust indenture, or if Canadian shall become bankrupt, numerous cumulative remedies may be exercised by the Trustee under said trust indenture and the bondholders, including the right of receivership, entry upon and possession of the trust estate, the right to declare all the bonds immediately due and payable, and the right of foreclosure and sale.

Canadian further shows that in addition to its obligation under said trust indenture and under said contract of January 3, 1928 with Colorado Interstate Gas Company to pay said principal and interest, including sinking fund, at the time, in the manner and in the amounts above stated, Canadian is obligated, among other things, both by said contract of January 3, 1928 and said trust indenture, to own, maintain and develop its gas lands, including its leasehold and other interests therein, and to develop, drill for, produce and gather gas therefrom, and to maintain and operate its transmission line and transport natural gas therethrough.

Canadian further shows that, in addition to its outstanding bonded indebtedness, as of December 31, 1941, it was indebted to Colorado Interstate Gas Company in the sum of $1,281,214 on 6% notes issued from time to time at par for cash to Colorado Interstate Gas Company to finance Canadian's obligations under said contract of January 3, 1928, which notes, as provided in said contract, are redeemable in monthly installments.

Canadian states and shows that it has no source of income to make the various payments above mentioned and to enable it to perform its various obligations which are necessary to be performed if its contracts are to be complied with and if natural gas is to be delivered by Canadian to its customers and by said customers to the ultimate consumers, except such income as it receives from Colorado Interstate Gas Company computed as provided in said contract of January 3, 1928. Under the provisions of its trust indenture, Canadian is prohibited from making any sale or sales of gas other than those covered by present contracts without the consent of the Trustee; and, as hereinbefore pointed out, the receipts from additional sales, if any, would serve only to reduce the amounts to be paid to Canadian by Colorado Interstate Gas Company under its aforesaid contract with Canadian. Moreover, under said contract any other cash received by Canadian from outside sources, whether through the sale of property, the borrowing of money, or otherwise, would likewise inure to the credit and benefit of Colorado Interstate Gas Company under said contract, and would not be available to Canadian to meet its cash deficiency caused by the Commission's Order. Such cash deficiency can be supplied only through Colorado Interstate Gas Company if Canadian is to observe and perform its present contract and trust indenture obligations.

It necessarily follows, and is a fact, that if Canadian is required to charge and receive from Colorado Interstate Gas Company and Clayton Gas Company $561,000 per annum less than provided for in said contract of January 3, 1928, Canadian will be short by just that sum in an amount necessary to perform its obligations under said contract of January 3, 1928, and under said trust inden-

ture. The further necessary effect of this inability to perform said obligations will be to render it impossible for Canadian to continue to maintain, develop and operate its gas leaseholds and its transmission system so as to deliver gas to Colorado Interstate Gas Company and Clayton Gas Company in manner provided by the contracts with said companies and in manner necessary to enable Canadian's customers properly to furnish gas to the ultimate consumers. The further necessary effect of the failure to receive this $561,000 will be to cause Canadian to default in its payment and other obligations under said trust indenture. Receivership, foreclosure or the enforcement of other remedies provided for in said trust indenture must necessarily be expected. It should be added, as the record shows, that the owners of the capital stock of Canadian have never received any dividends thereon, and can never receive any such dividends in the future, so long as its aforesaid "cost" contract with Colorado Interstate Gas Company remains in force and effect.

Canadian claims and submits that it will suffer great and irreparable damage by the enforcement of the Commission's Order, and earnestly submits that said Order is erroneous, and its necessary effect is and will be to deprive Canadian of its property without due process of law and in violation of the Fifth Amendment to the Constitution of the United States.

IX.

Not only will the enforcement of the Commission's Order cause Canadian the irreparable damage hereinabove shown, but a stay of its enforcement, during the period pending the preparation and filing of said petition for review in this court and the hearing, consideration and determination of said petition for review by this court will not prejudice or be detrimental to the Colorado Interstate Gas Company or to the ultimate consumers, and, in fact, for the reasons stated in the previous paragraph, such enforcement during said period will be detrimental and will prejudice the ultimate service to the ultimate consumers.

Moreover, as pointed out hereinafter, even assuming that Canadian were to put into effect immediately the reduc-

tion ordered, such reduction would inure only to the benefit of Colorado Interstate Gas Company, and not the ultimate consumers of such gas, unless the latter company passed on such reduction to its customers, and its customers (and their customers, in some instances) in turn passed on the reduction to ultimate consumers,—all of which is at least extremely speculative and doubtful, until the validity of the Commission's Order has been tested and sustained not only upon the petition of Canadian but also upon the petition of Colorado Interstate Gas Company.

X.

Should the Commission's Order of March 18, 1942, be set aside by this court upon review, there is danger that the revenues which Canadian will be deprived of, if said Order shall not be stayed up to the time said Order shall be so set aside, will be forever lost to Canadian. There is a question as to whether the Commission or the Court could make provision for the recouping by or reimbursement to Canadian of the various substantial losses which Canadian will have sustained. No provision is contained in the Natural Gas Act authorizing the Commission or the court to order such recouping or reimbursement, and Canadian may be without means of recovering or recouping such losses as a result of further rate proceedings, or otherwise. Canadian is without clear or adequate protection against the possible irrevocable loss of the amount lost represented by the reduced revenues during the period pending the preparation and filing of said petition for review in this court and the hearing, consideration and determination thereof by this court, except by declining to observe the Order during such period, in which event it might be prosecuted under the severe penal provisions of Section 21 of the Natural Gas Act. Without admitting that Canadian would be subject to such severe penalties under the circumstances confronting it Canadian respectfully urges that it should not be put to the alternative of accepting the reduction in its revenues in a very substantial amount each month, as above pointed out, with a doubtful right to recover its losses should the Order be set aside by this court on review or of defying the Order of the Commission and thus taking the risk of becoming

subject to the severe penalties in fines and imprisonment under the provisions above mentioned should the Order ultimately be upheld.

XI.

Canadian respectfully shows that to compel it to submit to the Order of the Commission and file the schedules of reduced rates and to give up said sums pending judicial review, or to disobey said Order and run the risk of such penalties pending such judicial review, in practical effect, nullifies such judicial review and operates to confiscate Canadian's property, all in violation of the due process clause of the Fifth Amendment to the Constitution of the United States.

XII.

No such emergency exists as would justify subjecting Canadian to the peril of losing its revenues in the substantial amount of $561,000 per annum, aggregating $46,750 per month, or of taking the risk of subjecting Canadian to the severe punishment and penalties under the provisions of Section 21 of the Natural Gas Act. In this connection Canadian points out that, as shown by the record, the Public Service Company of Colorado, which is the largest purchaser of gas from Colorado Interstate Gas Company over which the Commission has any jurisdiction, has a franchise in the City of Denver which will not expire until February, 1947, and which franchise specifically provides for the price of gas to be charged by the Public Service Company of Colorado to its customers in the City of Denver. It is manifest that the ultimate objective of the Commission and the underlying objective of the Congress in the enactment of the Natural Gas Act was and is to secure for the ultimate consumers fair and reasonable rates for natural gas. However, even if the Order of the Commission be ultimately upheld, it is apparent there can be no advantage that can possibly accrue to such ultimate consumers by reason of enforcing the rates and charges set up by the Order of the Commission dated March 18, 1942, during the period pending the review of the order by this court. Until determination of the proceedings in court for a review of the Commission's Order, neither the Public Service Company of Colorado nor the City and

County of Denver, or its electorate, would be warranted, even if legally justified in reducing rates to the ultimate consumers until it be finally determined that the Commission's Order herein entered is valid and enforceable. The same is obviously true as to the Clayton Gas Company and the other resale customers of Colorado Interstate Gas Company.

The practical effect, therefore, of the Order and the reduction in Canadian's revenues resulting from the operation of the Order pending the review by this court would be to deprive Canadian of the amount represented by the deduction in its prices and charges and transferring said sums, not to the ultimate consumers, but to Colorado Interstate Gas Company and Clayton Gas Company, neither of which has complained of Canadian's rates and charges.

XIII.

No public interest will be served by requiring Canadian to pay over sums aggregating $46,750 per month, during the period pending the review of the Order by this court, to Colorado Interstate Gas Company and Clayton Gas Company which have not complained of Canadian's rates and charges as being unjust and unreasonable.

XIV.

Canadian possesses the 103 volumes of testimony introduced before the Commission supplied by the official reporter of the Commission and copies of the 323 exhibits introduced in evidence before the Commission. Said volumes of testimony and exhibits are hereby tendered for filing in support of and as part of this petition.

Wherefore, Canadian River Gas Company, petitioner, prays that an immediate order be entered staying the operation and effect of the Federal Power Commission's Order, dated March 18, 1942, pending the judicial review of said Order by this court in the manner provided by the Natural Gas Act. In the event this court shall find it necessary to take this petition for stay under advisement, petitioner prays that an order be entered immediately temporarily staying said Order of the Commission pending further consideration of and action by this court under this

petition. Petitioner prays for such other and further relief to which it may be entitled in the premises.

Dated this 20th day of April, 1942.

CANADIAN RIVER GAS COMPANY,
By P. C. SPENCER,
Its Vice President.
Room 2757, 630 Fifth
Avenue, New York, N. Y.

P. C. SPENCER,
Room 2757, 630 Fifth Avenue,
New York, N. Y.
CHARLES H. KEFFER,
ADKINS, PIPKIN, MADDEN & KEFFER,
930 Fisk Building,
Amarillo, Texas,
SMITH, BROCK, AKOLT & CAMPBELL,
JOHN P. AKOLT,
931 Fourteenth Street,
Denver, Colorado,
Attorneys for Canadian River Gas Company.

[Exhibits and verification omitted.]

Filed April 20, 1942. Robert B. Cartwright, Clerk.

Order Staying Order of Commission etc. Case. No. 2550.

Twentieth Day, March Term, Saturday, May 16th, A. D. 1942.

Before Honorable Sam G. Bratton, Honorable Walter A. Huxman and Honorable Alfred P. Murrah, Circuit Judges.

This cause this day coming on for hearing before the court, upon the petition of Colorado Interstate Gas Company for a stay pending the completion and determination of a review of the Rate Order of the Federal Power Commission dated March 18, 1942, which Order is referred to in said petition of the petitioner, and a copy of which Order is filed herein as Exhibit "B" to said petition, and which Order was entered by said Federal Power Commission in Causes Nos. G-118, G-121 and G-124 on the Docket of said Commission, and which Order was amended by the further order of the Commission on April 22nd, 1942, to the extent

that the time for filing new schedules of rates and charges therein mentioned be changed from April 25, 1942, to May 19, 1942, and effective as to all bills regularly rendered on and after May 20, 1942. And it appearing to the Court that on May 13, 1942, the Commission, by Order entered on that date, denied the petition for rehearing that had been filed by Colorado Interstate Gas Company in said proceedings on April 14, 1942. And it further appearing to the court that each of the respondents herein has been duly served with a copy of said petition filed herein, and of notice of hearing, and the parties hereto, other than appeared by counsel. And the court having considered the petition herein, and heard the argument of counsel thereon, does find that it is necessary for the exercise of this court's jurisdiction in the review of said order, under the Natural Gas Act, that the matter be held in status quo until the review herein, at the instance of Colorado Interstate Gas Company, is perfected and finally determined.

It is now, therefore, hereby ordered that the said Order of the Federal Power Commission, as amended as aforesaid, be and the same is hereby stayed and suspended until the further order of this Court, in so far as it is directed to or affects the petitioner, Colorado Interstate Gas Company.

It is further ordered that the Federal Power Commission and Leland Olds, Claude L. Draper, Basil Manly, John W. Scott and Clyde L. Seavey, the persons constituting the Federal Power Commission, and their successors in office, and each and all of the other respondents, and the agents and attorneys of each and all of the respondents, be and they are hereby enjoined and restrained, until the further order of this Court, from enforcing, causing to be enforced, or attempting to enforce against the petitioner, Colorado Interstate Gas Company, the said Order of the Federal Power Commission dated March 18, 1942, entered in the above numbered causes on the docket of the Commission, as amended as aforesaid; and from taking any steps or instituting any proceedings or causing any steps to be taken or proceedings to be instituted against petitioner, Colorado Interstate Gas Company, its officers, agents or employees, to enforce any penalties, fines or other remedy for disre-

garding said Order of March 18, 1942, as amended as aforesaid.

This Order is made upon the condition that the petitioner, Colorado Interstate Gas Company, shall pay or cause to be paid to the purchasers of natural gas under its rate schedules FPC Nos. 1-9, inclusive, referred to in said Order of the Commission, as their several interests appear, the amount representing the reduction in the gross revenues of Colorado Interstate Gas Company which shall have accrued pending a determiation of this review proceeding, to the same extent as if new schedules of rates and charges had been filed by Colorado Interstate Gas Company on May 19, 1942, pursuant to said Order of the Commission, as amended, requiring a reduction in said rates and charges of not less than $2,065,000 per year, together with all costs which may be adjudged against Colorado Interstate Gas Company should said Order of the Commission, as amended, be sustained; and as surety, and solely in lieu of bond, shall deposit with the First National Bank of Denver, Colorado, or any other Federal depository to be approved by this Court, or a Judge thereof, under an escrow agreement also to be approved by this Court, or any Judge thereof, on or before May 19, 1942, the sum of $141,477.05, and thereafter on the 19th day of each succeeding calendar months until this review proceeding is finally determined and adjudicated, an additional sum according to the following schedule:

January	$ 220,468.68
February	205,740.32
March	198,141.11
April	184,798.36
May	141,477.05
June	135,088.63
July	121,896.65
August	122,279.48
September	126,766.36
October	168,771.90
November	220,330.90
December	219,240.56
Total	$2,065,000.00

The said amounts so deposited shall remain on deposit in said bank or banks pending a determination of said review proceeding, and said deposits shall be kept in a separate account as a special deposit, and said bank or banks shall furnish each month a certificate to the Clerk of this Court, a copy thereof to the Federal Power Commission and a copy to said City and County of Denver, Colorado, that said moneys have been thus deposited, and remain on deposit as provided herein and in said escrow agreement; subject, however, to the further order or orders of this court, to be returned to such ultimate consumers of gas or persons to whom the court shall find the same should be returned as contemplated by the provisions of the natural gas act.

Nothing in this order contained shall be considered as a determination of the amounts eventually to be refunded by Colorado Interstate Gas Company upon the final determination and adjudication of said review proceedings.

The cost consisting of the escrow fee and the cost of refunding the escrow funds in the event a refund is ordered shall be assessed by the further orders of this court.

[Escrow Agreement.]

Case No. 2550.

May 18, 1942.

The First National Bank of Denver, Colorado,
Denver, Colorado.

Dear Sirs: Enclosed herewith is a certified copy of an Order of this, the Tenth Circuit Court of Appeals, made and entered May 16, 1942, in Case No. 2550, Colorado Interstate Gas Company, a corporation, Petitioner, v. Federal Power Commission, et al., Respondents, wherein Colorado Interstate Gas Company is directed to deposit with you, or some other Federal depository approved by this Court, as a special deposit, the sum of $141,477.05 on or before May 19th, 1942, and to make monthly additional special deposits as set forth in said Order. Said special deposits are to remain on deposit pending the final determination and adjudication of the review proceedings, and are to be disbursed upon the further order of this Court, all as set forth in said Order of May 16, 1942.

Will you accept, hold and finally disburse all of said special deposits, and act as escrow agent or holder thereof all in accordance with the terms of said Order and the further orders of this Court? If so, will you acknowledge your acceptance by signing the copies of this letter at the place indicated, and return to the undersigned at once.

The Colorado Interstate Gas Company is herewith depositing the first special deposit for the month of May, by a certified check to your order in the amount of $141,477.05.

This letter, and your acceptance of the terms hereof as indicated, will constitute the escrow agreement mentioned in the order.

Very truly yours,
ROBERT B. CARTWRIGHT,
Clerk United States Circuit Court of Appeals, Tenth Circuit.

Approved:
SAM G. BRATTON, Judge.

Accepted:

THE FIRST NATIONAL BANK OF DENVER, COLORADO,
By P. K. ALEXANDER, Vice President.

Filed May 18, 1942. Robert B. Cartwright, Clerk.

Stay Order, Case No. 2551.

Twentieth Day, March Term, Saturday, May 16th, A. D. 1942. Before Honorable Sam G. Bratton, Honorable Walter A. Huxman and Honorable Alfred P. Murrah, Circuit Judges.

This cause this day coming on for hearing before the court upon the "Petition of Canadian River Gas Company For Stay, Pending Review, of Rate Order of Federal Power Commission," filed in the above entitled cause, and it appearing to the court that each of the respondents has been duly served with a copy of said Petition and that each of the respondents has been duly notified of the hearing of said Petition at this time, and the Petitioner appearing by its attorneys, P. C. Spencer, Charles H. Keffer and

John P. Akolt, the Respondent, Federal Power Commission, appearing by its attorney, Edw. H. Lange, the Respondent, City and County of Denver, Colorado, appearing by its attorneys, Thomas Gibson and Malcolm Lindsey, the Respondent, Public Service Commission of Wyoming, not appearing, the Respondent, Colorado-Wyoming Gas Company, appearing by its attorney, Donald C. McCreery, the Respondent, Public Service Company of Colorado not appearing, and the Respondent, Colorado Interstate Gas Company, appearing by its attorneys, Wm. A. Dougherty and E. R. Campbell, and the court having considered said Petition and heard argument of counsel thereon, and being now sufficiently advised in the premises,

The Court Does Now Hereby Find that the granting of said petition for stay is proper and necessary in aid of the jurisdiction of this court on review under the provisions of the Natural Gas Act of the order of the Respondent, Federal Power Commission, hereinafter referred to.

It Is Now Therefore Hereby Ordered That the Order of the Respondent, Federal Power Commission, dated the 18th day of March, 1942, which Order is referred to in said Petition of the Petitioner, Canadian River Gas Company, filed herein, and copy of which Order is filed in this Court as Exhibit B to said Petition, and which Order was entered by the Respondent, Federal Power Commission, in Causes Nos. G-118, G-121, and G-124 on the docket of said Respondent Commission, as said Order of March 18, 1942 was amended by the further order of the Respondent Commission, dated April 22, 1942, extending the time for the filing of the new schedule of rates and charges provided in said Order to May 19, 1942, to become effective as to all bills regularly rendered on and after May 20, 1942, be, and the same is hereby stayed and suspended until further order of this Court in so far as it is directed to or affects the Petitioner, Canadian River Gas Company.

It Is Further Hereby Ordered That the Respondent, Federal Power Commission, and Leland Olds, Claud L. Draper, Basil Manly, John W. Scott, and Clyde L. Seavey, the persons constituting the Federal Power Commission, and their successors in office, and each and all of the other respond-

ents, and the agents and attorneys of each and all of the respondents, be, and they are hereby enjoined and restrained, until further order of this court, from enforcing, causing to be enforced, or attempting to enforce against the Petitioner, Canadian River Gas Company, the said Order of the Respondent, Federal Power Commission, dated March 18, 1942, entered in the above numbered causes on the docket of the Commission, as so amended by the further order of the Commission of April 22, 1942, and from taking any steps or instituting any proceedings, or causing any steps to be taken or proceedings to be instituted, against the Petitioner, Canadian River Gas Company, its officers, agents or employees, to enforce any penalties, fines or other remedy for disregarding the said Order of March 18, 1942, as so amended by the further order of the Commission of April 22, 1942.

This order will become effective upon the execution and delivery to the Clerk of this Court by Petitioner of its personal bond in the penal sum of Five Hundred Sixty-one Thousand Dollars ($561,000) conditioned upon its refunding to the Respondent, Colorado Interstate Gas Company and to Clayton Gas Company, respectively, the amounts represented by the reduction in revenues of the Petitioner, Canadian River Gas Company, as directed by the Respondent, Federal Power Commission, in its Order dated March 18, 1942, as so amended by the further order of the Commission, dated April 22, 1942, together with all costs that may be adjudged against Petitioner, Canadian River Gas Company, if said Order, as so amended, shall be sustained.

Nothing in this Order contained shall be considered as a determination of the amounts eventually to be refunded by Canadian River Gas Company upon the final determination and adjudication of said review proceeding.

It Is Further Hereby Ordered That this Order be served by the Clerk of this Court upon each of the Respondents by mailing a copy hereof to each of said Respondents.

Filed May 16, 1942. Robert B. Cartwright, Clerk

[A bond for stay order in case No. 2551, dated May 15, 1942, was approved by the clerk and filed May 16, 1942.]

Motion to Dismiss, Case No. 2550.

Comes now the City and County of Denver appearing by its Attorneys, Malcolm Lindsey and Thomas H. Gibson, specially for the purposes of this motion, and not generally, in its own behalf and in behalf of such other of the respondents herein as may see fit to appear in this behalf and participate in this motion, and moves the court as follows:

1. To dismiss the petition herein on the ground that it is in the wrong circuit, because (a) the jurisdiction of this court is invoked solely on the grounds that Section (19b) of the Natural Gas Act of June 21, 1938, c556, 52 Stat. 833; Section 717r(b), Title 15 U. S. C. A., provides that:

"Any party to a proceeding under this Act (chapter) aggrieved by an order issued by the Commission in such proceeding may obtain a review of such order in the circuit court of appeals of the United States for any circuit wherein the natural gas company to which the order relates is located or has its principal place of business, * * * "

and it appears upon the face of said petition that:

(a1) Petitioner is a private corporation organized and existing under the laws of the State of Delaware.

(a2) Said petition fails to allege that said company is located in the tenth circuit for which your honorable circuit court of appeals, sitting as a federal court, has and may take jurisdiction as in such cases is made and provided by said natural gas act.

(a3) Said petition fails to allege its principal place of business or any facts to show the place of said company's location or its principal place of business other than that petitioner is a private corporation organized and existing under the laws of the State of Delaware.

(b) It affirmatively appears on the face of said petition that said petitioner is not located in and that it does not have its principal place of business within said circuit.

(c) It affirmatively appears upon the face of the record in said cause by the testimony of the petitioner's own

witness and by facts dehors the record that it is not located and that it does not have its principal place of business in said circuit; and this said respondent is ready to verify.

MALCOLM LINDSEY,
THOMAS H. GIBSON,
Attorneys for Respondent, City and County of Denver,
353 City and County Bldg.,
Denver, Colorado.

Filed Aug. 8, 1942. Robert B. Cartwright, Clerk.

Motion to Dismiss, Case No. 2551.

Comes now the City and County of Denver appearing by its Attorneys, Malcolm Lindsey and Thomas H. Gibson, specially for the purposes of this motion, and not generally, in its own behalf and in behalf of such other of the respondents herein as may see fit to appear in this behalf and participate in this motion, and moves the court as follows:

1. To dismiss the petition herein on the ground that it is in the wrong circuit, because (a) the jurisdiction of this court is invoked solely on the grounds that Section (19b) of the Natural Gas Act of June 21, 1938, c556, 52 Stat. 833; Section 717r(b), Title 15 U. S. C. A., provides

"Any party to a proceeding under this Act (chapter) aggrieved by an order issued by the Commission in such proceeding may obtain a review of such order in the circuit court of appeals of the United States for any circuit wherein the natural gas company to which the order relates is located or has its principal place of business, * * *"

and it appears upon the face of said petition that:

(a1) Petitioner is a private corporation organized and existing under the laws of the State of Delaware.

(a2) Said petition fails to allege that said company is located in the tenth circuit for which your honorable circuit court of appeals, sitting as a federal court, has and may take jurisdiction as in such cases is made and provided by said natural gas act.

(a3) Said petition fails to allege its principal place of business or any facts to show the place of said company's location or its principal place of business other than that petitioner is a private corporation organized and existing under the laws of the State of Delaware.

(b) It affirmatively appears on the face of said petition that said petitioner is not located in and that it does not have its principal place of business within said circuit.

(c) It affirmatively appears upon the face of the record in said cause by the testimony of the petitioner's own witness and by facts dehors the record that it is not located and that it does not have its principal place of business in said circuit; and this said respondent is ready to verify.

MALCOLM LINDSEY,
THOMAS H. GIBSON,
Attorneys for Respondent, City and County of Denver,
353 City and County Bldg.,
Denver, Colorado.

Filed Aug. 8, 1942. Robert B. Cartwright, Clerk.

Order Denying Motions to Dismiss Petitions and Amended Petitions, Cases No. 2550 and 2551.

Sixth Day, September Term, Monday, September 14th, A. D. 1942. Before Honorable Sam G. Bratton, Honorable Walter A. Huxman and Honorable Alfred P. Murrah, Circuit Judges.

These causes came on to be heard on motions to dismiss the petitions for review filed herein by petitioners. Thomas H. Gibson, Esquire, appearing for City and County of Denver, John P. Akolt, Esquire, appearing for Colorado Interstate Gas Company and Canadian River Gas Company, Donald McCreery, Esquire, appearing for Colorado-Wyoming Gas Company.

By leave of court, petitioners Colorado Interstate Gas Company and Canadian River Gas Company were granted leave to file amendments to their petitions for review. The motions to dismiss filed by the City and County of Denver

were renewed as to the petitions of the Colorado Interstate Gas Company and Canadian River Gas Company, as amended. Thereupon the causes were argued to the court.

On consideration whereof, it is now here ordered that the said motions to dismiss the petitions for review of the Colorado Interstate Gas Company, as amended, the Canadian River Gas Company, as amended, and the Colorado-Wyoming Gas Company be and the same are hereby denied.

Amendment to "Petition of Colorado Interstate Gas Company to Review and Set Aside an Order of the Federal Power Commission," Case No. 2550.

Comes Now Colorado Interstate Gas Company, Petitioner herein, and, permission of court being first had and obtained, amends its Petition to Review filed herein by adding at the end of Subdivision B of said Petition appearing on page 11 thereof, captioned, "The Facts and Statute Upon Which Venue Is Based," the following:

The properties of Canadian River Gas Company and Petitioner, Colorado Interstate Gas Company, are now, and at all times since the year 1928 have been, operated as a unit. Since June 15, 1936, Robert W. Hendee has been General Manager of each of said companies, and during all of said period he has resided in Colorado Springs, Colorado, and during all of said period Colorado Interstate Gas Company and Canadian River Gas Company have jointly maintained an office in the Colorado Springs National Bank Building in Colorado Springs, Colorado, under the charge of the said General Manager, from where the supervision, direction and management of the affairs of both of said companies have been conducted.

At the present time there are approximately thirty-six (36) employees in the office of the General Manager at Colorado Springs, Colorado. There has been substantially the same number for several years. Some of said employees devote their entire time to the business of Colorado Interstate Gas Company, and their entire salaries are paid by Colorado Interstate Gas Company, and the time of the remainder of said employees is devoted partly to the work of Colorado Interstate Gas Company and partly to the work of Canadian River Gas Company; and their salaries are paid

partly by each company. The compensation of the General Manager is paid in part by each of said companies.

All of the gas purchased by Colorado Interstate Gas Company is purchased from Canadian River Gas Company, and all of said gas is delivered by said Canadian River Gas Company to Colorado Interstate Gas Company in territory included in the Tenth Circuit. Part of said gas is transported by Canadian River Gas Company from the Texas Panhandle Field in Texas through Canadian River Gas Company's own pipe line to Clayton Junction, New Mexico, where it is delivered to Colorado Interstate Gas Company and where title passes to Colorado Interstate Gas Company. The remaining part of said gas is transported by Canadian River Gas Company from the field in Texas, through facilities leased by Canadian River Gas Company, to Gray, Oklahoma, where it is delivered to Colorado Interstate Gas Company and where title passes to Colorado Interstate Gas Company.

All of the customers to whom Colorado Interstate Gas Company sells the gas so purchased by it from Canadian River Gas Company are located in the territory included in the Tenth Circuit, namely, either Colorado or Oklahoma, and all of said gas sold by Colorado Interstate Gas Company is delivered by it to the purchasers thereof, either in Colorado or Oklahoma.

All of the physical properties of Colorado Interstate Gas Company are located either in Colorado or New Mexico.

All contracts of Colorado Interstate Gas Company with its customers and applications for service are made and acted on at its Colorado Springs, Colorado, office. All bills for gas sold by Colorado Interstate Gas Company are rendered out of the Colorado Springs office. The Purchasing Agent for said company, as well as Canadian River Gas Company, has his office in Colorado Springs where all major purchases are made, and all bills for materials purchased by both companies are paid by vouchers issued out of the Colorado Springs office. All of the dealings between Canadian River Gas Company and Colorado Interstate Gas Company in connection with purchase and sale of gas are handled in and through the Colorado Springs office, and bills for said gas are rendered from the Colorado Springs

office, and all payments for said gas are made in Colorado Springs. All audits of gas sold and accounting are made out of the Colorado Springs office, including the gas sold to Natural Gas Pipe Line Company of America, which is delivered at Gray, Oklahoma. Moneys received for the sale of gas (except gas sold to Natural Gas Pipe Line Company of America) are deposited in Colorado Springs, Colorado, banks, and, to the extent necessary, used to defray all operating expenses of the company and taxes, including federal income taxes. All general books, books of accounts, and property records are kept in the Colorado Springs office under the supervision of Assistant Treasurer Shields. For a long number of years, at least as far back as 1936, all contracts for sale of gas have been negotiated by the General Manager in Colorado. Correspondence with customers is conducted out of the Colorado Springs office.

The names and addresses of the officers and directors of Colorado Interstate Gas Company are as follows:

Officers:

F. H. Lerch, Jr., President, New York, N. Y.
A. R. Jones, Vice Pres., Kansas City, Mo.
W. A. Dougherty, Vice Pres., New York, N. Y.
Jas. Comerford, Treasurer, New York, N. Y.
J. O. Shields, Asst. Treasurer, Colo. Springs, Colo.
E. E. Duvall, Secretary, New York, N. Y.
Jas. Comerford, Asst. Secretary, New York, N. Y.

Directors:

N. K. Moody, Tulsa, Oklahoma.
A. R. Jones, Kansas City, Mo.
F. H. Lerch, Jr., New York, N. Y.
P. C. Spencer, New York, N. Y.
W. A. Dougherty, New York, N. Y.
E. E. Duvall, New York, N. Y.
Chas. Frueauff, New York, N. Y.

As shown above, certain officers of Colorado Interstate Gas Company reside in New York. These officers perform their duties as such officers in part in New York and at times in the Colorado Springs office or at other places outside of New York. No office, as such, for Colorado Interstate Gas Company is maintained in New York. There is a

service company, known as Gas Companies, Inc., having offices in New York, which exists for the purpose of rendering service to various natural gas companies in which Standard Oil Company of New Jersey has an interest, and such service as is rendered by the said officers to Colorado Interstate Gas Company is through said service company, Gas Companies, Inc.

Colorado Interstate Gas Company does not maintain an office in the State of Delaware, except the statutory office for service of process required by the Delaware laws, and does not transact business of any kind in the State of Delaware, and its only business is the production and sale of gas, as above stated. The Certificate of Incorporation and By-laws of said company provide for carrying on business and having offices within or without the State of Delaware, and for the holding of meetings of stockholders and directors within and without the State of Delaware, and the meetings of the stockholders and directors of said company are held without the State of Delaware.

Colorado Interstate Gas Company is located and has its principal place of business in this Tenth Circuit.

COLORADO INTERSTATE GAS COMPANY,
By WILLIAM A. DOUGHERTY,
C. W. COOPER,
Room 2839, 30 Rockefeller Plaza, New York, N. Y.
ELMER L. BROCK,
E. R. CAMPBELL,
931 Fourteenth Street, Denver, Colorado,
Its Attorneys.

[Verification omitted.]

Filed September 14, 1942. Robert B. Cartwright, Clerk.

Amendment to "Petition of Canadian River Gas Company to Review and Set Aside an Order of the Federal Power Commission," Case No. 2551.

Comes Now Canadian River Gas Company, Petitioner herein, and, permission of court being first had and obtained, amends its Petition to Review filed herein by adding at the

end of the subdivision of said Petition appearing on page 7 thereof captioned, "The Facts and Statute Upon Which Venue Is Based," the following:

The properties of Colorado Interstate Gas Company and Petitioner, Canadian River Gas Company, are now, and at all times since the year 1928 have been, operated as a unit. Since June 15, 1936, Robert W. Hendee has been General Manager of each of said companies, and during all of said period he has resided in Colorado Springs, Colorado, and during all of said period Canadian River Gas Company and Colorado Interstate Gas Company have jointly maintained an office in the Colorado Springs National Bank Building in Colorado Springs, Colorado, under the charge of the said General Manager, from where the supervision, direction and management of the affairs of both of said companies have been conducted.

At the present time there are approximately thirty-six (36) employees in the office of the General Manager at Colorado Springs, Colorado. There has been substantially the same number for several years. Some of said employees devote their entire time to the business of Colorado Interstate Gas Company and their entire salaries are paid by Colorado Industrial Gas Company, and the time of the remainder of said employees is devoted partly to the work of Colorado Interstate Gas Company and partly to the work of Canadian River Gas Company, and their salaries are paid partly by each company. The compensation of the General Manager is paid in part by each of said companies.

Said General Manager is in charge of all of the operations of Canadian River Gas Company, including the operations of its gas fields which are located in the State of Texas. Canadian River Gas Company maintains a field operating office in Amarillo, Texas, which, however, is also in charge of said General Manager. The Chief Dispatcher, who keeps in constant touch with the expected demands for gas and who, in turn, gives orders for the amount of gas to be piped, has his office in Colorado Springs, Colorado, and is under the supervision of said General Manager.

Of the total gas sales made by Canadian River Gas Company in the year 1939 in excess of 41,000,000 Mcf., all but approximately 4,600,000 Mcf. sold to Amarillo Oil Company

in Texas and approximately 93,000 Mcf. sold to Clayton Gas Company in New Mexico was sold by Canadian River Gas Company to Colorado Interstate Gas Company. As of the present time, the ratio of sales to Colorado Interstate Gas Company out of Canadian River Gas Company's total sales would be greater. The gas sold by Canadian River Gas Company to Colorado Interstate Gas Company is delivered to Colorado Interstate Gas Company at two points. Part of said gas is transported by Canadian River Gas Company from the field in Texas through Canadian River Gas Company's own pipe line to Clayton Junction, New Mexico, where it is delivered to the Colorado Interstate Gas Company and where title passes to Colorado Interstate Gas Company. The remaining part of said gas is transported by Canadian River Gas Company from the field in Texas through facilities leased by Canadian River Gas Company to Gray, Oklahoma, where it is delivered to Colorado Interstate Gas Company and where title passes to Colorado Interstate Gas Company.

The small sales made by Canadian River Gas Company to Clayton Gas Company represent gas transported by Canadian River Gas Company through its own pipe line into New Mexico, where it is delivered to the Clayton Gas Company in Clayton, New Mexico.

The principal bank account of Canadian River Gas Company is kept in banks in Colorado Springs, Colorado. It has no other bank account except a comparatively small revolving fund, which is maintained in Amarillo, Texas, in connection with the field operations. The principal disbursements of Canadian River Gas Company are made from its Colorado Springs, Colorado, office, and its principal or general books of account during all of said period have likewise been kept in the Colorado Springs office. These principal books include everything except records required to be kept in connection with field operations. The books of account are kept under the direction of J. O. Shields, who is Assistant Treasurer of the company and who maintains his office in the Colorado Springs office. The Purchasing Agent for both companies has his office in Colorado Springs,

where all major purchases are made, and all bills for materials purchased by both companies are paid by vouchers issued out of the Colorado Springs office. All of the dealings between Canadian River Gas Company and Colorado Interstate Gas Company in connection with the purchase and sale of gas are handled in and through the Colorado Springs office, and bills for said gas are rendered from the Colorado Springs office, and all payments for said gas are made in Colorado Springs.

All of the physical properties of Colorado Interstate Gas Company are located in Colorado and New Mexico. All gas purchased by Colorado Interstate Gas Company is purchased and received by it in the states of New Mexico or Oklahoma; all gas sold by Colorado Interstate Gas Company is sold by it in the states of Colorado and Oklahoma.

All of the gas which is covered by the reduction order made by the Commission to which this Petition to Review is directed is delivered to Colorado Interstate Gas Company and to Clayton Gas Company as the purchasers thereof from Canadian River Gas Company in territory included in the Tenth Circuit.

All contacts of Colorado Interstate Gas Company with its customers and applications for service are made and acted on at the Colorado Springs office. All bills for gas sold by Colorado Interstate Gas Company are rendered out of the Colorado Springs office. All audits of gas sold and accounting are made out of the Colorado Springs office, including the gas sold to the Natural Gas Pipe Line Company. Moneys received for sale of gas (except gas sold to Natural Gas Pipe Line Company of America) are deposited in Colorado Springs, Colorado, banks, and, to the extent necessary, used to defray all operating expenses of the company and taxes, including federal income taxes. All general books, books of accounts, and property records are kept in the Colorado Springs office under the supervision of Assistant Treasurer Shields.

Since at least the year 1936 all contracts for the sale of gas entered into by Colorado Interstate Gas Company have

been negotiated by said General Manager Hendee in Colorado, and correspondence with customers is conducted out of said Colorado Springs office.

The names and addresses of the officers and directors of Canadian River Gas Company are as follows:

Officers:

N. K. Moody, President, Tulsa, Oklahoma.
P. C. Spencer, Vice Pres., New York, N. Y.
A. R. Jones, Vice Pres., Kansas City, Mo.
R. E. Wertz, Vice Pres., Amarillo, Texas.
Geo. Baird, Secretary and Treasurer, New York, N. Y.
J. O. Shields, Asst. Treasurer, Colo. Springs, Colo.
W. M. Wright, Asst. Secretary, Amarillo, Texas.
E. A. Sickels, Asst. Secretary, Tulsa, Oklahoma.

Directors:

N. K. Moody, Tulsa, Oklahoma.
P. C. Spencer, New York, N. Y.
A. R. Jones, Kansas City, Mo.
R. E. Mullin, Kansas City, Mo.
E. A. Sickels, Tulsa, Oklahoma.

None of the above officers and directors maintains an office for the transaction of business of Canadian River Gas Company except J. O. Shields, Assistant Treasurer, in Colorado Springs, Colorado, and Geo. Baird in New York to the extent that he has custody of the minute books and other corporate records of that character.

Canadian River Gas Company does not maintain an office in the State of Delaware, except the statutory office for service of process required by the Delaware laws, and does not transact business of any kind in the State of Delaware, and its only business is the production and sale of gas, as above stated. The Certificate of Incorporation and By-laws of said company provide for carrying on business and having offices within or without the State of Delaware, and for the holding of meetings of stockholders and directors within and without the State of Delaware, and the meetings

of the stockholders and directors of said company are held without the State of Delaware.

Canadian River Gas Company is located and has its principal place of business in this Tenth Circuit.

CANADIAN RIVER GAS COMPANY,
By P. C. SPENCER,
Room 2759, 630 Fifth Ave.,
New York, N. Y.
ADKINS, PIPKIN, MADDEN & KEFFER,
By CHARLES H. KEFFER,
903 Fisk Bldg., Amarillo,
Texas.
SMITH, BROCK, AKOLT & CAMPBELL,
By JOHN P. AKOLT,
931 Fourteenth Street,
Denver, Colorado.
Its Attorneys.

[Verification omitted.]

Filed September 14, 1942. Robert B. Cartwright, Clerk.

Order Extending Time for Designation of Printed Record, Etc., Case No. 2550.

Forty-third Day, March Term, Tuesday, July 14th, A. D. 1942. Before Honorable Orie L. Phillips, Circuit Judge, and Honorable J. Foster Symes, District Judge.

It appearing to the court that the petition of the petitioner in this cause is to review and set aside an order of the Federal Power Commission and that in cause No. 2551 on the docket of this court Canadian River Gas Company, as petitioner, has likewise filed a petition to review and set aside an order of the Federal Power Commission directed to said Canadian River Gas Company and entered in the same dockets before the said Commission; and it further appearing to the court that in cause No. 2561 on the docket of this court Colorado-Wyoming Gas Company has also filed a petition to review and set aside an order of the Federal Power Commission directed to it and entered in the same dockets before the said Commission; and it further appearing to the court that under Rule 34 of the rules of this court a single record on review should be prepared

in this cause and in said causes Nos. 2551 and 2561 containing all matter designated by all parties to said three proceedings without duplication; and it further appearing from telegrams, the originals or copies of which are on file with the clerk of this court, that in each of said three causes the petitioner therein and the respondent, Federal Power Commission, in the interest of saving both time and expense and for the purpose of affording time to enable the parties to attempt to agree upon the portions of the transcript to be included in the printed record, have agreed to an extension of time for the filing of the transcript of the record by the Federal Power Commission in said three causes and for an extension of time for the designation of the portion of the record to be printed;

Now, therefore, it is hereby ordered:

1. That a single record on review shall be filed by the Federal Power Commission in said three causes pending herein.

2. That the respondent, Federal Power Commission, shall have to and including the 10th day of September, 1942, within which to certify and file with this court the transcript of record upon which the orders entered by the Federal Power Commission in said three proceedings are now sought to be reviewed in this court.

3. That the petitioner herein shall have to and including the 10th day of October, 1942, within which to file its designation of the portions of the transcript it desires to be contained in the printed record.

4. That the respondents herein and any intervener herein entitled under the rules of this court to participate in the designation of the record, shall have to and including the 10th day of November, 1942, within which to designate such additional portions of the transcript as they desire to be included in the printed record.

5. That the petitioner herein shall thereupon have to and including the 25th day of November, 1942, within which to designate such further parts of the transcript of the record which are to be contained in the printed record.

Order Extending Time for Designation of Printed Record, Etc., Case No. 2551.

Forty-third Day, March Term, Tuesday, July 14th, A. D. 1942. Before Honorable Orie L. Phillips, Circuit Judge, and Honorable J. Foster Symes, District Judge.

It appearing to the court that the petition of the petitioner in this cause is to review and set aside an order of the Federal Power Commission and that in cause No. 2550 on the docket of this court Colorado Interstate Gas Company, as petitioner, has likewise filed a petition to review and set aside an order of the Federal Power Commission directed to said Colorado Interstate Gas Company and entered in the same dockets before the said Commission; and it further appearing to the court that in cause No. 2561 on the docket of this court Colorado-Wyoming Gas Company has also filed a petition to review and set aside an order of the Federal Power Commission directed to it and entered in the same dockets before the said Commission; and it further appearing to the court that under Rule 34 of the rules of this court a single record on review should be prepared in this cause and in said causes Nos. 2550 and 2561 containing all matter designated by all parties to said three proceedings without duplication; and it further appearing from telegrams, the originals or copies of which are on file with the clerk of this court, that in each of said three causes the petitioner therein and the respondent, Federal Power Commission, in the interest of saving both time and expense and for the purpose of affording time to enable the parties to attempt to agree upon the portions of the transcript to be included in the printed record, have agreed to an extension of time for the filing of the transcript of the record by the Federal Power Commission in said three causes and for an extension of time for the designation of the portion of the record to be printed;

Now, therefore, it is hereby ordered:

1. That a single record on review shall be filed by the Federal Power Commission in said three causes pending herein.

2. That the respondent, Federal Power Commission, shall have to and including the 10th day of September, 1942,

within which to certify and file with this court the transcript of record upon which the orders entered by the Federal Power Commission in said three proceedings are now sought to be reviewed in this court.

3. That the petitioner herein shall have to and including the 10th day of October, 1942, within which to file its designation of the portions of the transcript it desires to be contained in the printed record.

4. That the respondents herein, and any intervener herein entitled under the rules of this court to participate in the designation of the record, shall have to and including the 10th day of November, 1942, within which to designate such additional portions of the transcript as they desire to be included in the printed record.

5. That the petitioner herein shall thereupon have to and including the 25th day of November, 1942, within which to designate such further parts of the transcript of the record which are to be contained in the printed record.

Order Extending Time for Designation of Printed Record, Cases Nos. 2550 and 2551.

Fourteenth Day, September Term, Monday, October 5th, A. D. 1942. Before Honorable Orie L. Phillips, Circuit Judge, and Honorable J. Foster Symes, District Judge.

These causes came on to be heard on the motion of petitioners for an extension of time within which to file a stipulation or designation of the parts of the record to be printed herein and were submitted to the court.

On consideration whereof, counsel for respondent, Federal Power Commission, consenting thereto, it is now here ordered by the court that the said motion be and the same is hereby granted and that the time within which petitioners may file a stipulation or designation of the parts of the record to be printed herein be and the same is hereby extended to and including the 25th day of November, 1942.

Order Extending Time for Designation of Printed Record, Cases Nos. 2550 and 2551.

Thirty-ninth Day, September Term, Tuesday, November 24th, A. D. 1942. Before Honorable Orie L. Phillips, Circuit Judge, and Honorable J. Foster Symes, District Judge.

These causes came on to be heard on the application of petitioners for an extension of the time within which a stipulated designation of the parts of the record to be printed herein may be filed in these causes and were submitted to the court.

On consideration whereof, it is now here ordered by the court that said application be and the same is hereby granted and that the time within which a stipulated designation of the parts of the record to be printed herein may be filed in these causes be and the same is hereby extended to and including the 10th day of December, 1942.

Stipulation for and Designation of Printed Record.

Now comes Colorado Interstate Gas Company, Canadian River Gas Company, and Federal Power Commission, sometimes hereinafter referred to as Canadian, Colorado Interstate, and the Commission, respectively, and the other parties to the review proceedings above captioned, whose joinder herein is indicated by their signatures hereto, and stipulate that the printed record in the review proceedings above captioned shall contain the following, and the undersigned hereby designate the following as the printed record in the above captioned review proceedings:

[In conformity with the order of the United States Circuit Court of Appeals, infra, the remaining portion of the stipulated designation of the printed record, with the exception of the items thereof which follows, is omitted.]

388-A—"It is agreed that all headings and subheadings employed in this Stipulation have been inserted for the convenience of counsel, and that these headings and subheadings do not constitute any part of the evidence in this proceedings."

389—It is expressly stipulated that in the event any of the parties hereto shall find it necessary or proper to appeal to

the Official Transcript filed with the court by the Commission, the filing of this Stipulation, and the printed record in pursuance thereof, shall in no wise prejudice its right to do so. In the event of a controversy as to the construction of any part of the narrative included in the record to be printed, it is expressly stipulated that the Official Transcript shall govern.

Dated the 9th day of December, A. D. 1942.

COLORADO INTERSTATE GAS COMPANY,
By WM. A. DOUGHERTY,
C. W. COOPER,
ELMER L. BROCK,
E. R. CAMPBELL,
Its Attorneys.

CANADIAN RIVER GAS COMPANY,
By P. C. SPENCER,
CHARLES H. KEFFER,
JOHN P. AKOLT,
Its Attorneys.

FEDERAL POWER COMMISSION,
By EDWARD H. LANGE,
Its Attorneys.

COLORADO-WYOMING GAS COMPANY,
By DONALD C. MCCREERY,
LEE, SHAW & MCCREERY,
WM. A. BRYANS III,
JOHN C. PICKETT,
Its Attorneys.

PUBLIC SERVICE COMPANY OF COLORADO,
By LEE, SHAW & MCCREERY,
DONALD C. MCCREERY,
Its Attorneys.

Filed December 9, 1942. Robert B. Cartwright, Clerk.

Order, Designation of Record Not to Appear in Printed Record, Cases Nos. 2550 and 2551.

Forty-seventh Day, September Term, Friday, December 11th, A. D. 1942. Before Honorable Orie L. Phillips, Circuit Judge, and Honorable J. Foster Symes, District Judge.

These causes came on to be heard on the application of petitioners for leave to have the stipulated designation of the record omitted from the printed record in these causes and were submitted to the court.

On consideration whereof, it is now here ordered by the court that that part of paragraph 5, subdivision (d), of rule 34, which provides that the printed record shall contain among other things the designations or stipulations as to the contents of the record, be and the same is hereby waived and that the record in these causes be printed without the inclusion therein of the stipulated designation.

Pleas and proceedings in the United States Circuit Court of Appeals for the Tenth Circuit, at the January and May Terms, 1944, of said Court, before Honorable Sam G. Bratton, Honorable Walter A. Huxman and Honorable Alfred P. Murrah, Circuit Judges.

On the 9th day of September, A. D. 1942, a transcript of the record, pursuant to petitions to review and set aside orders of the Federal Power Commission, was filed in the office of the clerk of the United States Circuit Court of Appeals for the Tenth Circuit, in a certain cause wherein Colorado Interstate Gas Company, a corporation, was petitioner, and Federal Power Commission et al. were respondents, and in a certain cause wherein Canadian River Gas Company, a corporation, was petitioner, and Federal Power Commission et al. were respondents, which said transcript, as prepared and printed under the rules of the United States Circuit Court of Appeals for the Tenth Circuit, is in the words and figures following:

BEFORE THE FEDERAL POWER COMMISSION

In the Matter of

CANADIAN RIVER GAS COMPANY, COLORADO INTERSTATE GAS COMPANY AND COLORADO-WYOMING GAS COMPANY, DOCKET NO. G-124: CITY AND COUNTY OF DENVER, COLORADO, COMPLAINANT V. PUBLIC SERVICE COMPANY OF COLORADO ET AL., DEFENDANTS, DOCKET NO. G-118.

Opinion No. 73.

[Caption Omitted.]

These proceedings are an outgrowth of an investigation instituted by the Commission on March 14, 1939, into the reasonableness of the rates and charges of the respondent companies, following the filing of petitions therefor by the City and County of Denver, Colorado, and by the Public Service Commission of Wyoming.

On April 12, 1939, Canadian River Gas Company[1] and Colorado Interstate Gas Company[2], filed with the Commission an application for a rehearing and stay of said order of investigation; and on April 13, 1939, Colorado-Wyoming Gas Company[3] filed with the Commission a motion to set aside the same. On May 9, 1939, the Commission issued its order denying the application of the Canadian and Colorado Companies, and also entered a separate order denying the motion of the Wyoming Company.

On July 7 1939 Canadian Company and Colorado Company filed their petition for review of the Commission's

[1] Herei after sometimes referred to as "Canadian Company";

[2] Hereinafter sometimes referred to as "Colorado Company";

[3] Hereinafter sometimes referred to as "Wyoming Company."

order of March 14, 1939, with the United States Circuit Court of Appeals for the Tenth Circuit. The Commission thereupon filed its motion to dismiss the petition. The Circuit Court of Appeals, by its decision of March 4, 1940, directed a dismissal of the petition for review. The Companies' petition for rehearing was denied by the court on July 24, 1940 (113 Fed. (2d) 1010); and certiorari was denied by the United States Supreme Court on October 28, 1940 (311 U. S. 693).

On September 13, 1940, the Commission consolidated these proceedings and ordered a public hearing to be held on October 28, 1940, in Denver, Colorado.

At the hearings, which consumed 102 hearing days, and closed on April 21, 1941, after one short recess, each of the respondent companies was afforded ample opportunity to and did present evidence. In addition, evidence was also offered by the City of Denver, Colorado, and by members of this Commission's staff. The transcript of the testimony in excess of 15,000 pages and over 300 exhibits clearly shows the extent and volume of the record.

Petition to Reopen Proceedings.

On March 11, 1942 Canadian and Colorado companies each filed a petition to reopen proceedings to take further evidence. Both petitions rely on the same general contentions for support. In the main these contentions are that taxes, wages and material costs have increased since the close of the proceedings and that additions to property have been greater than originally estimated. The Mayor of the City and County of Denver in a letter received March 17, 1942 and the Wyoming Public Service Commission in a telegram dated March 18, from its Chairman, have strenuously opposed granting of the petitions and the reopening of the proceedings. This Commission is fully aware of the recent trends in costs. It is also aware of the recent trends in revenues although no mention of revenues is made in the petitions. Due consideration has been given to these factors in the orders entered in these proceed-

ings. That full account has been taken of the relevant contentions by the companies is apparent in the discussion of these factors in this opinion.

History and Operations of Companies.

The Canadian and Colorado Companies are separate corporate entities; but the properties of the two companies have, since their inception, been operated as a single enterprise. The incorporation of these two companies and the acquisition and construction of their properties were the result of a "Memorandum of Stipulations Agreed Upon Between Southwestern Development Company, Cities Service Company, and Standard Oil Company (N. J.)." The primary objectives of the undertaking were the production of natural gas in the Texas Panhandle field and its transportation to the city gate of Denver for sale to the Public Service Company of Colorado and for the supplying of natural gas to Colorado Fuel and Iron Corporation at Pueblo, Colorado, enroute to Denver. The obtaining of these two markets was the essential prerequisite of the construction of the Canadian Company-Colorado Company pipe line sometimes referred to as the "Denver" line.

As a part of its obligations under the aforesaid stipulation, Southwestern Development Company caused Canadian Company to be incorporated under the laws of the State of Delaware on February 24, 1928, with broad powers to carry on business in gas oil and other extractive enterprises and qualified it to do business in the States of Texas New Mexico and Oklahoma. All of Canadian's capital stock, excepting directors' qualifying shares, was issued to Southwestern Development Company.

Also pursuant to the aforesaid stipulation, Colorado Company was incorporated under the laws of the State of Delaware on June 8, 1927, with broad powers to carry on business in natural gas, artificial gas, oils, and other extractive enterprises and qualified it to do business in the States of New Mexico, Oklahoma, and Colorado.

Canadian Company does not purchase any natural gas,

but produces from its own wells all of its requirements. It holds gas rights under oil and gas leases on approximately 315,000 acres of land in the Texas Panhandle field and had in operation on December 31, 1939, a total of 94 gas wells. Its gathering system consists of 144 miles of various sizes of pipe. It owns and operates a field compressing station near Fritch, Texas; the Bivins compressor station through which gas is transported to Clayton Junction approximately 35 miles north of the City of Amarillo, Texas; a gasoline extraction plant and a dehydration plant. The Canadian Company sells gas to the following affiliated companies: Amarillo Oil Company, Clayton Gas Company and Colorado Interstate Gas Company. Out of a total of about 46,000,000 MCF of gas sold for resale in 1939, approximately 41,000,000 MCF were sold to the Colorado Interstate Gas Company.

Canadian Company is engaged in the production, gathering, transportation, and sale of natural gas. It produces gas from its leaseholds in the Panhandle gas field in the State of Texas, gathers such gas in the field and after compressing it, (a) sells and transports in interstate commerce a portion of it through its main 22-inch transmission line, a distance of approximately 86 miles to a point in New Mexico known as Clayton Junction where the gas so transported is delivered to Colorado Company and to Clayton Gas Company, and (b) transports a portion of it through the facilities of Texoma Natural Gas Company to a point in Oklahoma known as Gray Junction where the gas so transported is also sold to Colorado Company.

The Canadian Company is obligated to supply the entire natural gas requirements of Colorado Company for a period of 20 years from and after the initial delivery of gas to Public Service Company of Colorado which was made on June 23, 1928, "and so long thereafter as seller has available for delivery to buyer hereunder quantities of natural gas which buyer determines are profitable for it to buy under the terms of this contract."

Construction of the main transmission line of Colorado Company was completed in June 1928. The line begins

at Clayton Junction, New Mexico, at the terminus of the transmission pipe line of the Canadian Company and extends in a northwesterly direction approximately 254 miles through New Mexico into the State of Colorado to the outskirts of the City of Denver, Colorado. The line consists of 20-inch and 22-inch Dresser coupled steel pipe. Various laterals extend from the main line to customers of the company, including a 16-inch lateral to the plant of the Colorado Fuel and Iron Corporation near Pueblo, Colorado, and one near the terminus of the line at Denver, Colorado, for the purpose of making deliveries to Wyoming Company at a point near Littleton, Colorado. On December 31, 1939, Colorado Company owned and operated three compressing stations known as Clayton Station, Canyon Station, and Devine Station.

On October 15, 1931, Colorado Company and Natural Gas Pipeline Company of America entered into an agreement which provides for the sale by Colorado Company to the latter of 25 per cent of the total requirements of the latter company's pipe line having as its destination what it known as the "Chicago" market. The gas so purchased is produced by Canadian Company and transported from the field through the 24-inch main transmission line of Texoma Natural Gas Company (an affiliate of the Natural Gas Pipeline Company of America) from Fritch compressing station to Gray Junction, Oklahoma. Colorado Company does not own, lease, or operate any of the facilities utilized in connection with the delivery and sale of this gas.

The contract for the sale of gas to Wyoming Company was entered into October of 1929 and provides for the sale by Colorado Company to Wyoming Company of the latter's requirements of natural gas. The gas so purchased by Wyoming Company is transported by it through its transmission pipe line and resold to various industrials, public authorities, and distribution companies for resale in the States of Colorado and Wyoming.

The total volume of gas sold by the Colorado Company in 1939 was approximately 41,000,000 MCF. Of this total,

about 20,000,000 MCF was sold to Natural Gas Pipeline Company of America. The two largest customers on the Denver line were Colorado Fuel and Iron Corporation (about 7,000,000 MCF annually) and Public Service Company of Colorado, Denver city gate (about 6,000,000 MCF annually).

Wyoming Company was incorporated under the laws of the State of Delaware in December of 1925 and is authorized to do business in the States of Colorado and Wyoming. The company's facilities consist of a natural gas transmission pipe line extending from a point near Littleton, Colorado, in a northerly direction and terminating at the city gate of Cheyenne, Wyoming, a distance of approximately 114 miles, as well as compressor stations and a number of laterals extending from the main line to various city gates and industrial plants in Colorado and Wyoming. At the inception of the project, natural gas was obtained from the Wellington gas field situated in Larimer County, Colorado. Until the latter part of the year 1929, its total requirements were obtained from this field. During the calendar year ending December 31, 1939, 98 per cent of its total requirements were obtained from Colorado Company.

During the year 1939, Wyoming Company transported and sold a total of 2,860,000 MCF of natural gas. Of this total about 900,000 MCF was sold to its affiliate, Public Service Company of Colorado, for resale by that Company through its distribution systems in a number of communities situated in northern Colorado. During the same year, Wyoming sold approximately 415,000 MCF to another affiliate, Cheyenne Light, Fuel and Power Company, for distribution in the City of Cheyenne. A total of 152,000 MCF[1] was sold for resale to the Greeley Gas and Fuel Company and Highway Gas Company. In addition to the above sales for resale, Wyoming Company, during the same period, sold a total of about 1,367,000 MCF[1] directly to ten industrial consumers located along its system in the State of Colorado and sold small quantities of gas to two United States Army posts.

[1] At 14.4 lbs. plus 4 oz.

Jurisdiction.

Canadian River and Colorado Interstate contend that they are not "natural-gas companies" within the meaning of the Natural Gas Act. The gist of these contentions has been considered before and rejected. Essentially, the contentions are: the business is private and not affected with a public interest; the contracts were entered into privately before the passage of the Natural Gas Act; and the companies have not held themselves out to serve the public generally but engaged only in serving natural gas to a selected number of customers. In addition, Canadian River contends that so far as it is engaged in the production and gathering of natural gas, it is not subject to the jurisdiction of the Commission. Colorado-Wyoming concedes that its operations in selling gas in Wyoming which it receives at Littleton, Colorado, constitute it a "natural-gas company" under the Act, but it contends that the Commission has no jurisdiction over its transactions in Colorado.

The question of jurisdiction is one of fact and law. The facts are clear and admitted. All three companies are engaged in "the transportation of natural gas in interstate commerce" and in "the sale in interstate commerce of such gas for resale." It is clear therefore that the respondent companies are engaged in activities which make them natural-gas companies within the meaning of the Natural Gas Act.

In effect, respondents challenge the constitutionality of the Natural Gas Act on the grounds that it attempts the regulation of private business. The Commission is mindful of the fact that already in other cases, where similar contentions were made and similar circumstances existed, the courts have upheld the constitutionality of the act here involved[1].

[1]Natural Gas Pipeline Company of America and Texoma Natural Gas Company v. Federal Power Commission and Illinois Commerce Commission, 120 Fed. (2d) 625 (C.C.A. 7th); Mississippi River Fuel Corporation v. Federal Power Commission, 121 Fed. (2d) 159 (C.C.A. 8th). See also Illinois Natural Gas Company v. Central Illinois Public Service Company and Illinois Commerce Commission, (No. 100—October Term, 1941) 314—U. S.—(decided January 5, 1942).

The particular contention of Canadian, that insofar as it is engaged in the production and gathering of natural gas it is not subject to the jurisdiction of the Commission, is unsound. Canadian's production and gathering operations are an integral part of its total operations, including transportation in interstate commerce and the sale of natural gas for resale in interstate commerce. Furthermore, Canadian's operations are an integral part of Colorado's operations and the two comprise a single operating system. The investigation of Canadian's production and gathering property and operations is indispensable in regulating Canadian's rates and charges for the sale of natural gas in interstate commerce for resale and for the transportation of natural gas in interstate commerce.

The contention of Colorado-Wyoming is negatived by the decision in Illinois Natural Gas Company v. Central Illinois Public Service Company and Illinois Commerce Commission, (No. 100—October Term, 1941) 314 U. S.—; where the Supreme Court, in an extension case within the State of Illinois, said:

"In determining the scope of the federal power over the proposed extension of facilities and sale of gas it is unnecessary to scrutinize with meticulous care the physical characteristics of appellant's business, in order to ascertain whether, as the court below held, the interstate commerce involved in bringing the gas into the state ends before delivery to distributors. In any case the proposed extension of appellant's facilities is so intimately associated with the commerce and would so affect the volume moving into the state and distribution among the states as to be within the Congressional power to regulate those matters which materially affect interstate commerce, as well as the commerce itself." (citing cases.)

Cost of Plant.

The record contains considerable evidence as to the cost and alleged value of the properties involved in the proceedings.

Canadian Company[1] and Colorado Company each intro-

[1]Evidence confined to transmission facilities only.

duced estimates of reproduction cost new less observed depreciation. They also introduced evidence as to the original cost of the property. Wyoming Company offered only "actual construction costs, less observed depreciation, plus working capital and additions to plant, now and immediately in course of construction." Commission staff restricted its plant studies to original cost and offered evidence of that character.

We have considered the estimates of reproduction cost new less observed depreciation submitted by the Canadian Company and the Colorado Company but conclude that they are too conjectural to have probative value, as they are not based upon established facts, and therefore, are subject to the vagaries of theories and imagination. We, therefore, turn to the evidence of original cost of the properties involved to determine whether it provide an adequate basis for the establishment of the proper rate base.

The properties are all of comparatively recent acquisition or construction. The accounting records have been sufficiently adequate and well maintained to permit a ready determination of all costs involved. The major portion of all cost of Canadian and Colorado Companies has been incurred since the adoption by these companies of an accounting system based on the Code of Accounts of the Pennsylvania Public Service Commission. Thus, the basic facts are clear and essentially undisputed. They represent the best and only reliable evidence as to property values. We find, therefore, in accordance with the provisions of Section 6 of the Natural Gas Act, and under the record in this proceeding, no necessity exists to consider other factors than original cost of the properties in service.

The differences between the amounts representing original cost claimed by the companies and allowed herein are all essentially differences in interpretation of the accounts or conclusions as to whether certain expenditures are legitimate items to be included in the cost of plant and hence in the rate base. A statement of the amounts claimed by each company and the amounts allowed herein follows:

	Original Cost (as of December 31, 1939)		
	Canadian Company	Colorado Company	Wyoming Company
Claimed by Company	$14,648,821	$14,670,749	$1,860,522[1]
Allowed herein	10,784,464	11,879,409	1,678,878
Difference	$ 3,864,357	$ 2,791,340	$ 181,674

The difference in the amounts above are large for the Canadian Company and the Colorado Company. However, they are accounted for principally by a comparatively few items, the decisions on which involve fundamental principles. These principles, which will be discussed later, relate to: (1) items formerly charged to expense (not through an accounting error) which the companies now seek to capitalize; (2) write-ups in plant accounts arising through transactions between affiliated interests; and (3) amounts paid to affiliated interests for entering into contracts. A few adjustments arise from a difference in determining the date when commercial operations first began and the balance of the items are comparatively minor adjustments and reclassifications.

A discussion of the principal items of difference between amounts claimed by the companies and those allowed herein follows:

Canadian Company

The difference of $3,864,357 between original cost claimed by Canadian Company ($14,648,821) and that allowed herein ($10,784,464) is composed of the following items:

(1) Past expenses now capitalized	$ 129,032
(2) Affiliated company profits	3,370,817
(3) Interest during construction	366,507
(4) Miscellaneous Adjustments	(1,999)
	$3,864,357

(1) Past Expenses Now Capitalized. The amount of $129,032 represents an arbitrary adjustment for general construction cost—3½% for engineering and general and

[1]This figure is book cost. Company did not introduce an original cost study.

administrative overheads, plus 1% interest—on all net property additions from 1929 to 1939. It is the amount added to the book costs of the company to arrive at its claimed original cost. Whatever costs have been incurred for these purposes heretofore have been charged to operating expenses. The amount therefore represents reaccounting (not correction of an accounting error), for the charges were made in conformity with the established accounting policy of the Company in effect at the time.[1]

(2) Affiliated Company Profits. The total affiliated company profits of $3,370,817 are comprised of three items. First, a profit of $3,120,496 on the sale of property by Amarillo Oil Company to Canadian Company: second, a profit of $121,787 on the sale of property by Master Oil and Gas Company to Canadian Company; third, a profit of $128,534 on the sale of property by Mission Oil Company to Canadian Company through Amarillo Oil Company.

All these transactions represent payments by Canadian Company for properties acquired from affiliated interests in excess of their original cost. Amarillo Oil Company is 100% owned by Southwestern Development Company as is Canadian Company. Canadian Company paid Amarillo Oil Company $5,000,000 for its gas leaseholds and wells in the Texas Panhandle field. The original cost of these properties to Amarillo Oil Company was $1,879,504. In fact, the difference between these amounts, $3,120,496, or the "write-ups," was carried on the books of Canadian Company until 1939 as "appreciation."

Similarly, the transactions involving the second and third write-ups stated above were not at arm's length and prices paid for the properties exceeded the original cost to the party first devoting them to the public service by the amounts shown.

The principle involved which requires the elimination from property accounts of intercompany profits from transactions not at arm's length is so patent as to require no lengthy discussion. Any treatment which would permit the capitalization of such amounts would open the

[1]Peoples Gas Light and Coke Company v. Slattery, 373 Ill. 31 PUR (NS) 193, 206, 1939, and Los Angeles Gas and Electric Corporation, PUR 1933 E. 317, 323.

door to the renewal of past practices of the utility industry when properties were traded between affiliated interests at inflated prices with the expectation that the public would foot the bill.[1]

(3) Interest During Construction. The Company has recorded on its books a charge for "interest during construction" computed on the basis of a construction period extending from May 1, 1927, to October 31, 1928, and upon book costs including the amount of "write-ups" heretofore discussed.[2] Directing our discussion first to the construction period to be utilized for the purpose of the computation, we find that the project became available for commercial operation prior to the date fixed by Respondent. The record shows clearly that regular deliveries of natural gas to Colorado Fuel and Iron Corporation, Public Service Company of Colorado, at the Denver city gate, and others, commenced in the latter part of June 1928, and continued thereafter. Such fact has long been regarded as establishing definitely the beginning of commercial operations. We hold that the construction period ended July 1, 1928. Little discussion is required to dispose of the inclusion of "write-ups" in the book costs upon which "interest during construction" is charged. It is obviously improper to attempt to build fictitious cost upon fictitious cost. Because of these two fundamental errors the books of the Company contain excessive charges for "interest during construction" in the amount of $366,507 and such amount is here disallowed.

(4) Miscellaneous Adjustments. The addition to plant of $1,999 is the net effect of a series of miscellaneous plant adjustments. No one of these adjustments is large, but they all represent accounting corrections or reclassifications that are necessary and proper.

In view of all the foregoing, the Commission finds that $10,784,464 is the original undepreciated cost of Canadian Company gas plant.

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[1]The Commission has steadfastly held such affiliated company profits will not be recognized. (Alabama Power Company, 1 F. P. C. R. 25, 39; Louisville Gas and Electric Company, 1 F. P. C. R. 130, 133; Northern States Power Company, 1 F. P. C. R. 329, 344.)

[2]Item (2) supra.

Colorado Company

The difference of $2,791,340 between original cost claimed by Colorado Company ($14,670,749) and that allowed herein ($11,879,409) is composed of three items:

(1) Past expenses now capitalized	$ 440,050
(2) Cost of contracts	2,352,940
(3) Miscellaneous Adjustments	(1,650)
	$2,791,340

(1) This adjustment, $440,050, is similar to that made in connection with Canadian Company original cost and discussed hereinabove. It represents items previously charged to expense in accordance with good accounting principles. Therefore, a restatement of these items resulting in their inclusion as items of legitimate original cost cannot be allowed.

(2) The $2,352,940, consisting of two items ($2,000,000 and $352,940), represents the recorded value of stock payments made to Southwestern Development Company and to Cities Service Company for entering into contracts for the purchase of gas.

In order fully to understand these two items it is necessary to go back to the agreement which provided for the construction of the "Denver Line." This was a tri-partite agreement between the Southwestern Development Company, the Standard Oil Company (N.J.) and Cities Service Company. The salient features of the agreement important to this discussion were that Cities Service Company was to secure a satisfactory franchise in the City of Denver and, if successful, the corporation to be formed by Standard

[1]There is allowed in the rate base of Colorado Company the unamortized balance of a payment made to one Arthur K. Lee for certain contracts. The principal contract related to the sale of natural gas to the municipality of Colorado Springs, which contract was about to expire at the time of purchase. There is grave doubt as to the bona fides and propriety of the transaction whereby Colorado Company acquired the contract. The record is inconclusive as to the necessity for making such an expenditure. Of the original amount of $236,666 the company has amortized $118,605 as of December 31, 1939. In view of the smallness of the item and the fact it will soon be completely amortized and thereby removed from the accounts, it is deemed preferable to allow it in the rate base rather than to reopen the record for further inquiry into its dubious nature.

Oil Company (N.J.) (Colorado Company) was to sell natural gas to two subsidiaries of Cities Service—the Public Service Company of Colorado for distribution in Denver and to Pueblo Gas and Fuel Company for distribution in Pueblo, Colorado. Southwestern Development Company agreed to form a corporation (Canadian Company) for the purpose of acquiring the Amarillo Oil Company properties and to produce and transport the gas from the field to a point of connection with the transmission company (Colorado Company). Standard Oil Company (N.J.) agreed to form a corporation (Colorado Company) for the purpose of transporting the gas from point of delivery by Canadian Company to the above named and other markets. Pursuant to this agreement the Canadian Company and Colorado Company came into being. The whole enterprise contemplated by the agreement became a reality.

Very strangely, it is now represented that Canadian Company refused to negotiate an agreement for the sale of gas by it to Colorado Company unless Colorado Company turned over to it 10,000 shares of preferred stock, having a total par value of $1,000,000, and 531,250 shares of no par common stock having a recorded value of $1,000,000. This $2,000,000 was recorded on the books of Colorado Company as cost of the gas purchase agreement. It is noted that the stock was actuallly issued to Canadian Company's nominee, the Southwestern Development Company.

The record clearly shows that the foregoing transaction resulted in an unjustified and fictitious increase of book cost of plant. In the tri-partite agreement the parent companies undertook to develop a mutually advantageous business enterprise by agreeing to create subsidiaries to carry the plan into effect. Pursuant thereto such subsidiaries were organized. It is now represented that one subsidiary, Canadian Company, refused to do what its parent had agreed upon unless it were paid $2,000,000. The Commission would be remiss in its duty if it required consumers to pay a return upon and amortize this payment.

The balance of the total amount of $2,352,940 is $352,940. This alleged cost is a result of issuing 187,500 shares of no par common stock to Cities Service Company, and is

likewise no part of legitimate original cost. It is contended that this cost was incurred because Public Service Company of Colorado and Pueblo Gas and Fuel Company, subsidiaries of Cities Service Company, the latter a party to the tri-partite agreement, would not enter into purchase contracts without such payment being made to the parent company (Cities Service Company). The stock was issued to Cities Service Company but later, on December 29, 1931, Cities Service Company sold the stock to Public Service Company of Colorado for $10.00 a share, or $1,875,000.

(3) The addition to plant of $1,650, Miscellaneous Adjustments, is the net result of a number of minor reclassifications and corrections of accounting errors required by the record.

Wyoming Company.

The difference, $42,236, between original cost claimed by the Wyoming Company of $1,721,414, and that allowed herein, $1,678,878, is comprised of the following items:

(1)	Interest capitalized on claimed non-utilized capacity	$27,475
(2)	Excessive interest during construction	7,574
(3)	Miscellaneous Adjustments	7,187
		$42,236

(1) This amount, $27,475, represents interest computed on a proportion of the total cost of the property south of Fort Collins, Colorado, estimated by the company to be in excess of that required to handle the business actually done during the period. This capitalization of a fictitious and arbitrary interest amount after the close of the construction period is clearly not justified. Interest ceases to be a cost of the original plant when commercial operations begin.

(2) This adjustment, $7,574, is necessary to restate interest during construction on the basis of simple interest at 6% per year applied to the adjusted monthly construction expenditures on each job for the period from the date of the initial expenditure to the date of operation or date ready for service.

(3) This total, $7,187, includes an adjustment of $5,715 for excessive construction overheads capitalized and $1,472 of miscellaneous adjustments, none of which can be treated as cost of plant.

Accrued and Annual Depletion, Depreciation and Amortization.

The determination of the annual allowances (annual expenses) for depletion, depreciation and amortization (sometimes referred to jointly as depreciation) and the accrued depreciation in the properties must be consistent. This is a simple statement of what should be regarded as a universal truth in the regulation of rates. It is so regarded by the overwhelming majority of regulatory authorities of the country, and by students and writers on the subject. It is so regarded by sound business management outside of the utility rate case field.

But, the principle of consistency is flagrantly violated in the evidence introduced by the companies in this proceeding. The accrued depreciation used by the companies is based upon observed percent condition of the property, which in a large measure is merely observed deferred maintenance. (Accrued depletion as determined by Canadian Company is an exception. It is based on estimates of original and remaining reserves.) Under the observation theory a high observed percent condition and consequently a low existing accrued depreciation result for many items of plant right down to the instant before they suffer the breakdown or obsolescence requiring retirement.

However, even this theory, if carried out consistently, might be considered as having some elements of reasonableness. The small observed depreciation would find its counterpart in an equivalently small annual charge to operating expenses to cover the yearly added amount of observed depreciation. But, this is not done. Instead another theory is advanced by the companies as a basis for determining the annual charge to operating expenses. In determining expenses the physical aspects are neglected and the problem becomes one of determining the probable length of life of the enterprise—an economic aspect. The future always may be considered speculative and manage-

ment can always be considered only reasonable if it conservatively judges the future. Thus, estimates of comparatively short life result. It then argues that the annual charges to expenses for depreciation (amortization of the investment) should be sufficient to amortize the remaining investment (cost new less observed depreciation) over the remaining short life of the enterprise. Thus, in calculating expenses, chargeable to the consumer, high depreciation charges are computed; in computing return to the company the opposite prevails, a small deduction from the cost of plant is computed.

The evidence of the Commission staff treats accrued and annual allowance for depreciation on a simple, consistent, and reasonable basis. It is the application of the service life principle. Property begins its inevitable march to retirement the moment it is placed in service. Its total life in service can be reasonably estimated with due consideration given to such influencing factors as probable life of the enterprise, gas reserves, obsolescence and inadequacy. The annual charge to expenses should be the best possible measure of the total service value of that property used up in a year. The net accumulation of these annual charges is the best possible determination of the expired outlay, hence the best measure of the actual depreciation existing in the property as of that date.

In an attempt to justify the unreasonable inconsistency in method of determining annual and accrued depreciation, the companies argue that a distinction must be made before and after passage of the Natural Gas Act. This argument is without merit for depreciation accrues regardless of any statute. The companies, of course, accrued depreciation in their books prior to the passage of the Act. The reserve requirement deducted herein is far less than that actually accrued. A comparison of the book reserves for depreciation, with that used herein, as of December 31, 1939, follows:

	Depreciation Reserve—December 31, 1939		
	Canadian Company	Colorado Company	Wyoming Company
Per Books	$2,995,528	$4,994,352	$486,406
Per This Opinion	1,480,948	2,674,805	395,944

The above comparison clearly reveals that by adoption of the principles announced herein the reserve is less than the amounts now on the books of the companies. They are benefited to the extent of the differences.

Aside from the question of principles there remain two major questions which have a direct influence on both the accrued and annual depreciation. These are (1) natural gas reserves, and (2) probable length of life of the enterprise. The two questions are related and will be discussed jointly in the following section under "Gas Reserves."

Gas Reserves

Almost one-third of the 16,000 page record deals with testimony concerning the natural gas reserves in the Texas Panhandle field and the remaining recoverable gas reserves of Canadian Company. For us to attempt specifically to discuss the many complex and involved questions pertaining to the remaining recoverable gas reserves of the field as a whole or of Canadian Company would serve only unduly to extend this opinion and cause to be treated at length a matter that, from the position it occupies in this proceeding, fails to warrant such extensive treatment. We have carefully considered all of the evidence of record and believe that the question can be resolved in relatively simple fashion.

Three estimates are of record for the field as a whole. The Company Witness Thompson gave it as his opinion that as of January 1, 1939, at an assumed abandonment pressure of 25 pounds, there could be recovered 9,532,027,596 MCF of gas at 16.4 pounds pressure base. The Company Witness Hughes gave it as his opinion that as of August 1, 1939, at an assumed abandonment pressure of 25 pounds, there could be recovered 8,840,132,111 MCF of gas at 16.4 pounds pressure. The Commission's staff Witness Hammer gave it as his opinion that as of August 1, 1939, at an assumed abandonment pressure of 25 pounds, there could be recovered 22,420,000,000 MCF of gas at 14.65 pounds pressure. In addition, the Witness Hammer upon the same basis estimates the recoverable reserve of Canadian Company to be 3,645,000,000 MCF.

We are convinced that, without adjustment, none of the

foregoing estimates can be accepted as the amount of natural gas reasonably expected to be recovered from the Texas Panhandle field. It seems clear from the evidence that the Company's estimates are too low; the estimates of the Commission's staff too high. We reach that conclusion because estimates of the Company witnesses based on the "porosity sand thickness" method or "open flow" do not appear to have been founded on reliable or proper data. Further than that it appears that when adequate development of a field has been reached and satisfactory pressure and production data are available, such as is found to be the case in the Texas Panhandle field, the pressure decline method, when properly used, is to be desired over those methods used by the Company witnesses depending as they do solely upon matters of judgment.

The major criticisms made by Canadian Company of Commission staff estimates were: (1) the pressure decline method cannot be applied to the Texas Panhandle field, (2) the use of quadrants in applying the method was incorrect, (3) account was not taken of the migration of gas under Canadian's acreage, (4) a 25 pound abandonment pressure is too low, and (5) account was not taken of the early unmetered production in the field.

The pressure decline method is recognized as a satisfactory method of estimating gas reserves in a field that is depleted as much as 15% or more and where reliable pressure and production data are available. The Texas Panhandle field meets these qualifications. It is a well developed field and the pressure and production records maintained by the Texas Railroad Commission are adequate and satisfactory. The estimates of Canadian Company witnesses based on porosity, pay thicknesses and open flow were not founded on proper data and must be considered essentially unreliable.

The dispute concerning the accuracy of the mathematical result following the method used by Commission staff of dividing the entire field into quadrants and averaging these quadrants is not clearly resolved on the record. The Commission recognizes, however, that for the field as a whole the Commission staff arrives at an average of 15,400 MCF of remaining reserves per acre as compared with only 11,600

MCF of remaining reserves per acre under Canadian Company acreage. If the method of averaging of quadrants is incorrect, it certainly has favored the company position of lower reserves. The record shows that Canadian acreage is considered among the very best in the entire field.

The differences of opinion as to whether Commission staff estimate allowed for the migration of gas from Canadian Company acreage occupies considerable space on the record. The pressure decline method, theoretically, automatically accounts for any migration. If the iso-baric maps are properly drawn this factor is accounted for.

The Commission has considered Canadian Company's remaining criticisms of the Commission staff estimate, abandonment pressure and unmetered production. There are many factors which will influence the pressure at which wells will be abandoned. The time of abandonment is so far in the future, however, that the answer at this time must be somewhat speculative. Similarly, any estimate of the amount of unmetered gas produced and wasted in the first years of the field must also be somewhat speculative.

After weighing all the pertinent facts of record and making due allowance for the criticisms of the estimate submitted by Commission staff, the Commission concludes that Canadian Company's remaining recoverable reserves, as of December 31, 1939, are not less than 2,800,000,000 MCF at 14.65 pounds pressure base and an abandonment pressure of approximately 50 pounds.

At the present and expected future rate of production of about 55,000,000 MCF a year, the 2,800,000,000 MCF of recoverable reserves will last 53 years. This determination, therefore, settles the last remaining question, that of the probable length of life of the enterprise. For purposes of applying the service life principle for depreciable property it is necessary to make certain that the life of the enterprise will exceed that of the longest life of any major unit of property. A life of 50 years, from 1928, or a remaining life, from December 31, 1939, of 38 years has been assigned to main line pipe. Thus, the remaining estimated 53 year life of reserves leaves an ample margin for a substantial increase in rate of production.

For purposes of depleting the cost of production plant the "production method" is used. Each MCF of gas produced carries with it a unit allowance for depletion expense. If the rate of production increases, the allowance for depletion increases proportionately. Thus, irrespective of the time within which the remaining reserves are used up, total investment in production facilities will be returned to the company in depletion expense allowances.

The Commission recognizes that an expected remaining life of 38 years for an extractive industry may be considered long. Canadian and Colorado Companies' contentions, however, that the business will be abandoned by 1956, or in 16 years from 1940, are not substantiated by any reliable evidence. The Commission takes note of the fact that the Texas Panhandle field and the adjacent Hugoton field are the largest known reservoirs of natural gas in the world. Natural-gas companies relying upon these fields, directly or indirectly, for their source of supply may be expected to continue in business for many years to come.

Parenthetically, it may be noted at this point that it makes little difference whether the service life principle based on the longer expected life, or the company's amortization principle based upon a 1956 expiration, is adopted. The net results as to excess earnings are substantially the same, provided consistency is maintained in computing the annual expense and the accrued depreciation and depletion reserve requirements. This result is a striking illustration of the fact that if consistency is followed in the treatment of accrued and annual depreciation or amortization, reasonable results may be expected, almost irrespective of the method or theory adopted.

Conclusions as to Depreciation, Depletion and Amortization.

In view of the foregoing, the Commission adopts herein the service life principle for *determing* annual and accrued depreciation and the production method for determining annual and accrued depletion of production facilities, using 2,800,000,000 MCF as the remaining recoverable reserves as of December 31, 1939. No serious controversy arose over the estimated service lives used by the Commis-

sion staff for the various classes of property other than main line pipe.[1] These estimates stand as reasonable, and are adopted. Using these estimates of service lives, the 2,800,000,000 MCF of remaining recoverable reserves[2] and the plant costs adopted as set forth hereinabove, the following amounts are obtained as proper for annual depreciation, depletion and amortization expense and accrued depreciation, depletion and amortization.

	Canadian Company	Colorado Company	Wyoming Company
As of December 31, 1939			
Accrued Depletion	$ 653,681		
Accrued Depreciation	1,480,948	2,674,805	395,944
Accrued Amortization		118,605	
Total	$2,134,629	$2,793,410	$395,944
Year 1939			
Depletion Expense	$ 80,969		
Depreciation Expense	157,774	268,305	38,280
Amortization Expense		13,890	
Total	$ 238,743	$ 282,195	$ 38,280

The amotization shown above for Colorado Company covers the cost of the contract for the sale of gas to Colorado Springs. The amount of amortization accrued and the annual allowance are both in accordance with the present practice of Colorado Company in accounting for the total cost of $236,666.

Rate Base.

Two factors in addition to original cost and accrued depreciation must be considered before the rate base for each company can be determined. These are: (1) working capital and (2) allowance for property additions since December 31, 1939.

[1]The controversy on the estimated life of main line pipe was involved in the estimates of natural gas reserves and the remaining life of the enterprise.

[2]For purposes of depleting gas well construction costs the reserves under the wells, rather than those under the entire acreage were used. Based on the total 2,800,000,000 MCF these reserves were determined to be 1,724,000,000 MCF as of December 31, 1939. This is in accordance with the alternative method of depletion submitted in evidence by Commission staff.

Working Capital

There is not a large difference between the working capital requirements determined by Commission staff and by the respective companies. Comparisons of these amounts are shown in the following table:

	Working Capital Requirements. Canadian Company	Colorado Company	Wyoming Company
Claimed by Company	$190,000	$120,000	$45,490
Commission Staff	150,738	109,065	16,235
Difference	$ 39,262	$ 10,935	$29,255

The differences shown are largely due to the inclusion by the companies of an allowance for minimum bank balances. These cash balances need not be provided for separately and were not included in the Commission staff estimates. The record is clear that delayed expense items, such as income taxes, provide ample funds for this purpose. Accordingly, the amounts determined as reasonable by Commission staff are adopted herein.

Property Additions

There is evidence in the record of probable future additions to plant for all three companies. A number of these additions, estimated at the time, have since been made. Allowance for these additions appears reasonable. Accordingly, an allowance for plant additions to December 31, 1941, is made herein. The allowances for the three companies are as follows:

	Additions Allowed 12/31/39 to 12/31/41
Canadian Company	$571,923
Colorado Company	337,000
Wyoming Company	78,813

It is contended that future additions beyond those of 1941 and as far as 1947 should be considered. At this time such probable future additions must still be considered speculative. Furthermore, in allowing the above additions without a concomitant deduction for additional depreciation and depletion reserves accumulated during the same years, the Commission is treating the companies more than fairly.

The estimated reserve accruals for two years for Colorado Company are larger than the above additions and Canadian Company's estimated reserve accruals for two years are almost as large as the above additions. For any long period of time reserve accruals will be larger than additions; hence the rate base would be lower if both items were considered. (After a natural-gas company has reached full commercial operations, the net investment—that is, cost less related reserves—tends to decrease with the lapse of time and with production.)

Contributions in Aid of Construction

Wyoming Company has on its books amounts, when properly classified, representing Contributions in Aid of Construction. The payments were made by customers for construction of certain facilities incident to service to such customers. The evidence is that the average balance of such account was $12,183. The amount is no longer refundable. It represents no investment by Woming Company. Accordingly, the amount should be deducted from the plant costs here to be utilized as a rate base.

Going Value

The Wyoming Company contended that an amount of $175,000 should be added to cost of plant for going value. The amount is a judgment figure wholly unrelated to any costs or outlays. This Commission and regulatory agencies in general have consistently condemned the arbitrary additions to the rate base of such fictitious element of value. It is significant that neither Canadian Company nor Colorado Company introduced any such claim.

The amount claimed by Wyoming Company for going value is deemed unjustified and is not included in the rate base.

Conclusions as to Rate Bases

There follows a summation of the rate base for each company based upon the conclusions reached herein as to each of the items involved.

	Canadian Company	Colorado Company	Wyoming Company
Original Cost as of Dec. 31, 1939	$10,784,464	$11,879,409	$1,678,878
Less: Accrued Depreciation, Depletion and Amortization	2,134,629	2,793,410	395,944
Depreciated Original Cost	$ 8,649,835	$ 9,085,999	$1,282,934
Plus: Working Capital	150,738	109,065	16,235
Additions to Dec. 31, 1941	571,923	337,000	78,813
Less: Customer Contributions			(12,183)
Prudent Investment	$ 9,372,496	$ 9,532,064	$1,365,799

The Commission therefore adopts the foregoing prudent investment amounts as the rate base for each company.

Revenues and Expenses.

None of the companies offered in evidence a complete income statement for any period of its operations. Fragmentary sections thereof, such as revenues, operating expenses and taxes were presented separately, in numerous exhibits. Canadian Company's operating costs were stated in accordance with the terms of its contract with Colorado Company rather than on the basis of recognized principles of expense classification. Colorado Company showed revenues and expenses separately for the Denver line and the Texoma Natural Gas Company deliveries. Wyoming Company introduced an income statement but omitted therefrom all consideration of annual depreciation expense.

The only complete income statements are to be found in Commission staff exhibits. These exhibits contained a complete analysis covering each of the years, 1937, 1938 and 1939. Brief summary statements were also introduced for the twelve months ended September 30, 1940. A comparative analysis of these statements reveals little difference in the net operating results for 1939 compared with either

the three year average or the 12 months ended September 30, 1940.

The Commission is aware of the substantial increase in natural gas sales due to the country's war efforts. It also takes note of the increasing costs of operation. In the natural-gas industry, however, operating labor and materials are a comparatively small part of total costs. All factors considered, it may reasonably be expected that revenues will increase as rapidly, if not more rapidly, than costs for all three companies. Nevertheless, for purposes of this order, 1939 revenues and costs are considered to be representative of the relationship that will exist between these items in the immediate future. Prediction of future conditions, particularly under present emergency conditions, is beset with more than average difficulty. Use of 1939 figures, however, undoubtedly resolves most of the doubts as to future operation conditions in favor of the companies.

Operating revenues as reported by the companies and the staff are essentially in agreement. The staff adjusted revenues so as to state all deliveries and revenues on a calendar year basis. These adjustments are minor and are accepted as reasonable. The 1939 operating revenues adopted herein for each of the three companies follows:

	Operating Revenues 1939
Canadian Company	$2,393,387
Colorado Company	5,773,010
Wyoming Company	828,941

Depreciation and tax expenses will be considered along with operating expenses in the following discussion. The most important single item of expense concerning which a wide difference exists between Commission staff and each of the companies is the annual allowance for depreciation expense. This has been discussed fully hereinbefore and appropriate allowances determined.

Commission staff recommended a number of adjustments to operating expenses and taxes as found recorded on the books of the companies. In some cases they did not adjust the items but suspended them for subsequent Commission decision. A brief discussion of the adjustments and sus-

pensions found reasonable and adopted herein follows for each company.

Canadian Company

To the extent that any comparison is possible, there is only a small difference between operating expenses as shown in Canadian Company exhibits and as shown in Commission staff exhibits. But, as stated previously because of the fragmentary nature of Canadian Company's exhibits, it is necessary to deal with the Commission staff figures exclusively.

For 1939 Commission staff reported operating expenses, as adjusted, of $665,287 and before adjustments of $746,556. Almost the entire adjustments are concerned with residual operations expenses. With the exception of the adjustment of $11,722 in connection with the joint operations of the Texoma Natural Gas Company's Fritch gasoline plant and an item of $223 of non-recurring expense, the balance of the staff expense adjustments are found reasonable. Unless the balance of the adjustments are made, operating expenses are overstated by the amount thereof. As a result of the above changes to the staff adjusted amount of $665,287, operating expenses for 1939 are found to be $677,232.

A further deduction of $6,614 for delay rental expense is found necessary. This amount was included in expenses by Commission staff since an adjustment to the plant account was made of $151,591 for past delay rentals capitalized. This plant adjustment was not adopted herein and it is, therefore, necessary to deduct the amount of $6,614 from 1939 expenses. After deducting this amount, a balance of $670,618 is obtained for operating expenses.

To this amount for operating expenses of $670,618, two items must be added. First, exploration and development costs of $41,573 for 1939. Second, an allowance for rate case expense. Actual rate case expense for 1939 was suspended by Commission staff for Commission consideration. It is customary to amortize such expenses over a period of 5 years, or more. Canadian Company in its exhibits claimed $41,000 a year for 5 years as necessary to cover its

total costs. A close scrutiny of some of the rate case expenses might show certain expenditures as unreasonable charges against rate payers. For purposes of this order, however, the Commission adopts the full annual amount claimed by the company as well as the five year amortization period.

The addition of the above two items results in an amount of $753,191 as the 1939 operating expenses of Canadian Company, which amount is considered as reasonable.

The total taxes of Canadian Company for 1939, including Federal income taxes, were $177,162. Commission staff deducted an amount of $2,021 of Federal capital stock tax and suspended all Federal income tax of $66,403 for further consideration. The Commission staff deduction is not adopted and the suspension is also reinstated.

Commission staff suspended all Federal income taxes. This was done to call attention to the fact that a tax adjustment would be necessary if the Commission changed rates, and, therefore, profits. The reduction in charges and consequent reduction in taxable income ordered hereinafter would result in a substantial decrease in income taxes at the 1939 rates. However, tax rates have increased over those of the past. Accordingly, the full amount of the 1939 income taxes of $66,403 are allowed herein and these together with increase in business are considered as fair estimates of the future as can now be made.

A summary of the operating re ons for 1939 found proper and reasonable herein n Company follows:

Operation expense	$ 753,191
Depreciation expense	157,774
Depletion expense	80,969
Taxes	177,162
Total Revenue Deductions	$1,169,096

The deduction of this amount from the 1939 revenue of $2,393,387 leaves a balance of $1,224,291 as the 1939 income available for return.

Colorado Company

Again, for reasons hereinbefore set forth, it is necessary to deal exclusively with expenses as shown by Commission staff exhibits. Operating expenses, as adjusted, for 1939 were reported as $425,019, and before any adjustments, (but after reclassifications to conform to the system of accounts), $432,643. These expenses are exclusive of the cost of purchased gas for 1939 of $2,112,951.

Commission staff adjustments to operating expenses consist chiefly of a deduction of $7,360 from transmission line maintenance. The evidence on record tends to support this deduction. However, for purposes of this order the operating expense of $432,643, as shown by the Colorado Company on its books (reclassified) is adopted.

Adding to this operating expense of $432,643, an allowance for amortizing expenses in connection with these proceedings is considered reasonable. During 1939 Colorado Company reported expenses of $58,290 in connection with the rate case. These expenses were suspended by Commission staff for further consideration. In its evidence Colorado Company claimed an annual allowance of $43,000 for a five-year period to cover its total estimated expenses attributable to the rate case. This amount is accepted herein as the best estimate on record as to a proper allowance for rate case expense. The addition of this allowance to operating expenses of $432,643 results in a total allowance of $475,643.

Total taxes, including Federal and State income taxes, for 1939 were $637,641. Commission staff deducted an amount of $22,693 representing a portion of Federal capital stock tax as not properly includible in gas expense. Because of the general tax situation, the Commission allows this portion of capital stock tax as a proper charge.

Federal and State income taxes for 1939, included in the total taxes of $637,641, are $419,040. These income taxes were suspended by Commission staff for further consideration. For reasons given in discussing a similar item of expense of the Canadian Company, the item is allowed in full.

There is no controversy as to the 1939 actual cost of purchased gas for resale of $2,112,951.[1] This is the largest and predominating item of operating costs. The reasonableness of this charge made by Canadian Company is, of course, involved in this case. Any adjustment in Canadian Company rates and charges by order will result in an adjustment of this cost item.

A summary of the revenue reductions found proper and reasonable for the Colorado Company follows:

Operating expenses	$ 475,643
Cost of purchased gas	2,112,951
Depreciation expense	268,305
Amortization expense	13,890
Taxes	637,641
Total Revenue Deductions	$3,508,430

The deduction of this amount from the 1939 revenue of $5,773,010 leaves a balance of $2,264,580 as the 1939 income available for return.

Wyoming Company

Essentially the only difference between company and Commission staff statement of operating expenses is in the staff suspension of all rate case expense. During 1939, a total of $14,282 was reported as rate case expense. Wyoming Company's estimate of rate case expense for 1939, 1940 and 1941 totaled approximately $87,660. On the basis of amortizing this expense over a five-year period, an annual allowance of $17,500 is made.

Commission staff recommended deductions from operating expenses for 1939 of $2,579 are accepted. Included in this total is $1,657 representing expenditures for entertainment and donations not properly includible in operating expenses. The balance, $922, represents a series of minor adjustments.

Allowing the $17,500 for rate case expense and accept-

[1]Total gas purchased was $2,126,330. The difference, or $13,379, represents gas used in company operations and is included in operating expenses.

ing the miscellaneous adjustments of $2,579 results in total operating expenses for 1939 of $85,364. This amount is exclusive of the cost of purchased gas.

The 1939 cost of purchased gas, after adjustment to a calendar year basis, was $498,103. During the year the rate for purchased gas from Colorado Company increased from 20 cents per MCF to 22-1/2 cents per MCF. The difference between the amount paid in 1939 and the cost for the full year 1939 on the 22-1/2 cent rate is $23,120. Operating expenses have not been increased by this amount and need not be increased since the reasonableness of this 22-1/2 cent rate of Colorado Company as well as its other rates for resale gas are under consideration in this proceeding. In the allocation of costs, discussed in the following section, appropriate consideration is given to this inter-relationship of revenues of the selling company and costs of the purchasing company.

As in the case of taxes for Canadian Company and Colorado Company, and for the same reasons set forth in the discussion thereof, Wyoming Company's actual taxes for the year 1939 are adopted herein. For 1939 the total taxes, including income taxes, were $57,106.

A summary of the operating revenue deductions for 1939 found proper and reasonable herein for Wyoming Company follows:

Operating expense	$ 85,364
Cost of gas purchased	498,103
Depreciation expense	38,280
Taxes	57,106
Total Revenue Deductions	$678,853

The deduction of this amount from the 1939 revenue of $828,941 leaves a balance of $150,088 as the 1939 income available for return.

Conclusions as to Income Available for Return.

For convenience, there follows a tabulation of the operating revenue, operating revenue deductions and resulting income available for return for the year 1939 for all three companies:

	Canadian Company	Colorado Company	Wyoming Company
Operating Revenue	$2,393,387	$5,773,010	$828,941
Operating Revenue Deductions			
Operating expenses	$ 753,191	$ 475,643	$ 85,364
Cost of gas purchased		2,112,951	498,103
Depletion	80,969		
Depreciation	157,774	268,305	38,280
Amortization		13,890	
Taxes	177,162	637,641	57,106
Total Deductions	$1,169,096	$3,508,430	$678,853
Income Available for return	$1,224,291	$2,264,580	$150,088

Rate of Return.

There is no exact or fixed formula for determining a reasonable rate of return. In the final analysis the rate of return fixed must be the Commission's best judgment of what is fair, based on the evidences of record and guided by the basic facts required by law to be considered. These basic facts are best set forth in the opinion of the United States Supreme Court in Bluefield Waterworks & Improvement Company v. Public Service Commission of West Virginia, 262 U. S. 679. The requirements stated that consideration be given to the returns earned by like investments which are attended by corresponding risks and uncertainty in the same vicinity and over the same period of time are well known.

The record contains a great amount of testimony on rate of return. Four witnesses for the companies and one witness for Commission staff offered exhibits. Opinion of company witnesses indicates a fair rate of return to be not less than 8%. Evidence of Commission staff witness indicates a fair rate of return as not more than 6-1/2%.

Commission staff exhibits contained complete and comprehensive studies of the history and trend of interest rates, stock yields, stability of earnings of public utilities and

other enterprises, general economic conditions and local conditions in the area of the market served. In addition, general statistics of the natural gas industry and present facts concerning the ownership, issuance, prices and yields of securities of natural gas pipe line companies, were introduced. Company witnesses relied primarily upon judgment or a far more limited study of financial experience of utilities, natural gas companies and other enterprises, both in the past and for the present. Nevertheless, the exhibits of practically all witnesses show that over-all returns are lower than before and that the returns being demanded by investors are among the lowest that have ever existed.

Canadian Company has a long-term, and essentially cost of service contract, with its affiliate, Colorado Company. Colorado and Wyoming Companies' sales are also principally to subsidiaries or affiliates and to stable markets. Colorado Company's principal industrial sale to Colorado Fuel and Iron Corporation is made to an affiliate. All these facts materially reduce basic business risks that might be present under other circumstances.

Parenthetically, one important difference exists between the circumstances in this case and in the Natural Gas Pipeline Company case. Due to the very large sales made to Colorado Fuel and Iron Corporation the proportion of Colorado's total industrial sales to its city gate sales for resale is very much larger than for Natural Gas Pipeline Company. Rates to such industrials are not subject to the jurisdiction of this Commission and are limited in a large measure by costs of competitive fuels, such as coal and oil. As it will be shown subsequently, a portion of the total earnings in excess of a fair rate of return for Colorado Company are properly allocable to these main line customers but no reduction in these rates is ordered. The amount of these earnings in excess of 6-1/2% rate of return is approximately $131,000. If Colorado Company retains these earnings in excess of a 6-1/2% rate of return on its sales to these customers, its rate of return on its entire business is increased to approximately 8% after placing into effect the reductions in rates ordered herein.

Evidence of record shows that the natural gas industry

is now recognized as a major utility industry which has passed its experimental and development period. It is now seasoned. Its securities are attractive to, and held in large amounts by institutional investors and recent financing has been at low interest rates. The Commission takes note of the fact that in 1940 Colorado Company refinanced its outstanding bonded indebtedness at an interest rate of 2¾%.

After consideration of all the testimony of record relating to the fixing of a fair rate of return, the Commission concludes that 6½%, on the bases herein found to be reasonable, is the maximum rate of return that can be considered fair in this case for all three companies.

The Supreme Court in its decision of March 16, 1942, in the case of Natural Gas Pipeline Company of America, et al v. Federal Power Commission, fully supports this view[1].

Conclusions as to Amount of Excessive Returns.

Application of this rate of return to the respective rate bases of each company as determined herein results in the amount of return considered as reasonable for each company. The following summary tabulation shows the rate base, income available for return, reasonable return (6½% on rate base) and excessive return for all three companies.

	Canadian Company	Colorado Company	Wyoming Company
1. Rate base	$9,375,000	$9,535,000	$1,366,000
2. Income available for return	1,224,291	2,264,580	150,088
3. 6½% on rate base	609,375	619,775	88,790
4. Excessive returns (2 minus 3)	614,916	1,644,805	61,298

[1]In its discussion of "Fair Rate of Return" in that case, the Court states:

"The Commission found that '6½ per cent is a fair annual rate of return upon the rate base allowed,' which it had characterized as 'a generous allowance.' The courts are required to accept the Commission's findings if they are supported by substantial evidence. §19(b). We cannot say on this record that the Commission was bound to allow a higher rate. * * *

"The business is in the same position as other similar businesses with respect to increased taxation, inflation and costs of operation. Other factors such as credit risks, risks of technological changes, varying demands for product, relatively small labor requirements, and conversion of inventory into cash compare more favorably. After a full consideration of all of these factors and of expert testimony, the Commission concluded that the prescribed reduction in revenues was just and reasonable, and that the 6½% was a fair rate of return."

Allocation of Costs.

It is readily apparent that the foregoing determination of earnings in excess of a reasonable return, by Companies, is based upon all the components of a rate case, in effect at the time, specifically applicable to each of the Companies as separate operating entities. This has been necessary because there are present in the proceeding three separate and distinct rate cases.

However, to stop there is to ignore realities. The entire project, although involving facilities of three corporate entities, is, for all practical purposes, a single project now designed to produce, gather, transmit and sell natural gas from the Texas Panhandle field to consumers along the line as far north as Cheyenne, Wyoming. The operation of the project is such that it is impossible, for example, to alter the rates of Canadian Company without simultaneously affecting the reasonableness of the rates of Colorado Company. Likewise the rates of Colorado Company cannot be altered without affecting the rates of the Wyoming Company.

Accordingly, if the rate-payer is to receive all to which he is justly entitled, we are compelled to determine Colorado Company's proportionate share of the reduction ordered for Canadian Company in the sum of $614,916 and to cause that amount plus the excess earnings of Colorado Company in the sum of $1,644,805 to be passed on to its customers. In turn the rates of Wyoming Company must be revised downward to reflect the saving in gas purchased as a result of the foregoing plus its previously determined excess earnings in the amount of $61,298. The orders that we adopt will be designed to accomplish that result.

The Commission is aware that in an investigation such as this it is incumbent on it to determine the reasonableness or unreasonableness of the rates and charges subject to its jurisdiction. This requires that the total costs of operations, including depreciation, taxes and a fair return, be distributed among the various customers served, individually or by appropriate groups. To the extent that such costs allocated to sales under the Commission's jurisdiction are less than revenues received, the rates and charges made are

unjust and unreasonable, and revenues must be reduced accordingly.

It does not follow, from this obligation of the Commission, that an allocation of physical property or portions thereon, must be made, before any excessive returns are determined, as seems to be the contention of the companies. In fact, the fragmentary presentation by the companies of revenues and expenses particularly, is rooted in the attempt to make property allocations first and as a starting point for all subsequent exhibits and testimony. Nowhere in the entire evidence submitted by Canadian and Colorado Companies is there a complete presentation of the entire operations of the company broken down between jurisdictional and non-jurisdictional operations.

All that can be accomplished by an allocation of physical properties can be attained by allocating costs including the return. The latter method is by far the most practical and business-like.

Canadian and Colorado companies submitted a number of so-called allocation studies. Each is premised on a different theory or principle, and starts with the Denver line as distinct from other operations. These theories varied from assuming a field price for gas as the prevailing market price, to the construction and operation of a separate line for city gate resale deliveries only. For the most part the assumptions made either do not square with realities or are patently unreasonable as applied to properties and operating conditions such as those concerned.

Commission staff exhibits on cost allocation followed principles that have long been recognized as reasonable in the public utility field and are widely accepted. Therein costs are divided essentially into two groups, fixed and variable. Fixed costs are largely joint costs which do not vary with volume of sales. The total amount of such costs are largely proportional to the maximum demand on the system or system capacity. Accordingly, these costs have been allocated basically in proportion to each customer's responsibility for the peak day demand. Variable costs are largely those that vary proportional to output or volume of

sale. Accordingly, these costs have been allocated in proportion to volume of gas purchased by each customer.

The principles and methods of cost allocation presented by Commission staff are obviously the most appropriate and reasonable for Canadian and Colorado Companies. Applying the physical and operating data submitted in evidence by Commission staff to total costs for each company results in the allocations shown in the following table. The total cost of service for Colorado Company is the amount found reasonable herein except for purchased gas. The actual cost of gas purchased from Canadian Company of $2,126,000 is eliminated and there is substituted the proper allocated cost of $1,575,000. This is a reduction of $551,000. This amount added to the excess returns of $1,645,000, based on the present cost of gas, makes a total of $2,196,000 as the new excess earnings over 6[illegible]% rate of return.

Canadian Company.

Customers	Revenue	Allocated Costs	Excess Revenue Over Costs
Colorado Company	$2,126,000	$1,575,000	$ 551,000
Clayton Gas Company	25,000	15,000	10,000
Amarillo Oil Company	205,000	152,000	53,000
Company Use	29,000	28,000	1,000
Total	$2,385,000	$1,770,000	$ 615,000
Miscellaneous Operating Revenues	8,000	8,000	.....
Total	$2,393,000	$1,778,000	$ 615,000

Colorado Company.

Customers	Revenue	Allocated Costs	Excess Revenue Over Costs
Direct Industrial Sales	$1,277,000	$1,162,000	$ 115,000
Sales to Public Authorities	49,000	33,000	16,000
Sales to Other Gas Utilities	3,062,000	1,652,000	1,410,000
Natural Gas Pipeline Company	1,376,000	721,000	655,000
Total	$5,764,000	$3,568,000	$2,196,000
Miscellaneous Operating Revenues	9,000	9,000	.....
Total	$5,773,000	$3,577,000	$2,196,000

Canadian Company sales to Colorado Company and to Clayton Gas Company are made under rate schedules on file with the Commission, FPC Rate Schedules Nos. 1 and 2, respectively, and are under its jurisdiction. As indicated above, revenues from these sales exceed the costs by $561,000. Accordingly, the Commission finds the Canadian Company's rates and charges under its FPC Rate Schedules Nos. 1 and 2 unjust and unreasonable and by order hereinafter entered requires the company to reduce its rates and charges by that amount.

All Colorado Company sales classified as "Sales to Other Gas Utilities" and its sales to Natural Gas Pipeline Company are made under rate schedules on file with the Commission, and are under its jurisdiction. As indicated above, total revenues from these sales exceed costs by $2,065,000. A distribution of this total between resale customers and to Natural Gas Pipeline Company is shown in the attached Exhibit A. Accordingly, the Commission finds the Colorado Company's rates and charges under its Rate Schedules Nos. 1, 2, 3, 4, 5, 6, 7, 8, and 9 unjust and unreasonable and by order hereinafter entered requires the company to reduce these rates and charges by the amount of $2,065,000 annually.

Colorado-Wyoming Gas Company.

In preparing its allocation of costs for Wyoming Company, Commission staff departed from the use of the system peak day for allocating demand (fixed) costs and combined the separate class peaks of resale customers and of main line industrial customers. This method is commonly used, but under the particular circumstances surrounding the deliveries of gas to the industrial customers involved, a variation from that method as hereinafter set forth would be in keeping with the Company's operations. The Colorado Portland Cement Company, the principal main line industrial user, is curtailed regularly during system peak days. Its demand on the system peak day is, in our opinion, a proper measure of its proportionate share of demand costs than its highest off-peak demand. Accordingly, the principles and methods of cost allocation presented by Commission staff are adopted with the modification that the coincident demands of all customers on the system peak day are used, and with exception of deliveries to Highway Gas Company.

Deliveries to Highway Gas Company are for all practical purposes an exchange of gas with Goodstein Pipeline Company. The total amount of revenue involved is less than $700 per year. In view of these facts no attempt was made to make a special cost study and costs have been assumed to equal revenues.

The total costs of Wyoming Company to be allocated are those found reasonable herein with the exception of the cost of purchased gas. As shown in Exhibit A attached, the charges made by Colorado Company to Wyoming Company exceed costs by $98,000. A reduction of this amount ordered herein reduces Wyoming Company's total costs (including return) from $768,000 to $670,000 and increases the amount of excess returns as shown in the previous section on "Rate of Return" from $61,000 to $159,000.

A summary of the results of this allocation of costs follows:

Customers	Revenue	Allocated Costs	Excess Revenue Over Costs
Direct Industrial Sales	$ 236,000	$ 201,000	$ 35,000
Sales to Public Authorities	11,000	6,000	5,000
Sales to Other Gas Utilities	582,000	463,000	119,000
	$ 829,000	$ 670,000	$ 159,000

All Wyoming Company "Sales to Other Gas Utilities" are made under rate schedules on file with this Commission and are under its jurisdiction. As indicated above a total revenue from these sales exceed costs by $119,000. The balance of the excess revenues (allocated to other customers) is $40,000 which is not passed on in rate reductions will increase the overall rate of return earned by Wyoming Company from 6½% to approximately 9½%.

The amount of the reduction in charges determined above are materially dependent upon the reduction in charges of Colorado Company to Wyoming Company. The Commission order entered herein grants Wyoming Company 30 days from and after the effective date of the new rates required to be filed by Colorado Company for the filing of its own ordered reduced rates.

The Commission finds Wyoming Company's rates and charges under its FPC Rate Schedule Nos. 1, 2, 3, 4, and 5 unjust and unreasonable and, by order hereinafter entered, requires the company to reduce these rates and charges by the amount of $119,000 annually.

Appropriate orders will be entered in conformity with this opinion.

LELAND OLDS, Chairman
CLAUDE L. DRAPER, Commissioner
BASIL MANLY, Commissioner
JOHN W. SCOTT, Commissioner
CLYDE L. SEAVEY, Commissioner

Dated at Washington, D. C., this 18th day of March, 1942.

Leon M. Fuquay, Secretary.

Exhibit A, Docket G-124, Opinion No. 73

Colorado Interstate Gas Company

Allocated Cost of Service

Sales to Other Gas Utilities and Pipe Line Companies 1939

Name of Customer	F.P.C. Rate Schedule No.	MCF at 14.65 Pounds	Revenue	Allocated Cost	Excess Revenue Over Cost	Average Revenue ¢/MCF	Average Cost ¢/MCF
Sales to Other Gas Utilities							
The Arkansas Valley Natural Gas Company	7	15,564	$ 3,000	$ 3,000	$ —	19.3	19.3
Citizens Utilities Company	4, 6, 9	181,017	68,000	44,000	24,000	37.6	24.3
City of Colorado Springs	5	805,981	213,000	107,000	106,000	26.4	13.3
Colorado-Wyoming Gas Company	3	2,867,649	495,000	397,000	98,000	17.3	13.8
The Pueblo Gas and Fuel Company	2	452,992	158,000	74,000	84,000	34.9	16.3
Public Service Company of Colorado	1	6,650,953	2,125,000	1,027,000	1,098,000	32.0	15.4
Total Other Gas Utilities		10,974,156	$3,062,000	$1,652,000	$1,410,000	27.9	15.1
Natural Gas Pipeline Company of America	8	20,367,632	1,376,000	721,000	655,000	6.8	3.5
Total		31,341,788	$4,438,000	$2,373,000	$2,065,000	—	—

Exhibit B, Docket G-124, Opinion No. 73

Colorado-Wyoming Gas Company

Allocated Cost of Service

Sales to Other Gas Utilities 1939

Name of Customer	F.P.C. Rate Schedule No.	MCF at 14.65 Pounds	Revenue	Allocated Cost of Service	Excess Revenue Over Cost	Average Revenue ¢/MCF	Average Cost ¢/MCF
Cheyenne Light, Fuel and Power Co.	1, 2	414,807	$ 182,000	$ 124,000	$ 58,000	43.9	29.9
Public Service Company of Colorado	3	900,114	335,000	294,000	41,000	37.2	32.7
Greeley Gas and Fuel Co.	4	147,406	64,000	44,000	20,000	43.4	29.8
Highway Gas Company	5	4,649	700	700	—	15.1	15.1
Total		1,466,976	$ 581,700	$ 462,700	$ 119,000	39.7	31.5

Order Reducing Rates Canadian River Gas Company.

Upon consideration of the orders previously issued in these proceedings, the evidence of record, the briefs and petition filed, and the Commission having on this date issued Opinion No. 73, which is hereby incorporated and made a part hereof:

The Commission finds that:

(1) The Canadian River Gas Company (hereinafter referred to as Canadian Company), a Delaware corporation, owns and operates facilities for the production, gathering, transportation and sale of natural gas for resale in interstate commerce, and is a "natural-gas company" within the meaning of the Natural Gas Act. It produces gas from its leaseholds in the Panhandle field in the State of Texas, gathers such gas in the field and, (a) transports a portion of it through its main 22" line a distance of approximately 86 miles to a point in New Mexico known as Clayton Junction where the gas so transported is sold for resale to Colorado Interstate Gas Company and Clayton Gas Company, and (b) transports a portion of it through the facilities of Texoma Natural Gas Company to a point in Oklahoma known as Gray Junction where the gas so transported is also sold for resale to Colorado Interstate Gas Company;

(2) A substantial portion of the natural gas sold to Colorado Interstate Gas Company (hereinafter referred to as Colorado Company) at Clayton Junction is transported by Colorado Company 254 miles to the environs of Denver, Colorado, for sale to Public Service Company of Colorado and the Colorado-Wyoming Gas Company; the entire system from the Panhandle field to Denver, Colorado, is operated as a single property and is commonly referred to as the "Denver Line." A substantial portion of the natural gas delivered at Gray Junction in Oklahoma is further transported through the facilities of Natural Gas Pipeline Company of America and Chicago District Pipeline Company to Chicago, Illinois;

(3) Natural gas sales to Colorado Company and to Clayton Gas Company are sales for resale in interstate commerce and are made under rate schedules on file with this Commission and designated as Canadian River Gas

Company FPC Rate Schedules Nos. 1 and 2, respectively. The rates and charges, demanded, observed, charged, and collected by Canadian Company for the transportation and sale of natural gas for resale under its FPC Rate Schedules Nos. 1 and 2, together with all rules, regulations, practices, and contracts, affecting such rates and charges, are subject to the jurisdiction of this Commission;

(4) The original undepreciated cost of Canadian Company's gas plant as of December 31, 1939, is $10,784,464;

(5) The remaining recoverable gas reserves of Canadian Company, as of December 31, 1939, are not less than 2,800,000,000 MCF at 14.65 pounds per square inch absolute pressure and an abandonment pressure of approximately 50 pounds per square inch; at the present and expected future rate of production these reserves will last in excess of 50 years;

(6) The production method is the most suited, for purposes of these proceedings, for determining annual and accrued (existing) depletion of gas leaseholds and gas well intangible costs; using the above determined recoverable gas reserves and the production method, an annual depletion expense of $80,969 and an accrued depletion, as of December 31, 1939, of $653,681 are determined as reasonable and proper;

(7) The service life principle is proper, for purposes of these proceedings, for determining annual and accrued (existing) depreciation of transmission facilities and all property other than gas leaseholds and gas well intangible costs; using this principle an annual depreciation expense of $157,774 and an accrued depreciation as of December 31, 1939, of $1,480,948, are determined as reasonable and proper;

(8) The amount of $8,649,835, (original cost of $10,784,464 less accrued depletion of $653,681 and accrued depreciation of $1,480,948), is the depreciated original cost of Canadian Company's gas plant as of December 31, 1939;

(9) An allowance of $571,923 for additions to property from December 31, 1939, to December 31, 1941, and of $150,738 for working capital are sufficient and reasonable; these

allowances added to the depreciated original cost result in an amount of $9,372,496 (accepted as $9,375,000) as the proper prudent investment rate base upon which Canadian Company is entitled to earn a fair rate of return;

(10) An annual rate of return of 6½ percent on the rate base of $9,375,000, or $609,375 is a fair and reasonable return to Canadian Company;

(11) Reasonable and proper allowances for operating expenses, including an allowance for amortizing rate case expense over a five-year period, depletion, depreciation, and all taxes are as follows:

Operating expenses	$ 753,191
Depletion expense	80,969
Depreciation expense	157,774
Taxes	177,162
	$1,169,096

(12) The total allowable cost of all services of Canadian Company is $1,169,096 plus $609,375 for a fair return or $1,778,471; a proper allocation of this total cost and its relationship to revenues for 1939 for sales to Colorado Company, Clayton Gas Company, and all others follows:

Customer	Revenue	Allocated Costs	Excess Revenue Over Costs
Colorado Company	$2,126,000	$1,575,000	$551,000
Clayton Gas Company	25,000	15,000	10,000
All other Sales	242,000	188,000	54,000
Total	$2,393,000	$1,778,000	$615,000

(13) Therefore, the rates and charges made, demanded, and received by Canadian Company for and in connection with the transmission and sale of natural gas for resale in interstate commerce to Colorado Company and Clayton Gas Company are unjust, unreasonable, and excessive to the extent of $561,000 per year;

(14) The rates and charges made, demanded, and received by Canadian Company, after reflecting the reductions hereinafter ordered, will be just and reasonable;

Therefore, the Commission orders that:

(A) The petition of Canadian River Gas Company to reopen these proceedings for the purpose of taking further evidence be and the same is denied;

(B) The rates and charges made, demanded, or received by Canadian River Gas Company for the transportation and sale of natural gas for resale to Colorado Interstate Gas Company under its FPC Rate Schedule No. 1 shall be reduced by not less than $551,000 per year;

(C) The rates and charges made, demanded, or received by Canadian River Gas Company for the transportation and sale of natural gas for resale to Clayton Gas Company under its FPC Rate Schedule No. 2 shall be reduced by not less than $10,000 per year;

(D) Canadian River Gas Company shall file on or before April 25, 1942, new schedules of rates and charges for or in connection with the transportation and sale of natural gas in interstate commerce for resale to reflect the reductions ordered in paragraphs (B) and (C) above, which new schedule of rates and charges shall be effective as to all bills regularly rendered on and after May 15, 1942;

(E) The Commission reserves the right to reject all or any part of such new schedules and in lieu thereof to prescribe the same by further order;

(F) On and after the effective date of the new schedules of rates and charges filed and made effective in accordance with paragraph (D) above, Canadian River Gas Company shall cease and desist from making, demanding, or receiving any rates and charges which do not reflect the reductions ordered in paragraphs (B) and (C) above.

By the Commission.

LEON M. FUQUAY, Secretary.

Order Reducing Rates Colorado Interstate Gas Company.

Upon consideration of the orders previously issued in these proceedings, the evidence of record, the briefs and petition filed, and the Commission having on this date

issued Opinion No. 73, which is hereby incorporated by reference and made a part hereof:

The Commission finds that:

(1) Colorado Interstate Gas Company (hereinafter referred to as Colorado Company), a Delaware corporation, owns and operates facilities for the transportation and sale of natural gas for resale in interstate commerce, and is a "natural-gas company" within the meaning of the Natural Gas Act. It transports gas from Clayton Junction, New Mexico, at the terminus of the transmission pipe line of Canadian River Gas Company, (hereinafter referred to as Canadian Company), through its main line consisting of 20" and 22" steel pipe, a distance of 254 miles through New Mexico into the State of Colorado to the outskirts of the City of Denver, Colorado. Sales are made along the line to gas utilities and industrial customers and to Public Service Company of Colorado and Colorado-Wyoming Gas Company at the terminus of the line. Sales are made to the Natural Gas Pipeline Company of America at Gray Junction, Oklahoma, at the point of receipt of the natural gas from Canadian Company;

(2) The entire natural gas requirements of Colorado Company are obtained from its affiliate, Canadian Company; the systems of the two companies are operated as a single property;

(3) Natural gas sales to The Arkansas Valley Natural Gas Company, Citizens Utilities Company, City of Colorado Springs, Colorado-Wyoming Gas Company, The Pueblo Gas and Fuel Company, Public Service Company of Colorado, and Natural Gas Pipeline Company of America are made under rate schedules on file with this Commission and designated as Colorado Interstate Gas Company FPC Rate Schedules Nos. 1 to 9, inclusive. The rates and charges demanded, observed, charged, and collected by Colorado Company for the transportation and sale of natural gas for resale under FPC Rate Schedules Nos. 1 to 9, inclusive, together with all rules, regulations, practices, and contracts affecting such rates and charges, are subject to the jurisdiction of this Commission;

(4) The original undepreciated cost of Colorado Company's gas plant as of December 31, 1939, is $11,879,409;

(5) The amount of $2,874,805 for accrued depreciation in the property of the Colorado Company as of December 31, 1939, is the best possible estimate of the actual depreciation as of that date and is reasonable. The amount of $118,605, being Colorado Company's accrued amortization as of December 31, 1939, for the cost of the Colorado Springs gas sales contract, is reasonable;

(6) The amount of $9,085,999, (original cost of $11,879,409 less accrued depreciation of $2,674,805 and accrued amortization of $118,605), is the depreciated original cost of Colorado Company's gas plant as of December 31, 1939;

(7) An allowance of $337,000 for additions to property from December 31, 1939, to December 31, 1941, and of $109,065 for working capital are sufficient and reasonable; these allowances added to the depreciated original cost result in an amount of $9,532,064 (accepted as $9,535,000), as the proper prudent investment rate base upon which Colorado Company is entitled to earn a fair rate of return:

(8) An annual rate of return of 6½ percent on the rate base of $9,535,000, or $619,775 is a fair and reasonable return to Colorado Company.

(9) Reasonable and proper allowance for operating expenses, including an allowance for amortizing rate expenses over a five-year period, cost of purchased gas, depreciation, amortization and all taxes are as follows:

Operating expenses	$ 475,643
Cost of purchased gas	2,112,951
Depreciation expense	268,305
Amortization expense	13,890
Taxes	637,641
Total	$3,508,430

(10) By order entered in these proceedings, as of this date, against Canadian Company, the above cost of purchased gas has been reduced by $551,000 annually, thereby reducing the total in paragraph (9) above to $2,957,430;

(11) The total cost of all services of Colorado Company is the sum of the costs in paragraph (10) above of $2,957,430 and $619,775 for a fair return, or $3,577,205; of this total $2,373,000 is properly and reasonably allocated to sales made under FPC Rate Schedules Nos. 1 to 9, inclusive;

(12) The total revenues for 1939 under Rate Schedules Nos. 1 to 9, inclusive, of $4,438,000 exceed the allocated costs found reasonable herein by $2,065,000; the detail of this relationship of revenues to costs and the amount of excess for each purchaser is shown in Exhibit A attached to Opinion No. 73 and is made a part of this order by reference;

(13) Therefore, the rates and charges made, demanded, and received by Colorado Company for and in connection with the transmission and sale of natural gas for resale in interstate commerce to the gas utilities listed in paragraph (3) above are unjust, unreasonable and excessive to the extent of $2,065,000 per year;

(14) The rates and charges made, demanded, and received by Colorado Company, after reflecting the reduction hereinafter ordered, will be just and reasonable;

Therefore, the Commission orders that:

(A) The petition of Colorado Interstate Gas Company to reopen these proceedings for the purpose of taking further evidence be and the same is denied;

(B) The rates and charges made, demanded, or received by Colorado Interstate Gas Company for the transportation and sale of natural gas for resale in interstate commerce under its Rate Schedules FPC Nos. 1 to 9, inclusive, shall be reduced by not less than $2,065,000 per year.

(C) Colorado Interstate Gas Company shall file on or before April 25, 1942, new schedules of rates and charges for or in connection with the transportation and sale of natural gas in interstate commerce for resale to reflect the reductions ordered in paragraph (B) above, which new schedules of rates and charges shall be effective as to all bills regularly rendered on and after May 15, 1942;

(D) Commission reserves the right to reject all or any part of such new schedules and in lieu thereof to prescribe the same by further order;

(E) On and after the effective date of the new schedules of rates and charges filed and made effective in accordance with paragraph (C) above, Colorado Interstate Gas Company shall cease and desist from making, demanding, and receiving any rates and charges which do not reflect the reductions ordered in paragraph (B) above.

By the Commission.

LEON M. FUQUAY, Secretary.

Order Reducing Rates, Colorado-Wyoming Gas Company.

Upon consideration of the orders previously issued in these proceedings, the evidence of record, the briefs filed, and the Commission having on this date issued Opinion No. 73, which is hereby incorporated and made a part hereof;

The Commission finds that:

(1) The Colorado-Wyoming Gas Company (hereinafter referred to as Wyoming Company), a Delaware corporation, owns and operates facilities for the transportation and sale of natural gas in interstate commerce for resale, and is a "natural-gas company" within the meaning of the Natural Gas Act. It operates a natural gas transmission system from a point near Littleton, Colorado, at the terminus of the Colorado Interstate Gas Company line, and extending in a northerly direction 114 miles to the city gate of Cheyenne, Wyoming. Approximately 98 percent of its total gas requirements are obtained from Colorado Interstate Gas Company, and the balance from local fields. Sales are made along the line to gas utilities and industrial customers and to Cheyenne Light, Fuel and Power Company at the terminus of the line;

(2) Natural gas sales to Cheyenne Light, Fuel and Power Company, Public Service Company of Colorado, Greeley Gas and Fuel Company, and Highway Gas Company are made under rate schedules on file with this Commission and are designated Colorado-Wyoming Gas Com-

pany FPC Rate Schedules Nos. 1 to 5, inclusive. The rates and charges demanded, observed, charged, and collected by Wyoming Company for the transportation and sale of natural gas for resale under FPC Rate Schedules Nos. 1 to 5, inclusive, together with all rules, regulations, practices, and contracts affecting such rates and charges, are subject to the jurisdiction of this Commission;

(3) The original undepreciated cost of Wyoming Company's gas plant as of December 31, 1939, is $1,678,878;

(4) The amount of $395,944 for accrued depreciation in the property of the Wyoming Company as of December 31, 1939, is the best possible estimate of the actual depreciation as of that date and is reasonable;

(5) The amount of $1,282,934, (original cost of $1,678,878 less accrued depreciation of $395,944), is the depreciated original cost of Wyoming Company's gas plant as of December 31, 1939;

(6) An allowance of $78,813 for additions to property from December 31, 1939, to December 31, 1941, and $16,235 for working capital are sufficient and reasonable; these amounts added to the depreciated original cost, less $12,183 of contributions in aid of construction, result in an amount of $1,365,799 (accepted as $1,366,000) as the proper prudent investment rate base upon which Wyoming Company is entitled to earn a fair rate of return;

(7) An annual rate of return of 6½ percent on the rate base of $1,336,000, or $88,790 is a fair and reasonable return to Wyoming Company;

(8) Reasonable and proper allowances for operating expenses, including an allowance for amortizing rate case expenses over a five year period, cost of purchased gas, depreciation and all taxes are as follows:

Operating expenses	$ 85,364
Cost of purchased gas	498,103
Depreciation expense	38,280
Taxes	57,106
Total	$678,853

(9) By order entered in these proceedings, as of this date, against Colorado Interstate Gas Company, the above cost of purchased gas has been reduced, effective on all bills rendered on and after May 15, 1942, by $98,000 annually, thereby reducing the above total to $580,853;

(10) The total cost of all services of Wyoming Company is the sum of $580,853, paragraph (9) above, and $88,790 for a fair return, or $669,643; of this total $462,700 is properly and reasonably allocated to sales made under FPC Rate Schedules 1 to 5, inclusive;

(11) The total revenues for 1939 under Rate Schedules Nos. 1 to 5, inclusive, of $581,700 exceed the allocated costs found reasonable herein by $119,000; the detail of this relationship of revenues to costs and the amount of excess for each purchaser is shown in Exhibit B attached to Opinion No. 73 and is made a part of this order by reference;

(12) Therefore, the rates and charges made, demanded, and received by Wyoming Company for and in connection with the transmission and sale of natural gas for resale in interstate commerce to the gas utilities listed in paragraph (2) above are unjust, unreasonable and excessive to the extent of $119,000 per year;

(13) The rates and charges made, demanded, and received by Wyoming Company, after reflecting the reduction, hereinafter ordered, will be just and reasonable;

Therefore, the Commission orders that:

(A) The rates and charges made, demanded or received by Colorado-Wyoming Gas Company for the transportation and sale of natural gas for resale in interstate commerce under its Rate Schedules FPC Nos. 1 to 5, inclusive, shall be reduced by not less than $119,000 per year;

(B) Colorado-Wyoming Gas Company shall file on or before May 25, 1942, new schedules of rates and charges for or in connection with the transportation and sale of natural gas in interstate commerce for resale to reflect the reductions ordered in paragraph (A) above, which new schedules of rates and charges shall be effective as to all bills regularly rendered on and after June 15, 1942;

(C) Commission reserves the right to reject all or any part of such new schedules and in lieu thereof to prescribe the same by further order;

(D) On and after the effective date of the new schedules of rates and charges filed and made effective in accordance with paragraph (B) above, Colorado-Wyoming Gas Company shall cease and desist from making, demanding, and receiving any rates and charges which do not reflect the reductions ordered in paragraph (A) above.

By the Commission.

LEON M. FUQUAY, Secretary.

Petition of Colorado Interstate Gas Company to Reopen the Above Entitled Proceedings to Take Further Evidence.

Comes Now the Colorado Interstate Gas Company (hereinafter referred to as "this respondent"), defendant and respondent in the above entitled proceedings, and respectfully petitions this Honorable Commission to reopen the above entitled proceedings and to take further evidence therein

The grounds relied upon for this petition, and a brief statement of the nature and purposes of the evidence to be adduced, which, as will hereinafter appear, is not merely cumulative, are as follows:

1. That, as appears from the record in this case, the evidence heretofore introduced as to the taxes of this respondent covered actual taxes only for the years up to and including the year 1939 and estimated taxes for the year 1940 and years subsequent thereto, and all the estimated taxes were based on the assumption that the tax laws in effect at the time of the hearing would continue unchanged.

Evidence of the actual taxes paid for the year 1940 as distinguished from the estimated taxes for said year heretofore introduced in evidence, is now available.

Since the close of the hearing in this case substantial changes have been made in the tax laws applicable to this

respondent, resulting in substantially increased rates of taxation. The Federal taxes payable by this respondent for the year 1941 under the new revenue laws are estimated at $1,600,000.00 as against $684,608.00 paid for the year 1940, or an increase of $915,392.00. This is a 134% increase. As applicable to the net earnings from the sale of gas from the "Denver Line" of this respondent, the record now shows that $496,341.00 was estimated as the total Federal taxes payable for the year 1940, and $683,784.00 was estimated as payable for 1941, whereas $493,290.00 was actually paid for 1940 and $1,233,779.00 is now estimated as payable for 1941. This shows an increase of Federal taxes applicable to net earnings from the sale of gas from the Denver Line of this respondent of $740,489.00, being 150% increase, in 1941 over 1940. Substantially all of said increase in taxes above said estimates now appearing in evidence is due to the increased tax rates under the new revenue laws adopted since the close of the hearing in this case.

Inasmuch as the estimates of taxes, not only for the years 1940 and 1941 but also for the years 1942 to 1947, inclusive, heretofore introduced in evidence were based upon the tax rates in existence before the increased tax rates made effective by the new revenue laws, the estimates contained in the record for the years 1942 to 1947, inclusive, will also be increased in proportion to the increase in the new tax rates, and this upon the assumption that the present increased tax rates are not further increased by subsequent legislation. Such further increase has been proposed by the Secretary of the Treasury and seems certain.

2. There was introduced in evidence estimates as to the cost of additional property necessary to meet the demands upon this respondent's pipeline system through the year 1947. The estimate of the cost of such necessary additional property for the year 1940 was $111,736.00. It was estimated that no additional property would be necessary in the year 1941, and the estimate for the year 1942 for such additional property was $214,326.00. The actual cost of such necessary additional property for the year 1940 is $215,254.94, and for the year 1941 $375,205.36, or a total of

$590,460.30 for the years 1940 and 1941 combined. This is $478,724.30 in excess of the estimated cost for 1940 and 1941, and is $264,398.30 in excess of the estimated cost of necessary additional property for the years 1940, 1941 and 1942 now appearing in evidence. There is also available at this time evidence of changed conditions occurring since the close of the hearing in these proceedings, because of which estimates of the cost of additional necessary property for the years 1942 to 1947, inclusive, or some of them, will have to be revised upwards.

3. That since June 30, 1940, as of which date evidence of value was introduced in connection with the reproduction cost new of this respondent's properties, the cost of labor and material, particularly pipe, necessarily and properly to be considered in determining the reproduction cost new of said properties, has substantially increased, with the result that the estimate of reproduction cost new as submitted in evidence on behalf of this respondent is substantially less than such estimate of reproduction cost new as of December 31, 1941, or as of the date of the filing of this petition.

4. Because of the increase in labor costs, as alleged in Paragraph 3 above, the general costs of maintenance and operation have likewise increased, as of December 31, 1941, and as of the date of the filing of this petition, substantially above such costs as shown in the operating statements submitted in evidence, and the estimates for the future will have to be revised upwards to properly reflect such increased costs and expense.

5. Exhibit 290, introduced by this respondent, sets forth a "Statement of Reductions or Suspensions of Service to December 31, 1940." After the close of the hearing in this proceeding, and starting with the 22nd day of September, 1941, and continuing to September 30, 1941, there occurred the most serious interruption of service that has taken place in the history of the operation of this respondent's pipeline system, said interruption being caused by washouts on the main line. Evidence is available showing the cause and extent of these washouts, and the time and extent of the interruption and curtailment of natural gas service

resulting therefrom to the various customers of this respondent. Such evidence will show that all industrial customers were cut off immediately upon the discovery of the break, and that service of gas for domestic consumers was seriously curtailed during the period in question, although such gas as was in the pipeline north of the break was available for limited domestic service during such period. Such evidence will also show the service preference in favor of domestic gas at the time of this interruption and curtailment, and will further show one of the hazards of this business in which this respondent is engaged.

This respondent states that it is prepared to introduce evidence in support of each and all of the statements hereinabove made. Said evidence is not merely cumulative but, as appears from the above statements, relates to facts which have occurred since the closing of the hearing in these proceedings. The record now before this Commission is based upon peace-time operations. The war in which the United States is now engaged has seriously affected the operations of this respondent and must necessarily continue seriously to affect those operations during the uncertain duration of the war, and no doubt for a long period thereafter. Obviously because of the changed conditions brought about by the war, evidence now in the record as to the past operations of this respondent is a much less safe or sound criterion upon which to gauge the future operations of this respondent that it was at the time such evidence was introduced. It is respectfully submitted that this Commission will take notice of the serious changes affecting all industry, including this respondent, already brought about and which on account of the war will continue to result in a manner persently unforeseeable. This respondent desires to introduce further evidence of the particular effect which the war has already had upon its operations and to supplement and revise its evidence now in the record relating to its future operations. The purpose of the evidence to be adduced in support of said statements is to establish the truth of said statements of facts, all of which it is submitted are material, important and pertinent to the issues raised in these proceedings, and

will serve to bring the record up to date, and should be considered by the Commission in reaching its findings and conclusions on the various issues presented in these proceedings.

Dated this 9th day of March, 1942.

COLORADO INTERSTATE GAS COMPANY,
By F. H. LERCH, JR., President.
30 Rockefeller Plaza, Room 3000,
New York, N. Y.

WILLIAM A. DOUGHERTY,
C. W. COOPER,
30 Rockefeller Plaza, Room 3000, New York, N.Y.
SMITH, BROCK, AKOLT & CAMPBELL,
ELMER L. BROCK,
E. R. CAMPBELL,
ELMER L. BROCK, JR.,
931 Fourteenth Street, Denver, Colorado.
Attorneys for Colorado Interstate Gas Company.

[Verification and certificate of service omitted.]

Received Mar. 11, 1942, Federal Power Commission.

Petition of Canadian River Gas Company to Reopen the Above-Entitled Proceedings to Take Further Evidence.

Comes Now the Canadian River Gas Company (hereinafter referred to as "this respondent"), defendant and respondent in the above-entitled proceedings, and respectfully petitions this Honorable Commission to reopen the above-entitled proceedings and to take further evidence therein.

The grounds relied upon for this petition, and a brief statement of the nature and purposes of the evidence to be adduced, which, as will hereinafter appear, is not merely cumulative, are as follows:

1. That, as appears from the record in this case, the evidence heretofore introduced as to the taxes of this respondent covered actual taxes only for the years up to and including the year 1939 and estimated taxes for the

year 1940 and years subsequent thereto, and all the estimated taxes were based on the assumption that the tax laws in effect in 1939 would continue unchanged.

Evidence of the actual taxes paid for the year 1940 and those payable for the year 1941, as distinguished from the estimated taxes for said years heretofore introduced in evidence, is now available. Said taxes for the years 1940 and 1941 are substantially in excess of the estimates for said years now appearing in the record.

Inasmuch as the estimates of taxes not only for the years 1940 and 1941 but also for the years 1942 to 1947, inclusive, heretofore introduced in evidence were based upon the tax rates in existence before the increased tax rates made effective by the new revenue laws, the estimates contained in the record for the years 1942 to 1947, inclusive, will also be increased in proportion to the increase in the new tax rates, and this upon the assumption that the present increased tax rates are not further increased by subsequent legislation. Such further increase has been proposed by the Secretary of the Treasury and seems certain.

2. There were introduced in evidence estimates as to the cost of additional property of this respondent through the year 1947. The costs of additional property actually incurred in the years 1940 and 1941, respectively, which are in the aggregate approximately $450,000, are now available for the record. There is also available at this time evidence of changed conditions occurring since the close of the hearing in these proceedings because of which estimates of the cost of additional necessary property for the years 1942 to 1947, inclusive, or some of them, will have to be revised upwards substantially.

3. That since June 30, 1940, as of which date evidence was introduced in connection with the reproduction cost new of this respondent's portion of the Denver line, the cost of labor and material, particularly pipe, necessarily and properly to be considered in determining the reproduction cost new of said properties has substantially increased, with the result that the estimate of reproduction cost new of this respondent's portion of the Denver line, as submitted in evidence, is substantially less than such estimate of repro-

duction cost new as of December 31, 1941, or as of the date of the filing of this petition.

4. Because of the increase in labor and material costs, as alleged in Paragraph 3 above, drilling costs and the general costs of maintenance and operation have likewise increased as of December 31, 1941 and as of the date of the filing of this petition substantially above such costs as shown in the evidence heretofore introduced, and the estimates for the future will have to be revised upwards to properly reflect such increased costs and expense.

5. Exhibit 290 heretofore introduced in this case sets forth a "Statement of Reductions or Suspensions of Service to December 31, 1940." After the close of the hearing in this proceeding, and starting with the 22nd day of September, 1941, and continuing to September 30, 1941, there occurred the most serious interruption of service that has taken place in the history of the operation of this respondent's business, said interruption being caused by washouts on the Denver line of the Colorado Interstate Gas Company in northeastern New Mexico. Evidence is available showing the cause and extent of the interruption and curtailment of natural gas service resulting therefrom. Such evidence will show that when said washouts occurred and delivery of gas by this respondent to Colorado Interstate Gas Company was interrupted thereby, all industrial customers of Colorado Interstate Gas Company were cut off immediately upon discovery of the break, and that service of gas for domestic consumers under the Denver line was seriously curtailed during the period in question, although such gas as was in the pipeline north of the break was available for limited domestic service during such period. Such evidence will also show the service preference in favor of domestic gas at the time of this interruption and curtailment and will further show one of the hazards of this business in which this respondent is engaged.

This respondent states that it is prepared to introduce evidence in support of each and all of the statements hereinabove made. Said evidence is not merely cumulative but, as appears from the above statements, relates to facts which have occurred since the closing of the hearing in these proceedings. The record now before this Commission is based upon peace-time operations. The war in which the

United States is now engaged has seriously affected the operations of this respondent and must necessarily continue seriously to affect those operations during the uncertain duration of the war, and no doubt for a long period thereafter. Obviously because of the changed conditions brought about by the war, evidence now in the record as to the past operations of this respondent is a much less safe or sound criterion upon which to gauge the future operations of this respondent than it was at the time such evidence was introduced. It is respectfully submitted that this Commission will take notice of the serious changes affecting all industry, including this respondent, already brought about and which on account of the war will continue to result in a manner presently unforeseeable. This respondent desires to introduce further evidence of the particular effect which the war has already had upon its operations and to supplement and revise its evidence now in the record relating to its future operations. The purpose of the evidence to be adduced in support of said statements is to establish the truth of said statements of facts, all of which it is submitted are material, important and pertinent to the issues raised in these proceedings, and will serve to bring the record up to date, and should be considered by the Commission in reaching its findings and conclusions on the various issues presented in these proceedings.

Dated this 10th day of March, 1942.

CANADIAN RIVER GAS COMPANY,
By P. C. SPENCER,
Its Vice President, Room 2757
630 Fifth Ave., New York, N.Y.

P. C. SPENCER,
Room 2757, 630 Fifth Avenue, New York, N.Y.
ADKINS, PIPKIN, MADDEN & KEFFER,
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930 Fisk Bldg., Amarillo, Texas,
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JOHN P. AKOLT,
931 Fourteenth St., Denver, Colorado,
Attorneys for Canadian River Gas Company.

[Verification omitted.]

Received March 11, 1942, Federal Power Commission.
Acknowledged March 11, 1942, Secretary.

Petition of Colorado Interstate Gas Company for Rehearing and to Reopen.

Now Comes the Colorado Interstate Gas Company, one of the Defendants-Respondents in the above-entitled and numbered causes, hereinafter sometimes referrred to as Petitioner or as Respondent or sometimes as Colorado Interstate, and referring to its "Request for Findings of Fact" heretofore filed herein, and to this Commission's "Order Reducing Rates Colorado Interstate Gas Company," and accompanying Opinion No. 73, dated March 18, 1942, but not served on this petitioner until on or about March 25, 1942, and to "Petition of Colorado Interstate Gas Company to Reopen the Above Entitled Proceedings to Take Further Evidence," dated March 10, 1942, and filed March 11, 1942, and respectfully applies for a rehearing in the above entitled causes upon each and all of the grounds set forth in the following Specifications of Errors.

Specifications of Errors.

1.

Without waiving but still insisting upon each and all of the Specifications of Errors following this specification, and without waiving but still insisting upon its pleas, objections and contentions as to the jurisdiction of the Commission over Colorado Interstate, it is respectfully submitted the Commission erred in denying Colorado Interstate's petition of March 10, 1942, to reopen the above entitled proceedings to take further evidence as to facts transpiring and developing since the closing of the hearing on April 21, 1941. The Commission states on page 3 of its Opinion that the granting of said petition was opposed by the Mayor of the City and County of Denver by letter, and by the Wyoming Public Service Commission by telegram. No copy of such letter or telegram was served upon petitioner. The Commission's statement on page 3 of its opinion that it is fully aware of the recent trends in costs, and its statement that it is also aware of the recent trends in revenues, is not based on substantial evidence in this case, and the Commission's "awareness" is not equivalent to, and cannot be substituted for, substantial evidence as to facts developing after April 21, 1941, which your petitioner offered to present. The statement on page 3 of the opinion that the Commission has

given due consideration to such trends of costs and revenues in the orders entered in these proceedings, discloses that the Commission has based its findings and orders upon matters and facts not in this record. The statement on page 39 of the opinion that the Commission is aware of substantial increase in natural gas sales due to the country's war efforts, and the statement on page 40 that in the natural gas industry operating labor and materials are a comparatively small part of the total costs, that it may reasonably be expected that revenues will increase as rapidly if not more rapidly than costs, and the statement on page 40 that for the purpose of the Commission's order, 1939 revenues and costs are representative of the relationship that will exist between these items in the immediate future, and the statement on page 40 of the opinion that the use of 1939 figures undoubtedly resolves most of the doubts as to future operation conditions in favor of the companies, and each of said statements are not supported by substantial evidence in this case, and cannot be substituted for substantial evidence, and such "awareness" of the Commission, and such conclusions and opinions cannot be substituted for substantial evidence as to the facts transpiring since the close of the hearing on April 21, 1941, since which time this country became actively engaged in war, and which evidence this petitioner offered to present. The basis for such "awareness," and conclusions and opinions is not set forth at any place in the Commission's Order or Opinion. Colorado Interstate's Petition to Reopen is hereby renewed upon each and all of the grounds set forth therein.

2.

The Commission erred in basing its findings and order upon operations of the Respondent for the pre-war year 1939, and in not giving consideration to operations, and the facts and evidence with respect thereto, of subsequent years.

3.

The Commission erred in abrogating the contracts for the purchase and sale of gas of this petitioner, and erred in refusing to make the findings of fact requested by petitioner, and numbered 1 to 12, inclusive, relating to the business and contracts of this petitioner, and erred in finding in its Findings 1 and 3, and elsewhere in its Opinion, that said

contracts which the Commission erroneously characterized as "FPC Rate Schedules Nos. 1 to 9, inclusive" were subject to its jurisdiction, and could be abrogated by it.

4.

The Commission erred in refusing to find that all of the contracts of respondent for the purchase and sale of gas were made, and by it substantially performed, at a time when neither the respondent nor any other contracting party contemplated any change or modification, through the regulatory process or otherwise, and long prior to the effective date of the Natural Gas Act.

5.

The Commission erred in refusing to find that since said contracts were made no material change in the extent of respondent's business and operations or in the respondent's methods of carrying on such business and operations has occurred.

6.

The Commission erred in refusing to find that in entering into said contracts and in providing and investing money for the performance thereof and in the substantial performance thereof, respondent relied upon prices for gas to be paid for the full project term and made its investment in said project in reliance on said contracts and would not have made said investment except on the basis of said contracts.

7.

The Commission erred in refusing to find that the contracts of the respondent for the purchase and sale of gas and the prices for gas therein agreed to are not subject to decrease or increase by the Commission prior to the expiration of the terms or lives of said contracts.

8.

The Commission erred in refusing to find that the present contracts of respondent fixing the gate price for gas to its customers, the several distributing companies, cannot now be abrogated because of the absence of any evidence establishing the necessary "public interest" as distinguished from the interest of the distributing companies, and erred

in not making the findings of fact requested by this petitioner and numbered 17 to 21 inclusive.

9.

The Commission erred in refusing to find that each of respondent's contracts fixing the price of gas were arrived at after full investigation and between competent and well-informed parties, free to contract or not.

10.

The Commission erred in refusing to find that the contract with Public Service fixing the price for gas at the Denver gate was negotiated over a period lasting more than a year and after many discussions and conferences with the Mayor and other representatives of the city of Denver, and the gate rate therein prescribed was fixed only after independent investigation by the city of Denver, "taking into consideration all economic factors involved," including the gate rate, and after rates of Public Service to the consumer had been fixed by Denver for the full unexpired term of its franchise, based on said gate rate.

11.

The Commission erred in refusing to find that the contract with Pueblo Gas and Fuel fixing the price for gas at the city gate was negotiated over several months between respondent and Pueblo Gas and Fuel Company, and the gate rate was fixed with the full knowledge of the officials of Pueblo and only after the city had adopted rates to be charged by the distributing company to the consumers for the full term of the franchise to the distributing company, which rates were based on said gate rate.

12.

The Commission erred in refusing to find that the city of Colorado Springs, as owner and operator of its municipal distribution system, had a contract with one Arthur K. Lee for its supply of gas at the city gate from the Hugoton Kansas Field, guaranteed by a $25,000 performance deposit, but in 1931, before gas under said contract was delivered, the city modified the contract with Lee to provide a 40c gate rate in contemplation of his assignment of said contract to respondent.

13.

The Commission erred in refusing to find that the present contract prices of respondent are reasonable as evidenced by the fact that they were all arrived at after long negotiation between adverse parties, free to contract or not, namely, respondent and the several distributing companies, and after full investigation in the case of the cities of Denver, Pueblo and Colorado Springs respectively.

14.

The Commission erred in refusing to find that the gas now being sold displaced manufactured gas in Denver, Pueblo and Colorado Springs and the savings to the consumers for the same heat units under the cost of manufactured gas range from 32% to 86%, depending upon volumes used.

15.

The Commission erred in refusing to find that for house heating purposes alone in Denver, the present cost per therm to the consumer of natural gas is 6c compared to 14c per therm for manufactured gas prior to the change-over.

16.

The Commission erred in refusing to find that the present contract prices of respondent are reasonable as evidenced by the fact that they have permitted the ultimate consumers to purchase from the distributing companies heat units at much less cost than was the case when manufactured gas was sold to them.

17.

The Commission erred in refusing to find that natural gas is being sold in this territory in competition with abundant, accessible and cheap supplies of coal, fuel oil and to a lesser extent in competition with other fuels.

18.

The Commission erred in refusing to find that Colorado produces more coal than any other state west of the Mississippi River, of which 50% to 60% is mined within 50 miles of the consuming area centering in Denver, Colorado Springs and Pueblo, and that this consuming area is also within economic transportation distance of large reserves of fuel oil.

19.

The Commission erred in refusing to find that the cost to the consumer for house heating in the Denver area per therm of natural gas is 25% to 30% more than the less convenient coal, which represents the difference the consumer, free to purchase coal, is willing to pay for the convenience factors in favor of natural gas and to be relieved from the investment and supply of coal for future use and for storage facilities.

20.

The Commission erred in refusing to find that the cost to consumer for house heating in the Denver area is the same per therm as that for heating with Grade No. 1 fuel oil; that is, 6c per therm, and by the use of Grade No. 2 fuel oil, such heat units may be had at 5c per therm.

21.

The Commission erred in refusing to find that the present contract gate prices of respondent are reasonable as evidenced by the fact that they have permitted the ultimate consumer to purchase heat units at costs that compare favorably with the costs of coal, fuel oil and other fuels, after taking into consideration the convenience factors in favor of natural gas.

22.

The Commission erred in refusing to find that the sales of natural gas by distributing companies supplied by respondent have increased substantially despite competition with other fuels.

23.

The Commission erred in refusing to find that sales by respondent for the year 1929, the first full year of sales after the cut-over of Mcf. at contract pressure base, amounted to 3,534,927 of resale domestic gas and 776,291 of resale industrial gas. Sales for 1939 were 6,818,497 of resale domestic and 4,779,576 of resale industrial.

24.

The Commission erred in refusing to find that house heating customers in the Denver area have increased from less than 1,000 in 1927, prior to the cut-over, to approxi-

mately 17,000 at this time, and the market for domestic cooking and water heating in the Denver area is now "sold" or "saturated."

25.

The Commission erred in refusing to find that aggregate sales of respondent's three distributing company customers in Denver, Colorado Springs and Pueblo were 3,488,049.6 Mcf. in 1927 and 9,376,232 Mcf. in 1939, with 1,150,887 Million Btu. heat units in 1927 and 7,612,048 million Btu. heat units in 1939, for which they received in the aggregate $2,731,739.35 in revenue in 1927 and $5,048,972.48 in revenue in 1939; that is, such aggregate sales increased in Mcf. by 2.69 times and in millions of Btu. by 6.61 times and in revenue by 1.85 times.

26.

The Commission erred in refusing to find that the present contract gate prices are reasonable as evidenced by the substantial increase in the use of natural gas, despite competition with other fuels.

27.

The Commission erred in refusing to find that all of the contracts of the respondent with its customers, the distributing companies, provided that, in case of shortage, gas shall be supplied to the domestic customers in preference to the industrial customers and that such gas shall have priority use of the facilities, and such provision has been carried out and enforced in actual operations, and the Commission erred in not reopening this proceeding to permit petitioner to show the facts of such preference at the time of the breaks in petitioner's pipe line in September, 1941.

28.

The Commission erred in refusing to find that the respondent's contracts with Public Service Company for the sale of gas at the Denver gate and with Pueblo Gas and Fuel Company for the sale of gas at the Pueblo gate are coterminous with the franchises of those distributing companies from those respective cities, which terminate in 1948, and the renewals of said franchises depend upon a favorable vote of the taxpaying electors; and respondent's contract

with the City of Colorado Springs for the sale of gas to its municipally owned distributing system also terminates in 1948, and the other contracts of the respondent also terminate at approximately the same time.

29.

The Commission erred in its Finding No. 2, in finding that Colorado Interstate is an "affiliate" of Canadian, and that "the systems of the two companies are operated as a single property."

30.

In its Finding No. 4, the Commission erred in finding that the original undepreciated cost of Colorado Interstate's gas plant, as of December 31, 1939, was $11,879,409.00, and erred in not finding that such original undepreciated cost, as of such date (December 31, 1939, or January 1, 1940) meaning thereby physical properties, plus cost of necessary contracts, was at least $14,670,749.

31.

The Commission erred in its finding numbered 4, and in its statement on page 19 of its Opinion, in eliminating from the undepreciated original cost of Colorado Interstate's property $440,050 on account of "past expenses now capitalized," and erred in not finding that said sum represented the original cost of gas plant, used and useful, which sum was treated for company purposes as an expense item, and at a time long prior to any attempted regulation; and erred in not finding said sum to be a part of the actual legitimate cost of petitioner's property, which should properly be included in the original cost of said property.

32.

In its finding numbered 4, and in its Opinion on page 19, the Commission erred in eliminating $2,352,940, original cost of contracts, and erred in its statements on pages 21 and 22 of its Opinion as to the nature of said contracts, the circumstances under which they were made, and the nature and circumstances under which the payments were made, and erred in not finding that said contracts were negotiated at arm's length after prolonged consideration between parties free to contract or not, and erred in not finding

that said contracts were essential to the project of supplying the gas involved in this controversy, and erred in not finding that said project would not have been possible but for the execution of said contracts, and erred in not finding that property of the cash value of at least $2,352,940 was paid for said contracts, and erred in not allowing said sum as original cost of contracts in addition to $250,000 which it did allow as cost of contract for sale of gas at Colorado Springs.

33.

The Commission erred in not finding that the original cost of respondent's portion of the physical properties of the Denver Line, exclusive of cost of contracts, and exclusive of necessary working capital, used and useful in transporting and selling gas to January 1, 1939, and as estimated, to January 1, 1947, on the basis of evidence existing at the close of the hearing on April 21, 1941, is as follows:

1939	$12,052,646
1940	12,081,142
1941	12,192,878
1942	12,192,878
1943	12,407,204
1944	12,407,204
1945	12,407,204
1946	12,407,204
1947	12,407,204

and the Commission erred in not reopening this proceeding as aforesaid to permit petitioner to show that the estimates of future additions to the physical properties above stated were too low, on account of facts developing subsequent to the close of the hearing on April 21, 1941.

34.

In its findings numbered 5 and 6, and in its statements on pages 24 to 35, inclusive, of its Opinion, the Commission erred in its findings and statements with respect to accrued depreciation, and erred in finding that the amount of $2,674,805, plus $118,605 for accrued amortization, or a total of $2,874,805, "for accrued depreciation in the property of the Colorado Interstate as of December 31, 1939, is the best possible estimate of the actual depreciation as of that

date, and is reasonable," and the Commission erred in making such finding in that said sum of $2,674,805 does not represent the actual depreciation in petitioner's property, and the amount of $118,605 represents only the accrued amortization with respect to the cost of one contract only. The Commission erred in deducting from the cost of petitioner's physical property any amount in excess of the observed depreciation and to the extent that the amount of $2,674,805 represents a return of capital investment, in addition to the actual deterioration of physical property, there was error in making such deduction from the cost of petitioner's property.

35.

The Commission erred in refusing to find that the actual depreciation accumulated in respondent's portion of the physical properties of the Denver line at December 31, 1938 (January 1, 1939), as determined by a field inspection and observation and the correlative present condition of such properties were as follows:

Description	Accumulated Depreciation Per-Cent	Condition of Properties Per Cent
Land	00.0%	100.0%
Land Rights (Rights of Way)	00.0	100.0
Pumping Station Structures	14.0	86.0
Measuring and Regulating Station Structures	13.0	87.0
Other Transmission System Structures	13.0	87.0
Mains	5.0	95.0
Pumping Station Equipment	12.0	88.0
Measuring and Regulating Station Equipment	10.0	90.0
Office Furniture & Equipment	20.0	80.0
Transportation Equipment	49.0	51.0
Tools and Work Equipment	20.0	80.0
Communication Equipment	16.0	84.0

36.

The Commission erred in refusing to find that the cost of reproduction new less observed actual depreciation of

respondent's portion of the physical properties of the Denver line as of December 31, 1938 (or January 1, 1939), was at least $11,385,356, and was at June 30, 1940, at least $11,431,077, based on costs obtaining at the time of the hearing herein, and erred in refusing petitioner an opportunity to present evidence, as requested, to show that the reproduction cost less depreciation new at this time would be in excess of said sums on account of increase in costs subsequent to the close of the hearing on April 21, 1941.

37.

The Commission erred in not finding the original cost of respondent's portion of the physical properties of the Denver line, less observed actual depreciation to January 1, 1939, and as estimated, to January 1, 1947, based on evidence of cost up to the close of the hearing on April 21, 1941, is as follows:

1939	$11,289,055
1940	11,317,551
1941	11,429,287
1942	11,429,287
1943	11,643,613
1944	11,643,613
1945	11,643,613
1946	11,643,613
1947	11,643,613

38.

In its finding numbered 7, the Commission erred in its finding that only $337,000 was necessary for additions to property from December 31, 1939, to December 31, 1941.

39.

The Commission erred in not granting the petition to reopen to take further evidence, referred to in assignment of error numbered 1 hereinabove, and in refusing to permit this petitioner to show that, whereas the estimate of the cost of such necessary additional property for the year 1940 was only $111,736, and for 1941 zero, and for 1942 only $214,326, in fact the actual cost of such necessary additional property for the year 1940 had been $215,254.94,

and for the year 1941 had been $375,205.36, or a total of $590,460.30 for the years 1940 and 1941, combined, which sum is $478,724.30 in excess of the estimated costs for 1940 and 1941, and is $264,398.30 in excess of the estimated costs for such necessary additional property for the years 1940, 1941 and 1942 now appearing in evidence, and the Commission erred in not reopening the case and making findings to that effect, and also in not making findings of increases in estimated expenditures for additional property for the years 1940 to 1947, inclusive, based on increased costs since the close of the hearing herein on April 21, 1941.

40.

In its finding numbered 7, the Commission erred in finding that $109,065 for working capital was sufficient and reasonable, and erred in eliminating all allowances for minimum bank balances.

41.

The Commission erred in refusing to find that the necessary working capital of respondent for the operation of its portion of the Denver line for each of the years 1939 to 1947, based on operating expenses and conditions obtaining up to the time of the close of the hearing on April 21, 1941, was not less than:

1939	$120,000
1940	127,000
1941	134,000
1942	142,000
1943	150,000
1944	151,000
1945	153,000
1946	154,000
1947	155,000

42.

In its finding numbered 7, and in its Opinion on pages 38 and 53 and elsewhere in its Opinion, the Commission erred in finding that $9,535,000 was the maximum rate

base upon which petitioner is entitled to earn a fair rate of return, and the Commission erred in not finding as the proper rate base the present fair value of all of petitioner's property as specified in the above assignments 30 to 41, inclusive.

43.

The Commission erred in not finding that the revenues of respondent from gas sold off of the Denver line during the year 1939 and as estimated for the years 1940 to 1947 are as follows:

Year	Sale of Gas for Resale to Domestic Consumers	Sale of Gas for Resale to Industrial Consumers	Direct Sale Gas to Industrial Consumers
1939	$2,297,015	$ 641,368	$1,370,849
1940	2,556,900	645,743	1,276,525
1941	2,724,975	699,282	1,389,266
1942	2,841,775	724,277	1,392,016
1943	2,945,775	747,492	1,340,566
1944	3,057,500	770,243	1,343,316
1945	3,192,600	789,574	1,346,066
1946	3,192,600	789,574	1,346,066
1947	3,192,600	789,574	1,346,066

44.

The Commission erred in its finding numbered 12, and in its statements on page 49 of its Opinion in including, for the purpose of determining reasonable rates for gas sold off the Denver line, revenues from its sales at Gray, Oklahoma, to the Natural Gas Pipeline Company of America.

45.

The Commission erred in refusing to find that the cost to respondent at contract prices for all gas delivered to it at Clayton Junction for the Denver line (exclusive of cost of gas delivered to it at Gray, Oklahoma, for sale to the Natural Gas Pipeline Company of America) was, for 1939, $1,221,008, and for 1940, $1,323,494, and, without taking

into account abnormal expenses arising out of the present war conditions, that such costs are estimated to be as follows:

1941	$1,293,088
1942	1,238,270
1943	1,244,759
1944	1,207,771
1945	1,175,875
1946	1,232,651
1947	1,733,845

46.

The Commission erred in failing to make proper findings as to the cost of gas, either on a contract basis or otherwise, to respondent, sold to the Natural Gas Pipeline Company of America at Gray, Oklahoma, and erred in its Finding No. 9 that the cost of all gas sold to respondent, both at Gray Junction and at Clayton Junction, in 1939 was $2,112,951.

47.

In its Finding No. 8, and in its statements on pages 49, 50, 51, 52 and 53 of its Opinion, the Commission erred in finding that a rate of return of 6½% on the rate base is fair and reasonable to this petitioner, and erred in not finding that said rate of 6½% would necessitate rates for the gas sold by respondent lower than the lowest reasonable rate, and erred in not finding that said rate of return of 6½% would necessitate rates for gas sold by respondent that would operate to confiscate its property contrary to the Fifth Amendment of the United States Constitution.

48.

The Commission erred in refusing to find that the rate of return necessary to this petitioner upon the fair value of its property devoted to the transportation and sale of gas is not less than 8%.

49.

In its Finding No. 9, and in its Opinion on pages 44 and 45, the Commission erred in discarding and ignoring, as it

states it does, all of respondent's evidence as to operating expenses, and erred in finding and allowing as operating expenses (exclusive of cost of gas, depreciation expense, amortization expense and taxes) only the annual amount of $475,643.

50.

The Commission erred in refusing to find that the operating expenses and operating taxes (exclusive of cost of gas, income, capital stock and like taxes, and depreciation and amortization expenses) of respondent for the Denver line for 1939 was $607,369, and for 1940 was $621,100, and basing estimates for future expenses on the normal trend of such expenses in past normal times, and without taking into account additional expenses which might occur from the defense program or war conditions, would be in the following estimated amounts:

1941	$643,500
1942	655,600
1943	688,900
1944	658,000
1945	670,300
1946	683,000
1947	694,300

and the Commission erred in not permitting the petitioner to reopen and submit evidence that such estimates of expense were too low on account of the rising expense of operations due to the war and other conditions transpiring after the closing of the hearing herein on April 21, 1941.

51.

In its Finding No. 9, and in its statements on pages 24 to 35, inclusive, the Commission erred in finding that the proper depreciation expense was only $268,305, and the Commission erred in not using as the amount to be depreciated, the fair value of the depreciable property of petitioner at the time it was overtaken by regulation, and in not using as the term or period over which depreciation is to be taken, the period during which the petitioner can remain in business, and erred in not finding that because of the termination of petitioner's sales contracts, said period

can not be assured beyond 1948; and in any event erred in refusing to find that said period could be extended beyond 1956, and erred in failing to disclose in its Opinion or Findings the basic facts on which it determined its depreciation expense allowance, and erred in the application of the service-life principle in this case. The allowance for annual depreciation expense is intended by the Commission to provide for the complete return of all invested capital to petitioner by the end of the economic life of its property. Even on the basis that the economic life of petitioner's pipe line is the number of years assumed by the Commission, said allowance will do no more than provide for the retirements necessary during that long period, and no provision is made for returning to petitioner the additional capital required to make replacements and additions and betterments during the future fifty years. The result is that petitioner never will recover its full capital investment unless the annual allowance for depreciation expense is increased.

52.

In its Finding No. 9, and in its statements on pages 19, 20, 21, 22, 24, 25, 26 and 33, the Commission erred in allowing only $13890 for amortization expense on account of amortization of cost of contracts, and the Commission erred in disallowing amortization expense on account of the cost of other essential contracts originally costing $2,352,940.

53.

In its Finding No. 9, and in its statements on pages 44, 45 and 46, the Commission erred in finding and allowing only $637,641 as the proper annual amount for expenses on account of taxes.

54.

The Commission erred in refusing to find that the State and Federal income taxes, and the Federal capital stock tax, excess-profits and defense taxes, applicable to net income from the sale of gas off the Denver line alone for 1939 were $340,119, and for 1940 were $521,875, and, assuming that the rates obtaining in all 1940 tax laws are not

increased, such taxes were estimated for future years as follows:

1941	$ 711,922
1942	825,240
1943	846,001
1944	979,686
1945	1,095,473
1946	1,099,259
1947	781,284

55.

The Commission erred in refusing to reopen and permit the petitioner to show that the Federal taxes alone payable by this respondent for the year 1941, under the new revenue laws, upon all gas sales are approximately $1,600,000, as against $684,608 paid for the year 1940, or an increase of $915,392, or a 134% increase, and that said taxes payable in respect of net earnings from the Denver line are, for 1940 $493,290, and are, for 1941 $1,233,779, and that the increase of such Federal tax, applicable to such net earnings from the sale of gas from the Denver line, amounted to $740,489 for 1941 over 1940, or an increase of 150%, and that the estimates for such taxes now contained in the record for the years 1942 to 1947, inclusive, would, without further increase in rates, have to be revised upwards.

56.

In its Finding No. 10, the Commission erred in finding that $2,957,430 was a reasonable and proper allowance for operating expenses, cost of gas purchased, depreciation, amortization and all taxes.

57.

In its Finding No. 11, the Commission erred in finding that $3,577,205 was a proper allowance for the total cost of all services of this petitioner, including a fair return, and in finding that of the total sum of $3,577,205, $2,373,000 was properly and reasonably allocated to the sales of this respondent, under its gas sales contract, which the Commission in said finding erroneously characterized as FPC Rate Schedules Nos. 1 to 9, inclusive.

58.

In its Finding No. 12, the Commission erred in finding that the total revenues for 1939 under said "Rate Schedules Nos. 1 to 9, inclusive" was $4,438,000, and erred in holding that said sum exceeded the "allocated cost" by $2,065,000, and erred in finding that said revenues were excessive in any amount.

59.

In its Finding No. 12, and in its statements in its opinion on pages 53, 54, 55, 56, 57 and 58, and in its Exhibit "A" to its Opinion, Findings and Order, the Commission erred in its findings as to costs, and in its findings as to the allocation of said costs. The Commission erred in making unsupported conclusions with respect to these matters, and erred in not making basic findings of fact with respect thereto, and in not disclosing in its so-called findings and in its Opinion the real method or basis used in arriving at its conclusions, but to the extent that petitioner is able now to discern the method so concealed and not disclosed: the following specifications are made:

(a) The Commission erred for reasons hereinabove specified in stating that Colorado Interstate had any earnings in excess of a reasonable return.

(b) The Commission erred in stating that the Commission's determinations of earnings is based upon all of the components of the rate case.

(c) The Commission erred in stating that the properties and business of Canadian, Colorado Interstate and Colorado-Wyoming constitute for all practical purposes a single project.

(d) The Commission erred in finding that it is necessary or proper to alter the prices paid by Colorado Interstate for gas purchased from Canadian.

(e) The Commission erred in finding that an allocation of physical property need not be made in arriving at a proper determination of rates for the sale of gas within the jurisdiction of the Commission, and erred in not making such allocation of physical property.

(f) The Commission erred in stating that Colorado Interstate did not submit in evidence a complete presentation of its entire operations, broken down between jurisdictional and non-jurisdictional operations.

(g) The Commission erred in wholly ignoring and discarding all of the evidence of this petitioner showing the apportionment, separation and allocation of its properties and business as between sale of gas for resale now sought to be regulated, and the direct sale of gas not subject to regulation in any case; the Commission erred in wholly ignoring and disregarding all of petitioner's said evidence, which error is more specifically assigned hereinafter.

(h) The Commission erred in stating that all that can be accomplished by an allocation of physical properties, can be attained by allocating costs, including the return.

(i) The Commission erred in stating that the cost allocation method is most practicable and business-like, because said method is not practical nor business-like, and such method is contrary to law in that it amounts to the assumption of jurisdiction by the Commission over properties, income and expenses over which it has no jurisdiction by reason of the express terms and exceptions of the Natural Gas Act.

(j) The Commission erred in stating that the Colorado Interstate's evidence is based upon assumptions, without stating what those assumptions were, and the Commission erred in stating that Colorado Interstate's exhibits do not square with realities or are unreasonable or inappropriate in that none of said statements of the Commission is supported by any substantial evidence, but are contrary to the evidence herein.

(k) The Commission erred in stating that the Commission's Staff exhibits on cost allocation followed principles that have long been recognized as reasonable in the public utility field, and are widely accepted, in that said statements are not supported by substantial evidence, but are contrary to the evidence in this case.

(l) The Commission erred in not showing what "peak day demand" it refers to, as the basis of the allocation of

fixed costs, and in not showing what it meant by or in not making any finding with respect to fixed costs, and erred in any event in basing its costs allocations on peak day demands for the pre-war year 1939, and in ignoring subsequent operating conditions.

(m) The Commission erred in failing to disclose what it meant by "variable costs" or making any findings with respect thereto, and in stating that such costs vary proportionately to output or volume of sale.

(n) The Commission erred in not recognizing or finding that the costs for the production and transmission of gas depend directly and primarily upon load factors rather than volume.

(o) The Commission erred in allocating its so-called variable costs in proportion to volume of gas purchased by each customer.

(p) The Commission erred in not making a finding as to the amount used by the Commission as fixed costs, and the amounts used as variable costs.

(q) The Commission erred in finding that the principles and methods of costs allocation presented by the Commission's Staff were the most appropriate and reasonable, in that such finding is not supported by substantial evidence, and is contrary to the evidence in this case.

(r) The Commission erred in lumping together the properties, business, revenues and expenses of the respondent with those of Canadian River Gas Company and the Colorado-Wyoming Company as if they were one company, whereas, the evidence shows that they are not, and that their interests in many particulars are adverse; and that they entered into this project and carried on their business as separate entities, with adverse interest.

(s) The Commission erred in lumping together the properties, business, revenues and expense, pertaining to the sale of gas for resale, with those pertaining to direct sale of gas, without regard to the jurisdictional boundary line separating the two businesses, and has attempted to extract from this conglomerate the cost of resale gas, and primarily on a straight volume basis.

(t) The Commission erred, in making such determination of costs and apportionment of such costs, in ignoring the jurisdictional boundary between interstate commerce and intrastate commerce, and has lumped together all the property, business, revenue and expenses pertaining to the intrastate sales in Texas.

(u) The Commission erred in its method by ignoring the fact that the sale of gas for domestic purposes is given priority use of the facilities over the sales for industrial purposes.

(v) The Commission erred in its method of allocation in that the allocation of transmission line costs between capacity costs and volumetric costs has been made in a manner that is arbitrary and discriminatory, in that volumetric costs have been unduly increased and capacity costs unduly decreased, thereby favoring or minimizing the costs charged to resale gas.

(w) The Commission erred in the allocation of transmission line capacity costs, particularly with reference to fixed charges and return on the investment. Failure to make property allocations on which to base return and depreciation charges lead only to incorrect, arbitrary and discriminatory allocations of costs.

(x) The Commission erred in adopting the allocation exhibit of the Commission's staff because the allocation of that portion of transmission line costs alleged to apply to capacity costs has been improperly allocated as between resale and direct sale gas. The percentage distribution used applies only to that portion of the property situated at and immediately north of Bivins Compressing Station, whereas the main line has at least four different ratios that should have been used.

(y) The Commission erred in adoption of the allocation exhibit of the Commission's staff because no weight was given therein to the distance the gas is transported from the field to the several customers and the number of times the gas must be handled or compressed before arriving at its destination.

60.

The Commission erred in its Findings 12 and 13, and in its Opinion in finding that the rates of this petitioner are unreasonable and excessive to the extent of $2,065,000 per year, and in finding that said rates were or are unreasonable to any extent, and erred in ordering that petitioner's net income be reduced by said amount or by any amount, and in finding that the rates and charges, after reflecting the ordered reductions in net income, would be just and reasonable.

61.

The Commission erred, in any event, in ignoring and misapplying the statutory standard of a "reasonable rate," and erred in attempting to convert its statutory authority to fix such a reasonable rate into a mandate or authority to regulate net income, and in any event in reducing net income for the present by the amount of an alleged excess of net income for the pre-war year 1939.

62.

The Commission erred in refusing to find that the cumulative total of net earnings of respondent from the sale of all gas off the Denver line under its contracts through 1947, after payment of all expenses and taxes, including cost of gas, and after a fair return upon the fair value of its property devoted to such service remaining and available for depreciation and amortization, would be approximately $13,849,646, and that said sum would be insufficient to amortize or depreciate the accumulated investment through the same period, to-wit, $15,151,812, by the amount of $1,302,166, and in refusing to find that such a deficiency would arise under contract prices and under the assumption that levels or trends of expense and revenues existing at the time of the hearing would be maintained, and in refusing to find that such deficiency would be increased, (a) if operating expense, estimated for the future on the basis of a normal trend developed under normal operating conditions in the past, increased by the defense program or war conditions, (b) tax rates above those obtaining in 1940 were enacted into law, and (c) the cost of gas at Clayton Junction increased for the same or other reasons; and

the Commission erred in refusing to find that a substantial deficiency would still result if a rate of return as low as 6½% was imposed; and the Commission erred in refusing to find that under increased costs of operations now existing and arising from facts and circumstances developing after the closing of the hearing herein on April 21, 1941, such deficiency would result under a rate of return as low as 6½%, and even after the inclusion of all of the revenues from the sale of gas by respondent to Natural Gas Pipeline Company of America, at Gray Junction, Oklahoma.

63.

The Commission erred in wholly ignoring and discarding evidence submitted by the petitioner with respect to the apportionment, separation and allocation of the properties and business of the respondent as between sale of gas for resale, now subjected to regulation, and the direct sale of gas not subject to regulation, on two alternative bases, each of which established the reasonableness of the petitioner's present prices for gas, which methods were

1. Showing as to the estimated net earnings from a Denver Line for Resale Gas only.

2. Showing as to the net operating earnings apportioned between Resale Gas and Direct Sale Gas on the Basis of Priority Use of Facilities.

64.

The Commission erred in refusing to find that the cost of the necessary physical properties of the Denver line used and useful for the transmission of gas for resale only was not less, at December 31, 1939 (January 1, 1940) than $11,412,163, and for each of the subsequent years would be not less than the following:

1941	$11,412,163
1942	11,412,163
1943	11,637,163
1944	11,637,163
1945	11,637,163
1946	11,637,163
1947	11,637,163

65.

The Commission erred in refusing to find that the working capital necessary for the operation of respondent's portion of a Denver line for resale gas only is not less than the following amounts for each of the following years:

1940	$129,000
1941	133,000
1942	140,000
1943	147,000
1944	148,000
1945	149,000
1946	150,000
1947	151,000

66.

The Commission erred in refusing to find that the operating expenses, exclusive of the cost of gas and income, capital stock and like taxes, that respondent would incur in the operation of its portion of a Denver line for resale gas only would be not less than the following:

1939	$551,340
1940	614,400
1941	626,600
1942	638,200
1943	666,300
1944	634,600
1945	645,800
1946	657,200
1947	667,300

and that these expenses are estimated on the basis of a normal trend developed from past normal operating expenses, and would be increased under abnormal conditions arising from the defense program and further increased by actual war.

67.

The Commission erred in refusing to find that the State and Federal income taxes and the Federal capital stock and like taxes, which would be incurred by the respondent in the operation of its portion of a Denver line for resale

gas only, based on 1940 laws and assuming no increase in the rates above those specified in said acts, are estimated as follows:

1940	$283,925
1941	415,398
1942	526,327
1943	557,172
1944	662,557
1945	770,633
1946	769,038
1947	436,808

68.

The Commission erred in refusing to find that the cost of gas to the respondent at Clayton Junction for a Denver line for resale gas only would be:

1939	$ 954,874
1940	1,053,601
1941	1,016,871
1942	959,860
1943	1,000,334
1944	1,001,626
1945	976,811
1946	1,020,813
1947	1,555,915

69.

The Commission erred in refusing to find that the cumulative total of net earnings of the respondent from its portion of a Denver line for resale gas only, under contract terms, after payment of all taxes and expenses and the allowance of a fair return upon the necessary investment, to the end of 1947, available for depreciation and amortization would be no more than $1,299,570, whereas the total investment accumulated through that period, and which would have to be thus depreciated or amortized, would be $14,377,771, resulting in a deficit for such purpose of $13,078,201; and in refusing to find that if the original cost of such investment was depreciated by the amount of the actual observed depreciation and a fair return was calculated on that sum, and salvage in the highest amount testified to for the whole line was credited, this deficit would still

be more than $11,700,000, and in refusing to find that the deficit in the last mentioned amount was estimated on the basis of contract prices and on the assumption that levels or trends of expenses and revenues existing at the time of the hearing would be maintained. And refusing to find that such deficit would be increased if operating expenses increased over those estimated for that time, and if tax rates obtaining for 1940 were increased, and if the cost of gas at Clayton Junction was increased for the same or other reasons, and erred in refusing to find that a substantial deficit would still exist if a fair return was limited to 6½%, and would exist if all of the revenues from the sale of gas by respondent to the Natural Gas Company at Gray Junction, Oklahoma, were included, and erred in refusing to find that such a deficit would be further increased by increased operating expenses and taxes occurring after the closing of the hearing on April 21, 1941, evidences to which this petitioner offered to produce but was refused.

70.

The Commission erred in refusing to find that on the basis of priority use of facilities by the resale gas, a fair apportionment of property and expenses of the respondent's portion of the Denver line is as follows.

	Resale	Direct Sale
Transmission lines	82.51%	17.49%
Clayton and Canyon Compressor Stations	72.80	27.20
Devine Compressor Station	94.40	5.60
All other general property	80.25	19.75
Working capital	79.80	20.20
Contracts with Canadian for the purchase of gas	52.78	47.22
Sales contracts with Public Service Company and with Pueblo Gas and Fuel Company	100.00	0.0
Sales contracts with City of Colorado Springs for its municipal distribution system	78.46	21.54
Operating and maintenance expense of transmission lines	82.51	17.49
General expense and operating taxes	80.25	19.75

and that income taxes and other taxes based on income are fairly apportioned in the ratio of the income.

71.

The Commission erred in refusing to find that the cumulative total of net earnings of the respondent under its contracts, after payment of all taxes and expenses and an allowance of a fair return upon its investment, through 1947, apportioned to resale gas on the basis of the priority use by that gas of the facilities, remaining and applicable to amortization and depreciation would be not more than $8,930,704, whereas the amount of necessary investment accumulated to that time, and which would have to be so amortized and depreciated, would be $12,210,637, thus leaving a deficit of at least $3,279,933; and in refusing to find that if this investment was depreciated by the amount of the actual observed depreciation and a fair return calculated on that reduced basis, and such sum was further credited with the highest amount of salvage testified to for the whole line, to wit, $131,019.95, such deficit would still be more than $1,800,000; and in refusing to find that such deficit would arise under contract prices and levels or trends of expenses and revenues existing at the time of the hearing, and that such deficit would be increased if operating expenses increased above those estimated on the basis of trends of expenses existing at the time of the hearing, or if tax rates increased above those obtaining in 1940, or if the cost of gas at Clayton Junction increased for the same or other reasons; and in failing to find that a substantial deficit would still exist even though a rate of return as low as 6½% was imposed and even though net income from the sale of gas to Natural Gas Pipe Line Company of America, at Gray, Oklahoma, was included; and in refusing to find that such deficit would be further increased if the increased operating expenses and taxes arising after the closing of the hearing on April 21, 1941, evidence of which was tendered but refused, were taken into account.

72.

The Commission erred in refusing to find that the present contract prices of respondent are not unjust, unreason-

able, unduly discriminatory or preferential, as evidenced by the fact that they are not now yielding and will not in the future, yield to respondent excessive earnings or more than a fair return under said contracts.

73.

The Commission erred in refusing to find that on the assumption that its supply of gas continues through 1956, and on the assumption that the taxpaying electors in Denver and Pueblo renew, in 1948, the franchise of Public Service Company and Pueblo Gas and Fuel, respectively, and on the assumption that such distributing companies then renew contracts for the purchase of gas at the city gates from the respondent, and on the assumption that the City of Colorado Springs likewise renews its purchase contract in 1948 and the other distributing companies, distributing much smaller quantities of gas, also renew their contracts, the amortization and depreciation requirements of the respondent can be spread so that the annual requirements for depreciation of the physical properties of respondent's portion of the Denver line employed in the transportation and sale of all gas will be $517,266.

74.

The Commission erred in refusing to find that on the basis of the same assumptions made in the preceding Assignment No. 73, the cost of respondent's gas purchase contract with Canadian, for all gas delivered to the Denver line at Clayton Junction, depleted to December 31, 1938, in proportion to the depletion of the gas reserves, and in the amount of $1,229,800, will require an annual amortization expense, on a sinking fund basis with interest at 2¾%, compounded annually, to the end of 1956, in the amount of $53,718.

75.

The Commission erred in refusing to find that the cost of respondent's sales contract with Public Service, Pueblo

Gas and Fuel, and the City of Colorado Springs will require an amortization allowance of $29,388 per annum to amortize them to the dates of their expiration in 1948; and any additional consideration paid by respondent for the renewal of any such contracts in 1948 will require additional amortization expense to the end of their respective lives.

76.

The Commission erred in refusing to find that under the assumption that the respondent continues in business through 1956, as aforesaid, the cost of all gas delivered to it at Clayton Junction would be as follows:

1939	$1,339,860
1940	1,534,753
1941	1,591,487
1942	1,542,645
1943	1,607,229
1944	1,636,617
1945	1,662,940
1946	1,813,724
1947	2,683,891

77.

The Commission erred in refusing to find that under the assumption that the Respondent remains in business through 1956, as aforesaid, and that tax rates contained in 1940 laws are not increased, the state and federal income taxes and the federal capital stock and related taxes would be as follows:

1939	$311,501
1940	429,109
1941	539,394
1942	652,606
1943	651,590
1944	749,981
1945	836,214
1946	794,365
1947	395,986

78.

The Commission erred in refusing to find that the balance net earnings of Respondent from its sale of all gas off the Denver line, after allowing for an 8% return, would be as follows:

1939	$423,241
1940	264,718
1941	400,155
1942	467,590
1943	428,701
1944	468,968
1945	501,133
1946	379,418
1947	103,750*

*Deficit.

and that this balance reflects the profits from the sale of direct sale gas and depends (a) upon the present contract prices, (b) upon the maintenance of present levels or trends of sales and revenues, (c) on the assumption that normal operating expenses trended into the future on the basis of past normal expenses will not be increased due to defense measures or actual war conditions, (d) upon taxes calculated at 1940 rates and on the assumption that such rates will not be increased, and (e) upon the Company's being able to remain in business and amortize and depreciate its property over the longer period and in the smaller annual amounts as shown in the preceding specifications of error; and the Commission further erred in failing to find that even with the inclusion of the net revenues from the sale of gas to Natural Gas Pipe Line Company of America, at Gray, Oklahoma, but including the increased operating expenses and taxes which have been incurred, evidence of which was tendered but refused, the balance net earning would not yield more than 6½% return and the prices now being charged by respondent would not be unreasonable.

79.

The Commission erred in refusing to find that on the assumption that the respondent could remain in business through 1956 its net earnings from a line sufficient to transport resale gas only would not, after paying all expenses, including depreciation and amortization, be sufficient in any year to allow an 8% return upon the necessary investment, such deficits being as follows:

1939	$328,164
1940	526,456
1941	364,263
1942	214,415
1943	208,126
1944	111,561
1945	12,712
1946	196,510
1947	1,160,917

and that these annual deficiencies below the amount required to give an 8% return on the fair value of the property devoted to resale gas only, are based on present contract prices and would be increased by an increase in the expenses of the respondent for any of the causes stated in the Assignment of Error next preceding; and the Commission further erred in failing to find that even with the inclusion of the net revenue from the sale of gas to Natural Gas Pipe Line Company of America, at Gray, Oklahoma, but including the increased operating expenses and taxes which have been sustained, evidence of which was tendered but refused, such net income would not be sufficient to yield 6½% return and the present prices for the sale of gas are not unreasonable.

80.

The Commission erred in failing to find that on the assumption that the respondent can remain in business through 1956, its net earnings, after payment of all expenses, including depreciation and amortization, and after an allowance of 8% return on the present fair value of the property devoted to the service, all apportioned to resale gas on the basis of priority use of facilities of that gas, would be as follows:

1939	$102,140
1940	117,858
1941	165,130
1942	219,453
1943	211,234
1944	250,679
1945	285,824
1946	218,584
1947	79,030*

*Deficit.

and that the average balance for the period shown is $166,000 per annum; and that this balance depends (a) upon the present contract prices and maintenace of present levels or trends of sales and revenues, (b) on the assumption that the present cost of gas at Clayton Junction, likewise apportioned, will not increase, (c) on the assumption that operating expenses which have been trended into the future on the basis of a normal trend developed in past normal times, will not be increased because of the defense program or war conditions, (d) on the assumption that the federal and state income taxes and the capital stock and related taxes, and other local and general taxes will not increase above the rates and levels of 1940, and (e) on the assumption the respondent's markets continue through 1956 and its depreciation and amortization expense, spread over that term and thereby reduced in annual amounts, would not have to be increased because of an earlier termination of respondent's business for any cause; and the Commission further erred in failing to find that even with the inclusion of the net income from the sale of gas to Natural Gas Pipe Line Company, at Gray, Oklahoma, but by including the increased operating expenses and increased taxes which have been incurred, evidence of which was tendered but refused, such net earnings would not exceed 6½% per annum and the present prices for the sale of gas would not be unreasonable.

81.

The Commission erred in refusing to find that the cost of all gas to the respondent at Clayton Junction, based on

the prevailing market value of gas at Bivins plus transmission cost to Clayton Junction, would be as follows:

1939	$1,891,022
1940	2,043,286
1941	2,176,464
1942	2,211,063
1943	2,293,108
1944	2,355,481
1945	2,415,251
1946	2,447,015
1947	2,486,168

82.

The Commission erred in refusing to find that the net earnings of the respondent from the sale of all gas off the Denver line, after payment of all expenses, including amortization and depreciation and the cost of gas on the basis stated in the Assignment of Error next preceding, and after an 8% return on the fair value of its property, would be

1939	$ 32,833
1940	56,146*
1941	62,144
1942	128,246
1943	76,049
1944	146,460
1945	201,253
1946	144,795
1947	40,859

*Deficit.

and that for all these years the average annual balance would be $86,307, and that this balance depends upon the same conditions and assumptions made in the two preceding Assignments of Error; and the Commission further erred in failing to find that even with the inclusion of the net earnings from the sale of gas to the Natural Gas Pipe Line Company of America, at Gray, Oklahoma, but including the increased operating expenses and taxes which have been incurred, evidence of which was tendered but refused,

the earnings would not yield more than 6½% return and the present prices for the sale of gas would not be unreasonable.

83.

The Commission erred in making each of its findings, numbered 1 to 14, inclusive, in that none of said findings is supported by substantial evidence, and each of said findings is contrary to the evidence in this case.

84.

The Commission erred in making each of its orders, lettered (A) to (E), inclusive, in that each of said orders is contrary to law and the evidence in this case.

85.

The Commission erred in refusing to find that the present contract prices of the Respondent are not "'unjust, unreasonable, unduly discriminatory or preferential.'"

86.

The Commission erred in making its findings and order herein, in that said findings and order are contrary to the terms of the Natural Gas Act and deprive this petitioner of its rights under the Fifth Amendment to the Constitution of the United States.

87.

The Commission erred in failing to make the preliminary, primary and basic findings necessary to support its ultimate findings and conclusions and erred in failing to disclose the methods and principles used by it and the computations made by it in arriving at its ultimate findings and conclusions. In an attempt to ascertain the basis on which the Commission had proceeded, this respondent did on March 30, 1940, cause a telegram to be sent to the Commission, reading as follows:

"In making study of Opinion No. 73 in Canadian River and Colorado Interstate Gas Company rate case find it difficult to check various figures against exhibits and also are unable to check various computations made which are based on findings of Commission not reflected in exhibits in order to thoroughly digest and understand all computations it will be necessary to confer with your representa-

tive and examine working papers that were used in making computations. Would like to do this this week, Wednesday or Thursday. Appreciate immediate reply."

On April 1, 1942, the Commission did deny the request contained in the above quoted telegram, said denial being as follows:

"The requests contained in your telegram of March 30, 1942, re Opinion No. 73 in matter of Canadian River Gas Company and Colorado Interstate Gas Company have been considered and are denied."

To the extent that this petitioner has not been able to specify with more particularity the errors of the Commission, such inability is due to the failure of the Commission to disclose by its findings and opinion the methods, principles and computations employed by it in arriving at its ultimate conclusions and findings. In failing to make proper findings, in failing to disclose thereby the methods and principles employed by it and in failing to grant petitioner's request for such additional findings and such disclosure of the methods, principles and computations used by the Commission, this petitioner has been further deprived of its rights under the Natural Gas Act and under the Constitution of the United States.

Respectfully submitted this 9th day of April, 1942.

COLORADO INTERSTATE GAS COMPANY,
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[Verification and certificate of service omitted.]

Filed March 11, 1942.

Petition of Canadian River Gas Company for Rehearing and to Reopen.

Now Comes Canadian River Gas Company, one of the Defendants-Respondents in the above-entitled and numbered causes, hereinafter sometimes referred to as Petitioner and sometimes as Canadian, and referring to Canadian's requested "Findings of Fact" heretofore filed herein and to this Commission's "Order Reducing Rates," dated March 18, 1942, and this Commission's Opinion No. 73 incorporated by reference in said Order, and to Canadian's Petition, dated March 10, 1942, to reopen the above-entitled proceedings to take further evidence, and respectfully applies for a rehearing in the above-entitled causes upon each and all of the grounds set forth in the following Specifications of Errors.

Specifications of Errors.

1.

Without waiving but still insisting upon each and all of the Specifications of Errors following this specification, and without waiving but still insisting upon its pleas, objections and contentions as to the jurisdiction of the Commission over Canadian, it is respectfully submitted the Commission erred in denying Canadian's petition, dated March 10, 1942, to reopen the above-entitled proceedings to take further evidence. The Commission states on page 3 of its Opinion that the granting of said Petition was opposed by the Mayor of the City and County of Denver by letter and by the Wyoming Public Service Commission by telegram. No copy of such letter or telegram has been served upon Canadian. The Commission's statement on page 3 of its Opinion that it is fully aware of recent trends in costs is not supported by any evidence in this case. The Commission's statement on page 3 of its Opinion that it is also aware of recent trends in revenues is not supported by any evidence in this case. The statement on page 3 of the Opinion that the Commission has given due consideration to the above factors in the orders entered in these proceedings indicates that the Commission has based its findings and orders upon alleged facts and matters not appearing in the record. The statement on page 39 of the Opinion that the Commission is aware of substantial increase in natural gas sales due

to the country's war efforts, the statement on page 40 that in the natural-gas industry operating labor and materials are a comparatively small part of the total costs, the statement on page 40 of the Opinion that all factors considered, it may reasonably be expected that revenues will increase as rapidly, if not more rapidly, than costs of Canadian, the statement on page 40 that for the purposes of the Commission's order, 1939's revenues and costs are representative of the relationship that will exist between these items in the immediate future, and the statement on page 40 of the Opinion that the use of 1939 figures undoubtedly resolves most of the doubts as to future operation conditions in favor of the companies, and each of said statements, are not supported by any evidence in the case. Even though it be assumed that the observations and statements of the Commission be generally true as to the gas industry as a whole, nevertheless, the application of such observations to Canadian and its business is not supported by any evidence in the record. The Commission's findings and orders are based upon facts found to exist in the pre-war year of 1939, whereas it is a matter of common knowledge, which the Commission in its Opinion has recognized, that pre-war conditions and facts do not now prevail and will not prevail during the war period, and for an indefinite period thereafter. The basis of the Commission for said observations and statements is not set forth at any place in its Opinion or Order. Canadian's Petition to Reopen is hereby renewed upon each and all of the grounds set forth therein.

2.

Even assuming that Canadian is a natural gas company within the meaning of the Natural Gas Act and subject to the jurisdiction of the Commission for certain purposes, the Commission, nevertheless, erred in finding and ruling that it has rate-regulatory jurisdiction over Canadian's production and gathering properties, facilities and business and in its attempted exercise of such jurisdiction in this case.

Canadian's production and gathering business is local in character, has not been declared to be and is not "affected with a public interest," and is not interstate in character, and the Natural Gas Act itself provides that it shall not be applicable to such production and gathering.

The Commission's rate-regulatory jurisdiction at the most extends only to the transportation of natural gas in interstate commerce and to the sale in interstate commerce of natural gas for resale for ultimate public consumption, and therefore the Commission erred in each and all of its findings, rulings and orders in so far as they relate to, and include Canadian's production and gathering properties, facilities, operations and business.

The statement or finding on page 11 of the Opinion that Canadian's production and gathering operations are an integral part of its total operations, including transportation in interstate commerce and the sale of natural gas for resale in interstate commerce, is not supported by substantial evidence.

The statement or finding on page 11 of the Opinion that Canadian's operations are an integral part of the operations of Colorado Interstate Gas Company, hereinafter sometimes referred to as Colorado, and that the two comprise a single operating system is not supported by substantial evidence.

The statement or finding on page 11 of the Opinion that the investigation of Canadian's production and gathering property and operations is indispensable in regulating Canadian's rates and charges for the sale of natural gas in interstate commerce for resale and for the transportation of natural gas in interstate commerce is not supported by substantial evidence.

Each of said statements and findings on page 11 of the Opinion, even if true, is immaterial and forms no basis or justification for an assumption of jurisdiction by the Commission for rate-making purposes over Canadian's production and gathering properties, facilities, operations and business, which is expressly negatived and withheld in and by the Natural Gas Act.

3.

The Commission erred in ordering a change in the price of gas provided to be paid Canadian by Colorado under the contract of January 3, 1928, between Canadian and Colorado.

4.

The Commission erred in not finding and ruling that

neither Canadian's contract with Colorado of January 3, 1928, nor the price of gas provided therein to be paid in subject to change by the Commission prior to the expiration of its term.

5.

The Commission erred in not finding that Canadian's contract of January 3, 1928, with Colorado was the result of prolonged arm's length private negotiations and individual bargaining between adverse parties.

6.

Said contract of January 3, 1928, between Canadian and Colorado obligates Canadian, among other things, to own, maintain and develop gas lands and leasehold or other interests therein and to develop, drill for, produce and gather gas therefrom. Certain quantities of the gas so produced and gathered Canadian is then obligated to transport and deliver to Colorado under said contract. The so-called purchase price to be paid Canadian under said contract of January 3, 1928, computed on the cost basis in said contract provided is the agreed compensation to Canadian for the performance of all its obligations under said contract.

Irrespective of any general jurisdiction which the Commission might have to change the price of gas to be paid under contracts executed prior to the effective date of the Natural Gas Act, such jurisdiction does not extend to changing the compensation to be paid Canadian for the performance of its obligations under said contract of January 3, 1928, with Colorado relating to the acquisition and holding of gas lands and the drilling and development thereof and the production and gathering of gas therefrom. The necessary effect of the Commission's findings and orders in this case is an attempted extension of any jurisdiction it may have to matters not within its jurisdiction and to production and gathering, over which jurisdiction has been expressly withheld by the Natural Gas Act. This Commission, therefore, has clearly erred in changing the amount of compensation provided to be paid Canadian by Colorado under the contract of January 3, 1928, insofar in any event as such compensation includes compensation for the performance of obligations relating to production and gathering

and other obligations not within the jurisdiction of the Commission.

7.

Canadian's contract with Colorado of January 3, 1928, was entered into and was substantially performed long prior to the adoption of the Natural Gas Act, and under such circumstances the Commission is without power to change any of the terms, provisions or prices as specified in such contract during the life thereof, and its action in this case in so doing is error.

8.

Even if it be assumed or held that the Commission has jurisdiction and power to change the price of gas provided to be paid under a contract negotiated, executed and substantially performed long prior to the adoption of the Natural Gas Act, and even if it be assumed that such power to change or modify the terms of a contract extends to a contract relating to production and gathering, the action of the Commission under the facts appearing in the record in this case in changing the price to be paid by Colorado to Canadian for gas delivered by Canadian to Colorado under said contract is unfair, unreasonable, capricious and arbitrary. As the evidence shows, under said contract Canadian cannot possibly make a profit from its operations, all the benefits of its operations being passed on to Colorado. It is entitled to receive only its actual costs including an amount sufficient to amortize the principal and interest of its bonded indebtedness held by Colorado during the life of the contract. To deprive Canadian of any part of such payments provided to be made under such contract must necessarily make it impossible for Canadian to pay its principal and interest on its bonds or to perform its other obligations under said contract necessary to produce and gather the gas which it has contracted to sell to Colorado. The necessary effect of such action will be to deprive Canadian of a substantial part of the consideration which induced it to enter into said contract and to render Canadian unable to pay principal or interest on its 6% bonds which as shown by the evidence as of December 31, 1939, were outstanding in the principal sum of $5,057,000, with possibility or probability of foreclosure of Canadian's properties under the trust deed securing said bonds as a result of the

default which will be forced by changing the amount of the payment which Colorado by the terms of said contract is obligated to make to Canadian. In addition to this outstanding bonded indebtedness as of December 31, 1939, Canadian was indebted to Colorado at said time in the amount of $1,384,254.14 on 6% notes sold from time to time at par for cash to finance Canadian's construction. Enforcement of the Commission's order will not only affect Canadian but also Colorado and will endanger the whole service to the ultimate consumers.

The enforcement of any order changing the contract price to be paid Canadian for its gas sold and delivered to Colorado under said contract will deprive Canadian of its property without due process of law in violation of the Fifth Amendment to the Constitution of the United States.

9.

In its consideration of a proper rate base the Commission erred in rejecting Canadian's estimates of reproduction cost new less observed depreciation (Op., p. 13).

10.

The Commission has erred in failing to make any preliminary or basic findings on which it bases its ultimate finding of the undepreciated cost of Canadian's gas plant as of December 31, 1939, to be $10,784,464. It is impossible for Canadian, from its said Order reducing rates of March 18, 1942, or from its Opinion No. 73 incorporated therein, to determine the different values of the various properties of Canadian used by the Commission in making up its aggregate of $10,784,464 found to be the undepreciated cost of Canadian's gas plant as of December 31, 1939. Because thereof it is impossible for Canadian to make the specific objections in this Petition for Rehearing to the individual items used by the Commission in determining said original cost, which objections Canadian would have the opportunity to make if the Commission had made proper preliminary and basic findings showing how it arrived at its ultimate finding of original cost as of December 31, 1939. The failure of the Commission to make such proper preliminary and basic findings deprives Canadian of due process of law in

violation of the Fifth Amendment to the Constitution of the United States.

11.

The Commission erred in not limiting its findings as to original cost to Canadian's properties used in the transportation of natural gas in interstate commerce and to the sale in interstate commerce of natural gas for resale for ultimate public consumption, and in including Canadian's production and gathering properties and facilities.

12.

The Commission erred in finding the undepreciated original cost of Canadian's property (Op., p. 14 and Finding No. 4) as of December 31, 1939, to be $10,784,464. The Commission's finding to that effect is not supported by substantial evidence.

13.

The Commission erred (Op., p. 15) in deducting from and not including in original cost of Canadian's properties the item of $129,032 which the Commission has deducted upon the ground that said item represents reaccounting and not a correction of an accounting error. The finding of the Commission that the placing of said sum by Canadian in its capital account represents reaccounting, and not correction of an accounting error is not supported by substantial evidence. The Commission erred in not finding that said sum is properly placed in capital as a part of the actual legitimate cost of Canadian's property. The Commission further erred in eliminating all that part of this item which relates to the production and gathering properties of Canadian.

14.

The Commission erred in deducting from and not including in original cost of Canadian's properties as of December 31, 1939 (Op., p. 15) the item of $3,370,817.

15.

The Commission erred in not properly or adequately setting up the facts appearing in the record showing the circumstances under which the item of $5,000,000 was paid by Canadian to Amarillo Oil Company for certain gas leaseholds and wells, and in not finding the following, namely:

That when Canadian acquired its original gas leaseholds and wells from Amarillo Oil Company as of May 1, 1927, it actually paid therefor the sum of $5,000,000 in cash, which sum was actually advanced by Standard Oil Company (N. J.) pursuant to a contract, dated April 5, 1927, between Standard Oil Company (N. J.), Southwestern Development Company, and Cities Service Company; that the contract of April 5, 1927, between Standard Oil Company (N. J.), Southwestern Development Company, and Cities Service Company, pursuant to which Standard Oil Company (N. J.) advanced to Canadian the sum of $5,000,000 which Canadian used to purchase gas leaseholds and wells from Amarillo Oil Company, was executed only as the result of prolonged arm's-length negotiations and individual bargaining between adverse parties, Standard Oil Company (N. J.) and Southwestern Development Company; that said transaction was not the ordinary inter-company transaction between affiliated companies and should not be so treated, because, first, its terms were negotiated at arm's length and agreed upon by adverse parties; second, it was not a book transaction, since the purchase price was actually advanced and paid in dollars by a company which was outside the Southwestern's holding company system; third, no contingency whatever could arise in the future which would affect the right of Amarillo Oil Company to keep and retain the full purchase price; and fourth, under these circumstances all accepted rules of accounting require that the full purchase price paid by Canadian be treated as its cost. Said full sum of $5,000,000 was actually invested in and went into this project. It was new money and came from an entirely outside source. To secure this $5,000,000, plus an additional $6,000,000, it was necessary for Canadian to issue its $11,000,000 of bonds. The payment of this $5,000,000 of new money was an essential to the inauguration and consummation of the project. The transaction was actual, bona fide, complete and final between the parties. The Commission erred in not making findings in accordance with each and all of the above statements. The Commission erred in not finding that said entire sum of $5,000,000 constituted part of Canadian's original cost, and in eliminating the sum of $3,127,496 therefrom, and in finding that said sum constituted a write-up.

16.

The Commission erred in basing its elimination of the $3,127,496 upon the express or implied finding or assumption that the gas leaseholds and wells purchased with the $5,000,000 had prior to the time of such purchase been devoted to a public service and in not finding that in any event said properties had not been devoted to any public service until after the same had been purchased by Canadian.

17.

The Commission erred in not finding that the full $5,000,000 paid by Canadian to Amarillo Oil Company for said original leaseholds and wells was a fair and reasonable price therefor, and in finding that said entire sum should not be included in Canadian's original cost.

18.

The Commission erred (Op., pp. 15-16) in deducting from and not including in Canadian's original cost the sum of $121,787, and finding that this item represents a profit among affiliated companies.

19.

The Commission erred in finding that the Master Oil and Gas Company property had been devoted to a public service before the time Canadian acquired it.

20.

The Commission erred in not finding that the sale by Master Oil and Gas Company to Canadian was negotiated at arm's length, that the purchase price was not exorbitant or in anywise unreasonable, and that the full purchase price for said property should be considered as part of Canadian's original cost.

21.

The Commission erred in deducting from and not including in Canadian's original cost (Op., pp. 15-16) the item of $128,534 upon the alleged ground that said payment constitutes a write-up and represents a price paid for properties not at arm's length which exceeded the original cost to the party first devoting them to the public service. Said finding (Op., p. 17) is not supported by any substantial evidence.

22.

With reference to the transaction referred to in Specification No. 21, the Commission erred in not making any preliminary or basic findings of fact showing the items making up said aggregate item of $128,534 so that Canadian could properly direct specification of errors to the elimination of the different items aggregating said sum of $128,534.

23.

If, as Canadian believes, there is included in this elimination of $128,534 the sum of $51,839.04 representing the cost of the drilling of an exploratory well (Bivins 2) over 20 years ago which resulted in a dry hole, then the Commission erred in making such elimination.

24.

If, as Canadian believes, the remaining portion of said sum of $128,534 eliminated by the Commission from Canadian's original cost, namely, the sum of $76,695, is eliminated by the Commission upon the ground that it represents an excess of original cost to the party first devoting the property to the public service, then the Commission erred in that said conclusion is not based upon any adequate finding and is not based upon substantial evidence in the record, and is contrary to law. The Commission erred in not finding that said purchase was made prior to the time that the property so purchased could possibly be said to have been first devoted to the public service, and the Commission erred in not finding that said sum is reflected in a sum actually paid by Canadian to Amarillo Oil Company for the property.

25.

The Commission erred in deducting from and not including in Canadian's original cost (Op., pp. 15-17) the item of $366,507 representing interest during construction.

26.

The Commission erred in not setting forth and making sufficient preliminary or basic facts showing just what interest during construction from Canadian's books has been

eliminated so that Canadian can properly direct specification of errors thereto.

27.

The Commission erred (Op., p. 18) in finding that any part of said sum of $366,507 eliminated by the Commission from Canadian's original cost represents interest upon "write-ups." The Commission's finding to that effect (Op., pp. 17-18) is not supported by substantial evidence.

28.

The Commission erred in finding that Canadian's construction period ended on July 1, 1928 for the purpose of computation and allowances of "interest during construction."

29.

The Commission erred in not finding that Canadian's construction period, for the purpose of the computation and allowance of "interest during construction," should not end before October 31, 1928.

30.

The Commission erred in not finding that the sum of $366,507 represents interest actually paid by Canadian during the period from May 1, 1927 to October 31, 1928.

31.

The Commission erred in not finding that the original cost of Canadian's properties for its production and gathering facilities as of December 31, 1939 is not less than the sum of $10,620,625.

32.

The Commission erred in not finding that the original cost of Canadian's transmission system properties as of December 31, 1939 is not less than the sum of $4,028,196.

33.

The Commission erred (Op., pp. 24-27) in ignoring and rejecting observed per cent condition of Canadian's depreciable property in determining the existing depreciation in said property as of December 31, 1939.

34.

The Commission erred in not finding from the uncontradicted evidence in this case that, based upon actual observation and inspection of the present condition of Canadian's depreciable property, the percentage of accumulated depreciation and the percentage of condition of the depreciable properties of Canadian were, as of December 31, 1938, as set forth in Canadian's request for Finding of Fact No. 82 heretofore filed with this Commission as follows:

Description	Accumulated Depreciation Per Cent	Condition of Properties Per Cent
Land	0%	100%
Right of Ways	0%	100%
Drilling and Cleaning Equipment	0%	100%
Field Measuring Station Structures	17%	83%
Measuring Station Equipment (Field and Transmission)	11%	89%
Field Lines	7%	93%
Field Compressor Station Structures	18%	82%
Field Compressor Station Equipment	16%	84%
General Property	22%	78%
Compressor Station Structures	10%	90%
Compressor Station Equipment	17%	83%
Transmission Line Equipment	7%	93%
Other Transmission System Structures	19%	81%
Other Transmission System Equipment	18%	82%
Measuring Station Structures (Transmission)	11%	89%
Gasoline Plant Structures	15%	85%
Gasoline Plant Equipment	27%	73%
Telephone System Equipment	16%	84%

35.

The Commission erred in not applying the percentages of depreciation set forth in the next preceding specification to Canadian's depreciation base.

36.

As stated by the Commission in that portion of its opinion under the heading "Gas Reserves" (Op., pp. 27-33) the

Commission witnesses based their testimony as to reserves upon the "pressure decline" method, whereas Canadian's witnesses based their testimony upon the "porosity sand thickness" method or "open flow" method. The Commission states in its opinion (Op., pp. 28-29) that the estimates of Commission staff, resulting from an application of the "pressure decline" method are too high and that Canadian's estimates, based upon applications of the "porosity sand thickness", or "open flow," methods, are too low, thereby condemning all methods as applied to the Texas Panhandle Field and rejecting the estimates both of Commission staff witnesses and Canadian's witnesses. Notwithstanding this, the Commission has made a purported finding as to Canadian's recoverable reserves. It is obvious that such finding is necessarily the arbitrary conclusion only of the Commission and is not supported by any substantial evidence in the case. The Commission erred in not basing its finding upon any evidence in the case and in making the finding that Canadian's recoverable reserves as of December 31, 1939, were 2,800,000,000 Mcf at 14.65 pound pressure base and at an assumed abandonment pressure of 50 pounds (Op., p. 31).

37.

The Commission erred in holding that the method used by the Commission staff in dividing the entire field into quadrants favored the position of Canadian as to lower reserves, there being absolutely no substantial testimony to this effect and this finding, therefore, is a mere conclusion not even remotely supported by the record (Op., p. 30).

38.

The Commission erred in making the statement that the method used by Commission staff of dividing the entire field into quadrants favored the position of Canadian as to lower reserves and in stating in effect that this was true because (1) Canadian's acreage is "considered among the very best in the entire field" (Op., p. 30), and (2) that the Commission staff had arrived "at an average of 15,400 Mcf of remaining reserves per acre (for the field as a whole) as compared with only 11,600 Mcf of remaining reserves per acre under Canadian's acreage" (Op., p. 30). These find-

ings are erroneous and are not supported by the record because the only testimony on these questions by the Commission staff shows an estimate for Canadian's reserves of 16,343 Mcf per acre, which is considerably higher than the estimate per acre for the field as a whole (see Hammer's Exhibit 180, page 4 of 4), and for the further reason that there is no substantial evidence whatsoever in the record to the effect that Canadian's acreage is among the most productive in the field, the evidence on this subject being merely that it is well blocked and among the most desirable acreage for this reason.

39.

The Commission erred in holding that "the pressure decline method, theoretically, automatically accounts for any migration" (Op., p. 30) for the reason that there is no substantial evidence in the record to support any such finding with respect to migration that may occur in the future. It is undisputed in this record that the life of any acreage is determined by production and drainage in the future, and past drainage in any event has very little bearing upon this fact after the gas in place has been determined.

40.

The Commission erred in its finding that "if iso-baric maps are properly drawn this factor (drainage) is accounted for". (Op., p. 30) because there is absolutely no evidence in the record to support the statement that iso-baric maps represent in any manner the drainage that may occur in the future.

41.

The Commission erred in failing to find that Canadian would lose proportionately more gas in the future from drainage than it had lost in the past, for the reason that the uncontradicted testimony in this case demonstrated that this would be true because of the increased rate of production from lands adjacent to the acreage of Canadian coupled with the fact that the record shows without contradiction and based upon figures and studies furnished by Commission staff that it was not until midyear 1938 that adjacent acreage had produced as much gas in volume as Canadian's acreage and, further, that during the last year covered by

the study of Commission staff only about half as much gas was produced from Canadian's acreage for each acre pound lost in pressure as was produced for each acre pound lost in pressure during the first year covered by the study of Commission staff. The record is clear and uncontradicted in this respect.

42.

The Commission erred in its finding that the life of Canadian's reserves would continue for 53 years from December 31, 1939 (Op., p. 31), because there is no substantial evidence that will support such finding.

43.

The Commission erred in the determination of the life of Canadian's reserves by merely dividing its expected future annual rate of production into remaining recoverable reserves as found by it (Op., p. 31) because such method of computation necessarily assumes, in spite of the uncontradicted testimony to the contrary, that Canadian will produce every foot of gas found by the Commission to remain in place under its acreage as of the date of the computation, notwithstanding the fact that there is no substantial evidence to support this assumption, but on the contrary, the uncontradicted evidence in this case demonstrated that a computation of this character, which did not take the drainage into account, would give an erroneous answer.

44.

The Commission erred in its finding that the life of Canadian's reserves would be influenced by the life of the Hugoton Field (Op., p. 32), for the reason that the evidence shows affirmatively and without contradiction that Canadian has no reserves in the Hugoton Field and there is no showing that it is possible for Canadian either to acquire reserves in that field or purchase gas therein and finally, even if Canadian could rely upon the Hugoton Field as a source of supply it would be necessary for it to make large additional capital expenditures, none of which are provided for in the rate base or anticipated by the Commission with respect to Canadian's future operations.

45.

The Commission erred in not considering the influence of drainage upon the life of Canadian's reserves because the overwhelming weight of the testimony shows that Canadian will lose far more gas by drainage than it will actually produce through its wells, there being no substantial evidence to the contrary.

46.

The Commission erred in failing to find that the life of Canadian's reserves depended upon and would be the same as the life of the field as a whole, this being the testimony of all of the witnesses who testified concerning this matter and there being no substantial evidence to the contrary, all of the testimony being that the Texas Panhandle Field is interconnected by means of porous spaces and that production of gas from any point in the reservoir will affect the entire reservoir, and all of the witnesses also testified to the fundamental law of physics that gas under pressure will migrate from areas of higher pressure to areas of lower pressure in the process of equalization of pressures.

47.

The Commission erred in failing to make any finding as to the total recoverable reserves of the Texas Panhandle Gas Field and to recognize the necessity for such finding in order to arrive at a proper finding of the remaining life of Canadian's recoverable reserves.

48.

The Commission erred in failing to find the remaining life of the Texas Panhandle Field as a whole.

49.

The Commission erred in failing to find that the total volume of gas in place originally in the Texas Panhandle Field did not exceed 19,661,265,912 Mcf computed on a 16.4 pound pressure base to 0 pounds gauge well-head abandonment pressure.

50.

The Commission erred in failing to find that the total

volume of gas in place originally in the Texas Panhandle Field computed to a 50 pound gauge well-head abandonment pressure did not exceed 17,381,014,589 Mcf.

51.

The Commission erred in failing to find that there had been produced from the Texas Panhandle Field from the beginning of production to January 1, 1941, a total of 8,325,985,366 Mcf. of gas computed on a 16.4 pound pressure base.

52.

The Commission erred in failing to find that from January 1, 1941, to the end of 1956, there will be withdrawn from the Texas Panhandle Field a total of 9,055,029,223 Mcf of gas computed on a 16.4 pound pressure base, and that at that time the average pressures in the field would not exceed 50 pounds gauge at the well-head.

53.

The Commission erred in failing to find that the remaining life of the Texas Panhandle Gas Field as a source of supply for long distance pipe lines will not extend beyond the end of 1956.

54.

The Commission erred in failing to find that the remaining life of Canadian's reserves as a source of supply for long distance pipe lines will not extend beyond the end of 1956, there being no substantial evidence to the contrary.

55.

The Commission erred in failing to find that the determination of average pressures in the Texas Panhandle Field by weighting on acreage alone does not give the correct equilibrium pressure, all of the substantial testimony in this case being to this effect.

56.

The Commission erred in failing to find that the pressure decline method of estimating gas reserves in the Texas Panhandle Field gives an erroneously high answer in the absence of the true equilibrium pressure, all of the substantial testimony in the case being to this effect.

57.

The Commission erred in failing to find that the average pressure in the Texas Panhandle Field, determined by weighting on acreage alone, shows an accelerated drop in pressure from year to year as related to production, all of the substantial testimony in the case being to this effect.

58

The Commission erred in failing to find that the average pressure of Canadian's reserves, determined by weighting on acreage alone, shows an accelerated drop in pressure from year to year as related to production, all of the substantial evidence being to this effect.

59.

The Commission erred in failing to find that any estimate of reserves in the Texas Panhandle Field, based upon the pressure decline method, is erroneously high, when the accelerated drop in pressure from year to year, as related to production, is ignored, the overwhelming weight of the testimony being to this effect and any contrary testimony, by inference or otherwise, is directly in conflict with the fundamental law of physics known as Boyle's Law.

60.

The Commission erred in applying the pressure decline method to Canadian's acreage in any event for the purpose of determining the remaining recoverable reserves in place in view of its finding in this case to the effect that the pressure decline method of estimating reserves is satisfactory when "a field is depleted as much as 15% or more" (Op., p. 29), all of the testimony in this case being to the effect that at the time of the hearing and at the time the estimates of reserves were made Canadian's reserves had been depleted less than 10%.

61.

The Commission erred in finding the accrued depreciation as of December 31, 1939, on Canadian's depreciable property to be $1,480,948.

62.

The Commission erred, under the facts and circumstances appearing in this case in using the service life principle for the purpose of determining annual depreciation expense.

63.

The Commission erred (Op. pp. 33-34) in not stating and finding what service lives it has used in applying the service life principle to annual depreciation expense. It is impossible, from Commission's Opinion, for Canadian to know what service lives have been used so that it can properly direct Specifications of Error thereto.

64.

The Commission erred under the facts and circumstances appearing in this case in using the service life principle for the purpose of determining future annual depreciation expense, which principle, as applied by the Commission, erroneously assumes that the allowance which was approximately 2% per annum on depreciable items when applied up to the very date that the property is exhausted and theoretically will go out of service will return the full investment in the property. This does not square with the realities. The property cannot be operated to the very date of exhaustion without the expenditure of large sums of money for the purpose of making replacements, betterments and rehabilitations of the property before the date of total exhaustion has been reached. The Commission has made no provision for these actualities, and in failing to do so, committed error.

65.

The Commission erred in not determining and finding the depreciation period for the amortization of Canadian's investment to end in the year 1947, and that it should be permitted to amortize its investment during the period commencing 1939, or such later commencement date as should be properly used in establishing the depreciation base, and ending in the year 1947, inasmuch as the primary term of Canadian's contract with Colorado expires in 1947, and the franchise with the Public Service Company of Colorado in Denver, terminates in the year 1947.

66.

In any event the Commission erred in not finding that the longest period which should properly be used for the amortization of Canadian's investment is the 18-year period starting in 1939 and terminating at the end of the year 1956.

67.

The Commission erred in finding that the accrued depletion of Canadian's properties as of December 31, 1939, is the sum of $653,681.

68.

The Commission erred in finding that the total accrued depletion and depreciation in Canadian's properties as of December 31, 1939, is the sum of $2,134,269.

69.

The Commission erred in finding that Canadian's depletion expense for the year 1939 was the sum of $80,969.

70.

The Commission erred in finding that Canadian's depreciation expense for the year 1939 was the sum of $157,774.

71.

The Commission erred in any event in its computation of depletion allowances because it assumes that Canadian will recover all of the gas currently under its acreage as determined by the Commission, whereas all of the substantial evidence in this case points to the fact that it will not do so.

72.

The Commission erred in not basing its annual depreciation and depletion expense upon the present fair value of Canadian's properties.

73.

The Commission erred in allowing only the sum of $150,-

738 as working capital instead of the sum of $190,000 claimed by Canadian.

74.

The Commission erred in making its working capital allowance in the same amount for all future years based upon the amount found by the Commission to be proper for the year 1939, and in not finding that the proper working capital allowance for the years 1939 to 1947, both inclusive, is as follows:

1939	$190,000
1940	205,000
1941	220,000
1942	230,000
1943	245,000
1944	265,000
1945	275,000
1946	285,000
1947	275,000

75.

The Commission erred (Op., p. 36) in finding that the probability of future additions to Canadian's properties for the years 1942 to 1947 are speculative. Such finding is not supported by substantial evidence.

76.

The Commission erred in not granting Canadian's Petition to Reopen for the purpose of taking additional evidence, in that, if such petition had been granted, Canadian could at this time introduce evidence as to future additions required in 1942, against which no charge of speculation could be made.

77.

The Commission erred in not making findings and allowances for future property additions for the years 1942 to 1947 in the amounts for said respective years as to the production and gathering systems, as shown in Statement No. 3 of Exhibit No. 184, which Statement shows necessary future property additions for said years 1942 to 1947 in the aggregate amount of $1,009,500.

78.

The Commission erred in using, as Canadian's rate base, (Op., p. 38, Finding No. 10), original cost computed as of December 31, 1939, less accrued depreciation and depletion, and plus working capital.

79.

The Commission erred (Op., p. 38, Finding No. 10), in finding that Canadian's proper rate base is the sum of $9,372,496.

80.

The Commission erred in including in any rate base for Canadian to be used in these proceedings any values applicable to Canadian's production and gathering properties and facilities, and in not limiting the rate base to values applicable to Canadian's transmission properties and facilities.

81.

The Commission erred in not making any finding as to the present fair value of Canadian's properties subject to the jurisdiction of the Commission and using the amount so found as the rate base.

82.

The Commission erred in not finding that the total original cost of Canadian's production, gathering and transmission properties extended through 1947 is $16,626,957.

83.

If it shall be finally held that the Commission has jurisdiction for rate-making purposes over all of Canadian's properties, including its production and gathering facilities, and if it shall be further finally held that the rate base is to be based upon original cost, then the Commission erred in not using the sum of $16,626,957 in computing Canadian's rate base.

84.

The Commission erred in not finding that the prevailing market value of gas in its natural state at the wellhead in the Texas Panhandle Gas Field, including Canadian's portion thereof, is 4c per Mcf. on a 16.4 pound pressure base.

85.

The Commission erred in not finding that the prevailing market value of gas in its natural state at the intake side of the Bivins Compressing Station is 7c per Mcf. on a 16.4 pound pressure base.

86.

The Commission erred in not finding that the reasonable transportation cost per Mcf. of transporting natural gas from the intake side of Bivins Compressing Station to Clayton Junction, New Mexico, for the different years 1939 to 1947, inclusive, is as follows:

1939	3.29c
1940	3.85c
1941	3.70c
1942	3.63c
1943	3.96c
1944	4.04c
1945	4.09c
1946	4.24c
1947	4.42c

87.

The Commission erred in not finding that the estimated volume of gas to be delivered at Clayton Junction, New Mexico, by Canadian to Colorado for the years 1939 to 1947, both inclusive, and the total and Mcf. cost of said gas computed under the contract of January 3, 1928, between Canadian and Colorado and the total cost and Mcf. cost of said volumes of gas using a 7-cent market value of said gas at the intake side of Bivins compressing station, plus a reasonable transportation cost therefrom to Clayton Junction, New Mexico, are as follows:

	Volume (Mcf. delivered at Clayton Junction, N. M.)	Contract Cost of all gas delivered at Clayton Junction, N. M.		Cost of all gas delivered at Clayton Junction, N. M., using 7¢ market, value at Bivens intake plus transportation to Clayton Junction	
	Mcf.	Amount	Per Mcf.	Amount	Per Mcf.
1939	18,377,500	$1,221,008	6.64c	$1,891,022	10.29c
1940	18,830,659	1,323,494	7.03c	2,043,286	10.85c
1941	20,345,148	1,293,088	6.35c	2,176,464	10.70c
1942	20,807,395	1,238,270	5.95c	2,211,063	10.63c
1943	20,915,828	1,244,759	5.95c	2,293,108	10.96c
1944	21,343,807	1,207,771	5.66c	2,355,481	11.04c
1945	21,767,854	1,175,875	5.40c	2,415,251	11.09c
1946	21,767,854	1,232,651	5.66c	2,447,015	11.24c
1947	21,767,854	1,733,845	7.97c	2,486,168	11.42c

88.

The Commission erred in not finding that the price of gas to be delivered to Colorado at Clayton Junction, New Mexico, provided to be paid Canadian under its contract of January 3, 1928, is less than the prevailing market value for said gas at the intake side of the Bivins compressing station before the extraction of natural gasoline, plus a fair charge for transporting said gas between the intake side of said Bivins compressing station and Clayton Junction, New Mexico.

89.

In any event the Commission erred in not limiting its rate-regulatory order as to gas sold by Canadian to Colorado to a proper rate for the transportation of gas by Canadian from the end of Canadian's gathering line at the intake of the Bivins Station to the point of delivery to Colorado at Clayton Junction, New Mexico, and in adding such proper transportation charge to the fair market value of the gas at the intake side of Bivins Compressing Station, which fair market value, under the uncontradicted evidence, is 7c per Mcf. Such action would avoid an assumption of jurisdiction by the Commission over Canadian's production and gathering properties, facilities, operations and business, which jurisdiction is expressly with-

held and negatived by the Natural Gas Act. The Commission committed error in going beyond this in its Opinion, Findings and Order.

90.

The Commission erred in not finding that the present market value of the gas leaseholds in the Texas Panhandle Field held by Canadian as of January, 1941, was the sum of $15,646,784.64.

91.

The Commission erred in not finding that the fair value of Canadian's leaseholds in the Texas Panhandle Field is largely in excess of the cost thereof as shown on Canadian's books.

92.

The Commission erred in not finding that the equivalent original cost of Canadian's production and gathering facilities, as would be required for the production and gathering of all gas delivered to Colorado at Clayton Junction, New Mexico, except Colorado's direct sale gas, extended through 1947, is not less than $11,811,410.

93.

The Commission erred in not finding that the equivalent original cost of Canadian's transmission system, as would be required for the transmission of all gas delivered to Colorado at Clayton Junction, New Mexico, except Colorado's direct sale gas, extended through 1947, is not less than $4,307,737.

94.

The Commission erred in not finding that the equivalent original cost of Canadian's production and gathering facilities, as would be required for the production and gathering of all gas delivered to Colorado at Clayton Junction, New Mexico, except Colorado's direct sale gas, less depreciation and depletion as of December 31, 1938, is not less than $7,001,667, and when extended through 1947, not less than $8,770,769.

95.

The Commission erred in not finding that the equivalent original cost of Canadian's transmission system, as would

be required for the transmission of all gas delivered to Colorado at Clayton Junction, New Mexico, except Colorado's direct sale gas, less depreciation as of December 31, 1938, is not less than $3,257,379, and when extended through 1947, not less than $3,914,220.

96.

The Commission erred in not finding that the total equivalent original cost of Canadian's production, gathering and transmission system for all gas delivered to Colorado at Clayton Junction, New Mexico, except Colorado's direct sale gas, extended through 1947, is not less than $16,119,147.

97.

The Commission erred in not finding that the present fair value of Canadian's property used and useful in the production, gathering and transmission of natural gas to Clayton Junction, New Mexico, extended through 1947, is not less than $13,135,965, exclusive of working capital.

98.

The Commission erred in not finding that the present fair value of Canadian's property used and useful in the production, gathering and transmission of all gas to Clayton Junction, New Mexico, except Colorado's direct sale gas, extended through 1947, is not less than $12,684,989, exclusive of working capital.

99.

The Commission erred (Op., p. 42) in not setting forth and making a finding as to each of the deductions from Canadian's 1939 expense suggested by the Commission's staff and allowed by the Commission and found by the Commission to be reasonable. Canadian is absolutely unable, from the Commission's opinion, to determine the items of its 1939 expense which the Commission has disallowed and cannot reconcile the total expense deductions made by the Commission with the adjustments made by the Commission's staff in exhibits introduced in evidence. Consequently, Canadian cannot, and is deprived of the right to, direct proper Specifications of Error to the deductions from expenses made by the Commission and to the different

items of deduction aggregating the total deduction made by the Commission. The failure of the Commission to make proper findings as to the expense deductions so made deprives Canadian of due process of law in violation of the Fifth Amendment to the Constitution of the United States.

100.

The Commission erred in finding that any of the expense adjustments made by the Commission's staff are reasonable, and in not finding that each and all of said adjustments are unreasonable.

101.

The Commission erred in finding that unless the adjustments made by the Commission are made, the operating expenses of Canadian are overstated by the amount thereof.

102.

The Commission erred in deducting the item of $6,614 from expenses. (Op., p. 42.)

103.

If, as indicated on page 42 of its opinion, the Commission has deducted the sum of $151,591 from Canadian's plant account for past delay rentals, the Commission erred in so doing.

104.

The Commission erred in making each and all of the expense deductions indicated on page 42 of its Opinion.

105.

The Commission erred (Op., pp. 43-44) in finding that the allowance of income taxes in the amount of $66,403 as an expense item for the future, together with increase in business, constitutes a fair estimate of the future. Said finding is not supported by substantial evidence.

106.

The Commission erred in basing its expense allowance for the future upon Canadian's 1939 expense.

107.

The Commission erred in not granting Canadian's Petition to Reopen heretofore filed and receiving further evidence as to the increased amount of Canadian's income and other taxes for the year 1941, which increase is admitted in the Commission's Opinion, and in not using an amount not less than Canadian's actual 1941 tax expense as the estimate of Canadian's tax expense for the future.

108.

To allow Canadian for the future as an expense item only the amount of taxes paid in the year 1939 will necessarily deprive Canadian of its property without due process of law in violation of the Fifth Amendment to the Constitution of the United States.

109.

The Commission erred (Op., p. 44) in allowing as operating expense only the sum of $753,191.

110.

The Commission erred (Op., p. 44) in allowing as tax expense only the sum of $177,162.

111.

The Commission erred (Op., p. 44) in allowing total revenue deduction only in the aggregate amount of $1,169,096.

112.

The Commission erred (Op., p. 44) in finding that Canadian will have $1,224,291 income available for return based upon 1939.

113.

The Commission erred in not finding that the reasonable

estimated total operating costs of Canadian for the years 1940 to 1947, both inclusive, are not less than the following:

1940	$2,269,903
1941	2,166,294
1942	2,192,137
1943	2,246,717
1944	2,262,285
1945	2,254,260
1946	2,219,333
1947	2,043,837

114.

The Commission erred in not finding that the reasonable estimated total operating costs of Canadian for the years 1940 to 1947, both inclusive, excluding Colorado's direct sale gas, are not less than the following:

1940	$2,194,419
1941	2,071,007
1942	2,075,867
1943	2,151,539
1944	2,200,274
1945	2,192,740
1946	2,160,467
1947	1,988,261

115.

The Commission erred in taking into consideration or basing any annual expense finding or order upon Canadian's production and gathering properties, facilities, operations and business.

116.

The Commission erred in finding that a rate of return of 6½% is fair and reasonable. Said finding is not supported by substantial evidence.

117.

The Commission erred in not finding that a rate of return of 6½% will result in rates to be charged by Canadian which are lower than the lowest reasonable rates.

118.

The Commission erred in finding that any rate of return less than 8% is fair and reasonable, and in not finding that a rate of return of 8% is the lowest reasonable rate.

119.

The Commission erred (Op., p. 53) (a) in using a rate base of $9,375,000; (b) in finding income available for return of $1,224,291; (c) in applying a 6½% rate to the rate base; and (d) in finding that a net income of $1,224,291 will result in any excess of return to Canadian. Each of said findings is not supported by substantial evidence in the case.

120.

Referring to the statements and findings of the Commission on pages 53 to 59 of the Commission's Opinion under the heading, "Allocation of Costs," Canadian states and shows as follows:

(a) The Commission erred (Op., p. 53) for reasons hereinabove shown in stating that Canadian has had any earnings in excess of a reasonable return.

(b) The Commission erred (Op., p. 53) in stating that the Commission's determination of earnings is based upon all the components of a rate case.

(c) The Commission erred (Op., p. 53) in stating that the properties and businesses of Canadian, Colorado, and Colorado-Wyoming Gas Company constitute, for all practical purposes, a single project.

(d) The Commission erred (Op., p. 54) in finding that it is necessary or proper to alter the prices received by Canadian from Colorado for gas sold by Canadian to Colorado.

(e) The Commission erred in ordering any change in the prices charged by Canadian for its gas for the reason that each of such changes is based upon and involves an exercise of assumed rate-regulatory jurisdiction over Canadian's production and gathering properties, facilities, operations and business, which jurisdiction the Commission does not have.

(f) The Commission has purported to make an allocation which it calls an "Allocation of Costs." There are no sufficient preliminary findings of fact based upon evidence in the case and there is no sufficient explanation of what the Commission means by its "Allocation of Costs" and how it has applied this theory to enable Canadian properly to direct Specifications of Error to the general statements and findings made in this portion of the Commission's Opinion. The failure of the Commission to make such proper preliminary findings and explanation of its "Allocation of Costs" theory so as to enable Canadian properly to direct Specifications of Error thereto deprives Canadian of due process of law in violation of the Fifth Amendment to the Constitution of the United States.

(g) The Commission erred (Op., p. 55) in finding that an allocation of physical property need not be made in arriving at a proper determination of rates for the sale of gas within the jurisdiction of the Commission, and in not making such allocation.

(h) The Commission erred in not finding a rate base for that part of Canadian's property subject to the rate-regulatory jurisdiction of the Commission.

(i) The Commission erred in not finding a rate base for that part of Canadian's property subject to the rate-regulatory jurisdiction of the Commission and then making an allocation of the physical properties and other values included in such rate base as between the portion or value thereof properly applicable to the gas over which the Commission has rate-regulatory jurisdiction and the portion of said gas over which the Commission does not have such rate-regulatory jurisdiction.

(j) The Commission erred (Op., p. 55) in stating that Canadian did not submit in evidence a complete presentation of its entire operations broken down between jurisdictional and non-jurisdictional operations.

(k) The Commission erred (Op., p. 55) in stating that all that can be accomplished by an allocation of physical properties can be attained by allocating costs, including the return.

(l) The Commission erred (Op., p. 55) in stating that the cost allocation method is by far the most practicable and business-like. Said method is not practicable or business-like, is contrary to law, and its necessary effect is an assumption of jurisdiction by the Commission over properties, income and expenses over which it has no jurisdiction.

(m) The Commission erred (Op., p. 56) in stating that Canadian's allocation evidence assumed a field price for gas as the prevailing market price. This statement is not supported by substantial evidence. The uncontradicted evidence in the case established the prevailing market price for said gas which was used by Canadian in its allocation exhibit.

(n) The Commission erred (Op., p. 56) in stating that Canadian's evidence was based upon assumptions, without stating what those assumptions were, which are referred to by the Commission, and the Commission erred in stating that Canadian's exhibits do not square with realities or are patently unreasonable as applied to properties and operating conditions such as those concerned. None of said statements is supported by substantial evidence.

(o) The Commission erred (Op., p. 56) in stating that the Commission's staff exhibits on cost allocation followed principles that have long been recognized as reasonable in the public utility field and are widely accepted. Said statement is not supported by substantial evidence and its application in this case is contrary to law and to the facts of the case and will necessarily result in depriving Canadian of its property without due process of law.

(p) The Commission erred (Op., p. 56) in not showing what "peak day demand" it refers to as the basis of the allocation of fixed costs.

(q) In any event, the Commission erred in basing its cost allocation on a "peak day demand" in one year only, to-wit, the year 1939.

(r) The Commission erred in not recognizing and finding that the costs for the production and transmission of gas depend primarily upon load factor rather than volume.

(s) The Commission erred (Op., p. 56) in not making a finding as to the amounts used by the Commission as fixed costs and the amounts used as variable costs, and the items thereof.

(t) The Commission erred (Op., p. 57) in finding that the principles and methods of cost allocation presented by the Commission's staff are the most appropriate and reasonable for Canadian. Such finding is not supported by substantial evidence.

(u) The Commission erred in accepting the allocation exhibit which it has adopted because the allocation of transmission line cost between volumetric costs and capacity costs have been made in a manner that is arbitrary and discriminatory in that volumetric costs have been increased and capacity costs decreased, thereby favoring or minimizing the costs charged to resale gas.

(v) The Commission erred in the allocation of transmission line capacity costs, particularly with reference to fixed charges and return on the investment. Failure to make property allocations on which to base return and depreciation charges lead only to incorrect, arbitrary and discriminatory allocations of costs.

(w) The Commission erred in adopting the allocation exhibit of the Commission's staff because the allocation of that portion of transmission line costs alleged to apply to capacity costs has been improperly allocated as between resale and direct sale gas. The percentage distribution uesd applies only to that portion of the property situated at and immediately north of Bivins Compressing Station, whereas the main line has at least four different ratios that should have been used.

(x) The Commission erred in adoption of the allocation exhibit of the Commission's staff because no weight was given therein to the distance the gas is transported from the field to the several customers and the number of times the gas must be handled or compressed before arriving at its destination.

121.

With further reference to that portion of the Commis-

sion's Opinion (pp. 53-59) under the heading, "Allocation of Costs," Canadian states and shows as follows:

(a) The Commission erred in making any findings as to cost allocations based upon Exhibits submitted by Commission's staff for the reason that none of such exhibits purported to make any cost allocation with respect to regulated and unregulated business, and therefore afforded no basis for allocation of costs with respect to regulated and unregulated business.

(b) The Commission erred in making any findings as to cost allocations based upon exhibits submitted by Commission's staff for the reason that none of such exhibits took into account the service preference provided by contract which domestic and commercial gas has over industrial gas, and particularly direct sales gas.

(c) The Commission erred in making any findings as to cost allocations based upon exhibits submitted by Commission's staff for the reason that such exhibits do not take into account the service preference which regulated gas sales have over the sales of unregulated gas, which service preference is provided by contract.

122.

The Commission erred in making each and all of the allocations applicable to Canadian set forth on page 57 of its Opinion.

123.

The Commission erred (Op., p. 58) in stating that Canadian's sales to Colorado and to Clayton Gas Company are made under rate schedules on file with the Commission, FPC Rate Schedules Nos. 1 and 2, respectively, and are under its jurisdiction. Canadian has heretofore filed with the Commission its contracts with Colorado and Clayton Gas Company, but under full reservations, as the Commision's records show.

124.

The Commission erred in finding (Op., p. 58) that Canadian's revenues from sales exceed costs by $561,000.

125.

The Commission erred (Op., p. 58) in finding that Canadian's rates and charges under its contracts with Colorado and Clayton Gas Company heretofore filed with the Commission and referred to by the Commission as FPC Rate Schedules Nos. 1 and 2 are unjust and unreasonable.

126

The Commission erred in not finding that Canadian's charges for its gas sold to Colorado and Clayton Gas Company are just and reasonable.

127.

The Commission erred in finding that it should require Canadian to reduce its rates and charges by the amount of $561,000, or any other amount.

128.

If the Commission is correct in its finding that Canadian and Colorado operations comprise a single operating system (Op., p. 11) then the Commission erred in ordering a total reduction of $551,000 in the price of gas to be paid by Colorado to Canadian in that said reduction applies to all gas sold by Canadian to Colorado, the record showing without question that approximately 25% of gas sold by Canadian to Colorado is direct sale gas and is not subject to the jurisdiction of the Commission. In that event there should be no reduction in Canadian's contract prices with respect to the volume of gas that is not sold by Colorado for resale.

129.

The finding that Canadian is a natural gas company, as defined in the Natural Gas Act and subject to the rate-regulatory jurisdiction of the Commission is not supported by substantial evidence. The Commission erred in overruling the objections and pleas to its jurisdiction heretofore made and filed in these proceedings by Canadian.

The Commission erred in basing its findings that Canadian is a natural gas company within the meaning of the Natural Gas Act and therefore subject to the rate-regulatory jurisdiction of the Commission as to all or any of

Canadian's business, operations or properties solely upon the fact that Canadian transports natural gas in interstate commerce or sells such gas in interstate commerce for resale for ultimate public consumption, and in failing to consider and to make findings as to those facts established by uncontradicted evidence in the record as follows:

(a) Canadian and its incorporators, in its articles of incorporation, disclaimed any right to become a public utility or common carrier.

(b) In no document or filing or statement, written or oral, since its origin has Canadian claimed any right or intent to be or become a common carrier or public utility.

(c) Canadian transports and sells only its own gas which is produced and gathered by it from lands owned and operated by it under lease except one tract in which it owns the mineral rights in fee. It does not purchase gas from any one and does not transport any gas except its own.

(d) Canadian has never claimed nor attempted to exercise the right of condemnation or eminent domain, but has purchased privately all its right of way, and other property, and has acquired from states and countjes, and paid for where necessary, the right to cross beneath the highways with its pipe line.

(e) Canadian has never applied for nor received any certificates of public convenience and necessity from any public official or regulatory body, and possesses no special privilege, grant or right of any kind from any public authority relating to the distribution of natural gas.

(f) Canadian has never made any filings of "rates or tariffs for the sale or transportation of gas with any state or municipal regulatory commission or authority, and has only filed its contracts for the sale of gas with this Commission under a disclaimer that it is a "natural gas company" within the meaning of the Act and with full preservation of right.

(g) Canadian never advertised or otherwise offered to sell gas to the public generally, but has limited its sales to three individual customers under specific privately nego-

tiated written contracts, namely, Colorado, with delivery at Clayton Junction, New Mexico, and Gray, Oklahoma; Amarillo Oil Company with delivery at the well for the City of Amarillo and Channing markets, and at different points along Canadian's pipe line system for Dalhart, Hartley and Texline, Texas, markets; and to Clayton Gas Company for the Town of Clayton, New Mexico, with delivery at the Clayton town border.

(h) Canadian's gas sale contracts are not uniform. They all contain their separate specifically negotiated terms, provisions and conditions.

(i) No such contract is for an indefinite term, but each contract is for a definite limited term, subject only to certain renewal options provided for therein.

(j) All Canadian's gas sale contracts were executed prior to the adoption of the Natural Gas Act at a time when no governmental authority, Federal or state, had attempted to declare the sale or transportation of natural gas to be "affected with a public interest" and at a time when Section 1 of the Interstate Commerce Act expressly disclaimed any such status.

(k) Canadian sells its own gas only and does not sell or hold itself out as being willing to sell gas to any ultimate consumer, or to any distributor of natural gas for ultimate consumption.

(l) Canadian has never devoted its property to the public service but has conducted its business as a private enterprise.

130.

Referring to the formal findings set forth in numbered paragraphs in the Commission's "Order Reducing Rates," Canadian states and shows as follows:

(a) The Commission erred in making Finding No. (1) in so far as it finds that Canadian owns and operates fa-

cilities for the production and gathering of natural gas in interstate commerce, and in so far as it finds that Canadian is a natural gas company within the meaning of the Natural Gas Act.

(b) The Commission erred in making Finding No. (2) in so far as it finds that the entire system from the Texas Panhandle Field to Denver is operated as a single property.

(c) As to the finding in Finding No. (3) that natural gas sold to Colorado and to Clayton Gas Company are sales for resale in interstate commerce, the Commission erred in so far as said finding covers gas sold by Canadian to Colorado and which gas is sold by Colorado to industrial purchasers, upon the ground that gas covered by Colorado's such direct sales are not sales by Canadian for resale in interstate commerce within the meaning of the Natural Gas Act.

(d) The Commission erred in making each and every of its other findings in its Finding No. (3).

(e) The Commission erred in making Findings Nos. (4) to (14), inclusive. Said findings are not supported by substantial evidence.

131.

As to the six formal orders contained in the Commission's "Order Reducing Rates," Canadian states and shows that the Commission erred in making each and every of said orders lettered (A) to (F), inclusive.

132.

In an attempt to ascertain the preliminary, primary or basic facts and figures upon which the Commission's ultimate facts found in its Opinion, Findings and Order are based, and which preliminary, primary or basic facts and figures are not set forth in the Commission's Opinion, Findings and Order, Canadian and Colorado, as the Commission's records will disclose, did, on March 30, 1942, cause a telegram to be sent to the Commission reading as follows:

"In Making Study of Opinion No. 73 in Canadian River and Colorado Interstate Gas Company Rate Case Find it Difficult to Check Various Figures Against Exhibits and Also are Unable to Check Various Computations Made Which are Based on Findings of Commission Not Reflected in Exhibits. In Order to Thoroughly Digest and Understand All Computations it Will be Necessary to Confer With Your Representative and Examine Working Papers That Were Used in Making Computations. Would Like to Do This This Week, Wednesday or Thursday. Appreciate Immediate Reply."

On April 1, 1942, the Commission did deny the request contained in the above quoted telegram, said denial being as follows:

"The Requests Contained in Your Telegram of March 30, 1942 Re Opinion No. 73 in Matter of Canadian River Gas Company and Colorado Interstate Gas Company Have Been Considered and Are Denied."

As indicated in previous Specifications of Error, the Commission's ultimate findings and conclusions are, in numerous instances, not supported by preliminary, primary or basic findings set forth in the Commission's Order or Opinion No. 73 incorporated therein so that Canadian is not enabled to direct specific Specifications of Error as it could do had there been set forth in the Commission's Order or Opinion proper preliminary, primary or basic findings. To the extent that Canadian has not been able more specifically to specify error, such failure has been due to the lack of such preliminary, primary or basic findings by the Commission and due to the failure of the Commission to disclose, by its findings and opinion, the methods and principles employed by it in arriving at its ultimate conclusions and findings. In failing to make proper findings and in failing to grant Canadian's request for such additional findings and such additional disclosure by the Commission of the methods and principles used by it, and the computations made in arriving at its results, this Petitioner has been further deprived of its rights under the

Natural Gas Act and under the Constitution of the United States.

Dated this 9th day of April, 1942.

CANADIAN RIVER GAS COMPANY,
By: P. C. SPENCER,
Its Vice President.

P. C. SPENCER,
630 Fifth Avenue, New York, New York,

ADKINS, PIPKIN, MADDEN & KEFFER,
CHAS. H. KEFFER,
930 Fisk Building, Amarillo, Texas,
SMITH, BROCK, AKOLT & CAMPBELL,
JOHN P. AKOLT,
931 Fourteenth Street, Denver, Colorado,
Attorneys for Canadian River Gas Company.

[Verification and certificate of service omitted.]

Motion of Colorado Interstate Gas Company for Stay of the Commission's Order of March 18, 1942.

Now comes Colorado Interstate Gas Company, one of the Defendants-Respondents in the above-entitled and numbered causes, hereinafter sometimes referred to as Petitioner or Respondent or as Colorado Interstate, and moves the Commission for an order herein staying and suspending the effective date and operation of its order dated March 18th, 1942, and served upon Colorado Interstate on or about the 25th day of March, 1942, wherein Colorado Interstate is ordered to file on or before April 25th, 1942, new schedules of rates and charges for the transportation and sale of natural gas for resale in interstate commerce, which new schedules shall reflect a reduction in the net income of Colorado Interstate by not less than $2,065,000 per year, and which new schedules of rates and charges shall be effective as to all bills regularly rendered on and after May 15, 1942.

The grounds upon which this motion is based are as follows:

I.

Colorado Interstate is also filing herewith its "Petition of Colorado Interstate Gas Company for Rehearing and to Reopen", which is hereby referred to and made a part hereof. Said petition for rehearing and to reopen is filed with diligence and in good faith, upon grounds which petitioner believes to be well founded, and such petition sets forth in considerable detail the errors which petitioner believes have been committed by the Commission, and the grounds upon which petitioner believes that a rehearing should be granted, and that these proceedings should be reopened for the purpose of taking further evidence.

II.

As pointed out in the Commission's Opinion, the hearings in this case before the Trial Examiner consumed 102 hearing days. The transcript of the testimony is in excess of 15,000 pages, and there are over 300 exhibits. The records and the briefs filed by the parties herein, as well as the Commission's own Opinion, show that serious and substantial questions of law and fact have been raised and presented, and have now been decided by the Commission. Numerous legal questions herein have never been heretofore presented to nor decided by the courts. As pointed out in its petition for rehearing, Colorado Interstate in good faith contends that the Commission has erroneously applied certain rulings and decisions of the Supreme Court of the United States to the facts in this case. Colorado Interstate, also in good faith, contends in said petition that numerous findings of fact made by the Commission are not supported by substantial evidence, or are contrary to the evidence in the case. Petitioner respectfully and sincerely submits that such rehearing and reopening should be granted. If, however, said petition for rehearing and to reopen shall be denied, it is Colorado Interstate's intention, pursuant to and within the time allowed by the Natural Gas Act, to file a petition to review said order in the proper United States Circuit Court of Appeals.

III.

If the order of March 18, 1942 be not stayed, and its operation be not suspended, pending a ruling by the Com-

mission on the petition for rehearing and to reopen, and if the Commission shall deny said petition for rehearing and to reopen, then, pending the preparation and filing of a petition for review in the United States Circuit Court of Appeals, directed to such order of the Commission, and pending which determination of such petition for review by the Court, Colorado Interstate will sustain serious, substantial and irreparable damages and losses in that the operation of the order would deprive Colorado Interstate of not less than $2,605,000 in revenue per annum, or at the average rate of $172,083.33 per month. The order of March 18, 1942 shows on its face that the Commission, basing its findings on operations for the year 1939, found that the total gross revenue of the respondent for the transportation and sale of gas for resale in interstate commerce amounted to $4,438,000, from which it follows that a reduction of such revenues by the amount of $2,065,000 amounts on such basis to a reduction of 46-1/2% of this respondent's gross revenue. On the basis of the Commission's figures the present net income of respondent is the sum of $2,065,000 and $619,775 (the return allowed), namely $2,684,775. The reduction ordered by the Commission is 76% of such computed net income. Such a drastic reduction in gross revenue and net income if finally affirmed, will require drastic changes in the operations of respondent, and in no event should such a drastic reduction be imposed until such order has been fully and deliberately reconsidered by this Honorable Commission, and in the event that the action of this Commission is adverse, then until Colorado Interstate has had full opportunity to exhaust is legal remedies, and until it has had said order judicially reviewed, as provided by the statutes and the Constitution of the United States.

IV.

Should the Commission's order of March 18, 1942, be set aside by the Commission, pursuant to Colorado Interstate's petition for rehearing and to reopen, or should said order be set aside by the Courts upon review, there is grave danger that the revenues which Colorado Interstate would be deprived of if said order shall not be so stayed, will be forever lost to Colorado Interstate. There is a question as to whether the Commission or the Courts could make

provision for the recouping by or reimbursement to Colorado Interstate of the very substantial losses which Colorado Interstate would have sustained. No provision is contained in the Natural Gas Act authorizing the Commission, or the Courts to order such recouping or reimbursement. Colorado Interstate may be without means of recouping or recovering such losses in future rate proceedings or otherwise. Colorado Interstate is, therefore, without clear or adequate protection against the possible irrevocable loss of the amount represented by the reduced revenues during the period pending consideration by the Commission, and pending the review of the order by the Courts, except by declining to observe the order during such period, in which event it lays itself open to prosecution under the severe penal provisions of Section 21 of the Natural Gas Act. Without admitting that Colorado Interstate would be subject to such severe penalties under the facts in this case, and under the particular circumstances confronting it, Colorado Interstate, nevertheless, urges that it should not be put to the alternative of either accepting the reduction in its revenues in the drastic amounts above pointed out, with the doubtful right ever to recover such loss should the order be finally modified or reversed, or of defying the order of the Commission, and thus risking the severe penalties and fines, and the imprisonment of its officers under the provisions of said Act should the order ultimately be upheld.

V.

No express provision is contained in the Natural Gas Act for relief by appeal to any Court for a stay of the operations of the order until after the denial of the petition for rehearing and to reopen, and filing of a petition for review with said Court under subdivision "b" of Section 19 of the Natural Gas Act. If the Natural Gas Act be construed as denying Colorado Interstate the right to a review by a Court of competent jurisdiction of the refusal of the Commission to stay the operations of its order dated March 18, 1942, and if the Natural Gas Act be construed as purporting to authorize the Commission to enforce said order, pending the disposition of the petition for rehearing and to reopen, then the Natural Gas Act itself is null and void in

so far as it purports to authorize the enforcement for such order during such period, in that it would thus operate to deprive Colorado Interstate of the right to a judicial review, and to judicial relief against the injuries and damages that would be sustained by reason of the operation of the order during the period pending final disposition by the Commission of such petition for rehearing and to reopen, all in violation of the due process clause of the Fifth Amendment to the Constitution of the United States. Likewise, the order itself, for the same reasons, would be null and void, in so far as it would operate to reduce Colorado Interstate's revenues during the period pending the filing and disposition of the petition for rehearing and to reopen, and any effort by the Commission to enforce the provisions of the order requiring Colorado Interstate to reduce its rates and charges during such period would result in an unconstitutional administration of the Natural Gas Act, in violation of the due process clause of the Fifth Amendment to the Constitution of the United States.

VI.

No such emergency exists as would justify subjecting Colorado Interstate to the peril of losing its revenues in the substantial amount of $2,065,000 per annum, (or at an average rate of $172,083.33 per month, or at the rate of 46-1/2%), or in forcing it to take the only other alternative of risking the severe punishment and penalties under the provisions of Section 21 of the Natural Gas Act. In this connection, it is manifest that the ultimate object of the Commission, and the underlying objective of Congress in the enactment of the Natural Gas Act was and is to secure for the ultimate consumers fair and reasonable rates for natural gas in those cases where the sale of gas was subject to the jurisdiction of Congress and the Commission. It was not the objective of either Congress or the Commission merely to lower gate rates or lower wholesale rates for the benefit of distributing companies such as those to whom Colorado Interstate sells its gas. Assuming that the gas sold by Colorado Interstate is ultimately held to be subject to the jurisdiction of the Commission under the Act, and the reduction or a substantial part thereof is affirmed, nevertheless it is apparent that there can be no advantage

or benefit to the ultimate consumers, unless and until the rates charged by the distributing companies, the customers of this respondent-petitioner are reduced. Until the motion for rehearing be considered and disposed of, and if said motion for rehearing be not granted, then until the termination of the proceedings on appeal to the Courts for a review of the Commission's order, no regulatory body having jurisdiction over the rates to the utlimate consumer would be warranted in reducing rates to the ultimate consumer, until it be finally determined that such reduced gate rates or wholesale rates to the distributing companies are valid and enforeible. In this connection, petitioner points out that although the reduction order amounts to $2,065,000 per annum, nevertheless, as the Commission can find from the record in this case, the sales of this fuel, natural gas, declines substantially at this time of year, and during the immediate Spring and Summer months when the order of March 18, 1942 can be reconsidered or judicially reviewed, the amount in controversy would be greatly reduced.

The practical effect, therefore, of the order, and the reduction of respondent's revenues arising from the operation of the order, pending the disposition of the motion for rehearing and the review by the Court, would be to deprive respondent of the amount represented by the reduction in its prices and charges and transferring of said sums not to the ultimate consumers, but to the distributing companies under contracts approved and executed, and substantially performed long prior to the Natural Gas Act, and with respect to which no distributing company is complaining.

VII.

In the event that the Commission shall deny petitioner's application for rehearing and to reopen, then, unless the order of March 18, 1942 is stayed, petitioner will be compelled either to file the schedules reflecting the reduction of $2,065,000 per annum of its revenues from the sale of gas in interstate commerce for resale, and so arrange its schedules as to distribute, equitably and fairly, said amount to its seven customers, the six distributing companies and Natural Gas Pipeline Company of America, or else refuse

to file such schedules and risk the penalties provided by the Act. Petitioner states that it will require more time than allowed by such order, adequately to work out new schedules of rates and charges of such vital importance to petitioner and to its customers.

VIII.

No public interest will be served by requiring Colorado Interstate to pay over sums at the annual rate of $2,065,000 per annum, or at the average monthly rate of $172,083.33 per month, during the period pending the disposition of its petition for rehearing and to reopen by the Commission, and if the Commission's action be adverse, then pending review of the order of the Commission by the Courts, to the several distributing companies; all for the reasons more specifically set forth hereinabove.

IX.

This application for stay is based not only upon the facts hereinabove stated, but also upon each and all of the grounds set forth in Colorado Interstate's petition for rehearing and to reopen, which is made a part hereof as aforesaid.

Wherefore, Colorado Interstate prays that the operation of the order dated March 18, 1942 be stayed and suspended until the Commission shall rule upon its petition for rehearing and to reopen, and, in the event that the ruling of the Commission is adverse, then pending the review of said order by the Courts on review, as provided by the Natural Gas Act, the laws of Congress and the Constitution of the United States.

Respectfully submitted this 9th day of April, 1942.

COLORADO INTERSTATE GAS COMPANY,
By WILLIAM A. DOUGHERTY,
Vice President, 30 Rockefeller Plaza, Room 3000, New York, New York.

[Verification and certificate of service omitted.]

Motion of Canadian River Gas Company for Stay of Commission's Order of March 18, 1942.

Now Comes Canadian River Gas Company, one of the Defendants-Respondents in the above-entitled and numbered causes, hereinafter sometimes referred to as Applicant and sometimes as Canadian, and moves the Commission to enter and issue an order herein staying and suspending the effective date and the operation of its Order, dated March 18, 1942, and served upon Canadian on or about March 25, 1942, ordering and directing Canadian to file, on or before April 25, 1942, new schedules of rates and charges for or in connection with the transportation and sale of natural gas in interstate commerce for resale which shall reflect a reduction of not less than $551,000 per annum in the rates and charges made, demanded or received by Canadian for the transportation and sale of natural gas for resale to Colorado Interstate Gas Company, and not less than $10,000 per annum in the rates and charges made, demanded or received by Canadian for the transportation and sale of natural gas for resale to Clayton Gas Company.

The grounds upon which this motion is based and presented are as follows:

I.

Canadian is, simultaneously with the filing hereof, filing with the Commission its "Petition of Canadian River Gas Company for Rehearing and to Reopen" of even date herewith. Said Petition for Rehearing and to Reopen is filed in good faith and upon grounds which Canadian believes to be well founded and sets forth, in considerable detail and by numerous specifications of error, the errors which Canadian believes have been committed by the Commission in its said Order, Findings and Opinion of March 18, 1942, and the grounds upon which Canadian believes these proceedings should be reopened for the purpose of taking further evidence. Said Petition for Rehearing and to Reopen is by this reference hereby incorporated herein and made a part hereof.

II.

As pointed out in the Commission's Opinion, the hearings in this case before the Trial Examiner consumed 102 hearing days. The transcript of the testimony is in excess of 15,000 pages, in addition to over 300 exhibits. Briefs of the various parties to this proceeding in excess of 2200 pages in length have been filed. As shown by these briefs and as indicated in the Commission's Opinion, serious and substantial questions of law and fact have been raised and presented to and now have been decided by the Commission. A number of the legal questions raised have never been decided by or presented to the courts. The application made by the Commission of certain decisions of the Supreme Court of the United States referred to in the Commission's Opinion to the facts in this case involving Canadian is seriously questioned. Canadian sincerely and in good faith contends, as pointed out in its Petition for Rehearing that numerous findings of fact made by the Commission are either not supported by any evidence or by substantial evidence. It is Canadian's sincere hope that the Commission will find merit in and grant Canadian's Petition for Rehearing and to Reopen. If, however, said Petition for Rehearing and to Reopen shall be denied by the Commission, it is Canadian's intention, pursuant to and within the time provided for in the Natural Gas Act, to file a petition for review directed to said Order in the proper United States Circuit Court of Appeals.

III.

If the Order dated March 18, 1942, be not stayed and its operation be not suspended pending a ruling by the Commission on Canadian's Petition for Rehearing and to Reopen, and if the Commission shall deny said Petition for Rehearing and to Reopen, then pending the preparation and filing of a petition for review in the United States Circuit Court of Appeals directed to such Order of the Commission, and pending a determination of such petition for review by the United States Circuit Court of Appeals, Canadian will sustain serious, substantial and irreparable damages and loses in this, to-wit:

A. The operation of the Order will deprive Canadian of the sum of $561,000 per annum, or at the rate of $46,750 per month.

B. As the record shows without contradiction, Canadian's entire income is based upon the cost of gas computed under its contract of January 3, 1928, with Colorado Interstate Gas Company, and amendments thereto. Any income received by Canadian through sales of gas to Amarillo Oil Company and Clayton Gas Company or any other customer operates only to reduce the costs and prices paid by Colorado Interstate Gas Company under its said contract with Canadian. The cost of gas sold by Canadian to Colorado Interstate Gas Company is computed by deducting all outside revenues received by Canadian (including sales of gas to others) from the aggregate cost or producing and delivering all gas sold to purchasers. This cost includes interest and amortization of funded and other indebtedness of Canadian, but does not include depreciation and depletion.

C. As the record shows, as of June 1, 1928, Canadian issued its $11,000,000 of 6% sinking fund gold bonds under a trust indenture with Equitable Trust Company, now succeeded by Chase National Bank of New York, as Successor Trustee. Beginning June 1, 1930, and periodically thereafter, bonds were redeemed through the sinking fund in accordance with the trust indenture, and at the present time the total amount of bonds outstanding is $3,868,000. All of said bonds are still owned by Colorado Interstate Gas Company, but are pledged by Colorado Interstate Gas Company as collateral security for its outstanding bonds, and said outstanding bonds of the Colorado Interstate Gas Company now in the amount of $6,864,000 are held by a third party or parties other than said Colorado Interstate Gas Company.

Interest at the rate of 6% per annum is payable on Canadian's outstanding bonds on June 1 and December 1 of each year. Said trust indenture securing said bonds obligates Canadian, in addition to the payment of interest, to pay to the Trustee, as a sinking fund, on June 1, 1942 and again on December 1, 1942, the sum of $303,243, and further obligates Canadian, on June 1 1943, and semi-annually there-

after on the 1st day of December and the 1st day of June in each year, to and including the 1st day of December, 1947, to pay into said sinking fund the sum of $300,270.

From the above it will be seen that on June 1, 1942, the Company is obligated, under said trust indenture, to pay the sum of $303,243 into the sinking fund, and $116,040 as interest, or a total of $419,283; and again on December 1, 1942, the sum of $303,243 in the sinking fund, and $107,130 as interest, or a total of $410,373.

Said trust indenture covers all the producing, gathering and transmission properties of Canadian and, by supplemental indenture thereto, also dated June 1, 1928, covers Canadian's contracts, including its contract of January 3, 1928 with Colorado Interstate Gas Company. Said trust indenture obligates Canadian to perform all the obligations of said contract of January 3, 1928 with Colorado Interstate Gas Company and its other outstanding contracts. Said trust indenture expressly provides that in case Canadian shall default in the payment of interest or sinking fund, or shall default in the performance of its other obligations which it has agreed to perform under said trust indenture, or if Canadian shall become bankrupt, numerous cumulative remedies may be exercised by the Trustee under said trust indenture and the bondholders, including the right of receivership, entry upon and possession of the trust estate, the right to declare all the bonds immediately due and payable, and the right of foreclosure and sale.

Canadian further shows that in addition to its obligation under said trust indenture and under said contract of January 3, 1928 with Colorado Interstate Gas Company to pay said principal and interest, including sinking fund, at the time, in the manner and in the amounts above stated, Canadian is obligated, among other things, both by said contract of January 3, 1928 and said trust indenture, to own, maintain and develop its gas lands, including its leasehold and other interests therein, and to develop, drill for, produce and gather gas therefrom, and to maintain and operate its transmission line and transport natural gas therethrough.

Canadian further shows that, in addition to its outstand-

ing bonded indebtedness, as of December 31, 1941, it was indebted to Colorado Interstate Gas Company in the sum of $1,281,214, on 6% notes issued from time to time at par for cash to Colorado Interstate Gas Company to finance Canadian's obligations under said contract of January 3, 1928, which notes, as provided in said contract, are redeemable in monthly installments.

Canadian states and shows that it has no source of income to make the various payments above mentioned and to enable it to perform its various obligations which are necessary to be performed if its contracts are to be complied with and if natural gas is to be delivered by Canadian to its customers and by said customers to the ultimate consumers except such income as it receives from Colorado Interstate Gas Company computed as provided in said contract of January 3, 1928. Under the provisions of its trust indenture, Canadian is prohibited from making any sale or sales of gas other than those covered by present contracts without the consent of the Trustee; and, as hereinbefore pointed out, the receipts from additional sales, if any, would serve only to reduce the amounts to be paid to Canadian by Colorado Interstate Gas Company under its aforesaid contract with Canadian. Moreover, under said contract any other cash received by Canadian from outside sources, whether through the sales of property, the borrowing of money, or otherwise, would likewise inure to the credit and benefit of Colorado Interstate Gas Company under said contract, and would not be available to Canadian to meet its cash deficiency caused by the Commission's Order. Such cash deficiency can be supplied only through Colorado Interstate Gas Company if Canadian is to observe and perform its present contract and trust indenture obligations.

It necessarily follows, and is a fact, that if Canadian is required to charge and receive from Colorado Interstate Gas Company and Clayton Gas Company $561,000 per annum less than provided for in said contract of January 3, 1928, Canadian will be short by just that sum in an amount necessary to perform its obligations under said contract of January 3, 1928, and under said trust indenture. The further necessary effect of this inability to perform said obligations will be to render

it impossible for Canadian to continue to maintain, develop and operate its gas leaseholds and its transmission system so as to deliver gas to Colorado Interstate Gas Company and Clayton Gas Company in manner provided by the contracts with said companies and in manner necessary to enable Canadian's customers properly to furnish gas to the ultimate consumers. The further necessary effect of the failure to receive this $561,000 will be to cause Canadian to default in its payment and other obligations under said trust indenture. Receivership, foreclosure or the enforcement of other remedies provided for in said trust indenture must necessarily be expected.

Canadian claims and submits that it will suffer great and irreparable damage by the enforcement of the Commission's Order, and earnestly submits that said Order is erroneous, and its necessary effect is and will be to deprive Canadian of its property without due process of law in violation of the Fifth Amendment to the Constitution of the United States.

IV.

Not only will the enforcement of the Commission's Order cause Canadian the irreparable damage hereinabove shown, but its enforcement during the consideration by the Commission of Canadian's Petition for Rehearing and to Reopen and during the period of consideration by the United States Circuit Court of Appeals of Canadian's petition for review which will be filed, as above stated, if the Commission shall deny Canadian's Petition for Rehearing and to Reopen will not prejudice or be detrimental to the Colorado Interstate Gas Company or to the ultimate consumers, and, in fact, for the reasons stated in the previous paragraph, such enforcement during said periods will be detrimental and will prejudice the ultimate service to the ultimate consumers.

It is further pointed out that although the reduction order amounts to $561,000 per annum, nevertheless, as the Commission can find from the record in this case, Canadian's sales decline substantially at this time of the year. During the immediate spring and summer months, when the order of March 18, 1942, can be reconsidered or judicially

reviewed, the amount in controversy would be relatively small.

V.

Should the Commission's Order of March 18, 1942, be set aside by the Commission pursuant to Canadian's Petition for Rehearing and to Reopen, or should said Order be set aside by the courts upon review, there is danger that the revenues which Canadian will be deprived of, if said Order shall not be stayed up to the time said Order shall be so set aside, will be forever lost to Canadian. There is a question as to whether the Commission or the court could make provision for the recouping by or reimbursement to Canadian of the various substantial losses which Canadian will have sustained. No provision is contained in the Natural Gas Act authorizing the Commission or the court to order such recouping or reimbursement, and Canadian may be without means of recovering or recouping such losses as a result of further rate proceedings, or otherwise. Canadian is without clear or adequate protection against the possible irrevocable loss of the amount represented by the reduced revenues during the period pending consideration by the Commission of the Petition for Rehearing and to Reopen and the review of the orders by the courts, except by declining to observe the order during such period, in which event it might be prosecuted under the severe penal provisions of Section 21 of the Natural Gas Act. Without admitting that Canadian would be subject to such severe penalties under the circumstances confronting it, Canadian respectfully urges that it should not be put to the alternative of accepting the reduction in its revenues in a very substantial amount each month, as above pointed out, with a doubtful right to recover its losses, should the Order be set aside as the result of its Petition for Rehearing and to Reopen, or as a result of its petition to the courts for review, or if defying the Order of the Commission and thus taking the risk of becoming subject to the severe penalties in fines and imprisonment under the provisions above mentioned should the Order ultimately be upheld.

VI.

No express provision is contained in the Natural Gas Act for relief by appeal to any court for a stay of the operation of the Order until after the denial of the Petition for Rehearing and to Reopen and the filing of a petition for review under Subdivision (b) of Section 19 of the Act. If the Natural Gas Act be construed as denying Canadian the right to a review by a court of competent jurisdiction of the refusal of the Commission to stay the operation of its Order dated March 18, 1942, and if the Natural Gas Act be construed as purporting to authorize the Commission to enforce said Order pending the disposition of the Petition for Rehearing and to Reopen, then the Natural Gas Act itself is null and void in so far as it purports to authorize the enforcement of the Order during such period in that it would operate to deprive Canadian of the right to a judicial review and to judicial relief against the injuries and damages it would sustain by reason of the operation of the Order during the period pending the final disposition by the Commission of the Petition for Rehearing and to Reopen, in violation of the due process clause of the Fifth Amendment to the Constitution of the United States. Likewise, the Order itself, for the same reasons, would be null and void in so far as it would operate to reduce Canadian's revenues during the period pending the filing and disposition of the Petition for Rehearing and to Reopen, and any effort by the Commission to enforce the provisions of the Order requiring Canadian to reduce its rates and charges during such period would result in an unconstitutional administration of the Natural Gas Act in violation of the due process clause of the Fifth Amendment to the Constitution of the United States.

VII.

No such emergency exists as would justify subjecting Canadian to the peril of losing its revenues in the substantial amount of $561,000 per annum, aggregating $46,750 per month, or of taking the risk of subjecting Canadian to the severe punishment and penalties under the provisions of Section 21 of the Natural Gas Act. In this connection Canadian points out that as shown by the record, the Public Service Company of Colorado, which is the largest pur-

chaser of gas from Colorado Interstate Gas Company over which the Commission has any jurisdiction, has a franchise in the City of Denver which will not expire until February, 1947, and which franchise specifically provides for the price of gas to be charged by the Public Service Company of Colorado to its customers in the City of Denver. It is manifest that the ultimate objective of the Commission and the underlying objective of the Congress in the enactment of the Natural Gas Act was and is to secure for the ultimate consumers fair and reasonable rate for natural gas. However, even if the Order of the Commission be ultimately upheld, it is apparent there can be no advantage that can possibly accrue to such ultimate consumers by reason of enforcing the rates and charges set up by the Order of the Commission dated March 18, 1942, during the period pending the disposition of Canadian's Petition for Rehearing and to Reopen and the review of the order by the courts. Until the Petition for Rehearing and to Reopen be finally disposed of, and if said Petition be not granted until determination of the proceedings in court for a review of the Commission's Order, neither the Public Service Company of Colorado nor the City and County of Denver, or its electorate, would be warranted, even if legally justified, in reducing rates to the ultimate consumers until it be finally determined that the Commission's Order herein entered is valid and enforceable. The same is obviously true as to the Clayton Gas Company and the other resale customers of Colorado Interstate Gas Company.

The practical effect, therefore, of the Order and the reduction in Canadian's revenues resulting from the operation of the Order, pending the disposition of the Petition for Rehearing and to Reopen and the review by the courts, would be to deprive Canadian of the amount represented by the deduction in its prices and charges and transferring said sums, not to the ultimate consumers, but to Colorado Interstate Gas Company, Clayton Gas Company, neither of which has complained of Canadian's rates and charges.

VIII.

No public interest will be served by requiring Canadian to pay over sums aggregating $46,750 per month, during the period pending the disposition of Canadian's Petition

for Rehearing and to Reopen by the Commission and the review of the Order by the courts, to the Colorado Interstate Gas Company and Clayton Gas Company which have not complained of Canadian's rates and charges as being unjust and unreasonable.

IX.

This application for stay is based not only upon the facts hereinabove stated but also upon each and all of the grounds set forth in Canadian's Petition for Rehearing and to Reopen being simultaneously filed herewith and hereinabove incorporated herein and made a part hereof.

Wherefore, Canadian prays that the operation of the Order dated March 18, 1942, be stayed and suspended until the Commission shall rule upon Canadian's Petition for Rehearing and to Reopen and in the event said Petition for Rehearing and to Reopen be denied pending the review of said Order by the courts on review, as provided by the Natural Gas Act.

Dated this 9th day of April, 1942.

CANADIAN RIVER GAS COMPANY
By P. C. SPENCER,
Its Vice President.
Room 2757, 630 Fifth Ave.,
New York, N. Y.

P. C. SPENCER,
Room 2757, 630 Fifth Avenue, New York, N. Y.

ADKINS, PIPKIN, MADDEN & KEFFER,
CHARLES H. KEFFER,
930 Fisk Building, Amarillo, Texas.

SMITH, BROCK, AKOLT & CAMPBELL,
JOHN P. AKOLT,
931 Fourteenth Street, Denver, Colorado,
Attorneys for Canadian River Gas Company.

[Verification and certificate of service omitted.]

Order Granting in Part and Denying in Part the Motion of Canadian River Gas Company for Stay of Commission's Order of March 18, 1942.

Upon motion filed with the Commission April 14, 1942, by Canadian River Gas Company, praying that the operation of the Commission's order dated March 18, 1942, in the above-entitled matter, be stayed and suspended until the Commission shall rule upon said Company's petition for rehearing, and, in the event such petition be denied, pending the review of said order by the Courts on review, as provided by the Natural Gas Act;

The Commission orders that:

(A) Paragraph (D) of its order of March 18, 1942, in this proceeding, be and it is hereby amended to read as follows:

"(D) Canadian River Gas Company shall file on or before May 19, 1942, new schedules of rates and charges for or in connection with the transportation and sale of natural gas in interstate commerce for resale to reflect the reductions ordered in paragraphs (B) and (C) above, which new schedules of rates and charges shall be effective as to all bills regularly rendered on and after May 20, 1942."

(B) The motion of Canadian River Gas Company, referred to above, be and it is hereby denied, except as provided in paragraph (A) above;

(C) Nothing herein shall be construed as a determination of the Commission upon the Petition for Rehearing filed by Canadian River Gas Company on April 14, 1942, which is now pending before the Commission.

By the Commission,

LEON M. FUQUAY, Secretary.

Order Granting in Part and Denying in Part the Motion of Colorado Interstate Gas Company for Stay of Commission's Order of March 18, 1942.

Upon motion filed with the Commission April 14, 1942, by Colorado Interstate Gas Company, praying that the operation of the Commission's order dated March 18, 1942, in the above-entitled matter, be stayed and suspended until the Commission shall rule upon said Company's petition for rehearing, and, in the event such petition be denied, pending the review of said order by the Courts on review, as provided by the Natural Gas Act;

The Commission orders that:

(A) Paragraph (C) of its order of March 18, 1942, in this proceeding, be and it is hereby amended to read as follows:

"(C) Colorado Interstate Gas Company shall file on or before May 19, 1942, new schedules of rates and charges for or in connection with the transportation and sale of natural gas in interstate commerce for resale to reflect the reductions ordered in paragraph (B) above, which new schedules of rates and charges shall be effective as to all bills regularly rendered on and after May 20, 1942."

(B) The motion of Colorado Interstate Gas Company, referred to above, be and it is hereby denied, except as provided in paragraph (A) above;

(C) Nothing herein shall be construed as a determination of the Commission upon the Petition for Rehearing filed by Colorado Interstate Gas Company on April 14, 1942, which is now pending before the Commission.

By the Commission.

LEON M. FUQUAY, Secretary.

Opinion No. 73-A.

At pages 2 to 3 in our Opinion No. 73 entered on March 18, 1942, disposition was made of the petitions of Canadian and of Colorado Interstate Companies, filed March 11, 1942, to reopen these proceedings.

However, in view of the claims asserted by the Companies, in petitions for rehearing and to reopen, filed April 14, 1942, as to increases in Federal income taxes for periods subsequent to the close of the hearing, it is deemed advisable to supplement our previous Opinion in more detail with respect to the position taken by the Companies therein.

The Companies allege that the Federal income and excess profits taxes, which they were required to pay in connection with operations for the year 1941, greatly exceed the amounts allowed by the Commission. Actually, as hereinafter shown, the taxes allowed by the Commission exceed the amounts which would have accrued in 1941 had the Companies' earnings been limited to a fair return for those years.

The fair return, that is the operating income, found reasonable, in our order, for Canadian Company amounts to $609,375.[1] To arrive at a base for calculating taxable income, this amount should be increased by income taxes allowed in computing the operating income, namely, $66,403,[2] and also by the annual amortization of rate case expenses allowed in the amount of $41,000,[3] which expenses are customarily deductible items for income tax purposes in the year paid rather than in the year amortized. From this total of $716,778 there should be deducted interest and the difference between other non-operating income and deductions, in the net sum of $417,431,[4] which is allowable for income tax purposes, but which is payable out of the fair return and also an additional amount of $355,007[5] rep-

[1] Finding No. 10.

[2] Exhibit No. 163—Statement No. 1.

[3] Exhibit No. 163—Statement No. 2.

[4] Exhibit No. 168, page 1.

[5] Depreciation and depletion per books for 1939 and deducted in computing taxable income was $593,750 (Exhibit No. 168, page 1); that allowed as reasonable and proper in Finding No. 11 was $238,743.

resenting depreciation and depletion deductible for income tax purposes, in excess of that allowed by the Commission. The total of these two latter deductions exceeds the aforesaid amount of $716,778.

If Canadian Company had been limited in 1941 to a return of $609,375, which was found to be a fair and reasonable return,[6] it would have had no net taxable income and would not have been obligated to pay any Federal income tax for that year. Therefore, the amount of $66,403 for 1939 Federal income taxes, allowed in Finding No. 11 as a reasonable item of operating expense, was ample.

The fair return allowed Colorado Company amounts to $619,775,[7] to which should be added income taxes allowed in Finding No. 9 in the amount of $391,526,[8] amortization of rate case expenses in the sum of $43,000[9] and the excess of "Other Income" over "Income Deductions," in the sum of $95,454,[10] giving a total maximum taxable income of $1,149,755. The normal income and surtaxes of 31 per cent[11] applied to the foregoing figure would disclose a tax liability of $356,424, as against the $391,526 allowed in our order. Furthermore, the amount of Colorado Company's taxable income will be smaller than $1,149,755, inasmuch as the said company has been deducting for income tax purposes approximately $272,000 more for depreciation and amortization than was allowed in determining a fair return.[12] Giving recognition to these additional deductions would reduce the tax, at the rate of 31 per cent, to approximately $272,039, as compared with $391,526 heretofore allowed

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[6] Finding No. 10.
[7] Finding No. 8.
[8] Exhibit No. 140, page 118.
[9] Opinion 73, page 45.
[10] Exhibit No. 140, page 1.
[11] Under the Revenue Act of 1941, the effect of the application of the several brackets of normal surtax rates is to provide a combined normal and surtax rate fractionally less than 31 per cent; however, for convenience, the computation herein is based upon a 31 per cent rate and represents the maximum income and surtax rates under said Act.
[12] The depreciation deducted for income tax purposes in the year 1939 in the amount of $422,869, together with the amortization of contracts and franchises, deductible for income tax purposes, in the amount of $131,537, or a total of $554,406 (Exhibit 170-A), exceed the depreciation and amortization, totalling $282,195 (See p. 34 of Op., and Finding No. 9 of Order), by the amount of $272,211.

Accordingly, if Colorado Company had been limited in 1941 to a return of $619,775, which was found to be a fair and reasonable return,[13] the total Federal income tax which it would have been obligated to pay on its taxable net income for that year would have been approximately $119,000 less than the amount of $391,526[14] allowed as an operating expense. The Commission's allowance therefore was ample.

The reductions heretofore ordered will eliminate excess earnings and will also eliminate any liability for claimed excess profits tax. Among other things, the excess profits tax is based upon excess earnings of the taxable year, as compared with the four-year base period, namely, the years 1936 to 1939. The Companies' earnings for these years[15] were substantially in excess of those allowed as reasonable in our orders herein. As stated at page 39 of our Opinion, a comparative analysis of the Companies' income tatements for each of the years 1937, 1938 and 1939, as well as for the 12 months ended September 30, 1940, "reveals little differences in the net operating results for 1939 compared with either the three-year average or the 12 months ended September 30, 1940." The ordered reduction in rates in these proceedings will eliminate the Companies' excess income. Their income from operations under the said Orders will be below, rather than above, the 1936 to 1939 average.

The proceedings herein originated with the filing of a complaint by the City and County of Denver, Colorado, in December 1938. Extended hearings have been had and a record made comprising some sixteen thousand pages of transcript of testimony and 316 exhibits. As stated in our main Opinion, ample opportunity was afforded the parties to fully present their evidence. At the time of the close of the hearing in April 1941, this Nation's defense program with its incident economic problems had been in progress for a number of months and evidence in the record as to that fact was given its due weight.

In Canadian and Colorado Companies' petitions to reopen these proceedings, isolated items of claimed increase

[13] Finding No. 8.
[14] Exhibit No. 140, page 118.
[15] Exhibit 185.

of cost of operations are asserted, but no allegations are made as to either the gross or the net operating revenues realized by the Companies for the year 1941 and the period subsequent thereto; and no allegations are made as to the manner or the amount in which said revenues differ from those utilized by the Commission in its Orders and which the Commission considered productive of the fair return allowed in such orders; nor are the claimed increased costs applied to such operating revenues so as to indicate in what manner or amount the changed economic conditions affect the Companies' fair returns. No allegations of this nature are made by the Companies, either as to operations under existing rates or as to operations that would obtain if the ordered reductions were made effective.

The aforesaid matters are in further explanation of the reasons set forth in our Opinion No. 73 for denying the Companies' petitions to reopen these proceedings, and do not in any manner modify or change the finding and ordering clauses of the Orders of March 18, 1942, which Findings and Orders are predicated upon the record made herein.

Orders denying Canadian and Colorado Companies' petitions for rehearing and to reopen will be entered. An order denying Colorado-Wyoming Company's petition for rehearing will be entered.

LELAND OLDS, Chairman,
CLAUDE L. DRAPER, Commissioner,
JOHN W. SCOTT, Commissioner,
CLYDE L. SEAVEY, Commissioner.

Dated at Washington, D. C., this 13th day of May, 1942.

J H. GUTRIDE, Acting Secretary.

Order Denying Petition for Rehearing and to Reopen.

Upon consideration of the petition of Canadian River Gas Company filed April 14, 1942, for rehearing with respect to the Commission's order reducing rates of said Company entered on March 18, 1942, and the Commission's Opinion No. 73, and to reopen the said proceedings; and

upon further consideration of all previous orders in this proceeding, the evidence adduced of record, the briefs and other documents filed, and having on this date made and entered its Opinion No. 73-A, which is incorporated by reference as a part hereof, adhering to its Opinion No. 73 and its order of March 18, 1942;

The Commission finds that:

No new facts have been presented or alleged in the petition for rehearing and to reopen which would justify a reversal or revision of the Commission's said order and said Opinion No. 73, entered March 18, 1942, and no principles of law are stated in the said petition for rehearing and to reopen which were not fully considered by the Commission before it rendered said order and said Opinion;

Now, therefore, the Commission orders that:

The petition for rehearing and to reopen be and it is hereby denied.

By the Commission.

J. H. GUTRIDE, Acting Secretary.

Order Denying Petition for Rehearing and to Reopen.

Upon consideration of the petition of Colorado Interstate Gas Company filed April 14, 1942, for rehearing with respect to the Commission's order reducing rates of said Company entered on March 18, 1942, and the Commission's Opinion No. 73, and to reopen the said proceedings; and upon further consideration of all previous orders in this proceeding, the evidence adduced of record, the briefs and other documents filed, and having on this date made and entered its Opinion No. 73-A, which is incorporated by reference as a part hereof, adhering to its Opinion No. 73 and its order of March 18, 1942;

The Commission finds that:

No new facts have been presented or alleged in the petition for rehearing and to reopen which would justify a reversal or revision of the Commission's said order and said Opinion No. 73, entered March 18, 1942, and no prin-

ciples of law are stated in the said petition for rehearing and to reopen which were not fully considered by the Commission before it rendered said order and said Opinion;

Now, therefore, the Commission orders that:

The petition for rehearing and to reopen be and it is hereby denied.

By the Commission.

J. H. GUTRIDE, Acting Secretary.

Order Denying Petition for Rehearing and Stay.

Upon consideration of the petition of Colorado-Wyoming Gas Company filed April 20, 1942, for rehearing and stay with respect to the Commission's order reducing rates of said Company entered on March 18, 1942, and the Commission's Opinion No. 73; and upon further consideration of all previous orders in this proceeding, the evidence adduced of record, the briefs and other documents filed, and having on this date made and entered its Opinion No. 73-A which is incorporated by reference as a part hereof, adhering to its Opinion No. 73 and its order of March 18, 1942;

The Commission finds that:

No new facts have been presented or alleged in the petition for rehearing which would justify a reversal or revision of the Commission's said order and said Opinion No. 73, entered March 18, 1942, and no principles of law are stated in the said petition for rehearing and stay which were not fully considered by the Commission before it rendered said order and said Opinion;

Now, therefore, the Commission orders that:

The petition for rehearing and to stay be and it is hereby denied.

By the Commission.

J. H. GUTRIDE, Acting Secretary.

Complaint for Correction of Gas Rates at the Denver Gate.

Your complainant City and County of Denver, a municipal corporation of the State of Colorado, respectfully shows:

1. Your complainant is a municipal corporation organized and existing under and by virtue of Article XX of the Constitution of the State of Colorado and a charter adopted by the people of the City and County of Denver pursuant to said Article.

2. Defendant Public Service Company of Colorado is a corporation duly organized and existing under and by virtue of the laws of the State of Colorado and is engaged in the business of distributing and selling natural gas for industrial and domestic use in the City and County of Denver, Colorado.

3. Defendant Colorado Interstate Gas Company is a corporation duly organized and existing under and by virtue of the laws of the State of Delaware and is engaged in the business of transporting natural gas through an interstate pipe line from in or near the town of Clayton in the State of New Mexico to various towns and cities in the State of Colorado including the City and County of Denver.

4. Canadian River Gas Company is a corporation duly organized and existing under and by virtue of the laws of the State of Delaware and is engaged in the business of transporting natural gas through an interstate pipe line from various wells in the State of Texas to connections with the Colorado Interstate Gas Company in or near the town of Clayton, in the State of New Mexico.

5. Your complainant is informed and believes and on such information and belief alleges that all of the defendants are, in a manner not fully known by your complainant, affiliated with the Cities Service Power and Light Company, a corporation of the State of Delaware, and associated companies, and your complainant is informed and believes and on such information and belief alleges that they do not deal with one another at arm's length but are all controlled by one and the same group of persons through common

ownership of stock and interlocking directorates and that the contracts between the defendants for the sale and purchase of gas hereinafter referred to, are made pursuant to dictation as to both parties to such contracts by the persons holding such common control.

6. Your complainant further alleges that defendant Canadian River Gas Company obtains the gas from gas wells which it owns or controls in the State of Texas, which gas it transports to the vicinity of the town of Clayton in the State of New Mexico and that such gas is transported across the boundary line between the State of Texas and the State of New Mexico.

7. At a point in or near the town of Clayton in the State of New Mexico the pipe lines of defendant Canadian River Gas Company connect with pipe lines of defendant Colorado Interstate Gas Company and at said point the Canadian River Gas Company delivers gas which it has collected as aforesaid to defendant Colorado Interstate Gas Company for a price and on terms and conditions unknown to this complainant.

8. Defendant Colorado Interstate Gas Company transports the gas which it acquires from defendant Canadian River Gas Company as aforesaid from the point in or near the town of Clayton in the State of New Mexico, where the pipe line of defendant Canadian River Gas Company connects with the pipe line of defendant Colorado Interstate Gas Company, through the State of New Mexico and across the boundary line between the State of New Mexico and the State of Colorado and through the State of Colorado to various towns and cities in the State of Colorado (including the City and County of Denver) where the gas is sold and delivered by defendant Colorado Interstate Gas Company to various distributing companies which sell and deliver the gas so purchased to consumers in such towns and cities of the State of Colorado and some of such gas is sold in the State of Colorado for use in the State of Wyoming.

9. Defendant Public Service Company of Colorado is the local distributing company for the City and County of Denver and said defendant purchases gas from defendant Colorado Interstate Gas Company at a point known as the

"Denver gate" at or near the boundary line of the City and County of Denver and transports the gas so purchased through pipe lines which it owns in the City and County of Denver to persons residing within the City and County of Denver and to persons and corporations doing business in the City and County of Denver, for local consumption.

10. Your complainant is informed and believes and on such information and belief alleges that defendant Public Service Company of Colorado pays at the Denver gate a price (known as "the Denver gate rate") to defendant Colorado Interstate Gas Company of 40 cents per 1,000 cubic feet of gas at a temperature of 60 degrees Fahrenheit and a pressure of 12.7 pounds per square inch, for gas having a minimum heat content of 800 British Thermal Units per cubic foot under those conditions.

11. Your complainant further alleges that defendant Public Service Company of Colorado distributes and sells the gas so purchased and received from defendant Colorado Interstate Gas Company to consumers in the City and County of Denver at a rate based on the gate rate aforesaid plus a charge for local service.

12. Your complainant further alleges that the gate rate of 40 cents per 1,000 cubic feet of gas as aforesaid charged by defendant Colorado Interstate Gas Company to defendant Public Service Company of Colorado is unreasonable, unjust and discriminatory, that said rate is greatly in excess of the reasonable cost of said gas plus a reasonable charge for transportation and delivery at the city gate of the City and County of Denver; that defendant Colorado Interstate Gas Company sells said gas at a much lower rate to other consumers buying their gas from said company on both sides of the city gate of the City and County of Denver where the service in all material respects is similar to the service rendered to the City and County of Denver save and except that the volume purchased by the other consumers is not so large as the volume purchased by defendant Public Service Company of Colorado for sale in the City and County of Denver and, by reason of the volume of purchase and single point of delivery, any distinction in the unit charge for the gas should reduce the price to the City and County of Denver rather than increase that price.

13. Your complainant alleges that a very large amount of natural gas is sold annually as aforesaid by defendant Public Service Company of Colorado within the City and County of Denver; that such amount for the year 1937, as your complainant is informed and believes and on such information and belief alleges, was 7,330,205 thousand cubic feet, and that the extra amount paid by the users of such natural gas in the City and County of Denver on account of the unreasonable, unjust and discriminatory charge of 40c per 1,000 cubic feet of gas amounts to a very large sum of money annually and will continue to amount to a very large sum unless and until relief is granted as herein prayed.

Wherefore your complainant prays that the Federal Power Commission will investigate and determine the reasonable cost and charge for gas used in the City and County of Denver where the same is produced and the reasonable value of the facilities and appliances by which such gas is transported to the City and County of Denver and the reasonable cost of such service and the reasonable compensation to be paid to the owners of such facilities and appliances for the use thereof and the reasonable gate rate to be charged by defendant Colorado Interstate Gas Company to defendant Public Service Company of Colorado at the Denver gate and will substantially reduce the gate rate of forty cents per 1,000 cubic feet of gas now being charged therefor.

The Public Service Commission of Wyoming filed with the Commission on or about January 9, 1939, in its Docket No. G-121, a complaint which is printed in the record in No. 2561 in this court.

Answer of Defendants Colorado Interstate Gas Company and Canadian River Gas Company.

In this answer the following abbreviations will be used:

"Commission" refers to the Federal Power Commission.

"Denver" refers to the City and County of Denver, complainant herein.

"Public Service" refers to defendant Public Service Company of Colorado.

"Colorado Interstate" refers to defendant Colorado Interstate Gas Company.

"Canadian River" refers to defendant Canadian River Gas Company.

"Defendants" refers to these answering defendants, namely, Colorado Interstate Gas Company and Canadian River Gas Company.

Defendants appear specially for the purpose of filing the following special pleas:

I.

Colorado Interstate was organized under the laws of the State of Delaware, and Canadian River was organized under the laws of the State of Delaware, for the purpose of engaging in the project of bringing natural gas to Denver and other places in Colorado. Canadian River was expected to and subsequently did acquire gas leaseholds and gas wells on more than 300,000 acres of gas lands in the Amarillo or Panhandle field of Texas, drilled additional wells thereon, built gathering lines and other facilities, and constructed a compressor station and a pipe line to Clayton, New Mexico, at which point delivery of the gas was to be made to Colorado Interstate. Colorado Interstate was expected to and did subsequently construct a pipe line with compressor sta-

tions from Clayton, New Mexico, to Denver and other places in Colorado, and eventually made contracts for the sale of natural gas to distribution companies and industries in Colorado. Of these contracts the one made with Public Service for the sale of natural gas for distribution in Denver was of the utmost importance, and without which the project could not have been undertaken and carried out. The carrying forward of this project of bringing natural gas to Denver and other points in Colorado, in accomplishing which there was expended in excess of Twenty Million Dollars ($20,000,000.00), took place only by reason of the series of events hereinafter related.

Prior to 1927 there had been general discussion in the City of Denver and consideration given by the Mayor and other officials of Denver to the possibility of having natural gas brought to Denver from the Amarillo field in Texas.

Defendants say that at a special election held in Denver on February 8, 1927, a franchise was granted to Public Service (which had been engaged in distributing manufactured gas in Denver for many years) to construct, maintain and operate an electric light and gas plant in Denver. This franchise was for a period of twenty (20) years and contained a special provision with respect to natural gas in Section IV-e, as follows:

"If at any time during the first ten (10) years of this franchise the Mayor and Council of the City after investigation and upon competent engineering advice, taking into consideration all the economic factors involved, shall by majority vote of the Council with approval of the Mayor determine that it is feasible to bring natural gas to Denver and shall give notice to the Company of their findings, together with engineering information upon which such determination was based, and provided a fair and reasonable rate is established for such service, then within two years thereafter the Company shall make such supply available to the City. In the event of its failure so to do, then the Company shall pay, as a penalty, the sum of fifty thousand dollars ($50,000.00) per year, for the then remaining years of this franchise that the Company remains in default.

"If, after the first ten (10) years of this franchise a supply of natural gas is found to be available under the foregoing stipulation and conditions, and the City is willing to grant the Company a franchise for natural gas for a term of twenty (20) years, and the Company refuses to make such supply available, then the Company shall pay, as a penalty, the fifty thousand dollars ($50,000.00) aforesaid during the then remaining years of this franchise that the Company remains in default."

Thereafter Mayor Ben F. Stapleton and the City Council employed A. C. King, an engineer of Chicago, Illinois, to make a thorough examination and investigation as to the feasibility of bringing natural gas to Denver. Pursuant to said employment said King made such investigation, and under date of August 10, 1927, reported the result thereof and his findings and recommendations to the Mayor and City Council of Denver. In such report said King reviewed in detail the project as then proposed by Colorado Interstate which contemplated the construction of a pipe line to bring natural gas to Denver from the Amarillo, Texas, field, and with respect to the rate to be charged by Colorado Interstate to Public Service he concluded that a 40 cent gate rate was reasonable; that as the result of such investigation and report, and based thereon, the City Council by ordinance, approved September 14, 1927, determined that it was feasible to bring natural gas to Denver. The ordinance in Section 1 provided:

"That after investigation and upon competent engineering advice, taking into consideration all the economic factors involved, it has been and hereby is now found and determined that it is feasible to bring natural gas to Denver; that said Public Service Company of Colorado be and it is hereby given notice of said findings and determination, together with the engineering information upon which such determination was based, and that the Clerk of the Council be and he hereby is directed forthwith, upon the final passage, publication, and approval of this Ordinance by the Mayor, to deliver to said Public Service Company of Colorado a duly certified copy hereof, together with a verified copy of the 'Report on Proposed Natural Gas Rates for

Denver' dated August 10, 1927, which was prepared, after investigation, by A. C. King, Consulting Engineer of Chicago, Illinois, and which said report constitutes the engineering advice and information upon which said findings and determination are based, and the original copy of which is now on file in the office of the Clerk of the Council of the City and County of Denver, to which reference is had for particularity and notice of which is hereby given to said Public Service Company of Colorado in conformity to the provisions of said Section IV-c of said above mentioned Franchise."

In and by said ordinance the rates to be charged by Public Service to local consumers were fixed for the full unexpired term of the aforementioned franchise, which was for a period of twenty (20) years from and after its approval on February 8, 1927.

After the enactment of said franchise negotiations were begun between those interested in the organization of Colorado Interstate and the representatives of Public Service. After the action taken by the Mayor and City Council in having a report made on the feasibility of bringing natural gas to Denver, negotiations were further and more actively continued, culminating in an agreement between Colorado Interstate and Public Service on January 3, 1928, all of which was prior to the construction of the pipe line. Said agreement contained the terms and conditions and the price to be paid by Public Service to Colorado Interstate for natural gas for distribution in Denver and its environs for a term of twenty (20) years, with the right reserved in Public Service to discontinue taking natural gas if it did not possess a franchise after February 8, 1947. There was not then, and is not now, any affiliation between Public Service and the interests which were responsible for the organization of Colorado Interstate through common ownership of stock, interlocking directorates or otherwise, except that Public Service subsequently became the owner of 15% of the issued and outstanding capital stock of Colorado Interstate and was represented on its board of directors by one director out of a total directorate of seven members; and all negotiations between such interests were and have been at all times carried on at arm's length.

At the time of making said contract with Public Service, Colorado Interstate had not been engaged in the gas business, and did not hold then and has not at any subsequent time held itself out as willing or able to serve the public generally with natural gas or to supply said commodity to any other customers than that limited number with which it has private contracts. It does not have corporate authority in its charter to engage in the public utility business or to act as a common carrier, and has never exercised any of the rights or privileges of a public utility or common carrier nor held itself out as such. Its Certificate of Incorporation issued by the State of Delaware provides as follows:

"Provided that nothing herein shall be construed to authorize the corporation to transport natural gas for others as a carrier for hire or to sell natural gas for others as a carrier for hire, or to sell natual gas except by special contracts, or to constitute the corporation a common purchaser of natural gas or a public utility corporation."

Defendants say that at the time of entering into said contract of January 3, 1928, Colorado Interstate was free to enter into such a contract or not, depending upon whether the terms and conditions of such a contract were satisfactory to it; that said contract was only entered into after the investigation and report made by the said A. C. King had been accepted and approved by the Mayor and City Council; that said report approved the 40 cent M.c.f. gate rate, and that thereafter the ordinance of September 14, 1927, approving the King report, was passed, all of which was made known to Colorado Interstate, and which report and action by the Mayor and City Council induced Colorado Interstate and Canadian River to undertake the project of bringing natural gas to Denver. Defendants further allege that were it not for such inducement Colorado Interstate would not have entered into the contract of January 3, 1928, with Public Service, or undertaken the project of bringing natural gas to Denver.

The defendants say they relied principally upon the contract for the sale of gas made by Colorado Interstate and Public Service in making investments in excess of twenty

million dollars ($20,000,000.00) for the purpose of bringing natural gas into the State of Colorado and that had it not been for said contract such investments would not have been made. In entering into said contract Colorado Interstate acted in complete good faith and it, together with Canadian River, invested their funds as aforesaid in reliance upon the good faith of Denver.

Defendants say that in filing this complaint Denver is seeking to destroy the contract rights which became vested in Colorado Interstate by virtue of said agreement of January 3, 1928, with Public Service, and which agreement it was induced to make in reliance upon the action of Denver, as above referred to. At the time said contract was made the parties thereto were competent and qualified to enter into it, and it was a private contract not subject to change, abrogation or impairment by any governmental public authority.

Defendants further say that Mayor Stapleton and the other city officials were and are advised of the foregoing facts and of the reliance placed by defendants upon the action of Denver in approving said 40 cent rate for natural gas, as referred to above, and are advised of the fact that in excess of Twenty Million Dollars ($20,000,000.00) was expended in reliance upon the action so taken by the City. Defendants urge that Denver in equity and good conscience is estopped from now questioning the legality of said 40 cent rate.

If the Natural Gas Act of 1938 is interpreted to confer on this Commission any jurisdiction, power or authority to regulate or change the rates fixed in said contract of January 3, 1928, said Natural Gas Act as so interpreted, and any rules, regulations or orders promulgated or entered by this Commission thereunder, will be null and void and unconstitutional, in that it would deprive Colorado Interstate of its vested rights and of its property and liberty of contract without due process of law, in violation of the Fifth Amendment to the Constitution of the United States, and defendants challenge and deny any jurisdiction in this Commission to modify, set aside or change any of the rates or charges set forth in said contract of January 3, 1928.

II.

Defendants refer to the facts alleged in Section I hereof and deny that the Commission has any jurisdiction over any part of the production, transportation or sale of natural gas which is the subject of this complaint, and challenge and deny any jurisdiction, power or authority of this Commission to enter any order attempting to change, modify or set aside any charge or price at which Colorado Interstate is selling natural gas to Public Service or to other public utilities in the State of Colorado or elsewhere, or to substitute and prescribe any different charges or prices for which Colorado Interstate shall sell natural gas in the State of Colorado or elsewhere, on the ground that Colorado Interstate is not a public utility and has not devoted its property to the public service but is selling a commodity at wholesale to selected customers under private contract. Colorado Interstate has not and does not now hold itself out as willing or able to serve the public generally with natural gas or to supply said commodity to any other customers than that limited number with which it has private contracts. It does not have corporate authority in its charter to engage in the public utility business or to act as a common carrier, and has never exercised any of the rights or privileges of a public utility or common carrier nor held itself out as such. Its Certificate of Incorporation issued by the State of Delaware provides as follows:

"Provided that nothing herein shall be construed to authorize the corporation to transport natural gas for others as a carrier for hire or to sell natural gas for others as a carrier for hire, or to sell natural gas except by special contract, or to constitute the corporation a common purchaser of natural gas or a public utility corporation."

Defendants say that with respect to gas sold by Colorado Interstate in Colorado, the operations of Colorado Interstate and Canadian River constitute in practical effect a single enterprise engaged in owning natural gas leases and resources in the State of Texas, producing natural gas therefrom, transporting the same through pipe lines and other facilities to points in the State of Colorado, and selling

such commodity at wholesale to selected public utility distributing companies and to industrial consumers under private contracts. The operations carried on by Canadian River are not of a public utility nature and its Certificate of Incorporation, issued by the State of Delaware, provides as follows:

"Provided that nothing herein shall be construed to authorize the corporation to transport gas or oil for others as a carrier for hire or to sell gas or oil for others as a carrier for hire or to sell gas or oil except by special contract, or to constitute the corporation a common purchaser of gas or oil or a public utility corporation."

Canadian River has never exercised any of the rights or privileges of a public utility or common carrier, nor held itself out as such, and has sold gas only to one customer in Texas, to one customer in New Mexico, and to Colorado Interstate under the terms of an agreement also dated January 3, 1928.

Defendants say that this enterprise from its inception has always been strictly private in character and that no part of it is affected with a public interest in the sense that the Congress would have jurisdiction, power or authority to enact legislation purporting to authorize this Commission to regulate the prices which it charges for the commodity which it sells.

The Natural Gas Act of 1938 insofar as the same purports to confer or is interpreted to confer on this Commission any jurisdiction, power or authority to regulate, change, modify or set aside the charges or prices at which Colorado Interstate is selling natural gas at wholesale or to authorize this Commission to determine and fix the charges or prices for which said defendants shall sell such commodity deprives defendants of their property and liberty of contract without due process of law, in violation of the Fifth Amendment to the Constitution of the United States; and any rules, regulations or orders promulgated by this Commission for the purpose of exercising any jurisdiction, power or authority will be null and void as against these defendants and like-

wise in violation of the provisions of said Fifth Amendment to the Constitution of the United States.

III.

Subject to the ruling of this Commission and of the courts on the foregoing special pleas, and without waiving but still insisting on the same, for its answer to the complaint herein, these defendants:

1. Admit the allegations contained in paragraph 1 of the complaint.

2. Admit the allegations contained in paragraph 2 of the complaint.

3. Admit the allegations contained in paragraph 3 of the complaint, but refer to the allegations made in Section I of this answer in support of the fact that Colorado Interstate's business is of a private character and the rates charged by it are not subject to regulation under the Natural Gas Act of 1938.

4. Admit the allegations contained in paragraph 4 of the complaint, but refer to the allegations contained in Section II of this answer in support of the fact that Canadian River's business is of a private character and the rates charged by it are not subject to regulation under the Natural Gas Act of 1938.

5. Deny the allegations contained in paragraph 5 of the complaint.

6. Admit the allegations contained in paragraph 6 of the complaint.

7. Admit that at a point near the Town of Clayton, New Mexico, the pipe line of Canadian River connects with the pipe line of Colorado Interstate, and at said point the natural gas produced by Canadian River is delivered to Colorado Interstate, under the terms of an agreement between said parties dated January 3, 1928. Defendants say

that the operations of Canadian River and Colorado Interstate constitute in practical effect a single enterprise, as already has been alleged in Section 11 of this answer, and that the terms of said agreement are not controlling in determining a fair and reasonable price which Colorado Interstate should charge for gas delivered to Public Service or to other public utility customers in Colorado.

8. Admit the allegations contained in paragraph 8 of the complaint, but say that the business so carried on by Colorado Interstate is private in character, is not that of a public utility, and the rates charged by Colorado Interstate are not subject to regulation by the Natural Gas Act of 1938.

9. Admit the allegations contained in paragraph 9 of the complaint.

10. Defendants deny that Public Service now pays at the Denver gate a price of 40 cents per thousand cubic feet of gas, and allege that in 1937 Public Service paid for all gas delivered at the Denver city gate at the average of $0.2862 per thousand cubic feet, and in 1938 at the average of $0.2865 per thousand cubic feet. The rate paid by Public Service for gas consumed by each domestic consumer in excess of 3,000 cubic feet per month has been reduced from time to time by voluntary action on the part of Colorado Interstate and by private agreement between Colorado Interstate and Public Service, so that the average gate rate charged for that part of the gas purchased by Public Service for distribution to its domestic consumers during the year 1937 was $0.3661 per thousand cubic feet, and during the year 1938 was $0.3649 per thousand cubic feet. Defendants say that the unit of measurement as alleged is correct, except that the pressure base is 13.2 pounds per square inch instead of 12.7 pounds per square inch as alleged.

11. Defendants have no knowledge as to the basis used in determining the rates charged by Public Service for gas distributed by it in Denver and, therefore, deny the allegations of paragraph 11 of the complaint.

12. Defendants deny the allegations contained in para-

graph 12 of the complaint and further deny that the rate charged Public Service of Colorado Interstate for gas sold to it under said agreement of January 3, 1928, is unreasonable, unjust or discriminatory. Defendants say that said rate so charged Public Service is just, reasonable and lawful, that it is not unduly discriminatory or preferential, and is in fact the lowest reasonable rate at which gas can be sold at the city gate of Denver in order to permit defendants to earn a fair and reasonable rate of return on the fair value of the property utilized in producing, transporting and selling natural gas to Public Service. In order to fulfill its obligations to Public Service under said agreement of January 3, 1928, defendants will be required to expend large additional sums of money in the future.

13. Defendants admit that a large amount of natural gas is sold annually by Public Service in Denver for domestic, commercial and industrial uses, but that for the year 1937 (ending on December 25, 1937) the amount purchased by Public Service was 6,622,086 M.c.f. at the pressure base of 13.2 pounds. Defendants deny that any part of the rates paid by the consumers of natural gas in Denver results from an unreasonable, unjust or discriminatory or preferential charge made by Colorado Interstate for the gas so sold.

Wherefore defendants pray that the complaint be dismissed.

Colorado Interstate Gas Company, although not a formal party respondent, filed an answer with the Commission in its Docket No. G-121, on or about February 25, 1939, which is printed in the record in No. 2561 in this court.

Canadian River Gas Company, although not a formal party respondent, filed its answer with the Commission in its Docket No. G-121, on or about February 25, 1939, which is printed in the record in No. 2561 in this court.

Public Service Company of Colorado filed an answer (Document No. 3 in the transcript of record) and entered its appearance (official transcript page 10) in the hearing before the Commission.

Order Instituting Investigation.

It appearing to the Commission that:

(a) Canadian River Gas Company, a corporation organized and existing under the laws of the State of Delaware, engaged in the production, gathering, transportation, and distribution of natural gas, owns and operates a main transmission natural gas pipe line extending from gas fields in the Texas Panhandle, near Amarillo, Texas, to Clayton, New Mexico;

(b) Colorado-Interstate Gas Company, a corporation organized and existing under the laws of the State of Delaware owns and operates a main transmission natural gas pipe line extending from Clayton, New Mexico, to the City of Denver, Colorado;

(c) Colorado-Wyoming Gas Company, a corporation organized and existing under the laws of the State of Delaware, owns and operates a main transmission natural gas pipe line extending from Littleton, Colorado, to Cheyenne, Wyoming;

(d) The main transmission natural gas pipe lines owned and operated by the Canadian River Gas Company, the Colorado-Interstate Gas Company, and Colorado-Wyoming Gas Company, as hereinbefore described, are so interconnected as to constitute, for the purposes of conducting an investigation, one continuous line extending from the Texas Panhandle, near Amarillo, Texas, to Cheyenne, Wyoming;

(e) Canadian River Gas Company, Colorado-Interstate Gas Company, and Colorado-Wyoming Gas Company are

engaged in the transportation of natural gas in interstate commerce and the sale in interstate commerce of natural gas for resale for ultimate public consumption, for domestic, commercial, industrial and other uses, and are, therefore, natural gas companies within the meaning of the Natural Gas Act;

(f) Pursuant to Section 4(c) of the Natural Gas Act and the Commission's Order No. 53, the Canadian River Gas Company on August 20, 1938, filed with the Commission its contracts and agreements covering the sale of natural gas to the Colorado-Interstate Gas Company and the Clayton Gas Company; the Colorado-Interstate Gas Company on August 19, 1938, filed with the Commission its contracts and agreements covering the sale of natural gas to the Public Service Company of Colorado, the Colorado-Wyoming Gas Company, the Pueblo Gas and Fuel Company, the City of Colorado Springs, the Citizens Utilities Company, the Arkansas Valley Natural Gas Company, and the Natural Gas Pipe Line Company of America; the Colorado-Wyoming Gas Company on August 20, 1938, filed with the Commission its contracts and agreements with the Cheyenne Light, Fuel and Power Company;

(g) On December 22, 1938, the City and County of Denver, Colorado, a State Commission within the meaning of the Natural Gas Act, filed with the Commission a complaint (Docket No. G-118) alleging, among other things, that natural gas produced, gathered, and transported by the Canadian River Gas Company is delivered and sold to the Colorado-Interstate Gas Company; that this gas is transported, delivered, and sold by the Colorado-Interstate Gas Company to the Public Service Company of Colorado, a corporation organized and existing under the laws of the State of Colorado; that the Public Service Company is a public utility engaged in the local distribution and sale of gas at retail to consumers in the City and County of Denver, Colorado, at rates which are greatly dependent upon the price paid by it to the Colorado-Interstate Gas Company; that the rates and charges for natural gas collected by the Colorado-Interstate Gas Company from the said

Public Service Company of Colorado are unreasonable, unjust, and discriminatory; that the Colorado-Interstate Gas Company sells natural gas at a much lower rate to other purchasers on both sides of the City gates of the City and County of Denver; said City and County of Denver petitions this Commission to investigate and determine the reasonable cost and charge for natural gas sold by the Colorado-Interstate Gas Company to the Public Service Company of Colorado at the Denver gate:

(h) On January 9, 1939, the Public Service Commission of the State of Wyoming, a State Commission within the meaning of the Natural Gas Act, filed with the Commission a petition (Docket No. G-121), reciting, among other things, that natural gas produced, gathered, and transported by the Canadian River Gas Company is delivered and sold to the Colorado-Interstate Gas Company; that this gas is transported, delivered, and sold by the Colorado-Interstate Gas Company to the Colorado-Wyoming Gas Company; that the Colorado-Wyoming Gas Company transports, delivers, and sells such natural gas to the Cheyenne Light, Fuel and Power Company, which is a public utility engaged in the local distribution and sale of gas at retail to consumers in the City of Cheyenne, Wyoming; that the rates charged by the Cheyenne Light, Fuel and Power Company, are dependent in a large measure upon prices which it pays to the Colorado-Wyoming Gas Company for natural gas; that the rates and charges for natural gas sold at the City gate by the Colorado-Wyoming Gas Company are unjust, unreasonable, and discriminatory, resulting in an excessively high cost to the consumers in the City of Cheyenne; that the said Public Service Commission of the State of Wyoming petitions this Commission to determine and fix a just and reasonable rate for gas sold to the Cheyenne Light, Fuel and Power Company at the City gates of Cheyenne, Wyoming:

Wherefore the Commission finds that:

It is necessary and proper, in the public interest, and to

aid in the enforcement of the provisions of the Natural Gas Act, that an investigation be instituted by the Federal Power Commission, on its own motion, into and concerning all rates, charges, classifications, rules, regulations, practices, or contracts of the Canadian River Gas Company, Colorado-Interstate Gas Company, and Colorado-Wyoming Gas Company.

The Commission, on its own motion, orders that:

An investigation of the Canadian River Gas Company, Colorado-Interstate Gas Company, and Colorado-Wyoming Gas Company be and is hereby instituted for the purpose of enabling the Commission:

(1) To determine with respect to each of said companies whether in connection with any transportation or sale of natural gas subject to the jurisdiction of this Commission any rates, charges, or classifications demanded, observed, charged, or collected, or any rules, regulations, practices, or contracts affecting such rates, charges, or classifications are unjust, unreasonable, unduly discriminatory, or preferential; and

(2) If the Commission shall find that any such rates, charges, or classifications, rules, regulations, practices, or contracts are unjust, unreasonable, unduly discriminatory, or preferential, to determine and fix by appropriate order or orders just, reasonable, and non-discriminatory rates, charges, classifications, rules, regulations, practices, or contracts to be thereafter observed and enforced.

By the Commission.

LEON M. FUQUAY, Secretary.

Joint Answer of Respondents Canadian River Gas Company and Colorado-Interstate Gas Company.

Comes now Canadian River Gas Company and Colorado-Interstate Gas Company, respondents herein, and without waiving their joint and several petition to review the order of the Commission entered herein on March 14, 1939, docketed No. 1931, in the United States Circuit Court of Appeals for the Tenth Circuit, and without waiving their petition for a writ of certiorari from the Supreme Court of the United States to said Circuit Court of Appeals in said cause docketed in the Supreme Court of the United States, October Term, 1940, No. 433, and without waiving any of their other pleas or objections to the jurisdiction of this Commission, by way of answer to said order of March 14, 1939 and the order of September 13, 1940 also entered herein, alleges as follows:

I.

Canadian River Gas Company (hereinafter referred to as "Canadian River"), and Colorado Interstate Gas Company (hereinafter referred to as "Colorado Interstate"), are not natural gas companies within the meaning of the Natural Gas Act. The business of neither company is of the character intended to be regulated by said Act, and is not so affected with a public interest as to bring them within the price-fixing provisions or other terms of said Act.

Respondents say that the facts in support of their contention that the Commission has no jurisdiction over either of them, to determine, change, or fix rates, charges, classifications, rules, regulations, practices or contracts under which they sell natural gas, are as follows:

Prior to 1927 there had been general discussion in the City of Denver and consideration had been given by the Mayor, the City Council and other officials of Denver, as to the possibility of having natural gas brought to Denver from the Amarillo field in Texas.

At a special election held in Denver on February 8, 1927, the qualified electors, by a majority vote, granted to the Public Service Company of Colorado (hereinafter referred to as "Public Service"), which company had been engaged in manufacturing and distributing gas in Denver for many years prior thereto, a franchise to construct, maintain and operate an electric light and gas plant in Denver. This franchise was for a period of twenty (20) years and contained a special provision with respect to natural gas in Section IV-*d*, as follows:

"If at any time during the first ten (10) years of this franchise the Mayor and Council of the City after investigation and upon competent engineering advice, taking into consideration all the economic factors involved, shall by majority vote of the Council with approval of the Mayor determine that it is feasible to bring natural gas to Denver and shall give notice to the Company of their findings, together with engineering information upon which such determination was based, and provided a fair and reasonable rate is established for such service, then within two years thereafter the Company shall make such supply available to the City. In the event of its failure so to do, then the Company shall pay, as a penalty, the sum of fifty thousand dollars ($50,000.00) per year, for the then remaining years of this franchise that the Company remains in default.

"If, after the first ten (10) years of this franchise, a supply of natural gas is found to be available under the foregoing stipulation and conditions, and the City is willing to grant the Company a franchise for natural gas for a term of twenty (20) years, and the Company refuses to make such supply available, then the Company shall pay, as a penalty, the fifty thousand dollars ($50,000.00) aforesaid during the then remaining years of this franchise that the Company remains in default."

Thereafter the Mayor and the City Council employed A. C. King, Engineer, of Chicago, Illinois, to make a thorough examination and investigation as to the feasibility

of bringing natural gas to Denver. Pursuant to said employment said King made such investigation, and under date of August 10, 1927, reported the result thereof in the form of his findings and recommendation to the Mayor and City Council of Denver. In such findings and recommendations said King reviewed in detail the project as then proposed by parties then representing respondents herein which contemplated the construction of a pipe line to bring natural gas to Denver from the Amarillo, Texas, field, including the gate rate to be charged to Public Service, and said King concluded that a forty cent (40¢) gate rate was reasonable; that as a result of such investigation and report, and based thereon, the City Council by ordinance passed September 14, 1927, determined that it was feasible to bring natural gas to Denver under said terms. The ordinance in Section 1 provided:

"That after investigation and upon competent engineering advice, taking into consideration all the economic factors involved, it has been and hereby is now found and determined that it is feasible to bring natural gas to Denver; that said Public Service Company of Colorado be and it is hereby given notice of said findings and determination, together with the engineering information upon which such determination was based, and that the Clerk of the Council be and he hereby is directed forthwith, upon the final passage, publication, and approval of this Ordinance by the Mayor, to deliver to said Public Service Company of Colorado a duly certified copy hereof, together with a verified copy of the 'Report on Proposed Natural Gas Rates for Denver' dated August 10, 1927, which was prepared, after investigation, by A. C. King, Consulting Engineer of Chicago, Illinois, and which said report constitutes the engineering advice and information upon which said findings and determination are based, and the original copy of which is now on file in the office of the Clerk of the Council of the City and County of Denver, to which reference is had for particularity and notice of which is hereby given to said Public Service Company of Colorado in conformity to the provisions of said Section IV-c of said above mentioned Franchise."

In and by said ordinance of September 14, 1927, the rates to be charged by Public Service to its local consumers were fixed for the full unexpired term of said franchise, which term was for a period of twenty (20) years from and after its approval on February 8, 1927. Said rates to local consumers to be supplied by Public Service were fixed in said ordinance in contemplation of the 40¢ gate rate aforesaid.

After the enactment of said franchise, negotiations were continued between the parties representing Colorado Interstate and its associates, in the project of bringing gas to Denver as aforesaid, and the representatives of Public Service. Such negotiations culminated in an agreement between the parties interested in said project, namely, Southwestern Development Company, Cities Service Company and Standard Oil Company (N. J.), dated April 5, 1927, which agreement contemplated the formation by said parties of a company such as Colorado Interstate which, as hereinafter set forth, was so formed. Said agreement of April 5, 1927, expressly provided:

"It is agreed that a schedule and form of rates in the city of Denver substantially as follows contained in a reasonably workable ordinance duly enacted, shall be deemed to make the project profitably feasible and the agreement immediately effective:

$2.00 for the first 1,000 cubic feet or less
.60 per thousand cubic feet for the next 9,000 cubic feet
.50 per thousand cubic feet for all over 10,000 cubic feet.

In case an acceptable rate ordinance is not secured in the city of Denver on or before the 1st day of July, 1927, the parties hereto or any of them may terminate participation herein and cancel any agreements made hereunder, each party thereupon to be free and without prejudice to act as if these stipulations and any agreements thereunder had never been made."

Said agreement of April 5, 1927 also contemplated as a condition to the feasibility of said project and as further security for the successful operation of said project, the procurement after private negotiation, of a few additional gas sales contracts. Said additional contracts, however, were not to jeopardize the supply of gas to Public Service for resale to its Denver customers.

Thereupon, and after the passage of the ordinance of September 14, 1927, fixing the rates to be charged by Public Service to its local consumers in Denver for the period of its franchise, negotiations were continued, and culminated in an agreement between Colorado Interstate and Public Service dated January 3, 1928.

Colorado Interstate and Canadian River were each organized under the laws of the State of Delaware for the purpose of this project. The Canadian River was expected to and subsequently did acquire gas leaseholds and gas wells on more than 300,000 acres of gas lands in the Amarillo field, drilled additional wells thereon, built gathering lines and other facilities, constructed a compressor station and a main pipe line to a point in New Mexico, near Clayton, New Mexico, at which point delivery of the gas was to be made to Colorado Interstate. Colorado Interstate was expected to and did subsequently construct pipe lines and compressor stations from the end of the Canadian River main pipe line to Denver, and other places in Colorado, and eventually made contracts as aforesaid for the sale of natural gas to distributing companies and industries in Colorado. The completion of this project to bring natural gas to Denver and other points in Colorado cost in excess of Twenty Million Dollars ($20,000,000.00) and took place only by reason of the series of events hereinbefore and hereinafter related.

Said agreement of January 3, 1928 contained the terms and conditions and the price to be paid by Public Service to Colorado Interstate for natural gas for distribution in Denver and its environs for a term of twenty (20) years, with the right reserved in Public Service to discontinue

taking natural gas if it did not possess a franchise from said City and County of Denver after February 8, 1947.

At the time of making said contract with Public Service neither Colorado Interstate nor Canadian River had been engaged in the gas business, and neither then nor at any time subsequent held themselves out as willing or able to serve the public generally with natural gas nor to supply said commodity to any other customers than the limited number which each had under private contract. Neither has corporate authority in its charter to engage in the public utility business or to act as a common carrier, and neither has ever exercised any of the rights or privileges of a public utility or common carrier, or held itself out as such. Neither has claimed to possess and has never attempted to exercise the power of eminent domain, but each has acquired all of its property by purchase under private contract.

The Certificate of Incorporation issued to Canadian River by the State of Delaware provides as follows:

"Provided that nothing herein shall be construed to authorize the corporation to transport gas or oil for others as a carrier for hire or to sell gas or oil for others as a carrier for hire or to sell gas or oil except by special contract, or to constitute the corporation a common purchaser of gas or oil or a public utility corporation."

The Certificate of Incorporation issued to Colorado Interstate by the State of Delaware provides as follows:

"Provided that nothing herein shall be construed to authorize the corporation to transport natural gas for others as a carrier for hire or to sell natural gas for others as a carrier for hire, or to sell natural gas except by special contract, or to constitute the corporation a common purchaser of natural gas or a public utility corporation."

Respondents say that at the time of entering into said contract of January 3, 1928, Colorado Interstate was free

to enter into such contract or not, depending upon whether the terms and conditions and the prospects of its performance were satisfactory to it; that said contract was only entered into after the investigation and report made by the said King including his findings and recommendations which had been accepted and approved by the Mayor and Council; that said report approved the 40¢ M.c.f. gate rate; that thereafter the ordinance of September 14, 1927 approving the King report was passed, all of which was made known to Colorado Interstate, and that said report and said ordinance induced Colorado Interstate and Canadian River to undertake the project of bringing natural gas to Denver under the terms as aforesaid.

Respondents further allege that were it not for such inducements the contract of January 3, 1928 with Public Service would not have been entered into and the project of bringing natural gas to Denver and the other Colorado points served would not have been undertaken.

Said contract of January 3, 1928 was for a term of twenty (20) years from the date Colorado Interstate was ready to begin deliveries of gas, and the first delivery was made on or about June 23, 1928, subject to the right of Public Service to discontinue taking gas if it did not possess a franchise after February 8, 1947, as aforesaid. Neither Colorado Interstate nor Public Service assumed any obligation to sell or purchase gas after the expiration of said contract term.

Respondents say that while they relied principally upon said contract of January 3, 1928 with Public Service in the making of investments in excess of Twenty Million Dollars ($20,000,000.00) to carry out the project, they also relied upon and had in contemplation prior to investing in said project a limited number of other private contracts. Such contracts limited in number and covering the sale of smaller quantities of gas were relied upon to make the project feasible and to guarantee, as aforesaid as far as possible and by means of such contracts, the protection of the capital ventured.

The other contracts of respondent, Colorado Interstate, in addition to the said contract of January 3, 1928, with Public Service for the sale of gas for resale, subsequently negotiated and filed with the Commission under objection to its jurisdiction and with full reservation of Constitutional rights, are as follows:

Customer	Date of Contract	Expiration Date
Arkansas Valley Natural Gas Company	November 27, 1929	June 23, 1948
	October 1, 1931	June 23, 1948
Citizens Utilities Company	May 1, 1937	May 1, 1942
City of Colorado Springs	June 12, 1931	June 19, 1948
Colorado-Wyoming Gas Company	October 3, 1929	Sept. 28, 1948
Natural Gas Pipeline Company of America	October 15, 1931	Sept. 30, 1946, and thereafter at election of Buyer.
The Pueblo Gas & Fuel Company	January 3, 1928	June 21, 1948

None of the foregoing contracts ever would have been made except for the making of the contract with Public Service of January 3, 1928 which made possible the building of said natural gas pipe line.

Respondents say that with respect to gas sold by Colorado Interstate in Colorado, the operations of Colorado Interstate and Canadian River are carried on as a single enterprise under contractual arrangement between them.

The respondent, Canadian River, has sold gas only to one customer in Texas, to one customer in New Mexico and to Colorado Interstate, under the terms of an agreement also dated January 3, 1928, for a term of twenty (20)

years, corresponding to the term set forth in said contract between Colorado Interstate and Public Service, as aforesaid.

The contracts of Canadian River, other than the one with Colorado Interstate as aforesaid, are as follows:

Customer	Date of Contract	Expiration Date
Amarillo Oil Company (For gas in excess of that purchased from other producers required for Panhandle Pipe Line Company, U. S. Zinc Company and customers in Amarillo)	January 3, 1928	June 23, 1948
Amarillo Oil Company (Requirements of, West Texas Gas Co.)	January 3, 1928	January 3, 1948
Amarillo Oil Company (For Dalhart)	June 19, 1928	April 14, 1943
(For Texline)	)	Sept. 23, 1943
Amarillo Oil Company (For Channing)	June 19, 1928	Nov. 16, 1943
Amarillo Oil Company (For Hartley)	Dec. 5, 1930	Nov. 27, 1945
Clayton Gas Company (Gas for Clayton, N. M.)	June 19, 1928	Sept. 2, 1943.

The contract of respondent, Canadian River, with Colorado Interstate, dated January 3, 1928, and its contract with Clayton Gas Company, dated June 19, 1928, being interstate in character, have been filed with the Commission under objection to the Commission's jurisdiction, and with reservation of all Canadian Rivers' Constitutional rights.

The natural gas now being sold and delivered to customers in Colorado under said contracts is being used by the consumers in place of and against the competition of

manufactured gas, coal and oil, and other fuels. Upon information and belief, respondents state that most of said distributing companies have retained as standby plants, the plants and facilities theretofore used by them to manufacture gas out of coal. The production and use of natural gas was accomplished in competition with and in substitution for to a large extent; other kinds of available fuel, particularly coal, fuel oil, electricity and manufactured gas.

The States of Colorado and Wyoming have cheap and abundant supplies of coal, and such supplies of coal are available and are being supplied at each and all of the points of delivery of natural gas under respondents' contracts. Wyoming and Kansas and Colorado, to a smaller extent, have abundant supplies of oil, far in excess of the needs of the inhabitants of said States. From the Lance Creek Oil Field in Wyoming, the Rocky Mountain Pipe Line Company carries oil for hire to Denver, with a branch line to Cheyenne. Said oil pipe line supplies refineries in Cheyenne and in Denver. These refineries, as well as many others located in Wyoming and Kansas and a few more in Colorado, sell at retail fuel oil, and deliver the same by tank cars and trucks. In the State of Kansas and in Wyoming, and to a smaller extent in Colorado, natural gas fields have been discovered and developed and will enter into competition with respondents at the expiration of their contracts, as aforesaid. All of the natural gas sold by respondents under said contracts and being used or resold by respondents' customers is in competition with all of the above described and other miscellaneous kinds of fuel, all available in large quantities.

Under all the foregoing facts and for all of these reasons, respondents deny that their business or the business of either one of them is affected with a public interest; deny that either of them is a natural gas company engaged in the transportation and sale of natural gas within the true intent and meaning of said Natural Gas Act; assert that if said Natural Gas Act is construed to include either of them within its terms or to subject the business of either to the regulation of the Commission or is so interpreted to confer upon the Commission any jurisdiction, power or

authority to regulate the price, terms and conditions under which they sell, or either one of them sells, gas as aforesaid, then said Act and all rules, regulations or orders promulgated and entered by the Commission thereunder, affecting either one of them, or both of them, are and will be null and void and unconstitutional, in that they deprive respondents of their vested rights and property and liberty of contract without due process of law and in violation of the Fifth Amendment to the Constitution of the United States.

II.

All of respondents' contracts hereinabove in subdivision I set forth are private and are not subject to change, modification, abrogation or impairment by substitution of regulated rates for contract prices, or otherwise. In support of this contention respondents adopt and by reference incorporate herein the facts hereinabove alleged in subdivision I of this answer, and particularly the allegations showing that each and all of said contracts were negotiated and entered into under the circumstances hereinabove set forth, and that each of said contracts was so negotiated and entered into long prior to the enactment of said Natural Gas Act. Respondents assert that it is not the true intent and purpose of said Act to operate retroactively so as to affect said contracts, and if said Natural Gas Act is interpreted to operate so retroactively, or so as to affect said contracts, or so as to permit the Commission to modify, change, impair or abrogate said contracts by substituting regulated rates for contract prices, then said Act and all rules, regulations or orders promulgated or entered by the Commission thereunder are, or will be, null and void, and unconstitutional, in that they impair respondents' contracts and deprive them of their vested rights and property and liberty of contract without due process of law, in violation of the Fifth Amendment to the Constitution of the United States.

III.

Any order of the Commission purporting to abrogate the contract prices of respondents will be void and unconstitutional for the reason that no "public interest" could be

or will be served by such abrogation and suspension. The abrogation and suspension of contract prices by so-called regulated rates can only operate to enrich the Public Service Company, Colorado-Wyoming Gas Company, and the other contract customers of respondents, at the expense of respondents. The suspension and abrogation of said contract prices will serve no "public interest" within the meaning of said Natural Gas Act.

IV.

Without waiving any of the foregoing pleas or defenses, but insisting upon each and all of them, respondents allege that none of their contract prices and none of their rules, regulations, practices or contracts are unjust, unreasonable, unduly discriminatory or preferential, within the meaning of said Act, or otherwise.

Order Fixing Date of Hearing.

It appearing to the Commission that:

(a) On December 22, 1938, the City and County of Denver, Colorado, a State Commission within the meaning of the Natural Gas Act, filed with the Commission a complaint (Docket No. G-118) alleging, among other matters, that natural gas produced and gathered in the State of Texas by the Canadian River Gas Company is transported by said company without the State of Texas and is then sold and delivered by it to its affiliate, the Colorado Interstate Gas Company, at a point near Clayton, New Mexico; that this gas is then transported by the Colorado Interstate Gas Company through the State of New Mexico and into the State of Colorado and that a large portion of such gas is then resold by said Colorado Interstate Gas Company to an affiliate, the Public Service Company of Colorado, at the City gate of Denver, Colorado; that said Public Service Company of Colorado is a public Utility en-

gaged in the local distribution and sale of gas at retail to consumers in the City and County of Denver, Colorado, at rates which are greatly dependent upon the price paid by it to the Colorado Interstate Gas Company; that the rates and charges for natural gas collected by the Colorado Interstate Gas Company from the said Public Service Company of Colorado are unreasonable, unjust, and discriminatory; that the Colorado Interstate Gas Company sells natural gas at a much lower rate to other purchasers on both sides of the City gates of the City and County of Denver; and said City and County of Denver petitions this Commission to investigate and determine the reasonable cost and charge for natural gas sold by the Colorado Interstate Gas Company to the Public Service Company of Colorado at the Denver gate;

(b) On January 9, 1939, the Public Service Commission of the State of Wyoming, a State Commission within the meaning of the Natural Gas Act, filed with the Commission a petition (Docket No. G-121), reciting, among other things, that natural gas produced, gathered, and transported by the Canadian River Gas Company, is delivered and sold by said company to the Colorado Interstate Gas Company; that this gas is then transported, sold and delivered by the Colorado Interstate Gas Company at Livingston, Colorado, to the Colorado-Wyoming Gas Company; that the Colorado-Wyoming Gas Company transports such gas out of the State of Colorado and delivers and sells it at the City gate at Cheyenne, Wyoming, to the Cheyenne Light, Fuel and Power Company, a public utility engaged in the local distribution and sale of gas at retail to consumers in said City of Cheyenne, Wyoming; that the rates charged by the Cheyenne Light, Fuel and Power Company are dependent in a large measure upon prices which it pays to the Colorado-Wyoming Gas Company for natural gas; that the rates and charges for natural gas sold at the City gate by the Colorado-Wyoming Gas Company are unjust, unreasonable, and discriminatory, resulting in an excessively high cost to the consumers in the City of Cheyenne; that the said Public Service Commission of the State of Wyoming petitions this Commission to determine and fix a just

and reasonable rate for natural gas sold to the Cheyenne Light, Fuel and Power Company at the City gate of Cheyenne, Wyoming;

(c) On March 14, 1939, the Commission instituted an investigation (Docket No. G-124) of the Canadian River Gas Company, Colorado Interstate Gas Company and Colorado-Wyoming Gas Company, for the purpose of enabling the Commission (i) to determine with respect to each of said companies whether in connection with any transportation or sale of natural gas subject to the jurisdiction of this Commission any rates, charges, or classifications demanded, observed, charged or collected, or any rules, regulations, practices, or contracts affecting such rates, charges, or classifications are unjust, unreasonable, unduly discriminatory, or preferential; and (ii) if the Commission shall find that any such rates, charges, or classifications, rules, regulations, practices, or contracts are unjust, unreasonable, unduly discriminatory or preferential, to determine and fix by appropriate order or orders just, reasonable, and nondiscriminatory rates, charges, classifications, rules, regulations, practices, or contracts to be thereafter observed and enforced;

(d) Said order instituting an investigation was duly served upon the said Canadian River Gas Company, Colorado Interstate Gas Company, and Colorado-Wyoming Gas Company;

The Commission orders that:

(A) Dockets Nos. G-118, G-121 and G-124 be and they are hereby consolidated for purposes of hearing thereon;

(B) A public hearing in these proceedings be held commencing October 28, 1940, at 10 o'clock a. m. in the Circuit Court Room, Federal Building, in Denver, Colorado, and at said public hearing, pursuant to the provisions of Section 50.63 of the Provisional Rules of Practice and Regulations under the Natural Gas Act the order of procedure will be for the Canadian River Gas Company, the Colo-

rado Interstate Gas Company and the Colorado-Wyoming Gas Company to open and close, and said opening shall consist in the presentation of their evidence relevant and material to the matters under the aforesaid investigation; and after said opening, the Federal Power Commission shall present its evidence, and thereafter, other participants may present their evidence; said order of procedure shall, however, be subject to such change or modification as the Examiner may find necessary or desirable;

(C) Interested State commissions may participate in said hearing, as provided in Section 67.4 of the Provisional Rules of Practice and Regulations under the Natural Gas Act.

By the Commission.

LEON M. FUQUAY, Secretary.

At the opening of the hearing on October 28, 1940 before the Commission, it was stipulated and agreed, and ordered by the Examiner, that Colorado Interstate Gas Company and Canadian River Gas Company proceed with the hearing without waiving their pleas to the jurisdiction of the Commission, and that their answers filed with the Commission be incorporated into the record (Transcript of Testimony, Vol. I, p. 26).

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1. Origin of the Project—Denver's Desire for Natural Gas and Its Grant of a Franchise to the Public Service Company of Colorado.

On January 6, 1927, the City Council of the City and County of Denver passed Ordinance No. 1, Series of 1927 (Ex. 23), entitled in part:

> "An ordinance submitting to the qualified taxpaying electors of the City and County of Denver the question of granting a franchise to Public Service Company of Colorado, * * * to construct, * * * and operate a plant * * * for the * * * distribution of electricity and artificial and natural gas and to furnish, distribute and sell said products to the said City and County of Denver, and the inhabitants thereof, for light, heat and power, or other purposes, by means of pipes, mains, * * * and wires * * * over, under, along and across all streets, * * * public ways and places in the City and County of Denver, and fixing the terms and conditions thereof and providing for rates and standards of service; and providing for the calling and holding of a special election upon said question, * * *"

This proposed franchise was limited to a twenty-year term and required an approving vote of the electors under Denver's Charter, excerpts from which were introduced as Exhibit 27 herein. Section 277 of the Charter required the approving vote (Ex. 27, p. 3), and Section 278 limited the term to twenty years (Ex. 27, p. 3).

On February 8, 1927, the electors voted approval of the proposed franchise, introduced herein as Exhibit 24. This franchise will expire February 8, 1947, by reason of its own limitations (Ex. 24, p. 34) as required by the aforesaid provisions of the Charter (Ex. 27, p. 3). That franchise prescribed, with respect to manufactured gas then being furnished, a price to the consumer, without regard to use, of 90c per thousand cubic feet (Ex. 24, p. 32), with a heating value of not less than 400 Btu. per cu. ft. (Ex. 24, p. 33). It provided, with respect to natural gas in Section IV-c, the following (Ex. 24, p. 29):

"If at any time during the first ten (10) years of this franchise the Mayor and Council of the City, after investigation and upon competent engineering advice, taking into consideration all the economic factors involved, shall by majority vote of the Council with approval of the Mayor determine that it is feasible to bring natural gas to Denver and shall give notice to the Company of their findings, together with engineering information upon which such determination was based, and provided a fair and reasonable rate is established for such service, then within two years thereafter the Company shall make such supply available to the City. In the event of its failure so to do, then the Company shall pay, as a penalty, the sum of fifty thousand dollars ($50,000.00) per year, for the then remaining years of this franchise that the Company remains in default.

"If, after the first ten (10) years of this franchise, a supply of natural gas is found to be available under the foregoing stipulation and conditions, and the City is willing to grant the Company a franchise for natural gas for a term of twenty (20) years, and the Company refuses to make such supply available, then the Company shall pay, as a penalty, the fifty thousand dollars ($50,000.00) aforesaid during the then remaining years of this franchise that the Company remains in default."

On September 14, 1927, the Denver Council passed Ordinance No. 178, Series 1927 (Exhibit 25). Section 1 found and provided:

"That after investigation and upon competent engineering advice, taking into consideration all the economic factors involved, it has been and hereby is now found and determined that it is feasible to bring natural gas to Denver; that said Public Service Company of Colorado be and it is hereby given notice of said findings and determination, together with the engineering information upon which such determination was based, and that the Clerk of the Council be and he hereby is directed forthwith, upon the final passage, publication, and approval of this Ordinance by the Mayor, to deliver to said Public Service Company of Colorado a duly certified copy hereof, together with a

verified copy of the 'Report on Proposed Natural Gas Rates for Denver,' dated August 10, 1927, which was prepared, after investigation, by A. C. King, Consulting Engineer of Chicago, Illinois, and which said report constitutes the engineering advice and information upon which said findings and determination are based, and the original copy of which is now on file in the office of the Clerk of the Council of the City and County of Denver, to which reference is had for particularity and notice of which is hereby given to said Public Service Company of Colorado in conformity to the provisions of said Section IV-c of said above mentioned Franchise."

Section 2 granted the right to Public Service to sell natural gas in place of manufactured gas under a schedule of rates "*for the unexpired term of said franchise*" (that is, until February 8, 1947. (Ex. 24, p. 34.) The gas was to have a heating value of not less than 800 Btu. per cubic foot and the rates were: For the first 400 cu.-ft. or less, 90c; for the next 600 cu. ft., 15c per 100; for the next 1,000 cu. ft., 12c per 100; for the next 1,000 cu. ft., 7½c per 100; for the next 7,000 cu. ft., 6c per 100; for the excess above 10,000 cu. ft., 5c per 100.

Section 3 recited:

"Under said Franchise said Public Service Company of Colorado is required to supply said City and County and its inhabitants with natural gas as long as the same is available, during the unexpired term of said Franchise, and a reserve acreage of gas leaseholds in the State of Texas, from which natural gas may be supplied sufficient for the uses of said City and County of Denver and its inhabitants during the unexxpired term of said Franchise, by contract, has been rendered available to said Public Service Company of Colorado. • • •"

Section 4 provided in part:

"It is further determined that the rates to be charged by said Company for natural gas service to industrial users for heating, manufacturing and power purposes in the City and County of Denver for the term of said

Franchise may be lower and different from those charged for domestic purposes and the Company shall have the right to contract with industrial users for the sale of such natural gas, provided that all such contracts contain a 'cut-off' clause which recognizes the preferred right of the domestic users over the industrial users."

Respondent offered said King Report, Exhibit 26, as an official document of the complainant Denver, filed according to law and upon which the City respondents acted and relied. On page 8 of this report, King found the project to be feasible on the basis of a 40c per Mcf. gate or town border rate. This exhibit was refused (Vol. II, p. 171).

EXHIBIT 26.

Synopsis.

Supply.

Natural gas supply for Denver from the Amarillo field is feasible and will be of great advantage to Denver. Indications are that the available gas in the acreage to be reserved for this project will be sufficient for at least 20 years.

Cost of Construction.

The estimated initial cost of the entire pipe line project is $15,523,837 exclusive of gas wells and leases. The investment will have to be increased from time to time as gas sales increase and additional compressor stations, gas wells and gathering lines are needed.

Public Service Co. Additional Investment.

The Public Service Co. will have to spend about $1,750,000 to adapt its system for natural gas of which about $1,100,000 would be chargeable to capital investment.

Proposed Rate.

The proposed rate will not return an excessive profit on the entire investment from gas field to Denver consumer, the estimate averaging 7 3/4% over a ten year period.

The proposed rate would increase present gas bills where the consumption of artificial gas now is less than 2,200 cu.

ft. per month, but decrease those where the consumption is more than that amount.

Recommended Rate.

A rate is recommended which would not increase any gas bills and would reduce all bills now less than for the minimum consumption.

This rate is:

For the first 400 cu. ft. or less of gas per month	$ .90
For the next 600 cu. ft. of gas, used per month, per 100 cu. ft.	.15
For the next 1,000 cu. ft. of gas used per month, per 100 cu. ft.	.12
For the next 1,000 cu. ft. of gas used per month, per 100 cu. ft.	.075
For the next 7,000 cu. ft. of gas used per month, per 100 cu. ft.	.06
For the excess above 10,000 cu. ft. of gas used per month, per 100 cu. ft.	.05

Problem for Investigation.

The clause in the franchise granted to the Public Service Co. of Colorado by vote of the taxpayers on Feb. 8, 1927, compels the grantee under penalty of $50,000 per annum to furnish natural gas to the City and County of Denver, provided: (a) that after investigation that it is feasible to do so, and shall notify the company to that effect, submitting the engineering data on which said finding is based: (b) that a fair and reasonable rate is established for such service.

The fact that the proposition to supply natural gas has been submitted, disposes of the first condition, leaving only the question of the establishment of a fair and reasonable rate.

A fair and reasonable rate is defined to be a rate which will yield a fair return on the investment necessary to furnish the service and will not subject the rate payers to unreasonable charges.

In the present case, two corporations are involved, one

furnishing the gas to the City limits and the other distributing it to the consumer. The consumer is not particularly concerned with how the profits are to be divided between them, but is vitally interested that the rate he pays will earn no more than a fair return on the total investment necessary to furnish the service from the gas field to his gas consuming appliances. However, in the actual procedure of the investigation it is necessary to consider production and distribution separately as well as the whole proposition as a unit.

Available Gas Supply.

It is proposed to bring in gas from the Amarillo, Texas, gas field. This gas and oil field extends from the South Eastern part of Hartley County in a generally southeasterly direction through portions of Moore, Potter, Hutchinson, Carson, Gray and Wheeler counties, Texas. The total length of the known productive area is over 100 miles and varies from about 10 to 30 miles in width, and exceeds 1,200 square miles in area. The oil producing area lies chiefly in the Hutchinson County portion of the territory mentioned. Over 50 gas wells have been *complete* within the gas area in addition to these in the proven oil area, and no wells in the proven gas area are dry holes except those which were not drilled into the known productive level. Gas is found in one to five or six beds of varying thickness. This field is probably the largest natural gas reservoir now within the United States. (See Diagram 1). Competent geologists have estimated the net recoverable gas reserves of this area at 2,500 billion cubic feet.

Gas has also been found in a few wells in Texas County, Oklahoma Panhandle district about 70 miles north of the Amarillo field, but this area has not been sufficiently developed to permit it to be classed as of major importance.

The known gas reserves mentioned above together with the possible productive areas in Southeastern Colorado and Northeastern New Mexico seem to assure at least a 20 year life for the proposed undertaking to supply natural gas to Denver, Colorado Springs and Pueblo. This area is now or shortly will be supplying gas to Amarillo, Lubbock, Plainview, Wichita Falls and other Texas cities, and a part of the requirements of Kansas City, and Wichita,

and will probably supply a portion of the gas to several Oklahoma Cities.

"The total area held by the interests controlling the project which is known as the Colorado Interstate Gas Company is in excess of 350,000 acres, of which approximately two thirds is in the proven gas area. It is stated that this acreage will be held in reserve for this project and for the city of Amarillo which it now supplies.

From information now available it does not appear practicable to supply Denver over a 20 year period, with natural gas from other fields.

Quality of Gas.

The heating value of the gas produced from the area held for this project averages about 1,100 BTU. Losses in compression and transmission will reduce the heating value of gas delivered to Denver to approximately 1,070 B.T.U. at standard conditions or 875 B.T.U. as actually supplied to the consumer, the difference being accounted for by the fact that owing to the altitude, the gas has about 17% less density than at sea level which is the standard basis of measurement. This heating value is 2.65 times the heating value of the manufactured gas now supplied in Denver, which is 330 B.T.U.

The gas from the wells on the leases which will supply the Colorado Interstate Gas Company is free from sulphur or other objectionable elements, and like nearly all natural gas is practically non-poisonous. Much of the gas produced in connection with oil wells in the eastern part of Moore County and Western part of Hutchinson County contains sulphur in objectionable amounts. (See Diagram I). This gas is used in the production of casing head gasoline and carbon black.

Pipe Line Project.

In addition to supplying Denver and its environs it is proposed to furnish gas for general distribution in Colorado Springs and Pueblo and to the Colorado Fuel & Iron Co.'s plant at Pueblo and to the Portland Cement plants near Canon City. The project includes a 22" diameter pipe line from the compressor station in the field to a point about

10 miles east of Pueblo, passing through the Northwest corner of Texas and the Northeast corner of New Mexico. From that point a 20" line will be laid to the City limits of Denver, passing about 7 miles east of Colorado Springs. Pueblo and Colorado Springs will be supplied by branches from the main line. (See Diagram 2). A compressor station will be built at the field end of the line to increase the gas pressure for transmission. As the load increases, additional compressor stations will be built and equipment added to existing stations. During the second year of operation it is proposed to build a station near Pueblo and later, one between the field and Pueblo. As the rock pressure in the field declines, one or more stations may have to be built in the field to act as gathering stations, taking gas from the wells and delivering it to the main compressor station.

At the main compressor station it is planned to construct a gasoline absorption plant to remove all gasoline from the gas as it is deleterious to the type of joint used in the pipe line construction. The amount of gasoline obtainable from this gas is not sufficient to warrant the construction of a recovery plant except as a means of reducing the maintenance of the main pipe line. The reduction in heating value of the gas due to the removal of the gasoline content will be about 30 B. T. U. per cubic foot (at standard conditions), and is taken into account in the heating value figures previously mentioned.

Proposed Rates.

The rate at which the Public Service Co. of Colorado proposes to furnish natural gas to Denver consumers is as follows:

(a) For all gas for domestic or preferred commercial service, the following net rate:

For the first 200 cu. ft. or less of gas per month	$1.50
For the next 2,800 cu. ft. of gas used per month, per 100 cu. ft.	.075
For the next 7,000 cu. ft. of gas used per month, per 100 cu. ft.	.060
For the excess above 10,000 cu. ft. of gas used per month, per 100 cu. ft.	.050

(b) Industrial customers may be supplied under special contracts carrying a provision for cutting off such customers in event of interference of supply of gas to domestic users. These contracts will probably be as low as 20 cents per thousand for very large users during the first five years.

The Colorado Interstate Gas Co. proposes to supply gas to the Public Service Co., for domestic and commercial consumption at 40 cents per thousand cu. ft. at the Denver City limits. For gas sold to industrial users at low rates, the Pipe Line Co. will receive 85% of such gross receipts. Under these industrial contracts domestic consumers will have preference in case of emergency or shortage of gas.

A contract has been made to supply gas to the Colorado Fuel & Iron Co., at Pueblo, contingent upon construction of the pipe line. This contract is to run for a period of ten years and specifies a rate of 16 cents per thousand cu. ft. for the first five years, and 18 cents for the next five years. It is not intended to use the gas for boiler fuel but to replace producer gas in the rail mill, soaking pits and open hearth furnaces, the average daily consumption being estimated at 12,500,000 cu. ft. The contract also provides that in cases of emergency or temporary shortage of gas, that the demands of domestic consumers may be given preference except that gas needed to complete certain work then in jeopardy shall not be cut off. This contract is of material value to the proposition in that it assures a considerable volume of business during the early years when the retail business is being built up.

The Pipe Line Co. also proposes to furnish gas to the local distributors in Colorado Springs and Pueblo at the same price as to the Public Service Co. in Denver. Other large industrial consumers within reasonable distance will probably be obtained.

Gas Consumption.

The estimated annual gas sales at the various points along the pipe line where it is expected to market gas are shown in Table 1, covering a period of ten years from the time the project begins operation. These estimates are close to those prepared by the Pipe Line Company, the fig-

ures herein being slightly higher for domestic and lower for industrial consumption. Table 2 shows the estimated maximum day demands for each year of the same period.

Cost Estimates.

In the investigation of the project a field inspection was made of the entire proposed route of the pipeline together with compressor station sites, to determine the character of the ground, contours extent of cultivation along the right of way etc. No unusual construction problems will be encountered, the most difficult being the crossing of the Arkansas River near Pueblo.

Detailed estimates of cost were made covering all labor, material, actual overhead expenses and contractors' profit. As no specifications for the work have yet been prepared these estimates were made after conferences with the engineers who will have charge of the construction so that the same would be in accord with the work as planned. The construction program contemplates that all material will be purchased and delivered to the contractors by the Pipe Line Co. The figures also include an allowance for interest during construction of 5% for the Pipe Lines and 2½% for compressor stations. The investment in compressor stations and field lines from the wells will have to be increased from time to time with increase in load.

A summary of the investment by years is shown in Table 3. An allowance for working capital has also been included. While it is small in amount compared to the total investment, it is sufficient for at least 2 months operating expenses, exclusive of gas royalties and similar expenses which will not have to be met before the income is received from the same gas.

Allocation of Investment.

In addition to considering the project as a whole, it was deemed advisable to ascertain if the proposed set up would work out by allocation to Denver its proper share of investment and expenses. The pipe line investment between Denver and Colorado Springs is chargeable to Denver business exclusively. That portion between Pueblo and Colo. Springs is divided between Denver and Colorado

Springs in proportion to the respective use. Similarly the line investment from the wells to Pueblo was allocated to Denver in the proportion of its use to the total. Investment in compressor stations was allocated along with the sections of pipe line which they serve. The maximum day demands were used in determining the ratios, rather than the annual consumption, as the lines and compressor stations must be built to serve these peak demands. In a long pipe line of this character it is unnecessary to take account of hourly peaks as in electric plants because the storage capacity of the line is sufficient to take care of hourly fluctuations.

At the Denver terminal of the line a pressure reducing and measuring station will be built, connecting with the Denver distribution system.

The total investment and the amount chargeable to Denver on the basis of the above allocation is shown in Table 3.

Pipe Line Revenue and Expense.

Estimates of revenue from sales of gas to distributing companies and others, based on the consumption estimates previously mentioned are shown in Table 4.

Estimates of Expenses and Net Earnings, available for Return on Investment, Retirement Reserve, etc., are shown in Table 5, for Denver business only and in Table 6 for the entire project. The same allocation basis was used for operating expenses as for investment in the figures for Denver only.

The credit shown for gasoline produced is net after operating and fixed charges on the gasoline plant. Fixed charges are considered as an expense item as the cost of the plant has not been included in the estimate of investments.

Valuation of Gas.

The project will include approximately 250,000 acres of gas leases in proven territory which of course have considerable value.

In the Pipe Line Co.'s valuation set up these leases have been included at $11,000,000, this amount being determined on the basis of 1c per thousand feet for the estimated re-

coverable gas. This method of valuation has not met with favor by courts and utility commissions for several reasons and therefore is not accepted in this case. The general rule is to value the leases either at actual cost, or at the market value where leases were acquired prior to exploitation of the field. Another method of treatment frequently employed is to consider the production end of the business as if it were separate and distinct and to establish a market value for gas at the mouth of the well. On this basis gas production is considered a commercial rather than a public utility undertaking. After some study of the situation this basis was adopted for this report.

This mouth of the well price must be sufficient to induce capital to hold a large block of acreage which is essential to a pipe line project of this magnitude, and therefore must include all carrying charges, royalties, drilling and maintenance costs, depletion and retirement charges. Owing to the fact that practically no gas is being purchased in this field for pipe line purposes at present, there is no established market price.

Giving due consideration to all facts and to the history of gas prices in other fields, it is considered that a fair price would be 7 cents at the beginning increasing at about the rate of ¼c per year for a 10 year period. It is quite probable that some gas can be purchased in the beginning from individuals for about one-half of the figures mentioned but probably not in sufficient quantity nor on fixed terms covering a period which would warrant the investment of upwards of $20,000,000 on this project. No attempt has been made to set up figures for longer than 10 years, though it is believed that, if the field proves as productive as indicated, gas prices will not much exceed 10c for a considerable time thereafter. Doubtless there will be some increase in the immediate future as the large quantities of gas available at lower prices are attracting the pipe line companies now in the Oklahoma and Texas fields farther east and there will be some competition for the available gas.

Retirement Reserve.

The amount set up for retirement reserve has been estimated at 4% on the entire investment or about 4½% on the depreciable property. It is believed that this will over a

period of years, be sufficient for all necessary replacements in addition to current maintenance provided in the operating expense estimate, although it is somewhat lower than the amounts usually set up by the pipe line companies.

Net Return.

The return on the investment in the pipe line project is shown in Table 5, as estimated on the basis of Denver business only, and in Table 6 for the entire project including the service to the Colorado Fuel and Iron Co. As the net return in the latter instance is somewhat higher, it is evident that the sale of gas to large users on a wholesale basis which have a very evenly distributed consumption, is a distinct asset to the project. Furthermore, this fact tends to decrease rather than increase the price of gas to Denver. For the ten year period the average net earnings are estimated to be 10¼% on the average investment for Denver business only. This is not considered unreasonable, after giving due consideration to all factors and particularly to the fact that the Public Service Co. is not to guarantee to purchase any specific amount of gas and could, if cheap gas should become available near Denver, purchase and distribute it there. In such event Denver consumers would benefit as the city has the power to regulate the rates, which are based on actual cost.

Comparison of Town Border Rates.

In comparison of the town border rates in other cities the 40 cent rate offered appears low (See Table 10) but the well prices of gas are generally much higher in the other fields, averaging about 18 cents in Ohio, 25 cents in Pennsylvania, 17 cents in West Virginia and 10 cents in Oklahoma.

Adaptation of Denver Plant to Natural Gas.

In practically all large cities which have been supplied with artificial gas, it is necessary to make rather extensive changes in the distribution system to adapt it to natural gas. Where the natural gas rate is materially lower for the same amount of heat furnished, the volume of gas will increase rapidly necessitating greater capacity in the distribution system. The point of supply of natural gas usually must be located some distance from the artificial gas plant, which requires a re-arrangement of the system or its equiva-

lent. In Denver both of these requirements can best be met by building a high pressure loop feeder main around the outer part of the city, tying into the present distribution system at various points, including the present gas holder stations. At these tying in points the pressure will be reduced and maintained constant by regulators. Extensions to the high pressure system with additional regulator stations will be constructed from time to time to meet increased demands.

The introduction of natural gas into a distribution system with lead and yarn pipe joints results in a marked increase in gas leakage. This is probably due to the fact that artificial gas carries into the system small amounts of tar and oils which keep the yarn moist and act as a seal at other points where gas might escape. Natural gas is dry and tends to absorb the oils and dry out the packing, thus increasing the leakage. Pipe with joints of this type is standard construction for artificial gas systems, and about 85% of the mains in Denver are so constructed. Natural gas practice is to use steel pipe with coupled or welded joints.

The only effective means devised to date to remedy the excess *leadage* is to install lead clamps at each joint in the mains which are spaced approximately 12 ft. apart. It is estimated that this work in Denver would cost $788,100, and would require nearly two years to complete. A portion of this amount is chargeable to expense and the balance to capital account.

The introduction of natural gas would require changes and adjustments in all gas using appliances on account of the much lesser volume of gas required to furnish the same heat. The Public Service Co. proposes to do this work at its own expense, estimated at $75,000.

A summary of the estimated additional investment by years together with the total gas plant investment is shown in Table 7.

Included in the total investment figures is the present gas making plant. By replacing the coal gas plant with modern equipment and continuing to furnish the present quality of artificial gas, the company can increase the net earnings at

once to about the same amount as is estimated would result during the fourth year after the introduction of natural gas. The investment required for the improved artificial plant is about $500,000 whereas the natural gas investment, as shown by Table 7, is about $1,750,000, to realize the same net earnings. However, with the latter expenditure, greater earnings can be realizing during the following years. It seems fair, therefore, to include the present plant in the valuation and allow a return on it for several years after the first four to compensate for the lesser earnings in these years. It should not be carried in the capital account permanently but amortized as rapidly as circumstances will permit.

Estimate of Gas Consumption and Revenue (Denver).

Estimate of number of consumers of various classes, the total annual gas consumption of each class, and the revenue for ten year period are shown in Table No. 8. Estimates of gas consumption for house heating were based on the data available for houses now heated in Denver by artificial gas. The estimates do not include any of the suburban territory outside of Denver which are not at present supplied with gas. Revenue estimates are on proposed rates.

It will be noted that the gas estimates for house heating are a large proportion of the total, as the proposed rate is one which tends to encourage this class of business. The number of such customers as shown in the estimate is somewhat greater than that estimated by the Public Service Co.

Heating Cost—Gas vs. Coal.

In connection with the preparation of the estimates, considerable study was given to the cost of house heating by gas, at the proposed rate as compared with coal. The results indicate that under average conditions the cost of heating with gas should not exceed the cost with coal by more than about 15% and in some cases, less, depending on the kind of coal used. This is based on the assumption that the house holder is already a gas consumer so that the gas used for heating will practically all be billed at the low step in the rate, and that a reasonably efficient gas burner is installed.

In making comparisons of heating costs after gas has been

installed, the following facts should not be overlooked. Owing to the much greater convenience of gas, it will be used at times when only a small amount of heat is needed, whereas under similar circumstances the house holder would not go to the trouble to start a coal or wood fire. Constant temperature can be maintained with gas without attention, which is not the case with coal. As a result, the tendency is to maintain a higher average temperature with gas which of course tends to increase the fuel consumption. The above comparison is based on equal temperature being maintained. The advantages of convenience, cleanliness, labor saving and ease of control will doubtless lead many to use gas for heating even at some increase in cost.

Estimates of Operating Expenses and Interest Return (Denver).

Estimate of operating expenses and net earnings for the ten year period are shown in Table 9. The adaptation of the system to natural gas, will, as previously mentioned necessitate considerable increase in distribution and customer expense, particularly in the early part of the period. New business expense also must be largely increased in order to market gas in sufficient quantity in the early part of the period to insure success to the undertaking. The estimated net earnings before reserve show a deficit for the first year—gradually increasing to approximately the same figure as the artificial gas plant would show after four years, and then increasing. After deducting retirement reserves based on 1.8% of the depreciable property as set out in the artificial gas investigation in 1926 the net return on investment increases from a deficit in the first year to 8½% in the tenth year, the weighted average for the period being slightly more than 5½%. Corresponding estimates prepared by the Public Service Co. show a materially lower net revenue, the average for the first five years, before reserves being only $218,967 per annum. The corresponding estimate for this report averages $504,840, and for the ten year period $876,636 per annum. The company did not extend their estimates beyond the first five years. The difference in the figures results from a greater estimated gas consumption, and somewhat less expense than the company's estimates.

Comments on Rate Proposed by Public Service Co.

While the estimates show that the proposed rate will not yield an excessive return for the first ten years of the period, it is believed that a change in the rate, lowering the initial charge of $1.50, would be very desirable. The revenue lost by reduction of the initial charge could be made up by some increase in the first steps of the rate, in preference to a reduction in the latter steps. In order to obtain a satisfactory volume of house heating, the average rate from 15,000 cu. ft. monthly consumption up must be kept low. Any adjustments in the town border rate for gas should be reflected in the rate to the consumer.

In comparison of the present and proposed rates as shown on Diagram 5 it is of interest to note that where the present consumption of artificial gas is 2200 cu. ft. or less, the corresponding bill for natural gas will be increased, but where it now exceeds 2200 cu. ft. the bill for natural gas will be lower than with artificial.

Conclusions.

Considering the pipe line and the distributing systems as a single unit, which it would be necessary to do if the Public Service Co. were themselves to bring in the gas, the estimated average net earnings for the 10 year period are 7¾% on the average total investment with the company's proposed rate. Should a similar proposal be made by an entirely new concern, to come into Denver and distribute natural gas from the same sources, that figure would represent what it could expect to average on its investment. It is evident, therefore, that the proposed rate will not yield more than a fair return on the entire property.

In discussion of the situation with the Mayor and Manager of Improvements and Parks, the following rate has been suggested as being more desirable as it will not result in the increase of any bills for the same service after the change to natural gas and will reduce all except the minimum bills.

For all gas for domestic or preferred commercial service, the following net rate:

For the first 400 cu. ft. or less of gas per month	$ .90
For the next 600 cu. ft. of gas used per month, per 100 cu. ft.	.15
For the next 1000 cu. ft. of gas used per month, per 100 cu. ft.	.12
For the next 1000 cu. ft. of gas used per month, per 100 cu. ft.	.075
For the next 7000 cu. ft. of gas used per month, per 100 cu. ft.	.06
For the excess above 10000 cu. ft. of gas used per month, per 100 cu. ft.	.05

Comparison of bills under this rate and that proposed by the Public Service Company are shown on Diagrams 3, 4 and 5.

It is evident that the above rate will reduce the revenue somewhat below that from the rate proposed by the company although over the entire period the difference would be small in amount.

The Coal Situation.

Coal operators have expressed much fear that the proposed pipe line project will take away the greater part of their business in the State and especially in Denver. That their opposition is ill advised is shown by the propaganda which they issued showing how much cheaper coal is than gas for the ordinary householder and therefore it is much to be preferred. At the same time they *site* the magnitude and importance of the coal industry in Colorado and implying that it will be subject to dire disaster if natural gas is brought in. As a matter of fact, based on the anticipated consumption of gas five years after its introduction, the coal displaced by it in Denver will not be more than approximately 25 % of the total use. The corresponding figure for the entire state would be only about 8% or 800,000 tons. Of this amount about 220,000 tons reduction is due to the use of gas by the Colorado Fuel & Iron Co. and would not affect the general market situation.

Gas cannot be sold in Denver cheap enough to displace slack coal or screenings used in large power or heating plants with stoker fired boilers. It will displace coal in industrial processes only where precise heat control and ab-

sence of deleterious elements in the fuel result in a better product, although frequently at some increase in cost as compared with other fuels.

If gas can be had on terms outlined herein it would be of much greater economic advantage to Denver than the retaining of 25% or less of the coal business. That a vastly greater number of people would be benefited, is self-evident.

The coal interests plea is nothing new. When natural gas was first brought to Pittsburgh many years ago the coal miners went so far as to cut off the pipe line, fearing it would deprive them of their livelihood. Yet today more coal is mined in Pennsylvania than ever. Nor has natural gas had any appreciable effect on the coal industry in Cleveland or Cincinnati. For house heating and many other uses oil is now a real competitor of coal and probably would displace nearly as much coal as gas will if made available.

TABLE NO. 1

Exhibit No. 26

ESTIMATED GAS SALES IN M. CU. FT. PER YEAR

ORADO INTERSTATE GAS COMPANY

	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH
ES TO DISTRIBUTING COMPANIES										
VER										
All except Industrial	8325218	3505933	4408280	5167850	5789840	6177100	6596680	6947900	7198060	7397340
Industrial	500000	1500000	2250000	2700000	2300000	2370000	2940000	3000000	3005000	3005000
Total	8825218	5005933	6658280	7867850	8089840	8547100	9536680	9947900	10203060	10402340
LORADO SPRINGS										
All except Industrial	212000	332400	479900	591000	675000	789000	747000	765000	783000	801000
Industrial	80600	100000	100000	100000	100000	100000	100000	100000	100000	100000
Total	292600	432400	579900	691000	775000	889000	847000	865000	883000	901000
ERLO										
All except Industrial	169600	208000	378000	485000	585000	639000	666000	695000	720000	747000
Industrial	100000	125000	150000	150000	150000	150000	150000	150000	150000	150000
Total	269600	333000	528000	635000	735000	789000	816000	845000	870000	897000
PE/LINE SALES										
lo. Fuel & Iron Company	3750000	3750000	3750000	3750000	3750000	3750000	3750000	3750000	3750000	3750000
nsa City Line	2200000	2200000	2200000	2200000	2200000	2200000	2200000	2200000	2200000	2200000
her Industrial Sales	100000	100000	150000	150000	150000	150000	150000	150000	150000	150000
nestic Sales	120000	176000	231000	272000	315000	321000	333000	342000	351000	360000
Total.	6170000	6226000	6331000	6372000	6415000	6421000	6433000	6442000	6451000	6460000
AND TOTAL SALES	9556618	12077333	14091180	15569050	16517840	17069100	17632680	18097900	18407060	18660340

This is the best this can be photographed because it is very tightly bound.

Exhibit No. 26

TABLE NO. 2

ESTIMATED PEAK DAY DEMANDS (M.CU.FT.)

	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH
DENVER										
All except Industrial	15400	25300	32600	38700	44200	47000	49500	51500	53000	55200
Industrial	2900	5500	7900	9500	9800	10000	10300	10500	10500	10500
Total	18300	30800	40500	48200	54000	57000	59800	62000	63500	65700
COLORADO SPRINGS										
All except Industrial	1380	2300	3200	4000	4500	4800	4900	5060	5200	5300
Industrial	260	330	330	330	330	330	330	330	330	330
Total	1640	2630	3530	4330	4830	5130	5230	5390	5530	5630
PUEBLO										
All except Industrial	1100	1800	2400	3200	3900	4200	4400	4600	4850	5100
Industrial	330	420	500	500	500	500	500	500	500	500
Total	1430	2220	2900	3700	4400	4700	4900	5100	5350	5600
PIPE LINE SALES										
Colorado Fuel & Iron Co.	12500	12500	12500	12500	12500	12500	12500	12500	12500	12500
Kansas City Line	7300	7300	7300	7300	7300	7300	7300	7300	7300	7300
Other Industrial	330	330	500	500	500	500	500	500	500	500
Domestic	800	1140	1500	1770	2050	2110	2170	2230	2290	2350
Total	20930	21270	21800	22070	22350	22410	22470	22530	22590	22650
GRAND TOTAL	42380	56920	68730	78300	85580	89240	92100	95620	96970	99580
Denver Ratio										
% Denver & Colorado Springs	.917	.921	.920	.918	.918	.917	.918	.921	.920	.921
% Total	.432	.541	.589	.616	.631	.639	.647	.654	.655	.660

This is the best this can be photographed because it is very tightly bound.

Exhibit No. 26

TABLE NO. 3

TOTAL INVESTMENT AND PORTION ALLOCATED TO DENVER
YEARS

		1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH
Grand Total Investment Exclusive of Branch Lines		$11667078	$15243405	$15243405	$16113063	$16495293	$16495293	$16495293	$16495293	$16495293	$16495293
Amount Allocated to Denver											
Main Pipe Line											
Amarillo to Pueblo	$9015717	3894790	4277903	5310257	5553602	5608917	5761043	5833169	5396279	5905295	5950373
Pueblo to Colorado Springs	1201722	1179184	1179184	1179184	1179184	1179184	1179184	1179184	1179184	1179184	1179184
Colo. Spgs. to Denver	1976279	1976279	1976279	1976279	1976279	1976279	1976279	1976279	1976279	1976279	1976279
	12273718	7050253	7433366	8465720	8709115	8864380	8916506	8988632	9051742	9060758	9105836
Metering Station (Denver)	33364	33364	33364	33364	33364	33364	33364	33364	33364	33364	33364
Compressor Station Yrs.											
Amarillo Comp. Sta. 1	504445	217920									
2 & 3	677182		366355	390860							
4	927077				571079						
5 to 10	1012397					657753	666092	671431	681728	682770	687982
Cimarron " " 4	562105				346857						
5 to 10	617765					389810	391752	399694	401018	401636	407725
Pueblo " "2 & 3	403538		371301	371301							
4	1612148				1213148						
5 to 10	1612148					1213148	1213148	1213148	1213148	1213148	1213148
		217920	737656	770161	1360868	1471911	1485192	1498475	1510094	1511751	1520055
Yield Lines 1 to 4	1715551	711118	928113	1010460	1056779						
5 to 10	1926801					1215811	1231226	1246640	1260128	1262055	1271689
Working Capital	140000	60480	75740	88260	86840	88340	89460	90580	91500	91700	92400
Total Allocated to Denver		$ 8103135	$ 9807839	$ 10362165	$ 11227212	$ 11653806	$ 11755738	$ 11857689	$ 11946838	$ 11959631	$ 12023314
% Allocated to Denver		.5525	.6434	.6798	.6968	.7065	.7127	.7189	.7243	.7250	.7289

Exhibit No. 26

TABLE NO. 4

COLORADO INTERSTATE GAS COMPANY ESTIMATED YEARLY REVENUE

	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH
DENVER										
All except Industrial @ 40¢	$ 930087	$ 1402373	$ 1763312	$2067140	$ 2315936	$ 2470840	$ 2638672	$ 2779160	$ 2879224	$ 2958936
Industrial @ 85 1/2¢	51000	102000	153000	191250	204000	209100	214200	216750	218025	218025
Industrial @ 17¢	51000	187000	280500	331500	340000	348500	357000	365500	365500	365500
Total	$1032087	$ 1691373	$ 2196812	$ 2589890	$ 2859936	$ 3028440	$ 3209872	$ 3361410	$ 3462749	$ 3542461
COLORADO SPRINGS										
All except Industrial @ 40¢	84800	132960	191960	236400	270000	291600	298800	306000	313200	320400
Industrial @ 15¢	12000	15000	15000	15000	15000	15000	15000	15000	15000	15000
Total	$ 96800	$ 147960	$ 206960	$ 251400	$ 285000	$ 306600	$ 313800	$ 321000	$ 328200	$ 335400
PUEBLO										
All except Industrial @ 40¢	67040	115800	148800	191000	235200	257600	266400	277200	288000	298800
Industrial @ 15¢	15000	18750	22500	22500	22500	22500	22500	22500	22500	22500
Total	$ 82040	$ 133950	$ 171300	$ 213500	$ 257700	$ 280100	$ 288900	$ 299700	$ 310500	$ 321300
Wyo Ir. 1st 5 yrs. @ 16¢	600000	600000	600000	600000	600000					
2nd @ 18¢						675000	675000	675000	675000	675000
GAS LINE										
Ft. Lupton @ 40¢	40000	70400	98000	108800	126000	129600	133200	136800	140400	144000
Industrial @ 15¢	15000	15000	22500	22500	22500	22500	22500	22500	22500	22500
Kansas City Line @ 10¢	396000	396000	396000	396000	396000	396000	396000	396000	396000	396000
Total	$ 1059000	$ 1631400	$ 1116900	$ 1127300	$ 1144500	$ 1223100	$ 1226700	$ 1230300	$ 1233900	$ 1237500
GRAND TOTAL REVENUE	$ 2270727	$ 3054683	$ 3665972	$ 4145090	$ 4547136	$ 4936240	$ 5039272	$ 5212410	$ 5335349	$ 5436661

TABLE NO. 5

Exhibit No. 26

COLORADO INTERSTATE GAS COMPANY ESTIMATED OPERATING EXPENSES, REVENUE, ETC., FOR DENVER BUSINESS

	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH
REVENUE										
Operating Expenses (Entire Project)	$ 1032087	$ 1691373	$ 2196312	$ 2589890	$ 2899936	$ 3028440	$ 3209872	$ 3361410	$ 3468749	$ 3512861
Management	85000	85000	85000	85000	85000	85000	85000	85000	85000	85000
Operating Labor	53000	80000	90000	130000	135000	148000	170000	175000	175000	175000
Maintenance	75000	70000	60000	60000	60000	60000	60000	65000	65000	85000
Supplies	15000	30000	30000	35000	35000	40000	40000	40000	40000	40000
Fuel	7000	24000	32000	44000	58000	67000	78000	78000	84000	105000
Misc. & Contingencies	35000	30000	30000	30000	30000	30000	30000	30000	30000	30000
Taxes	223000	232000	232000	214000	217000	250000	255000	256000	265000	265000
	$ 493000	$ 551000	$ 559000	$ 598000	$ 650000	$ 678000	$ 718000	$ 729000	$ 744000	$ 785000
Credit for Gasoline	41489	51845	59767	66858	69505	78483	80218	81149	88146	86145
Net Operating Expense	$ 451351	$ 499155	$ 499233	$ 541712	$ 580495	$ 599517	$ 637782	$ 647551	$ 655854	$ 698855
% Chargeable to Denver	.7325	.6434	.6798	.6968	.7065	.7127	.7189	.7243	.7290	.7289
Amount Ditto	$ 249571	$ 321156	$ 339579	$ 391482	$ 410180	$ 427185	$ 458788	$ 469021	$ 479627	$ 509468
Gas at Well Chargeable to Denver - M. Cu. Ft.	3000000	5310000	7000000	8890000	9150000	9680000	10200000	10650000	10950000	11325000
Ditto Rate per M.	7¢	7-1/8¢	7-1/8¢	7-3/4¢	8¢	8-1/8¢	8-1/8¢	8-3/4¢	9¢	9-1/4¢
Amount Chargeable to Denver	$ 210000	$ 381975	$ 525000	$ 643095	$ 738000	$ 798840	$ 867000	$ 931875	$ 985500	$ 1047563
Total Expense Ditto	$ 459571	$ 703131	$ 864579	$ 1035177	$ 1148180	$ 1225825	$ 1325788	$ 1400896	$ 1465127	$ 1557031
Net Earnings - Ditto	$ 578716	$ 988242	$ 1334633	$ 1555313	$ 1751816	$ 1802615	$ 1883084	$ 1960514	$ 1993727	$ 1955830
Investment Allocated to Denver	$ 8103135	$ 9007839	$ 10562165	$11227212	$11653806	$11755748	$11857689	$11956888	$11959631	$12053314
% For Retirement Reserve & Int.	7.07	10.05	12.86	13.85	14.74	15.36	15.93	16.41	16.70	16.51
% Retirement Reserve	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
% Net Return	3.07	6.05	8.86	9.85	10.74	11.36	11.93	12.41	12.70	12.51

Exhibit No. 26

TABLE NO. 6

COLORADO INTERSTATE GAS COMPANY

ESTIMATED OPERATING EXPENSES, REVENUE, ETC., FOR E NTIRE PROJECT

	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH
TAL REVENUE	$ 2270727	$ 3051685	$3689972	$ 4189090	$ 4547136	$ 4856840	$ 5095872	$ 5318.10	$ 5335510	$ 5436661
t Operating Expenses Exclusive f Gas at Well (See Table No. 5)	451351	498155	499833	561718	580195	599517	631782	614755	661754	698955
. Cu. Ft. Gas at Well	10114000	12800000	14847000	16411000	17470000	18114000	18754000	17186000	19616000	19875000
lue of Gas at Well	710080	988000	1113585	1272853	1397600	1461405	1554090	1678775	1764540	1838438
tal Expense	1161431	1487155	1612758	1834595	1978095	2061922	2185872	2326386	2426294	2537393
t Revenue	1109296	1564985	2077214	2354495	2569041	2794918	2910000	2991698	2909255	2899268
vestment Including Branches	15983837	16100162	16100162	16969882	17358092	17358092	17358092	17358092	17358092	17358092
nes to Colo. Springs, Canon ity and Pueblo										
For Retirement Reserve & Int.	7.15	8.96	12.88	13.86	14.81	15.85	16.21	16.63	16.77	16.71
Retirement Reserve	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Net Return	3.15	4.96	8.88	9.86	10.81	11.85	12.21	12.63	12.77	12.71

TABLE NO. 7

Exhibit No. 26

GAS PLANT VALUATION - DENVER

YEARS

	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH
ming of Year	$ 10531132	$ 11526268	$ 12008852	$ 12276414	$ 12563526	$ 12807447	$ 12962347	$ 13114247	$ 13265147	$ 13417047
tions										
P. Mains & Regulators	535236	96684	59662	31212	38021					
P. Mains	75000	100000	150000	200000	150000	100000	100000	100000	100000	100000
k Clamps	225000	225000								
vices	26400	26400	26400	26400	26400	26400	26400	26400	26400	26400
ne Meters	19500	19500	19500	19500	19500	19500	19500	19500	19500	19500
ad Meters	4000	5000	5000	4000	4000	4000				
portation Equipment	5000	5000	2000	1000	1000		1000		1000	
ellaneous Equipment	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
tal End of Year	$ 11526268	$ 12008852	$ 12276414	$ 12563526	$ 12807447	$ 12962347	$ 13114247	$ 13265147	$ 13417047	$ 13567447

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Exhibit No. 25

TABLE NO. 8

CONSUMPTION & REVENUE - DENVER

	1986	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH
tomers	Actual										
estic	61259	61410	62130	60840	59770	59230	59220	59710	60300	61090	62010
se Htg.	305	2000	5000	8000	10500	12500	14000	15000	16000	16600	17500
mercial	5505	5510	5550	5600	5650	5700	5750	5000	5050	5900	5950
ustrial		12	25	35	45	50	55	55	60	60	60
Total	70129	71562	73005	74475	75965	77480	79020	80595	82210	83850	85520
al Sales											
estic	1811458	960600	1136170	1338480	1458250	1658140	1776600	1911600	1959900	2077060	2108340
se Htg.	2636555	453618	1209763	1902200	2465000	2803000	3003000	3240000	3460000	3601000	3753000
mercial	1016340	501000	605000	705600	813600	923400	977500	1015000	1053000	1062000	1071000
ustrial		500000	1500000	2250000	2700000	2800000	2870000	2940000	3000000	3000000	3000000
Total	5107595	2415218	4500933	6203280	7668850	8184790	8627100	9106600	9502900	9740060	9933340
nue											
estic		$ 1757789	$ 1928946	$ 1907643	$ 2091950	2205725	$ 2291814	$ 2389600	$ 2467476	$ 2554704	$ 2593250
se Htg.		298668	763900	1212600	1571200	1807900	1949900	2099500	2242000	2335000	2432000
mercial		377400	441400	500900	567000	633400	656900	675900	697100	703000	709000
ustrial		120000	340000	440000	615000	640000	656000	672000	685000	686500	686500
Total Revenue		$ 2547857	$ 3473246	$ 4211143	$ 4845150	$ 5287025	$ 5553614	$ 5037000	$ 6091576	$ 6279214	$ 6420750

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Exhibit No. 26

TABLE NO. 9

ESTIMATED EXPENSES & NET REVENUE PUBLIC SERVICE COMPANY OF COLORADO (DENVER ONLY) - YEARS

N. Co. Ft. GAS PURCHASED	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH
All except Industrial	1920218	3000933	3955280	4762850	5381810	5757100	6166680	6502900	6743060	6932560
Industrial	500000	1500000	2250000	2760000	2800000	2870000	2940000	3000000	3005000	3005000
Co. Use	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Lost & Unaccounted For	400000	500000	450000	400000	400000	415000	425000	440000	450000	460000
Total	2825218	5005933	6660280	7867850	8586810	9047100	9536680	9947900	10203060	10402560
Expense										
Gas Purchased	$ 1052087	$ 1691373	$ 2196812	$ 2650890	$ 2859936	$ 3020440	$ 3205872	$ 3361410	$ 3487740	$ 3582461
Dist. Operation	73500	73000	79000	79000	80000	80000	82000	82000	84000	85000
Customers Operation	360500	314200	343300	362500	380500	390000	413000	425000	435000	435000
General Expense	221000	221000	225000	230000	235000	240000	250000	252000	265000	273000
Taxes	180000	190000	200000	210000	220000	230000	240000	250000	260000	270000
New Business	270000	305000	305000	220000	180000	160000	160000	160000	160000	160000
Dist. Maintenance	875000	875000	100000	100000	90000	90000	90000	95000	95000	95000
Customers Maintenance	165000	165000	165000	75000	77000	76000	77000	77000	73000	79000
Other Maintenance	10000	10000	12000	12000	13000	13000	14000	14000	15000	15000
Administration	44587	61027	72695	84790	92523	97136	102148	106603	109887	112363
Unlassed	3000	3000	4000	4000	5000	5000	5500	6000	6000	6500
Total Expense	$ 2636674	$ 3315600	$ 3703907	$ 3967180	$ 4230959	$ 4419576	$ 4613520	$ 4835013	$ 4965636	$ 5073324
Net before Reserve	88817 *	171646	507336	877970	1056066	1131038	1193480	1256563	1313642	1347134
Investment at end of Year	11586268	12008852	12276414	12563586	12807147	12962347	13111247	13265147	13417047	13567947
Reserve at 1.8% of Depreciable Property	149928	157930	162385	167160	171223	173818	176359	178882	181423	183937
Net after Reserve	238745*	13716	344951	710010	884843	957220	1017121	1077681	1132225	1163197
% on Investment		0.11	2.81	5.66	6.91	7.38	7.76	8.12	8.44	8.58

* Deficit

BAD PRINT

City	Field Supply	Length of Pipe Line Miles	Size of Supply Pipe	Price Delivered at City Gate	Rates - Per Meter Monthly	Min-Minimum Charge Ser-Service Charge
Cincinnati 900 B. T. U.	West Virginia	153	20"HP	45¢ M	First 5000 cu. ft. Next 5000 " " " 5000 " " " 5000 " " " 5000 " " All over 25000 cu. ft.	75¢ per M 75¢ 70¢ " " Min 65¢ " " 60¢ " " 55¢ " " 50¢ " "
Los Angeles 1100 to 1125 B.T.U.	Southern California	15 to 110	12"HP to 16"HP	15 1/2¢ 40 M• 20¢ 20 M• 25¢ all over	First 4000 cu. ft. Next 11000 " " " 25000 " " Over 40000 " "	92¢ per M 80¢ 85¢ " " Min 78¢ " " 72¢ " "
Dallas 950 to 1000 B.T.U.	Oklahoma & West Texas	150 to 200		40¢ M	First 700 cu. ft. Next 49300 " " " 50000 " " " 100000 " " " 100000 " " All over 300000 cu. ft.	15.00¢ per M 50¢ 6.75¢ " " Min 6.51¢ " " 6.00¢ " " 5.51¢ " " 5.00¢ " "
Kansas City, Mo.					First 400 cu. ft. Next 1600 " " " 48000 " " Over 50000 " "	5¢ total 75¢ 5¢ per 100 Min 8¢ " " 8¢ " "
Cleveland					First 5000 cu. ft. Next 10000 " " " 10000 " " " 25000 " " All over 50000 cu. ft.	50¢ per M 50¢ 55¢ " " Ser 60¢ " " 75¢ " " $1.00 " "
Pittsburgh					First 50000 cu. ft. Next 50000 " " " 100000 " " All over 200000 cu. ft.	60¢ per M $1.00 55¢ per M Min 50¢ " " 45¢ " "
Baton Rouge	Calcasieu	170		35¢	First 500 cu. ft. Next 79500 " " " 60000 " " All over 140000 cu. ft.	$1.10 $1.10 70¢ per M Min 60¢ " " 25¢ " "
Denver	Amarillo	343	22" and 20"	40¢ M	Proposed Rate First 200 cu. ft. Next 2800 " " " 7000 " " All over 10000 cu. ft.	$1.50 $1.50 7¢ per 100 6¢ per 100 Min 5¢ per 100

• Million

Mr. Brock: I next offer in evidence a certified copy of the report on proposed natural gas rates for Denver dated August 10, 1927 and made by A. C. King, Consulting Engineer, 35 South Dearborn Street, Chicago, and filed with the Regional Ordinance No. 178, Series 1927, in the office of the City Clerk of Denver, Colorado.

I might say in that connection that the ordinance of September 14th refers to the King report expressly as the basis for the determination by the City Council that it was feasible to bring natural gas to Denver.

Mr. Examiner, I have enough copies left to supply you with a complete set if you desire it.

The Trial Examiner: Fine. Have you distributed copies of Exhibit 26 to Counsel?

Mr. Brock: Yes.

The Trial Examiner: Is there any objection to the offer of Exhibit 26?

Mr. March: Yes, sir, there is an objection, Mr. Examiner. We don't object to the other exhibits, but we do object most emphatically to the introduction of Exhibit 26. This exhibit differs from the other exhibits. It is not a public document. It is a report by an engineer, a consulting engineer and in this report are various data which we want to cross examine the witness who prepared the report about.

For example, there are statements in here that, as I understand it, in regard to a 40-cent rate here in Denver, the necessity for it. There are statements here as to the Panhandle field. There are estimates—various statements about this entire project, statements about the coal situation here. I'm just glancing through this report here and I find certain statements about—yes, I find a statement like this in the report:

"Coal operators have expressed much fear that the proposed pipeline project will take away the greater part of their business in the state and especially in Denver. That their opposition is ill-advised is shown by the propaganda which they issued showing how much cheaper coal is than gas for the ordinary householder and therefore is much to be preferred."

Now there is in this report a great many statements like that and we feel that we should have the right to cross examine the witness who presented this report. We will have no objection probably to the admission of this report if Mr. King is called in and it is put in in the proper way. We say it is entirely improper to bring in this report and attempt to put it in as a document without a witness to cross-examine. It denies us a very fundamental right of cross examination here, and I think this has some direct bearing upon the outcome of the proceedings here, and so we object to it on that ground, if it please the Examiner.

The Trial Examiner: Where is Mr. King, Mr. Brock?

Mr. Brock: He was then in Chicago, is the address given in the report. As far as I know he is still there I don't know anything different.

The Trial Examiner: Is he still living?

Mr. Brock: Well; I think so.

The Trial Examiner: Well, the Examiner—

Mr. Brock: May I make an observation?

The Trial Examiner: Surely, Mr. Brock.

Mr. Brock: So that you will understand just what this situation is.

By this original ordinance granting the franchise to the Public Service Company and voted upon by the qualified tax paying electors it was provided that if the Mayor and City Council should determine that it was feasible to bring natural gas to Denver then the Public Service Company under severe penalty should be required to make the necessary arrangements to bring that natural gas to Denver. Following that ordinance the Mayor and City Council employed this engineer to make an investigation and report back to the Mayor and City Council with respect to that matter. After that report came in the City Council by ordinance No. 178, Exhibit No. 25, passed this ordinance determining that it was feasible to bring natural gas to Denver and ordering the clerk to so notify the Public Service Company so that they would understand what their obligation would be under the original ordinance and the very

first section of this ordinance, No. 178, provides, and I think I should read it:

"After investigation and upon competent engineering advice taking into consideration all of the economic factors involved, it has been and hereby is now found and determined that it is feasible to bring natural gas to Denver; that said Public Service Company of Colorado be and it is hereby given notice of said findings and determination, together with the engineering information upon which such determination was based, and that the Clerk of the Council be and he hereby is directed forthwith upon the final passage, publication and approval of this ordinance by the Mayor to deliver to said Public Service Company of Colorado a duly certified copy hereof together with a verified copy of the 'Report on proposed natural gas rates for Denver,' dated August 10, 1927, which was prepared after investigation by A. C. King, consulting engineer of Chicago, Illinois, and which said report constitutes the engineering advice and information upon which said findings and determination are based and the original copy of which is now on file in the office of the Clerk of the Council of the City and County of Denver, to which reference is had more particularly, and notice of which is hereby given to said Public Service Company of Colorado in conformity with the provisions of said section, IV-e of said above-mentioned franchise."

Accordingly this is a public document of the City and County of Denver in its files and moreover the City and County of Denver is a complainant in this case. In fact it was the City and County of Denver that initiated this whole proceeding. It is a part of their files and their records. It has been made a part of this ordinance of the City and County of Denver upon that proposition, and I certainly think it is admissible in evidence.

Mr. March: If it please the Examiner, we have no objection to the ordinance going in. That is a public document, but here we find a report a report made by an employe of the City, a report which was not offered in evidence in any proceedings, an open hearing, a report made by a witness who was never cross examined by anybody in open hearing. Not only that but, this report contains the most controversial matters. You have an estimate of re-

serves in the field in this report. We don't know and the Examiner doesn't know and the Federal Power Commission won't know if this report is worth the paper it is written on until we have the witness right here who wrote the report and have an opportunity to cross examine him about the report.

You will recall yesterday that I brought out through Mr. Spencer here that the company furnished Mr. King—cooperated with Mr. King very closely in making this report.

Mr. Brock: To the extent of giving him information.

Mr. March: I want Mr. King to say just exactly what happened. I'm not imputing any lack of good faith here in the report or imputing that the gas company wrote the report or anything like that. We just want to know the facts surrounding the report, what it is based upon. We don't even know what the report is based upon, except by this man's opinion. We don't know that this man is a competent engineer here. We have a right to test his expert qualifications here on the witness-stand.

The Trial Examiner: I think the Examiner is in position to rule, Mr. March.

As I view this offer, the Commission's counsel raises no objection to the foundation for the exhibit Mr. Brock. Therefore, the mere fact that it is a public document wouldn't necessarily make it admissible in this proceeding. The harmful part of the exhibit, as the Examiner sees it, it is an engineering report containing many statements by the witness, by Mr. King, rather, and representing his informed opinion. Now to deprive Commission's counsel and the complainants of the right to cross examine Mr. King would seem to me to be a very harmful thing.

In view of that I will sustain the objection of Commission's counsel to the offer of Exhibit 26.

(Exhibit 26, marked for identification.)

Mr. Brock: As I understand it, Mr. Examiner, this exhibit will nevertheless become a part of the record for the purposes of any possible review proceeding.

The Trial Examiner: It will not become a part of the record, Mr. Brock. A copy of the exhibit is retained in

the official files of the Commission but it does not become a part of the record. However, if you desire you may make an offer of proof.

Mr. Brock: Well, I desire to make an offer of proof in strict accordance with the report itself, and if need be read it into the record.

Mr. March: Why, if it please the Examiner, reading it into the record won't help the matter any. That's just putting the thing in evidence. This man who reads it into the record, he didn't write the report, and that adds nothing to it. It might just as well be put in evidence. Why doesn't he call Mr. King? We would be glad to let the thing go in then without any objection probably.

Mr. Brock: Certainly the practice in court is if the exhibit is offered and rejected it goes up with the record so that the reviewing court can itself determine whether the trial court was right in rejecting the exhibit and that is the point that we want to preserve. We don't want to have to send this case back to the Commission again if the reviewing court should ultimately conclude that we are right.

Mr. March: Well, if it please the Examiner, I think it can be understood it is marked for identification in the record and not in evidence, and will not be considered by the Commission.

The Trial Examiner: It will remain in the exhibit file, Mr. Brock, but as far as the proceeding is concerned the Commission and the Examiner will not consider it as evidence.

Mr. Brock: I understand that for your purposes you have sustained the objection.

The Trial Examiner: Yes.

Mr. Campbell: Mr. Examiner, to avoid any possible argument on this point at a later date I should like to ask Commission's counsel if they object to this offer of Exhibit No. 26 on the ground that the clerk himself is not here to identify it. It is a certified copy. Now, if there is going to be any objection on that score we can go get the clerk and he can repeat—

Mr. March: I thought we had made ourselves perfectly clear here. The clerk isn't going to add anything to it as far as Mr. King's report is concerned. If you want Mr. King's report in evidence, as far as Commission's counsel is concerned, you can bring Mr. King in here.

Mr. Campbell: You are shooting a little fast here. Let me finish.

The Trial Examiner: Your objection, Mr. March, didn't go to the foundation of the exhibit?

Mr. March: My objection goes to the exhibit in its entirety, on the grounds that the witness who prepared the exhibit is not brought in here to be cross examined by us. Now as far as we are concerned it is marked for identification in the record. It's not in evidence and there is nothing in this thing—we don't question the certification of any clerk here at all.

Mr. Campbell: That's all I want you to say. Do you say that now?

Mr. March: Why, certainly.

Mr. Campbell: Very well. Let the record show that and let the record also show that it has been tendered as an exhibit and that counsel makes an offer of it as proof and that counsel are willing to sit down and read every word of it in the record as an offer of proof but that the Examiner has dispensed with that and that we offer it not further than a public document upon which the City acted and on which the Colorado Interstate acted.

The Trial Examiner: The offer is rejected on the grounds stated.

(Vol. II, pp. 165-174.)

2. The agreement between Southwestern Development Company, Cities Service Company and Standard Oil Company (N. J.) to undertake the project of constructing the pipe line from the Texas Panhandle field to Denver.

On April 5, 1927, Southwestern Development Company, Cities Service Company and Standard Oil Company (N. J.) entered into the following contract, received as Exhibit 1:

[EXHIBIT 1.]

Memorandum of Stipulations agreed upon between Southwestern Development Company, Cities Service Company and Standard Oil Company (New Jersey).

New York, N. Y., April 5th, 1927.

I. The project in general contemplates the acquisition of natural gas properties in the Amarillo Gas Field, the construction of a pipe line from that field to the city of Denver via Pueblo and Colorado Springs with branches to Canon City and other places, the sale and delivery of natural gas at the city gate for distribution in said cities and in other places and the sale of natural gas for industrial purposes to industries along the route of the pipe line.

II. The plan of the project as herein set forth is to be carried out only upon the condition that the attorneys for the parties advise favorably upon the legality under Federal Laws and the laws of the several States where the business is located, and the plan may be modified by some alternative plan which meets with the approval of the attorneys and substantially conforms to the plan herein stated. One corporation instead of two may be created or used hereunder in the State of Texas to fulfill the functions hereinafter assigned to two corporations.

III. The Southwestern Development Company is the owner of all of the capital stock of the Amarillo Oil Company which is the owner of a large area of gas leaseholds, gas wells and other gas properties located in the counties of Hartley, Oldham, Moore, Potter, Hutchinson and Carson, State of Texas. The Southwestern Development Company agrees to form and hold the stock of a corporation which will be and continue separate from its other projects now

operating or which may hereafter operate in said counties and will cause the Amarillo Oil Company to convey to said new company, hereinafter designated as the Texas Producing Company (free from all debts, liens and encumbrances) all its gas leaseholds, gas fee and gas wells and equipment, including pipe lines.

The Southwestern Development Company also agrees to cause said Texas Producing Company to enter into a contract to operate its wells and gas properties so as to produce therefrom the amount of natural gas required by the project except to the extent that natural gas required by the project may be purchased from others. It will also cause the Texas Producing Company to sell its gas production at cost and so far as is practicable to hold its areas of gas lands as a blocked up reserve during the time the gas of other producers can be profitably purchased.

It is agreed, however, that it is necessary that the Texas Producing Company sell to the project at all times sufficient gas produced from its own wells, which together with the gas sold to the Panhandle Pipe Line Company and Amarillo Oil Company under the contracts herein provided for, will enable the Texas Producing Company to comply with the terms of its leases and to offset gas taken by others in competitive areas, and the Southwestern Development Company agrees to cause the Amarillo Oil Company and Panhandle Pipe Line Company each to purchase and take from the Texas Producing Company at all times as nearly as may be practicable the same proportion of their total requirements of gas as the amount taken by the project from the wells of the Texas Producing Company bears to the total amount of the gas requirements of the project.

It is agreed that Southwestern Development Company shall cause the Texas Producing Company and the Panhandle Pipe Line Company and Amarillo Oil Company to enter into a contract whereby the Texas Producing Company shall sell and the Panhandle Pipe Line Company and/or the Amarillo Gas Company shall purchase the natural gas required to supply the customers of the Panhandle Pipe Line Company and the Amarillo Gas Company in the city of Amarillo and its environs, and to supply the Amarillo Oil Company with gas for sale to the Smelter Company which is now being supplied by it, and any consumers which

it may hereafter acquire located in the city of Amarillo or its environs and the gas supplied under this contract is to have preference over the gas supplied to the project.

It is agreed also that the price to be paid for each one thousand (1,000) cubic feet of said gas deliverable to said Panhandle Pipe Line Company and/or the Amarillo Oil Company shall be the actual cost per M cubic feet to said Texas Producing Company including in said costs maintenance and operating expenses, rentals and royalties, maintenance of funds or reserves for renewals, replacements or extraordinary maintenance not covered by expenditures for current operation or ordinary maintenance, taxes excepting net income or net profits taxes, general expense, bond interest and sinking fund requirements, development costs, a fair allowance for contingencies, and the expense of purchasing and procuring gas if any is purchased by said Texas Producing Company from other producers of gas; such costs are to be computed on all gas sold by said Texas Producing Company and an average price per M cubic feet so ascertained, the method for fixing the same to be carefully worked out and set forth in the agreement hereafter to be made pursuant to these stipulations except that from the time that the method herein defined for computing the cost of gas to the Panhandle Pipe Line Company and Amarillo Oil Company goes into effect until the time when the project begins taking gas from the Texas Producing Company there shall be included as a part of the cost of gas, the interest accruing on one-fourth of any bonds issued by the Texas Producing Company, but the cost of any wells drilled by the Texas Producing Company which are not necessary to supply gas for the requirements of the Panhandle Pipe Line Company and Amarillo Oil Company, shall not be taken into account in determining the cost of gas to them, nor shall sinking fund payments on bonds of Texas Producing Company commence during such period.

IV. The Southwestern Development Company also agrees to cause to be incorporated and to hold the stock of a company hereinafter designated as the Texas Connecting Company which shall build a pipe line of adequate capacity and equipment, including compressors and branch lines, for the gathering and transporting of natural gas from the Amarillo

Gas Field in said counties to a junction point in Oklahoma or New Mexico near the northwest corner of the Texas Panhandle where its pipe line will connect with and make deliveries of natural gas to the project.

The Southwestern Development Company agrees to cause said Texas Connecting Company to enter into a contract with the Texas Producing Company to purchase the gas production of the latter company and to purchase gas from other producers when the same may be profitably acquired and to sell and deliver the same to the project at the cost thereof. Said Texas Connecting Company shall also build and operate a plant for the extraction of gasoline from the natural gas transported, and treat therein and have the recovered product therefrom, the net profits therefrom to be credited upon the cost chargeable against the Colorado Company for the natural gas sold and delivered to it.

V. The Texas Producing Company and the Texas Connecting Company shall not make any contract for the sale of natural gas nor do anything that may impair the capacity of each to fulfill its deliveries of natural gas hereunder for the full term of the agreement to be made in accordance with these stipulations. (Contract with the Amarillo Oil Company and/or Panhandle Pipe Line Company to be expressly accepted as a preferred obligation as hereinbefore provided.) In case profitable sale of natural gas may be made with the consent of the Colorado Company to others than the project, the net profits shall be paid to or credited upon the cost of gas chargeable to the Colorado Company hereunder as if such sales had been made for the Colorado Company's account, and subject to this provision, the Texas Producing Company is to co-operate with the Amarillo Oil Company and/or Panhandle Pipe Line Company in the sale of gas to them for delivery to additional customers in northwestern Texas, known as the Panhandle of Texas, and in making gas from the Amarillo Gas Field in said counties available on reasonable terms to such customers.

VI. For the purpose of defining the respective operating rights of the Amarillo Oil Company, which retains the ownership of the fee oil and the leasehold oil, and on the other hand the Texas Producing Company which becomes the owner of the fee gas and leasehold gas in the same lands, a working agreement shall be entered into under

the usual terms customary in oil and gas fields whereby gas wells drilled by the oil owners may be purchased at cost by the owner of the leasehold gas and oil wells drilled by the owner of the leasehold gas may be purchased at cost by the owner of the leasehold oil, and rental obligations may be shared. Said working agreement to grant an option to the project at cost upon any gas which may be developed in the counties of Hartley, Oldham, Moore, Potter, Hutchinson and Carson, State of Texas by the Amarillo Oil Company.

VII. Standard Oil Company (New Jersey) agrees to form a corporation, hereinafter designated "The Colorado Company", and to cause the stock of the Colorado Company to be issued to the companies in the amounts hereinafter set forth. Said Colorado Company shall construct a pipe line of adequate capacity and equipment, including branch lines, and main line to extend from a connection with the pipe line of the Texas Connecting Company and follow a route via or near Pueblo and Colorado Springs to Denver, with a branch line to Canon City and a branch line to each of such other places as may be made a part of the project. Said Colorado Company shall enter into a contract with the Texas Connecting Company to purchase gas at cost from the Texas Connecting Company for the natural gas requirements of its customers and to enter into a contract with the Public Service Company of Colorado for the delivery of gas to Denver and its environs, a contract with the Pueblo Gas & Fuel Company for Pueblo and its environs, and a contract with Cities Service Company or its nominee for delivery of gas for distribution in Colorado Springs, Ivywild and their environs if Cities Service Company succeeds in buying the distribution plants in the last two named places; if such purchase is not made, then the Colorado Company shall negotiate and endeavor to make a contract with the owners of said plants in Colorado Springs and Ivywild and environs.

VIII. In view of the possibility of gas being found along the pipe line of the Colorado Company or within piping distance of the market then being supplied by it, the parties agree that it may be desirable for the protection of the money then invested in the project and/or the plants of the distributing companies to arrange for purchase of such

gas by the Colorado Company and the marketing of such gas while the gas of the Texas Producing Company is reserved for the future. It is understood that the distribution companies controlled by Cities Service Company are to use their best efforts to co-operate with the Colorado Company in the disposal of such gas. Upon failure of the Colorado Company to purchase or dispose of any such gas or to participate in the purchase or disposal thereof, then the distributing companies controlled by Cities Service Company shall have the right to purchase and market that part of such gas which if such purchase were not made would be offered for sale to customers of distributing companies. Otherwise, the distribution companies controlled by Cities Service Company are to purchase all of their natural gas requirements from the Colorado Company, and the Colorado Company to purchase all of its requirements from the Texas Connecting Company, and the Texas Connecting Company from the Texas Producing Company and other producers of gas in the Amarillo Field, deliverable as heretofore set forth.

IX. The contract between the Texas Producing Company and the Texas Connecting Company and the contract between the Texas Connecting Company and the Colorado Company and the contract between the Colorado Company and the distributing companies in Denver and Pueblo owned or controlled by Cities Service Company; and the contract between the Colorado Company and Cities Service Company for delivery of gas for use in Colorado Springs and Ivywild if Cities Service Company should acquire the plants now being operated in said two last named cities by the municipalities, shall all be for a term of twenty years from and after the execution of the first one thereof and so long thereafter as natural gas may be profitably sold by the Colorado Company after payment of the cost thereof to the Texas Connecting Company as herein provided.

X. It is agreed between the parties hereto that on the signing of the agreement contemplated under these stipulations, an engineering firm such as Ford, Bacon & Davis, Inc., or similarly equipped engineers, shall be engaged by the Texas Producing Company, the Texas Connecting Company and the Colorado Company (Christy Payne being hereby authorized to act for them in this particular until in-

corporated if any such action is expedient) to construct the pipe lines and stations and to operate all properties under engineering and/or construction contracts, during a period of twenty years, terminable, however, by the engineers or by the employing companies at the end of five years provided one year's notice has been given or at any time thereafter on one year's notice; the Colorado Company to name other engineers in place of those retired for the remaining term under contracts terminable on one year's notice. Remuneration for said engineering operation and management to be prorated in the proportion that the investment of each company bears to the total investment.

XI. The Colorado Company reserves to itself for direct service the sales of gas to the steel plant of the Colorado Fuel & Iron Company in or near Pueblo and to the cement and zinc smelter refineries, ore reduction plants and other industries in and along the railroad to Canon City, and to any other large industries located along the route of its main and branch lines and not located in or abutting on the low or intermediate pressure distribution plants maintained in Denver, Pueblo, Colorado Springs, and the other places which may be supplied under contract for delivery of gas by the Colorado Company at the city gate.

XII. Cities Service Company agrees to cause the Public Service Company of Colorado to convert its artificial gas distribution plant in the city of Denver and environs into a natural gas distribution plant and to cause the Pueblo Gas & Fuel Company to convert its artificial gas plant now operated by it in the City of Pueblo into a natural gas distribution plant. It is understood also that Cities Service Company is negotiating for the purchase of the plant or the capital stock of the Colorado Springs Light, Heat & Power Company now operated by the City of Colorado Springs, an artificial gas company supplying Colorado Springs and Ivywild and environs, and that if said purchase is consummated it will cause the company making such purchase to convert said artificial gas plant into a natural gas distribution plant. Said Cities Service Company also agrees to cause the Public Service Company of Colorado, the Pueblo Gas & Fuel Company and the company distributing gas in Colorado Springs and Ivywild, if such plants are secured by it, to enter into contracts

with the Colorado Company to purchase and take from the Colorado Company all of the natural gas required by said distribution plants for the supply of their consumers, which contracts shall contain the usual provisions for the purchase and taking of natural gas and its distribution and in addition substantially the following provisions:

(a) During the first fifteen years after the Colorado Company is ready to make deliveries, the city gate price which the distribution company shall pay the Colorado Company for gas purchased and taken shall be forty (40) cents per thousand cubic feet. Gas may also be purchased from the Colorado Company for sale under special industrial contracts, which special contracts have been submitted to and approved by the Colorado Company, at eighty five per cent. (85%) of the price charged by the distribution company to such industrial consumers under such approved contracts.

It is provided, however, that six months before the beginning of the eleventh year of the above agreed first fifteen year period, if the Colorado Company finds that its cost of obtaining natural gas has increased on the average per thousand cubic feet during the first six months of said tenth year over the cost of obtaining gas during the sixth, seventh and eighth years, then it shall bring such increased cost to the attention of said distribution companies, and an adjustment of said rates shall be made if the parties are then able to agree mutually upon the amount of such increase; if not able to fix such increase by mutual agreement, then said prices shall remain unchanged for said entire period of fifteen years. After the said period of the first fifteen years, the prices in effect at the end of said first fifteen year period are to continue as basic prices, but if the Colorado Company by reason of an increase in the cost of producing and obtaining natural gas is obliged to pay an increased price for its supply of gas for the purposes of the agreement or agreements made under this stipulation over and above the average price paid during the eleventh to fifteenth years inclusive, then it may on six months' written notice, increase said prices to the same extent. In the event such increased prices are not acceptable to said distribution companies, the increase under the facts above set forth shall be arbitrated.

(b) The distribution companies shall adopt and endeavor to secure in the cities served a schedule of rates which will tend to stimulate sales of natural gas for house heating as well as for cooking, laundry work and hot water heating, all parties to co-operate in the effort to secure satisfactory rate schedules in each city served.

(c) Each distribution company shall make every reasonable effort to increase and build up sales of natural gas in such towns and engage and pay for the service of the Natural Gas Department of H. L. Doherty & Company to direct such efforts, doing among other things, to the extent such Department deems advisable, the following:

1. Attaching any and all new consumers abutting on existing lines and extending present distribution systems throughout any sections where profitable consumers may be secured.

2. Introduction of and demonstrations of the workings and benefits of proper burners and appliances designed for the use of natural gas. Demonstration and sale of natural gas heating and other natural gas appliances at convenient point or points where public interest may be attracted and secured, and sale of such appliances at fair prices and on reasonable terms of payment, and on installment terms of payment when consumer desires, if found necessary to stimulate sales of gas.

3. Advertising the advantages of natural gas in local papers, distribution of pamphlets to interest and educate the public in the use of natural gas, and the holding of frequent educational campaigns and natural gas demonstrations together with personal solicitations

4. Making a thorough survey of the commercial and industrial sales possibilities; instituting schedules of rates to attract the major portion of this business; making extensions of low pressure or city high pressure lines as may be necessary to meet the requirements of these classes of consumers.

5. To make available for the purpose of increasing sales of natural gas the following minimum expenditures for the use of the sales department:

1st year, an amount equal to $2.00 per consumer then attached to lines.

2nd year, an amount equal to $1.50 per consumer then attached to lines.

3rd year, an amount equal to $1.00 per consumer then attached to lines.

4th year, an amount equal to $ .75 per consumer then attached to lines.

5th year, an amount equal to $ .50 per consumer then attached to lines.

(d) Cities Service Company agrees to cause the Public Service Company of Colorado and the Pueblo Gas & Fuel Company, and such company as it may organize to operate the distribution plant in the city of Colorado Springs and Ivywild, if purchased by Cities Service Company, to make such additions and changes in the distribution plant in each city operated respectively by them as will insure so far as the capacity of the distribution plant will do so an adequate and uniform pressure of natural gas throughout each city and its environs in keeping with good practice in cities where natural gas is supplied for house heating as well as other domestic purposes. Such additions and changes shall be completed and in operation at the time the Colorado Company is ready to commence deliveries of natural gas hereunder, and shall be so constructed that a pressure of thirty pounds gauge to the square inch at each of the Colorado Company's delivery points will give uniform and adequate pressure throughout each distribution plant.

(e) In any of said contracts it is to be stipulated that the demands of domestic consumers upon the supply of natural gas are to be preferred over service to industrial consumers and that the remainder may be prorated, after demands of domestic consumers, among commercial and industrial consumers, but that such domestic preference shall not be exercised so as to deprive the Colorado Fuel & Iron Company of the volume of gas needed to complete open hearth heats then in jeopardy and to keep its furnaces warm during extreme domestic demand upon the pipe line of the Colorado Company, or so as to deprive any

other industrial consumer which requires a small proportion of its normal gas demand to prevent damage to its appliances.

(f) The gas deliverable at the city gate of each distribution plant shall be measured by orifice meter or other meter of standard type and equally accurate. The unit of measurement shall be one thousand cubic feet of natural gas at an assumed temperature of 60 degrees F. and an assumed pressure of eight ounces above 12.7 pounds atmospheric pressure computed according to Boyle's Law relating to gas measured at varying pressures, but without allowance for variations of barometer, the specific gravity of the gas to be ascertained each three months and the average temperature determined and used in the computations. The delivering company to furnish, maintain and read the meters and the receiving company to have the right to install check meter or meters of standard and accurate grade with duplicate installation and daily or frequent checking comparisons of readings.

In order to keep account of the gas sold to domestic consumers and paid for at one rate, and gas sold for industrial purposes and paid for at another rate, the amount of natural gas used by the distributing company in any of its power plant or plants and the amount consumed by the distribution company's industrial special rate consumers, shall be deducted from the total amount registered by the Colorado Company's meter at such delivery point and the difference between these two amounts shall be considered the amount of gas delivered by the Colorado Company to the distribution company for the purpose of supplying the distribution company's domestic consumers.

(g) Cities Service Company agrees to use its best endeavors to promptly obtain suitable franchise and rate ordinances for the sale of natural gas in Denver and Pueblo, and in any other city, including Colorado Springs and Ivywild, in which it may install or acquire the distribution plant, and so far as is practicable to secure rate ordinances to cover not less than a fifteen year term.

It is agreed that the parties hereto are to give the Cities Service Company opportunity to purchase the artificial gas plants in the City of Colorado Springs and Ivywild and

secure a franchise for natural gas and a rate ordinance therein, but if the Cities Service Company is unsuccessful in its attempt to purchase said plants, its right to have first opportunity shall expire three months after the Colorado Company's line is in operation. It is also agreed that if there are other cities and towns which the Colorado Company believes to be available markets, it shall from time to time give the Cities Service Company thirty days' notice and opportunity to investigate each of such towns and cities; if the Cities Service Company upon such investigation desires to install a natural gas distribution plant therein it shall within said thirty days give notice of such conclusion and shall have first opportunity for a period of three months thereafter in which to secure a franchise and rate ordinance.

XIII. It is agreed that out of the money raised for the project, the Colorado Company is to pay to the Southwestern Development Company through the purchase of bonds of the Texas Producing Company and the Texas Connecting Company as set forth in these stipulations and the financial statement attached hereto, Five Million Dollars ($5,000,000) in cash and is to deliver to the Texas Connecting Company fifty (50) per cent. of its common stock (after deducting from the total common stock any shares allotted under stock warrants with bonds and the shares to the extent of fifteen (15) per cent. of the total original issue allotted to Cities Service Company), and One Million Dollars ($1,000,000) par value of its preferred stock, in consideration of the obligations assumed by it hereunder to produce and deliver gas, supported by the wells, gas leaseholds and fee gas to be acquired by the Texas Producing Company and the pipe lines and facilities to be constructed by the Texas Connecting Company, free from any liens, debts or encumbrances.

XIV. In the obligations hereinbefore set forth upon the Texas Producing Company to sell gas to the Texas Connecting Company and the Texas Connecting Company to buy from the Texas Producing Company, and the Texas Connecting Company to sell to the Colorado Company and the Colorado Company to buy from the Texas Connecting Company, at cost, it is agreed that such cost shall include all money expended in producing, purchasing and transporting gas to the place of measurement and delivery, with payments made monthly upon monthly cost estimates with

semi-annual adjustments to meet six months' actual costs, including in such costs maintaining and operating expenses, rentals and royalties, maintenance of funds or reserves for renewals, replacements or extraordinary maintenance not covered by expenditures for current operations or ordinary maintenance, taxes excepting net income or net profits taxes, general expense, bond interest and sinking fund requirements, development costs, a fair allowance for contingencies and the expense of purchasing and procuring gas if any is purchased from other producers of gas, but there shall not be included in the cost of gas sold to the Texas Connecting Company and/or the Colorado Company any rentals on leases from which the Colorado Company has relinquished its right to have the gas production delivered for the project and has given notice of such relinquishment. In the event the Texas Producing Company and the Texas Connecting Company have profits from any source and accumulate a surplus in excess of working capital requirements there shall be a reduction in the price of gas until such excess is used up.

XV. Southwestern Development Company agrees that it will not permit the Amarillo Oil Company to incur any obligations on its natural gas properties described herein, other than in the natural course of the current and normal operations under existing contracts, or to dispose of any part of its properties during the period of the negotiation for franchise and rate ordinance for natural gas in the City of Denver and if an acceptable franchise and rate ordinance is secured, then continuing until the gas wells and gas fee and gas leaseholders are vested in the Texas Producing Company as herein provided.

XVI. All parties hereto agree upon the execution of these stipulations to proceed diligently to the preparation and execution of formal agreements substantially on the terms of these stipulations. Upon the execution of said agreements it is agreed that Cities Service Company will cause the Public Service Company of Colorado to use its best efforts to secure a franchise and rate ordinance for the distribution of natural gas in the city of Denver and in the city of Pueblo. On securing such natural gas franchise and rate ordinances on terms which make the project profitably feasible in the judgment of the parties hereto,

the obligations of the parties hereunder shall immediately become effective and the financing and constructon program proceeded with diligently.

It is agreed that a schedule and form of rates in the city of Denver substantially as follows contained in a reasonably workable ordinance duly enacted, shall be deemed to make the project profitably feasible and the agreement immediately effective:

$2.00 for the first 1,000 cubic feet or less
.60 per thousand cubic feet for the next 9,000 cubic feet
.50 per thousand cubic feet for all over 10,000 cubic feet

In case an acceptable rate ordinance is not secured in the city of Denver on or before the 1st day of July, 1927, the parties hereto or any of them may terminate participation herein and cancel any agreements made hereunder, each party thereupon to be free and without prejudice to act as if these stipulations and any agreements thereunder had never been made.

XVII. The Colorado Company shall have free access during the term of these stipulations and any agreements made hereunder, to all property and to the financial and corporate data and records, reports, books of account, operating and financial data, audits completed or in progress, and all facts and data including well logs, records and maps having any relevancy to the project, of the following companies, viz., the Texas Connecting Company, the Texas Producing Company, Amarillo Oil Company, Panhandle Pipe Line Company, Southwestern Development Company, and any and all subsidiaries, associate or distribution companies, distributing natural gas deliverable under these stipulations or any and all agreements which may be made pursuant to any contracts which may be entered into pursuant hereto.

XVIII. To provide the final funds for the project, it is agreed that the Colorado Company will issue its Twenty Year, Six Per Cent. Sinking Fund Gold Bonds, in such amounts and under such sinking fund conditions as it may find expedient, and with detachable stock warrants at a rate not to exceed ten shares for each One Thousand Dollar ($1,000) bond of the original issue, and at a price not less

than Fifteen Dollars ($15.00) per share, if deemed necessary to make the bonds marketable, warrants to expire if not taken up on or before the 1st day of July 1930; said bonds shall be secured by issuing to a Trust Company, Trustee, to be selected by the Colorado Company, a first mortgage and/or deed of trust conveying to such Trustee its pipe lines and other facilities and in addition such bonds shall be secured by pledge of the bonds of the Texas Connecting Company and the Texas Producing Company purchased and owned by the Colorado Company as hereinafter provided, by pledge of the gas purchase contract with the Texas Connecting Company by pledge of the assignment of the gas purchase contract between the Texas Connecting Company and the Texas Producing Company and by pledge of the contracts of the Colorado Company with distributors in the cities served.

The Texas Connecting Company and the Texas Producing Company will also each issue its Twenty Year Six Per Cent. Sinking Fund Gold Bonds in such amount and under such sinking fund condition as may be determined; for the cost of construction and cost of acquisition of properties, the bonds of the Texas Producing Company to include Five Million Dollars ($5,000,000) for purchase of fee gas, leasehold gas and gas wells of the Amarillo Oil Company, which bonds will be bought at par by the Colorado Company and will be secured by issuing to a Trust Company, Trustee, a first mortgage and/or deed of trust conveying said properties. The Texas Producing Company will also assign as security its contract with the Texas Connecting Company and the Texas Connecting Company will also assign as security to the Colorado Company its contracts with the Texas Producing Company and others for gas and such assignments and contracts may be pledged also under the Colorado Company mortgage.

In addition to said bonds, the Colorado Company is to issue—

(a) To Standard Oil Company (New Jersey) at par, One Million Dollars of Six Per Cent. Preferred stock, preferred as to assets and dividends, redeemable at any time after five (5) years from date at One Hundred Five (105) and accumulated unpaid dividends.

To the Texas Connecting Company (whose stock is to be owned by the Southwestern Development Company) One Million Dollars ($1,000,000) of said Preferred Stock, as part consideration for the gas delivery contract.

(b) To Standard Oil Company (New Jersey), for One Million Dollars ($1,000,000) cash, fifty (50) per cent. of its no par value common stock (after deducting from the total common stock issued the shares under stock warrants and the fifteen (15) per cent. of the original issue of common stock allowed to Cities Service Company).

(c) To the Texas Connecting Company, fifty (50) per cent. of its no par value common stock (after deducting from the total common stock issued the shares under stock warrants and the fifteen (15) per cent. of the original issue of common stock allotted to Cities Service Company), part consideration for gas delivery contract.

(d) To Cities Service Company, fifteen (15) per cent. of the common stock of the Colorado Company originally issued, as consideration for contracts with the distribution companies in the cities of Denver and Pueblo and other places.

XIX. The plan of final financing which the parties now contemplate is shown on Table No. 1 attached hereto, which the Standard Oil Company (New Jersey) agrees to supervise, and it is agreed that the funds advanced or expenses incurred by the Southwestern Development Company and the Standard Oil Company (New Jersey) for purposes of the project including costs of incorporating and qualifying the new companies to be formed hereunder and shall be repaid with interest at six (6) per cent. from the date of each advance and/or expenditure out of the funds of the final financing.

XX. The Colorado Company is to have a board of seven directors, of which the Southwestern Development Company may elect three, the Standard Oil Company (New Jersey) three and Cities Service Company one. It is also agreed that the Colorado Company may name one director on each of the boards of the Texas Producing Company and the Texas Connecting Company.

XXI. These stipulations are to form the bases of agreements presently to be drawn embodying the terms hereof and to be executed by the parties hereto promptly when drafted in accord herewith.

Attest: SOUTHWESTERN DEVELOPMENT CO.,
By N. K. MOODY, President.
Secretary.

Attest: CITIES SERVICE COMPANY,
By ERNEST H. JOHNSTON,
Secretary. Vice President.

Attest: STANDARD OIL CO. (New Jersey),
By S. B. HUNT,
Secretary. Vice President.

Amarillo-Denver Project
Financial Statement
Table No. 1

Capital Requirements First Ten Years		
Colorado Company:		
Consideration for purchase bonds Texas Producing Co.	$ 6,665,000	
Consideration for purchase bonds Texas Connecting Co.	5,385,000	
Pipe Line Construction Program in Colorado	10,893,000	$22,943,000
Capital Requirements First Year		
Colorado Company:		
Purchase of bonds of Texas Producing Co. for acquisition of field properties from Amarillo Oil Co., and interest on bonds	$ 5,300,000	
Purchase of bonds of Texas Producing Co. to provide its working capital, new wells, miscellaneous, and interest on bonds	300,000	
Purchase of bonds of Texas Connecting Co. to provide it with working capital, main line construction, field lines, compressor station, telephone line, gasoline plant, miscellaneous, and interest on bonds	4,375,000	
Main and branch lines in Colorado, telephone line, working capital, miscellaneous, and interest during construction	8,925,000	
	$18,900,000	

ethod of Financing:

Bonds, 20 year, 6%, Sold at par, Preferred Stock, 6%	$18,000,000	
$1,000,000 sold to Standard Oil Co. (N. J.) at par	1,000,000	
1,000,000 to Texas Connecting Co., part consideration.		
$2,000,000		
Stock Warrants, 180,000 at not less than $15	2,700,000	
Common Stock—Standard Oil Co. (N. J.) to pay for its allotment	1,000,000	
Out of earnings from time to time (unless bonds realize a premium)	243,000	$22,943,000

ivision of Shares of No Par Common Stock:	Shares.	Per Cent.
Stock Warrants	180,000	14.4
Southwestern Development Co., via Texas Connecting Co., for contracts and field properties	441,250	35.3
Standard Oil Co. (N.J.) for $1,000,000 cash	441,250	35.3
Cities Service Co. for city gate contract	187,500	15.
	1,250,000	100.0

(*) Suggested $5,300,000 be retired in 20 ears, and $12,700,000 on 10-year basis in the inking fund.

Requirements of the Three Companies, First Ten Year Period, in Detail

Texas Producing Company		
New wells	$ 1,300,000	
Interest during construction	5,000	
Working capital	60,000	$ 1,365,000
Texas Connecting Company		
88 miles main line	$ 3,000,000	
Field station and gasoline plant	1,050,000	
Field lines	790,000	
Telephone line	80,000	
Well lines	335,000	
Interest during construction	110,000	
Working capital	20,000	$ 5,385,000
Colorado Company		
Payment to Southwestern Dev. Co. for field	$ 5,000,000	
First year's interest thereon	300,000	
Main and branch lines	8,245,000	
Telephone line	123,000	
Pump station	2,210,000	
Interest during construction	250,000	
Working captal	65,000	$16,193,000
Grand Total, Requirements First Ten Years		$22,943,000

First Year's Requirements of the Three Companies, in Detail

Texas Producing Company		
Working capital	$ 60,000	
New wells	200,000	
Miscellaneous	30,000	
Interest during construction	10,000	$ 300,000
Texas Connecting Company		
88 miles main line	$ 3,000,000	
Field compressing station	350,000	
Field gathering lines	300,000	
Telephone line	80,000	
Interest during construction	105,000	
Working capital	20,000	
Gasoline plant	350,000	
Miscellaneous	170,000	$ 4,375,000
Colorado Company		
Payment to Southwestern Dev. Co.	$ 5,000,000	
One year's interest thereon	300,000	
Main and branch lines	8,245,000	
Telephone line	123,000	
Interest during construction	250,000	
Working captal	65,000	
Miscellaneous	242,000	$14,225,000
Grand Total, First Year's Requirements		$18,900,000

The proposed Texas Producing Company, and the proposed Texas Connecting Company referred to in Exhibit 1, and whose functions it was agreed by the parties to Exhibit 1 could be performed by one company instead of two, were not in fact incorporated, but the functions proposed for these two companies were carried out by the formation of Canadian River Gas Company.

Testimony of P. C. SPENCER.

(Reading)—"My name is P. C. Spencer, and I reside at Scarsdale, New York. I am a lawyer by profession, and have been employed in that capacity by Consolidated Oil Corporation of New York, N. Y., since August 1, 1934.

"Since March 1, 1932, I have been a vice president and a director of Canadian River Gas Company (hereinafter referred to as 'Canadian River'), one of the companies involved in these proceedings. Canadian River is a wholly-owned subsidiary of Southwestern Development Company (hereinafter referred to as 'Southwestern'). I have been a director of Southwestern since April, 1932, and a vice president since March, 1935. I have acted as attorney for Southwestern and its subsidiaries in various matters since 1924.

"From July 1924 to May 1934, fifty-one per cent of the issued and outstanding capital stock of Southwestern was owned or controlled by Producers & Refiners Corporation (hereinafter referred to 'P&R'). Since May 1934, Southwestern's stock formerly held by P&R has been owned by Consolidated Oil Corporation (hereinafter referred to as 'Consolidated'). Approximately forty-nine per cent of Southwestern's capital stock has been at all times owned and held by The Mission Oil Company (hereinafter referred to as 'Mission') and affiliated interests. Mission has not been at any time affiliated with either P&R or Consolidated.

"I was first employed as an attorney for P&R and certain of its subsidiaries in 1922, and became general counsel of P&R and its subsidiaries about June, 1927. I continued in that capacity until May 1932, at which time I was appointed as one of the receivers for P&R, when it became involved in an equity receivership. The receivership was terminated and the receivers discharged in July 1934.

"Since 1932 I have been actively identified with the management of Southwestern and its subsidiaries, including Canadian River. Prior to that time I was generally familiar with the business and affairs of Southwestern and its subsidiaries by reason of my employment as attorney and general counsel for P&R.

"Southwestern was incorporated under the laws of the State of Colorado in July 1924. It is exclusively a holding company, owning capital stock and other securities of other companies engaged solely in the business of producing, transporting and/or distributing natural gas. In November 1935 Southwestern and Mission registered with the Securities and Exchange Commission as holding companies, pursuant to the provisions of the Public Utilities Holding Company Act of 1935.

"In 1926 Amarillo Oil Company, Southwestern's principal subsidiary, held oil and gas leases covering approximately 325,000 acres of gas land (proven and potential) in the Texas Panhandle field, on which it owned and operated about twenty gas wells with an open-flow capacity of approximately one-half billion cubic feet per day, which was substantially in excess of the volume required for the Amarillo market, which it was then supplying. It was obvious to Southwestern's management at that time that Southwestern could not realize upon these extensive gas properties and investments unless new markets of a substantial character could be developed. Markets in the immediate vicinity of the field were either occupied or too small to be attractive, and it became necessary to look for markets at greater distances. The transportation of gas by pipeline over long distances was in its infancy at that time. Neither Southwestern nor any of its subsidiary or affiliated companies had had any previous experience in transporting gas over greater distances than approximately one hundred miles. The City of Denver, located at a distance of approximately three hundred fifty miles from the field, and intervening territory seemed to be the closest available market for natural gas in substantial quantities. Moreover, Southwestern had learned from various sources that the City of Denver was actively interested in making natural gas available as an additional fuel supply to its residents and industries.

"During the year 1926, and possibly prior thereto, Minal E. Young was negotiating with officials of the City of Denver and other interested parties for the purpose of entering into a contract or contracts to bring natural gas to Denver from the Texas Panhandle field. In this connection, Amarillo Oil Company granted to Mr. Young an option covering the right to purchase gas for this purpose from its reserves in the Texas Panhandle field. Mr. Young's negotiations were unsuccessful, and the option expired without being exercised some time during the summer of 1926.

"At about this time, representatives of Southwestern approached representatives of Standard Oil Company (New Jersey) (hereinafter referred to as 'Standard') regarding the construction of a pipeline project to furnish gas to Denver and intervening territory. Standard was approached in this connection because it had had a long and successful experience in operating natural gas projects in other areas, and was fully capable of financing any project in which it might become interested. Standard's representatives became interested to the extent that they agreed to investigate the feasibility of the project. This investigation developed that two of the principal domestic markets in the territory (Denver and Pueblo) were then being supplied with manufactured gas by subsidiaries of Cities Service Company (hereinafter referred to as 'Cities Service'), which led to representatives of Cities Service being brought into the negotiations. Public Service Company of Colorado (hereinafter referred to as 'Public Service'), a Cities Service subsidiary, was distributing manufactured gas in Denver, but its franchise from the municipality had expired.

"On February 8, 1927, an ordinance was adopted by the qualified electors of the City and County of Denver granting a new gas franchise to Public Service for a period of twenty years, under the terms of which Public Service was required to substitute natural gas for manufactured gas, if an available supply of natural gas was found to be feasible for that purpose by the City. This ordinance was brought to the attention of Southwestern.

"As a result of the passage of the above-mentioned ordinance on February 8, 1927, and subsequent negotiations between Southwestern, Standard and Cities Service, a

Memorandum of Stipulations was entered into between the parties on April 5, 1927, which, subject to the approval of counsel the granting of a satisfactory natural gas franchise and rate ordinance by the City of Denver and other contingencies provided for the organization and construction of the Denver gas pipeline project substantially as now set up. This agreement has been introduced in these proceedings as Exhibit No. 1.

"During the spring and summer of 1927 various conferences were held between the parties to the agreement of April 5, 1927, and officials and representatives of the City of Denver, for the purpose of attempting to work out some mutually satisfactory basis upon which the proposed pipeline project might be constructed and natural gas supplied to the City of Denver. It was apparent to Southwestern officials at that time that the project could not be undertaken without a firm contract for the Denver market on a satisfactory price basis. In order to make the project economically feasible it was estimated that the Denver city-gate rate could not be less than forty cents per MCF for domestic consumption. In this connection, the City of Denver employed A. C. King, a consulting engineer of Chicago, Illinois, to make an investigation on its behalf and to submit a report covering the availability and economic feasibility of natural gas for Denver from the Texas Panhandle field as then proposed.

"Officials of Southwestern cooperated with Mr. King in facilitating his investigation of the natural gas reserves of Amarillo Oil Company in the Texas Panhandle field and of other features of the proposed pipeline project. As I recall, Mr. King completed his investigation and filed his report with the City of Denver sometime during the month of August, 1927, which was generally favorable to the proposed pipeline project, including the 40-cent city-gate rate. Southwestern was subsequently advised that on September 14, 1927, the City of Denver had adopted an ordinance reciting Mr. King's report, finding that an adequate supply of natural gas was available and economically feasible for Denver consumers, directing Public Service to supply such natural gas in substitution for the manufactured gas then being distributed, and fixing rates to be charged for such

natural gas based upon a city-gate rate of forty cents per MCF for domestic gas. The ordinance also imposed certain penalties upon Public Service in the event of its failure to carry out the mandate set forth therein.

"Upon the passage of this ordinance, all parties to the agreement of April 5, 1927, immediately became active in carrying out their respective obligations thereunder. As a part of its obligations Southwestern caused Canadian River to be incorporated under the laws of the State of Delaware on February 24, 1928, all of its capital stock (25,000 shares without par value), excepting directors' qualifying shares, being issued to Southwestern. This company was organized by Southwestern to own and operate gas leases, wells, pipelines and other facilities for the production and transportation of natural gas with which to supply the Denver project market of Colorado Interstate Gas Company (hereinafter referred to as 'Colorado Interstate'), and the Texas markets of Amarillo Oil Company.

"On March 31, 1928, Canadian River obtained a permit to transact business in the State of Texas as a foreign corporation for a period of ten years. This permit was renewed for an additional period of ten years on March 17, 1938.

"At the first meeting of Canadian River's Board of Directors, held on March 27, 1928, resolutions were adopted authorizing the purchase of Amarillo Oil Company's gas rights and wells covering approximately 325,000 acres of land located in the Counties of Hartley, Oldham, Moore, Potter, Carson and Hutchinson, in the State of Texas, for the sum of $5,000,000, subject to approval of titles by counsel. (Number of gas wells—26.) The consideration to be paid by Canadian River to Amarillo Oil Company for such gas rights and properties had been previously negotiated and fixed by representatives of Southwestern, Standard and Cities Service in the Memorandum of Stipulations dated April 5, 1927. In addition to the properties sold to Canadian River for $5,000,000, Amarillo Oil Company acquired or constructed other properties between May 1, 1927, and June 1, 1928, for the account of Canadian River, which were subsequently transferred to Canadian River at cost. The

expenditures so made, together with interest on capital employed, totaled approximately $1,000,000.

"During the fall of 1927 and the spring of 1928, representatives of Southwestern and Amarillo Oil Company were busily engaged in satisfying various title requirements of counsel in connection with gas rights and wells to be conveyed to Canadian River, including the discharge of certain outstanding mortgage liens. These gas rights and properties were finally cleared and conveyed to Canadian River by Amarillo Oil Company in the summer of 1928. Prior thereto, Canadian River had commenced drilling additional wells, constructing gathering lines and a transmission line from the field (Bivins Station) to Clayton, New Mexico; also a compressor plant and gasoline absorption plant at Bivins. The first deliveries of gas by Canadian River to Colorado Interstate were made in the summer of 1928.

"In order to finance the acquisition of properties, the drilling of wells and the construction of necessary gas pipeline and other facilities, on June 5, 1928, Canadian River's Board of Directors and stockholders authorized its officers to issue the company's First Mortgage Twenty-Year six per cent Sinking Fund Gold Bonds in the principal amount of $11,000,000 pursuant to an Indenture with Equitable Trust Company as Trustee (now Chase National Bank of the City of New York) successor trustee. Canadian River issued substantially all of these bonds to Colorado Interstate during the year 1928 for the purpose of repaying advances made on its behalf by Colorado Interstate.

"Canadian River's gas sales through the operation and use of these properties and facilities are limited to three individual customers, i. e., Colorado Interstate, Amarillo Oil Company and Clayton Gas Company, all of which are covered by privately negotiated contracts, as shown in Exhibit No. 15. Deliveries to Colorado Interstate are made at two points, (1) Clayton, New Mexico, for the Denver pipeline market, and (2) Gray, Oklahoma for the Chicago pipeline market. Deliveries to Amarillo Oil Company are made at the well for the City of Amarillo and Channing markets and at different points along Canadian River's pipeline system for Dalhart, Hartley, and Texline, Texas.

markets. Deliveries to Clayton Gas Company are made at the Clayton town-border through a lateral from the main line. The price of all gas sold to Colorado Interstate is computed on a coast basis as provided in the contract between the parties, which is also true of sales to Amarillo Oil Company as to gas purchased for the Amarillo and Channing markets. Gas delivered to Clayton Gas Company, and also gas delivered to Amarillo Oil Company for Dalhart, Hartley and Texline, Texas, markets, is sold on a fixed price schedule (not cost) as agreed upon by the parties.

"As a part of the consideration for Canadian River's agreement to sell gas to Colorado Interstate on a cost basis, Colorado Interstate issued to Southwestern, as the nominee of Canadian River, 42-1/2 per cent of its authorized common stock and $1,000,000 par value of authorized preferred stock.

"Under the terms of its gas sales agreement dated January 3, 1928, with Colorado Interstate, Canadian River is not permitted, except with the consent of Colorado Interstate to make any contract for the sale of gas to others than those specifically mentioned in the agreement, which 'may impair its capacity to produce natural gas for delivery' to Colorado Interstate, and excepting the Amarillo Oil Company markets, the requirements of Colorado Interstate have first call and preferential rights to all gas, properties and facilities of Canadian River. Moreover, the indenture under which Canadian River's bonds have been issued provides that it will not modify or consent to the modification of its gas sales agreements with Colorado Interstate and Amarillo Oil Company without first obtaining the consent of the Trustee thereto; that the company will not make any sales of gas other than those for which provision is made in the above-mentioned contracts until it shall first have obtained the consent of the Trustee thereto. (The Trustee is required to grant such consent if the transaction is approved in writing by the holders of a majority of the bonds then issued and outstanding.) Canadian River's obligations under these provisions have been at all times observed and complied with.

"The terms and conditions of the Colorado Interstate

contract were negotiated and agreed upon in the first instance by representatives of Standard and Cities Service on behalf of Colorado Interstate, and representatives of Southwestern on behalf of Canadian River. The terms and conditions of the sales contracts with Amarillo Oil Company were negotiated and agreed upon by the parties with the advice, consent and approval of Colorado Interstate. The gas sales contract with Clayton Gas Company was originally entered into by Colorado Interstate and was negotiated by representatives of Southwestern on behalf of Clayton Gas Company, and representatives of Colorado Interstate on its own behalf.

"Canadian River has never filed any schedule of rates or prices for the transportation or sale of natural gas with any public body except Federal Power Commission, and in that instance it was done under protest with a full reservation of all legal and constitutional rights. Excluding one or two emergency transactions of minor importance, it has never offered to sell or sold gas to any parties except the customers heretofore named, and it has never been a purchaser of gas in the field. It has produced and owned all of the gas which it has transported, and it has never transported gas for others for hire.

"Canadian River has never exercised the right of eminent domain in connection with the condemnation of rights of way, or otherwise. Its pipelines in some instances do cross public highways. In all cases rights of way have been acquired and paid for through private negotiation. It has never used the streets and alleys of any municipality, except in the City of Amarillo for a telephone line restricted to its own business use. It has not obtained rights of way from any state or other public body which were conditioned upon pipeline operations as a common carrier.

"Canadian River has no public grants or franchises of any character whatsoever, except its Certificate of Incorporation from the State of Delaware and its permit to do business as a foreign corporation in the state of Texas.

"In the year 1936 the Railroad Commission of Texas demanded that Canadian River and other gas pipeline companies file with it an annual report as a 'public utility,' as

required under Article 6056 of the Texas statutes—otherwise suit would be filed against the companies immediately by the Attorney General. Since the Texas courts had not passed upon the validity of this statute, and Canadian River did not then desire to engage in litigation with the state on the subject, the company did file a partial report as a 'gas utility' with the Railroad Commission at that time, but did so under protest, contending that it was not a 'public utility' for any purpose and fully reserving its constitutional and legal rights. Similar reports for succeeding years have been filed by Canadian River, subject to the same reservations. Exhibit No. 21 is the facing sheet, together with reservations of constitutional and legal rights attached thereto, of such report for the year 1938,— which is typical of such filings for all years commencing in the year 1936.

"Canadian River's business is divided into three principal operating functions—production, gathering, and transportation of natural gas. It does not occupy a monopolistic or exclusive position in any one of these fields, because of the facts hereinafter stated. The production and sale of natural gas, particularly in the Texas Panhandle field, is a highly competitive undertaking. Canadian River now holds approximately 315,000 acres under gas leases, and owns and operates about 91 gas wells thereon. The Texas Panhandle field is approximately 125 miles in length, containing approximately one and one-half million acres, of which approximately two-thirds are estimated to contain sweet gas and one-third sour gas. There are more than 1,650 producing gas wells in the field. There are 50 oil pools scattered along the north side of the field, with more than 4,200 wells producing oil and gas. Estimates of original gas reserves in this field have ranged from fifteen trillion cubic feet to somewhere in the neighborhood of twenty-five trillion cubic feet, of which approximately two-thirds was sweet gas. During all the years of Canadian River's existence, there never has been a time when producers in the field were not seeking markets for their gas from both connected and unconnected wells. In fact, during most of this period producers have been attempting to compel others to buy their gas by law or otherwise.

"Pipeline rights of way and the facilities necessary for the transportation of gas are available to all who are willing and able to assume the hazards, and pay the costs involved. Nine companies supplying domestic and industrial gas to Chicago, Minneapolis, Denver, Dallas, Des Moines and other cities have acquired leases in and operate pipelines out of the Texas Panhandle field. The business of transporting and selling gas in the territory occupied by Canadian River is open to all.

"Commencing in the year 1931, several so-called conversation statutes have been enacted by the Texas State Legislature and orders issued pursuant thereto by the Texas Railroad Commission, which were designed to compel the gas pipeline companies to share their pipeline markets by purchasing gas from other producers in the field with unconnected wells. In each instance Canadian River has opposed the validity of these statutes and orders, either by filing an action against the Railroad Commission of Texas or by associating itself with others similarly situated in the prosecution of such an action. This position was taken by Canadian River because it believed that all of these statutes and orders represented an attempt to invade its private status and to abrogate and imperil its private contracts. The company's position has been consistently upheld by the courts."

(Vol. I, pp. 56-71.)

* * * * *

Direct Examination (Continued).

By Mr. Keffer:

Q. I have just one or two questions. Mr. Spencer, you state in your narrative statement that Amarillo had conveyed to Canadian River approximately 325,000 acres of lease-holds, I think in 1927 or whenever that occurred. Now there are other matters in the record, I think some reports have been filed that indicated that Amarillo Oil Company had at that time something in the nature of 350,000 acres. Is there any discrepancy in those two statements?

A. Well, there is an apparent discrepancy of some 25,000 acres.

Q. What is the occasion for that?

A. The figure which I use of approximately 325,000 acres excludes acreage which Amarillo Oil was under contract to sell to the United States government for helium purposes and that acreage, as I recall, approximated twenty to twenty-five thousand acres.

Q. That's right, and that was not included in your figure of approximately 325,000 acres?

A. That's right, that particular acreage was subsequently conveyed to the United States Government as a basis for their helium operations near Amarillo, Texas.

Q. Now, one other thing. Are you familiar, Mr. Spencer, with the fact that in Texas the statutes of that state with respect to the payment of franchise taxes by corporations provides one means for computing the tax on general business corporations, and another means for computing the franchise tax on public utility corporations?

A. I am.

Q. Do you know under which statute the franchise tax for Canadian River has been computed by the State of Texas?

A. The franchise tax of Canadian River Gas Company has been computed on the basis of a general business corporation.

Mr. Keffer: That's all.

Cross Examination.

By Mr. March:

(Vol. I, pp. 72-73.)

* * * * * *

Q. Mr. Spencer, how many corporations are you a director of?

A. Approximately?

Q. Yes, sir.

A. I would say less than ten.

Q. Will you name those corporations for the record?

A. Well, starting with the Southwestern Development Company, a holding company system—is this question confined to directorship?

Q. Directorship and officership.

A. I am an officer and director of Southwestern Development Company, the parent company. I am also an officer and director of the following subsidiaries of the Southwestern: West Texas Gas Company; Canadian River Gas Company. I am an officer but not a director of the Amarillo Oil Company. I am a director of the Colorado Interstate Gas Company. I am a director of the Natural Gas Pipeline Company of America, and the Texoma Natural Gas Company. I am an officer and director of the Parcomis Oil and Gas Company, and there may be one or two other small companies which have no connection with the natural gas companies with which I may be associated as an officer or director but I don't have the record before me at the moment. I am giving these from memory, Mr. March, and I ask permission to correct the record if I have omitted anything or misstated anything.

Q. You first became connected with the natural gas business where?

A. My first contacts with the natural gas business occurred by the time I became employed at the Producers and Refiners Corporation.

Q. You were employed as counsel employed in the legal department as an employe?

A. In the first instance I was retained as counsel in Wyoming for the Producers and Refiners Corporation. I was not an employe at that time.

Q. But you were subsequently employed in the legal department?

A. I subsequently became general counsel and an employe of Producers and Refiners Corporation.

Q. What person employed you?

A. I was employed by the president of the company at that time.

Q. Who was that?

A. Mr. L. R. Crawford.

Q. He employed you as general counsel?

A. He did.

Q. How long did you remain in that capacity?

A. I remained in that capacity until May 1932.

Q. Who was your immediate superior during that period?

A. Mr. Crawford, the president, was chief executive of the company, and I reported to him as well as the Board of Directors, of course.

Q. Who was Chairman of the Board of Directors?

A. We had no Chairman of the Board of Directors. As I recall the President of the company acted as Chairman of the Board of Directors meetings.

Q. Mr. W. S. Fitzpatrick, was he on the Board?

A. W. S. Fitzpatrick was a member of the Board until the fore part of 1932.

Q. What company controlled the Producers and Refiners Corporation during that period?

A. From about 1923 until the fore part of 1932, a majority of the outstanding common stock of Producers and Refiners Corporation was owned and held by the Prairie Oil and Gas Company.

Q. When did you become a director of the Producers and Refiners Corporation?

A. I never was a director of the Producers and Refiners Corporation.

Q. Were you an employe?

A. An employe, that's correct.

Q. Who controlled the Prairie Oil and Gas Company?

A. If you mean by that any particular group or groups controlled it, my impression is that it was not so, controlled by any group or groups.

Q. You do not know that?

A. I do not.

Q. Do you know who was the largest stockholder in the company during that period?

A. Not of my own knowledge, no.

Q. What was the general understanding as to the largest stockholder?

A. I wouldn't be able to testify on that. You are covering a very long period on that, Mr. March, during which the situation might have changed.

Q. Did you ever know whether or not the Rockefeller interests held any stock in the Prairie Oil and Gas Company?

A. I think it was common knowledge that they did.

Q. For a long period of years, until about 1932?

A. I think so. If you are speaking of Rockefeller inter-

ests as Mr. John D. Rockefeller, Senior, or Mr. John D. Rockefeller, Junior, and various—

Q. Trusts, set up by them.

A. Trusts or charitable foundations they may have set up. I think from time to time during all the period which we are discussing in here some one or more of them held stock in the Prairie Oil and Gas Company from time to time.

Q. Who were probably the largest stockholders of the group?

A. They may have been, Mr. March. I couldn't testify to that.

Q. What company did you first become a director of?

A. Well—

Q. I mean subsequent to your employment with the Producers and Refiners Corporation.

A. And you mean also companies connected with—

Q. Well, say any company to begin with, subsequent to your employment by Producers and Refiners Corporation?

A. As general counsel?

Q. As general counsel.

A. That's going a long ways back, but it's my recollection at the moment that the first company—the first companies with which I became associated actively as a director were Southwestern and certain of its subsidiaries concerning which I have testified.

Q. How much stock did you own in the Southwestern Development Company?

A. Did I own?

Q. At the time you became a director.

A. I did not own any stock at that time nor do I own a share of stock in the Southwestern Development Company at the present time.

Q. Who asked you to become a member of the Board of Directors?

A. Of the Southwestern Development Company?

Q. Yes, sir.

A. About the time that I became a director of the Southwestern, I also became receiver for the Producers and Refiners Corporation, and as to those positions that I was elected to during the time I was receiver, it was at my own

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Q. 1932?

A. Yes, and that is the same year that I became receiver for Producers and Refiners Corporation.

Q. That was the first directorship that you held of any importance?

A. It is my recollection that that is correct.

Q. And you asked to become a member of the Board of Directors?

A. I am not sure whether my election to the Board of Southwestern Development Company preceded my appointment as receiver or followed it. In the event it preceded it, I was requested to go on by the President of the Producers and Refiners Corporation.

Q. Who was that?

A. Mr. L. R. Crawford.

Q. Whom did you feel that you were responsible to on that Board?

A. As a member of the Board?

Q. Yes.

A. I was as a member of the Board, I felt it a responsibility to all of those that were interested in the Southwestern Development Company as stockholders and creditors and holders of its bonds or other obligations.

Q. You felt responsible to the people that were paying you, didn't you?

A. Well, any time I become a director of a corporation, Mr. March, I feel personally that there are certain obligations that are there and must be carried out whether they pay me or whether they don't. That is a part of the responsibility you assume when you become a director.

Q. Yes. I think that is right, and I think you really did try to conscientiously do that.

A. I certainly did.

Q. You understand that I am not trying to say that you didn't. You understand that clearly.

Here's the thing: You were sitting on the Board of the Producers and Refiners Corporation as a receiver and as an employe of that company.

A. An employe.

Q. I believe there were certain business transactions between those two companies, the sale of properties—

A. The sale of properties from Producers and Refiners Corporation to the Southwestern group occurred long before the time I became a director. Those transactions occurred in 1924, I believe—'25.

Q. There were no particular business transactions of any importance between these two companies while you were serving on the Board of Directors of Southwestern Development Company?

A. I think Producers and Refiners Corporation had guaranteed some obligations of Southwestern. I can't recall for the moment of any business of any major importance that occurred at the time or subsequent to the time that I became a director of Southwestern, between it and Producers and Refiners Corporation. There may have been. I don't want to be bound by that. There may be. There may have been some business come up that others would consider material or substantial that I don't recall at the moment.

Q. If anything did come up like that you would represent the interests of Southwestern Development Company over the interests of Producers and Refiners Corporation?

A. Well, if I couldn't represent the interests of the Southwestern Development Company in any transaction in which I had a dual relationship I would resign one position or the other and put my *allegance* where I thought it ought to be. I wouldn't try to act in two capacities.

Q. I see. Amarillo Oil Company, you were a director of that company? When did you become a director of it?

A. I am not a director of Amarillo.

Q. You are an officer?

A. An officer.

Q. When did you become an officer of that company?

A. May I refer to my notes?

Q. Certainly.

A. I don't seem to have it right here, but my memory is it was subsequent to 1932.

Q. Subsequent to 1932?

A. Yes.

Q. Amarillo Oil Company was in 1928 and still is a wholly-owned subsidiary of the Southwestern Development Company?

A. That's right.

Q. When did you become a director of the Canadian River Gas Company?

A. 1932.

Q. That company is likewise a wholly-owned subsidiary of Southwestern Development Company?

A. That is right.

Q. You were quite actively engaged in 1928, as I believe you testified, in the organization of this pipeline project and in the organization of Canadian River Gas Company?

A. I think that description is a little imperfect and perhaps a little too broad. I was acquainted with it and had knowledge of it from time to time but I wouldn't say that I was very active then in carrying it out.

Q. You weren't active in carrying it out, you just had knowledge of it?

A. That's right.

Q. Who was the main person responsible for carrying it out?

A. You are speaking now of the organization?

Q. Yes, the executive down there who was taking the matter in hand and carrying out the organization?

A. Well, I think the executives of Southwestern who were most active in that respect were Mr. Moody and Mr. Fitzpatrick.

Q. And they represented who?

A. They represented Southwestern.

Q. And they were likewise directors and officers of the Producers and Refiners Corporation?

A. They were both directors of the Producers and Refiners.

Q. Officers and directors of the Prairie Oil and Gas Company also?

A. That's right.

Q. They were representing the same interests you were, weren't they?

A. Not exactly.

Q. They were representing, I believe you said, the Producers and Refiners who had fifty-one per cent of the stock of Southwestern?

A. That's correct.

Q. That was enough to elect a majority of the Board of Directors?

A. Yes.

Q. You were an employe and had two directors of these two companies serving actively in the organization of the Canadian River Gas Company?

A. I was an employe of the Producers and Refiners.

Q. That's right.

A. I was not an officer or director of Southwestern or Canadian River at that time.

Q. Yes, I understand. The transaction, I believe you testified to some extent whereby certain oil leases were transferred from Amarillo Oil Company to Canadian River Gas Company shortly after the organization of Canadian River Gas Company?

A. Yes, sir, I am generally familiar with it.

Q. Do you know how much those leases cost the Amarillo Oil Company?

A. Approximately?

Q. Approximately.

A. I have a figure in my mind from memory what the book cost of these leases—I mean the book cost of Amarillo Oil Company was at the time they were transferred. How the book cost was made up or what adjustments were made in it, I am not familiar with that. I have a recollection that the cost—did you ask me to give it or did you ask me if I had any knowledge of it?

Q. Well, what is it?

A. Will you read back that, please?

(The record referred to was read by the reporter, as set forth above.)

The Witness: —of the gas rights—costs of the gas rights and properties transferred by Amarillo Oil Company to Canadian River in 1928 appear on the books of Amarillo Oil Company as having an investment value based upon cost of approximately $1,700,000. I think that's it.

By Mr. March:

Q. I won't hold you to exact figures—approximately that?

A. I think approximately, that is correct.

Q. What was the purchase price? How much did Canadian River pay Amarillo Oil Company for these leases?

A. Five million dollars.

Q. Five million dollars?

A. Yes, sir.

Q. At this time both of these companies were wholly-owned subsidiaries of the Southwestern Development Company?

A. That's correct.

Q. That five million dollars, did that go into the capital structure of the Canadian River Gas Company?

A. The cost of the leases?

Q. Yes.

A. It went into the capital structure of the Canadian River Gas Company, that's correct.

Q. Did any money change hands?

A. Certainly did—cash.

Q. From whom to whom?

A. From whom to whom—from Canadian River Gas Company to Amarillo Oil Company, five million dollars in cash.

Q. Where did the Canadian River Gas Company get that money?

A. The money was advanced to the Canadian River Gas Company by the Colorado Interstate Gas Company.

Q. Where did they get it?

A. I think that the money was put up at a time before Colorado Interstate was fully organized to do business. Therefore, I think it was advanced on a temporary basis to Colorado Interstate by the Standard Oil Company (New Jersey).

Q. When did you first become a director of the Colorado Interstate Gas Company?

A. I can give you these dates pretty accurately—

Q. I mean approximately. You don't have to be confined to—

A. I believe it was in 1934.

Q. Do you have any stock in the Colorado Interstate Gas Company?

A. I have no stock in that corporation.

Q. Who asked you to become a director of that company?

A. The officers of Southwestern Development Company asked me to accept a directorship on that Board.

Q. What officer?

A. Mr. A. R. Jones who was vice president and Mr. N. K. Moody who is president.

Q. Did you sign proxies to vote stock?

A. I don't believe I ever signed a proxy for voting stock of Southwestern in Colorado Interstate. I may have, but I don't recollect that I ever did.

Q. What other common directors are there between those two companies, Southwestern Development and Colorado Interstate—pardon me, Canadian River and Colorado Interstate?

A. May I have the question, please?

(The question referred to was read by the reporter, as set forth above.)

The Trial Examiner: You mean at this time, Mr. March?

Mr. March: At this time.

The Trial Examiner: Or prior to when these transactions occurred.

The Witness: Mr. Moody and Mr. A. R. Jones and I are all directors of the Canadian River Gas Comnapy and we are also directors of the Colorado Interstate Gas Company. I think that's correct.

By Mr. March:

Q. I believe one hundred per cent of the bonds of the Canadian River are owned by the Colorado Interstate?

A. They are owned by Colorado Interstate but pledged as collateral security under its bond indenture.

Q. I note here in your testimony, referring to your written statement at Page 8 and 9 and 10, you state here—I quote—you are discussing the eleven million dollars in bonds that were issued and the indenture under which they were held, the Chase National Bank. You stated here:

"Trustee is required to grant such consent if a transaction is approved, in writing, by the holders of a majority of the bonds, then issued, outstanding."

That is, as I understand that, the Canadian River can't

sell gas to anyone else other than those stipulated in the contract unless the trustee and secondly the bond holders, the persons holding a majority of the bonds, approve. In the final analysis, the bond holders are the supreme arbitrator of that matter. They have a supreme say.

A. I don't want to become unduly complicated, but it's not quite that simple, Mr. March. Let me see if I can state it as it is. If the Canadian River wanted to sell gas to any new customer, it would have to get the approval of the trustee under its bond indenture or the approval of the holder of the majority of its bonds which would amount to the same thing, but before you can get that, however, you must remember that the bonds of Canadian River are pledged as collateral security under the bond indenture of Colorado Interstate, and I believe it is also true that you have to get the approval of the trustee or the bond holders of the Colorado Interstate indenture in order to change the situation.

Q. Why was that written into an indenture, that provision written in there to keep the Canadian River from selling any gas to anyone else?

A. Well, I didn't insert the provisions, Mr. March. My evidence probably isn't very good. I would say that it was inserted in there to make certain that the gas reserves and facilities of Canadian River Gas Company would always be preserved to do the job they were expected to do with respect to this Denver pipeline and not weakened or diluted by any other activities without the consent of those who were primarily interested in that.

Q. Now, Mr. Spencer, you are sitting on the Board of both of these companies and the question comes up as to whether or not you are going to let Canadian River sell gas to certain other parties, and you are sitting over on Colorado Interstate Board and you have got to look after the interests of both Boards. Now who do you represent? Say that situation comes up?

A. All right, let's say that situation comes up. I am sitting on the Board of Canadian River and I think this is the wise thing for Canadian River to do, is to sell gas to somebody else. In order to do that we have to comply with certain contractual requirements. If I thought it was the best thing for Canadian River, I would vote for it.

Q. If you thought it was the best thing for the Canadian River Gas Company you would vote for it?

A. That's right.

Q. Regardless of the interests of Colorado Interstate?

A. That's right. I haven't come to that yet.

Q. Now we come down to Texoma Natural Gas Company which I understand has a contract with the Canadian River whereby twenty-five per cent of the requirements of natural gas must be served by Canadian River. Now you are also a director of the Natural Gas Pipeline Company of America?

A. That's right.

Q. And say that they really need some more gas and it is to their interests that they get more gas and you are already sitting up there on the Board of Colorado Interstate and the Board of Canadian River. Now what do you do?

A. Well, I do this, Mr. March, as anyone else has to do where he is representing various companies in a holding company group, conflicting interests. I have to make up my mind where my real interest is and where my real responsibility is and having adopted that position if I have interests there that conflict with any other job, directorship or office that I may have, I would consider it as my duty to resign the other job or the other directorship, or possibly refrain from participating in the transaction on the other side of it and at all times fully disclose that I might have a dual relationship to all other parties that were working with me.

Q. You would have to locate your real interests, then, first?

A. I think so.

Q. That's what I'm after, your real interests, what real interest you represent. The people you really represent are the ones from whom you get your money, whom you are paid by?

A. My salary is paid by Consolidated Oil Corporation.

Q. Yes, and I believe Consolidated Oil Company is the successor company—took over Producers and Refiners Corporation, in 1932.

A. Consolidated Oil Corporation acquired the stock holdings of Southwestern, formerly held by the P&R by public sale conducted by the receivers. They own it.

Q. And when that happened in 1932—

A. It happened in 1934.

Q. Pardon me—it took over these properties and then instead of being an employe of Producers and Refiners Corporation you became an employe of Consolidated Oil Corporation?

A. That's correct.

Q. And you have since had a similar relationship to the Colorado—to the Consolidated Oil Corporation as you had previously with the Producers and Refiners Corporation?

A. That's correct.

Q. So your real interests there and the real people that hold the stock finally are the Consolidated Oil Corporation and you work for them and you serve as a director and represent their interests on these Boards?

A. Well, that question has a lot of things in it. Let me make this statement, Mr. March: I held practically all the positions that I now hold with Southwestern and its subsidiaries before I ever became an employe of Consolidated.

Q. Yes, I know.

A. Well, let me—

Q. Yes.

A. And I have continued to hold those positions since I became an employe of Consolidated Oil Corporation in August 1934. Now since 1934 to date I do not recall one single thing that Consolidated Oil Corporation has asked me to do or refrain from doing in connection with any business or activity of Southwestern or any of its subsidiaries.

Q. Did you ever consult any officers or directors of that company?

A. I have talked over the business and affairs of this company, yes, and given them such information as I thought might be of interest to them from time to time.

Q. Whom do you report to in Consolidated?

A. I report to G. T. Stanford, general counsel of the corporation.

Q. Whom does he report to?

A. He reports directly to the Board of Directors and such other officers as he may have worked for from time to time.

Q. In other words, when Producers and Refiners, the corporation was taken over by Consolidated, you kind of

went along with the properties and you likewise continued to hold your positions in all of the subsidiaries of Southwestern Development?

A. I think that's correct.

Q. One other question about Producers and Refiners I want to ask is this: Who financed that company? What interests financed it? Where did they get their money to work on?

A. Well, that's a long way back too, Mr. March. I'll do the best I can with it. The corporation was organized in 1918, somewhere along in there, and was originally financed through the sale of capital stock to the public and also I think it had a bond issue outstanding at one time which was sold to the public.

Q. The money was advanced. Who were the particular people that had those bonds—furnished the money and got those bonds—Prairie Oil and Gas?

A. No, the principal financing of Producers and Refiners Corporation was all concluded before the Prairie Oil and Gas Company acquired the majority of the interests of its outstanding capital stock. As I recall it the only part Prairie Oil and Gas Company had in financing the Producers and Refiners Corporation was this: First it guaranteed some notes in the principal amount of ten million dollars that Producers and Refiners obtained from New York banks and later than that I think it advanced on open account some million to three million dollars from time to time to carry on current operating expenses. That I think is all that Prairie did in conection with the financing of Producers and Refiners operations.

Q. Now who controls the Consolidated Oil Corporation of which you are an employe? What company controls it? What persons?

A. Consolidated Oil Company is owned by some eighty-five thousand stockholders. I am sure there is no one stockholder or group of stockholders that exercises any control.

Q. Did you ever see the stockholders' list?

A. No.

Q. Who prepared the registration statement to the SEC?

A. I had something to do with it—which registration statement?

Q. Consolidated Oil.

A. Well, it has filed several of them.

Q. Well, any of them.

A. I filed one. You are talking about A-2 statements?

Q. Yes, and others.

A. K-10. I assisted in the preparation of A-2 registration statement for the Consolidated in 1937, I believe.

The Trial Examiner: What is the A-2 registration, Mr. Spencer?

The Witness: The A-2 registration statement is a statement that must be filed by any corporation proposing to offer securities to the public.

The Trial Examiner: Oh, yes.

The Witness: Under the Securities Act of 1933.

By Mr. March:

Q. Do you know whether or not the Rockefeller interests held any stock in Consolidated Oil Corporation?

A. I think John D. Rockefeller, Junior does hold some stock. If you have a copy of that statement, the statement of stockholders in it, I'd be perfectly willing to verify it.

Q. I don't have it. I'll get it.

A. I don't have it with me. I'm perfectly willing to verify it as correct.

Q. You are willing to state that John D. Rockefeller, Junior and some of the Rockefeller foundations or voting trusts hold considerable stock in Consolidated Oil Corporation?

A. I doubt if any of the foundations or trusts hold any stock at this time.

Q. John D. Rockefeller, Junior holds voting stock?

A. Voting stock, yes, at least he did the last time I had any knowledge of it.

Q. When was that?

A. I remember seeing it in one of the statements that you are referring to that he was one of the principal stockholders.

Q. He is one of the principal stockholders of the Consolidated Oil Company?

A. That's correct.

Q. And has been since 1932?

A. I think that's correct, Mr. March. If I had a copy of that I would be willing to verify it as correct.

Q. Now there is another little matter here I wanted to clear up. You said you had these directorships a holding company system——

A. Including what?

Q. Holding company system, and it was your problem.

A. Yes.

Q. As I understand you are kind of a coordinator here to bring all of the eggs together in one basket. What I mean, you are kind of a coordinator here as far as these companies are concerned?

A. I think you could say that so far as Southwestern and its subsidiaries are concerned, yes. I do try to coordinate their activities through my various jobs, to the best interests of all of them.

Q. Is your job with Texoma and Natural Gas Pipeline Company the same?

A. No, it isn't.

Q. How much stock do you hold in those companies, either one of them?

A. Southwestern owns 13.31 per cent, approximately, of the outstanding capital stock of Natural Gas Pipeline Company of America and 26.62 per cent, approximately, of the outstanding capital stock of Texoma Natural Gas Company.

Q. You represent that stock?

A. I am elected to the Board by reason of that stock ownership.

Q. You feel it your responsibility primarily to those stockholders?

A. After you get on the Board, Mr. March, you should represent all of the stockholders.

Q. Represent all of the companies in spite of the fact that they have conflicting interests, too, as you have stated?

A. If they have conflicting interests you have got to decide where your love lies and take it and reject the balance of it.

Q. A man's love lies where he gets his money from, isn't that true?

A. If I was called upon to make a decision as to which Board I would sit on and try to carry out my obligation as between the Natural Gas Pipeline Company and Southwestern, it wouldn't take me long to decide. I should think that I would resign as director of Natural Gas Pipe, if I couldn't perform my obligations there, and I would remain as a director of Southwestern.

Q. That is all of that phase.

Now this other I want to come back to. I want to take the Mission Oil Company. You state here—I quote on Page 1, and you also stated in the record:

"Mission has not been at any time affiliated with P&R or Consolidated." Is that true?

A. That's correct.

Q. Where does Mission come into this picture at?

A. The Mission Oil Company which is a Kansas corporation—it is well to make that distinction because there are other Mission corporations—is the owner and holder of approximately 47.2 per cent of the issued and outstanding capital stock of Southwestern and has been since its organization in 1924.

Q. How much do you own in the Mission Oil Company?

A. I own no stock in the Mission Oil Company.

Q. That stock is just held in your name?

A. Sir?

Q. That stock is just held in your name?

A. Yes, sir.

Q. You do have some stock held in your name, though?

A. I do, Consolidated Oil Corporation being the beneficial owner.

Q. Consolidated Oil Corporation being the beneficial owner?

A. Right.

Q. About how much per cent of the voting stock?

A. Less than five per cent. I can't give you the exact amount of shares, but it is less than five per cent.

Q. Then there is some affiliation between Mission Oil and Consolidated Oil Corporation, some small affiliation there?

A. Well, I think that is correct. There is, and perhaps

my statement is a little too broad. The affiliation I have in mind there is not enough ownership, not enough ownership to make it affiliated as defined by the Public Utility Holding Company Act.

Q. You mean it didn't have ten per cent?

A. That's right.

Q. Where did this Parcomis Oil Company come into the picture? You say you are a director of that company, I believe.

A. Parcomis Oil and Gas Company is a company that owns the oil rights underlying the leases upon which the Canadian River Gas Company holds the gas rights.

Q. How come you are on the Board of Parcomis?

A. Well, I guess I am there because I happen to know something about it and have sort of grown up with it, in later years.

Q. You grew up with it—

A. It is a company that is practically inactive, Mr. March.

Q. You grew up with this transaction whereby the oil rights of these gas properties of Amarillo oil—Amarillo Oil Company was transferred over to Parcomis?

A. Yes, I was familiar with that.

Q. Just what was that transaction? You weren't a director of that company at that time, were you?

A. No, I wasn't. I became a director later.

What was the question, please?

(The record referred to was read by the reporter, as set forth above.)

The Witness: The oil rights underlying these leases; in other words, the Canadian River Gas Company owns the gas rights; oil rights were transferred to the Parcomis Oil and Gas Company by the Amarillo Oil Company. At that time all the outstanding capital stock of Parcomis Oil and Gas Company was held by Southwestern Development Company. Subsequently, Southwestern Development Company distributed the stock of Parcomis Oil and Gas Company as a stock dividend so that Parcomis then ceased to be a subsidiary of Southwestern. The stockholders of Southwestern at that time received the stock of Parcomis. There have been some changes in the stock ownership since that time.

Q. What was the consideration here for the transfer of these oil rights to Parcomis?

A. I don't recall exactly. My recollection is that it is something less than one hundred thousand dollars, but if that is too far off, may I correct it?

Q. Yes, certainly, you may correct any of this. The Trojan Oil and Gas Company, where does that come into the picture at?

A. The Trojan Oil and Gas Company owns approximately 47.2 per cent of the stock of Parcomis. It was originally, I believe, organized and set up by the same parties who organized and set up Mission, although since their incorporation there is considerable diverted interests in their stock ownership, at the present time so I am informed.

Q. You don't know who controls the Trojan Oil and Gas Company? what company?

A. So far as I know the principal owners of the Trojan stock are Mr. A. R. Jones and Mr. Frank E. Jones of Kansas City.

Q. Those people are also large stockholders in the Mission Oil Company?

A. Who are also large stockholders of Mission; that is correct.

Q. How do you vote that stock over there in Mission?

A. How do we vote it?

Q. How do you vote it, yes?

A. I give a proxy to the management of Mission.

Q. Under instructions of Consolidated?

A. No instructions at all. I have done it on my own initiative the last two times.

Q. Now the largest stockholder in Parcomis is Trojan Oil and Gas Company and you say the Southwestern Development Company did hold all the stock of Parcomis at the time these oil rights were transferred and that stock subsequently was distributed to stockholders of Southwestern Development Company?

A. There are two or three questions in one there.

(The record referred to was read by the reporter, as set forth above.)

The Witness: The Consolidated Oil Corporation is the largest stockholder in the Parcomis Oil and Gas Company.

By Mr. March:

Q. Now, yes.

A. It now is, yes.

Q. And formerly was Southwestern Development; is that right?

A. Well—

Q. Or was it Producers and Refiners Corporation?

A. Let me give you the continuity. Originally all the issued and outstanding capital stock of Parcomis was owned and held by Southwestern. It distributed stock dividend after which 51 per cent of Parcomis was owned by P&R and the minority interest was owned chiefly by Mission or Trojan. I am not so sure which, just which at that time, but it soon became Trojan. The Parcomis stock was held by P&R but was sold by the receivers to Consolidated and at the same time Southwestern stock was sold. Does that answer the question?

Q. Yes. Now the largest stockholder of Parcomis is Consolidated Oil Corporation?

A. Right.

Q. Now what influence did Standard Oil have over the control of Canadian River Gas Company along about 1928 when all of this—I say along about in 1927 when the original contract was entered into by the parties which provided for the organization of Canadian River—cut that. That's getting the cart before the horse.

Subsequent to the organization of Canadian River Gas Company, what influence did Standard Oil Company have over the control of Canadian River Gas Company?

A. None, as such.

Q. What do you mean by "as such"?

A. Perhaps it is superfluous. I was trying to anticipate what you were thinking about. I'll go ahead and answer on that basis. Colorado Interstate was in a position to exercise some influence over the business and affairs of Canadian River by reason of its contractual relationship. The Standard Oil Company of New Jersey owned 42½ per cent of the capital stock of Colorado Interstate.

Q. Didn't they own any stock in Canadian River?

A. They own no stock in Canadian River.

Q. What is this contractual influence they had over them, in the control of the Canadian River Gas Company?

A. Well, under the gas sales contract, primarily, between Canadian River and Colorado Interstate.

Q. What did that provide in regard to this influence, in the control of Canadian River by Standard Oil (N. J.) or Standard Oil of New Jersey?

A. I have said that Standard Oil of New Jersey had no control over Canadian River.

Q. What about Standard Oil (N. J.)? What about Standard Oil of New Jersey?

A. No Standard company had any control of Canadian River.

Q. Or had any influence in the control thereof?

A. That's right.

Q. Do you know that to be a fact?

A. I will testify to it as a fact.

Q. Well, now, you are familiar with this contract—this agreement of March 10, 1930, agreement among participants in the Texas-Chicago Pipeline project, are you not?

A. Generally familiar with it, yes.

Q. I want you to exxplain to me—it says down here—I am reading here from this contract. It happens to be in Volume 62 of Federal Trade Commission report, under Docket No. 92, Senate Session dated February 16th, 1934. Pages 440. I'll read a portion of that contract, that agreement:

"Standard will furnish or cause to be furnished and the project will purchase twenty-five per cent of the gas for said project from the acreage of Canadian River Gas Company, a Delaware corporation."

Now how could Standard guarantee that Canadian River would turn loose with twenty-five per cent of the requirement of Texoma?

A. They couldn't.

Q. How come they wrote it in there?

A. Well, if you go a little further, they corrected it to the extent that it showed the contracts—the contracts show very clearly that it had no obligation to do or cause that to be done, except that it could make arrangements with Southwestern which it subsequently did.

Q. It wouldn't have much trouble making arrangements with Southwestern in view of the fact that it held considerable stock in Southwestern.

A. It held no stock in it.

Q. How could it make the arrangements, then?

A. It could make the arrangements by convincing Southwestern that it was a good thing for both of them to do.

Q. However, Rockefeller had considerable interests in Consolidated Oil Corporation which did——

A. The Consolidated Oil Corporation did not own any interests whatsoever in Southwestern at that time.

Q. The Producers and Refiners Corporation held that interest?

A. That's right, in 1932.

Q. The Producers and Refiners did have an interest in it?

A. Along with many thousands of other stockholders.

Q. A very substantial interest?

A. Yes, that's right, I think it was.

Q. So you would say that they couldn't cause—well, I won't ask you that question.

A. Not without the consent of Southwestern, and I don't think they intended anything else, and I think it is made clear by the subsequent document.

Q. Where are the subsequent documents?

A. Well, I don't have those.

Q. Will you produce them for the record here so we won't have any misunderstanding in regard to this proposition?

A. May I ask some questions off the record from my boys to find out if they have got them or not?

The Trial Exminer: Let's keep it on the record.

Mr. March: We can clear that up during the recess.

The Trial Examiner: You will take it up at the next recess?

Mr. March: Yes.

The Trial Examiner: Very well.

By Mr. March:

Q. Let's see here now, who was this Minel E. Young whom you negotiated with for the sale of this gas of Amarillo Oil?

A. He was a man who had been active in natural gas business up in Wyoming prior to the time mentioned in my statement.

Q. He had no connection with this other company, is that right?

A. None whatsoever.

Q. Who was financing him?

A. I don't know.

Q. How come the deal fell through?

A. I think it was the lack of financing. That's hearsay. I don't know. It fell through.

Q. Now, when you wanted to sell this—market this gas of Amarillo Oil Company, and say you went to Standard interests and tried to sell them on the proposition; is that right?

A. Yes, sir, we approached them.

Q. Whom did you approach?

A. I don't want to give the impression that I did the approaching. I didn't.

Q. Mr. Fitzpatrick?

A. Mr. Fitzpatrick first took it up with Mr. Walter Teagle who at that time was President of the Standard Oil of New Jersey.

Q. How about Christy Payne?

A. He didn't come into it until, as I understand it, until Mr. Teagle suggested to him that he investigate the feasibility of the project that we were talking about.

Q. In other words, he was really working under Mr. Teagle's direction, to your understanding?

A. I think so, and the Chairman of the Board.

Q. Who are these Denver people, this City group here interested in securing natural gas here, you speak of here? this Denver group that was interested in getting natural gas?

A. That statement is based upon the reports in the newspapers at that time and the activity of Mr. Young with the City officials, none of which we conducted.

Q. The City officials contacted you? You didn't contact them?

A. I misunderstood you. No, not in—

Q. What did they do?

A. They didn't contact us at that time, in 1926.

Q. Was the—was it the Public Service Company of Colorado that really prompted your interest in this development?

A. I think it was the general situation in Denver that attracted us more particularly the ordinance that was adopted providing for furnishing natural gas in Denver, if found feasible by the City Council.

Q. This testimony is pure hearsay on Page 3 of your statement:

"Moreover, Southwestern had learned from various sources that the City of Denver was actively interested in making natural gas available as an additional fuel supply for its residents and industries."

A. I think that statement is hearsay except, in that it is based upon newspaper articles and what Mr. Young told us at the time he asked for the option.

Q. What were you doing during this period? Were you right on the ground floor, right in the field, or personally in on these negotiations?

A. No, I wasn't a major general, or I wouldn't say that I was even a captain or lieutenant. I was a young lawyer living here in Denver at that time and familiar, and watching these things as best I could that were going on, and had some connection with the business of the companies that employed me.

Q. You were actually employed in the legal department of one of them, weren't you?

A. Yes, but I didn't want to leave any impression that I was leading the band in this proceeding. That wasn't so. I didn't occupy any such importance.

Q. Are you a general or a private now?

A. I am still a private and I hope to continue so.

Q. I hope I can find out who your general is. What did you have to do with this King report? What do you know about it?

A. I know about it. I have seen it. I was here at the time it was filed. I understand it is going to be offered in evidence here.

Q. You didn't have anything to do with Mr. King's report and just read it after it was written, isn't that right?

A. That's right. Certainly I had nothing to do with it.

Q. I believe Mr. King was employed by the City of Denver, wasn't he?

A. He was.

Q. He wasn't an employe of your company?

A. He was not.

Q. Did you also give him any assistance or did the company give him any assistance?

A. Gave him such information and data as he requested when he came to the field to investigate the reserves.

Q. He came down into the field and you made available the basic data upon which he made his estimate of reserves, is that right?

A. I don't want—I wouldn't say that. I would say that the company gave him such assistance as he requested. Now whether he used that as a basis for his report, I wouldn't know.

Q. You all were anxious that he return a favorable report, weren't you?

A. We didn't want anything but a fair report.

Q. Favorable report, I said.

A. Why certainly, if he could conscientiously give us a favorable report it would delight us.

Q. Was your project entirely dependent upon the estimated reserves made by Mr. King?

A. Well, of course what the project depended upon and what were the essential features of it was to be determined by the City of Denver. We didn't have anything to do with that. It was up to them.

Q. Yes, I understand, but you didn't start that project without knowing that you had sufficient reserves to furnish the project, did you? You couldn't sell Standard nor couldn't sell anybody on it—

A. I misunderstood your question. Would you mind stating it again?

Q. Yes, the question as I recall was, did you rely upon this estimate of reserves of Mr. King in your determining as to the feasibility of this project, the estimate of reserves of Mr. King?

A. No, we had formed our own estimate of reserves prior to the time of the King report.

Q. Who made those estimates?

A. I don't recall who made them at the moment. We

had access to various reports that had been made on the reserves in the field.

Q. What is just one of those reports?

A. I can't answer that offhand. I would have to check our files to see.

Q. Will you check up for me?

A. Yes.

Q. Do you recall——

A. I don't think that—to be a little more explicit — I don't think the Canadian River or Amarillo Oil went out and employed anyone at that particular time to make a report on its gas reserves. I think it had general information that was available on reserves.

Q. Well, of course you had to take something up to Standard's office with you to show that you did have reserves?

A. I think they made their own investigation of reserves.

Q. They made an investigation of reserves?

A. I think they did.

Q. Who made that estimate?

A. I don't know.

Q. You didn't know how much reserves you had down there?

A. Why, we had an opinion of what reserves we had, yes.

Q. Whom did you rely upon for your estimate of reserves in 1928 in this project, even before the King report?

A. We better leave it where we had it before, if we had specific reports at that time. I'll look up and see and reply to you.

Q. Such information as you had, though, was made available in a cooperative spirit to Mr. King?

A. Such information as Mr. King requested of us, I am sure that he got.

Q. What was the estimate of reserves that you recall? How much reserves did they have down there when this project started? How much did they figure on?

A. I don't recall the figure.

Q. The contracts say twenty years. The contracts are only made for twenty years, aren't they?

A. That's right.

Q. Why was that?

A. Well, one very good reason is the Public Service Company of Colorado only had a franchise for twenty years.

Q. Well, you had other customers besides them, didn't you?

A. That was the principal contract at that time without which the project, it was rather dubious as to whether they would want to carry it on or not.

Q. Well, the Colorado Fuel and Iron Corporation was just as important a factor as the Public Service Company of Colorado, wasn't it?

A. Well, they both, I would say to you, were very indispensable.

Q. I won't argue that question with you.

What did you know about the contracts? Did you have anything to do with the negotiation of the contract with the Colorado Fuel and Iron Corporation?

A. I did not.

Q. Did you ever meet Mr. King and talk to him and know him?

A. I think I met him at the time he was here in Denver but I am sure he wouldn't count me among his acquaintances.

Q. Do you know where he is now?

A. No, sir, I do not.

Q. I notice here in your testimony expressed on Page 7, beginning on Page 7, that you speak rather prolifically concerning—you describe the field rather prolifically down there in the Panhandle field. Is that first-hand information or second-hand information?

A. What page is that on, please?

Q. Beginning on Page 7.

A. That had to do with—my Page 7 has to do with the issue of bonds, Mr. March.

Q. I beg your pardon. It is over on Page—it is on Page 12 and 13, I believe.

A. Well, if you mean by that, Mr. March, did I survey the land and count the number of wells and so forth, I did not, of course.

Q. Whom did you get your information from?

A. The information comes from our own organization.

Q. Who in your organization?

A. It is the character of information that we need all the time.

Q. Who furnishes that information in your organization?

A. A number of different people furnish it, depending upon what I want.

Q. Who does?

A. Different people furnish it, depending on what I want.

Q. Say what you want is this.

A. Say what I want is this? Well, as to the number of wells, I would ask Mr. Watson, our Mr. Watson, who is engineer for the Canadian River Gas Company.

Q. What about—

A. And also as to the open flow.

Q. How about the fifty oil pools?

A. I would get that from him, too.

Q. What about the sweet and sour gas?

A. That would be all general information that would come from Mr. Watson's department. Let me say that this particular information—the basis of it was gathered in connection with the prosecution of some suits the Canadian River Gas Company had involving conservation statutes. For instance, I think the number of wells, the open flow as of this date is considerably in excess of what I have enumerated.

Q. Then your data is not up to date?

A. The Colorado Interstate—

Q. You are not stating the present situation here?

A. No. The number of wells is now greater and the open flow would be greater.

Q. When did this situation exist?

A. These are only round approximate figures. I would say they existed between 1938 or thereabouts—1938 and 1939.

Q. You don't know?

A. Yes, I do know.

Q. Now, what about this sentence here: "Estimates of original gas reserves in this field have ranged from fifteen trillion cubic feet to something in the neighborhood of

twenty-five trillion cubic feet, of which approximately two-thirds was sweet gas"? What estimates are you talking about there?

A. All the estimates that I related about and have seen from time to time since I ever had any knowledge of the field.

Q. Have you been reading about them? When did you read about them?

A. Well, at various times we have read about them over the years.

Q. What reports did you read?

A. Well, I think the more recent reports I have read bearing upon this subject would be the testimony in the rate proceeding of the Natural Gas Pipeline Company, their testimony there on the subject.

Q. What did you have to do with employing the geologists who testified there?

A. I had nothing to do with the employment of the geologists either for the Texoma or the Natural Gas Pipeline Company.

Q. You were interested in that because you were a director of the Texoma line and the Natural Gas Pipeline? You felt a responsibility there?

A. A responsibility for the employment of the geologists?

Q. I mean for the case. You were on the Board of Directors and the case was involving your company?

A. My responsibility of—my responsibility as a director of the Natural Gas Pipeline Company in this rate case was to see that competent counsel was employed to prepare and carry out our case for us, which we endeavored to carry out.

Q. Where did you get your figure of fifteen trillion?

A. That testimony before the Federal Power Commission is a very round figure. As I recall it the original reserve in the field testified to by Mr. Hughes and Mr. Thompson and Mr. Peterson was approximately that.

Q. Is that the only estimate of fifteen trillion that you know anything about, the Texas Panhandle field?

A. No. I have seen other estimates around the same figure. There is no particular importance here except to

show a range—I am not attempting, Mr. March, to put any geological testimony in here.

Q. You don't feel qualified to do that?

A. I certainly do not.

Q. In other words, you want a definite understanding that you are just making a general statement here?

A. Exactly. I wouldn't object if you tried to strike it out. I wasn't—if you think it would go too far I would have no objection to striking it out.

Q. With that understanding there is nothing misleading. In other words, this fifteen and twenty-five trillion is pure hearsay?

A. Exactly, and I am not in a position to say either one or both are anywheres near correct.

Q. There may be forty trillion there for all you know?

A. It may be so.

Q. You gave some testimony before the Federal Trade Commission—

The Trial Examiner: Mr. March, before you finish that question I would like to interrupt you.

We will take a five-minute recess at this time.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. March:

Q. Mr. Spencer, I have before me a transcript of a proceeding before the Securities and Exchange Commission, Docket No. 70-146, dated October 11, 1940. On Page 17 this question was asked and I will read your answer:

"Q. Do you know whether or not your production and engineering officials have indicated whether they believe there are unexplored reserves that might be available for the system if it should be required, that is, unexplored or unused reserves?"

Your answer:

"A. Well, we know that new gas fields are being constantly opened up and old gas fields are being constantly extended. We also know that there is a substantial quan-

tity of natural gas reasonably adjacent to our pipeline which has no present market. Does that answer the question?"

Do you recall making that statement?

A. Yes, sir.

Q. What source of supply did you have reference to when you said "a substantial quantity of natural gas reasonably adjacent to our pipeline which has no present market"?

A. The pipeline I was talking about in that testimony was the pipeline of the Natural Gas Pipeline Company and the Texoma line running from the Panhandle field to Chicago, and the fields along that line which I mentioned as having not been fully dedicated to any market were at Hugoton and I believe Otis and some other fields in Texas, smaller fields.

Q. Your geologists had told you there was a substantial supply of gas in the Hugoton field?

A. Yes. I don't know as my geologists had told me. I certainly have received that impression from reports. I have read that there is a substantial supply of gas at Hugoton.

Q. You are an executive of the company? You are largely an administrative executive?

A. What company?

Q. The Canadian River Gas Company and the Southwestern Company.

A. I would say that I am one of the chief administrative officers of Southwestern and Canadian River.

Q. You are not worried much about adequate reserves, are you?

A. (Pause.)

Q. What I mean is that you think you have an adequate reserve here, don't you?

A. We are worried about everything—perhaps too much. We are worried about adequate reserves and the future of our markets and all of those things.

Q. You apparently think there is not much need to worry about the gas running out down there because you say here that new fields are being opened up all the time and a great deal adjacent which has, you indicate, a very very large supply of gas?

A. We are not concerned about the immediate exhaustion of the gas reserves available to either the Natural Gas Pipeline Company or the Texoma.

Q. You have an adequate supply for a good many years to come?

A. I would say so.

Q. Do you know about how many years to come?

(Vol. 1, pp. 74-123.)

* * * * *

Mr. Dougherty: What company are you talking about?

Mr. March: The Canadian River Gas Company.

Mr. Dougherty: Is that the company you were speaking of, Mr. Spencer.

Mr. March: The Colorado Interstate.

The Witness: The answer I gave, as I interpret the question, was that it was applicable to the Canadian River.

By Mr March:

Q. Can you answer that?

A. I can't give any specific number of years. Our geological data on the field is in the process of being brought down to date right at the time. It has not been completed or any final conclusion reached, so to ask me to fix a specific year in which our gas reserve would be exhausted, or a specific span of years over which we would have gas reserves, I would be unable to answer that at the moment. There are a lot of other things that must be taken into consideration, as to the pressure that you need to economically continue operations and other things that I am really not qualified to answer.

Q. How long have your geologists been working on the estimate of reserves?

A. I think our geologists have been working on the question of reserves in this field as long as I can remember.

Q. Don't they ever get to an answer?

A. They got to an answer—

Q. What was the answer at one time they reported to the management of the company?

A. I am speaking generally. I don't know the Canadian River has ever employed anyone to give specific statements or estimates of gas reserves except in the instant case. It may have but I don't recall any other instance.

Q. There have been people working on this estimate of reserves on this Southwestern Development?

A. We haven't, no. I was speaking of geologists constantly engaged in the study of these fields.

Q. In other words, you have been working along for a good many years and you don't know how much gas you have.

A. We feel we have sufficient gas reserve that there isn't a prospect of our being exhausted in the immediate future. That is certain.

Q. What do you mean by "immediate future"?

A. You are getting me to fix a day.

Q. No, approximately. You are not worried about that? You feel you have sufficient reserves?

A. We are not worried about reserves. As I said in the beginning, we worry about other things more than the extent of our gas reserves—for instance, the continuation of our existing contract.

Q. Your existing contract?

A. With the Colorado Interstate.

Q. When is it up?

A. 1947.

Q. So you are thinking more about getting the contract renewed than worrying about having enough gas to supply the Public Service Company?

A. I certainly am. I will say we have an ample gas reserve to supply the market during that part of that contract and some period thereafter. I don't know how long.

Q. Why are you worried about getting this contract renewed?

A. Because we would like to continue our market if possible.

Q. There is no reason why?. No one else is serving them with natural gas?

A. No, not at the moment.

Q. There is no reason it wouldn't be renewed, is there?

A. There are a lot of contingencies to the renewal of

this contract. The Public Service Company of Colorado is in no position to renew the contract with us, even if so disposed, until they get some new franchises from the City of Denver.

Q. Would you help them get them like you did before?

A. We would help them in every proper way if it was a proper way.

Q. You say, "if it was a proper way"?

A. I mean some—I meant to emphasize—

Q. If it gets the results?

A. No, no, not that. I mean in every proper way and just that.

Q. You state here on Page 13 of your written statement or your testimony, speaking of the Canadian River as I understand it, "It does not occupy a monopolistic or exclusive position in any one of these fields, because of the facts hereinafter stated." Then you state some facts. How do you know it doesn't occupy a monopolistic position? Can you amplify it in any manner here?

A. Because it does not hold any franchises, governmental grants or anything else that gives it an exclusive position to produce gas, market gas, transport gas, or sell gas.

Q. You wouldn't accept anything like that from the Government, would you, if you could get out of it?

A. I would be delighted to accept something like that if I have to accept regulations under the Natural Gas Act.

Q. In other words, by "monopoly" you mean the exclusive position that they don't have a grant or a franchise from the State of Texas to exclusively take the gas from that field?

A. That is right. I didn't mean anything connected with anti-trust.

Q. You say down here at the bottom of the page that there are nine companies supplying domestic and industrial gas to Chicago, Minneapolis, Denver, Dallas, Des Moines—and so on. What are those nine companies?

A. I don't know as I can give them all. I will try. The Natural Gas Pipeline Company of America, the Northern Natural Gas Company, the Colorado Interstate Gas Company, the Lone Star Gas Company, the Panhandle

Eastern Pipeline Company, the Consolidated Gas Company —there is the Cities Service Company that is a pipeline company. I am not sure of the correct name. It supplies Kansas City I think and the territory contiguous thereto.

Q. Do you know how many of these are jointly interested in the Natural Gas properties in the Texas Panhandle Field?

A. Will you please read the question?

(The question referred to was read by the reporter, as set forth above.)

By Mr March:

Q. For example, there are quite a few interested in the Natural Gas Pipeline Company?

A. That is correct.

Q. There are several interested in the Canadian River and Colorado Interstate?

A. Well the same ones interested in the Canadian River and Colorado Interstate are also interested in the Natural Gas Pipeline Company.

Q. The same outfit, the same group?

A. No, they form a part of it.

Q. When your get up to the stockholders they are substantially the same stockholders?

A. That is not correct. There are several stockholders in the Natural Gas Pipeline Company of America that have no interest in the Colorado Interstate Gas Company or Canadian River Gas Company or the Southwestern.

Q. But there are some that do?

A. There are the three I mentioned.

Q. Yes. Which one?

A. Maybe I didn't mention them. They are the Standard of New Jersey, Southwestern and—well, the Cities Service, which is the parent company of the Public Service Company of Colorado; they are stockholders in Colorado Interstate, and are also stockholders in the Natural Gas Pipeline Company.

Q. One more question about this Texoma and Natural Gas Pipeline Company which bears on this field: Where do you intend to get your gas to serve Milwaukee?

A. Well—

Q. I will put it this way: Will that mean an increase upon the demands upon Canadian River?

A. We hope so.

Q. You hope so?

A. Yes.

Q. In other words, it is your hope that a larger percent of the Canadian River Gas will be used by the Natural Gas Pipeline for this Milwaukee service?

A. That is right.

Q. Do you contemplate tapping onto the Hugoton field?

A. I am not certain what you mean.

Q. I mean when I say "you" the Natural Gas Pipeline Company for this Milwaukee service.

A. No decision has been made by the Board of Directors at this time, as far as I know and have inquired, to acquire additional reserves any place.

Q. How are you going to shoot more gas through that line to Chicago? I thought it was running to capacity now.

A. Well, I am not an engineer. The line does have a capacity—additional capacity. It depends upon how much compression you want to put on it and there is a possibility of looping part of it. All of those things are now under study by the Natural Gas Pipeline Company to determine what it should do, as to what extent it should provide additional capacity.

Q. I believe in your Colorado Interstate line it is not operating at capacity, is it?

A. Sometimes it is operating to capacity. Most of the time I guess it is not. When I say "guess" I haven't the figures in front of me.

Q. Are you trying to sell more gas?

A. What?

Q. Are you trying to sell more gas?

A. You are speaking now of the Denver line?

Q. Yes.

A. Oh, yes, we would be glad to sell more gas if our customers would take it, our present customers—

Q. Just your present customers?

A. Yes.

Q. You wouldn't want to sell gas to anybody else?

A. We haven't any proposal before us to sell gas to anyone.

Q. Are you open for any proposal?

A. Are we open for any proposal?

Q. Yes.

A. I think we would be very foolish to say we were not open for a proposal. We would be glad to consider any proposal to sell more gas. Whether or not we would accept it would depend upon the facts and circumstances at that time.

Q. You contemplate an increase in your Denver business in the immediate future?

A. You are getting a little out of my line.

Q. You are not that man?

A. I am not the market expert. I am not the market statistician and I don't want to appear to cover too much territory.

Q. I will apologize if I am—

A. I am answering you as far as I can.

Q. I think you are. It is just because of this general testimony here and I just wanted to get the attitude—

A. I invited general cross examination by the character of the statement I put in and I will answer the questions the best I can.

Q. I think you have.

A. Thank you.

Q. I can't quite understand why you are so interested in keeping—I mean in not purchasing gas from so many producers in the Texas Panhandle field. In other words, you fought legislation which required you to purchase this gas from independent producers? You don't want to have anything to do with it?

A. Well, to tell that whole story would take quite a lot of time but I say simply this: There are quite a number of reasons as far as I am concerned. The Canadian River Gas Company went into the field and paid five million dollars—

Q. They made five million dollars?

A. Paid five million dollars.

Q. They only made four million dollars?

A. Not that.

Q. It was the Amarillo Oil Company that made that?

A. Please read the question.

(The question referred to was read by the reporter, as set forth above.)

Mr. March: Please read the question before that, Mr. Reporter.

(The record referred to was read by the reporter, as set forth above.)

The Trial Examiner: You didn't answer Mr. March's first question completely.

Mr. March: Go ahead and complete your original answer.

The Witness: Let me start again.

The Canadian—

By Mr March:

Q. I didn't quite understand your position there, why you were so interested in not purchasing that gas.

A. Let me say this: The Canadian River Gas Company paid five million dollars for gas rights and gas leases of the Amarillo Oil Company. It drilled a lot of wells itself and built gathering lines for those wells and built its own pipe line and so forth. It went down there with the idea of having a fixed permanent reserve to take care of their Denver market. They went down there under a policy of not being dependent upon anybody for its gas supply; it would have its own gas supply and it would furnish it over the years to the Denver market. Now, having bought and paid for its reserve and having drilled its wells for this purpose, it seemed to be unjust and unfair to require Canadian River to pay for somebody else's gas reserve, gas wells, and gathering lines. That was one of the main economic reasons.

Q. What if you could get that gas cheaper than you could sell it or sell it to the Colorado Interstate?

A. Cheaper gas today—any reliance upon cheap gas today may become very expensive tomorrow when you depend upon somebody else. We think the cheapest and most economical way to run this business is to have our own gas reserve and our own gas wells and not be dependent upon somebody else.

Q. If you could get a special price for independent gas down there you could just let your gas stand aside for a little while and take up the independent load?

A. The trouble is, gas doesn't stand aside. It isn't static. If you think you are leaving your gas there and taking somebody else's, probably your gas is going out the back window.

Q. If you are taking out yours you are probably draining that from the independent man's property. It is better to do that than the other way?

The Trial Examiner: Mr. March—

The Witness: Wait a minute. I think the record will show that the drainage has been away from the Canadian River Gas Company's reserve and not to them.

By Mr March:

Q. You don't know that?

A. Yes. That is what all the figures I have seen—

Q. What figures? It is very important and I want to know what figures?

A. All the reports I have seen.

Q. What reports?

A. (Pause).

Q. I didn't think you had many reports of the reserve of this field.

A. I haven't many reports.

Q. What reports? What are you basing that on? It is important in this case.

A. You will probably get it at the proper time but don't try to get it through me.

Q. I don't want to get the statement through you if you don't know.

A. I beg your pardon. I only put it in there because you said I want to correct the impression I felt we were.

Q. In other words, you don't know actually who is draining who?

A. No, I am not an expert on that.

Q. You don't know, do you?

A. No, I wouldn't say I am a witness for that at all.

Q. You don't know, do you?

A. (Pause).

Q. You don't know who is draining who down there, whether you are draining somebody else—you don't actually know yourself? You just know what people tell you?

A. I don't actually know myself.

Mr. March: That is all.

Mr. Lange: I have a few questions that I want to ask Mr. Spencer.

The Trial Examiner: Proceed.

Cross Examination (Continued).

By Mr. Lange:

Q. Going back to the time this project for the bringing of gas to Denver was first thought of, wasn't it first uncertain as to whether it would be one company transporting the gas of the entire district or two? When was it finally determined whether it should be one or two companies?

A. I think, Mr. Lange, it was always intended to have two. There was a possibility that they might want to have three and they later fixed it on two.

Q. Two?

A. Yes. I am speaking of the project as a whole.

Q. Yes. When they determined upon two, did they determine how far each company was to go?

A. I think that was determined in the agreement, just exactly how far each company was to go. I am speaking of the agreement of April 5, 1927.

Q. And at that time the Canadian River constructed its line from the Panhandle field to just beyond the State of Texas into New Mexico?

A. Clayton, New Mexico.

Q. Clayton, New Mexico?

A. Yes.

Q. And at that point connected up with the facilities, the transmission line of the Colorado Interstate?

A. Yes, sir.

Q. Which extended from Clayton, New Mexico, through New Mexico into Colorado and then on to Denver?

A. That is right.

Q. That was the way the project was finally built?

A. Yes, sir.

Q. And shortly after its completion the gas began its course through those facilities, first through the facilities of the Canadian River out of the Panhandle of Texas to Clayton, New Mexico?

A. That is right.

Q. The gas moved through that line and at that point delivery was made under the contract with Colorado Interstate and the gas then moved on through the facilities of the Colorado Interstate through New Mexico and into Colorado and to Denver?

A. That is right.

Q. And that has been the course of operation ever since that time?

A. That is right, it is a continuous flow through the pipeline facilities.

Q. Facilitated through compressor stations along the line?

A. That is right.

Q. At the time the project was first started artificial gas was being sold in Denver, was it not?

A. Yes, sir, it was being distributed here.

Q. Distributed here by the same company that now distributes it, the Public Service Company of Colorado?

A. Right.

Q. And was artificial gas also being distributed about that time in the City of Colorado Springs?

A. Yes, sir.

Q. And who was distributing it there?

A. I believe it was being distributed by a municipal gas plant; that is, a plant that was owned by the municipality itself. That is my understanding.

Q. And the results of being distributed in Pueblo?

A. Yes, sir.

Q. And shortly after the completion of these lines natural gas was then substituted for the artificial gas and distributed at those various points along the line?

A. Well, following the delivery under our several contracts for these cities, yes.

Q. And when the project was contemplated being built it was, of course, contemplated that this natural gas that

would be transported through those lines would be substituted for the artificial gas for distribution at those various points?

A. Yes, sir.

Q. And the gas was so distributed and is still being distributed to domestic and commercial users in Denver, Pueblo, Colorado Springs and those other points?

A. That is right.

Q. And subsequently other delivery points were established for the sale and delivery of gas to the Colorado-Wyoming Gas Company?

A. Yes, sir.

Q. About how long after the Denver project had been completed was that begun?

A. The contract was dated about a year after, isn't it?

Q. It is fixed by contract?

A. I think it is within a year or so after the execution of the original contract?

Q. And sales were made from that time on and have continued? They are still being made as far as you know?

A. To Colorado-Wyoming?

Q. Yes.

A. Yes.

Q. And that gas is delivered by Colorado Interstate rights to what is known as the Denver gate by Colorado Interstate, isn't it?

A. Yes, I think—you are asking me a lot of things I am really not qualified to answer, but that is my understanding.

Q. In connection with your managerial work you do have occasion to inform yourself first-hand as to those matters, don't you?

A. I am not an officer of Colorado Interstate. I am a director. I am generally familiar with what you are talking about.

Q. You are interested in the ultimate destination?

A. That is right.

Q. And volume of gas in a general way?

A. That is right.

Q. And that gas after being sold by Colorado Interstate to Colorado-Wyoming is then transported by that company

through a portion of Colorado and into Wyoming at Cheyenne?

A. So I understand.

Q. And those operations have been continually carried on since the time this contract was entered into between Colorado Interstate and Colorado-Wyoming?

A. As far as I know.

Q. As far as you know the deliveries have been continually made?

A. Yes.

Q. There is one other matter with reference to the acreage that I would like to get cleared up. On Page 7 of your statement you referred to the wells covering approximately 325,000 acres of land; that is, as of 1928. I noticed on Page 13 of the statement that the Canadian River now holds approximately 315,000 acres. There has been a reduction, hasn't there? Explain what has taken place. Has there been a reduction in the acreage?

A. Yes, sir.

Q. In what fashion?

A. They have been surrendered, there have been surrenders of acreage there to lessors subsequently.

Q. That is what accounts for that difference?

A. There have been acquisitions of acreage, Mr. Lange, and also dispositions of acreage since 1928, which leaves us with this net figure at the moment or approximately this net figure.

Q. Does Canadian River hold any acreage producing or capable of producing gas in any other area than the Panhandle of Texas?

A. Its gas interests are confined to the Texas Panhandle entirely.

Q. At the time this deposition was taken—referring to the Federal Trade Commission, you testified before the Federal Trade Commission on one or two occasions, didn't you?

A. If you are speaking about the Utilities investigation—

Q. Yes.

A. I appeared once as a witness, I believe. It was just once, I believe.

Q. Have you testified in any other cases involving either natural gas or oil?

A. I didn't consider that a case.

Q. Well, I will say any other case than this proceeding you are now testifying in or any proceedings.

A. Are you limiting this to the natural gas?

Q. And production of oil, either the production of gas or oil or any of the matters pertaining to it.

A. During the time that I was receiver for Producers and Refiners Corporation I testified several times before the various courts involved in the receivership proceeding.

Q. Where was the receivership pending at that time?

A. The primary action was pending in the United States District Court for the District of Wyoming at Cheyenne. There were four ancillary proceedings; three in the state of Oklahoma and one in the state of Kansas.

Q. What were the style and names of those?

A. I couldn't give you those offhand.

Q. Well, if you can supply that later—

A. All of them?

Q. Yes.

A. I would be glad to.

Q. From your testimony, as near as you can recall?

A. I can give you the title of those.

Q. Do you recall the courts?

A. I will include the court and style and caption of the case. I have appeared before the Securities and Exchange Commission in various matters.

Q. You might include that in your list, too.

A. A list of the applications and declarations and docket numbers and the dates will be sufficient?

Q. As nearly as you can, yes.

A. All right.

Mr. Lange: I think that is all for the present.

The Trial Examiner: Do you have some questions, Mr. Gibson?

Mr. Gibson: I don't believe I do at the present time.

The Trial Examiner: You haven't at the present time?

Mr. Gibson: No.

Mr. Keffer: We have some redirect examination, Mr. Examiner.

Mr. Dougherty: If I may be permitted to ask some questions here before redirect examination, I would be glad—

The Trial Examiner: I think you might, Mr. Dougherty.

Cross Examination (Continued)

By Mr. Dougherty:

Q. Mr. Spencer, a number of questions have been asked concerning a figure of five million dollars. Do you know if that figure was fixed, namely, the amount that the leases which went into this project from the Amarillo Oil Company was fixed in some document prior to the time when the Canadian River actually made the purchase?

A. A consideration of five million dollars to be paid and paid by Canadian River to Amarillo Oil Company for its gas rights and properties was fixed in the pre-organization agreement dated April 5, 1927 between Southwestern, Standard and Cities Service.

Q. I hand you Exhibit No. 1 which has been marked in evidence in this case, and I am referring you to Article 13 on Page 17. Do you find there the fixing of that price of five million dollars that we are discussing?

A. (Examining document) This article covers that subject.

Q. And who were the participants to that contract?

A. Southwestern Development Company, Cities Service Company, Standard Oil Company (New Jersey).

Q. Was Canadian River Gas Company a party to it?

A. Canadian River Gas Company was not in existence at that time. The agreement provided for the subsequent organization by Southwestern.

Q. When was Canadian River organized?

A. February 1928.

Q. And at the time when the transaction that you referred to, namely the meeting of the Board of the Canadian River and the adoption of the resolution authorizing the payment of five million dollars for the acreage, when that took place were there any negotiations between Canadian River and the Amarillo Oil Company concerning that?

A. None whatsoever. That was merely a part of the carrying out of the terms and conditions of the April 5, 1927 agreement.

Q. Have you any knowledge as to the parties that negotiated the price of five million dollars?

A. Yes.

Q. Who were they?

A. The price was negotiated primarily by Mr. Christy Payne of Standard and Mr. Moody and Fitzpatrick for Southwestern.

Q. Some reference has been made to twenty years as the period of contract *with* Canadian River has with Colorado Interstate Gas Company for the sale of gas. That contract is Exhibit No. 16 in this case. Do you know whether or not it provides for an option under which Colorado Interstate can purchase gas from Canadian River beyond that 20-year period?

A. It contains such an option.

Q. There was a question asked you by Mr. March in which he said, "did you want to sell more gas" and I think you said, "We would like to sell more." I would like to know what company you are speaking of or had in mind at the time when the personal pronoun was used. Was it the Canadian River or the Colorado Interstate?

A. I was speaking primarily of Canadian River and indirectly I hold the same feeling for Colorado Interstate.

Q. What I had in mind was that you still are cognizant of the provision under which that gas would have to be sold to Colorado Interstate, except by its consent?

A. Exactly.

Mr. Dougherty: That is all I have.

Cross Examination (Continued)

By Mr. March:

Q. Were there ever any direct negotiations between the Amarillo Oil Company and the Canadian River Gas Company in regard to that five million dollar deal, the acquisition of the gas land, in which the Amarillo Oil Company paid only a little over a million dollars for it?

A. Substantially over a million dollars.

Q. Say two million dollars to be generous?

A. Yes, there were direct negotiations on that contract between the parties to the agreement of April 5, 1927, as I have testified—perhaps I misunderstood your question.

Q. I understand you have testified here that the original commitments were made providing for this five million dollar transaction before the organization of the Canadian River Gas Company?

A. Yes.

Q. The Southwestern, Cities Service and Standard?

A. That is right.

Q. What I am asking you is this: Were there ever any direct negotiations between the Amarillo Oil Company and the Canadian River Gas Company relative to that deal?

A. Well, there was a proposal submitted by one company and accepted by the other company. It went through the minutes of each company, however, that was merely a form of carrying on what had previously been agreed upon by the originators of the project.

Q. It was just a matter of routine?

A. I think, to answer you frankly, it was carrying out a previous agreement made and there was not what you call real barganing at that time between the Amarillo Oil Company and the Canadian River Gas Company.

Q. The fact of the business is that Southwestern owned one hundred per cent of both companies?

A. That is right.

Q. And there wasn't any room for any negotiations between the companies?

A. Not because Southwestern owned one hundred per cent of each company but because the terms and conditions of the transaction had been agreed upon in the organization agreement.

Q. Amarillo Oil Company didn't agree to that?

A. Yes, they did.

Q. Whom did they agree with? They weren't a party to this tri-party agreement?

A. Let's put it this way: It agreed and consented in carrying out the agreement Southwestern made for them.

Q. There wasn't much question about the Amarillo Oil Company agreeing in view of the fact all of the voting stock was held by Southwestern?

A. I don't think the Board of Directors deliberated too long over the proposal. I think they accepted it promptly (laughter).

Q. There wasn't any question about Canadian River paying that much money for it, was there?

A. No, that is right. The five million dollars had been provided for them from the outside with which to pay for it.

Q. From where? From Christy Payne of Standard Oil?

A. Mr. Christy Payne didn't furnish it.

Q. But Standard Oil did?

A. Standard Oil didn't furnish it to Canadian River. Colorado State—Colorado Interstate furnished the money to Canadian River.

Q. Colorado Interstate furnished the money to Canadian River?

A. Yes.

Q. It was a kind of trickling down process?

A. Nobody had any money yet except the Standard and it was coming on up through.

Q. The cash register has rung plentiful since then?

A. Sir?

Q. The cash register has rung plenty since then?

A. Well, "plenty" is a relative term. It has been generous.

Mr. March: That is all.

Mr. Dougherty: May I continue with just a couple of questions, Mr. Examiner?

The Trial Examiner: I think so, Mr. Dougherty.

Cross Examination (Continued).

By Mr. Dougherty:

Q. As I understand it, Mr. Spencer, the Colorado Interstate sold its securities, substantially all of them originally to the Standard Oil Company, a New Jersey Corporation?

A. Read the question, please.

(The question referred to was read by the reporter, as set forth above.)

The Witness: It sold substantially all of its bonds to the Standard of New Jersey and it sold 42½ per cent of its common stock and a million dollars of its preferred stock to Standard.

By Mr. Dougherty:

Q. The securities you mentioned were the entire source of cash that came into Colorado Interstate?

A. I think it was a source of all cash that came into the entire project.

Q. So that the cash started from Standard Oil Company then to the Colorado Interstate and then to Canadian River?

A. That is right from a cash standpoint. I don't want to overlook the words "substantial contribution" in gas reserves on the other end.

Q. So Southwestern Development Company was not taking five million dollars of its own funds and paying it to its own subsidiary?

A. It got five million dollars of outside money.

Q. Do you recall at the time prior to the organization of this project that use was being made of any of the leases and wells that the Amarillo Oil Company owned in the Panhandle field?

A. The only use being made of the lease and wells at that time was to supply the market requirements of the City of Amarillo and vicinity.

Q. How many wells, if you recall, were required to supply that city's gas requirements?

A. Well, they had one well that was capable of doing it. However, that would not be a very good practice. I think they had—I would say they had around nineteen or twenty wells in 1926. Not more than half would be connected up to the pipeline, however—I am trying to answer out of my head. I may be incorrect.

Q. At any rate, would it be correct to say that only a small part of the total gas reserves were being utilized to supply the markets that were then available?

A. That would be quite correct.

Mr. Dougherty: That is all.

The Trial Examiner: I understand you have some redirect examination?

Mr. Keffer: I have a question or two, Mr. Examiner.

The Trial Examiner: Proceed.

Redirect Examination.

By Mr. Keffer:

Q. Again with reference to this transaction whereby Amarillo Oil Company conveyed its leases to Canadian River for a consideration of five million dollars. At the time that was made, Standard Oil Company had absolutely no interest in the Southwestern or now, as far as that is concerned?

A. That is correct.

Q. The Southwestern sitting on one side of the table making that deal had every incentive to get just as much as they could for that acreage, did they not?

A. Yes, they tried to get more than five million dollars.

Q. And likewise the Standard on the other side of the table were not interested in Southwestern, and furnishing all the money had every incentive to bear down as far as they could on the price is that not correct?

A. They tried to pay less than five million dollars.

(Vol. 1, p. 125-154.)

* * * * *

Q. Now, Mr. Lange asked you a while ago, Mr. Spencer, with respect to artificial gas that was being sold and distributed in Denver, Colorado Springs and Pueblo, and you answered that you understood it was. What is the primary source of artificial gas, do you know?

A. Again I am not an expert. I would say the principal ingredient from which artificial gas is derived is coal.

Q. The artificial gas that was distributed in these various towns was generated largely through coal mined in this area?

A. The processing of coal.

Q. Yes?

A. Yes.

Q. That gas you stated had been replaced by natural gas. Is there any character of regulation with respect to the

mining, or was there at that time with respect to the mining, transportation and sale of coal to these gas companies for making artificial gas which was distributed in their systems?

A. None that I know of.

Q. In other words, the natural gas which Colorado Interstate has brought into these towns has simply replaced the coal which formed the basis of the artificial gas, is that not correct?

A. I think it would be more correct—substituted for the coal and artificial gas and everything that went into it.

Q. Right in that connection I am not sure how the record appears on it but it occurred to me that just a little explanation here might be made. That is that the Colorado Interstate in these various towns of Colorado Springs, Pueblo, Denver, and others, merely sells gas at the city gate, is that not true?

A. That is correct.

Q. In other words, the Colorado Interstate is not engaged in distribution in any sense in those respective towns?

A. That is right.

Mr. Keffer: I think that is all.

Mr. March: I have some further questions.

The Trial Examiner: Proceed.

Recross Examination.

By Mr. March:

Q. You wouldn't want to say, Mr. Spencer, in view of your previous testimony here, that Standard Oil or persons owning substantial stock in Standard Oil had no interest directly or indirectly in Southwestern Development Company at the time this agreement between these three parties was consummated relative to this five million dollars?

A. Well, if you mean that stock ownership and affiliations, no matter how far removed from the situation, then I would say I could not be positive that was not so any more than I could be positive you weren't interested in Southwestern in the same manner, or anyone else.

Q. It is not that definite because you have already testified, as I understand, that you knew that John D. Rockefeller of the John D. Rockefeller interests had an investment in the Producers and Refiners Corporation—I mean the

Prairie Oil and Gas Company—which in turn had control of the Producers and Refiners, which in turn had 51 per cent of the Southwestern Development Company.

A. That is all right except at the base. I don't believe I testified that I knew. I believe I said "I believe." I didn't ever examine the stock or have any definite knowledge about the stock.

Q. Now Standard Oil gives, as I understand—or loans, as I understand, whichever it may be, or purchased bonds of Colorado Interstate Gas Company. They advanced this five million dollars to the Canadian River Gas Company and they purchased bonds, is that it? What do they get? What security do they get? Is it an open loan or what is it?

A. Well, I find it a little difficult in finding what you mean, who you mean by "they."

Q. I am talking about this five million dollar deal. I want to know just how the money was advanced and what evidence of indebtedness was gotten by all parties. Standard Oil didn't give Colorado Interstate five million dollars, did they?

A. Oh, no, I never found it to be philanthropic to that extent.

Well, let me see if I can follow it through. See if this answers it: The Standard Oil of New Jersey bought bonds from Colorado Interstate, The Colorado Interstate took that money and bought bonds of Canadian River and so that the five million dollars started with Standard would ultimately be in the treasury of Canadian River and that five million dollars was paid to Amarillo oil for its leases and gas wells.

Q. And where is Canadian River going to get the money to pay off this five million dollars?

A. The five million dollars?

Q. I mean pay off these bonds—pardon me.

A. The bonds?

Q. Yes.

A. Amortization of the bonds was included as a part of the cost of gas.

Q. And which is a part of the rate base to so-called cost rate base to Colorado Interstate?

A. And to Amarillo Oil Company.

Q. Yes. And then, of course, and in the final analysis the Denver rate payer is going to have a great deal to do with

the repaying of this five million dollars, their proportionate share?

A. Indirectly they will pay a proportionate part of the five million dollars through the amortization of the bonds; that's right.

Mr. March: That's all.

Recross Examination (Continued).

By Mr. Dougherty:

Q. Mr. Spencer, is the gas underlying those leases for which the five million dollars was paid; is that the gas that goes through pipelines and for which the gas consumers pay their money?

A. That's the same gas.

(Vol. I, pp. 154-158.)

* * * * *

Q. Will you please state just the additional matters which he inquired about and concerning which you promised to secure additional information for him?

A. According to my notes Mr. March asked me to supply him with the title, court, caption and so forth of the receivership actions involving Producers and Refiners Corporation in which I was receiver. I have a copy of such information.

Q. Will you hand that to Mr. March?

Mr. March: Will you mark that for identification so we can have it in the record here?

Mr. Keffer: I have no objection.

The Trial Examiner: It will be marked for identification then as Exhibit 37.

(Exhibit 37, Witness Spencer, marked for identification.)

Mr. Keffer: We offer in evidence Exhibit 37 which is a statement of the actions pending in the receivership of the Producers and Refiners Corporation.

The Trial Examiner: No objection?

Mr. March: No objection.

The Trial Examiner: Exhibit 37 will be received.

(Exhibit 37, Witness Spencer, received in evidence.)

By Mr. Keffer:

Q. Were there any other requests made, Mr. Spencer?

A. Mr. March also asked me to give him a list of proceedings before the Securities and Exchange Commission in which I had appeared as a witness for Southwestern Development Company or its subsidiaries. I shall be unable to furnish that list until I return to my office but I shall do it at that time.

Q. But you will at that time assemble that information?

A. Yes, sir.

Q. Were there any other matters?

A. In answer to some questions regarding the organization agreement for the Chicago project which is now operated by Natural Gas Pipeline Company of America I testified that there was an agreement supplementing the original agreement which qualified or modified the Standard of New Jersey participation therein, and Mr. March asked me to advise him or to obtain a copy of such agreement and I have done that.

Q. You have secured a copy of that?

A. I have secured a copy of the agreement that I had in mind.

Q. I hand you, Mr. Spencer, Exhibit 38 and I will ask you if that is a photostatic copy of the agreement to which you have just referred, or the letter to which you have just referred?

A. It is.

Mr. Keffer: I will now offer in evidence Exhibit No. 38 which has just been identified by Mr. Spencer.

Mr. March: No objection.

The Trial Examiner: Exhibit 38 will be received.

(Exhibit 38, Witness Spencer, received in evidence.)

By Mr. Keffer:

Q. Are there any other matters, Mr. Spencer, about which inquiries have been made?

A. The last item I have in my notes is a request by Mr. March that I advise him concerning what geological information on the Texas Panhandle field Amarillo Oil Company had during the year 1926 to 1928. I requested our

office to make an examination of our files and I find that we have no specific reports that had been prepared for Amarillo Oil Company at that time. We did, however, have available bulletins of the American Association of Petroleum Geologists which contained geological information on the Texas Panhandle area. I refer particularly to the bulletin of August 1926 and the bulletins which I believe are printed in a consolidated volume, I believe, for 1928, and that concludes the requests that I have in my notes.

Mr. Keffer: I take it, then, that the record might show that Mr. Spencer has complied with the additional requests for information that were made except as to the cases in which he has testified before the Securities and Exchange Commission and that request will be later supplied.

Mr. March: I have some questions.

Mr. Keffer: Well, may the record—

Mr. March: Yes, absolutely, as far as—

Mr. Keffer: That's all.

Cross Examination

By Mr. March:

Q. The geological journals you are speaking of, what were they again?

A. They are bulletins of the American Association of Petroleum Geologists.

Q. And the dates again?

A. Bulletin of August 1926 and the bulletins of 1928 which I think are printed in one volume.

Q. Did you read these during that period?

A. I don't recall that I did, Mr. March.

Q. Do you know whether or not your companies relied on the information contained therein?

A. I couldn't say that they did. I would say that it was a part of the information that they had available.

Q. Do you know that they actually saw the articles?

A. Yes, they are in their file.

Q. Whose files?

A. Amarillo Oil Company.

Q. Did you see them in the files?

A. No. You asked me to find out what they had and I

have tried to comply with that, but they have told me that they are in their files.

Q. They said they were? They didn't say whether they relied on them or not?

A. No.

Q. Do you know of anyone that did rely on them in connection with your companies, Southwestern Development Company?

A. I do not.

Q. You think that most of the geological advice—petroleum engineering advice, was oral advice to the executives then?

A. Well, undoubtedly they obtained oral advice. The reason I hesitate is because I'd like to answer your question in a different way which isn't actually responsive.

Q. Well, go ahead and answer it in your own way.

A. I don't think from my knowledge of it that they obtained much oral advice from geologists in those days. They had substantially over 300,000 acres of lands which appeared to them to be capable of producing large volumes of gas. They had twenty gas wells, one of which was capable of producing, as I recall, over 100,000,000 cubic feet per day. The twenty wells were scattered generally throughout this large block of land and if I have the feeling of that time it was that, "Why bother so much about the geologists? Here is plenty of gas," and it is very apparent on the record.

Q. You have the same feeling today, haven't you?

A. I still feel that we've got substantial quantities of gas. It should be evident to anyone.

Q. You just gave us the information from 1926 to 1928. I wonder if you have any reports which have been made to any of your companies as to the amount of reserves you have in your acreage, Canadian River acreage from 1928 to date?

A. I do not.

Q. Who's making that study?

A. We have studies that are in the course of preparation. We have employed Mr. James Thompson as our geologist of Amarillo. He has been engaged in this work.

Q. Mr. C. Don Hughes?

A. We have also employed Mr. Hughes.

Q. How about Mr. Peterson?

A. We haven't employed Mr. Peterson.

Q. So if we wanted to subpoena someone that would be familiar with the situation we would possibly want to subpoena Mr. Thompson and Mr. Hughes?

A. Well, I'll say this: If you wanted to subpoena someone in whom we had confidence regarding their geological ability you would be well advised in subpoenaing Mr. Thompson.

Q. What about—

A. Or Mr. Hughes.

Q. What about the geological department?

A. Sir?

Q. What about your geologists? Don't you have any geologists?

A. Mr. Thompson is, I believe, retained as a geologist, has been in recent years for Canadian River.

Q. By whom?

A. By Canadian River.

Q. He was likewise retained by Natural Gas Pipeline Company of America?

A. I think he was a geologist in that case.

Q. He acts as geologist pretty well for all the Standard Oil Company (N. J.) companies, doesn't he?

A. I think Mr. Thompson acts pretty well as geologist for everybody that needs information regarding the Texas Panhandle field. You understand the number of geologists who are familiar with and qualified to testify about the Texas Panhandle field is very much limited.

Q. You didn't think Mr. Peterson was a very good man?

A. Mr. Peterson isn't in the general practice of geology. He is an employe of Texoma Natural Gas Company.

Q. That is the reason you didn't secure him here?

A. We didn't consider employing Mr. Peterson. We may find it advisable to call him. We haven't concluded on that either.

Q. Now, so much for that. What I want to ask you next is about this supplemental agreement here that Standard Oil Company (N. J.) made—allegedly made in regard to the original contract, agreement I should say, for the building of this line to Denver.

Are there any other supplemental agreements to that contract?

A. I think there are. I don't know whether you call them supplemental. There were amendments or subsequent agreements pertaining to the original agreement, yes.

Mr. March: I wonder if you would produce those here because they have a very direct affect upon the main contract.

Mr. Dougherty: May I inquire so I can make a note of that?

Mr. March: All supplemental and amendatory agreements, oral, written, express or implied—whatever you want to call them—and in regard to the agreements of March 20, 1927—

The Witness: No, no.

Mr. Dougherty: That's what I was concerned about. The thing Mr. Spencer has in his mind hasn't anything to do with the Colorado Interstate Gas Company or that April 25th agreement. It has solely to do with the Natural Gas Pipeline Company of America matter.

Mr. March: Well, that's right. I'm sorry.

I want to make the other request now in regard to this—which did you understand I was asking you about?

The Witness: I thought you were asking—until you put in the date—I thought you were talking about the Chicago project, but then I was in doubt.

Mr. March: Let's get these other supplemental agreements in regard to the Chicago project, amendatory agreements, or oral agreements in regard to that situation.

The Witness: You had better make that request to Mr. Dougherty. I don't have the agreements available until after the time that Southwestern became interested in it.

Mr. Dougherty: I'll provide that.

Mr. March: Now I want to ask for those supplements.

Q. Are there any supplemental or amendatory agreements, oral or written, in regard to the 1927 contract, the tripartite agreement between Cities Service Company, Insull & Standard Oil Company (N. J.)?

A. None whatsoever so far as I know.

Mr. Dougherty: Maybe I didn't understand this. I thought you said Insull & Standard and still referring to the—

Mr. March: Southwestern instead of Insull—Southwestern and Standard?

Mr. Dougherty: Between City Service, Southwestern Development Company and Standard Oil Company?

The Witness: That's the way I understood your question. Did I answer it?

By Mr. March:

Q. You said none that you know of.

A. None whatsoever that I know of.

Q. Will you check and see?

A. I have done all the checking that I could. I have done my part of the checking and find none.

Q. One final question I want to ask you:

You said, I believe, you were an employee of the Consolidated Oil Corporation?

A. I am, yes.

Q. Do you know how much stock Sinclair owns in that company?

A. No, I don't.

Q. Do you know whether they own any at all or not?

A. I think they do but I do not know the amount.

Q. Very small amount?

A. I would rather not say whether it is small or whether it is medium or whether it is large. I don't know.

Q. You don't know anything about it. I believe you testified you didn't know who the stockholders of that company were except that you did know that Rockefellers had some interest.

A. Well, I couldn't testify about the Rockefellers any more than I could testify about anybody else.

Q. You want to change your testimony in that regard?

A. Not at all. I said I understood they were and I had seen statements in which they were listed as stockholders.

Q. Substantial stockholders?

A. Yes. I said also that I had not examined the stock records of the Consolidated Oil Corporation.

Q. I wonder if you would produce this Stockholders list of Consolidated Oil Corporation as of December 31, 1939?

A. I wouldn't except under compulsion. Consolidated Oil Corporation has some 85,000 stockholders and I couldn't see any purpose in the world of dragging all 85,000 names into this proceeding.

Q. What about the twenty largest stockholders? Would you be willing to produce those?

A. I will agree to do this, Mr. March, if it will be satisfactory to you: If the twenty largest stockholders are a matter of public record, I'll find that record and give it to you. I think they are.

Q. As of December 31, 1939?

A. I don't know about that. I'll give it to you as of the latest available date.

Mr. March: I'd appreciate it very much, Mr. Dougherty, if this witness would produce here—pardon me, Mr. Keffer—if this witness would produce here the twenty largest stockholders of Consolidated Oil Corporation as of December 31st, 1939, and I feel that it is a reasonable request, if the Examiner please. If the Examiner desires me to state the relevancy of that I will.

The Trial Examiner: No, I have no desire for you to state it, Mr. March.

Mr. Dougherty: Might I make a suggestion about that date. Frequently lists are prepared for annual meetings and for dividend purposes. Now, supposing that happens to be December 15th?

Mr. March: That's all right.

Mr. Dougherty: What you want is the closest available date to 1939.

(Vol. IV, pp. 587-599.)

* * * * * *

Recross Examination (Continued)

By Mr. March:

Q. Your name is P. C. Spencer and have previously testified in this case?

A. Yes, sir.

Q. I refer you to Exhibit No. 38. I note that letter is dated March 10, 1930. Was that the same date of the original agreement relative to this project?

A. I believe it is the same date, Mr. March.

Q. Would you call that an amendment to the contract?

A. Well, I would either call it an amendment or supplement or something. It certainly was a part of the contract after it was signed.

Q. Why didn't the contract refer to it?

A. Now let me explain to you, Mr. March, this: You asked me a question, I believe, on Monday after reading from the Federal Trade Commission report of some other report out of the original contract provision which stated that Standard of New Jersey had agreed to furnish or cause Canadian—

Q. Cause Canadian River?

A. Cause Canadian River to furnish twenty-five per cent of the market requirements for the Chicago line. You asked me how they could do that. I had seen a copy of this letter call it a supplement or amendment or whatever you will—and I testified that I didn't believe they could make such an arrangement or intended to without the consent of Southwestern. You asked me to produce that supplemental agreement and I asked Mr. Dougherty for it and he has provided this instrument for me to give to you.

Q. Why isn't it notarized?

A. I don't know. I don't think it is notarized.

Q. You don't think it is?

A. Sir?

Q. I don't see it here.

A. I thought your question—

Q. Why isn't it notarized?

A. I don't know. At the time, Southwestern was not a party to the Chicago project or enterprise.

Q. Have they ever been a party to it?

A. Yes, they became a party subsequent to this date. I think it was in June of that year.

Q. In what way did they become a party?

A. They became a participant and agreed to buy the bonds and stock. In fact, the bonds and stock that they agreed to buy are the same that they now hold today.

Q. Have you those agreements relative to the Canadian

River agreement to furnish twenty-five per cent of the requirements for the Chicago line?

A. Canadian River has never agreed to furnish twenty-five per cent to the Chicago line. That contract is with Colorado Interstate Gas Company.

Q. Colorado Interstate Gas Company agrees to furnish twenty-five per cent of the requirements of the Chicago line?

A. Mr. Dougherty has just concluded putting the contracts and supplements and amendments into the record.

Q. What is Colorado Interstate doing making the contract when Canadian River owns the reserves? I think you misunderstood my question.

A. I certainly do, Mr. March. Will you tell me what you have in mind, please?

Q. Colorado Interstate didn't have these gas reserves, did it?

A. Colorado Interstate has a call on Canadian River for whatever gas it wants to take.

Q. And so Canadian River Gas Company didn't agree to make available twenty-five per cent of the reserves to the Natural Gas Pipeline Company of America; that was done in the upper stratosphere?

A. It was perfectly agreeable to Canadian River. I think they did enter into some kind of an agreement which facilitated Colorado Interstate's ability to furnish twenty-five per cent.

Q. They would have to, wouldn't they?

A. Yes, they did.

Q. Where is that agreement? That is the agreement I want.

A. It is already in the record. We introduced that the first day.

(Conference outside the record.)

The Witness: The agreement between Canadian River Gas Company and Colorado Interstate Gas Company with reference to this transaction which we have been discussing is on the first sheet of Exhibit No. 15 about the fourth or fifth item listed on that page.

By Mr. March:

Q. That has not been filed with the Federal Power Commission?

A. No, it has not been filed with the Federal Power Commission but it was included with the contract—

Q. We have copies marked for the record here already?

A. Yes, that is right. They are in this bound volume that we have already introduced.

Q. I just wanted to let the record show that in order to tie the proposition into this letter here.

I want to get to the principal point here which is this: Is there any agreement that Standard Oil Company entered into with Canadian River relative to the furnishing of twenty-five per cent of the requirements for this line?

A. No agreement whatever.

Q. I note here in this letter an agreement as follows:

"The Standard Oil Company (N. J.) has not yet been able to effect the necessary arrangements to permit it to furnish such gas on a basis satisfactory to it and is not yet certain it will be able to perfect such arrangements—"

What I want is the arrangements which were perfected by Standard Oil, the contract relative to that arrangement.

A. They are talking about arrangements with Southwestern, Mr. March, and the arrangements with Southwestern were finally perfected. They were perfected through an agreement under the terms of which Southwestern became a participant in the Chicago project and took over one-half of the participation of Standard, the participation Standard had at that time.

Q. That agreement is in evidence?

A. That agreement is not in evidence.

Q. Will you produce that agreement for the record?

A. That is the same agreement you asked for before. It will be shown in the agreements heretofore that you have asked for; to-wit, the supplements and amendments to the Chicago contract.

Q. You will obtain all agreements, oral and written, relative to the commitment of Southwestern Development Company to require Canadian River Gas Company to make available twenty-five per cent of the reserves to the Natural Gas Pipeline Company of America, will you not?

A. I have already produced all there is as far as the Canadian River is concerned.

Q. I am talking about as far as Standard is concerned. I want the contracts and agreements Standard entered into with anybody relative to this 25 per cent commitment which Canadian made. I understood you to say that Southwestern Development Company made all of the commitments for Canadian River and made them with Standard. I want the agreement with Standard, the agreement which Standard entered into with the Southwestern Development Company and Canadian River relative to this 25 per cent commitment here of the reserves of the Canadian River.

A. I understand perfectly and it will be very easy—

Mr. Dougherty: Might I suggest it isn't twenty-five per cent of the reserves of Canadian River. The project is to sell twenty-five per cent of the requirements for the Chicago line.

Mr. March: That is right.

Mr. Dougherty: That is a different thing.

Mr. March: I might have misstated it. It is twenty-five per cent of the requirements of the Natural Gas Pipeline Company of America.

Q. Do you know who negotiated this agreement with Southwestern, relative to the Canadian River, with the Standard Oil?

A. Nobody negotiated for reserves here. Again we are talking about a contract to sell twenty-five per cent of the requirements of the Chicago Pipeline project.

Q. Well, take it that way—

A. The negotiations with respect to Southwestern's participation in the Chicago project carried on—it was carried on principally between Mr. Moody and Mr. Payne, as I recall it.

Q. Mr. Moody representing—

A. Southwestern.

Q. Mr. Payne representing Standard Oil Company (N. J.)?

A. That is right.

Q. What did you have to do with those negotiations?

A. I wasn't in on them.

Q. You don't know anything about them except hearsay?

A. All I know is what the documents show that grew out of it, Mr. March.

Q. Where did you get this document here, from Mr. Dougherty?

A. I asked Mr. Dougherty for it.

Q. Didn't you have a copy of this agreement in your files?

A. I think we have, but I don't know where we got it. I couldn't be responsible for it. I couldn't say that the one in our files is correct, so I asked Mr. Dougherty to get one that would have more authenticity.

Q. Where did he get it?

A. Maybe we had better put Mr. Dougherty on the stand. I don't know. I would like to get him up here.

Mr. March: I don't want anybody to get me up there.

The Trial Examiner: Mr. March, are you about finished?

Mr. March: Just one more final question.

Q. Just who was this Central States group? I know it was stated here but why is that group treated together, Reid L. Carr acting for all parties in the Central States group?

A. Well, Mr. March, you ask me to testify to these things and I give you the best I know and then you tell me later that I don't know anything about it. I will go ahead and tell you that it is my impression and information that those parties specified as the Central States group were composed of Columbian Carbon Company, Texas Corporation, Phillips Petroleum Company, and Skelly Oil Company were acting as a group. I believe they authorized Mr. Carr to act for them in the capacity of a representative.

Q. And Phillips Petroleum Company subsequently sold its interests?

A. They did.

Q. So did the Skelly Oil Company?

A. So did the Skelly Oil Company.

(Vol. IV, pp. 613-621.)

Cross Examination.

By Mr. Marsh:

"Q. Mr. Spencer, I have a transcript of a portion of your testimony before the Securities and Exchange Commission in the matter of Southwestern Development Company, October 11, 1940, on Page 16 thereof, where a question was asked you and you answered it. Will you read that question and answer and tell me whether or not that is your testimony?

"Q. Can you state the general position of the reserves at this time and whether or not they are adequate for the supply of additional gas to the Wisconsin area?

"A. I am not a geologist or an engineer. I can say for the record that the question of gas reserves held by Natural Gas Pipeline Company and the Texoma Natural Gas Company has been rather an important issue in the Natural Gas Pipeline Company rate case now pending before the Federal Power Commission. In that case, as I recall, engineers for the Government have testified that the companies have reserves which should be sufficient to serve their markets for 30 to 40 years. On the other hand, the geologists and engineers of the companies have indicated a possible much shorter life; that is to say, I think they have estimated that they had adequate gas reserves until 1954, although I am not quite certain about the qualifications that may be attached to that data."

Q. You may continue reading down to the middle of Page 17.

A. "Q. Do you know whether or not that estimated life also included the possibly supply or requirements of the line which is now built to Milwaukee?

"A. Not specifically, but these estimates are based upon very broad markets and market increases that may be expected for the entire Texas Panhandle field.

"Q. Do you know whether or not your production and engineering officials have indicated whether they believe there are unexplored reserves that might be available for the system if it should be required; that is, unexploited or unused reserves?

"A. Well, we know that new gas fields are constantly being opened up and old gas fields also being extended. We also know that there is a substantial quantity of natural gas reasonably adjacent to our present market.

"Does that answer your question?

"Q. Is that held by The Natural Gas Pipeline System; that is, Texoma and Colorado Interstate, or what adjacent supply do you have in mind?

"A. There are thousands and thousands of acres of gas lands running from Oklahoma, Kansas and Texas, not controlled and being operated by Texoma Natural Gas Company, which at the present time is not connected to any large interstate pipe line."

Q. That's all. Now, is that your testimony in that case?

A. It sounds very much like it, Mr. March.

Q. Well, do you think it is?

A. I do.

Q. Well, now, that was a case involving the purchase of certain bonds by the Southwestern Development Company?

A. As I recall, Mr. March, this particular proceeding before the Securities and Exchange Commission involved both the acquisition and issuance of securities by Southwestern Development Company.

Q. As one of the chief executive officers of the companies involved here, controlling Canadian River Gas Company, what is the position of the management with reference to reserves? Are they taking the Federal Power Commission's word for the estimate of reserves, or the opinions of their own engineers?

A. Why, obviously, if they are going to employ engineers and geologists in whom they have confidence, they are going to rely on the judgment and conclusions of those engineers and geologists.

Q. Why did you bring out in this testimony in this case before the Securities and Exchange Commission, where it is of interest to show that you had large reserves, the Federal Power Commission estimate of reserves?

A. Well, when I am a witness I always try to give as much information and data as I can to the attorney cross

and geologists of the government thought about it as well as our own engineers and geologists.

Mr. March: That's all.

Redirect Examination.

By Mr. Dougherty:

Q. Mr. Spencer, the pipe line you were discussing in connection with that testimony as I understand it was of the Natural Gas Pipeline Company of America?

A. That's right.

Q. It had no relationship to the Colorado Interstate Gas Company or the Canadian River Gas Company?

A. None whatsoever.

Q. And when you were speaking about the reserves adjacent to the pipe line, that was adjacent to the pipe line of the Natural Gas Pipeline Company?

A. That's right.

Q. Because that had to do with the acquisition by Southwestern Development Company of certain securities of the Natural Gas Pipeline Company?

A. That is correct.

Recross Examination.

By Mr. March:

Q. However, the reserves of the Canadian River Gas Company are involved when you speak of the Texoma Natural Gas Company, aren't they?

A. They would be indirectly in so far as it involved the contract for the sale of 25 per cent of the Natural Gas Pipeline Company's requirements by the Colorado Interstate Gas Company, yes.

(Vol. XCVIII, pp. 15197-15202.)

EXHIBIT 146-A.

In the District Court of the United States for the District of Wyoming.

Consolidated Oil Corporation, Complainant, vs. Producers and Refiners Corporation, Defendant. In Equity No. 2217. Filed June 12, 1933. Charles J. Ohmhaus, Clerk.

Answer of Complainant Consolidated Oil Corporation to Counterclaim of Preferred Stockholders Protective Committee.

Comes now Consolidated Oil Corporation, Complainant herein, and now and at all times saving and reserving unto itself all benefits and advantages of exception which can or may be had or taken to the errors or uncertainties or other imperfections in the so-called objections and in the counter-claim of Ernest Sturm, Sherman M. Bijur and James G. Stanley as the Protective Committee constituted by and acting under a Protective Agreement dated August 1, 1932, for Cumulative Convertible Seven Per Cent. Preferred Stock of Producers and Refiners Corporation, for its answer to said counterclaim says:

* * * * *

III.

Answering paragraph 3 of said counterclaim, Complainant admits that shortly after December 5, 1923, to-wit, on December 29, 1923, the Prairie Oil & Gas Company caused to be elected to the Board of Directors of defendant corporation W. S. Fitzpatrick, Dana H. Kelsey and N. K. Moody, who were also directors, officers and stockholders of The Prairie Oil & Gas Company, and admits that during the years from 1924 to 1931, inclusive, said persons were annually elected directors of defendant corporation and directors of The Prairie Oil & Gas Company, but Complainant says that said persons resigned as directors of defend-

ant corporation on April 9, 1932 and at no time thereafter was any of them a director of defendant corporation. Complainant admits that during the period from January 1, 1924 until the commencement of this suit The Prairie Oil & Gas Company, through its ownership of 65½% of the common stock of defendant corporation, caused to be elected to the remaining four places on the Board of Directors of defendant corporation persons selected by it who were at all times officers or employees of defendant corporation, and says that The Prairie Oil & Gas Company did so by having a duly authorized attorney attend each annual meeting of stockholders of defendant corporation held for the election of directors during said period and by having said attorney vote for seven members of the Board of Directors nominated by it. Complainant further says that no officer or director or employee or agent of The Prairie Oil & Gas Company ever solicited the proxy or held the proxy or as proxy voted the stock of any other stockholder of defendant corporation at any election of directors during said period; that throughout said period many holders of preferred stock of defendant corporation, by their proxies and attorneys, voted for the nominees of The Prairie Oil & Gas Company as directors of defendant corporation; and that throughout said period no holder of either preferred or common stock of defendant corporation ever voted against any such nominee of The Prairie Oil & Gas Company or in favor of any person not a nominee of The Prairie Oil & Gas Company. Complainant denies "that at no time during the period from January 1, 1924 until the date of the commencement of this action was any person selected for membership on the Board of Directors as a representative of the minority common stockholders of said defendant corporation or of the preferred stockholders of said defendant corporation" and says that at all times during said period each and every director was nominated and elected as a representative of all the stockholders of defendant corporation. Complainant denies that "none of the directors of said defendant corporation were stockholders thereof at any time during their tenure of office as such directors" and says that each and every director at all times during his tenure of office was a stockholder of defendant corporation.

* * * * *

XIX.

Paragraph 19 of said counterclaim should be dismissed and stricken from said counterclaim as it does not state facts sufficient to constitute a valid counterclaim in equity. Said paragraph shows on its face that defendant corporation owns but 51% of the stock of Southwestern Development Company and that if anybody has a claim against The Prairie Oil & Gas Company by virtue of any matter alleged therein it is Southwestern Development Company and not the defendant corporation.

Complainant therefore moves to strike said paragraph 19 of said counterclaim, and subject to such motion to strike, in answer to said paragraph admits that in July, 1924, Southwestern Development Company was incorporated under the laws of the State of Colorado with an authorized capital stock of 50,000 shares of no par value, of which 40,806 shares were issued. Complainant admits that 19,995 shares, or 49% of the stock of Southwestern Development Company were issued to The Mission Oil Company, and 20,811 shares, or 51%, were issued to The Mountain States Gas Company. Complainant admits that the Mountain States Gas Company was a wholly owned subsidiary of defendant corporation and that it was later dissolved and the stock of Southwestern Development Company held by it turned over to the defendant corporation, which ever since has been and now is the owner and holder thereof of record. But Complainant says that neither defendant corporation nor Complainant owns directly or indirectly any stock, nor otherwise has any interest in The Mission Oil Company which owns the remaining 49% of the stock of Southwestern Development Company. Complainant admits that prior to the organization of said Southwestern Development Company, The Prairie Oil & Gas Company had agreed to purchase for cash from The Mission Oil Company at 83 1-3% of par, all or any part of the bonds of Southwestern Development Company which The Mission Oil Company had or might acquire. Complainant denies that thereafter The Prairie Oil & Gas Company "purchased certain of said bonds of Southwestern Development Company at a price approximately 83 1-3% of the face amount thereof and paid a total sum, including interest, of $1,524,-

266.68," as alleged, but says that in the year 1924, pursuant to said agreement with The Mission Oil Company, The Prairie Oil & Gas Company did purchase from it at 83 1-3% of par Southwestern Development Company bonds in the amount of $1,399,650 par value and that subsequently, in the years 1926 and 1927, The Prairie Oil & Gas Company did purchase Southwestern Development Company bonds from other third parties in the amount of $208,530 par value, at various prices, the total cost of all of such bonds to The Prairie Oil & Gas Company, including accrued interest paid thereon, being approximately the sum of $1,524,266.68. Complainant further says that The Prairie Oil & Gas Company did not at any time desire to purchase any of said bonds for the purpose of making a profit thereon, but that The Prairie Oil & Gas Company purchased all of said bonds in order to aid the business and affairs of Southwestern Development Company and because neither defendant corporation nor Southwestern Development Company had any funds at the times said purchases were made with which to finance such purchases, and says that without such aid and assistance said Southwestern Development Company would have been unable to assemble and develop its properties and to participate in the extensive gas projects in which it subsequently became interested. Complainant admits that thereafter and in the year 1928 Southwestern Development Company did retire such bonds at the face amount thereof plus accrued interest, and that The Prairie Oil & Gas Company received on account of the bonds which it had purchased for the purpose aforesaid a total sum of approximately $1,835,202.59, but denies that The Prairie Oil & Gas Company caused Southwestern Development Company to retire said bonds. Complainant admits that the net profit made by The Prairie Oil & Gas Company on said transaction was approximately $310,935.91, but denies that said profit was excessive or unfair or unwarranted or was obtained by The Prairie Oil & Gas Company for the reason that The Prairie Oil & Gas Company owned a majority of the common stock of defendant corporation, or by reason of the alleged interlocking directorates of said three companies, or by reason of any alleged control or domination of the Board of Directors of defendant corporation or of

Southwestern Development Company by said The Prairie Oil & Gas Company.

Paragraph 20 of said counterclaim should likewise be dismissed and stricken from said counterclaim as it does not state facts sufficient to constitute a valid counterclaim in equity, for the same reasons as stated in paragraph XIX hereof, and complainant moves to strike said paragraph 20 from said counterclaim.

Subject to such motion to strike, and answering said paragraph 20, Complainant denies that the Canadian River Gas Company received the sum of $5,000,000 for the sale of leases or that said sum was seized by The Prairie Oil & Gas Company or used by it to reimburse itself for advances to Southwestern Development Company or its subsidiaries, but says that early in the year 1928 the Amarillo Oil Company agreed to sell its gas properties to Canadian River Gas Company for a consideration of $5,000,000 cash; That Canadian River Gas Company was formed for the purpose of (1) acquiring the gas properties of Amarillo Oil Company, (2) constructing a pipe line from the Amarillo field to a point to connect with the pipe line of Colorado Interstate Gas Company, and (3) selling gas to Colorado Interstate Gas Company, Amarillo Oil Company and others. Complainant says that the Colorado Interstate Gas Company advanced or caused to be advanced the sum of $5,000,000, which the Canadian River Gas Company was to pay for the gas properties of Amarillo Oil Company; that said $5,000,000 was not paid directly to Amarillo Oil Company, but was paid to The Prairie Oil & Gas Company; that the Colorado Interstate Gas Company was not willing to advance said $5,000,000 to the Canadian River Gas Company or to the Amarillo Oil Company or to Southwestern Development Company until such time as the Amarillo Oil Company had fully performed all of the obligations imposed upon it under the above mentioned agreement, but did consent to advance said sum only to The Prairie Oil & Gas Company on the latter's responsibility and credit and agreement to see to the proper application of the money, or in case the project fell through for any reason to return said money with interest at the rate of 6%. Complainant admits that said sum was used in part to reimburse The

Prairie Oil & Gas Company for advances made by it to Southwestern Development Company and its subsidiaries, but denies that any of said advances were excessive or erroneous or incorrect, and denies that The Prairie Oil & Gas Company was enabled to reimburse itself as aforesaid by reason of the fact that it owned a majority of the common stock of defendant corporation, or by reason of alleged interlocking directorates of all three corporations, or by reason of any alleged domination or control of the Board of Directors of defendant corporation or of Suthwestern by The Prairie Oil & Gas Cmpany. Complainant says that The Prairie Oil & Gas Company did not make improper use of any portion of said sum of $5,000,000 which was so advanced to it and that neither Southwestern Development Company nor defendant corporation was in any way damaged or aggrieved by reason of any matter alleged in said paragraph 20 of said counterclaim, but on the otner hand that said Southwestern Development Company and defendant corporation as a stockholder therein were greatly benefited thereby.

* * * * *

Wherefore, Complainant prays that said counterclaim of the Preferred Stockholders Protective Committee be dismissed with costs, and that Complainant have such other and further relief in the premises as may be equitable and just.

G. T. STANFORD,
R. W. RAGLAND,
W. E. MULLEN,
Solicitors for Complainant.

Certified Copy. D C Form No. 30

United States of America, District of Wyoming, ss.

I, Charles J. Ohnhaus, Clerk of the United States District Court in and for the District of Wyoming, do hereby certify that the annexed and foregoing is a true and full copy of certain designated excepts from the Answer of Complainant Consolidated Oil Corporation to Counterclaim of Preferred Stockholders Protective Committee filed in this court on the 12th day of June, A. D. 1933, in civil cause No. 2217, Con-

solidated Oil Corporation, Complainant, vs. Producers and Refiners Corporation, Defendant, now remaining among the records of the said court in my office.

In Testimony Whereof, I have hereunto subscribed my name and affixed the seal of the aforesaid court at Cheyenne this 18th day of November, A. D. 1940.

CHARLES J. OHNHAUS, Clerk.

(Seal) By ....., Deputy Clerk.

With reference to the introduction of Exhibit 146-A in evidence, and the objections thereto, and the ruling of the trial examiner thereon, the following appears in the record:

Mr. Examiner, I have a document here that I would like to have marked for identification at this time. It won't take but a minute and then I can give opposing counsel a copy of it to examine before it is ruled on later in the day.

The Trial Examiner: What is to be marked for identification?

Mr. March: This is a certified copy of the pleading filed with the United States District Court for the District of Wyoming; Cheyenne, Wyoming. I will read the certification which will explain the document: "I, Charles J. Ohnhaus, Clerk of the United States District Court in and for the —— District of Wyoming, do hereby certify that the annexed and foregoing is a true and full copy of certain designated excerpts from the answer of complainant Consolidated Oil Corporation to counterclaim of Preferred Stockholders Protective Committee filed in this court on the 12th day of June, A. D. 1935, in civil cause No. 2217, Consolidated Oil Corporation, complainant, versus Producers and Refiners Corporation, defendant."

It was duly certified to on November 18, 1940.

This is the company's own statement, the Consolidated Oil Corporation's own statement as to what it had to do with the disposition of it and what its predecessor, the Prairie Oil & Gas Company had to do with the five million dollars. It is likewise the Consolidated Oil Corporation's own statement as to the control of the Southwestern De-

velopment Company by Producers and Refiners Corporation, and Producers and Refiners Corporation in turn by the Prairie Oil & Gas Company.

The Examiner is familiar with the requirements that these pleadings should be sworn to in court. I offer them so that they will be marked for identification.

The Trial Examiner: Suppose they be marked for identification as Exhibit No. 146-A inasmuch as it has to do with that particular exhibit.

(Vol. XLIX, pp. 6717-6718.)

* * * * * *

Mr. March: Good. We are also considering here Exhibit 146-A—I have stated my argument as to the relevancy of it here—which is the answer of complainant, Consolidated Oil Corporation, to counterclaim of preferred stockholders protective committee filed with the clerk in the District Court of the United States for the District of Wyoming.

The Trial Examiner: Do you desire to proceed first with Exhibit 146-A?

Mr. March: We might dispose of that first. Shall I restate my relevancy argument there?

The Trial Examiner: I don't believe it will be necessary.

Mr. March: All right, sir.

Mr. Spencer: Mr. Examiner, Exhibit 146-A consists of part of an answer made by Consolidated Oil Corporation, complainant in the case involving the receivership of Producers and Refiners Corporation to a counterclaim of Preferred Stockholders Protective Committee.

In other words, the Consolidated Oil Corporation in this instance is answering the counterclaim of a Preferred Stockholders Protective Committee. The answer is not here in it entirety; certain parts of the answer have been selected for this exhibit. The counterclaim which brought forth the answer is not here, and none of the evidence that was taken upon the counterclaim or the answer is here. The extracts taken from this answer for the purpose of plead-

ings—I want to emphasize that—for the purpose of pleadings admitted and denied certain allegations made in the counterclaim. It is obvious that the parties to this proceeding here and the issues involved are entirely different than the parties and the issues involved in this receivership proceeding.

Certainly it could not be said that Southwestern Development Company or any of its subsidiaries or any other party to this proceeding so far as I know has ever had any opportunity to cross examine any witnesses on the material contained in this answer.

Furthermore, at the time the answer was made, Consolidated Oil Corporation, as far as the record shows, owned no interest in Southwestern Development Company or any of its subsidiaries.

Now, it might be said—in fact, I expected counsel to argue that this might go in as an admission against interest. If counsel considers it such, I don't know any rule of law that would permit Consolidated Oil Corporation to make any admission against interest which would bind the parties to this proceeding here. I am objecting to it because it is inadequate: because it is incompetent, and has no place as an exhibit or as evidence in this hearing.

Mr. March: I would like to state, Mr. Examiner, that obviously I could not remove from the United States District Clerk's office the official records of that proceedings.

I would like to further state that I have here, and the Examiner knows, a certified copy of that answer.

Mr. Spencer: I am not questioning that.

Mr. March: I would like to further state here that the Examiner can read this and see that here was a statement made, not in the spirit of controversy of this case. It was made stating absolute facts. It shows conclusively that Prairie Oil & Gas Company controlled and exercised the control of the Producers and Refiners Corporation. The Producers and Refiners Corporation, which controls Southwestern Development Company, which controlled both the Canadian River Gas Company and the Amarillo Oil Com-

pany at the time this five-million-dollar lease transaction took place. It is evidence which is of first rate, and I would like to state that in previous proceedings I have offered evidence from the actual pleadings in the United States District Court and I have yet to have them challenged.

The only other thing I could do, Mr. Examiner, is put Mr. Spencer on the stand. Mr. Spencer was the receiver for the Producers and Refiners Corporation at this time, June 12, 1933.

This is more valuable than any testimony. It was not made in the spirit and heat of controversy. There is nothing here to hide. They come right out and admit what happened here. This establishes conclusively not only that the Prairie Oil & Gas Company had the power—had enough stock to exercise the control of the Producers and Refiners Corporation, but it is important here to show that they actually did do it; they actually exercised it and this shows it.

Mr. Spencer: It is not testimony, Mr. Examiner.

Mr. March: I don't say it is testimony.

Mr. Spencer: It is a portion of pleadings, the admissions and denials made for the purpose of pleadings.

The Trial Examiner: Well, I don't know that the particular exhibit, strictly speaking, could be regarded as an admission against interest, but as I understand your objection, Mr. Spencer, it does not go to the use of certified copy in the proceeding.

Mr. Spencer: Oh, no.

The Trial Examiner: It goes to the weight of the material, and I have gone over this exhibit rather carefully and I note that it deals, of course, with some of the matters that might be regarded as being in the background of this proceeding.

Mr. Spencer: Before the Examiner rules, I would like to say one thing more.

The Trial Examiner: Very well.

Mr. Spencer: I didn't wish to interrupt you.

The Trial Examiner: That's all right.

Mr. Spencer: But so far as Consolidated Oil Corporation was concerned, everything that they have said there, everything admitted or denied for the purpose of pleadings, was pure hearsay.

Mr. March: I don't think it was pure hearsay. Here the Consolidated Oil Corporation comes in and had to make an answer. They came in and made an answer. What kind of people are they? Do they come in and make a sworn answer in one case different from another answer? Mr. Spencer is attorney for the Consolidated Oil Corporation which is a company which controls Southwestern Development Company. It is vitally hooked up with this case. It is not in the background, it is in the foreground—four million dollars are involved here.

Mr. Lange: It is a sworn pleading, Mr. Examiner, and in the Federal Court, Mr. Examiner, a sworn pleading of that sort certainly would be admissible in this proceeding.

The Trial Examiner: I understand there is no objection on the basis of the foundation for the exhibit, but let me say this, that the Examiner will have occasion to study that particular exhibit quite carefully in the future and if it has any weight or bearing in this proceeding, the Examiner will give it its proper weight at that time, and for that reason the objections now raised will be overruled and Exhibit 146-A will be received.

(Exhibit 146-A received in evidence.)

Mr. Spencer: Then, Mr. Examiner, I wish an opportunity to look over the rest of the record in receivership action and determine what additional portions of that record I wish to offer in rebuttal to anything that may be contained in here.

The Trial Examiner: I should perhaps have mentioned that with reference to your statement, that portions of the record might be missing and that counsel would be afforded an opportunity if they so desired to furnish parts they felt were important and omitted from the record.

(Vol. XCVIII, pp. 15129-15135.)

Testimony of CHRISTY PAYNE.

Mr. Dougherty: Mr. Payne.

Whereupon—

CHRISTY PAYNE called as a witness on behalf of the Colorado Interstate Gas Company, having been first duly sworn, deposes and says as follows:

Direct Examination.

By Mr. Dougherty:

Q. Will you state your name and address?

A. Christy Payne, 800 South Palm Avenue, Sarasota, Florida.

Q. What is your business today, Mr. Payne?

A. I haven't any business. I am retired.

Q. Since when did you reach that enviable state?

A. Under the retirement plan of the Standard Oil Company in force for employes, I retired August 1, 1935, after forty years service.

Q. Prior to that time, were you connected with Standard Oil Company, the New Jersey Corporation?

A. Yes, sir.

Q. And what was your official connection at the time of your retirement?

A. I was then—or just prior to the annual meeting of June 1935, I was a vice president, director and treasurer.

Q. Prior to assuming those offices, had you been connected with subsidiaries of the Standard Oil Company, the New Jersey Corporation?

A. Yes, sir.

Q. Were those generally natural gas subsidiaries?

A. Generally the natural gas subsidiaries, yes, sir.

Q. And I believe you said that at your retirement you had more than forty years of service?

A. That is right.

Q. Did you ever hear of the Colorado Interstate Gas Company?

A. Yes, sir. I believe I was its first president.

Q. At my request, have you prepared a statement concerning the early history and other facts about the forma-

tion, organization and character of business of that company?

A. I have.

Q. Will you read that statement into the record at the present time?

A. It is dated October 22, 1940.

Pardon me, off the record. Will I read this title?

A. No, just start in with the text; that is all you need.

A. From 1920 until July 1, 1933, I was in charge of the natural gas interests of Standard Oil Company, a New Jersey corporation—hereinafter referred to as "Standard Oil"—and was associated with Colorado Interstate Gas Company—hereinafter referred to as "Colorado Interstate"—from the beginning, being its first president.

Colorado Interstate Gas Company was incorporated under the laws of Delaware June 8, 1927. It was a part of a project organized for the purpose of selling in Colorado natural gas which would be produced in Texas in the gas field known as the Amarillo or Panhandle field.

As finally developed, Colorado Interstate constructed a pipe line from a location near Clayton, New Mexico, to the vicinity of Denver, with certain lateral lines extending from the main pipe line. I understand that a physical description of the line will be given by other witnesses.

At Clayton there is a connection with the pipe line of Canadian River Gas Company—hereinafter referred to as "Canadian River"—which company produces the gas and delivers it to Colorado Interstate at Clayton.

The possibility of Standard Oil participating in this natural gas pipe line enterprise was first brought to our attention in 1926 by officials of Southwestern Development Company.

Leases on large blocks of acreage in the Panhandle field, upon which approximately twenty gas wells had been drilled, were held by a subsidiary of Southwestern Development Company.

We were advised that Denver and other points in Colorado seemed to offer the best available markets to be

served from these gas reserves, and that there was considerable public agitation in the city of Denver looking toward the substitution of natural gas for the manufactured gas then being supplied consumers in that city.

Public Service Company of Colorado, a subsidiary of Cities Service Company, had distributed manufactured gas in Denver for a number of years. On February 8, 1927, a new franchise was granted Public Service Company by a majority vote of the qualified electors.

This franchise contained a provision looking toward the bringing of natural gas to Denver. Public Service Company was obligated to make a supply of natural gas available to the city if the Mayor and Council of the city, after investigation and upon competent engineering advice and taking into consideration all the economic factors involved, should determine that a natural gas supply for Denver was feasible.

A penalty of Fifty Thousand Dollars ($50,000.00) per year was provided for if Public Service Company defaulted in carrying out the terms of that provision.

This indicated to us that the City of Denver was earnestly seeking a natural gas supply for its citizens, and on the basis of that we actively carried on the work necessary to the development of the project.

During 1926, after preliminary negotiations with Southwestern Development Company, a tentative understanding had been reached on the purchase price to be paid for the leases, wells and gas reserves which were to constitute the gas supply. It was expected that the financing of the project would be undertaken by Standard Oil, and that Southwestern Development Company and Standard Oil each were to have an equal stock position in the company.

During 1926, some negotiations had been carried on with representatives of Public Service Company, but it was not until after the approval of the franchise by the voters of Denver that we were in position to conclude an agreement among the interested parties. This was done, and under date of April 5, 1927, an agreement was entered into by

Southwestern Development Company, Cities Service Company and Standard Oil Company, a New Jersey corporation.

A copy of this contract has been introduced as an exhibit in this proceeding, numbered Exhibit 1. This agreement of April 5, 1927, was the culmination of the negotiations which began in 1925 and were continued with considerable activity after February 8, 1927.

The terms were agreed upon only after a series of conferences at which various plans were considered and the viewpoints of all the parties were put forward and thoroughly discussed. Since Standard Oil was assuming the responsibility of putting up the money for the project, we exercised the utmost care and our best judgment in all of the matters under consideration, and the willingness of the company to proceed with this project depended entirely upon the basis agreed to by the parties.

The investigations which had been made at my request clearly disclosed that it was not economically possible to bring gas to Denver solely for the domestic and ordinary commercial business there available.

At Pueblo was a large steel plant of the Colorado Fuel & Iron Company offering the possibility to a large industrial load. It was necessary to obtain this business in competition with the fuel then being used, and both this load and the Denver load were indispensable to the project.

We expected to take on certain other business that our investigations indicated was there, including the Cities of Colorado Springs and Pueblo, and certain industrial customers. These additional industrial contracts were to be subject to the prior call of Denver on the gas reserves of the project.

During the summer of 1927 a number of conferences were held with the Mayor and other officials of the City of Denver. A letter proposal embodying the general principles under which gas would be sold to Public Service Company was written to that company under date of June 8, 1927, by Colorado Interstate and that formed the basis of the negotiations with the City officials.

This proposal provided that details were to be worked out in a contract to be prepared later. It was a matter of great public interest and intense application on the part of all parties.

The city had employed A. C. King, a consulting engineer, of Chicago, Illinois, to advise it on all factors of the matter, and Mr. King made an independent investigation and made a formal report dated August 10, 1927, on the project. I understand this report will be made a part of the record in this proceeding.

After many discussions and conferences with the representatives of the City of Denver the rate at which gas was to be sold to Public Service Company was agreed upon at forty cents per mcf for domestic gas.

An ordinance was passed by the City Council on September 14, 1927 making a formal declaration of the feasibility of bringing natural gas to Denver and fixing the rates which were to be charged by Public Service Company for gas distributed by it.

These rates were based upon the payment by Public Service Company of a gate rate of forty cents per mcf for domestic gas. The passage of this ordinance completed the action of the City with respect to the bringing of natural gas to Denver, and we then entered into the work of drafting a contract for the sale of gas and for the construction of the line.

The contract with Public Service Company was finally executed in June, 1928, although dated as of January 3, 1928. At this time Colorado Interstate had not been engaged in the gas business and was under no obligation to enter or carry on that business except upon terms and conditions satisfactory to it.

One of the matters that was given especial consideration by those interested in this project concerned the character of operation in which Colorado Interstate should engage. There was a group of small communities in eastern Colorado, such as Rocky Ford, La Junta and Las Animas which had no gas service of any character and there were certain other communities and enterprises that seemed to furnish available markets for natural gas. A decision had to be

made as to whether this company was to operate as a public utility engaging in the sale of natural gas generally to all customers, including domestic ones, or whether it would limit the character of its operations and deal only with selected customers and sell gas only under specially negotiated contracts.

After considering all aspects of this problem, it was the unanimous opinion of those interested that the pipe line company should not attempt to expand its business to that of a public service character, but it would make contracts for the sale of gas at prices agreed upon with its customers, and with only those customers which it felt it could supply at negotiated prices.

Our investigations made us believe that we could safely develop a gas supply for a period of twenty years and that the enterprise would be justified on a basis of forty cents per mcf gate rate for domestic gas, and the sale of gas to industries in competition with the fuel prices then in existence.

We did not want to assume the privileges or duties of a public service company which would entail obligations beyond those voluntarily assumed in our contracts.

Accordingly, when Colorado Interstate was organized, a special provision was inserted in its Certificate of Incorporation providing that the company was not to operate as a public utility and was to sell gas only by special contract.

The company never engaged in distributing gas generally to consumers, it made no filings of schedules with the Public Service Commission of Colorado, never advertised that it would sell gas to all who might apply, had no general schedule of rates, and made no sale of gas except pursuant to a special contract negotiated with each customer.

It never sought or obtained any franchise right or privilege from any governmental authority to engage in the sale of gas and did not construct its pipe line in any municipality. It never held itself out as being willing to sell generally to the public.

During the entire period that I was associated with the management of Colorado Interstate, every contract was separately negotiated with the customer and in every instance the considerations peculiar to that customer's business were considered and the contract of sale made in recognition of these special problems.

The company did not have the power of eminent domain and never exercised or attempted to exercise that power. All of its property was purchased after negotiation with the owner.

The financing of the cost of this enterprise was done through the issuance of $19,200,000.00 of bonds of Colorado Interstate, substantially all of which were acquired by Standard Oil, with the remainder being purchased by an individual, and in addition, $2,000,000.00 was paid by Standard Oil for the preferred and common stock which it received.

Colorado Interstate purchased $11,000,000.00 of bonds from Canadian River, which then acquired the leases, producing wells and other properties in Texas from the Amarillo Oil Company, and constructed all other facilities necessary to produce, gather and transport the gas to Clayton.

The price to be paid by Colorado Interstate to Canadian River for the gas purchased from it was to be the cost to Canadian River of owning, producing, compressing and transporting the gas to the delivery point at Clayton.

Cost was made the basis because it was recognized that profit from the enterprise should go to Colorado Interstate since that company had financed the entire venture, either directly or through purchase of bonds of Canadian River.

After the issuance of all securities, Colorado Interstate then had outstanding $19,200,000.00 of bonds, 20,000 shares of preferred stock and 1,250,000 shares of common stock. There was no public financing and the bonds were to be amortized over a period of twenty years.

Colorado Interstate was willing to bring gas to Denver as a private business venture and invest this money on the

basis of the contractual obligations assumed, provided there was a reasonable expectation that at the end of the twenty-year period the company would have been able to recover back all of the money invested with adequate earnings for that entire period.

The contracts for the sale of gas to Public Service Company and others were made upon this basis. The construction of this project was begun and the expenditures necessary were made only after the investigation report of Mr. King and the approval of the forty cent per mcf gate rate by him, and, after the approval by the City of Denver in the ordinance of September 14, 1927, of the King report and the forty cent rate.

Colorado Interstate relied upon this action by the City of Denver and the contract with Public Service Company was entered into only after such action by the City and in reliance thereon.

Except for the approval by the City of Denver and the subsequent contract with Public Service Company, the project would not have been undertaken and the money would not have been expended.

While the contract with Public Service Company was the principal one making this project feasible, of equal importance was the sale of gas to Colorado Fuel & Iron Company at Pueblo.

In addition to the contract with Public Service Company, we made a few contracts for the sale of much smaller quantities of gas to one municipally-owned plant and to other distributing companies serving other communities in Colorado.

These were private contracts, separately negotiated, and were made in order to assure the return of the capital investment so far as possible.

These contracts were with Pueblo Gas & Fuel Company, Arkansas Valley Natural Gas Company, Colorado-Wyoming Gas Company, Public Utilities Consolidated Corporation—now known as Citizens Utilities Company—and the City of Colorado Springs.

None of these contracts would have been possible except for the contract with Public Service Company for Denver.

Q. Mr. Payne, you referred to a proposal which was made by the Colorado Interstate to the Public Service Company of Colorado by letter under date of June 8, 1927.

I am going to hand you Exhibit 4 and ask you if that is a copy of that letter of proposal, Exhibit 4 being the exhibit of that number that has already been introduced in evidence.

A. Yes, that is a copy.

Q. All right, sir. You mentioned that you were in charge of the natural gas interests of the Standard until July 1, 1933; did you continue your connection with the Standard Company from that date until the date of the retirement which you have already described?

A. Yes.

Q. Who succeeded you in charge of the natural gas department after July 1, 1933?

A. Mr. Ralph W. Gallagher.

Mr. Dougherty: That is all the direct examination.

The Trial Examiner: The hearing will stand recessed for five minutes.

(Whereupon a short recess was taken.)

The Trial Examiner: We will come to order, gentlemen.

Mr. March: If it please the Examiner, we can prevent a great deal of unnecessary cross examination here by incorporating into this record the cross examination and examination of Mr. Payne before the Federal Trade Commission, involving certain matters involving the organization of the Colorado Interstate Gas Company and the financing of that company.

This testimony is found in Senate Document No. 92, Part 83, Seventieth Congress, first session. It is entitled "Utility Corporation's letter from the Chairman of Federal Trade Commission Transmitting in Response to Senate Resolution No. 83, Seventieth Congress, A Monthly Report

on the Electric Power and Gas Utilites Inquiry. Filed with the Secretary of the Senate, December 15, 1935."

Now, if it is agreeable to counsel, opposing counsel, we would like to offer in evidence the portions of this testimony of Mr. Payne which I will designate, and I now offer to be marked for identification, Federal Trade Commission, Volume No. 83.

I hand opposing counsel a copy. I wish to have it designated as Exhibit No.—what is the next exhibit number?

The Trial Examiner: 10 is the next exhibit.

Mr. March: Exhibit No. 10.

(The document referred to was marked for identification as "Exhibit No. 10.")

Mr. March: I wish to offer specifically from this record, testimony of Mr. Payne found on the following pages: Page 195 to 202.

Mr. Dougherty: Inclusive?

Mr. March: Inclusive.

Page 212 to 228, inclusive, and page 246 and 249.

The Trial Examiner: 246 to 249?

Mr. March: Yes, that is right.

The Trial Examiner: Inclusive?

Mr. March: Two pages there, the last designation, 246 and 249.

Mr. Dougherty: 246 and 249?

Mr. March: That is right.

That is my offer: Now, as to the relevancy of this, Mr. Examiner, this, as I stated, involves testimony relative to the organization of the Colorado Interstate Gas Company, certain transactions relative to the financing of that company, and the expenditure of some four hundred and some odd thousand dollars to secure the right of way into Denver—not the right of way, but the franchise rights and the service into Denver, Colorado, and Colorado Springs.

Also, page 246 and 249, that portion of the testimony chiefly involves testimony relative to the relationship between Standard Oil and Ford, Bacon & Davis, Incorporated, which was a company which constructed the pipe line for Colorado Interstate Gas Company, and was a service company for a period of years—I should say, operated the companies for a period of years.

Mr. Dougherty: We have no objection to it, designated from this volume as part of the examination of Mr. Payne in this proceeding.

Mr. March: May it please the Examiner, I offer these in evidence at this time.

The Trial Examiner: I believe you have made an offer prior to this.

Mr. March: I have marked them for identification. I now wish to offer this in evidence.

The Trial Examiner: I think the Examiner explained, Mr. March, that no ruling will be made by the Examiner at this time on the offer of evidence. Ruling will be made at the time the hearing is convened in Denver.

Mr. March: Well, this is in lieu, you understand, of our cross examination, a large portion of our cross examination of Mr. Payne on this deposition.

It is really a part of this deposition, so I see no reason why the Examiner should not rule on this at this time.

The Trial Examiner: As I understand, Mr. Dougherty raises no objection to the offer made by Commission's counsel; however, the Examiner, at this time, does not feel that he is in a position to rule on these matters before the official designation of the Examiner to preside at these hearings has been made.

Mr. March: That is all right, Mr. Examiner. We will only ask a few questions.

Mr. Dougherty: I am in doubt as to 247 and 248. I don't know whether you said 246 to and including 249.

Mr. March: It is 246 to 249, pardon me.

Mr. Dougherty: You include 247 and 248? That is that I wasn't clear on.

The Trial Examiner: Do you include 247 and 248, Mr. March? I understand—

Mr. March: Yes, sir, I am including those two pages, yes, sir. I am including them. It is from page 246 to 249, inclusive.

Mr. Dougherty: Now, I understand it is only the pages designated in this volume that are being—

Mr. March: That is right. Just those specific pages. That is all.

Shall I continue, Mr. Examiner?

The Trial Examiner: You may continue, Mr. March.

Cross Examination.

By Mr. March:

Q. Mr. Payne, how many years did you work for the Standard Oil Company?

A. Forty.

Q. That was the Standard Oil Company (New Jersey)?

A. Standard Oil Company, New Jersey, and its subsidiaries.

Q. By whom were you employed?

A. I was not a direct employe of the Standard Oil Company (New Jersey) until June, 1927, when I became a director. During the prior employment, it was with subsidiaries.

Q. What subsidiaries?

A. A number of natural gas companies operating in Ohio, Pennsylvania and West Virginia and some later enterprises—Louisiana.

Q. You don't recall their names, do you?

A. Interstate Natural Gas Company and this Denver project involved in this case and a company operating from northern Pennsylvania north into New York State.

There were some twelve or fifteen companies.

Q. Were you ever employed directly by any members of the Rockefeller family?

A. No.

Q. They had nothing to do with employing you?

A. They had nothing to do with my employment.

Q. Did you work under their supervision?

A. Never had any supervision from any of the Rockefellers.

Q. In 1927, the Colorado Interstate Gas Company was organized, as I understand; on that date, who was your immediate superior?

A. I was elected a director of the Standard Oil Company in June, 1927. I was a member of the Board of Directors at that time.

Q. You were, likewise, an officer, were you not?

A. I was not an officer at that time, no. The president of the company was Mr— Walter C. Teagle was either president or Chairman or Mr. A. C. Bedford was Chairman or president. Those two offices were held by those two men.

Q. You drew your salary from the Standard Oil Company (New Jersey)?

A. No, I drew a portion of it. The balance was paid by the natural gas companies of which I was an officer.

Q. That was in 1927?

A. That is right. That was the first time the Standard Oil Company had paid me was when I was elected a director in June 1927.

Q. Prior to that time you had received compensation from the subsidiary companies?

A. From the subsidiary companies.

Q. To whom did you feel that you were responsible to report? Who did you consider your superior in the organization?

A. Well, of course, my position was sort of a liaison officer between these subsidiaries and the Board of the Standard Oil Company, and I frequently talked with Mr. Hunt, the Treasurer of the Standard Oil Company, and Mr. Teagle, Mr. Jones, vice president, Mr. Bedford.

Q. Who directed your activities in the organization of the Colorado Interstate Gas Company?

A. Well, my conferences were chiefly with Mr. George H. Jones until he died in November 1928—I believe I have made a mistake—I believe George H. Jones was Chairman

of the Board, and Mr. Bedford died about or just prior to this time.

Mr. Teagle was president and Mr. Jones was Chairman of the Board. My conferences were usually with George H. Jones.

Q. You were in complete charge of the organization of Colorado Interstate Gas Company, so far as Standard Oil Company (N. J.) was concerned?

A. I was its representative, yes.

Q. Who was the representative of Southwestern Development Company?

A. The Southwestern Development Company was represented by W. S. Fitzpatrick, Nelson Moody and A. R. Jones of Kansas City.

Q. Who did you negotiate with, with these three individuals?

A. With those three gentlemen?

Q. Yes.

A. Mostly with Mr. Fitzpatrick.

Q. Who did Mr. Fitzpatrick represent? Did he represent the Standard Oil interests?

A. No. Mr. Fitzpatrick never had any employment with the Standard Oil Company (New Jersey).

Q. (N. J.)?

A. That is right.

Q. He might have had some connection with the Standard Oil Company (New Jersey) though?

A. No connection whatever.

Q. Do you know that he was not connected in any way?

A. I know that he was not connected in any way.

Q. Do you know that he was not connected in any way with the Rockefeller family?

A. I don't think he was connected with the Rockefeller family in any respect.

Q. What leads you to believe that?

A. Well, he was an officer of Prairie Oil & Gas Company, and I think the Prairie Pipeline Company, and that was his business, and his activity was with those companies.

Q. This Prairie Oil & Gas Company—you wouldn't say the Rockefellers didn't have any interest in that, would you?

A. I am not sure whether Mr. Rockefeller, Sr., had any stock in that company at this time or not. He had disposed of all of his stock in the Standard Oil (New Jersey) at this time.

He had conveyed it to those foundations, charitable organizations.

Q. Since you mention that, these charitable organizations which have been set up by Senior Rockefeller, those organizations held substantial stock in the Standard Oil (New Jersey) in 1927, did they not?

A. I think they had quite a few shares, yes.

Q. Probably the largest block of stock; common stock?

A. Well, Mr. March, there are three or four of those foundations. If you are grouping them all together, they might have had quite a block.

Q. When you were a director of the Standard Oil Company (New Jersey), did you ever see the stockholders list?

A. Oh, I have, yes, many times.

Q. You can state that the Rockefellers had a substantial stock interest? When I say "the Rockefellers," I mean these foundations and charitable institutions and other trusts set up by Senior Rockefeller, had a substantial interest in the Standard Oil Company (New Jersey).

A. I think that is a correct statement.

Q. And you are not prepared to state that they had a substantial interest in Prairie Oil & Gas Company?

A. What I say is, I don't know whether the foundations, the charity foundations, had received stock from Mr. Rockefeller or whether Mr. Rockefeller owned stock, but, as I understand it, after the dissolution which occurred in 1911, there were many changes in the ownership of the stock of the individual companies.

Some of them, the Rockefellers held substantial interests, and others they sold their interest and I am not aware of the facts.

Q. In other words, you wouldn't be prepared to say one way or the other, whether or not the Rockefellers had any interest whatsoever in Prairie Oil & Gas Company from 1927 on to your retirement?

A. I couldn't say; truly, I couldn't say.

Q. You have no knowledge?

A. No.

Q. What was the relationship between the organization of Colorado Interstate Gas Company and Canadian River Gas Company?

A. Only one of contract.

Q. Just of contract?

A. That is all.

Q. Do you know, in 1927, what company was the *the* largest stockholder in the Southwestern Development which controlled the Canadian River Gas Company?

A. I think what I call the Bert Jones Company, the Mission Company, of Kansas City, owned 49 per cent and the 51 per cent was owned by the Producers & Refiners Corporation.

Q. Producers & Refiners Corporation?

A. Yes.

Q. And—

A. (Interposing) May I add that I think the Prairie Oil & Gas Company controlled the Producers & Refiners Corporation?

Q. That is satisfactory.

A. I don't know what proportion they owned.

Q. They controlled it?

A. Yes.

Q. Mr. Payne, in regard to Exhibit No. 4, I note that this original tender of offer, that is, the proposal of June 8, 1927, by Canadian River Gas Company and Colorado Interstate Gas Company, to Public Service Company of Colorado for the sale of gas to Denver, was made on the stationery of the Prairie Oil & Gas Company and the name of W. S. Fitzpatrick appears as Chairman of the Board of Directors of Prairie Oil & Gas Company.

Can you tell me why that offer was made in that form? It was not made to the Prairie Oil & Gas Company, of course.

A. It was made by Mr. Fitzpatrick, Chairman of the Board of Directors, oh, for dignity, I guess. I don't know any other reason.

Q. You wouldn't say that it was made because Prairie Oil & Gas Company represented pretty well common interest?

A. No, I think it was simply, "you sign it or I sign it."

Q. I believe Mr. Fitzpatrick was Chairman of the Board while you were president and director of the Colorado Interstate Gas Company, was he not?

A. That is right.

Q. Now, Mr. Payne, when you became an officer of the Colorado Interstate Gas Company, did you draw a salary from that company?

A. I think that a portion of my time was charged to the Colorado Interstate Gas Company and paid by that company, yes, that is correct.

Mr. Moody and Mr. Fitzpatrick did not draw any salary from the Colorado Interstate Gas Company.

Q. Where did they draw their salaries from?

A. They were both employees of the Prairie Oil & Gas Company.

Q. How many members of your office were officers or directors, originally, of the Colorado Interstate Gas Company? Can you enumerate them?

A. Oh, I think Mr. R. W. Gallagher, Mr. H. C Cooper, Mr. John B. Luse, and myself. I think there were four members. No, I think there were only three members, Mr. Gallagher, Mr. Cooper and myself.

Q. Three officers?

A. Three directors.

Q. Was the staff of the company recruited from your office pretty well at the beginning?

A. Yes, from my office or from the operating staff of subsidiaries—Pittsburgh and Cleveland.

Q. Do you recall how many members of the Board of Directors there were originally for the Colorado Interstate Gas Compny?

A. Seven.

Q. Seven?

A. Yes, sir.

Q. And you had three out of seven?

A. Three out of Seven.

Q. While we are on that, you mentioned Mr. Gallagher. I am interested in Mr. Herbert R. Gallagher. Who was he?

A. He had nothing to do with any of these enterprises

I think he was associated with the Consolidated Oil Company.

Q. He had no connection with you?

A. That is the Sinclair—known as the Sinclair Oil Company.

Q. He had nothing to do with you?

A. Not at the time we are talking about—during the organization and commencement of this project. Later, as a member of the Consolidated Oil Company corporation he may have had some interest when that company succeeded the Prairie in owning the Southwestern stock.

Now, that is rather indefinite, isn't it, but so long as I had anything to do with the Colorado Interstate Gas Company, Herbert Gallagher had nothing to do with it, no relation whatever.

The fact I am talking about occurred in more recent years.

Q. Now, I want to ask you—I note here in your written statement—I will read it—it is on page 7. You just read it in the record.

I note the following statement: "Financing of the cost of this enterprise was done through the issuance of $19,200,000 bonds of Colorado Interstate, substantially all of which were acquired by Standard Oil Company, and the remainder being purchased by an individual."

I want to know who that individual was?

A. I think that was John D. Rockefeller, Jr.

Q. You say you think. Do you know if is John D. Rockefeller, Jr.?

A. Well, the subscription came through his office, through his representative—I think it was John D. Rockefeller, Jr.

Q. That subscription—who contacted you in regard to that subscription?

A. I think I went to see Mr. Rockefeller's head man who had an office at 26 Broadway, and I think Mr. S. B. Hunt, who was then a treasurer of the Standard Oil Company, went with me.

Q. He was the head man, Rockefeller's main man?

A. Did you ask his name?

Q. You say Mr. Hunt?

A. No, Mr. Hunt was treasurer of the Standard Oil Company.

Q. But whom did you go to?

A. We went to see Mr. Cutler.

Q. Cutler?

A. Cutler.

Q. His full name is Bernard—

A. (interposing) No; Bertram G. isn't it?

Q. Bertram G.?

A. Bertram G. Cutler, I believe.

The Trial Examiner: Is it Cutlet?

The Witness: C-u-t-l-e-r.

The Trial Examiner: Oh, Cutler.

By Mr. March:

Q. Who told you to go and see him?

A. I think Mr. Hunt said we had better see if Mr. Cutler wouldn't like to buy some of the bonds of this company.

Q. You never made any reports to Mr. Cutler in any way?

A. What is that question?

Q. I say, you never made any reports to Mr. Cutler?

A. No.

Q. You never reported to him at all about your negotiations and dealings with Colorado Interstate?

A. No, not at all.

Q. Your main reports were made to the Chairman of the Board of Directors?

A. That is correct.

Q. That was Mr. Jones?

A. That was Mr. George H. Jones.

Q. Now, I want to ask you a question about the Colorado Fuel & Iron Company?

I believe it was necessary, as I understand it, for you to secure the business of Colorado Fuel & Iron Company, before this project could be economically feasible?

A. That is correct.

Q. Is that correct?

A. Yes, sir.

Q. As I understand it, you were in a position to secure that business?

A. We probably had a better access to that company than any other natural gas operator, yes, sir.

Q. That was due to the fact that the Rockefellers had substantial stockholdings in Colorado Fuel & Iron Company?

A. I think Mr. John D. Rockefeller, Jr., did, yes, sir, and he gave us the—his office gave us the letters of introduction to the officials of the Colorado Fuel & Iron.

Q. Do you recall who in his office gave you the letters of introduction?

A. I think it was Mr. Cutler.

Q. I want to ask you a question about—you will pardon me if I seem to be skipping around here, Mr. Payne, but I am just supplementing some of the matters already in evidence in this Federal Trade Commission report—I mean it has been tendered.

I want to ask you a question about the relationship between Ford, Bacon & Davis, Incorporated, and Standard Oil Company (N. J.) What was the corporate relationship between the Standard Oil Company (N. J.) and Ford, Bacon & Davis?

A. There was no corporate relationship. That is to say, the Standard owned no stock in Ford, Bacon & Davis and Ford, Bacon & Davis was not interested in Standard Oil Company.

Q. You are positive of that?

A. I am positive of that, yes, sir.

Q. You examined the stockholders list of Ford, Bacon & Davis?

A. No, but I know that the Standard Oil Company owns no stock in Ford, Bacon & Davis, Incorporated, and I am quite equally sure that the firm of engineers had no stock of the Standard Oil Company. They had other uses for their capital.

Q. Do you know whether or not any members of the Rockefeller family or any trusts that you set up during the period you were connected with the Standard Oil Company (N. J.) had any interest in Ford, Bacon & Davis, Incorporated?

A. I am sure there was no relationship between any of these interests. Ford, Bacon & Davis was entirely owned by the engineers who carried on the business of the firm. It was just an engineering firm like any other nationally known engineering firm.

Q. Who did you understand to be in control of Ford, Bacon & Davis—what person?

A. Well, George W. Bacon, I think, was president; then his partners—it was originally a partnership; when that was incorporated there were Messrs. Von Phul, Uebelacher, Rhodes, Hill and Black—there were two Blacks, one in charge of the California office and one in charge of the New Orleans office. Those were the men who constituted Ford, Bacon & Davis, and owned the company.

Q. None of these men were ever connected in any way, directly or indirectly, with Standard Oil Company (N. J.)?

A. None of them.

Q. But you have not seen the stockholders list and you did not see the stockholders list of Ford, Bacon & Davis, Incorporated?

A. No, I never did.

Q. So you would not be prepared to say as to whether or not the members of the Rockefeller family, or voting trusts set up by them, held substantial stocks of Ford, Bacon & Davis?

A. I am sure of that, because I talked with members of Ford, Bacon & Davis and I knew the constitution of their organization.

Q. That would eliminate any possibility of the Rockefellers owning that stock?

A. I am sure of that.

Q. As I understand it, Ford, Bacon & Davis did practically all of the gas engineering work for the Standard Oil Company (N. J.).

A. I will tell you how our connection with them took place. While I was in Pittsburgh, working for the Peoples Natural Gas Company, I overheard Mr. Uebelacher testify for the Philadelphia Gas Company and I was so impressed with his testimony and his ability to handle himself in matters of that kind that when we had our first rate case I wanted Mr. Uebelacher of Ford, Bacon & Davis to represent us. That was the beginning of our relationship with Ford, Bacon & Davis.

Q. What year was that?
A. Oh, that was somewhere in 1919 or 1918.
Q. And you were responsible for the employment
A. (Interposing) I think so, originally, yes.
Q. And they were your exclusive engineers?
A. They were not our exclusive engineers.

(Vol. IV., pp. 506-538.)

* * * * * *

In April, 1927, there was payment to Cities Service Company of $26,750.00 by the Colorado Interstate Gas Company for services of its engineers and employees in connection with the rate ordinance and other matters, together with $1750.00 interest, which is included in the $26,750.00.

Now, what I want to ask you: Do you recall that transaction, Mr. Payne?

A. Yes
Q. Now, what I want to ask you is what those engineers did.
A. Mr. March, in 1926, the parties promoting this enterprise agreed that if any of the parties advanced money to further the enterprise prior to the time when the corporation might be completed and the financial set-up arranged, they should be reimbursed their advances plus 6 per cent interest, and what you are referring to is the payment made to Cities Service Company for work done in advance of the final set-up of the project.

(Vol. IV., pp. 542.)

* * * * *

Mr. Lange: I have one or two questions to ask Mr. Payne.

By Mr. Lange:

Q. Mr. Payne, I understand that you are connected with the enterprise of bringing gas from the Amarillo field to Denver from its inception. You stated in your—you made the statement in this statement in the record that you were connected with the original negotiations in 1927, isn't that correct?
A. And '26.

Q. And '26?

A. Yes.

Q. Even as far back as 1926?

A. Yes.

Q. When the project was first discussed?

A. Yes.

Q. At that time, artificial gas was being served in Denver?

A. Yes.

Q. In the City of Denver?

A. Yes.

Q. Who distributed that gas in Denver?

A. Public Service Company of Colorado.

Q. And was there artificial gas being distributed in Colorado Springs?

A. Yes.

Q. Who distributed it there?

A. I think a municipally owned plant. What do they call that?—Colorado Springs Municipal Gas Plant or some such name as that. It was municipally owned.

Q. And was there also artificial gas being distributed in Pueblo, Colorado?

A. Distributed by the Pueblo Gas & Fuel Company.

Q. Pueblo Gas & Fuel Company?

A. Yes.

Q. And when this projected enterprise was discussed, it was contemplated, of course, to substitute natural gas for the artificial gas, wasn't it?

A. Yes.

Q. And I believe you make the reference at the end of your statement to the effect that, principally, because of the proposed delivery of natural gas for distribution in Denver, that the project was finally constructed, that if you hadn't had the contract with Public Service Company of Colorado for distribution at Denver, the project would not have been constructed?

A. That is correct. There were two essential customers—the City of Denver and the steel plant at Pueblo. Without either one of those, the project wouldn't have been feasible.

Q. And that delivery at Denver was, of course, at the

Denver city gate for distribution in the City of Denver for ultimate public consumption?

A. Yes; certainly.

Q. In other words, domestic, commercial, as well as industrial were to be supplied in the City of Denver?

A. By the distributing company, the Public Service Company of Colorado, yes, sir.

Q. And the same would be followed in Colorado Springs; they were to distribute that natural gas in Colorado Springs, too, after your company had sold it at the city gate?

A. That is correct.

Q. Now, how long after that were other sales made off the line for domestic consumption—for ultimate domestic consumption?

A. Well, I think, within a year, the contract was made for sale of gas to the Arkansas Valley Gas Company.

Q. And where did they distribute?

A. They distributed in Rocky Ford, La Junta, Las Animas.

Q. For domestic and commercial use there?

A. That is right.

Q. Was there any additional contract entered into later for domestic consumption?

A. Well, there was the contract for delivery of gas, wholesale, to the line that went north from Denver toward Cheyenne.

Q. Colorado-Wyoming Gas Company?

A. Colorado-Wyoming Gas Company, that is correct.

Q. And with the ultimate object in view of that company either distributing that gas, itself, or selling it to distributing companies who would, in turn, distribute to the public?

A. I think that is the statement of the situation, yes, sir.

Q. And when the line was subsequently built, the transmission line from the Amarillo field to Denver, natural gas was transported through it and sold at the various gates along the line to these several distributing companies for distribution?

A. That is correct.

By Mr. March:

Q. Just one other question I have in mind. Did you

ever hold any stock in the Standard Oil Company (New Jersey)?

A. What is that question?

Q. Did you ever, personally, own any stock in the Standard Oil Company (New Jersey)?

A. Yes. Most of what I have was secured through what they call the employees' stock plan.

Q. Is that common stock?

A. That is common stock, yes. The employees pay so much a month into this plan and the company puts in a contribution.

Q. You say that was a substantial amount of stock?

A. No. I would say not substantial. I wish it was more substantial than it is.

Q. Under 10,000 shares?

A. Under 2000 shares.

Q. Under 2000 shares?

A. Oh, yes.

Q. You said you were elected to the Board of Directors of the Standard Oil Company (New Jersey).

A. The parent company.

Q. The parent, New Jersey, that is right. In 1927?

A. 1927.

Q. Just shortly before the negotiations relative to organization of Colorado Interstate Gas Company?

A. Well, it was during the negotiations which began in 1926.

Q. What stock interest did you represent on the Board?

A. I was there merely because of my experience in natural gas operation.

Q. Yes, I know, but they had an election and elected you as a member of the Board of Directors. What stockholders were responsible for electing you?

A. I couldn't tell you that. There were none directly responsible for me or back of me.

Q. Who contacted you relative to being a director?

A. The officers of the company, members of the Board of Directors.

Q. Mr. Jones?

A. They mange the company.

Q. In other words, the company was managed—had a self-perpetuating Board of Directors?

A. No. Of course, they are elected annually and I suppose I was asked to be a director by the fellow members of the Board and then proxies were secured from the stockholders generally and a sufficient majority secured to elect this Board.

Q. Yes. In other words, you were elected on the recommendation of the management?

A. That is correct.

Q. Whom did you consider the management to be?

A. The Board of Directors of the Standard Oil Company managed the company solely.

Q. Where were the offices of Colorado Interstate Gas Company?

A. In New York and Colorado Springs.

Q. And where were the offices of Canadian River Gas Company?

A. Canadian River Gas Company?

Q. Were they in the same—

A. (Interposing) Independence, Kansas.

Q. They weren't in the same building that Colorado Interstate Gas Company was?

A. No. Independence, Kansas.

Q. In whose offices were the offices of Colorado Interstate Gas Company housed?

A. Together with all the other natural gas companies. We rented space from the owners of the building.

Q. They were housed right there with the rest of the Standard crowd?

A. That is right.

Q. Was the Prairie Oil & Gas Company housed in the same building?

A. No.

Q. Was the Southwestern Development Company housed in the same building?

A. No, the offices of those last two companies were in Independence.

Mr. March: That is all.

Mr. Lange: No further questions.

(Vol. IV., pp. 543-549.)

* * * * *

Q. With respect to your election to the Board of Directors, did you consider that you represented all the stockholders after you were elected?

A. I never represented any block of stockholders or any pressure group, no. I represented all the stockholders.

Q. As a matter of fact, Mr. Payne, at that time, and for a number of years preceding thereto, did not the Board of Directors of Standard Oil Company (N. J.) consist of men who devoted all their time either to the affairs of that company or its subsidiaries?

A. All of the directors of the company during my knowledge of Standard Oil Company have been specialists in some line of the company's work.

Q. And devoted all—

A. (Interposing) And active in the employment in that work, yes.

Q. And they—

A. (Interposing) They are not bankers or outside capitalists. They are all men active in the specific work of the company.

Q. And, generally, is it not so that they reached a position of a director after a number of years of service in lower capacities?

A. That has always been the case.

Q. In various fields?

A. That has always been the case.

Mr. Dougherty: That is all the questions I have to ask, Mr. Payne.

The Witness: Could I change my answer? It has always been the case in my memory.

Mr. Dougherty: That is all I have to ask, Mr. Payne.

I would like to introduce in evidence from Exhibit 10, which has already been offered by counsel for the Commission, the testimony of Arthur K. Lee, which relates to the question of the acquisition of rights to Colorado Springs.

That testimony commences right at the bottom of page 359 and continues down a little better than half-way of page 372. That bears on some of the questions that Mr. March asked Mr. Payne about payment and some question about the commission about this firm named Dunham & Pratt. It is explanatory of that.

Mr. March: No objection to that offer. May I ask you one final question about Consolidated Oil Corporation?

Recross Examination.

By Mr. March:

Q. As I understand, the property of Prairie Oil & Gas Company were merged into Consolidated Oil Corporation or acquired by Consolidated Oil Corporation?

A. Well, at some time something like that happened. Whether it was a merger or purchase of assets, I don't know.

Q. Do you know anything at all about the stockholders of Consolidated Oil Corporation or, did you know anything at all about the stockholders—

Mr. March: Strike that "did you know."

By Mr. March:

Q. Do you recall anything at all regarding who the stockholders of Consolidated Oil Corporation were from 1932 until your retirement from Standard Oil Company (New Jersey)?

A. Well, one of the companies that went into the Consolidated Oil Company was the Sinclair Oil Company.

Q. Yes, I believe you stated a while ago that Sinclair had a substantial interest in Consolidated Oil Corporation.

A. I assume so.

Q. You assume that?

A. It is common report, yes.

Q. You don't know? You have no first-hand knowledge?

A. No, I have no first-hand knowledge. It is common report.

Q. Do you have any first-hand knowledge as to who any of the other stockholders were?

A No, I have no knowledge as to that.

Q. Then, one final question here: Would you say that, as a general rule during your service as a Director of Standard Oil Company (N. J.), that you observed that most, if not all, of the Directors of Standard Oil Company (N. J.) were on the payroll of that company or they were employees of the company in some capacity, or subsidiaries of the company?

A. That is true. They were employees, had their regular positions and activities and were paid. I believe there is one man named Jennings who had been active as an employee, but was kept on as a Director one or two years after his retirement. I think that is the only exception.

(Vol. IV, pp. 551-554-A.)

CHRISTY PAYNE, a witness called by Colorado Interstate Gas Company, having been duly sworn, was examined and testified as follows:

Direct Examination.

By Mr. Dougherty:

Q. Mr. Payne, you are the same Christy Payne who testified in depositions in this proceeding on October 22, 1940, here in Washington?

A. Yes.

Q. And I believe you there gave testimony concerning the formation and origin of this natural gas project involved in the Canadian River Gas Company and Colorado Interstate Company?

A. Yes.

Q. Directing your attention specifically to the leases and wells, that were originally acquired by Canadian River Gas Company from Amarillo Oil Company, will you tell us the narrative as to how the price of $5,000,000.00 was arrived at in the early negotiations that took place and which led up to the making of this project agreement in April, 1927, which has been introduced as Exhibit 1 in this case?

A. I will have to begin with the time when my attention was first called to this Amarillo Gas Field.

Q. I might say, Mr. Payne, you do not need to limit yourself too closely to that. Give us such additional facts as are necessary for a complete background of the story.

A. Early in June, 1926, Mr. Teagle came back from an oil meeting in Tulsa and suggested to me that I look up the facts with respect to the Amarillo Gas Field, that he had talked about that field with Mr. Fitzpatrick when he was out there.

Later in the same month, Mr. Fitzpatrick came to my office in New York. He had been talking with Mr. Teagle and I believe their conclusion had been that if the field justified it and there was a market, the Standard Oil Company would be invited to participate on a fifty-fifty basis with Mr. Fitzpatrick's Company, the Southwestern Development Company.

It was suggested that I send men out to investigate the Amarillo field and the possible markets so it was arranged that Mr. H. C. Cooper, our chief engineer in Pittsburg and Mr. R. W. Gallagher who was president of East Ohio Gas Company and Ralph E. Davis, an appraisal gas engineer, should go to Amarillo, to investigate the field there and the possible markets and make a report. These men went out about the first of July, 1926 and in a week or ten days they returned with reports, both of the condition of the field, the wells and production and an investigation of potential markets. They eliminated the Kansas City Market and felt that a line up through Colorado to Denver was a feasible project.

These reports were then shown to Mr. Fitzpatrick in July and with Mr. Fitzpatrick, Mr. N. K. Moody and Mr. A. R. Jones came to New York to discuss what then might be done. Mr. Jones was president of the Mission Oil Company which owned 49% of the Southwestern Development Company.

Our first approach to the project, after concluding that it was a feasible project, was that the new project would buy all of the properties of the Amarillo Oil Company, the Panhandle Pipe Line Company which was a connecting link between the field and Amarillo and the gas distributing plant of the Amarillo Gas Company in Amarillo.

As I recall, we made a proposition for the purchase of all those properties and it was given consideration by these three men. That proposition was rejected. The reason they gave was that they had some plans about selling gas further south in Texas and that the properties in and running to Amarillo were important for that extended project. Then we made a proposition for the purchase of the wells and gas leases.

The first proposition was for the payment of $1,250,000.00 in cash and the value of stock of $750,000.00, a total of $2,000,000.00. This proposition was considered by these men and rejected. Then we proposed a purchase of gas in the field with a 50-50 arrangement as to the ownership of stock. That proposition was rejected as not satisfactory to these men. Their argument was that they had some bonds outstanding and I don't recollect whether they were bonds of the Amarillo Gas Company or the Amarillo Oil Company or the Southwestern Development Company, perhaps bonds and notes of more than one of those companies and they were in default. Their attitude was that they must have a substantial payment in cash for the value of the properties. They had been talking first about $15,000,000.00 and then $10,000,000.00 and then $7,000,000.00 and there was dickering back and forth.

I was away during September and Mr. Gallagher carried on some further negotiations with these men, most of the time with Mr. Moody and Mr. Fitzpatrick, but Mr. Jones came on from Kansas City when there was any real proposition to consider. Mr. Gallagher reached a figure of paying $4,000,000.00 in cash for the gas leases and wells and in his proposal, as I recall, the Southwestern Development Company was to buy an equal amount of stock—no, in Mr. Gallagher's proposal, the Standard Oil Company was to buy $2,000,000.00 preferred stock and the common stock was to be divided. I think Mr. Fitzpatrick appealed to Mr. Teagle who was away on an inspection trip along about the first of October and all Mr. Teagle had to suggest was that $5,000,000.00 in bonds be paid to the Southwestern Development Company and $1,000,000.00 in cash in addition which the Southwestern Development Company was to use to buy stock in the project. That suggestion did not meet with the approval and was abandoned.

When I returned about the first of October, Mr. Fitzpatrick and Mr. Moody and Mr. Jones came to New York and they then insisted upon a payment of $5,000,000.00 in cash for the wells and the leases and half of the issue of preferred stock and half of the issue of common stock and for the stock, Southwestern Development Company was to pay nothing. Mr. Gallagher and I realized that that seemed

to be the end of the alley so far as concessions on the part of Southwestern Development Company was concerned and as Mr. Teagle was away, we recommended to Mr. George H. Jones who was chairman of the board of Standard Oil Company this was as far as we could go in our negotiations and in our judgment, it should be accepted and Mr. Jones approved our recommendation.

Q. Then that resulted in the agreement between representatives of Southwestern Development Company and between you and Mr. Gaffagher representing the Standard Oil Company of New Jersey, that in this project, there would be the $5,000,000.00 in cash paid for the leases and wells of the Amarillo Company and, in addition, there would be this stock with an equal interest of Standard Oil Company, I think you said 50%?

A. That is correct. That was in October and that basis remained throughout the rest of the negotiations and the organization.

In the meantime, the corporate forms had to be changed from the setup that we were making because counsel of Standard Oil Company, in conferences with the Humble Oil and Refining Company decided Standard Oil Company could not own any interest in a company which owned property in Texas and that caused the change from our original plan or program.

Q. At the time, however, when these negotiations were carried on, you were thinking in terms of one project?

A. We were thinking in terms of one project.

Q. Now, that started, I believe you said, in June, 1926, and continued through until October of the same year, that series of negotiations?

A. I think the negotiations began after the reports came in in the second week in July and continued until October.

Q. Did you have a number of conferences during that period with representatives of Southwestern Development Company?

A. Many conferences, as I said, before, chiefly with Mr Moody and Mr. Fitzpatrick but whenever there was a proposition to be seriously considered, they always brought in Mr. Jones from Kansas City.

Q. Now, you started out with your first offer, Mr. Payne, I think you said of about $1,250,000 with $750,000.00 in stock. What were the motives or impelling motives or reasons that existed for raising your offer or your proposal until, finally, you agreed on the one that was the basis of the contract?

A. In the reports of the gas reserves made by Mr. Davis and Mr. Gallagher and Mr. Cooper, there was a considerable difference of opinion about the available gas and the acreage. Mr. Davis felt that there were 165,000 acres of proven territory.

Q. That is in the Canadian River area?

A. That is in the Canadian River area then owned by the Amarillo Oil Company in those six counties of the Panhandle field. There weren't many wells drilled in that area some 20 or 21, or 22 wells and from the data available, it was a little difficult to accurately estimate reserves. Mr. Davis thought that the reserves might run as high—

Mr. March: (Interposing) I object to that question unless they bring Mr. Davis up and he testifies. That is just a way of getting the reserve in the record without having the witness here. What Mr. Davis thought is all right if they want to bring him in but they should have brought him in Denver. I object to the question.

Trial Examiner: I think there is some merit to the objection raised by Commission's counsel. If Mr. Payne, Mr. Dougherty, would confine himself more to the history of these transactions rather than endeavor to go into the detail of the estimates made by Mr. Davis—

Mr. Dougherty: (Interposing) Of course, that is a history. I think the witness could say on the basis of estimates made by Mr. Davis he did certain things. That is what we have got here, Mr. Examiner, a contention by the Federal Power Commission that the $5,000,000.00 paid for these leases or at least that part of it not represented by wells should not be allowed, something like $3,100,000.00.

Any figure that Mr. Payne would give here as to what Mr. Davis said, I would not urge that be considered as evidence of the fact but merely as the basis upon which he arrived at various dollar figures which were proposed in these negotiations.

Mr. March: I object to the testimony of the amount of reserves Mr. Davis said was there. Mr. Payne was here on the stand when the hearing began. There has been an adequate opportunity for any sort of testimony to be brought in either through Mr. Davis or other witnesses. As I recall, I interrogated many witnesses and attempted to find out the estimate of reserves. I object to reopening that testimony at this time.

Mr. Dougherty: That isn't what I'm doing, Mr. March. When we started off with these depositions, there was no contention on anybody's part, that I knew of then, that the $5,000,000.00 would not be accepted as the original cost of these leases so there was no reason why I should anticipate some contention of yours and go into it in detail.

Now, since we have had these hearings, you have made those contentions about these leases and, therefore, what I am doing is merely showing the history of the negotiations. I am not, and I again affirm it, I am not trying to put in Mr. Davis' estimates of reserves as having any bearing on what the reserves of this field were or are. In the first place, it was back in 1926 and that is not of any pertinency with respect to the reserves of 1939. I do not care about so many cubic feet per acre but it is a basis of negotiation in arriving at the dollar value.

Trial Examiner: I think if Mr. Payne would answer in the manner suggested by you, Mr. Dougherty, it would not be objectionable.

Mr Dougherty: The Examiner sees my point. After all, what Ralph Davis said in 1926 is not evidence of what he might say in 1939 or what anybody else might say.

Trial Examiner: I appreciate that. I think Mr. Payne should refrain, at least from giving definite estimates in the manner in which he started out to do and I think perhaps if you will go along with Mr. Dougherty's suggestion, Mr. Payne, it will be perfectly all right.

The Witness: May I say that during the summer of 1926, when estimates by some parties were low and others were high, we came more and more to the conclusion that the field was very much richer than we first thought it was.

Our feeling was that, owing to the amount of gas being wasted through oil wells in adjoining territory in Hutchinson and Carson Counties that you had to take that seriously into consideration in estimating the amount of gas that might ultimately recovered by more wells drilled through the summer, better acquaintance with conditions there proved to us that the field was more valuable than at first glance which were very conservative at first.

By Mr. Dougherty:

Q. Were you in the position of making a trade with these people as to the dollars that would be paid for these leases and wells which would go into the cost of the project?

A. Certainly. My attitude and the attitude of Mr. Gallagher was that we wanted to make the pipe line project a financial success and an honorable credit. It was our effort, therefore, to buy those leases at the lowest possible figure that went into the project.

On the other hand, Mr. Fitzpatrick and Mr. Moody, while they had an interest in the pipe line project, were particularly and more vitally interested in getting as much cash as possible from the sale of those properties.

Q. Now, at any time during the course of these negotiations, did Mr. Fitzpatrick or Mr. Moody make any reference to the fact that the Rockefeller family and some of the Rockefeller charitable organizations were stockholders in Prairie Oil and Gas Company which had stock interest in Producers and Refiners Corporation which, in turn, had a stock interest in Southwestern Development Company and that because of that stock interest and also the fact that the Rockefeller family and these same charitable organizations had stock interest in the Standard Oil Company, the New Jersey Company, that some consideration should be given to that and that you ought to pay a higher price because of that fact?

A. No, nothing of that kind entered into the negotiations.

Q. Was there any discussion of the fact that the Rockefeller interests were stockholders common to both companies discussed or brought into the negotiations in any way?

A. Those facts were not discussed or brought into the subject.

Q. Did you ever discuss this matter with either Mr. Rockefeller, Senior or Junior prior to the time that Mr. Junior bought the bonds of the company which was later in 1927?

A. There was a discussion at the time the bonds were offered to Mr. Rockefeller, Jr., in 1927. Prior to that, there was only this reference to the project. That was the time I asked Mr. Cutler in John D. Rockefeller, Jr.'s office to give our men a letter of introduction to the Colorado Fuel and Iron Company so that we could learn something about their uses of fuel.

Q. Now, that last time when you saw Mr. Cutler or the one you mentioned last, was that subsequent to the time when this agreement had been reached with Southwestern Development Company's representative at which these leases would be put into the project?

A. No, I think it was some time—I think it was some time in September—no—the later part of August.

Q. That was when you were first wanting to have contacts with the Colorado Fuel and Iron Company.

A. Yes.

Q. In connection with the markets available?

A. At the time we were trying to find out how much gas would be used by the steel plant at Pueblo.

Q. Was there any discussion with Mr. Cutler at any time as to the price at which these leases and wells would be paid for that were to go into the project?

A. No, sir.

Q. And that also is true of Mr. Rockefeller?

A. That is true in the case of Mr. Rockefeller.

Q. Is it a correct statement, Mr. Payne, that in arriving at the price which you did agree upon, that you were doing it from the interest of the proposed natural gas pipe line and that you exercised your best judgment uninfluenced by any of these matters I have just referred to?

A. That is correct.

Q. Now, you have mentioned that as time went on during the summer and more information was available about the character of the field, your estimates as to the quantities of gas underlying the reserves increased. Now, at the

time you made this final agreement of $5,000,000.00 plus half the stock, was it your judgment then that that was a prudent business agreement to make on behalf of the business interests you represented?

A. I was satisfied it was a very good business deal and that the pipe line should be a profitable project set up on that basis, yes.

Q. And on the basis of the facts as they were then, is it still your judgment that that was a prudent business deal and that the leases and wells were worth what was paid for them?

Mr. March: I object to that question on the grounds there has been no adequate predicate laid here of the witness' knowledge of the value of leases and there was a witness who testified by the name of Wallace who was supposed to be an expert upon the value of leases. This man has not qualified himself as an expert upon that and there has been no adequate foundation laid for it.

Trial Examiner: The objection will be overruled.

Mr. Dougherty: Do you have the question in mind, Mr. Payne? If not, we will have the stenographer read it.

The Witness: Will you repeat it, please?

(Whereupon, the pending question was read by the reporter.)

The Witness: That is still my judgment.

(Vol. CII (4), pp. 15759-15772.)

* * * * *

Q. I think you testified initially when you gave your deposition on October 22, that there was no corporate relationship between Standard Oil (New Jersey) and Ford, Bacon & Davis?

A. No relation whatever except when they were hired as engineers.

Q. I meant no corporate relation.

A. No corporate relation.

(Vol. CII (4) p. 15783.)

* * * * *

By Mr. March:

Q. In all these negotiations relative to the Denver project, I believe you stated that you did not contact but once Mr. Cutler, Mr. Cutler in Mr. Rockefeller's office?

A. No, I said once prior to the issuing of the bonds.

Q. Well now, did you or did you not consult Mr. Cutler directly in regard to the Denver project?

A. I did not.

Q. Well, did you ever consult Mr. Cutler subsequent to the April 5, 1927, agreement, original agreement?

A. Yes. Mr. Seth Hunt, treasurer of Standard Oil Company, and I went to see Mr. Cutler when we were marketing the bonds of the Colorado Interstate Gas Company and offered to that office the opportunity to subscribe for that bond.

Q. That was subsequent to the April 5, 1927, agreement?

A. Yes.

Q. Now, prior to that time, you saw Mr. Cutler once, I believe, about the project, prior to April 5, 1927?

A. Once in 1926 to get a letter of introduction for Mr. Comfort and Mr. Tate and I am just trying to fix the date when, I think, I got another letter of introduction for Mr. Towers to Mr. Welburn, president of Colorado Fuel & Iron Company. That was perhaps sometime early in 1927. That would make two instances.

Q. Now, when you went in to see Mr. Cutler, did you tell him about the project and everything and about the importance of having the C. F. & I. business, the Colorado Fuel & Iron Company's business?

A. Certainly I told him what the project hoped to do in bringing natural gas to Pueblo and Denver, yes.

Q. Did you tell him about your negotiation with Mr. Fitzpatrick?

A. I don't think we discussed Mr. Fitzpatrick at all, no.

Q. You didn't mention Mr. Fitzpatrick?

A. I don't think so.

Q. What made you think that Mr. Cutler could help you in any way with the C. F. & I.?

A. Well, it is common knowledge, Mr. March, that Mr. John D. Rockefeller, Jr., holds securities of the Colorado Fuel & Iron Company.

Q. As a matter of fact, you knew at that time he held a majority of the securities of Colorado Fuel & Iron, didn't you?

A. I do not know that. I think he had a large holding of bonds. I am not sure whether he had the majority of stock or not. I do not know anything about that.

Q. You understood, though, that he had such an influence over the control of the company that it was most important that you get letters of introduction from Mr. Rockefeller before you contacted people at the C. F. & I.?

A. I think we could probably have gotten a letter of introduction or access some other way but that way was a very persuasive one for a nice reception.

Q. Yes. You mean by persuasive, of course, when a man has a large block of stock in a company, he can always persuade directors to do what he likes in such matters, is that what you have in mind?

A. Well, I don't want to quibble with you about it. I can imagine stockholders having difficulties with their board of directors but usually, a board of directors, knowing that an election is occurring in another year, probably would like to do what the stockholders desire.

Q. Do you know that Mr. Cutler sits on the board of directors of C. F. & I.?

A. I don't know.

Q. Was Mr. Cutler very favorably impressed with your project?

A. I don't think he had any judgment on it until the contracts were made and the bonds ready to sell and then he was very much interested in it and wanted to know something about it.

Q. Wanted to know something about it?

A. Yes.

Q. How do you know he didn't know something about it prior to the time—

A. (Interposing) I mean at the time the bonds were offered to him, we had to give him some sort of a prospectus of what the company was going to do.

Q. How do you know he wasn't familiar with the negotiations all along?

A. I don't know how he possibly could have been familiar with them.

Q. You do not?

A. I do not.

Trial Examiner: The hearing will stand in recess for five minutes.

(Whereupon, a recess was taken after which the hearing was resumed.)

Trial Examiner: The hearing will be in order.

By Mr. March:

Q. You say your superior in these negotiations was George H. Davis?

A. What was that question?

Q. Pardon me, George H. Jones?.

A. No, I did not say that.

Q. Who was your immediate superior?

A. These negotiations were in the hands of Mr. Gallagher and myself.

Q. I know, but to whom did you report?.

A. We made our recommendations then to Mr. George H. Jones who was chairman of the board of the Standard Oil Company.

Q. Then he was your immediate superior in these negotiations, George H. Jones was?

A. Naturally, we had to refer our recommendations to the board of directors of the Standard Oil Company, New Jersey. Mr. Jones was chairman of that board and very much interested in its affairs.

Q. You consulted Mr. Jones rather frequently in regard to these negotiations, did you?

A. No, we did not.

Q. Did you consult him in regard to these negotiations?

A. I remember the one instance which I have already related but otherwise, I do not recall any frequent or any other references to Mr. Jones.

Q. You just saw Mr. Jones one time before this contract, this tripartite agreement of April 5, 1927, was consummated?

A. I was not a director of Standard Oil Company until July, 1927. Prior to that time, I did not see Mr. Jones very often.

Q. Very often, but you saw him now and then in regard to these negotiations, did you not?

A. Not especially with regard to these negotiations.

Q. He is the man who instructed you to enter into the negotiations, wasn't he?

A. No.

Q. Who was the man who instructed you to enter into the negotiations relative to this April 5, 1927, agreement?

A. You remember I said Mr. Teagle referred the matter to me.

Q. And Mr. Teagle was the man you carried on your instructions with from day to day?

A. I saw Mr. Teagle very rarely and had no discussions with him with respect to these negotiations.

I think when I was away in September of 1926 Mr. Gallagher saw Mr. Teagle several times, but our organization was such that on the natural gas matter neither Mr. Teagle nor Mr. Jones would interfere with the *nagotiations* carried on by the heads of the departments.

Q. However, they had to give you an O. K. to the consummation of the negotiations and to the institution of the negotiations?

A. Especially an O. K. where any expenditure of money was involved, certainly.

Q. There was certainly quite a few thousand dollars involved here, was there not?

A. Certainly.

Q. So Mr. Jones and Mr. Teagle authorized the negotiations and authorized the approval of the final consummation agreement of April 5, 1927?

A. I think I have already said that Mr. Teagle instituted the matter with me and that Mr. Jones gave the final approval on our recommendation.

Q. How do you know that Mr. Teagle did not consult frequently Mr. Cutler in Mr. Rockefeller's office?

A. Mr. Teagle was a very busy man on oil matters, he did not pay much attention to natural gas.

Q. Do you know that he never discussed these matters in regard to the authorization, that he had entered into these negotiations with Mr. Cutler?

A. I do not think he had two words with Mr. Cutler in this matter.

Q. Did he tell you he did or did not?

A. No.

Q. Did Mr. Cutler tell you he did not?

A. No.

Q. Did anyone tell you that he did not?

A. No.

Q. How do you know that he did not?

A. Just because I know how the business was operated, how your organization functioned.

Q. Teagle was the oil man?

A. Yes.

Q. He was the man who handled the oil affairs of the company?

A. Yes.

Q. You say he was a man who was in a superior position in the company, I mean in a high position. I believe you say that he occupied a high position.

A. He certainly did.

Q. Was he directly responsible for the gas end of the business?

A. No, he had very little contact with natural gas; not particularly interested in it.

Q. As a matter of fact, up to this time, had there been any gas that went into the business?

A. Well, we had about $200,000,000 worth of property, or $250,000,000 worth of property invested in natural gas.

Q. Did you have any natural gas pipe lines?

A. Yes, many of them.

Q. George H. Jones, how do you know George H. Jones did not consult with Cutler in regard to this project and secure Mr. Cutler's O. K. upon the institution of the negotiations?

A. I am quite sure Mr. Jones never talked to Mr. Cutler about this proposition.

Q. Did Mr. Jones tell you he did not?

A. No.

Q. Did Mr. Cutler tell you he did not talk to Mr. Jones?

A. No.

Q. Did you find out in any way positively that they did not consult in regard to this matter?

A. No.

Q. Cutler and Jones?

A. No.

Q. Now you say Fitzpatrick was the man on the other side of the table representing the Southwestern Development Company.

A. I said Fitzpatrick and Moody.

Q. Fitzpatrick took leadership in these negotiations, did he not?

A. Mr. Fitzpatrick was a kind of executive who never bothered much with papers or statistics or maps or data, and Mr. Moody was the man that handled maps and papers and oil records, was familiar with the field, the properties, and did a great deal of negotiation.

Q. However, Fitzpatrick was the chief executive officer of the Southwestern Development Company at that time, was he not, in 1926 or 1927?

A. I am not sure. Mr. Moody was president, and I am not sure whether Mr. Fitzpatrick was an officer.

Q. You are not sure whether Mr. Fitzpatrick was even connected with Southwestern Development Company?

A. Oh, he was connected, because the company of which he was a chief executive officer was the chief holder of the stock.

Q. That was the Prairie Oil & Gas Company, or the Producers and Refiners Oil Company?

A. The Prairie Oil & Gas Company controlled the Producers and Refiners Oil Company, and the latter owned the majority of the stock, or 51 per cent of the stock of Southwestern Development Company.

Q. And Fitzpatrick was the chief executive officer of the Prairie Oil & Gas Company?

A. That is correct.

Q. How do you know Mr. Fitzpatrick did not consult Mr. Cutler and obtain Mr. Cutler's approval upon these negotiations?

A. I do not know.

Q. As a matter of fact, don't you know that he did consult him?

A. No, I do not think that he did, but I cannot answer you that positively, because it is not within my knowledge.

Q. What makes you do not think that he did?

Trial Examiner: What is that, Mr. March?

By Mr. March:

Q. What makes you do not think—Strike that out.

Are not you familiar with Mr. Cutler's testimony before the Investigating Committee in the United States Senate in 1933? Are not you familiar with Mr. Fitzpatrick's testimony before that body, testifying that he consulted Mr. Cutler frequently?

A. No, I am not familiar with it.

Q. You are, though, familiar with the stockholdings of John D. Rockefeller, Jr., and various trusts set up by John D. Rockefeller, Jr., and Sr., in the Prairie Oil & Gas Company?

A. No, I know nothing more about that than newspaper knowledge.

Q. What proof have you got as to anytime that Fitzpatrick was not working under the direction of Mr. Cutler, Mr. Bertram Cutler in Mr. Rockefeller's office?

A. May I suggest in answer to your question that none of the Rockefellers attempted at any time to interfere with management or make suggestions to management, or to have anything to do with the responsibilities that rested on the Boards of Directors, or the officers of any of our companies, I mean the Standard Oil Company of New Jersey or any of its subsidiaries. Perhaps I have no right to assume that the same attitude was the attitude of the Rockefellers with respect to their other investments in the old Standard Oil companies, but I think that was their attitude.

Q. How do you know they did not have Mr. Cutler do the directing and informing?

A. I do not think the Rockefellers do business that way.

Q. How do you know they did not?

A. From my experience with my own company.

Q. You had two men between you and the Rockefellers, I mean the principal stockholders of the Standard Oil, did you not, that is Mr. George H. Jones and Mr. Teagle?

A. Yes.

Q. You were the third man in the organization in so far as authority was concerned?

A. So far as natural gas operations were concerned, I was in charge of them.

Q. Now we have a three-way proposition here, we have three companies, as I see it: We have the Southwestern Development Company, we have the Standard Oil, then we have the C. F. & I. Why was it so essential to get the C. F. & I. business for this project?

A. The volume of gas that could be used by the steel company and the price it could afford to pay.

Q. What is important to this C. F. & I. contract to the project?

A. The importance was if the project did not have that volume of gas it would not have sales enough to support the project.

Q. You mean firm sales now?

A. Any kind of sales.

Q. Was the C. F. & I. contract a profitable contract?

A. I should say it was a very essential contract and a profitable one.

Trial Examiner: Do you adopt the testimony of Mr. Spencer, Mr. Payne, that it was indispensable?

The Witness: I certainly do.

By Mr. March:

Q. The Denver service was not indispensable, was it?

A. The Denver service was also indispensable. There were those two necessary factors.

Q. They could have built that line up there to C. F. & I. without even having the Denver service, could not they, very profitably?

A. No, sir.

Q. Do you know that to be a fact?

A. I think so, in my judgment.

Q. Did you investigate that phase of the angle, I mean of the proposition?

A. Our preliminary reports were quite clear on that, yes, sir.

Q. You did at that time then consider just bringing the pipe line up to the C. F. & I.?

A. No.

Q. Now, as a matter of fact, Mr. Payne, was not the

idea of this project broached by the Cities Service Company?

A. It was not.

Q. You were approached by Southwestern Development Company, were you not?

A. I was approached by Mr. Fitzpatrick of the Southwestern Development Company, yes, sir.

Q. Did you know that Mr. Fitzpatrick of the Southwestern Development Company had not in turn been approached by the Cities Service Company?

A. Not that I know of, to my knowledge.

Q. Did you know that the Cities Service had attempted to secure the C. F. & I. business for this project and could not do it until it got the Southwestern Development Company interested in the project?

A. Not to my knowledge.

Q. Not to your knowledge?

A. No, sir. I mean definitely I never heard of that.

Q. You were familiar with the negotiations for this project as early as 1926, were you not?

A. My first attention was called to it in June of 1926, but I assume you are referring to the fact that a man named Minal Young had an option on Southwestern's gas with the idea of laying a line to Denver and possibly to the steel plant, and that option was expiring the first of August of 1926, and Mr. Young was unable to go through with it. That is all that I know of anything prior to the time my attention was drawn to this matter.

Q. You do not know what efforts the Cities Service Company had made to secure the business of C. F. & I. and put this project through until they got Mr. Fitzpatrick interested?

A. I do not. I went to Mr. Creveling when we were investigating the markets in the summer of 1926, and he said this man Young had been fiddling around out there and he would be very glad if a responsible group would bring gas to Denver.

Q. Who told you that?

A. Mr. Creveling of the Cities Service organization. Mr. Creveling was in charge of the gas operations of the Cities Service group.

Q. When did this man see you?

A. Oh, that was in August of 1926.

Q. And previously in June Mr. Fitzpatrick had broached the subject to you?

A. That is correct.

Q. Did Mr. Fitzpatrick bring this man into your office and introduce you to him?

A. No, it was part of our job to find markets. My immediate undertaking was to see what reaction the Cities Service group would take to the proposition.

Q. Did not Mr. Fitzgerald tell you that his negotiations with the Cities Service Company were proceeding—did not he tell you of his negotiations with Cities Service in any way?

A. I never heard of them.

Q. You proceeded on your own initiative to investigate the feasibility of the market, the possibility of the market?

A. That is correct.

Q. What did Fitzpatrick tell you when he came to you and sold you on the idea of going in on this project?

Mr. Spencer: Mr. March, I think that has been covered thoroughly, both in the direct testimony and in this testimony.

Mr. March: What I am interested in is the line of Mr. Fitzpatrick's representations on this project. What I want to know is what representations were made to him in regard to this project.

Mr. Spencer: You may have a better memory than I have. I do not at the moment recall that there is a line of testimony in this record any place that Mr. Fitzpatrick ever had any conversations with Cities Service regarding an independent organization on this project.

Mr. March: There is testimony in the record—

Trial Examiner: Just a minute, Mr. March.

Mr. March: Yes, sir.

Trial Examiner: Are you directing your questioning now at the representations that Mr. Fitzpatrick made with respect to the Cities Service?

Mr. March: No, made to Mr. Payne, in other words, in regard to this project.

Trial Examiner: At the time Mr. Fitzpatrick contacted Mr. Payne in regard to this project?

Mr. March: That is right, sir, the first time.

Trial Examiner: I think he testified to that.

By Mr. March:

Q. What was the extent of his representations to you, Mr. Fitzpatrick's representations to you, in regard to this project?

A. Of course, I cannot give you his exact words, but this was the substance of his visit:

"We have in the Amarillo field blocked up an area of gas leaseholds and have the greatest gas field that has ever been discovered in the world. We think that you are the people qualified to develop that field and market the gas, and I proposed to Mr. Teagle we go in 50-50 on the proposition. Won't you put your men to work investigating the field? We will give you all the information you need in respect to wells' records, and things of that kind. Our men will meet your men out there and study the proposition. Then after their reports are in we will discuss the details of the project, if it is feasible, if it proves to be feasible."

Q. The reports which your men turned in as to the gas there varied, I believe you testified, they were not the same; in other words, they were high and low, as you recall it?

A. That is correct.

Q. Now did Mr. Teagle speak to you before Mr. Fitzpatrick did?

A. Yes. On Mr. Teagle's return from the oil meeting in Tulsa he said, "I had a talk with Fitzpatrick. They have got some great gas territory there, and he is coming to New York to see you about it."

Q. I see. Now in these negotiations for the purchase prices of these leases, the Amarillo lease, you always, as I gather, referred the propositions to your superiors in the Standard Oil organization for their approval or disapproval, with your recommendations?

A. When it came to a proposition of the Standard Oil Company investing money in a new project, our depart-

ment studied the project, made out recommendations, asked for the money to go ahead with the project.

Q. Well, there were four or five preliminary purchase prices arrived at, tenders were made by the Southwestern Development Company, and on each one of the preliminary propositions you consulted Mr. Teagle in regard to it, or Mr. Jones?

A. No.

Q. You did not consult either one of them?

A. I did not.

Q. You waited until you offered them the $5,000,000 before you told Mr. Teagle or Mr. Jones anything about your offer?

A. We completed the dicker right down to the point where we could go no further with it.

Q. You made, on your own initiative, the offer of $5,000,000 for these properties, for the Amarillo oil?

A. I did not say that; I did not say that. I said we found that the last word from the Southwestern Development Company was $5,000,000 and half the stock. Seeing that that was the end of the road we recommended its acceptance.

Q. Did you report to Mr. Teagle or Mr. Jones in regard to it?

A. No. I think I talked verbally to Mr. Jones.

Q. You talked to Mr. Jones in regard to that?

A. Yes. Mr. Teagle was away on his fishing trip.

Q. Did Mr. Jones say that was acceptable to him?

A. He approved it.

Q. Approved it immediately?

A. No, I cannot recall that.

Q. He did not approve it the same day you told him about it, did he?

A. Well, I cannot say whether it was immediately or whether he carried it over a day; it was almost immediately, because Mr. Fitzpatrick was awaiting the answer.

Q. Do you know whether Mr. Fitzpatrick ever saw Mr. Jones or not in regard to this project, in the negotiations?

A. That is a hard one to answer. So far as the negotiations were concerned, I do not think Mr. Fitzpatrick had any negotiations with Mr. Jones.

Q. You do not think so?

A. No. They were friends.

Q. They were friends?

A. Oh, yes, they were friends.

Q. Of long standing?

A. Yes, of years' standing.

Q. Now what did Mr. Jones tell you when you first started negotiations? Did he tell you there was a limit to what you were to pay for these properties?

A. No, Mr. Jones did not tell me anything about it. He had nothing to do with the initiation of these negotiations.

Q. Did he authorize you to conduct the negotiations?

A. No. That is Mr. Teagle.

Q. He authorized Mr. Teagle then?

A. I do not see why you say that.

Q. Did he or did he not, or do you know?

A. No, I do not think he did.

Q. Mr. Payne, the Board of Directors of Standard Oil is not accustomed to enter into $5,000,000 negotiations without the approval of the Board of Directors of the Standard Oil; are they?

A. My dear sir there was not anything to submit to the Board of Directors until October. We got to the end of the dicker.

Q. Did the Board of Directors ever meet to consider this proposition, that you know of, prior to the end of the dicker?

A. Not that I know of. It is perfectly possible that Mr. Jones may have talked to one or two of the other members of the Board. I know his answer was almost immediate.

Q. Including Mr. Cutler?

A. Not that I know of. Mr. Cutler had nothing to do with the Board of Directors of the Standard Oil of New Jersey in any respect.

Q. Do you know of your own knowledge whether or not any large financial transactions were put through by Standard Oil without the approval of Mr. Cutler? Do you know positively whether they were or not?

A. Certainly, Mr. March. You forget that later I became the vice president and treasurer of the Standard Oil Company. I knew what relations the organization had with stockholders. I say that the Rockefellers never interfered

with the action of the directors, never took any part in the business matters of the organization.

Q. Of course you were not familiar with what went on between Mr. Cutler and Mr. Jones, to your knowledge, or Mr. Fitzpatrick, of your own knowledge, during the negotiations on this particular contract back there in 1927?

A. I know nothing about it but I think there was no communication between them.

Q. Now did you ever subsequently see Mr. Cutler in regard to the contract that you negotiated with the C. F. & I.?

A. No, Mr. Cutler had nothing to do with the negotiations on that contract, excepting the matter of introduction.

Q. How do you know he did not have something else to do with it?

A. I cannot answer that question, because I do not know.

Q. For all you know, he might have instructed the president of the C. F. & I. to consummate the contract with the Carolina State Gas Company?

Trial Examiner: Mr. Payne need not answer that question, Mr. March. He told you what he knows about it.

Mr. March: All right, sir.

By Mr. March:

Q. How long did these negotiations continue?

Trial Examiner: What negotiations are you speaking of?

Mr. March: For this contract of April 5, 1927, from June 1926 to April 5, 1927.

A. Well, you see, Mr. March, there were different phases of that contract that was finally embodied in the stipulation: First, the relations between the Southwestern Development Company and the project; and then later the relations betewen the project and the Public Service Company of Colorado; and those were negotiated at different times.

Q. You settled your negotiations with Mr. Fitzpatrick, and then you, too, negotiated with the Cities Service Company?

A. After that, yes, sir.

Q. You had all of your negotiations completed as far as

you and Fitzpatrick were concerned when you started with the Cities Service Company?

A. I think that is correct.

Q. Did you also agree on just what you would let Cities Service have in the project? What interests you would let them have in the project?

A. No, we knew nothing about that. At the time negotiations were carried on with the Southwestern Development Company we had not yet broached the city-gate contract with the Public Service Company of Colorado; that came later.

Q. You did not negotiate with Public Service of Colorado, you negotiated with Cities Service Company, did you not, which was the parent company?

A. No, we talked with Mr. Creveling and Mr. W. A. Jones of the Cities Service Company's New York office. Mr. Creveling was in charge of natural gas operations of the whole Cities Service group, but we also had in our conferences the president of the Public Service Company of Colorado who came during those negotiations into the matter of making the contract—What was his name?

Mr. Spencer: Stannard.

The Witness: Stannard.

By Mr. March:

Q. The Public Service of Colorado, of course, was not a party to the contract, the tri-partite agreement?

A. It was not a party to the stipulation, no.

Q. Now was there any disagreement between you and Fitzpatrick as to the participation which you would permit Cities Service Company to have in the project?

A. You see, Mr. March, we carried on negotiations with Mr. Stannard and Mr. Creveling and Mr. Jones and the engineer over there.

Mr. Spencer: A Mr. Hancock.

The Witness: Yes. And did our best to arrive at a contract, to arrive at a city-gate price, and reached the point where the Cities Service Company and lawyer associates walked out on us and it looked as if there was not going to be any contract.

By Mr. March:

Q. Walked out on you and Fitzpatrick?

A. No, walked out on Mr. Gallagher and me.

Q. Mr. Gallagher being an official of your company, the Standard Oil?

A. He was my right-hand man, yes, sir, at that time.

The negotiators on the side of Cities Service Company left a foot in the door, however, and in a week or two came back. When they came back the first discussion was had as to a participation in the project on the part of Cities Service. So in answer to your question, it was not until that time that Mr. Gallagher and I could communicate to Mr. Fitzpatrick as to what the situation was with respect to participation by the Cities Service Company.

Q. So you carried on the initial negotiations with the Cities Service Company with regard to the participation and Mr. Gallagher sat on the side lines and let you carry on these negotiations?

A. Well, we both were in that.

Q. Did you answer my question as to whether or not there was any disagreement between you and Mr. Fitzpatrick as to the participation of the Cities Service Company in the project?

A. Well, I gave you a rather long answer which ended in the fact that there was no discussion of that participation until this break in negotiations, and they came back with the proposition.

Q. I will ask you the question, were there any disagreements between you and Mr. Fitzpatrick as to the participation of the Cities Service Company in this project?

A. No, I think we reported to Fitzpatrick that here was the Cities Service's last answer and they would be satisfied with nothing less than 15 percent participation, and we recommended its acceptance.

Q. Do you know what happened in regard to the $5,000,000 in cash that the Amarillo Oil Company was supposed to get for these leases?

A. Well, I only know that the titles were cleared.

Q. The titles were cleared?

A. To the leases that were conveyed by the Amarillo Oil Company to the Canadian River Gas Company.

Q. Do you know of your own knowledge whether or not the Amarillo Oil Company actually received that $5,000,000 in cash?

A. No, I cannot answer that question.

Q. Do you know how much of that $5,000,000 the Prairie Oil & Gas Company got, if any?

A. It is my recollection that Prairie Oil & Gas Company had been the sugar-daddy on that proposition out there, and it loaned money, and probably that money was paid back, although I had no knowledge in regard to that.

Q. You had no knowledge in regard to that?

A. No.

Q. For all you know the Prairie Oil & Gas Company might have gotten all of that $5,000,000?

Mr. Spencer: I object to that, Mr. Trial Examiner.

Mr. March: I have a right to ask him that question.

Mr. Dougherty: He simply says he does not know anything about it.

Trial Examiner: He says he does not know.

Mr. Dougherty: So it is speculative as to what might have happened.

Mr. March: All right, sir.

By Mr. March:

Q. Now in what way was this $5,000,000 paid to Southwestern Development Company interests, or the Amarillo Oil Company?

A. I am trying to recall whether that money was paid after the bonds were issued and signed and delivered, or whether the money was advanced some time before that and interest paid on the advances just as if it had been paid for out of the sale of bonds. I am not sure.

Q. You do not know how the money was actually paid or how it was paid, or anything about the details?

A. I think it was paid to the Southwestern Development Company, and sometime prior to the issue of bonds, I think. There were a number of advances made during the course of the organization by the Standard Oil Company which were to be repaid when the contracts were completed. That may have been one of them.

Q. But in so far as the details are concerned, you do not recall?

A. I do not recall.

Q. Do you know if there were strings tied to that $5,000,000, to see that it is properly spent or where it went to, or anything about it?

A. I did not regard that as our concern, excepting to see that the leases and properties were free from any lien or encumbrance, and we had all those titles examined by lawyers in Houston and Amarillo.

Q. Now I have here the stockholders' list of the Standard Oil Company as filed with the Committee of the United States Congress, containing House Report No. 2192, and I will ask you to examine that and see if your recollection of the stockholders' list is substantially the same in so far as the first three stockholders are concerned as it was in 1927?

Mr. Dougherty: Will you refer to the page?

Mr. March: Page 211, Standard Oil of New Jersey.

By Mr. March:

Q. The largest stockholder there being John D. Rockefeller, Jr.

A. My answer to that is that I think I knew at that time that Mr. John D. Rockefeller, Jr., owned something around 11 percent of the stock of the Standard Oil of New Jersey.

Q. In 1926 and 1927?

A. In 1926 and 1927. And that Mr. Rockefeller, Sr., had sold all his holdings to these foundations.

Q. Various foundations set up by Rockefeller?

A. The foundations mentioned down below. No, I do not know, nor could I confirm the holdings that are listed here in any respect.

Q. What man did you consider as being the man who handled all of John D. Rockefeller's financial affairs?

Mr. Spencer: Which Rockefeller, and when?

By Mr. March:

Q. John D. Rockefeller, Jr., and in 1926 and 1927.

A. As a matter of fact I do not know much about it. Mr. Rockefeller maintained an office.

Q. You saw Mr. Cutler, did you not, in regard to the stock participation of John D. Rockefeller, Jr., in this project?

A. In regard to what?

Q. Participation of John D. Rockefeller, Jr., in this project.

A. In the purchase of bonds?

Q. Yes.

A. Yes, I saw Mr. Cutler, and Mr. Cutler was the one who gave me the letters of introduction to Mr. Welright.

Q. Was he generally known to be the man in Mr. Rockefeller's office who handled all his financial affairs?

A. No, that is not correct Mr. March. He was reputed to have principal charge of investments in railroad bonds, railroad specialties. There were others, and I do not know them.

Q. You do not know any of the others, do you?

A. Well, I met the man who handled the financial affairs of the foundations or the men, rather, Mr. Turnbull, Mr. Fosdick, and in later years Mr. Nelson Rockefeller, a very active man, but my contacts, as I have said, were with Mr. Cutler.

Q. What occasioned you to contact the principal man in the Rockefeller foundations during your tenure of officer and director of Standard Oil?

A. Well, as you know—and perhaps you do not know—they purchase from time to time some bonds, both of the Standard Oil Companies and of specialties.

Q. You, therefore kept contact with them for that purpose?

A. Yes.

Q. Was it part of your duties to handle the floating of bonds of Standard Oil of New Jersey, the negotiation for the sale of those bonds?

A. Only once, in 1934, when there was a refinancing operation.

Q. Were those bonds distributed to the public?

A. Well, you know it was a fashion then not to sell bonds to the public which required a prospectus and an advertisement and a long delay before the Securities and Exchange Commission, and we placed the bonds with a few institutions privately.

Q. And a few individuals privately?

A. Institutions.

Q. And individuals?

A. Well, if you want to call it that way.

Q. In other words, there was a date when they had the preferred list, so to speak?

Trial Examiner: I do not see any connection with this case, Mr. March.

Mr. March: The connection is just this: Here is a man, one of the chief executive officers of Standard Oil of New Jersey, who contacted frequently persons who had, we contend, the voting power of the Standard Oil Company stock, controlling part of the Standard Oil Company stock of the Rockefellers and their financial views. I want to explore his connection with that. I am just about through with this line.

Trial Examiner: It is all right, if you want to explore that.

By Mr. March:

Q. Did Mr. John D. Rockefeller, Jr., get any of these bonds in 1934 that were issued by the Standard Oil of New Jersey?

A. Yes. We sold some to the Bankers Trust, Guaranty Trust, J. P. Morgan & Company, and the National City Bank.

Q. I did not ask for a list.

A. And the Chase National Bank, and these foundations that you have mentioned.

Q. Do you know how much John D. Rockefeller, Jr., got?

A. John D. Rockefeller, Jr. took some of the bonds—I do not remember just what it was, perhaps $3,000,000, $4,000,000 or $5,000,000.

Q. Did you see Mr. Cutler in regard to that transaction?

A. No, I saw Mr. Rockefeller personally, and Mr. Turnbull and Mr. Fosdick—I saw all three of them, and I saw Mr. Cutler.

Q. I understood your testimony previously that you did not see Mr. Rockefeller personally prior to the April 5, 1927 meeting. As I understand your testimony today, you

did see both Mr. Cutler and Mr. Rockefeller. Did you see Mr. Rockefeller personally in regard to this project prior to 1927?

A. No.

Q. The only one you saw was Mr. Cutler?

A. The only one I saw was Mr. Cutler, asking him for letters of introduction.

Q. And explained the project—you told him all about the project at that time?

A. Told him something about it, sir.

Q. Mr. Hancock, you mentioned him a few minutes ago. Mr. Hancock was prominent in the negotiations of this agreement on the part of Cities Service Company, was he not?

A. Mr. Hancock was consulted as an engineer. He was not very prominent in the negotiations at that time. Later he became more prominent in the activities of Cities Service Company.

Q. What did Mr. Spencer have to do with the negotiations of this agreement, P. C. Spencer?

A. This gentleman there (indicating)?

Q. Yes.

A. I did not know Mr. Spencer in 1926 or 1927.

Q. He was not prominent in the organization at that time?

A. No.

Q. When did you first become acquainted with Mr. Spencer?

A. I think Mr. Spencer came into the picture very strongly in the beginning 1928, when the contracts were being drafted, and deed of trust drafted along in that period.

Q. In 1928?

A. Yes, sir.

Q. On the part of whom? Whom was he representing?

A. He represented the Southwest Development Company.

(Vol. CII (3) pp. 15797--15830.)

Extracts from Exhibit 10, being "Document No. 92, Part 83, of the Seventieth Congress, First Session, entitled 'Letter from the Chairman of the Federal Trade Commission Transmitting in Response to Senate Resolution No. 83, Seventieth Congress, a Monthly Report on the Electric Power and Gas Utilities Inquiry', filed with the Secretary of the Senate December 15, 1935."

Testimony of CHRISTY PAYNE Before Federal Trade Commission.

* * * * * *

Question. You played a rather prominent part, did you not, in the organization of the Colorado Interstate Gas Co.?

Answer. Yes, sir. I was associated with others in the formation of that company.

Question. And you became the president of the company, did you not?

Answer. I was the first president of the company; yes, sir.

Question. And you were president during the year 1927?

Answer. Yes; I think so.

Question. And the other interests in the ownership of the Colorado Interstate Gas Co., I understood, were the Southwestern Development Co. and the Cities Service group?

Answer. The Southwestern Development Co. owned 42½ percent; Cities Service Co., 15 percent.

Question. And your interests, 42½?

Answer. And the Standard Oil Co. of New Jersey, 42½ percent; yes, sir.

Question. One of the important considerations in the organization of the Colorado Interstate Gas Co. was finding a market for the gas, was it not, up in Colorado?

Answer. That was the sole purpose of the organization of the company; yes, sir.

Question. And in the available markets or possible markets Denver figured as probably the most important one, did it not?

Answer. There were two important factors. Without either one of these the project was not feasible. One was the city of Denver and the other was the steel plant in Pueblo.

Question. Which of those two was the more important?

Answer. Well, that is hard to say. They both were necessary to support the practicability of the enterprise. The steel plant gave the steady load, and the Denver plant gave the domestic load.

Question. But there were some industrial loads at Denver, also, were there not?

Answer. Rather small ones, yes.

Question. In order to assure yourselves of an outlet in Denver, you had to arrange matters through the local distributing company there, did you not?

Answer. Yes.

Question. The Public Service Co. of Colorado?

Answer. We had to negotiate a contract for delivery of natural gas to that company.

Question. And did you negotiate such a contract, as a preliminary to the organization of the company, or as a part of the organization?

Answer. I would say as a preliminary.

Question. The matter of whether the Public Service Co. of Colorado had a franchise to serve gas in the city of Denver was a matter of considerable importance to the Colorado Interstate Gas Co., was it not?

Answer. It was.

(Pp. 196-197.)

* * * * *

Question. Were you familiar, Mr. Payne, with the testimony of Mr. William S. Fitzpatrick, before the Senate committee, investigating the stock exchanges, with reference to his, Mr. Fitzpatrick's connection with the Prairie Oil and Gas Co.?

Answer. No; I don't believe I ever saw it, Mr. Wooden.

Question. I have it here, appearing on page 3307, of part 7, of the report of those hearings, and I would just like to read a portion of it for the record, as a basis for a few more questions of you. [Reading:]

Mr. Fitzpatrick. I came to the Prairie Oil & Gas Co. in 1908, and continued in one capacity or another with the Prairie Oil & Gas Co. down to the time that it was taken over by the Consolidated.

Mr. Pecora. Were you, during any part of that period, an officer or director of any other corporation engaged in any phase of the oil business?

Mr. Fitzpatrick. None except a few smaller concerns that were largely owned or that the Prairie Oil & Gas Co. had a large interest in.

Mr. Pecora. Was the Prairie Pipe Line Co. one of them?

Mr. Fitzpatrick. No.

Mr. Pecora. Were you connected with that corporation?

Mr. Fitzpatrick. Not officially.

Mr. Pecora. Were you through any community of interest between the corporations that you were connected with in that corporation?

Mr. Fitzpatrick. No; except that the owners of about 60 percent of the stock in one company owned stock in the other; and in one company, I don't know which one it was, it was 65 percent, about.

Senator Couzens. Were the Rockefellers interested in the Prairie Co.?

Mr. Fitzpatrick. Both companies.

Senator Couzens. Both the pipe-line and the oil company?

Mr. Fitzpatrick. Yes, sir.

Senator Couzens. Did they have a controlling interest?

Mr. Fitzpatrick. No, sir.

Senator Couzens. Do you know the percentage of interest which they had?

Mr. Fitzpatrick. Only approximately. I think they had about 22 or 23 percent of the oil and about 20 pergent of the pipe.

Mr. Pecora. Does not that represent a management control for all practical purposes?

Mr. Fitzpatrick. I do not know what you mean by "practical purposes", Mr. Pecora.

Mr. Pecora. For purposes of operation of the company.

Mr. Fitzpatrick. The stock represented by the Rockefellers and their friends, the trusts and people that had been formerly associated with the old gentleman in years gone by or their relatives, had, as I remember it, something like 40 or 42 percent.

Senator Couzens. Who represented the Rockefellers in the management?

Mr. Fitzpatrick. Well, I don't know that anybody represented the Rockefellers exactly. I came as near it, I presume, as anybody.

Senator Couzens. You were representing them on the board of directors?

Mr. Fitzpatrick. I was always elected on the board of directors with the proxies that they sent in and the others.

Senator Couzens. So you were always looked upon as a Rockefeller man?

Mr. Fitzpatrick. I could not say how I was looked upon.

Would you say that—from your knowledge of the affairs of the Standard Oil Co. of New Jersey—that, as Mr. Fitzpatrick testifies, the practical control of the Prairie Oil & Gas Co. was in the hands of the Standard interests?

Answer. Did you say "in the hands of Standard interests"?

Question. Well, Rockefeller interests, then.

Answer. Well, that is decidedly different.

Question. I guess it is. I am referring to Mr. Fitzpatrick's testimony. In other words, would you agree with that statement of his?

Answer. In my experience, I have had no contact whatever with the Prairie Oil & Gas Co. or its operations, or its management, or its control, or stock ownership; and I do not know anything about it.

Question. You were never affiliated in any way at all with the Prairie Oil & Gas Co.?

Answer. No; never in any way.

Question. Was the Producers & Refiners Corporation a subsidiary of Prairie Oil & Gas Co.?

Answer. I understand so.

Question. And, in turn, did the Producers & Refiners Corporation own 51 percent of the voting stock of Southwestern Development Co.?

Answer. I think they owned 50 or 51 percent; yes, sir.

Question. Then, did not the Southwestern Development Co. own all the stock of the Canadian River Gas Co.?

Answer. That is right.

Question. And 42½ percent of the common stock of the Colorado Interstate Gas Co.?

Answer. That is correct.

Question. With an equal amount, 42½ percent, held by Standard Oil Co. of New Jersey?

Answer. Yes, sir.

Question. Would you say that the Standard Oil of New Jersey came into the Amarillo-Denver pipe-line project by virtue of its relationship to the natural-gas reserves owned by the Amarillo Oil Co.?

Answer. Not in any respect; no, sir.

Question. Of course, it was aware that those reserves existed, and it was aware of the relationship between the various corporations, as outlined just now? In other words, it was acting with knowledge of those facts at the time?

Answer. You have just said that the Standard Oil Co. owned 42½ percent of the Colorado Interstate Gas Co., which was not created at the time you are now talking about, with respect to reserves.

Question. The reserves—were they held by the Canadian River interests or the Amarillo Gas Co. interests, prior to the organization?

Answer. Yes. As I understand it, the Producers & Refiners Co., and Mr. Bert Jones and his brother, of Kansas City, had built up these reserves in the Panhandle field, over a period of 8 or 9 years, prior to the formation of the Colorado Interstate Gas Co., and those interests were supplying the town of Amarillo and some industries on the borders of the city of Amarillo.

Question. If not through any interest, indirect or otherwise, in the gas reserves of the Amarillo Oil Co., how did

the Standard Oil Co. of New Jersey get into the picture with reference to the organization of the Colorado Interstate?

Answer. These men I have mentioned—Mr. Jones, Mr. Fitzpatrick, and Mr. Moody—came to New York and talked with me about the reserves which they had in the Panhandle field. They said, "We would like to have the Standard Oil Co., with its natural-gas organization, market the gas from that field. We think the reasonable market is up through Colorado, but we would like to have you study it; we would like to have you take an interest, furnish the management, find a market, and organize the whole venture." And it was on the basis of that invitation that the Standard Oil Co. investigated the matter and finally went into the project.

(Pp. 216-217.)

* * * * *

Testimony of NELSON K. MOODY, before Federal Trade Commission.

NELSON K. MOODY, was thereupon called as a witness for the Commission and, having been first duly sworn, testified as follows:

Direct examination by Mr. Wooden.

Question. Will you state your full name and business, please, Mr. Moody?

Answer. I am in the oil and gas business.

Question. And what is the nature of your connection with the oil and gas business?

Answer. I am president of the Southwestern Development Co. Its subsidiaries are in the gas business largely.

Question. Is that the only connection you have with any natural-gas company?

Answer. I am an officer of some of the Southwestern Development Co. subsidiaries.

Question. Will you name those and what office you hold?

Answer. I am president of the Amarillo Oil Co. I am president of the Canadian River Gas Co. I believe that is all in which I am an officer.

Question. Are you also a director of those companies that you have named?

Answer. Yes.

Question. How long have you been connected with the Southwestern Development Co?

Answer. Ever since its organization.

Question. And when was that?

Answer. About 1924.

Question. The Southwestern Development Co., as I understand it, has a 42½-percent interest in the Colorado Interstate Gas Co?

Answer. Yes, sir; that is correct.

Question. What was the business of the Southwestern Development Co. before the Colorado Interstate Gas Co. was formed, which, I believe was '27 or '28.

Answer. Yes. Southwestern Development Co. owned a number of other companies operating in the gas business, distribution and transportation business, production.

Question. What were they?

Answer. The Amarillo Oil Co., Panhandle Pipe Line Co., Amarillo Gas Co.

Question. What was the Panhandle Pipe Line Co. referred to?

Answer. The Panhandle Pipe Line Co. was a gas transportation line that transported gas from the Amarillo gas fields to the city of Amarillo.

Question. And did the Amarillo Gas Co. own a considerable block of gas lands or acreage or leases?

Answer. The Amarillo Gas Co.; no.

Question. What was the company that owned that; Canadian River?

Answer. Amarillo Oil Co.

Question. Was there an Amarillo Gas Co.?

Answer. Yes.

Question. And what did it do?

Answer. It was a distribution company in the city of Amarillo.

Question. Was that a subsidiary of Southwestern Development?

Answer. Yes, sir.

Question. What connection do you have with any oil companies?

Answer. I am president of the Sinclair-Prairie Oil Marketing Co.

Question. What is the business of that concern?

Answer. Buying and selling crude oil.

Question. From what field?

Answer. From the Mid-Continent field, Kansas, Oklahoma, and Texas.

Question. What other oil company connections do you have?

Answer. That is all.

Question. You are not connected with the Consolidated Oil Corporation in any way?

Answer. No.

Question. Is this marketing company you have just mentioned a subsidiary of Consolidated?

Answer. Yes.

Question. Were you at one time an officer of the Prairie Oil & Gas Co.?

Answer. Yes.

Question. During what period and what office did you hold?

Answer. I went to work for the Prairie Oil & Gas Co., in 1910 as assistant general manager. I was later made vice president, later made president, remained as president until the spring of 1932.

Question. And was that the time when the Prairie Oil & Gas Co. was merged in the Consolidated Oil Corporation?

Answer. The Consolidated Oil Corporation bought the assets of the Prairie Oil & Gas Co. in the spring of 1932.

Question. And did you then immediately become the head of this marketing company that you named?

Answer. Yes, within a month.

Question. What is the present relationship between the Southwestern Development Co. and the Consolidated Oil Corporation?

Answer. The Consolidated Oil Corporation owns 51 percent of the Southwestern Development Co.'s common stock.

Question. How is the balance owned?

Answer. The balance is owned very largely by the Mission Oil Co., and there are 4 or 5 smaller stockholders.

Question. Who is the Mission Oil Co.?

Answer. The Mission Oil Co. is controlled very largely by Mr. Albert R. Jones and associates of Kansas City.

Question. And who is the Consolidated Oil Corpora-

tion, in the same way? Who are the people who are prominent in its control or management?

Answer. I cannot answer that.

Question. Although you are the president of a direct subsidiary of the Consolidated?

Answer. Yes; what I mean by that is it has a very large number of stockholders, and I know of no individual or group in which control is vested.

Question. Were you ever a director of Consolidated?

Answer. Yes, sir.

Question. When?

Answer. From early in 1932 until about a year ago.

Question. Then you were a director at the time Consolidated was formed, became a director upon its formation in 1932?

Answer. The Consolidated Oil Corporation was not formed at that time. It had been in existence for many years before that.

Question. But even though you had been a director during the period you named of the Consolidated Oil Corporation, you still have no idea of who the interests are that control it and direct its management?

Answer. I know who some of its managers are, but I do not know where the control is vested.

Question. I am not speaking of what you might say technical, legal control, but practical operating control.

Answer. Oh. Well, I know the management of the Consolidated Oil Corporation.

Question. Who is that?

Answer. Mr. H. F. Sinclair is chairman of the executive committee. Mr. H. R. Gallagher is president.

Question. Who is he?

Answer. He is a gentleman in the oil business who is president of the Consolidated Oil Corporation.

Question. As a one-time director of the Consolidated, would you say that its practical control and management was in the hands of the Sinclair interests?

Answer. No.

Question. What would you say?

Answer. Mr. Sinclair is very prominent in the management of the company's affairs.

Question. Is he chairman of the board?

Answer. He is chairman of the executive committee, I believe.

Question. Is this Mr. Gallagher connected with Mr. Sinclair in any other way than just as a head of this Consolidated Co.?

Answer. None that I know of.

Question. Can you name the other officers and directors of the Consolidated?

Answer. Mr. Thirtel is the comptroller, and I haven't the directors in mind right now.

Question. Can't you name some of them, such as you remember them when you were on the board?

Answer. Mr. W. S. Fitzpatrick is a director. Mr. E. W. Sinclair is a director.

Question. What is his relation, if any, to H. F.?

Answer. He is a brother. That is all that I can recall at this time. Mr. J. F. Farrell is treasurer.

Question. And who is he?

Answer. He is the treasurer of the Consolidated Oil Corporation.

Question. Can you tell me anything else about him?

Answer. No; except that he is a very delightful gentleman.

Question. We will take that for granted. There is no top company or holding company above the Consolidated Oil Corporation, is there?

Answer. I don't understand just what you—

Question. I mean, did any other corporation own or control the Consolidated Oil Corporation?

Answer. Not that I know of; no, sir.

Question. Or did any other company have any substantially large stock interests in it?

Answer. I cannot say as to that. I am not advised.

Question. At any rate, did any other oil or gas company have any substantial stock interest in the Consolidated?

Answer. No; not that I know of.

Question. Can you say when Consolidated Oil Corporation acquired its 51 percent of the stock of the Southwestern Development Co.?

Answer. It acquired them as a part of the assets of the Prairie Oil & Gas Co. at the time it bought its assets.

Question. In what year?

Answer. Spring of 1932. (After conferring with an associate.) May I correct that statement?

Question. Surely.

Answer. It acquired them at the receiver's sale of the Producers & Refiners Corporation, which owned the 51 percent of the Southwestern Development Co. up to that time.

Question. So that the same 51 percent that the Producers & Refiners formerly owned of the Southwestern was acquired by the Consolidated; is that right?

Answer. Yes.

Question. And when was that?

Answer. It was in May 1934.

Question. Did you state how that acquisition came about? That is, was it purchased at a receiver's sale?

Answer. Purchased at the receiver's sale.

Question. Do you know what was paid for it?

Answer. Not directly; no, sir.

Question. Do you know the general character of the consideration that passed?

Answer. I believe it was $3,000,000.

Question. You think that was the only consideration?

Answer. That is my recollection.

Question. Did any part of that reach the stockholders of Producers & Refiners?

Answer. I cannot say as to that, Mr. Wooden. The company was in receivership.

Question. Don't you know as a matter of fact that as a result of the receivership the stockholders of Producers & Refiners received nothing?

Answer. No, I do not.

Question. You never heard that?

Answer. No; I don't know that I ever did.

Question. Did Prairie Oil & Gas Co. control Producers & Refiners Corporation?

Answer. It owned the majority of the stock.

Question. How much was it? Was it 65 percent.

Answer. Approximately.

Question. Southwestern Development Co., as I understand it, owned the Canadian River Gas Co; is that right?

Answer. Yes.

Question. Also owned the Amarillo Oil Co.?

Answer. Yes.

Question. Did the Amarillo Oil Co. have a large amount of gas reserves?

Answer. Yes.

Question. And were those reserves sold to the Canadian River Gas Co.?

Answer. Yes.

Question. I take it that the Southwestern Development Co., in control of both of those corporations, controlled also the terms and substance of the sale, that is, the terms on which the sale was made from the Amarillo Oil to the Canadian River Gas Co.?

Answer. Well, it no doubt approved the conditions under which it was done.

Question. It could not have been done without its approval?

Answer. Probably not.

Question. Was there a considerable profit taken by one company from the other in the course of that transaction?

Answer. The Amarillo Oil Co. received for the property more than the cost represented by its books.

Question. I think we have a report somewhere in our record that shows the amount of profit made on that deal.

Answer: It was approximately $3,000,000 plus, which is purely an intercompany profit.

(Pp. 608-612.)

. . . . . .

Question. As a matter of fact that market along the Colorado Interstate Gas Co. pipe line was really small compared to the reserves that you had?

Answer. That is correct. I might add there that the formation of the Colorado Interstate Gas Co. and the arangement that was made in connection therewith were matters of very vital importance at that time to the Southwestern Development Co., and its subsidiaries. The Southwestern Development Co. was in very bad shape at that time. It had a mortgage out which was in default, and everything that it owned was pledged under that mortgage.

(P. 620.)

. . . . . .

Question. Were you a director of the Canadian River Gas Co?

Answer. Yes.

Question. Who were the other directors?

Answer. I don't recall.

Question. Don't you recall any of them?

Answer. I cannot tell you that from memory, Mr. Wooden.

Question. You mean you cannot remember any of them?

Answer. At the time of the organization?

Question. Yes.

Answer. Why, I was a director. Mr. Fitzpatrick was a director, Mr. Albert Jones.

Question. Is Mr. W. A. Jones?

Answer. No; it is Albert R. Jones, Kansas City.

Question. Wasn't there a representative of the Cities Service Co. on the board?

Answer. On the Canadian River Gas Co.?

Question. Yes.

Answer. Not that I recall.

Question. Was there a member of the board representing the Colorado Interstate Gas Co.?

Answer. I don't believe there was any member of the board representing the Colorado Interstate Gas Co.; no.

Question. It appears from the organization agreement of April 5, 1927, which is a part of Mr. Prichard's report, that it was agreed that the Colorado Interstate could name one director on the board of Canadian River Gas Co. Does that help you?

Answer. I had forgotten that provision. Mr. R. W. Gallagher was on that board for a time; rather short time.

Question. As a representative of the Colorado Interstate?

Answer. I don't understand that is so, but probably so; yes.

Question. That is the Mr. Gallagher who is prominently identified, it it not, with the Standard Oil Co. of New Jersey and its gas division?

Answer. Yes.

Question. Was there any representative on the board of Canadian River Gas Co. that you understood to represent the Standard Oil Co. interest?

Answer. No; never.

Question. Wasn't Mr. Gallagher in a position really to represent both the Colorado Interstate and the Standard?

Answer. He was connected with the Standard Oil Co.; yes.

Question. As far as you know, there was no representative of Cities Service Co. on the Canadian River Gas Co. board?

Answer. I think I can state positively that there never was.

Question. Reverting for a moment to the profit made by Amarillo Oil Co. on its sale of gas leases to Canadian River Gas Co., you said that was an intercompany profit?

Answer. Yes.

(P. 621.)

* * * * *

Testimony of W. S. FITZPATRICK before Federal Trade Commission.

Question. Do you recall your testimony given in the investigation of the Senate Committee on Banking and Currency?

Answer. I recall that I did give some testimony before a Senate committee. I could not say that I remember the title of the committee.

Question. I have here what is the printed copy of your testimony in that matter.

Answer. That is better than my recollection now.

Question. And testifying with respect to a division of the profits of a syndicate in which you participated, you said, on page 3311:

It was something that I thought Rockefellers had arranged for me, in view of the more than 20 years' service I had rendered the company in maintaining its charter rights in the State.

Wouldn't you say that you had considered yourself a representative of the Rockefellers in the Prairie Oil & Gas Co.?

Answer. No; I would not say that. But this I can say, that the Rockefellers, or one Rockefeller, the young man,

was a substantial stockholder in the Prairie Oil & Gas Co., and I always voted his proxies; but it was a minority interest that he held, and I did understand from him or from his office that they had when they sold some shares of The Prairie Co. arranged with the people who bought it to make me some money on the profit of the sale of that stock. I believe that is the substance of my testimony there. That is the fact.

Question. On page 2307 of that same record of your testimony before the Senate committee you were asked by Senator Couzens:

Who represented the Rockefellers in the management?

That is, of the Prairie—and your answer was:

Well, I don't know that anybody represented the Rockefellers exactly. I came as near it, I presume, as anybody.

Answer. I think that is true.

Question. You think that is correct?

Answer. I don't think that Rockefellers required as stockholders or had a representative to manage the Prairie Oil & Gas Co. in their interests.

Question. When the Consolidated was formed in 1922, as I understand it, it was a consolidation of the Prairie Oil & Gas and the old Sinclair Consolidated?

Answer. Yes; and the Prairie Pipe. They were consolidated, but the formula was the sale of the assets of the two Prairie Cos. to the Consolidated.

Question. In that consolidation did not the Prairie interests get the larger amount of the Consolidated stock?

Answer. Neither of the Prairie Cos. got a larger amount of the stock issued and distributed directly to the stockholders of the two Prairie Cos.

Question. What did you mean by your testimony before the Senate committee to the effect, on page 3311 that you made out of the Prairie properties, the two companies, the pipe line and the—what do you call the other one—the oil? One was the pipe-line company and the other the oil company?

Answer. Yes.

Question. That you made out of those two companies,

and "made of it a property that entitled us to 8,000,000 out of the 14,000,000 shares of the Consolidated stock"?

Answer. I meant that the stockholders of the Prairie Oil & Gas Co. and the Prairie Pipe Line Co. had while I was with them developed for them a property that the sale of which brought eight or approximately eight of the 14,000,000 shares of Consoldiated Oil Co.?

Question. Then the Prairie interests at the time of organization of the Consolidated acquired a majority of the stock? They were entitled to it, you say?

Answer. The stockholders of the Prairie owned immediately thereafter—I don't know what their ownership is now—but immediately after the distribution to them of the approximately 8,000,000 shares received for their properties had eight out of approximately 14,000,000 shares.

Question. Did you go on the board as a representative of those stockholders—the board of Consolidated?

Answer. I didn't vote the shares of those stockholders at the meeting that elected me to the board. I was not even on the committee that voted them. I did not solicit them and I had no correspondence with them. The management of the Sinclair, Mr. Sinclair himself and his associates, asked me to go on that board of directors and take that position. No stockholder that I remember of the Prairie Oil & Gas Co. asked me to do that. I was a stockholder myself, however.

Question. Well, you say that you represented the Rockefellers in the Prairie Oil & Gas Co. as near as anybody did?

Answer. All right; but that don't mean that anybody did as far as I know, and I did not represent them, and I did not know of anybody who did.

Question. But you thought that your services over a long period of years is what explained your participation in this syndicate at the request of the Rockefellers?

Answer. Originally the Standard Oil Co. and supposedly Mr. Rockefeller owned every share of the Prairie Oil & Gas Co., which later went into the Prairie Pipe Line Co., but at the time after the dissolution decree in the United States Supreme Court the elder Rockefeller, to my knowledge, never owned any stock. I never knew of it if he did. The young man had something like 250,000 shares, which was a large amount.

Question. Is it your idea that the Prairie stockholders, entitled to eight out of the fourteen million shares of stock, would go into the Consolidated without having somebody to represent their interests?

Answer. If I should express an opinion it would be just an idea, which is not quite—I can't say is honest-to-God correct—but I don't know of any arrangement with anybody to represent the Rockefellers. I never heard anybody in Mr. Rockefeller's employ say anybody represented him or that he expected anybody to represent him on that board of directors or in that company.

Question. You would not admit that anybody on that board represented the Prairie stockholders' interests, which went to make up 8 out of the 14,000,000 shares?

Answer. No; the Prairie is out of business. We represented the Consolidated Oil Co. and I had been with the Prairie. That probably may have been why they wanted me on there, but I was not asked by any stockholder of the Prairie, and I don't think it was represented at the stockholders' meeting where the stockholders voted to sell the property that I was going on the board of directors.

Question. Were there any other men on the Consolidated board who had formerly been with Prairie?

Answer. Yes.

Question. Who were they?

Answer. Mr. Nelson K. Moody and Mr. Dana Kelsey and Mr. Clark Koontz and myself.

Question. Isn't it expected that in a large corporation the large stockholding interests will be represented on the board by certain individuals?

Answer. I don't want to be misunderstood, but I am quite sure with the opportunity you have had to look into these large corporations you know more about that than I do.

Question. Well, I know about it from the outside looking in. I want you from the inside looking out.

Answer. I have never been in the employ, even in the early days when I was a lawyer, I never was employed by but two corporations in my life, outside of local attorney for a bank. But my corporate business started with my connection with the Prairie Oil & Gas Co. and ended with

my connection with the Consolidated Corporation. Those are the only two corporations I was ever a director in.

Question. When you said before the Senate Committee that you represented the Rockefellers in the Prairie Oil & Gas Co. "as much as anybody did" was there any definite understanding to the effect that you would not continue to represent them in the Consolidated?

Answer. No; but I did think I represented them as much as anybody, because I don't think anybody represented them. Now, if you want me to, I will tell you some more.

Question. In other words, the very large stockholders had no representatives?

Answer. My understanding is—and I believe it is a matter of record—that the decree of the Supreme Court of the United States dissolving the Standard Oil Trust enjoined both the elder and the junior Rockefellers from interfering in the management of any of those dissolved companies, and my observation has been that they always leaned backward to avoid it.

Question. Does that account for your statement that you represented them as much as anybody did, but that nobody represented them?

Answer. No; it does not account for it. I don't say that nobody represented them. If anybody did, or does now, I don't know it. That is all I said. It is their business, not mine. And if I did represent them, or I knew my present relation to the Consolidated Oil Corporation was at their dictation or at their suggestion, I would say so, but I do not.

Question. Wouldn't you say as a matter of almost inevitable result that when two large interests pool their properties and consolidate them and form a new corporation those interests will see to it that they have representatives on the board of the new corporation?

Answer. I should say that depended a good deal on the fellow that was doing the inferring.

Question. I am asking what you would.

Answer. I would not; and if I did, I would not make it applicable to this case any more than I have told you, because I do know what I have told you.

Question. Did you have a large investment in the stock of Prairie Oil & Gas Co. yourself?

Answer. Somewhere in the neighborhood of 10,000 shares, and a little more in the pipe line.

Question. What proportion was that of the total?

Answer. You mean I had at the time they sold out?

Question. Yes.

Answer. I don't remember definitely the number of shares.

Question. A very small proportion, was it not?

Answer. Oh, 10, 15, 17, thousand shares, or something like that.

Question. Out of how many?

Answer. Out of 14,000,000.

Question. In other words, you were not sufficiently interested in the stock of the company in your own right to insure your election as a member of the board?

Answer. Oh, no. I could not have forced it at all and, bless your heart, I would not have done it.

Question. And wasn't that true also of the other directors who had formerly been with Prairie?

Answer. I think that is true of all the directors. I think you will find none of the present directors of the company own enough stock to force their election. In fact, many of them do not own as much stock as I do, and I could not.

Question. Those things are usually arranged by some understanding between the stockholders, are they not, as to who the directors shall be?

Answer. Well, so far as I was concerned, when I was the head of the Prairie Oil & Gas Co. as such, I determined it myself, sent out their proxies, and when the stockholders sent me their proxies I voted them, and I never had a suggestion—never in the life of the Prairie Oil & Gas Co. in the 10 years, nearly, that I was the head of it—I never had a suggestion from a stockholder as to who should be elected director until, after the Rockefellers sold some stock to Blair & Co., Blair & Co. asked to have representatives on the board of directors.

Question. The Consolidated now owns, does it not, 51 percent of the stock of the Southwestern Development Co.?

Answer. That is my understanding.

Question. And isn't that 51 percent of the--

Answer. No; I beg your pardon; the Consolidated does not own 51 percent of the Southwestern.

Question. What does it own?

Answer. The Consolidated owns about 51 percent of the Southwestern that the Producers & Refiners formerly owned. Isn't that correct, Mr. Spencer?

Mr. Spencer. They own 51 percent of the stock. Your first answer was correct.

Mr. Fitzpatrick. They do. They got that.

Mr. Wooden. I was just about to follow it up with the second question: That is the same 51 percent that was formerly owned by the Producers & Refiners?

The Witness. Yes, sir; that is it.

By Mr. Wooden:

Question. Acquired as a result of the receiver's sale?

Answer. That is my understanding.

Question. Had the Consolidated or any of its constituents or predecessor companies loaned a considerable sum of money to Producers & Refiners?

Answer. The Prairie Oil & Gas Co. during its lifetime loaned Producers & Refiners considerable money.

Question. Was it somewhere in the neighborhood of $10,000,000?

Answer. No. I think the loans never amounted to more than three and a half or four million dollars. But P. & R. borrowed $10,000,000 from the banks, which was guaranteed by the Prairie Oil & Gas Co.

Question. And it was default on those obligations that led to the receivership, was it?

Answer. That is my understanding.

Question. And did Consolidated bid in at the receiver's sale the 51 percent of the stock of Southwestern formerly held by Producers & Refiners at the amount of the indebtedness?

Answer. Now I don't know. My understanding is that they bought that part and other parts of the assets of the Producers & Refiners Corporation at the receiver's sale, but what they bought it with or what they gave for it I

don't know, because I had nothing whatever to do with the proceedings in that receivership. Mr. Spencer can tell you all about that.

Question. The Prairie Oil & Gas Co. at one time controlled, did it not, the Producers & Refiners Corporation?

Answer. Prairie Oil & Gas Co. at one time owned a majority of the stock of the Producers & Refiners Corporation, floating stock, and had among its officers and employees a majority of the board of directors.

Question. What did the Prairie Oil & Gas Co. do with the transactions by which the Southwestern Development Co. purchased the gas reserves, or rather by which the Canadian River Gas Co. purchased the gas reserves, of the Amarillo Oil Co.

Answer. Did the Prairie Oil & Gas Co. have to do with that?

Question. Yes.

Answer. I don't think they did. I think that was purchased by the Amarillo Oil Co., was taken over by the Southwestern.

Question. And sold then to the Canadian River Co.?

Answer. Yes.

Question. Is it your testimony that the Prairie Oil & Gas Co. had nothing to do with the transactions which took place there?

Answer. Those were all carried on through the officers of the P. & R.—Producers & Refiners.

Question. In which the Prairie Oil & Gas Co. had the majority interest?

Answer. I think they did.

Question. What I am getting at is to what extent the officers of Prairie Oil & Gas Co. directed or influenced the course of those negotiations and transactions.

Answer. They participated in the discussions that led up to the conclusion of the transaction and approved it.

Question. And naturally their majority interest was effective in such transactions?

Answer. Oh, well; figure that out for yourself. But we represented the owners of the largest stock interest, we understood the propositions, we favored them as business of the company in which we were interested, and the officers of the company carried them out.

Question. To what extent did the officers of the Prairie Oil & Gas Co. have anything to do with the arrangement by which the contract with the Canadian River Gas Co. for the purchase of gas was negotiated?

Answer. I would say that they do not have very much to do with it.

Question. Then all the more reason for stating just what they had.

Answer. It is my guess that you have been hearing a lot of testimony about the volume of gas that was in it. I have heard some of it this afternoon. And the town of Amarillo was the only place we had to go to sell any of it. We did not know the gas business. The Producers & Refiners people did not have anybody who knew the gas business or had ever had any experience in it. We did not know where to get anybody, and we did not know—we did not want to turn it over to some outsider that we didn't know.

We had very satisfactory and many business relations with the Cities Service, and with the Standard Oil Co., and somebody proposed that they take over the gas management and the financing and understanding of the business, start the way and we would go three ways and find an outside market for that gas. Denver was the first one we thought of, or the first one suggested.

Question. Cities Service had only a 15-percent interest, didn't they, or something like that, in the line?

Answer. Cities Service at that time had a franchise in Denver and a distribution system for manufactured gas.

Question. But they received only 15 percent participation in the Colorado Interstate Gas Co.?

Answer. Yes; 15 percent was their participation.

Question. Standard Oil got 42.5 percent, didn't it?

Answer. Yes.

Question. And Southwestern Development Co., 42.5?

Answer. Yes, sir. That was agreed on, and from there we let the gas people fix the set-up pretty much.

Question. Do I understand that you do not claim to be a gas man at all?

Answer. I certainly do not.

Question. And nobody on the Prairie Oil & Gas board or in the management was a gas man, had ever had any experience in the gas business?

Answer. Mr. Moddy had taken over our gas interests as soon as we found out that we had some in Wyoming and northwest Texas, and he was kind of assigned to specialize in the gas end of it and did.

Question. Were you a member of the board of Producers & Refiners?

Answer. Yes.

Question. Were you an officer?

Answer. No.

Question. Who were the other members of the board of Producers & Refiners that you can recall?

Answer. Well, it has been a long time ago and I only have to speak from memory, but I think Mr. Moody and Mr. Kelsey were both members, and Mr. Frank Kistler for awhile, and his brother for awhile, and a man by the name of Fertig, and I don't know that I can call them all, but Mr. Spencer can give you that?

(Pp. 767-774.)

* * * * *

Testimony of W. S. FITZPATRICK before Senate Committee on Banking and Currency, Seventy-Third Congress, November 14 to November 22, 1934, Offered by the Commission as Exhibit 289.

Mr. Pecora. Mr. Fitzpatrick, I see you rising to your feet as Mr. Cutler leaves the stand.

Mr. Fitzpatrick. Yes.

Mr. Pecora. You wish to say something to the committee?

Mr. Fitzpatrick. I think I have a better recollection of some things than Mr. Cutler seems to have.

Mr. Pecora. I have not heard what you said, but perhaps if you take the witness stand again we may hear you.

The Chairman. Do you care to make any further statement, Mr. Fitzpatrick?

Mr. Fitzpatrick. Mr. Cutler is mistaken if he says he

never heard of the consolidation until 1932 with Sinclair. I talked to him myself about it.

Mr. Pecora. When for the first time?

Mr. Fitzpatrick. Oh, when it first came up.

Mr. Pecora. Back in 1928?

Mr. Fitzpatrick. In 1928. Mr. Cutler's memory fails him if he says he never heard of my participation in the profits of the Blair syndicate.

Mr. Pecora. Do you mean by the Blair syndicate the original purchasing syndicate of the Sinclair stock?

Mr. Fitzpatrick. Blair. Because I remember distinctly telling Mr. Cutler that these people had been very nice to me and I appreciated it—that they had managed to pay me more out of this than my combined salary the twenty-some years I had been working with the company.

Senator Couzens. What did Mr. Cutler say when he found that you had taken $300,000 from a competing organization?

Mr. Fitzpatrick. I did not take it from a competing organization. I took it from the bankers, and I thought, and I believe, and I know that the suggestion that I get something—not 10 percent, not $300,000—I do not believe anybody thought there was $300,000 in it, or anything like the amount of profit there was in it—but I know that I got the idea from Mr. Cutler that I should have something out of it, or that they would give me something out of it. I know that when I talked to Mr. Martson that Mr. Martson had talked to Mr. Cutler about it or Mr. Cutler had talked to Mr. Martson about it. I know that I would not have done that or anything else and I did not do anything else in connection with this consolidation until it was approved by Mr. Cutler.

Senator Couzens. And yet Mr. Cutler testifies—

Mr. Fitzpatrick (interposing). I do not care what Mr. Cutler testifies about. I say I know Mr. Cutler's memory is not good.

Mr. Pecora. Mr. Fitzpatrick, according to your recollection when did you tell Mr. Cutler for the first time that you had received this $30,000 from that purchasing syndicate?

Mr. Fitzpatrick. Probably the first time I saw him after I had received it.

Mr. Pecora. That was shortly after April, 1929?

Mr. Fitzpatrick. No. I went West, as I say, shortly after I received it, and was gone several weeks, and the first time I got back to New York I went in to see Mr. Cutler.

Mr. Pecora. Well, within a month or two after you had received it?

Mr. Fitzpatrick. A few months after I received it. Some few months afterwards.

Mr. Pecora. It would appear, Mr. Fitzpatrick, from the facts that have been developed here that the Rockefeller interests had nothing to do with the organization of that purchasing syndicate.

Mr. Fitzpatrick. I understand that is so.

Mr. Pecora. Do you know why Mr. Cutler then should have had any part in any conversations that led to your receiving a share of the profits of that syndicate?

Mr. Fitzpatrick. At that time and up to that time everything that had been said to me by Mr. Cutler or anybody else in Mr. Rockefeller's office, or by Mr. Rockefeller himself, indicated that they were very friendly to me, and that everything I had done in connection with the management of the Prairie Co. had their approval. Down to this day there has only been one criticism, and I think that was removed. Now, I believe, as I said this morning, that they were very friendly to me. And I believe that they—I knew that they knew something of my financial condition. And I believed that they wanted these people to do something for my benefit. I wondered then and have ever since why if they felt that way they asked somebody else to do it instead of doing it themselves.

Mr. Pecora. You have not found an answer to that?

Mr. Fitzpatrick. I have not found an answer to it?

Senator Couzens. You did not get an answer today, either, did you?

Mr. Fitzpatrick. I did not get an answer today. And I am astonished more than you gentlemen are.

Now, another proposition. It has been intimated by this committee that this participation of mine was kept secret. It was not kept secret. It figured in my income taxes the year I received it. It was talked over with my associates in the Prairie Oil & Gas Co. and approved by them. They understood it then, they understand it now, and at all times have understood it.

Senator Couzens. How do you account for this conflicting testimony then?

Mr. Fitzpatrick. I am not able to account for it. If I could account for it I would not be here disputing it.

Mr. Pecora. Mr. Fitzpatrick, how do you account for Mr. Arthur W. Cutten, Mr. Harry F. Sinclair, and Mr. Albert H. Wiggin having apparently been ignorant of the reason why you received this $300,000 from the purchasing syndicate of which they were members?

Mr. Fitzpatrick. I do not account for it. I never had any conversation with any of them about it, and I know nothing about it. It was fixed up by Blair & Co., and I supposed everything was fixed up right and that everybody knew it and that it was satisfactory all around. I got the money from them. I did not ask them how much it was. I never asked for an accounting. I never asked for a statement as to the operations of the syndicate. I never asked for anything. And I got it. And I got into this thing here at the suggestion of Mr. Cutler and Mr. Marston, and whatever you gentlemen see fit to believe, whatever the public may believe, if it is to my detriment it is too bad. But I am going to see that the truth is laid before you.

Mr. Pecora. That is all we want.

Mr. Fitzpatrick. I do not care who disputes it. Mr. Cutler is an important man. Mr. Cutler represents perhaps the most powerful influence in this country—possibly in the

world. I served them for twenty-some years, and I have never heard anything fall from the lips of anybody connected with the Rockefeller organization, until I heard this testimony, that impaired my respect for or confidence in them.

Now when I told Mr. Cutler that these people have been very good to me and I appreciated it—in fact they had carried me in this matter and made me more money than my combined salary, or approximately the amount of my combined salary for the years that I have been with the Prairie Oil & Gas Co., I don't remember why it was, but he said "I would not say anything about that." That is the first intimation I ever had or the first time it ever occurred to me that anybody might think there was anything wrong about my taking that money from Blair & Co.

Mr. Pecora. Who said to you you shouldn't say anything about it?

Mr. Fitzpatrick. Mr. Cutler.

Mr. Pecora. That was when you first told him that you had received that money?

Mr. Fitzpatrick. Yes, sir. When I told him how much it was.

Mr. Pecora. Now, when you were out in Excelsior Springs some 2 weeks ago with Mr. Sinclair were you surprised to know that he was ignorant of the reasons why you got that $300,000 out of that purchasing syndicate's profits?

Mr. Fitzpatrick. I naturally was. Naturally was surprised.

Mr. Pecora. His ignorance of the fact seemed genuine to you, did it?

Mr. Fitzpatrick. It did. It did. It did. Because I thought I could understand how he might not have known all about it. He said he did not. He asked me and I told him the story about Mr. Cutler and my conversation with Mr. Cutler and Mr. Marston.

Mr. Pecora. Now, Mr. Fitzpatrick, you exchanged your shares of Prairie Oil & Gas Co. for shares of the Sinclair Co.—

Mr. Fitzpatrick. Yes.

Mr. Pecora (continuing). Some time in 1929?

Mr. Fitzpatrick. 1928 we made the arrangement.

Mr. Pecora. And it was consummated in February 1929?

Mr. Fitzpatrick. Yes, sir.

Mr. Pecora. Did you at that time in your transaction part with all your holdings of Prairie Oil?

Mr. Fitzpatrick. No.

Mr. Pecora. A substantial part of them?

Mr. Fitzpatrick. A substantial part of them, yes.

Mr. Pecora. And you exchanged them for shares of the common stock of the Sinclair Co.?

Mr. Fitzpatrick. Yes.

Mr. Pecora. Which then was more or less of a competing company?

Mr. Fitzpatrick. Well, in a measure. But the general discussion that was going on indicated that the Sinclair contemplated a dividend of $3 a share. I knew that that was all that the Prairie Oil could pay, if they could pay that much. I knew that I would receive, pending the further negotiations for the consolidation, dividends on 5 shares at $3 a share instead of on 3 shares of Prairie at $3 a share. I wanted those additional dividends. I got them. And I paid my income tax on that additional income.

Senator Couzens. Did Mr. Rockefeller know that you exchanged the stock in a corporation in which he had a big interest for stock in a competing company?

Mr. Fitzpatrick. I am quite sure Mr. Rockefeller did not know it.

Senator Couzens. Did Mr. Cutler know it?

Mr. Fitzpatrick. I am quite sure that Mr. Cutler did not know it. I did not tell either one of them. It never occurred to me that it was any of their business.

Mr. Pecora. Did you tell any of the directors of the Prairie Oil & Gas Co.?

Mr. Fitzpatrick. Oh, yes. I told the directors of the Prairie Oil & Gas Co., and several of the boys in both companies made the same exchange, at the same time and in the same way.

Mr. Pecora. Were the Rockefeller interests represented on the board of directors of the Prairie Oil & Gas Co. at that time?

Mr. Fitzpatrick. Well, they were represented; yes. I represented the Rockefellers more thoroughly than I did anybody else, because there was no question of policy that I remember ever having come up that I did not try to find out whether they approved it or not. Now, we had those negotiations with Mr. Sinclair and his people all through 1929, and finally we broke up. In 1930 we were unable to get together. And there were other complications. Mr. Sinclair was about to sell or get rid of his interest in another pipe line. We waited for that. He did it. After he did it and about the time he did it we began to hear rumors of the building of the Ajax Pipe Line, and the Ajax Pipe Line took away from us—and this acquisition of full ownership of the pipe line by the Indiana company, took away from us about 70,000 to 75,000 barrels a day of business. The building of the Ajax Pipe Line took away about 20,000 barrels a day of the New Jersey company. And at the same time it took away about 6,000 barrels as I remember it of the Pure Oil Co., that went into the Ajax Pipe Line. And it took away about 40,000 barrels a day that was going to the Standard Oil Co. of Ohio—

Senator Couzens (interposing). After you had made your exchange or purchase—

Mr. Fitzpatrick (continuing). That made a difference in the setup, in the division or value of the property.

Mr. Pecora. At the time you effected that exchange of your holdings of Prairie Oil for shares of the Sinclair Company, on the basis of 5 shares of Sinclair stock for 3 shares of Prairie Oil stock, negotiations had already been in progress looking to a general consolidation of the two companies, had there not?

Mr. Fitzpatrick. They were in the preliminary stages.

Mr. Pecora. Yes. Now, at any time in those preliminary stages, or particularly at the time when you effected the exchange of your shares of Prairie Oil on the basis of 5 to 3 for shares of Sinclair Oil, did the Sinclair people indicate that they would be willing to make the same kind of exchange with the other stockholders of the Prairie Oil?

Mr. Fitzpatrick. Yes, with the other officers.

Mr. Pecora. Oh. Only with the officers, and not with the general body of the stockholders?

Mr. Fitzpatrick. No; and that was limited to 20,000 shares.

Mr. Pecora. And that offer was held out only to the officers of the Prairie Oil & Gas Co.?

Mr. Fitzpatrick. Yes, sir.

Mr. Pecora. Did other officers beside yourself avail themselves of the offer?

Mr. Fitzpatrick. Yes; they did.

Mr. Pecora. All of them?

Mr. Fitzpatrick. Not all of them.

Mr. Pecora. Which of them did so?

Mr. Fitzpatrick. Mr. Moody, Mr. Kelsey, and I think Mr. Wilhelm. I am not sure whether Mr. Wilhelm did or not, but there were several that did.

Mr. Pecora. Was the fact of such exchanges, made known by you or any other officers of the Prairie Oil & Gas Co. to the stockholders at the time that the negotiations were finally concluded on a share-for-share basis?

Mr. Fitzpatrick. We didn't send out any letter to the stockholders; no.

Mr. Pecora. Well, did you indicate the fact to the stockholders of the company in any form?

Mr. Fitzpatrick. But there was no effort on anybody's part so far as I know to conceal it.

Mr. Pecora. But was the information given to the stockholders?

Mr. Fitzpatrick. I don't know.

Mr. Pecora. Was there anything affirmatively done, in other words?

Mr. Fitzpatrick. I don't know.

Mr. Pecora. I mean to inform the stockholders of the deal that the officers had obtained for themselves.

Mr. Fitzpatrick. I don't know.

Mr. Pecora. What was that answer?

Mr. Fitzpatrick. I don't know.

Senator Couzens. Doesn't it appear to you, Mr. Fitzpatrick, that while doing this you were really scuttling your ship with the Prairie Oil & Gas Co.?

Mr. Fitzpatrick. It did not.

Senator Couzens. It would seem to me that if I owned 15 percent of a company and my officers were exchanging their stock for stock of a competing company I would consider that my ship was being scuttled.

(Pp. 3357-3361.)

* * * * *

Mr. Fitzpatrick. I came to the Prairie Oil & Gas Co. in 1908, and continued in one capacity or another with the Prairie Oil & Gas Co. down to the time that it was taken over by the Consolidated.

Mr. Pecora. Were you during any part of that period an officer or director of any other corporation engaged in any phase of the oil business?

Mr. Fitzpatrick. None except a few smaller concerns that were largely owned or that the Prairie Oil & Gas Co had a large interest in.

Mr. Pecora. Was the Prairie Pipe Line Co. one of them?

Mr. Fitzpatrick. No.

Mr. Pecora. Were you connected with that corporation?

Mr. Fitzpatrick. Not officially.

Mr. Pecora. Were you through any community of interest between the corporations that you were connected with in that corporation?

Mr. Fitzpatrick. No; except that the owners of about 60 percent of the stock in one company owned stock in the other; and in one company, I don't know which one it was, it was 65 percent, about.

Senator Couzens. Were the Rockefellers interested in Prairie Co.?

Mr. Fitzpatrick. Both companies.

Senator Couzens. Both the pipe line and the oil company?

Mr. Fitzpatrick. Yes, sir.

Senator Couzens. Did they have a controlling interest?

Mr. Fitzpatrick. No, sir.

Senator Couzens. Do you know the percentage of interest which they had?

Mr. Fitzpatrick. Only approximately. I think they had about 22 or 23 percent of the Oil and about 20 percent of the Pipe.

Mr. Pecora. Does not that represent a management control for all practical purposes?

Mr. Fitzpatrick. I do not know what you mean by "practical purposes", Mr. Pecora.

Mr. Pecora. For purposes of operation of the company.

Mr. Fitzpatrick. The stock represented by the Rockefellers and their frineds, the trusts and people that had been formerly associated with the old gentleman in years gone by, or their relatives, had, as I remember it, something like 40 or 42 percent.

Senator Couzens. Who represented the Rockefellers in the management?

Mr. Fitzpatrick. Well, I don't know that anybody represented the Rockefellers exactly. I came as near it, I presume, as anybody.

Senator Couzens: You were representing them on the board of directors?

Mr. Fitzpatrick. I was always elected on the board of directors with the proxies that they sent in and the others.

Senator Couzens. So you were always looked upon as a Rockefeller man?

Mr. Fitzpatrick. I could not say how I was looked upon.

Senator Couzens. I mean, the testimony indicated yesterday that you had been with the Rockefellers very many years.

Mr Fitzpatrick. I went with the Prairie Oil & Gas Co. in 1908. I was first employed as an attorney in a suit that was pending in Kansas, brought by the attorney general to forfeit the charter of the Prairie Oil & Gas Co. and the Standard Oil Co. of Kansas, and withdraw or cancel the permit of the Standard Oil Co. of Indiana to do business in the State of Kansas under the antitrust laws of that State. After some 6, maybe 9, months in the progress of that case I was invited to devote my entire time to the Prairie Oil & Gas Co. as its general counsel.

(Pp. 3307-3308.)

My offer there—however, before my offer there, I will distribute photostatic copies of it to counsel. The original is available for counsel.

The Trial Examiner: Do you wish to have this marked for identification, Mr. March?

Mr. March: Yes, sir.

The Trial Examiner: It will be marked for identification as Exhibit No. 289.

(Exhibit 289 marked for identification.)

Mr. March: I offer that testimony of William Samuel Fitzpatrick, Vice President of Executive Committee, Consolidated Oil Company, beginning on Page 3308 and extending through Page 3323; there is the testimony of Elisha Walker, beginning on Page 3323—I don't want to include that as it is irrelevant to this. That testimony also includes 3349 and I don't want to include that testimony—and there

is the testimony of Bertram Cutler, Rockefeller Financial Adviser, Page 3348-3358; then the resumed testimony of William Samuel Fitzpatrick, Vice Chairman of the Executive Committee of Consolidated Oil Company, Page 3357-3362. There is a small matter on Page 3362 regarding the testimony of Harry F. Sinclair and I do not wish to include that.

Mr. Examiner, to the Commission's counsel's way of thinking, this is the most important testimony offered and I want to make my statement as to its relevancy. It is one thing that shows the members of the Rockefeller family had large stockholdings in the Prairie Oil & Gas Company which controlled the Producers and Refiners Corporation which controlled Southwestern Development Company which controlled Canadian River Gas Company and Amarillo Oil Company.

(Vol. XCVIII, pp. 15,184-15,185.)

* * * * *

We have here certain testimony of a former officer of Prairie Oil & Gas Company and a former officer of Consolidated Oil Corporation at certain hearings before the Committee on Banking and Currency of the United States Senate. The testimony was taken in 1933.

Now, for the purpose of these hearings, the purpose of the investigations as shown by the resolutions on the facing sheet of Exhibit No. 289 is: "To investigate practices of stock exchanges with respect to the buying and selling and the borrowing and lending of listed securities." That is Senate Resolution No. 84.

Senate Resolution 56 is: "A resolution to investigate the matter of banking operations and practices, the issuance and sale of securities, and the trading therein."

Now, in connection with those investigations there were certain syndicate operations in New York that came under an examination by this Committee. If the Examiner had time to read this testimony he would see that it is all based upon those stock transactions. Here and there through these many pages Mr. March finds the name "Rockefeller" occasionally, which is sufficient in itself to make the whole

thing relevant and material and competent for your consideration; wherever he can find the name "Rockefeller" and the name "Prairie Oil & Gas Company" and "Standard Oil Company (New Jersey)" on the same pages, there shouldn't be any question about it, there really shouldn't.

However, I think the Examiner will agree with us first certainly that there were no issues involved there in that hearing that bear any resemblance to what we have under consideration here. Certainly we don't have the remotest semblance of identity of parties, and certainly I think counsel will agree as far as Mr. Fitzpatrick is concerned no one had a right to cross examine him except the Committee's counsel; therefore, I object to the exhibit in its entirety because I think it is irrelevant, immaterial, and certainly incompetent for the reasons I have stated.

(Vol. XCVIII, pp. 15186-15187.)

* * * * *

Not only that, but this: As I said before, it is one thing to prove that the Rockefellers had a substantial stock ownership in Prairie Oil & Gas Company, but it is another thing to prove they exercised control. The reason it is the whole heart of this and so vital is because unless I can prove that when they sat around the table in 1927 and made their original agreement between the Cities Service Company, Southwestern Development and Standard Oil Company (N. J.), that the Standard Oil Company (N. J.) not only had the power—the same person controlled the Standard Oil Company (N. J.), the Rockefellers, the details as to who they were and everything about it, unless I can show those same persons not only had sufficient stock to have considerable influence and Prairie Oil & Gas Company, and, therefore, Southwestern Development Company—unless I can show further they did exercise control over the Prairie Oil & Gas Company, my case is not as strong as it should be.

As far as this testimony is concerned, Mr. Examiner, to be absolutely frank with the Examiner here, I think it relevant to show just what the situation was. The situation here involved was the payment of a hundred or so thousand dollars to Mr. Fitzpatrick, the Chief Executive Officer for

years of Prairie Oil & Gas Company during the time the contracts were entered into for the Denver line which Prairie Oil & Gas Company controlled and which controls Southwestern Development Company, which controls Canadian River Gas Company.

I think all I need here is to show this from Pages 3358, 3359, 3360, down to the bottom of Page 3360. To indicate the relevancy and the importance of this, on Page 3360 I direct the Examiner's attention to where Mr. Pecora asked Mr. Fitzpatrick:

"Were the Rockefeller interests represented on the Board of Directors of the Prairie Oil & Gas Company at that time?"

Mr. Fitzpatrick stated: "Well, they were represented; yes. I represented the Rockefellers more thoroughly than I did anybody else, because there was no question of the policy that I remember ever having come up that I did not try to find out whether they approved it or not."

Then on Page 3358, during the cross examination, Mr. Pecora asked Mr. Fitzpatrick:

"Do you know why Mr. Cutler then should have had any part in any conversations that led to your receiving a share of the profits of that syndicate?"

Mr. Fitzpatrick stated: "At that time and up to that time everything that had been said to me by Mr. Cutler or anybody else in Mr. Rockefeller's office, or by Mr. Rockefeller himself, indicated that they were very friendly to me, and that everything I had done in connection with the management of the Prairie Company had their approval."

(Vol. XCVIII, pp. 15,188-15,190.)

* * * * *

The Trial Examiner: Have you anything further at this time, Mr. Dougherty?

Mr. Dougherty: No, Mr. Examiner, we have not.

The Trial Examiner: Mr. March, I believe the Examiner is in position now to take up this exhibit No. 289 to which you referred previously.

Mr. March: Yes. We discussed that previously and the Examiner deferred ruling until coming to Washington.

Commission Counsel already made a statement with regard to that exhibit No. 289 in the testimony of Mr. Fitzpatrick and Mr. Cutler as reported in the hearings before the Pecora Committee or, I should say, before the Committee on Banking and Currency of the United States Senate. We consider this exhibit 289 the most important piece of corporate evidence that we have tendered as an exhibit in this case and wish at this time to renew our offer of the exhibit.

Mr. Spencer: Mr. Examiner, I think I have heretofore stated my objections to this exhibit somewhat at length. I do not think it necessary at this time to repeat anything that I said before.

I will say this, that I think Counsel for the Commission evidences a distinct inferiority complex when he says this is the most important piece of corporate evidence that he has submitted in this case.

The Trial Examiner: I have gone over this exhibit No. 289 rather carefully and I have read the entire matter, and I am frank to state, Mr. March, that I see very little, if anything, in this exhibit that pertains to this proceeding.

Mr. March: Mr. Examiner, one of the most vital things is this five million dollars, and here is positive proof that the then executive officer of the Southwestern Development Company sat on the opposite side of the table from Mr. Christy Payne, and everything that he did was carried out pursuant to the instructions of Mr. Cutler with the approval of the Rockefeller families, who controlled the dominant interest in the Standard Oil Company of New Jersey.

If that is not important, then the testimony of Mr. Christy Payne is not important, nor that of Mr. Lerch. Our whole corporate case involving this five million dollars is important. We rather seriously consider this the most important evidence we have to offer. It is one thing to show stock ownership, which we have shown, and to show beyond the shadow of a doubt that the chief executive officer of the

Southwestern Development Company, or the parent Company of the Southwestern Development Company, Prairie Oil and Gas Company, back in 1927 and on through 1932 was working directly under the supervision and direction of the Rockefellers, is very, very vital, involving this five million dollar transaction, which is one of the most vital issues in this entire case.

As I said before, I can limit this offer to approximately three pages. But, as I stated, I believe all of it is important. And at the time Mr. Dougherty stated that he would rather that the whole story go in if any of it went in. That is one reason why I offer Mr. Cutler's testimony, so as to have the entire story in with regard to this particular transaction.

I believe that was Mr. Spencer's statement.

Mr, Spencer: I stated that.

Mr. Examiner, the trouble is that none of the testimony that he has here that he wants to put in does anywhere near what he says it does. That is the only difficulty.

The Trial Examiner: I was about to remark that Mr. March's statement, of course, includes the interpretation placed upon this particular piece of evidence. As I say, the thing that I got out of this particular document was the fact that someone was trying to run down some three hundred thousand dollars. And what connection that has with this rate case I was unable to see.

However, the Examiner is going to be somewhat lenient here, Mr. March. The Examiner will rule favorably. In other words, the Examiner will grant the admission of this document, exhibit 289, for whatever the testimony may be worth, and over the objection of counsel for the respondent.

(The document referred to was received in evidence and marked exhibit No. 289.)

(Vol. CII-2, pp. 16020A-16020D.)

The Commission introduced as Exhibit 249 part of the testimony before the Securities and Exchange Commission May 1, 1939, Docket No. 43-195 "In the Matter of Public Service Company of Colorado" of the witness Harry D. Hancock, who was one of Cities Service's negotiators in these conferences with Standard and Southwestern. Commission's counsel in the instant case offered this testimony to show as he stated, Cities Service's side of these negotiations (Vol. LXXXIV, p. 12670). Hancock is now and was at the time of his testimony before the Securities and Exchange Commission, president and chief engineer of Gas Advisers, Inc., a mutual service company serving subsidiary companies of Cities Service (Exhibit 249, p. 451). At the time of the negotiations, however, he was chief engineer of Gas Service Company at Kansas City, Missouri, a Cities Service subsidiary. He was lent to Cities Service to "engage in these negotiations and studies" (Ex. 249, pp. 470, 471). H. O. Caster and J. D. Creveling also represented Cities Service (Exhibit 249, p. 473). And from time to time Messrs. Board, Fowler and Loiseau of Public Service sat in (Ex. 249, p. 477).

Testimony of HARRY D. HANCOCK before the Securities and Exchange Commission, May 1, 1939, in the Matter of Public Service Company of Colorado—Exhibit 249.

HARRY D. HANCOCK, a witness produced for and on behalf of the Declarant, having been first duly sworn by the Examiner, was examined and testified as follows:

Direct Examination.

By Mr. Burns:

Q. Please state your name.
A. Harry D. Hancock.
Q. Mr. Hancock, what is your occupation?
A. I am employed by Gas Advisers, Inc., of New York City, as President and Engineer.

Q. Have you specialized in any particular branch of the engineering profession?

A. Yes, gas engineering, for the past 27 years.

Q. Gas Advisers, Inc. is a mutual service company, is it not?

A. It is.

Q. Serving certain of the subsidiaries in the Cities Service system?

A. That is correct.

Q. How long have you been associated with Cities Service Company or any of its subsidiaries?

A. Since 1912.

Q. When, if you know, did the subsidiaries of Cities Service Company first begin to engage actively in the natural gas business?

A. In a substantial way in 1912.

Q. And that was in the Mid-Continent field?

A. That is correct.

Q. You have been engaged in that branch of the activity of the system substantially all of that time?

A. No, for the first seven or eight years I was engaged in the manufactured gas branch of the business and since that time in the natural gas branch of the business.

Q. And when you entered the natural gas branch of the business where were your offices first located?

A. In Bartlesville, Oklahoma.

Q. In the Mid-Continent field?

A. In the Mid-Continent field.

Q. When would you say, Mr. Hancock, the Amarillo field first began to attract people in the gas industry as a potential gas supply?

A. The field was discovered in 1918 and began to attract attention as a potential reserve for large volumes of gas in the early 20's. By that I mean 1922.

Q. When did it become evident it was a phenomenally large gas field?

A. The interest proceeded to increase year by year as additional drilling was done and by 1925 and 1926 the potentialities of the field were beginning to be widely recognized.

Q. Did the gas engineers in the Cities Service organiza-

tion make a study of that field for the purpose of its business?

A. Yes.

Q. Were you engaged in that study to any extent?

A. Yes.

Q. In the first studies of that field, what markets had they particularly in mind?

A. In the studies as early as 1922, the markets under consideration were of a local nature in what might be called the Amarillo area for power plants and other industrial uses.

Q. Later on were markets to the east taken into account as available to be supplied with Amarillo gas?

A. They were concurrently with that time and proceeding from then on, markets such as various cities in Colorado, Kansas, Missouri, Nebraska and Illinois, which were considered as potential markets for Texas Panhandle gas.

Q. Was consideration given at an early date to the possibility of bringing gas into as far as Kansas City?

A. It was.

Q. By connecting up with the system already serving that city?

A. That is correct.

Q. And eventually a line was built to Wichita to connect with the system which supplied Kansas City, Missouri?

A. That is correct, in 1927.

Q. And studies were projected also as to the availability of that gas for the Chicago market?

A. That is correct.

Q. And Omaha?

A. That is correct.

Q. Tell me about the considerations that were given to the possibility of that gas being brought to Denver?

A. Preliminary consideration was given during the period from 1922 on. Serious consideration began in 1925 and 1926. That was both by the Cities Service Company, organization and others.

Q. What are some of the factors involved in the study of bringing natural gas from a fairly remote field to a market for sale?

A. It is important that the entire project be conceived along sound engineering and economic lines, that the in-

vestment be the minimum which the construction work can be carried out at with due regard to service, and the quantities to be transported must be carefully analyzed and studied to secure the proper balance between the supply and the market outlets to be sure that a line of sufficient capacity is built at the outset because it is more economical to construct a single large line than to later construct parallel lines; to be sure that the line is not likewise over-built beyond the capacity of the market to absorb the outlet. As a general proposition natural gas to be transported long distances must be handled in comparatively large volumes. It would not be feasible to build long small lines.

Q. Well, I presume that in these studies it is contemplated that to develop a market it is necessary to displace other fuels currently being used, is that correct?

A. That is correct, except to the extent industrial plants may be attracted into the community by the availability of a natural gas supply.

Q. But as far as the existing industries and the existing possible outlets, the fuel then being used must be displaced, is that correct?

A. That is correct.

Q. So that for the kitchen range, let us say the manufactured gas supply, if there is manufactured gas, must be displaced?

A. That is correct.

Q. And for house heating, coal or oil must be displaced. Is that true?

A. Coal, oil, coke, wood, or whatever may have been used.

Q. And as far as the existing industries are concerned, if they are to be attracted so they will connect with the lines, the fuel they are using has to be displaced by gas?

A. That is right.

Q. And that is all involved in the various studies that have to be made?

A. It was.

Q. And the house heating also is obviously a seasonal load, is it not?

A. Yes, it is very seasonal in its character and not only seasonal in its character, but varies widely from year to year.

Q. Can you tell me what you found with regard to the Denver market, the Colorado market in your preliminary studies as to the feasibility of building a line to Denver?

A. Generally speaking the city of Denver is a city of homes with a high percentage of ownership by the occupants of those homes as compared with other cities, with a relatively high percentage of people living in single, or two or three family houses, as opposed to many other cities where a large percentage live in large apartment buildings. In other words, the city of Denver offers some opportunities and attraction to the development of house heating business. On the other hand, the city of Denver did not offer as attractive industrial opportunities as do other cities, particularly in the East.

Q. Then would you say there was not a large market for the sale of gas for industrial uses in Denver?

A. Comparatively speaking that is true.

Q. What would you say about other sections of Colorado? I mean eastern Colorado?

A. The next largest city in Colorado is Pueblo, and at that location there is a very large steel plant, known as the Colorado Fuel and Iron Company, which manufactures steel rails for railroads and other steel shapes, and on account of that, Pueblo has a much larger percentage of industrial opportunity compared to domestic opportunity.

Q. The Colorado Fuel and Iron Company is what is generally known as a Rockefeller project?

A. That is my understanding.

Q. What fuel were they using?

A. They were using coal.

Q. Was it coal produced from their own coal mines?

A. That is my information.

Q. Did you make any attempt to sound out that company as to the possibility of it being a prospective gas user?

A. We did.

Q. And with what result?

A. We were unable to arrange a satisfactory contract with that company for its fuel business.

Q. And was one of the reasons advanced that they were mining and utilizing their own coal as fuel?

A. That was I think the reason advanced.

Q. When did you first see that others were thinking about building a gas line to Denver?

A. The first definite information was early in 1928.

Q. Whose gas supply was being talked of for that purpose?

A. The promoters of the line to which I refer stated they were in a position to contract for the gas reserves owned by the Southwestern Development Company in the Texas Panhandle field.

Q. That was a subsidiary of the Prairie Oil and Gas at that time?

A. It was partly owned by Prairie Oil and Gas, according to my information.

Q. And the rest by Mission Oil Company?

A. Substantially all the rest by Mission Oil Company.

Q. But it was also known as a Rockefeller project?

A. That is right.

Q. Were negotiations undertaken at that time to utilize this gas supply to bring it to Denver?

A. Yes.

Q. Did the promoters come to Cities Service Company with it and suggest a joint enterprise?

A. The promoters did come to Cities Service Company.

Q. Where, in the Amarillo field, was that block of acreage owned by the Prairie Oil and Gas Company?

A. In the extreme western end of the field.

Q. So it was the end of the field nearest to Denver, is that correct?

A. That is correct.

Q. Did those negotiations come to a head because of an agreement or contract to build a line?

A. They came to a tentative agreement contingent on the ability of the promoters to finance their enterprise, but it later developed that they were unable to finance their enterprise.

Q. What was the next thing that happened with regard to the proposed line to Denver?

A. Concurrently with the negotiations which I have just referred to, the Southwestern Development Company, and the interests associated with the Southwestern Development Company, began to discuss with Cities Service Company the possibility of building a line to Denver. Concurrently with

that step Cities Service Company was contemplating building or forming a company to build a line to various cities and industries in Colorado.

The Southwestern Development Company arranged for the Standard Oil Company of New Jersey to join with it in the negotiations and discussions, and from that time, that is, about the middle of 1926, there were these three interests contemplating the building of a line to Denver. By the three interests, I mean the Southwestern Development Company, Standard Oil Company of New Jersey, and the Cities Service Company, each were contemplating the building of a line to Denver, or joining in the building of a line to Denver and other cities in Colorado.

Q. And those negotiations progressed during 1926?

A. Yes.

Q. And 1927?

A. Yes.

Q. And during that time was Cities Service Company engaged in the project of running a line east to Wichita?

A. That is correct. In 1927 the necessary preliminary work was completed, acreage was acquired, and a 20-inch line, which was the first major line from the Texas Panhandle Field, was constructed and completed on about the last day of 1927, completed as far as Wichita, Kansas, where it tied in with the existing transportation system.

Q. Now returning to the negotiations for the line west to Colorado. You say these negotiations were carried on in 1926 and the early part of 1927?

A. That is correct.

Q. And did it appear that the Southwestern Development Company interests or the Standard Oil of New Jersey interests were in a position to procure the Colorado Fuel & Iron Company as a customer where others might not be able to do so?

A. That was one of the important developments which did take place. Those two interests advanced so that they were in a position to negotiate a satisfactory contract, appeared to be in that position, and ultimately were able to negotiate a satisfactory contract with the Colorado Fuel & Oil Company.

Q. In other words they were able to supply a factor

which would support the line which possibly no one else could supply as far as outlet for gas is concerned?

A. That is correct.

Q. That industrial load would complement the load that might be developed in any city served by the line?

A. That is true. It would enable the line to be operated at a higher load factor and more economically than it would have been done without such a substantial industrial load.

Q. Mr. Hancock, you have testified that you have been engaged in the manufactured gas business and also in the natural gas business. Can you tell us the fundamental or essential differences in operating those two branches of the business?

A. The differences arise from a different set of economics and costs in the two branches of the business, also involve a different conception of volume of business, and means by which those volumes can be obtained. As stated previously, the natural gas business is fundamentally one of large volume at somewhat lower prices per unit of heating value than obtains in the manufactured gas business. Generally speaking, the manufactured gas business involves the sale of gas for cooking, and water heating; and small commercial and industrial operations.

Whereas, the natural gas business includes those which I have just mentioned as well as gas sales for house heating and practically all commercial and industrial operations.

Q. Well, am I right in stating that one of the essential problems of a gas engineer in the manufactured gas business is to devote constant attention to keeping the costs of keeping manufactured gas down as low as possible? Is that one of his primary problems?

A. That is correct.

Q. And certain marketing fields, such as you have mentioned, house heating and large industrial operations that he can't even reach with manufactured gas, is that correct?

A. That is correct.

Q. So that a public utility man engaged in the manufactured business has had no experience in building up those large loads. Is that true?

A. That is true, and has been very forcibly brought to

my attention and the attention of others in various localities.

Q. You have had experience, have you, in bringing gas to a community replacing manufactured gas and found difficulty with the local management in building up an outlet for the gas?

A. Yes.

Q. An the pipe line company has to jump in and augment the efforts of the local management to show them how local loads are built up?

A. That is the endeavor of the pipe line company, to do that.

Q. Well, now, in these negotiations that we have been discussing, it finally ended in an agreement, did it not?

A. It did. A preliminary agreement, subject to certain conditions and developments.

Q. Was made?

A. Yes.

Q. And did that agreement provide, among other things, that the Cities Service Company was to receive 15 per cent of the stock of the company which was to build the line?

A. It did.

Q. Was the Cities Service Company to contribute to the cost of the line, the cost of building the line?

A. No.

Q. Had there been any discussions during the negotiations of the possibility of Cities Service Company having an investment interest in the line and paying a part of the cost of building the line? There had been that discussion?

A. Yes, sir.

Q. But that was dropped in the final agreement?

A. That is right. The discussions involved the purchase by Cities Service Company, or a company which would be formed for the purpose, of a larger percentage of common stock.

Q. Well, can you tell me something of the considerations which were an inducing factor whereby the participants in this line allowed Cities Service Company a 15 per cent stock interest?

A. I can tell you what was in my mind during the negotiations, and what I believe to be in the minds of others participating in those negotiations from the conversations and discussions.

The Cities Service Company, as previously stated, contemplated the building of a line, of a wholly-owned line, in Colorado. It felt that if it did not build a wholly-owned line that it was entitled to some participation in a joint enterprise. Cities Service Company further felt that it was in a position to render substantial services to the pipe line company and had rendered such services in conceiving or assisting in the conception of a pipe line along sound engineering and economic lines.

Cities Service Company also had, through Henry L. Dougherty & Company, its fiscal agent, a large and competent staff of natural gas engineers and salesmen, and other individuals who are essential and useful to the building and successful operation of such a project. It felt that the services of these men would be distinctly advantageous to a jointly owned pipe line. The hazard of building a pipe line of this character was very largely one of markets. By the time the line was undertaken the availability of the gas supply was very largely assured for a reasonable number of years.

There were substantial engineering problems in the design and construction of a line, but all of these factors which I have just named were not as important as the uncertainty of market development.

Through this stock ownership of Cities Service Company in the Public Service Company of Colorado and the Pueblo Gas and Fuel Company, it was also in a position to lay before the Boards of Directors and management of these two companies plans for the stimulation of gas load building.

Q. Were the partners in the proposed line interested in seeing to it that the organization of the Cities Service Company, the natural gas organization, be kept available for market building in Colorado to dispose of the output of this line to Colorado?

A. They were in two directions. First, that the Talent of the Cities Service Company organization through Henry L. Dougherty and Company, its fiscal agent, be made available to the pipe line company for such marketing plans as deemed advisable in each of the localities and also that

the direct services as required by the two distributing companies just named be made available to those distributing companies. That is, in the execution of the local plant for load stimulation and building.

Q. Was there also an engineering problem at the very beginning of gas service involved in the change-over of the distribution system from manufactured gas to natural gas?

A. There was.

Q. In the contract which was eventually executed between Public Service Company of Colorado and Colorado Interstate Gas Company, is this interest of the partners in the line that the Cities Service staff assist in the load building of the venture evidenced?

A. It is.

Q. Have you the contract with you?

A. No, sir; I haven't the contract before me, but I do have it in mind. It is contained in the contract between the Colorado Interstate Gas Company and the Public Service Company of Colorado under date of January 3, 1928.

Q. Now, while we are looking for that contract, may I say this, that there were several inducing factors as a result of which Cities Service Company acquired a 15 per cent interest in this line from the proposed partners in the venture and one was the fact they had been in on the study of the possible line from its earliest inception; secondly, that they had made substantial contributions to the venture in their surveys and studies which were made; and third, the participants in the enterprise wanted to be sure that the Cities Service Natural Gas organization would get behind the load building for the line on the market particularly in Denver and Pueblo?

A. Yes.

Q. As well as to assist in the mechanical job of change-over from artificial to natural gas. Are those some of the factors which resulted in Cities Service acquiring a 15 per cent interest of the line?

A. What you have just said is a fair summary of those factors.

Q. Is Section 8 of the agreement between Colorado Interstate Gas Company and Public Service Company in Colorado the section you referred to?

A. It is.

Q. Is there anything further that you can think of to add to your testimony that bears upon this question we are discussing?

A. I might say on the latter point that the other two participants in the enterprise, Southwestern Development Company and Standard Oil Company of New Jersey, insisted and demanded a minimum requirement in the contract obligating Public Service Company to take or pay for certain specific volume of gas per day or per year. The Public Service Company was unwilling to enter into that obligation and the other two participants in the industry were only willing to forego the insertion of that requirement in view of the arrangement described in Section 8 of the contract providing for a method by which the consumption and sale of gas would be stimulated.

Mr. Burns: I have no further questions to ask of this witness.

Cross Examination.

By Mr. Davis:

Q. Mr. Hancock, in 1926 and 1927, during the period that you conducted these negotiations with the Southwestern Development Company and the Standard Oil Company of New Jersey, with what firm were you connected at that time?

A. In 1926 I was chief engineer of the Gas Service Company at Kansas City, Missouri and was delegated or borrowed, you might put it to go to Denver and engage in these negotiations and studies.

Q. Right there, was Gas Service Company then a mutual service company?

Mr. Burns: Gas Service Company is a different company altogether. It is a company engaged in the gas business, distributes gas in Kansas, Oklahoma et cetera, and Gas Advisers, Inc. is a service company. They are two different things.

By Mr. Davis:

Q. You are now President of Gas Advisers, Inc.?

A. President of Gas Advisers, Inc.

Q. At that time, in 1926, you were employed by Gas Service Company?

A. Gas Service Company.

Q. And you were loaned, so-called, to the Public Service Company of Colorado?

A. No, to Cities Service Company.

Q. To Cities Service Company?

A. Which was the owner of Gas Service Company. In 1927 I was employed directly by Henry L. Dougherty and Company, fiscal agents for Cities Service Company as chief engineer of the Natural Gas Department of Henry L. Dougherty and Company. I, however, retained my office and headquarters in Kansas City during 1927 and '28.

Q. Were you at any time during these negotiations considered an employee or a member of the staff of Public Service Company of Colorado?

A. No, sir.

Q. Now you mentioned something to the effect that the men in the utility business had no idea as to the method of building the gas load in a particular utility property, but you didn't tell us to what date that situation was present.

Was that prior to 1926 or since that time?

A. That condition is not a function of time. It is more the function of background and experience. It still exists where the same conditions exist as existed at that time. If an organization or an individual has had long experience in the manufactured gas business, they will obviously have a manufactured gas viewpoint, and I might say at that point that the organization of the Public Service Company of Colorado at that time, in my opinion, was one of the best, if not the best manufactured gas organizations in the country and enjoyed a national reputation. So what I am saying is not critical of the Public Service Company of Colorado as an organization, but it is rather a statement of a condition which existed, namely, the necessary lack of experience in the natural gas business, because their business had been along other lines.

Q. Now, then, are you the duly authorized representative of Cities Service Company in all negotiations between the Colorado Interstate Gas Company and the other so-called partners that Mr. Burns referred to, such as the Southwestern Development Company and the Standard Oil Company; is that correct?

A. No, sir. I have participated in the negotiations.

Q. Who else was principal representative of Cities Service or Henry L. Dougherty & Company?

A. Mr. H. O. Caster and Mr. J. D. Crebeling.

Q. You described negotiations with the various participants which culminated in the building of a line by the Colorado Interstate Gas Company so that you apparently were familiar with all phases that entered into the final contract which you have identified as Exhibit 1 in the agreement. Is that correct?

A. That is true. You characterized me as the principal negotiator.

Q. I so understood from your direct testimony.

A. I just want to put the record straight that I was a party to the negotiations and was present at most of the discussions and furnished information to both Mr. Caster and Mr. Crebeling for their guidance and use and made recommendations for them and joined in the negotiations.

Q. Was there a time in those negotiations when the Colorado Interstate Gas Company wished to contract directly with Public Service Company of Colorado and Public Service of Colorado was not permitted to enter into a contract with Colorado Interstate Company for some reason by Cities Service Company?

A. No, sir.

Q. Isn't it a fact that Cities Service Company refused to permit Public Service of Colorado to enter into a contract with Colorado Interstate Gas Company until Colorado Interstate Gas Company paid Cities Service Company by this 15 per cent stock interest in Colorado Interstate Gas Company?

A. That was not my understanding.

Q. How was the determination of the 15 per cent stock interest of 187,500 shares of stock in Colorado Interstate Gas determined as the share which Cities Service Company was to receive?

A. By negotiation and agreement. There was considerable difference of opinion, claims and counter claims, and that was the final outcome of these discussions.

Q. Were you present during the discussions?

A. Yes.

Q. And negotiations?

A. Yes.

Q. Can you tell us what some of these claims and counter claims were that led up to the final bargain of 15 per cent?

A. Many of the claims and counter claims were demands on the part of Cities Service Company that it receive at least 33-1/3 per cent of the common stock of Colorado Interstate. The Southwestern Development Company and Standard Oil Company of New Jersey felt that 10 per cent was sufficient. The discussions involved the matter of Cities Service Company not participating at all, but resulted in it building a line of its own. The discussion also involved the purchase by Cities Service Company of common stock in addition to the 10 per cent heretofore mentioned. The discussion also included the possible purchase by Cities Service Company or its nominee of a portion of the bonds to be issued by Colorado Interstate. There was some discussion also at the time that the percentage of common stock would be allocated to the purchaser of the bonds, in which case the 33-1/3 per cent previously referred to would have been reduced to something like 28 per cent.

Those are a few of the discussions, claims and counter claims out of which grew the final agreement on the part of Cities Service Company to accept 15 per cent stock interest.

Q. Do you know whether or not Colorado Interstate Gas Company ever considered as one of the reasons for their being obliged to issue 15 per cent stock interest in their company as being grounded on the fact that Cities Service Company had refused to permit Public Service Company of Colorado to enter into a contract with Colorado Interstate Gas Company?

A. Well, there may have been statements or conversations along that line. I don't believe that was the real situation, however. The other two participants were more interested in securing a substantial load development on the line than in trying to produce the amount of common stock ownership.

Q. Now, the studies you were making in 1926 and 1927 when you say you were borrowed from the Gas Service Company—

A. Right.

Q. Weren't those being made on behalf of Public Service Gas Company of Colorado?

A. No, sir.

Q. Indirectly would you say they were being made for Public Service Company of Colorado?

A. No, because those studies involved a state-wide situation involving Pueblo and various industries which were located at various points in the State, and Public Service Company, so far as I know, was never interested in building a pipe line, and hence only had an interest at that time in procuring a gas supply for Denver and environs.

Q. Was there any discussion in these negotiations in so far as Public Service Company acquiring this interest in Colorado Interstate is concerned?

A. No.

Q. In other words, the officers and directors of Public Service Company of Colorado have never at any time entertained any idea of acquiring any interest in Colorado Interstate Gas Company simultaneously with the entry into the contract for the purchase of natural gas from Colorado Interstate Gas Company?

A. I don't know what ideas they entertained. I never heard any such ideas so expressed.

Q. When you were in Denver, you saw Mr. Fowler, Mr. Loiseau and Mr. Board, did you not?

A. Yes.

Q. And you discussed this entire problem with them?

A. Yes.

Q. And was that question at all discussed as to the feasibility of acquiring directly without going through the *circuitious* route of inquiring into Cities Service Company?

A. No, sir; it was not discussed.

By Mr. Burns:

In 1926 and 1927, were you considering the feasibility of constructing a pipe line from the Amarillo Field to Colorado?

A. Yes.

Q. And whether that was to be constructed by Cities Service Company alone or in conjunction with others is the problem which you had under consideration?

A. That is correct.

By Mr. Davis.

Q. Now, Mr. Hancock, those expert services that the Cities Service Company organization rendered, and which was one of the claims you mentioned in this contract, as being one of the reasons for this 15 per cent interest to the effect that they would get behind a load building of the line, etc., did the Cities Service Company charge the Public Service Company of Colorado for that service?

A. Henry L. Dougherty & Company, fiscal agents for Cities Service Company, received compensation for that portion of the services rendered directly to Public Service Company of Colorado in the way of supplying experienced new business men, distribution engineers, men familiar with the change-over procedures. In other words, the work which was done in Denver and environs was handled in accordance with the service contract then in existence. In other words the supplying of personnel, which if not so supplied, would have had to been secured by Public Service from other sources, if it could have been so secured. The character of service to which I refer as being of the most value from the standpoint of the Colorado Interstate was the conception of sales plans and procedures presented to the Colorado Interstate Gas Company with suggestions as to how it proceeds to convince its city gate customers of the soundness of this plan, resulted in the stimulation of sale of gas for all the domestic and commercial purposes.

Q. Mr. Hancock, when I ask you a question a few moments ago as to whether or not you knew one of the reasons Cities Service Company obtained this 15 per cent stock interest was because Cities Service Company had refused to permit Public Service of Colorado to enter into a contract with Colorado Interstate Gas Company, you answered me that had not been the fact.

A. I don't think that was the fact; no, sir.

Q. I was reading that statement from a copy of the minutes of Colorado Interstate Gas Company. Did you know that statement was in the minutes of Colorado Interstate Gas Company?

Mr. Burns: I object to this as incompetent. It seems if they want to introduce the minutes of the Colorado Inter-

state Gas Company as proof of the inducing factor, that they ought to have the people here who prepared those minutes so that they will be subject to cross examination. The question he is asking now is tantamount to his offer of the minutes in evidence.

Mr. Davis: I asked him if he knew.

Mr. Burns: I am afraid that really is the same thing as putting them in the record.

Mr. Davis: He could tell us whether he knows.

Mr. Burns: Suppose he says yes or suppose he says no, the record shows in an indirect way that the minutes of the Colorado Interstate Company make a certain statement. Now if that statement is to be put in, it ought to be put in in proper form and have the people here who prepared those minutes and say how it was they happened to phrase the minutes that way, and whether the person that phrased the minutes knew what he was talking about, or whether it was just some lawyer trying to dress up some minutes.

Mr. Stern: The statement is a proper one on cross examination whether this witness knows that was in the minutes, and his knowing it was in the minutes, whether it was a factor in the consideration. That is what I take it Mr. Davis was asking.

By the Examiner:

Q. Do you know anything about the minutes?
A. I know about it now.
Q. Did you know about it until the question was asked?
A. Yes, but not until last week.

The Examiner: Off the record.

(Discussion off the record.)

The Examiner: On the record.

Mr. Stern: If the witness will state regardless of the appearance of this statement in the minutes of the Colorado Interstate Company his impression for the reasons for this contract were those he stated and he would not change it regardless of what appeared on the minutes, I understand that is correct.

The Witness: I will state that very definitely.

(Pp. 451-481.)

Pursuant to the stipulations of April 5, 1927 (Exhibit 1), the project parties thereto, in a letter dated June 8, 1927, and filed on their behalf by W. S. Fitzpatrick, made a written proposal in the name of Colorado Interstate Gas Company to Public Service Company of Colorado. This letter proposal of June 8, 1927 is Exhibit 4 herein.

EXHIBIT NO. 4.

The Prairie Oil and Gas Company.
W. S. Fitzpatrick,
Chairman of the Board.

June 8, 1927.

Public Service Co. of Colorado, Denver, Colorado, Attention George H. Shaw, Esq.

Dear Sir: The Colorado Interstate Gas Company, recently incorporated under the laws of Delaware for the purpose of transporting natural gas to Pueblo, Colorado Springs, Denver and other places in Colorado, makes the following proposition to the Public Service Company of Colorado for the sale and delivery of natural gas to it for distribution in the City and County of Denver:

1st. This offer is contingent upon the City of Denver establishing rates for natural gas distribution by the Public Service Company of Colorado, which will justify it in purchasing natural gas from the Colorado Interstate Gas Company at the city gate prices herein contained, which are at the minimum level sufficient to attract capital for the enterprise.

2nd. The Colorado Interstate Gas Company agrees to construct and put into operation a pipe line from a point in Union County, New Mexico to a point near the city line of the City of Denver, which pipe line will be of several sizes but not less than 16" outside diameter and adequate for all your requirements. Said pipe line will connect at said point in New Mexico with a Texas pipe line which will connect with and be supported by a large area of valuable gas reserves in the Counties of Hartley, Oldham, Moore, Potter, Carson and Hutchinson in the Panhandle of Texas.

3rd. The Colorado Interstate Gas Company will sell and deliver to the Public Service Company of Colorado,

(a) All of the natural gas requisite for the supplying of the domestic consumers connected to and served with gas from the Public Service Company of Colorado's pipe lines in the City of Denver and its environs.

(b) Such amounts of natural gas as may be requisite to fulfill contracts made with the consent and approval of the Colorado Interstate Gas Company by the Public Service Company of Colorado for the sale of gas upon special terms and conditions for consumers other than domestic consumers, and

(c) Such amounts of natural gas as the Public Service Company of Colorado may require for use in properties owned or occupied by it, which amounts, if desired upon special terms and conditions other than those applying to gas for domestic use hereunder, are deliverable only with the consent and approval of the Colorado Interstate Gas Company.

The obligation of the Colorado Interstate Gas Company to make the above deliveries of natural gas, must necessarily be subject to the available production from the sources above mentioned but to the extent of any shortage in supply, the Public Service Company of Colorado shall have the right to purchase or otherwise obtain gas from any available source or manufacture gas to supply, at its own expense, such portion of its requirements for its consumers as is not obtainable from the Colorado Interstate Gas Company.

4th. The prices to be paid by the Public Service Company of Colorado to the Colorado Interstate Gas Company for natural gas supplied hereunder, shall be as follows:

During the first fifteen years the city gate price shall be forty (40) cents per thousand cubic feet.

For gas for resale under special industrial contracts, submitted to and approved by the Colorado Interstate Gas Company, the price payable to the Colorado Interstate Gas Company shall be eighty-five per cent. (85%) of the price charged by the Public Service Company of Colorado to such industrial consumers under such approved contracts.

For gas purchased by the Public Service Company of Colorado for its use in power plant or plants, the price payable to the Colorado Interstate Gas Company shall be eighty-five per cent. (85%) of the same price or scale of prices at which the Public Service Company of Colorado is selling gas to an industrial consumer using similar quantities or at such prices as the parties may agree from time to time shall apply.

After the said period of the first fifteen years, the prices in effect at the end of said fifteen year period are to continue as basic prices, but if the Colorado Interstate Gas Company by reason of an increase in the cost of producing and obtaining natural gas, is obliged to pay an increased price for its supply of gas for the purposes of the Public Service Company of Colorado, over and above the average price paid during the eleventh to fifteenth years inclusive, then it may on six months' written notice, increase said basic prices to the same extent. In the event such increased prices are not acceptable to the Public Service Company of Colorado, the increase under the facts above set forth shall be arbitrated.

5th. The Public Service Company of Colorado is to convert its distribution plant into a natural gas distribution plant and is to use every reasonable effort to build up sales of natural gas and to distribute the same at uniform pressures throughout the plant of the Public Service Company of Colorado after receiving the gas at the city gate at a pressure of thirty (30) pounds per square inch. Demands of domestic consumers are to be preferred over service to industrial consumers, but such domestic preference is not to be exercised so as to deprive the Colorado Interstate Gas Company of the right to supply the Colorado Fuel & Iron Company enough gas to complete open hearth heats then in jeopardy and to keep warm any furnace or appliance to prevent damage to such appliance.

6th. The Colorado Interstate Gas Company agrees to use diligent effort to complete its pipe line and to be ready to supply natural gas to the Public Service Company of Colorado on or before the first day of December, 1928, and the term of the contract shall be for twenty (20) years and so long thereafter as natural gas may be profitably sold by

the Colorado Interstate Gas Company to the Public Service Company of Colorado hereunder.

7th. The details of this proposition are to be worked out and a contract between the parties entered into embodying the principle and substantial terms herein proposed. Your acceptance noted upon the duplicate of this letter will constitute a preliminary understanding between the Companies, which is to form the basis of said contract if and when satisfactory rates are established by the City of Denver.

Respectfully yours,

COLORADO INTERSTATE GAS COMPANY,
By W. S. FITZPATRICK,
Chairman of the Board of
Directors.

Approved and accepted by The Public Service Company of Colorado, June 8, 1927.

CLARE N. STANNARD,
Vice President and General
Manager.

During these negotiations with the city officials of Denver and Public Service, the project parties also opened negotiations with Pueblo Gas and Fuel Company, and that company in turn began negotiations with the City of Pueblo, also a Home Rule or Charter City like Denver, for the necessary franchise. These negotiations ultimately resulted in Franchise Ordinance No. 1245 introduced as Exhibit 39 herein. That ordinance was entitled:

> "An Ordinance Granting Franchise Rights To The Pueblo Gas and Fuel Company, Subject to the Vote of The Qualified Taxpaying Electors, Establishing Rates to Be Charged for Natural and Artificial Gas, and Calling a Special Election to Determine Whether or Not Such Franchise Shall Be Granted."

The ordinance then recited:

> "Whereas, The Pueblo Gas and Fuel Company has perfected arrangements for supplying natural gas to the people of the City of Pueblo, provided a schedule

of rates which will justify its expenditures on this account is established for a term of twenty (20) years; and—

"Whereas, The Pueblo Gas and Fuel Company must make extensive changes in its distribution system to provide for natural gas and must agree to pay a fixed and unchanging price for such natural gas throughout said period of twenty (20) years; and

"Whereas, The Pueblo Gas and Fuel Company is unable to contract for a supply of natural gas and thereby reserve the same for use by the people of Pueblo for any period beyond the expiration of its franchise—

"Now, Therefore, Be It Ordained by the Council of Pueblo, Colorado:—" (Ex. 39, p. 1).

Section 1 then provided:

"That subject to the approval of the qualified taxpaying electors of the City of Pueblo to be evidenced by their votes at the special election hereinafter provided for, the franchise is hereby granted by the City of Pueblo to The Pueblo Gas and Fuel Company, its successors and assigns, to construct, maintain and operate within the City of Pueblo, a plant for the manufacture and generation of gas with the right and privilege to distribute either natural or artificial gas to the City of Pueblo, its inhabitants and people in the vicinity by means of pipes, mains, . . ." (Ex. 39, p. 1).

Rates for manufactured gas then being furnished were continued in effect, but it was then provided:

"In consideration of the agreement by The Pueblo Gas and Fuel Company—to be evidenced by its acceptance of this ordinance—to be prepared to furnish natural gas to the inhabitants of the City of Pueblo within two (2) years, to make, at its own expense, the alterations in its system and in its customers' domestic gas appliances necessary for the distribution thereof, and to contract with the Colorado Interstate Gas Company for a large reserve acreage of gas leaseholds in

the State of Texas to be made available for future use by the people of the City of Pueblo and other towns, cities, and places to be served by the proposed pipe line without discrimination against the City of Pueblo or its inhabitants; subject, however, to requirements for gas by Amarillo and a number of small towns in the Panhandle of Texas, and for helium gas by the United States Government from the Cliffside Structure, the following schedule of rates to be charged domestic consumers of natural gas is hereby established and declared to be fair and reasonable when applied and averaged throughout a period of twenty (20) years:—"

(Ex. 39, p. 3).

Then followed a schedule of gas rates for gas at not less than 800 Btu. per cubic foot, precisely the same as that contained in the Denver Ordinance, Exhibit 24 above abstracted.

This Pueblo Franchise Ordinance then provided in Section 7 (Ex. 39, p. 4) that the "foregoing schedule shall remain in effect for a term of twenty (20) years from the date on which said company turns natural gas into its distribution system." It further provided that the gas should be supplied at not less than 800 Btu. heating value per cubic foot and that helium and gasoline might be extracted from the gas provided it did not lessen the heating value. Section 8 (Ex. 39, p. 4) then provided:

"It is further determined that the rates to be charged by said company for natural gas service to industrial users for heating, manufacturing and power purposes in the City of Pueblo may be lower and different from but not higher than those charged for domestic purposes and the company shall have the right to contract with industrial users for the sale of such natural gas, provided that all such contracts shall contain a 'cut-off' clause which recognizes the preferred right of the domestic users over the industrial users. The company shall from time to time make and file with the City Clerk a schedule or schedules of classifications for all industrial users and the rates charged under the classifications shall be on the basis of the volume used and the load requirements and all consumers of any class shall be supplied on equal terms, and further, these

> schedules and rates as compared with corresponding schedules and rates in other places in Colorado using natural gas supplied by the Colorado Interstate Gas Company, shall not unjustly discriminate against the customers of The Pueblo Gas and Fuel Company."
>
> (Ex. 39, pp. 4, 5).

The ordinance then required the Pueblo Gas and Fuel Company to make natural gas available within two (2) years under penalty of forfeiture of the franchise (Ex. 39, p. 5) and concluded by providing for newspaper publication of the proposed franchise and set the special election of the qualified taxpaying electors for April 6, 1928 (Ex. 39, pp. 5, 6).

Parenthetically, and out of chronological order, attention is here called to Exhibit 40 herein, Ordinance No. 1336 of Pueblo, passed September 5, 1934, entitled:

> "An Ordinance authorizing The Pueblo Gas and Fuel Company to make effective a schedule of rates for natural gas service lower than those prescribed by Ordinance No. 1245 effective April 6, 1928, applicable to all residence service and to business space heating purposes."

This ordinance recited that the Pueblo Gas and Fuel Company had voluntarily reduced rates for certain quantities of domestic gas and for space heating when separately metered. This reduction was made to conform to a similar reduction in Denver. Both reductions by the respective distributing companies were made possible through a voluntary reduction by Colorado Interstate effective to the distributing companies August 24, 1934, described by Hendee, Colorado Interstate's manager, in Vol. IV, p. 525. There was a reduction of 4c in the gate rate for certain quantities and an additional 2c reduction for additional quantities of gas sold for domestic and for house heating purposes. Accordingly, the maximum reduction would be from 40c to 34c (Vol. IV, pp. 625, 626).

In the meantime the project parties, Southwestern, Standard and Cities Service, had through their representative, Ford, Bacon & Davis, Inc. (hereinafter called FB&D), opened negotiations with C. F. & I. for an industrial contract.

As shown in Exhibit 1, the project parties had tentatively hired FB&D to engineer, construct and operate the pipe line. The C. F. & I. industrial contract was considered by the project parties to be equally indispensable to the project as the contract with Public Service (Hill, Vol. II, p. 219; Payne, Vol. II, p. 517; Spencer, Vol. I, pp. 115, 116; Rhodes, Vol. IX, pp. 1211, 1212). George W. Bacon, chairman of the Board, and James F. Towers of FB&D, negotiated the contract on behalf of Colorado Interstate "before Colorado Interstate was formed and when the project was at its embryo." (Hill, Vol. II, p. 218). On Cross examination Rhodes testified:

> "The original negotiation for that contract was made in Denver and Colorado Springs when I was here and I know the hard, bitter fight that Mr. Bacon and Mr. Towers of our organization went through to get that price agreed upon and the contract signed up. * * * I sat in with Mr. Bacon and Mr. Towers a good many nights after they had come back from their conferences and I know what they went through." (Vol. IX, pp. 1211, 1212).

Shortly after the passage of the Denver Franchise Ordinance of February 8, 1927, and as a result of these negotiations between them, C. F. & I. sent a letter to FB&D dated February 19, 1927 (Exhibit 9), making an application for natural gas for its fuel requirements, except boiler fuel, at its steel plant in Pueblo. It offered to pay for this gas at the rate of 16c per Mcf. for the first five years and 18c per Mcf. for an additional five-year period. The letter stated:

> "'We understand that the gas which you will supply us hereunder will be from the same source as the supply of gas for the cities of Pueblo, Colorado Springs, Denver, and other places, and, in emergencies or cases of temporary shortage of gas, the demands of domestic consumers upon said supply are to be preferred over service to us hereunder, and we agree that you may under said circumstances pro rate any remainder, after demands of domestic consumers, among your industrial consumers. Nothing herein, however, shall give you the

right to exercise such domestic preference so as to deprive us of the volume of gas needed to complete open hearth heats then in jeopardy, and to keep our furnaces warm during extreme domestic demand upon your pipe line."

This application and offer was to be binding upon C. F. & I. for twelve months, within which time the letter stated it was understood that the project parties would attempt to secure contracts with distributing companies at Denver, Colorado Springs and Pueblo upon terms which would justify the construction of the pipe line. The letter also stated that C. F. & I. granted an option to the project parties to supply their boiler fuel requirements for five years at 10c per Mcf. This option could also be exercised at any time within the year. Within the year, and on February 2, 1928, FB&D, acting on behalf of Colorado Interstate, wrote C. F. & I. advising that it had procured other contracts which justified the construction of the line and that accordingly C. F. & I.'s application of February 19, 1927, for gas for all of its fuel requirements except boiler fuel, was accepted. As to the supply of gas for boiler fuel, action was reserved. (Exhibit 9).

On February 15, 1928, C. F. & I. replied to FB&D confirming the arrangement and granting to the project parties, represented by FB&D, additional time until May 19, 1928, within which to accept the proposal with respect to boiler gas. (Exhibit 9).

On May 1, 1928, FB&D, on behalf of the project parties, wrote to C. F. & I. exercising the option to supply gas for boiler fuel for the generation of steam, as proposed, for a period of five years. (Exhibit 9). This contract was formally assigned by FB&D to Colorado Interstate and will be abstracted hereinafter under the head of "Contracts of Colorado Interstate."

The abbreviation C.F.&I. employed herein means Colorado Fuel & Iron Company, and the abbreviation F.B.&D. employed herein means Ford, Bacon & Davis, Inc.

Exhibit (X) to Stipulation and Designation of Printed Record.

The following appears in the record with reference to Southwestern Development Company, Standard Oil Company (N. J.), and Cities Service Company:

Southwestern Development Company. This company was organized under the laws of the State of Colorado in July, 1924. 51% of its voting stock was issued to the Mountain States Gas Company, and 49% to the Mission Oil Company. The Mountain States Gas Company was a wholly-owned subsidiary of Producers and Refiners Corporation. Mountain States Gas Company was subsequently dissolved and thereafter this stock was held directly by Producers and Refiners Corporation (Exhibit 146-A, p. 14). From July, 1924, to May, 1934, 51% of the issued and outstanding capital stock of Southwestern Development Company was owned and held by Producers and Refiners Corporation (T., 57); and from January 1, 1924, to the date of the Producers and Refiners Corporation receivership in 1932, which resulted from that corporation's defaulting on certain promissory note obligations held by New York banks which had been endorsed or guaranteed by The Prairie Oil and Gas Company (Exhibit 10, pages 623, 772), The Prairie Oil and Gas Company held the controlling stock interest in Producers and Refiners Corporation by virtue of its ownership of approximately 65% of the issued and outstanding voting stock. Prairie officers and directors were represented on the board of directors of Producers and Refiners Corporation by W. S. Fitzpatrick, Dana H. Kelsey and N. K. Moody from about January 1, 1924, to about April 1, 1932.

House Report No. 2192, submitted to the Seventy-second Congress, Second Session, and entitled, "Report on Pipe Lines" (Exhibit 288 herein), contains the following statement with respect to stock ownership of The Prairie Oil and Gas Company and Sinclair Consolidated Oil Corporation, respectively, to-wit:

The Prairie Oil and Gas Company. On December 31, 1931, members of the Rockefeller family (J. D. Rockefeller, P. Rockefeller, J. A. Garner, and Mrs. G. R. Dodge, Trustee) held approximately 14.82% of the voting stock of The Prairie Oil and Gas Company. Petroleum Corporation of

America, on the same date, held 23.91% of the voting stock of The Prairie Oil and Gas Company. Sinclair Consolidated Oil Corporation, on the same date, owned approximately 49% of the stock of Petroleum Corporation of America (Exhibit 288, pages 46-47). The remainder of the stock was diffused among numerous stockholders (Exhibit 288, Index, p. 32).

Sinclair Consolidated Oil Corporation. On March 9, 1932, Pierce Oil Corporation held 10.57% of the voting stock of Sinclair Consolidated Oil Corporation. John D. Rockefeller held directly 253,600 shares of Sinclair Consolidated Oil Corporation, being approximately 4.1% of the total stock issued and outstanding (Exhibit 288, pages 43-44). The remainder of the stock of Sinclair Consolidated Oil Corporation was widely diffused (Exhibit 288, Index, page 32). Effective as of March 31, 1932, Sinclair Consolidated Oil Corporation acquired all the assets of The Prairie Oil and Gas Company, title to said assets being taken in the name of various subsidiaries of Sinclair Consolidated Oil Corporation. On the same day the name of Sinclair Consolidated Oil Corporation was changed to Consolidated Oil Corporation (Exhibit 288, page 40). Since May, 1934, 51% of the stock of Southwestern Development Company (formerly held by Producers and Refiners Corporation) has been held by Consolidated Oil Corporation (T., 57). This stock was purchased at the Receiver's sale of Producers and Refiners Corporation in May, 1934 (Exhibit 10, page 611). As of December 31, 1939, the largest stockholder in Consolidated Oil Corporation was Petroleum Corporation of America, holding 8.4% (Exhibit 142, page 23), and on the same date Consolidated Oil Corporation held 40.3% of the voting stock of Petroleum Corporation of America. No other stockholder held over 1% of the outstanding stock of Petroleum Corporation of America (Exhibit 142, page 55).

In Exhibit 141-A, page 7713 (being excerpts from the "Hearings Before the Temporary National Economic Committee," Seventy-sixth Congress, Second Session, September 25, 1939) the following appears:

Common Stock Held by the Largest 100 Stockholders of the Major Oil Companies.

The Temporary National Economic Committee requested in its questionnaire that the oil companies supply—

"A list containing the names and addresses of the largest 100 common stockholders, corporate and individual, as of December 31, 1938 and the number of shares held by each." Also "The total number of common stockholders as of December 31, 1938." See Table F, following:

Table F.—Shares of Common Stock Held by the 100 Largest Stockholders of the Major Oil Companies,[1] December 31, 1938.

Name of Company	Total Number of Common Stockholders	Total Common Shares Outstanding	Shares Held by 100 Largest Stockholders	Percentage
Shell Union Oil Corp.	17,393	13,070,625	11,624,611	88.9
Sun Oil Co.	5,226	2,316,484	1,966,808	84.9
Skelly Oil Co.	3,152	995,349	817,245	82.1
Standard Oil Co. (Ohio)	3,532	753,740	521,166	69.1
Tide Water Assoc. Oil Co.	24,116	6,375,253	4,066,873	63.7
Gulf Oil Corp. of Pa.	15,135	13,751,846	7,430,934	54.0
Standard Oil Co. (N. J.)	126,383	26,618,065	12,582,063	47.3
Ohio Oil Co.	31,287	5,563,377	2,955,244	45.0
Socony-Vacuum Oil Co.	113,240	31,206,071	12,803,585	41.0
Continental Oil Co.	29,969	4,738,593	1,688,030	35.6
Consolidated Oil Corp.	69,068	13,751,846	4,801,289	34.9
Standard Oil Co. (Ind.)	99,665	15,272,020	5,267,862	34.5
Pure Oil Co.	29,033	3,982,051	1,359,356	34.1
Phillips Petroleum Co.	40,105	4,449,052	1,355,054	30.4
Union Oil Co. of Calif.	26,524	4,666,270	(2)	28.1
Texas Corporation	86,380	10,876,882	2,605,090	24.0
Atlantic Refining Co.	29,313	2,663,999	633,271	23.8
Cities Service Co.	466,658	3,704,067	776,599	21.0

[1]Source: T.N.E.C. Questionnaire. Standard Oil Company of California and Mid-Continent Petroleum Corporation did not answer.

[2]Figure not available, as company reported percentage only.

The following also appears in said Exhibit 141-A, pages 8007-8009:

Consolidated Oil Corporation.

3. Following is a list containing the names and addresses of the 100 largest common stockholders (as disclosed by the stock records), corporate and individual, as of December 31, 1938, and the number of shares held by each:

	Shares
Abbott, Proctor & Paine, 120 Broadway, New York N. Y.	27,508
Leon Aerts, c/o Banque Belge p'our L'Etranger, 67 Wall St, New York, N. Y.	19,168
Atwell & Co., 45 Wall St., New York, N. Y.	25,172
Auerbach, Pollak & Richardson, 30 Pine St., New York, N. Y.	14,687
J. S. Bache & Co., 42 Broadway, New York, N. Y.	63,689
Bank of New York, Lawrence Morris & Josiah Macy Willets, Trustees for Kate M. Ladd u/a dated Nov. 29, 1938, 48 Wall St., New York, N. Y.	25,000
James E. Bennett & Co., 50 Broadway, New York, N. Y.	16,435
Harry Payne Bingham, c/o First Nat. Bank, 2 Wall St., New York, N. Y.	50,000
Louis C. Blendermann, 52 William St., New York, N. Y.	13,820
Mrs. Mabel Tremain Brewster, 52 Vanderbilt Ave., New York, N. Y.	15,810
Brown Bros. Harrimann & Co., 59 Wall St., New York, N. Y.	24,043
Mrs. Mary Flagler Cary, 1009 Park Ave., New York, N. Y.	21,400
Central Hanover Bank & Trust Co., 70 Broadway, New York, N. Y.	10,049
S. B. Chapin & Co., 111 Broadway, New York, N. Y.	29,822
The Chase National Bank of the City of New York, Trustee for benefit of David Rockefeller, Personal Trust Dept., 11 Broad St., New York, N. Y.	75,200
The Chase National Bank of the City of New York, Trustee for benefit of Laurance S. Rockefeller, Personal Trust Dept., 11 Broad St., New York, N. Y.	74,000

	Shares.
The Chase National Bank of the City of New York, Trustee for benefit of Winthrop Rockefeller, Personal Trust Dept., 11 Broad St., New York, N. Y.	75,100
The Cleveland Trust Co., Euclid Ave. & E. 9th St., Cleveland, Ohio	28,243
Mrs. Helen P. Dane, 6 Beacon St., Boston, Mass.	30,740
Carbon P. Dubbs, Chelston, East Paget, Bermuda	11,400
Harry Harkness Flagler, 32 Park Ave., New York, N. Y.	57,000
Harry Harkness Flagler, Trustee for Jean Louise Flagler U-A Dated July 2, 1931, 32 Park Ave., New York, N. Y.	15,500
Charles Frederick & Co., c/o Irving Tr. Co., Foreign Office, 1 Wall St., New York, N. Y.	15,861
Cobb & Co., c/o Customers Securities Dept., The New York Trust Co., 100 Broadway, New York, N. Y.	10,852
Consolidated Oil Corporation (Treasury Stock), 630 Fifth Ave., New York, N. Y.	76,843
Cudd & Co., c/o The Chase Nat'l Bk., Personal Trust Dept., 11 Broad St., New York, N. Y.	12,699
Dean Witter & Co., 14 Wall St., New York, N. Y.	12,322
Dominick & Dominick, 115 Broadway, New York, N. Y.	17,741
Mrs. Lela H. Edwards, 316 Fourth Ave., Commonwealth Bldg., Pittsburgh, Pa.	37,200
Fenner & Beane, 67 Broad St., New York, N. Y.	68,793
Fuller, Rodney & Redmond, 44 Wall St., New York, N. Y.	12,563
Garner & Co., 140 Broadway, New York, N. Y.	14,750
Goodbody & Co., 115 Broadway, New York, N. Y.	14,598
Mrs. Edith Hale Harkness, c/o New York Trust Co., Income Collection Dept., 100 Broadway, New York, N. Y.	92,437
Harris Upham & Co., 11 Wall St., New York, N. Y.	127,191
Hayden, Stone & Co., 25 Broad St., New York, N. Y.	27,555
H. Hentz & Co., 60 Beaver St., New York, N. Y.	30,935
Hirsch, Lilienthal & Co., 165 Broadway, New York, N. Y.	11,925
John Huntington Hord, 1564 Union Trust Bldg., Cleveland, Ohio	12,943

	Shares
Hornblower & Weeks, 40 Wall St., 12th Fl., New York, N. Y.	52,581
John W. Hubbard, 605 Granite Bldg., Pittsburgh, Pa.	12,000
The John Huntington Corp., c/o The Cleveland Trust Co., Estates Department, Cleveland, Ohio	12,936
Hurley & Co., A Partnership, 55 Wall St., New York, N. Y.	11,268
E. F. Hutton & Co., 61 Broadway, New York, N. Y.	50,377
Jessup & Lamont, 26 Broadway, New York, N. Y.	100,740
Josephthal & Co., 120 Broadway, New York, N. Y.	18,469
Kidder Peabody & Co., 17 Wall St., New York, N. Y.	17,628
King & Co., c/o City Bank Farmers Trust Co., 22 William Street, New York, N. Y.	10,102
John Kogting (Consolidated Oil Corp.—Treasury Stock), c/o Consolidated Oil Corp., 630 Fifth Avenue, New York, N. Y.	390,146
Kuhn Loeb & Co., 52 William St., New York, N. Y.	11,637
Walker G. Ladd, c/o W. R. Reed, 19 Rector St., Rm. 2302, New York, N. Y.	11,435
Laidlaw & Company, 26 Broadway, New York, N. Y.	18,648
Lamson Bros. & Co., 2200 Board of Trade Bldg., Chicago, Ill.	12,415
Lewis Cass Ledyard, Lewis Cass Ledyard, Jr. & U. S. Tr. Co. of N. Y., Trsts of Tr. U-Will Payne Whitney, Dec'd for Ben. of Helen Hay Whitney & Remaindermen, 45 Wall St., New York, N. Y.	44,200
Lewis Cass Ledyard, Lewis Cass Ledyard, Jr. & U. S. Tr. Co. of N. Y., Trsts of Tr. U-Will Payne Whitney, Dec'd for Ben. Joan Whitney Payson & Remaindermen, 45 Wall St., New York, N. Y.	15,700
Lewis Cass Ledyard, Lewis Cass Ledyard, Jr. & U. S. Tr. Co. of N. Y., Trsts of Tr. U-Will Payne Whitney, Dec'd for Ben. of John Hay Whitney & Remaindermen, 45 Wall St., New York, N. Y.	21,500
Lehman Bros., 1 William St., New York, N. Y.	13,827
Carl M. Loeb, Rhoades & Co., 61 Broadway, New York, N. Y.	16,688
George W. Loft, 10 E. 40th St., New York, N. Y.	15,246
The Lynnewood Corp., c/o Wilmington Trust Co., Wilmington, Del.	30,000

	Shares
Mac & Co., c/o Union Tr. Co. of Pittsburgh, Box 926, Pittsburgh, Pa.	13,056
Marrs McLean, Frost Nat. Bank Bldg., San Antonio, Texas	20,400
Merrick & Co., 100 Broadway, New York, N. Y. Cus. Sec. Dept.	11,159
Mitchell Hutchins & Co., 231 South LaSalle St., Chicago, Ill.	12,191
John Mooney, c/o Petroleum Corp. of America, 15 Exchange Place, Jersey City, N. J.	84,200
O'Neill & Co., P. O. Box 28, Wall St. Station, New York, N. Y.	19,760
Orvis Bros. & Co., 60 Broadway, New York, N. Y.	10,964
Paine, Webber & Co., 25 Broad St., New York, N. Y.	30,378
Mrs. Joan W. Payson, 45 Wall St., New York, N. Y.	23,359
Perkins & Co., c/o Commercial Trust Co. of N. J., 15 Exchange Pl., Jersey City, N. J.	12,000
Petroleum Corporation of America, 15 Exchange Place, Jersey City, N. J.	115,646
Carl H. Pforzheimer & Co., 25 Broad St., New York, N. Y.	26,200
E. A. Pierce & Co., 40 Wall St., New York, N. Y.	89,009
Pierce Oil Corp., 120 Wall St., New York, N. Y.	220,683
Pierce Petroleum Corp., 120 Wall St., New York, N. Y.	120,800
Post & Flagg, 49 Broad St., New York, N. Y.	48,066
Pouch & Co., 52 Wall St., New York, N. Y.	11,740
Harold I. Pratt, c/o Charles Pratt & Company, 26 Broadway, New York, N. Y.	15,950
Mrs. Ruth Baker Pratt, c/o Charles Pratt & Co., 26 Broadway, New York, N. Y.	22,950
Mrs. Alta Rockefeller Prentice, The Chase National Bank, Personal Trust Dept., 11 Broad St., New York, N. Y.	105,620
President and Fellows of Harvard College, 24 Milk St., Boston, Mass.	50,000
The Real Estate Tr. Co. of Phila., Sallie S. Houston, S. F. Houston & Edgar Dudley Faries Surviving Trustees of Estate of Henry H. Houston, Dec'd, Philadelphia, Pa.	93,732
Rockefeller Center, Inc., 30 Rockefeller Plaza, New York, N. Y.	500,000

	Shares
Salkeld & Co., c/o Bankers Trust Co., P. O. Box 704, Church St. Annex, New York, N. Y.	20,249
J. & W. Seligman & Co., 54 Wall St., New York, N. Y.	24,473
Henry L. Shattuck, 50 Federal Street, Boston, Mass.	12,000
Sigler & Co., c/o Central Hanover Bank & Tr. Co., 70 Broadway, New York, N. Y.	31,055
Smith, Barney & Co., 14 Wall St., New York, N. Y.	25,193
Supervised Shares, Inc., c/o State Street Trust Co., Boston, Mass.	15,000
Tegge & Co., c/o Guaranty Trust Co. of N. Y., 140 Broadway, New York, N. Y.	10,152
Mrs. Adabelle B. Terry, c/o Guaranty Trust Co. of N. Y. Att. Custody Div., 524 Fifth Ave., New York, N. Y.	10,511
Thomson & McKinnon, 11 Wall St., New York, N. Y.	71,155
Trustees of the Massachusetts Investors Trust Under a Declaration of Trust Dated March 21, 1924, c/o State Street Trust Co., Boston, Mass.	30,000
The Union Trust Co. of Pittsburgh, P. O. Box 755, Pittsburgh, Pa.	22,001
Alvin Untermyer, 30 Pine St., New York, N. Y.	12,720
Samuel Untermyer, 30 Pine St., New York, N. Y.	27,000
Weber & Co., c/o Farmers Loan & Tr. Co., 22 William St., New York, N. Y.	11,900
Winthrop, Mitchell & Co., 26 Broadway, New York, N. Y.	36,215
Wonham Albert & Co., 64 Wall St., New York, N. Y.	11,290
Yale University, Treasurer's Office, New Haven, Conn.	30,964

As of December 31, 1939, Mission Oil Company's holdings of Southwestern Development Company's common stock was 47.28%; members of the Jones family held 28.88% of the stock of Mission Oil Company, and Consolidated Oil Corporation, through P. C. Spencer, held approximately 3.97% of such stock (Exhibit 141 and Exhibit 142, p. 43).

Standard Oil Company (N. J.). Since its organization Rockefeller interests, or members of the Rockefeller family, have held stock in this company. In the year 1926 or 1927, about the time of the negotiations of the agreement of April 5, 1927 (Exhibit 1), John D. Rockefeller, Jr. held approxi-

mately 11% of the voting stock of the company (T., p. 15825). As of November 16, 1931, members of the Rockefeller family and various educational and charitable institutions and trust estates set up by that family held approximately 16.47% of the voting stock of the company. Of this percentage John D. Rockefeller, Jr., the largest stockholder in the company, held 11.14%, and the educational institutions endowed by John D. Rockefeller, Sr., 5.33%. Approximately 4% of the outstanding stock was owned by employees of the company. The remainder of the stock was widely diffused (Exhibit 288, pages 210, 211). As of December 31, 1938, members of the Rockefeller family and charitable institutions and trust estates set up by them held directly 13.21% of the voting stock of the company (Exhibit 141). The remainder of the stock was widely diffused.

Cities Service Company: It is stated by A. E. Lundvell, Examiner of Accounts, in his Report to the Federal Trade Commission (Document 92, Seventieth Congress, First Session, June 15, 1934—Exhibit 54, page 785 in this proceeding); that

"Since September, 1910, the Cities Service Company has been controlled by Henry L. Doherty & Company through stock ownership, and its operations have been supervised through Henry L. Doherty & Company as fiscal agent."

(The Report of Lundvell is included in Document 92 as Exhibit No. 5997, pages 767-1051.)

As of March 14, 1931, the H. L. Doherty interests held 29.6% of the voting stock of the Cities Service Company (Exhibit 54, page 776).

As of December 31, 1938, the H. L. Doherty interests owned 5.88% of the voting stock of Cities Service Company (Exhibit 141).

It is further stated in said Report to the Federal Trade Commission (Exhibit 54, p. 780) as to the parties constituting the firm of Henry L. Doherty & Company, as follows:

Henry L. Doherty & Co.—Henry L. Doherty & Co. was formed January 1, 1906, as a partnership, with Henry L. Doherty and Frank W. Frueauff as partners. Mr. Charles

T. Brown was tentatively accepted as a partner on or about January 1, 1910, but the partnership agreement was never executed. On August 24, 1915, Mr. Brown's authority to obligate the firm in any way was terminated by contract. The death of Mr. Prueauff on July 31, 1922, terminated the partnership, after which the firm name and business of Henry L. Doherty & Co. have been continued by Henry L. Doherty as sole proprietor.

It appears that the firm of Henry L. Doherty & Co. was formed by Henry L. Doherty to conduct the business of financing and operating public-utility enterprises. From the beginning the firm has maintained a staff of executives, engineers, accountants, and operating personnel trained to supervise the operations and development of such enterprises as well as others with which it later became identified.

Through the medium of the Doherty Operating Co., which was organized in 1906, Henry L. Doherty & Co. secured operating and management contracts and ultimate control of a number of public-utility operating companies. These acquisitions led to the organization of the Cities Service Co. and are now part of the Cities Service System.

The balance of the stock was widely diffused (Exhibit 141-A).

Over a period of years the Cities Service Company has held in excess of 90% of the voting stock of Cities Service Power and Light Company, which latter company in turn owns the controlling stock in Public Service Company of Colorado, the company that distributes gas in the City of Denver and surrounding areas (Exhibit 54, page 796, and Exhibit 141).

Public Service Company of Colorado holds 100% of the stock of Colorado-Wyoming Gas Company (Exhibit 141).

CHART SHOWING CORPORATE RELATIONSHIP BETWEEN CANADIAN RIVER GAS CO., COLORADO INTERSTATE GAS CO, COLORADO-WYOMING GAS CO., AND CERTAIN AS OF DECEMBER 31, 1939*

PIERCE OIL CORP.

HARRIS UPHAM & CO.

HENRY UPHAM HARRIS

LEHMAN BROS.

ADAMS EXPRESS CO.

STEPHEN MITCHELL

ROCKEFELLER INTERESTS

HARRIS TRUST & SAVINGS BANK

H. B. STATON

JONES FAMILY

PETROLEUM CORP. OF AMERICA

COLORADO FUEL & IRON CO.

H. L. DOHERTY INTERESTS

STOCK DISTRIBUTED TO MISSION OIL CO. STOCKHOLDERS

TROJAN OIL & GAS CO.

MISSION OIL COMPANY

CONSOLIDATED OIL CORP.

P. C. SPENCER WITH CONSOLIDATED OIL CORP.

STANDARD OIL CO. (N. J.)

CITIES SERVICE CO.

GEORGE MACDONALD

PARCOMIS OIL & GAS CO.

SOUTHWESTERN DEVELOPMENT CO.

CITIES SERVICE POWER & LIGHT CO.

SINCLAIR PRAIRIE OIL CO.

DALHART GAS CO.

CANADIAN RIVER GAS CO.

COLORADO INTERSTATE GAS CO.

PUBLIC SERVICE CO. OF COLORADO

PANHANDLE PIPELINE CO.

AMARILLO OIL CO.

HOPE NATURAL GAS COMPANY

COLORADO WYOMING GAS CO.

RED RIVER GAS CO.

AMARILLO GAS CO.

THE EAST OHIO GAS COMPANY

NATURAL GAS PIPELINE CO. OF AMERICA

CLAYTON GAS CO.

WEST TEXAS GAS CO.

THE PEOPLES NATURAL GAS COMPANY

GAS COMPANIES INCORPORATED

STANDARD OIL CO. OF NEW JERSEY

INTERSTATE NATURAL GAS COMPANY, INC

WM VON PHUL

53.96%

FORD, BACON & DAVIS, INCORPORATED

LEGEND

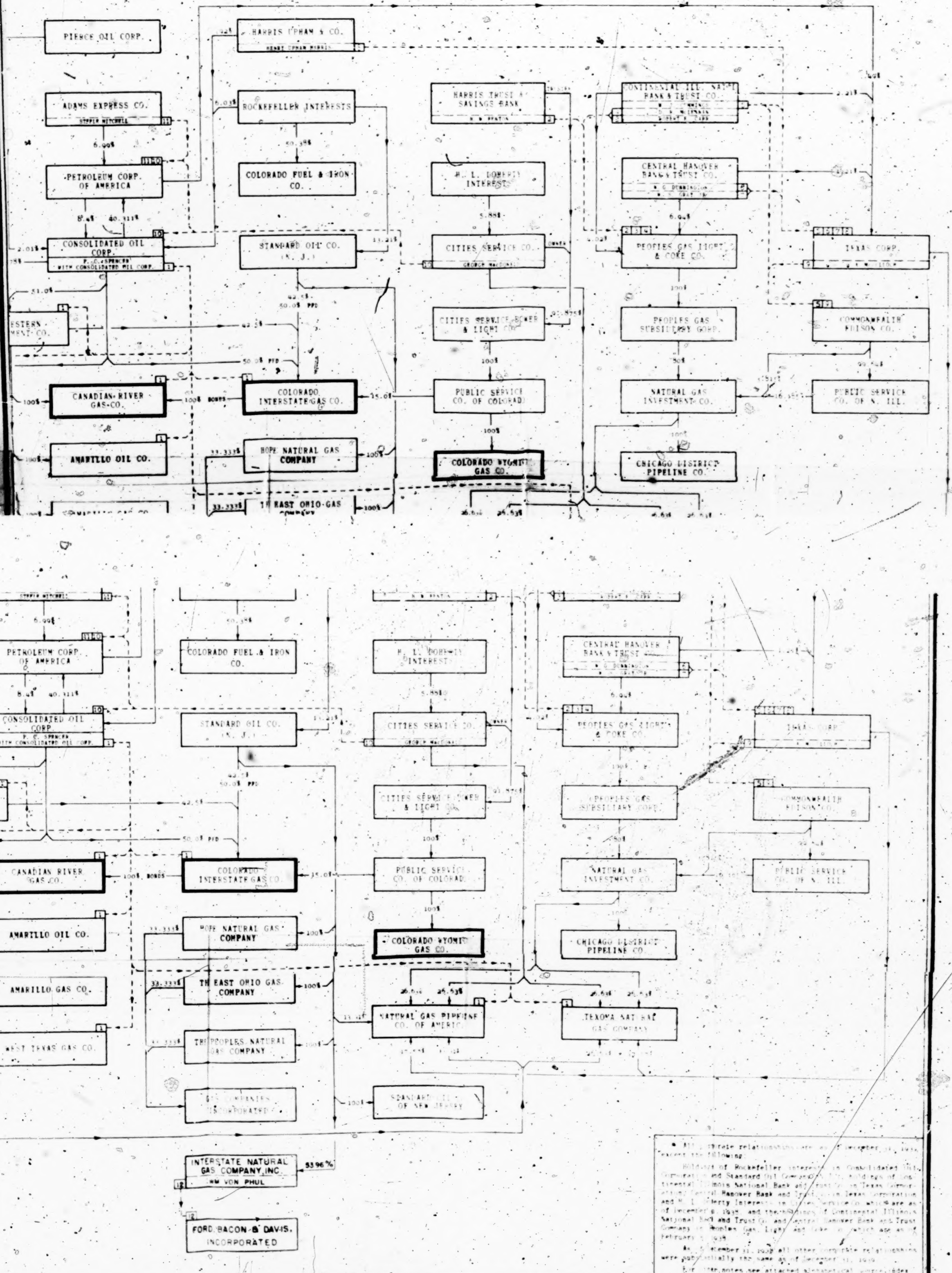
100% —— Solid lines indicate stock relationships. Percentages are of common or voting stock unless otherwise indicated.

- - - - Dash lines show common officers or directors. Each director or officer is assigned a number to aid in showing common positions. Only a few common officers and directors are shown, and these are principally between the top companies.

[1] Each director or officer is assigned a number to aid in showing common positions.

F.P.C. EX. 141

CHART SHOWING CORPORATE RELATIONSHIP BETWEEN S CO., COLORADO INTERSTATE GAS CO., COLORADO-WYOMING GAS CO., AND CERTAIN OTHER COMPANIES, AS OF DECEMBER 31, 1939*



* All intercorporate relationships are as of December 31, 1939, except the following:

Holdings of Rockefeller interests in Consolidated Oil Corporation and Standard Oil Company (N. J.), holdings of Continental Illinois National Bank and Trust Co. in Texas Corporation, Central Hanover Bank and Trust Co. in Texas Corporation and H. L. Doherty Interests in Cities Service Co. which are as of December 8, 1939, and the holdings of Continental Illinois National Bank and Trust Co. and Central Hanover Bank and Trust Company in Peoples Gas Light and Coke Co. which are as of February 1, 1940.

As of December 31, 1939 all other corporate relationships were substantially the same as of December 31, 1939.

For other notes see attached alphabetical numerical index.

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653307

Vol. II

TRANSCRIPT OF RECORD

(Pages 625 to 1230)

Supreme Court of the United States

OCTOBER TERM, 1944

No. 379

COLORADO INTERSTATE GAS COMPANY, PETITIONER,

vs.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, ET AL.

No. 380

CANADIAN RIVER GAS COMPANY, PETITIONER,

vs.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, ET AL.

ON WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE TENTH CIRCUIT

PETITIONS FOR CERTIORARI FILED AUGUST 22, 1944.

CERTIORARI GRANTED { NOVEMBER 13, 1944. JANUARY 2, 1945.

United States Circuit Court of Appeals

TENTH CIRCUIT.

No. 2550.

COLORADO INTERSTATE GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

No. 2551

CANADIAN RIVER GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; PUBLIC SERVICE COMPANY OF COLORADO; and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

ON PETITION TO REVIEW AND SET ASIDE ORDERS OF THE FEDERAL POWER COMMISSION.

FILED SEPTEMBER 9, 1942.

VOLUME 2—Pages 625-1230

3. Incorporation, Objects, Powers, Capitalization, and Financing of Colorado Interstate Gas Company.

Payne testified:

"One of the matters that was given especial consideration by those interested in this project concerned the character of operation in which Colorado Interstate should engage. There was a group of small communities in eastern Colorado, such as Rocky Ford, LaJunta and Las Animas which had no gas service of any character and there were certain other communities and enterprises that seemed to furnish available markets for natural gas. A decision had to be made as to whether this company was to operate as a public utility engaging in the sale of natural gas generally to all customers, including domestic ones, or whether it would limit the character of its operations and deal only with selected customers and sell gas only under specially negotiated contracts.

"After considering all aspects of this problem, it was the unanimous opinion of those interested that the pipe line company should not attempt to expand its business to that of a public service character, but it would make contracts for the sale of gas at prices agreed upon with its customers, and with only those customers which it felt it could supply at negotiated prices.

"Our investigations made us believe that we could safely develop a gas supply for a period of twenty years and that the enterprise would be justified on a basis of forty cents per Mcf. gate rate for domestic gas, and the sale of gas to industries in competition with the fuel prices then in existence.

"We did not want to assume the privileges or duties of a public service company which would entail obligations beyond those voluntarily assumed in our contracts.

"Accordingly, when Colorado Interstate was organized, a special provision was inserted in its Certificate of Incorporation providing that the company was not to operate as a public utility and was to sell gas only by special contract." (pp. 513, 514, V. IV).

This company was incorporated under the laws of Delaware June 8, 1927, with an authorized capital of 1,250,000 shares common stock without par value, and 20,000 shares of 6% cumulative preferred stock of $100 par value. It was organized with broad powers to carry on a business in natural and artificial gas, oil and other extractive minerals and products. (Schutte, Vol. VI, pp. 857, 858.) The articles filed herein as Exhibit 2, however, limited the broad powers and objects with this specific provision:

> "Provided that nothing herein shall be construed to authorize the corporation to transport natural gas for others as a carrier for hire or to sell natural gas for others as a carrier for hire, or to sell natural gas except by special contract, or to constitute the corporation a common purchaser of natural gas or a public utility corporation." (Ex. 2, p. 3; Schutte, Vol. VI, p. 858.)

A certificate of authority to transact business in Colorado was issued April 24, 1928 (Exhibit 3), and a like certificate to transact business in New Mexico was issued April 30, 1928. (Exhibit 3).

On June 8, 1927, the directors authorized issuance of a total of 100 shares to the original subscribers, or their assignee Standard, at $10 per share. On June 5, 1928, the directors authorized issuance of a total of 531,250 shares of the common stock to Standard for $1,000,000 cash and issuance of 10,000 shares of the $100 par value 6% cumulative preferred to Standard for $1,000,000 cash. Actually the $2,000,000 was applied against the open account of the company with Standard arising out of advances made by Standard towards the building of the project. (Schutte, Vol. VI, pp. 858, 859.)

Also on June 5, 1928, the directors authorized issuance of 531,250 shares of the common and 10,000 shares of the 6% cumulative preferred $100 par value stock to Canadian River Gas Company's nominee, Southwestern, in consideration of the execution by Canadian of the gas sales contract of January 3, 1928 (Exhibit 16) under which Canadian was to sell gas at "cost" to Colorado Interstate. (Schutte, Vol. VI, p. 859; Payne, Vol. IV, p. 515, 516; Spencer, Vol. I, pp. 66, 150, 151, 152.)

Also on June 5, 1928, the directors authorized the issuance of 187,500 shares of common stock to Cities Service in consideration of the execution by Cities Service's subsidiaries, Public Service and Pueblo Gas and Fuel Company, of the sales agreements with Colorado Interstate covering the sale of gas at the Pueblo, Colorado, city gate (Exhibit 7-H) and the sale of gas at the Denver, Colorado, city gate (Exhibit 7-I). The common stock issued to Southwestern and to Cities Service was recorded on the books on the same basis as that sold for cash to Standard, namely, $1.88235294 plus per share, or $1,000,000 for 531,250 shares issued to Southwestern and $352,941.17 for the 187,500 shares issued to Cities Service. The 10,000 shares of preferred issued to Southwestern was likewise recorded on the books at $1,000,000, the equivalent of the cash received from Standard for a like amount. (Schutte, Vol. VI, p. 860.)

On June 8, 1927, the board of directors authorized the issuance of one hundred shares of the common capital stock of the original subscribers, or their assignee (Standard Oil Company (New Jersey) upon receiving payment therefor at the rate of ten dollars per share.

On June 5, 1928 the board of directors authorized the issuance of ten thousand shares of the company's one hundred dollar par value six per cent cumulative preferred capital stock to Standard Oil Company (New Jersey) upon receipt of one million dollars therefor, and approved the issuance of 531,250 shares of the company's common capital stock to Standard Oil Company (New Jersey) for one million dollars. Actually, the two million dollars was applied against the open account with Standard Oil Company of New Jersey.

Also on June 5, 1928 the board of directors authorized the issuance of ten thousand shares of the company's six per cent cumulative preferred capital stock, par value one hundred dollars, and 531,250 shares of its no-par common capital stock to Canadian River Gas Company or its order. The latter company, according to the minutes of the meeting of the board of directors held June 5, 1928 had refused to enter into the gas sales contract with the respondent, dated January 3, 1928, unless the above-described stocks were given as part consideration for Canadian River Gas

Company's entering into said contract. The preferred and common stocks were actually issued to Southwestern Development Company, as directed by Canadian River Gas Company. Southwestern Development Company has continuously owned one hundred per cent of the common stock of Canadian River Gas Company since its organization.

Also on June 5, 1928 the board of directors authorized the issuance of 187,500 shares of the company's no-par common capital stock to Cities Service Company. The latter company, according to the minutes of a meeting of the board of directors held June 5, 1928, had refused to permit two of its subsidiaries, Public Service Company of Colorado and Pueblo Gas and Fuel Company, to enter into their respective contracts for the purchase of gas from the respondent unless the above-described stock was issued in consideration therefor.

The preferred stock issued to Southwestern Development Company as a result of the foregoing was recorded on the respondent's books at its par value ($1,000,000.00). The common stock issued to Southwestern Development Company and Cities Service Company was recorded in the books on the same basis as that sold to Standard Oil Company (New Jersey), i. e., $1.883529 plus per share, or $1,000,000.00 for the 531,250 shares issued to the Southwestern Development Company and $352,941.17 for the 187,500 shares issued to Cities Service Company. The board of directors failed, however, to adopt resolutions placing a value on the capital stocks which were not issued for a cash consideration.

It is clear from the foregoing that Colorado Interstate Gas Company issued its common and preferred capital stocks recorded at two million dollars for the privilege of buying gas from Canadian River Gas Company and issued its common capital stock recorded at $352,941.17 for the privilege of selling gas to certain customers. The total recorded value of the stocks issued in this manner ($2,352,941.17) was charged to an account, Franchises and Contracts. The company has recorded amortization on its books which would extinguish that account over the 20-year period from July 3, 1928 to June 30, 1948.

On December 29, 1931, Cities Service Company sold its 187,500 shares of no-par common capital stock in Colorado Interstate Gas Company to Public Service Company of Colorado for ten dollars per share, or a total of $1,875,000.00. This value is also stated in a resolution adopted by the board of directors of Cities Service Company on February 5, 1932, certified copy of which was filed in the stock certificate book of Colorado Interstate Gas Company.

The ten thousand shares of six per cent cumulative preferred capital stock in Colorado Interstate Gas Company originally issued to Southwestern Development Company were transferred by it to Prairie Oil and Gas Company on December 28, 1928, and on March 31, 1932 the latter transferred the stock to Consolidated Oil Corporation.

On December 31, 1939 the capital stocks of Colorado Interstate Gas Company were held as follows:

I'll read the common first and then the preferred.

Common: Standard Oil Company (New Jersey) 531,250 shares or 42.5 per cent of the total;

Southwestern Development Company 531,250 shares or 42.5 per cent of the total.

Public Service Company of Colorado 187,500 shares or 15.0 per cent of the total;

Total common stock, 1,250,000 shares.

Preferred Stock: Standard Oil Company, (New Jersey) 10,000 shares or 50 per cent of the total;

Consolidated Oil Corporation 10,000 shares or 50 per cent of the total of 20,000 shares outstanding.

The stock of Southwestern Development Company as of December 31, 1939 was held 51 per cent by Consolidated Oil Corporation and approximately 47 per cent by Mission Oil Company.

Public Service Company of Colorado is controlled by Cities Service Power and Light Company.

On June 5, 1928 the board of directors authorized the issuance of the company's First Mortage and Collateral Trust Twenty-Year Six Per Cent Sinking Fund Gold Bonds

dated June 1, 1928 and payable June 1, 1948 in an aggregate principal amount of $19,200,000.00.

The trust indenture is with the Chase National Bank, New York, successor Trustee to The Equitable Trust Company of New York, and is secured by a lien on the company's properties and on the bonds of the Canadian River Gas Company.

The bonds of Colorado Interstate Gas Company were issued at the par value thereof, as follows:

On June 14, 1928,	$7,021,000.00
June 27, 1928	8,470,000.00
December 3, 1928	1,401,000.00
December 30, 1929	2,308,000.00
Total	$19,200,000.00

Beginning June 1, 1930, and periodically thereafter, bonds were redeemed through the sinking fund in accordance with trust indenture provision, so that on December 31, 1939 the balance outstanding was $8,865,000.00.

On October 28, 1938, the board of directors approved an agreement made with the Guaranty Trust Company of New York resulting in reduction of the nominal interest rate from six per cent to three and a half per cent provided Colorado Interstate Gas Company pay a premium of two per cent of the face value of the bonds then outstanding ($10,384,000.00) except for $519,000.00 principal amount subject to redemption on December 1, 1938, to Guaranty Trust Company and its associate. This reduction in interest rate was incidental to purchase of the outstanding bonds by Guaranty Trust Company of New York and The Mutual Life Insurance Company of New York from the previous owners.

The cash proceeds from the sale of Colorado Interstate Gas Company's securities—$19,200,000.00 from the sale of bonds and $2,000,000.00 from the sale of common and preferred stock, a total of $21,200,000.00—were used primarily to liquidate advances received from Standard Oil Company of New Jersey to finance the initial construction programs of both Colorado Interstate Gas Company and Canadian

River Gas Company. The advances for the latter company were made through Colorado Interstate Gas Company.

(Vol. VI., pp. 858-864.)

* * * * *

Q. Mr. Schutte, how much money did Public Service Company of Colorado put in this project?

A. Well, Public Service Company of Colorado wasn't included in the initial program. It was Cities Service Company that was included in the original program. Public Service Company of Colorado, however, later on acquired by purchase the common stock of Colorado Interstate that had initially been issued to Cities Service Company.

Q. How much did Cities Service Company pay for that stock?

Mr. Keffer: If the Examiner pleases, I don't see how that has anything to do or any bearing upon the rate base in this case or any materiality whatsoever insofar as reasonable rate of return of property used in the Public Service is concerned. I object to the question because it is wholly irrelevant.

The Trial Examiner: Objection overruled.

Mr. March: I welcome the opportunity.

The Trial Examiner: The objection has been overruled.

Mr. Keffer: Please note our exception.

The Trial Examiner: Yes.

By Mr. March:

Q. Will you answer the question, Mr. Schutte?

A. What is the question?

The Trial Examiner: Please read the question, Mr. Reporter.

(The question referred to was read by the reporter, as set forth above.)

The Witness: Cities Service Company paid no cash for the stock. There was no cash consideration.

By Mr. March:

Q. Do you recall how much Public Service Company of

Colorado paid the Cities Service Company for that stock?

A. Ten dollars a share.

Q. Do you recall the total amount; the total consideration?

A. Just a moment. (Examining document.) It was $1,875,300.

Q. Did at that time, to your knowledge, Cities Service Company control Public Service Company of Colorado, either directly or through one of its subsidiaries?

A. It did, yes.

(Vol. VI, pp. 869-871.)

Mr. Dougherty: If the Examiner please, Mr. Lange has requested information concerning change in the terms of the mortgage secured bonds outstanding of Colorado Interstate Gas Company and I agreed to furnish that. It is as follows:

By Fourth Supplemental Indenture to the original mortgage, such indenture being dated September 1, 1940, the rate on the remaining outstanding bonds will be fixed at 2.75 per cent and the maturity date was amended to December 1, 1945; otherwise, there were no changes of any substance.

(Vol. C, pp. 15368-15369.)

P. C. SPENCER, called as a witness on behalf of the respondent, being first duly sworn, testified as follows:

Direct Examination.

By Mr. Keffer:

Q. Please state your name.

A. P. C. Spencer; S-p-e-n-c-e-r.

Q. You gave your name. Please give your residence also.

A. I reside at Scarsdale, New York.

Q. Do you have any official connection with the Canadian River Gas Company, Mr. Spencer?

A. I am a vice president and director of the Canadian River Gas Company.

Q. How long have you been connected with that company?

A. I have been connected with the company as vice president and as a director since 1932.

Q. Have you been generally familiar, Mr. Spencer, with the organization of the Canadian River Gas Company and also with the Southwestern Development Company?

A. Yes.

Q. What was your position prior to the organization of the Canadian River Gas Company with respect to the Southwestern Development Company?

A. I was attorney and a portion of the time general counsel for the Producers and Refiners Corporation which owned a majority of the outstanding capital stock of the Southwestern Development Company, and as such general counsel I was generally familiar with the business affairs of the Southwestern Development Company and its subsidiaries and the organization of the Southwestern Development Company in 1924.

(Vol. I., pp. 27-29.)

EXHIBIT NO. 2.

Certificate of Incorporation of Colorado Interstate Gas Company.

First. The name of this corporation is

Colorado Interstate Gas Company.

Second. Its principal office in the State of Delaware is located at No. 7 West Tenth Street in the City of Wilmington, County of New Castle. The name and address of its resident agent is Corporation Trust Company of America, No. 7 West Tenth Street, Wilmington, Delaware.

Third. The nature of the business or objects or purposes proposed to be transacted, promoted or carried on are:

To search for, mine, bore, dig for, produce, refine, manufacture, treat, compress, blend, use, store, prepare for market, contract for, purchase or otherwise acquire, sell, exchange, and generally to deal in natural and artificial

gas, petroleum and other oils, coals, sulphur, lignite, and other minerals and mineral substances, and all kinds of products and by-products thereof, including natural gas-gasoline and casing head gasoline, and all implements and materials used in the production, manufacture, storage, transportation and sale of said gas, oil, and or minerals and products and or by-products thereof.

To lay, maintain, own, lease or otherwise acquire, and operate such pipe line or lines as may be necessary or convenient for the transportation and delivery of natural and or artificial gas and or oil purchased, produced or sold by the corporation.

To erect, build, install, construct, purchase or otherwise acquire, lease, own, possess, operate, maintain, and or contract and deal with respect to all power and gasoline plants, compressing and pumping stations, and or boosters, and or all water, telephone, telegraph and or electric transmission lines, rights of way, easements, privileges, and or other interests in lands or property necessary or desirable in connection with the laying, building, installing, constructing, owning, leasing, acquiring, operating, and or maintaining of said pipe lines, and or the business of dealing in natural and artificial gas, petroleum and other oils, minerals and mineral substances as herein provided.

To buy, sell, lease and improve lands, build houses, structures, vessels, cars, wharves, docks and piers.

To acquire, own, operate, exchange and sell leases, licenses, or other contracts for the purpose of drilling and developing lands for oil and gas, and to purchase or otherwise acquire, own, operate, and develop, sell and dispose of, oil and gas lands.

To enter into and carry out contracts of every kind pertaining to its business, to acquire, use, sell and grant licenses under patent rights, to purchase or otherwise acquire hold, sell, assign and transfer shares of capital stock and bonds or other evidences of indebtedness of corporations, to exercise all the privileges of ownership, including voting upon the stock so held.

To have one or more offices, to carry on all or any of

its operations and business and without restriction or limitation as to the amount, to purchase or otherwise acquire, hold, own; mortgage, sell, convey or otherwise dispose of real and personal property of every class and description in any of the states, districts, territories or colonies of the United States and in any and all foreign countries subject to the laws of such state, district, territory, colony or country and the same to pledge, mortgage and hypothecate for the uses, benefits and purposes of the corporation, and to issue bonds, debentures and other evidences of debt, and to secure the same and interest thereon by mortgage, pledge and hypothecation of said real estate and personal property; and generally to do and perform all things incidental or necessary to enable it, to carry out the objects and purposes above set forth.

In general, to carry on any other business in connection with the foregoing, whether manufacturing or otherwise, and to have and exercise all the powers conferred by the laws of Delaware upon corporations formed under the laws thereof and to do any and all things hereinbefore set forth to the same extent as natural persons might or could do.

Provided that nothing herein shall be construed to authorize the corporation to transport natural gas for others as a carrier for hire or to sell natural gas for others as a carrier for hire, or to sell natural gas except by special contract, or to constitute the corporation a common purchaser of natural gas or a public utility corporation.

The foregoing clauses shall be construed both as objects and powers; and it is hereby expressly provided that the foregoing enumeration of specific powers shall not be held to limit or restrict in any manner the powers of this corporation.

Fourth. The total number of shares of the corporation's authorized capital is One Million Two Hundred Seventy Thousand (1,270,000) of which Twenty Thousand (20,000) of the par value of One Hundred Dollars ($100) each are to be Preferred Stock and One Million Two Hundred Fifty Thousand (1,250,000) are to be Common Stock without nominal or par value. From time to time, either class of stock may be increased or decreased or one or more

additional classes of stock may be created with such preferential, special or qualified rights as may be determined by the Board of Directors and the stockholders having voting rights, provided, however, that any additional classes of stock so created shall be subordinate to the Preferred Stock now authorized in respect of payments of dividends and all payments on liquidation or dissolution. The holders of the Preferred Stock shall be entitled to receive, when and as declared by the Board of Directors, dividends from the surplus or net profits of the corporation at the rate of six percent. (6%) per annum and no more, payable quarterly, on dates to be fixed by the By-laws of the corporation or by resolution of the Board of Directors. Dividends on the Preferred Stock shall be cumulative and shall be paid or set apart for payment before any dividend on any stock of the corporation shall be paid or set apart, so that if in any quarterly period dividends at the rate of six percent. (6%) per annum shall not have been paid or set apart for the Preferred Stock, the deficiency shall be fully paid or set apart for payment before any dividend shall be paid upon or set apart for any other stock of the corporation.

When full cumulative dividends on the Preferred Stock for all previous years shall have been declared and shall have become payable, and the accrued quarterly installments for the current year shall have been declared, and the corporation shall have paid such cumulative dividends for previous years and shall have paid and set apart from its surplus or net profits a sum sufficient to pay such accrued quarterly installments for the current year, the Board of Directors may declare dividends on the Common or other stock of the corporation payable then or thereafter out of the remaining surplus or net profits.

In the event of any liquidation or dissolution of the corporation, whether voluntary or involuntary, the holders of the Preferred Stock shall be entitled to be paid in full both the par amount of their shares and the dividends accumulated and unpaid thereon before any amount shall be paid to the holders of any other stock, but shall not be entitled to share further in the assets of the corporation or the proceeds of liquidation. After payment to the holders of

the Preferred Stock of its par value and the unpaid accrued dividends thereon, the remaining assets and funds of the corporation shall be distributed and paid to the holders of the Common or other stock according to their respective rights.

The holders of Preferred Stock shall not be entitled to receive any dividend or share of profits beyond the six per cent. (6%) aforesaid, whether payable in cash, stock or property, nor shall they have any preemptive right to subscribe for any new issue of stock of any class now or hereafter authorized or issued.

The holders of Preferred Stock shall have no voting powers whatsoever, nor shall they be entitled to notice of any meeting of stockholders of the corporation.

The Preferred Stock as an entirety shall be subject to redemption and may be redeemed at the option of the corporation at any time after five (5) years from the issue thereof on any quarterly dividend payment date by payment for each share of stock so to be redeemed of One Hundred Five per centum (105%) of the par amount thereof and any addition thereto of dividends accumulated and unpaid thereon. Not less than thirty (30) days' nor more than sixty (60) days' previous notice of such redemption shall be given in such manner and form as may be prescribed by the Board of Directors. From and after the date fixed in any such notice as the date of redemption (unless default be made by the corporation in the payment of the redemption price pursuant to such notice), all dividends on the Preferred Stock shall cease to accrue and all rights of the holders of record thereof as stockholders of the corporation, except the right to receive the redemption price, shall cease and determine.

The Preferred and Common Stock may be issued by the corporation from time to time for such consideration as may be fixed from time to time by the Board of Directors thereof.

Fifth: The amount of capital stock with which this corporation will commence business is One Hundred (100) shares of Common Capital Stock.

Sixth: At all elections of directors, each stockholder shall be entitled to as many votes as shall be equal to the number of his shares of Common stock multiplied by the number of directors to be elected, and he may cast all of such votes for a single director or may distribute them among the number to be voted for, or any two or more of them, as he may see fit, which right, when exercised, shall be termed cumulative voting.

Seventh: The names and places of residence of the original subscribers to the capital stock and the number of shares subscribed for by each are as follows:

Name	Residence	No. of Shares
T. L. Croteau	Wilmington, Delaware	98.
A. L. Miller	Wilmington, Delaware	1
T. L. Fray	Wilmington, Delaware	1

Eighth: This corporation is to have perpetual existence.

Ninth: The private property of the stockholders shall not be subject to the demand of corporate debts to any extent whatever. No contract or other transaction between the corporation and any other corporation shall be affected or invalidated by the fact that any one or more of the stockholders, directors, officers or agents of the corporation is or are interested in or is a stockholder, director, officer or agent, or are stockholders, directors, officers or agents of such corporation, and any stockholder, director, officer or agent or stockholders, directors, officers or agents of the corporation, individually or jointly, may be a party or parties to or may be interested in any contract or transaction of the corporation or in which the corporation is interested; and no contract, act or transaction of the corporation with any person or persons, firm or corporation shall be affected or invalidated by the fact that any stockholder, director, officer or agent or stockholders, directors, officers or agents of the corporation is a party to or are parties to or interested in such contract, act or transaction or in any way connected with such person or persons, firm or corporation, and each and every person who may

become a stockholder, director, officer or agent of the corporation, is hereby relieved from any liability that might exist from the contracting with the corporation for the benefit of himself or any firm, association or corporation in which he may be in any wise interested.

Tenth: In furtherance and not in limitation of the powers conferred by statute, the Board of Directors is hereby expressly authorized:

To make and alter the By-laws of this corporation, to fix the amount to be reserved as working capital over and above its capital stock paid in, to authorize or cause to be executed mortgages and liens upon the real and personal property of this corporation.

From time to time to determine whether and to what extent and at what times and places and under what conditions and regulations, the accounts and books of this corporation (other than the stock ledger), or any of them, shall be open to inspection by stockholders, and no stockholder shall have the right of inspecting any account, book or document of this corporation, except as conferred by statute, unless authorized by a resolution of the stockholders or Directors.

If the By-laws so provide, to designate two or more of its number to constitute an executive committee, which committee shall for the time being, as provided in said resolution or in the By-laws of this corporation, have and exercise any and all the powers of the Board of Directors in the management of the business and affairs of this corporation, and have power to authorize the seal of this corporation to be affixed to all papers which may require it.

Pursuant to an affirmative vote of the holders of at least a majority of the stock issued and outstanding having voting power given at a stockholders' meeting, duly called for that purpose, or when authorized by the written consent of the holders of at least a majority of the voting stock issued and outstanding, the Board of Directors shall have power and authority at any meeting to sell, lease or exchange all of the property and assets of this corporation including its good will and its corporate fran-

chise upon such terms and conditions as its Board of Directors deem expedient and for the best interests of the corporation.

This corporation may in its By-laws confer powers upon its Directors in addition to the foregoing and in addition to the powers and authorities expressly conferred upon them by statute. Directors need not be stockholders.

Both stockholders and Directors shall have power, if the By-laws so provide, to hold their meetings, and to have one or more offices within or without the State of Delaware, and to keep the books of this corporation (subject to the provisions of the statutes) outside of the State of Delaware at such places as may from time to time be designated by the Board of Directors.

Eleventh: This corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation in the manner now or hereafter prescribed by statute, and all the rights conferred upon stockholders herein are granted subject to this reservation.

We, the Undersigned, being each of the original subscribers to the capital stock hereinabove named for the purpose of forming a corporation to do business both within and without the State of Delaware, and in pursuance of the General Corporation Law of the State of Delaware, being Chapter 65 of the Revised Code of Delaware, and the acts mandatory thereof and supplemental thereto, do make and file this certificate, hereby declaring and certifying that the facts herein stated are true, and do respectively agree to take the number of shares of stock hereinabove set forth, and accordingly have hereunto set our hands and seals this 8th day of June, A. D. 1927.

In presence of: HERBERT E. LATTER.

(Seal) T. L. CROTEAU.
(Seal) A. L. MILLER.
(Seal) T. L. FRAY.

State of Delaware, County of New Castle, ss.

Be It Remembered that on this 8th day of June A. D. 1927, personally came before me, Herbert E. Latter a Notary Public for the State of Delaware, T. L. Croteau, A. L. Miller and T. E. Fray, parties to the foregoing Certificate of Incorporation, known to me personally to be such, and severally acknowledged the said Certificate to be the act and deed of the signers respectively and that the facts therein stated are truly set forth.

Given under my hand and seal of office the day and year aforesaid.

HERBERT E. LATTER,
Notary Public.

HERBERT E. LATTER,
Notary Public,
Appointed Feb. 24, 1927
State of Delaware
Term Two Years

State of Delaware.

Office of Secretary of State.

I, Josiah Marvel, Jr., Secretary of State of the State of Delaware, do hereby certify that the above and foregoing is a true and correct copy of Certificate of Incorporation of the "Colorado Interstate Gas Company", as received and filed in this office the eighth day of June, A. D. 1927, at 10 o'clock A. M.

In Testimony Whereof, I have hereunto set my hand and official seal at Dover, this fourth day of October in the year of our Lord one thousand nine hundred and forty.

JOSIAH MARVEL, JR.,
Secretary of State.

(Seal)

4. Incorporation, Objects, Powers, Capitalization, and Financing of Canadian River Gas Company.

Spencer testified that his company, Southwestern, was advised that King filed his report with Denver in August,

1927; that this report was favorable to the proposed pipe line project, including the 40c gate rate; that Southwestern was subsequently advised of the passage of the ordinance of September 14, 1927 (Exhibit 25); which ordinance recited the King Report and fixed the rates for distribution based on a 40c gate rate (Spencer, Vol. 1, pp. 62, 63). Continuing, Spencer stated:

> "Upon the passage of this ordinance, all parties to the agreement of April 5, 1927, immediately became active in carrying out their respective obligations thereunder. As a part of its obligations, Southwestern caused Canadian River to be incorporated under the laws of the State of Delaware on February 24, 1928, all of its capital stock (25,000 shares without par value), excepting director's qualifying shares, being issued to Southwestern. This company was organized by Southwestern to own and operate gas leases, wells, pipe lines and other facilities for the production and transportation of natural gas with which to supply the Denver project market of Colorado Interstate Gas Company * * * and the Texas markets of Amarillo Oil Company." (Vol. 1, p. 63.)

* * * * * *

Spencer's additional testimony is set forth supra, under Titles 2 and 3.

A Certificate of Incorporation issued February 24, 1928, and an Amendment thereto issued April 18, 1935, was received as Exhibit 11 herein. Said Exhibit 11 is as follows:

EXHIBIT NO. 11.

State of Delaware, Office of Secretary of State.

I, Josiah Marvel, Jr., Secretary of State of the State of Delaware, Do Hereby Certify that the Certificate of Incorporation of the "Canadian River Gas Company", was received and filed in this office the twenty-fourth day of February, A. D. 1928, at 4 o'clock P. M.;

And I do hereby further certify that the said "Canadian River Gas Company", filed a Certificate of Amendment of Certificate of Incorporation the eighteenth day of April, A. D. 1935, at 1 o'clock P. M.:

And I do hereby further certify that the aforesaid Certificates are the only Certificates of record for the aforesaid Corporation:

And I do hereby further certify that the aforesaid Corporation is duly incorporated under the laws of the State of Delaware, and is in good standing, and has a legal corporate existence, so far as the records of this office show, and is duly authorized to transact business.

In Testimony Whereof, I have hereunto set my hand and official seal, at Dover, this fourth day of October, in the year of our Lord one thousand nine hundred and forty.

JOSIAH MARVEL, JR.,
(Seal) Secretary of State.

Certificate of Amendment of Certificate of Incorporation.

Canadian River Gas Company, a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware

Does Hereby Certify:

First: That at a meeting of the Board of Directors of said Canadian River Gas Company, duly held and convened, a resolution was duly adopted setting forth an amendment proposed to the Certificate of Incorporation of said corporation as follows:

Resolved that the Certificate of Incorporation of said Canadian River Gas Company be amended by striking out all of the Article thereof numbered "Eighth" and by inserting in lieu thereof the following:

"Eighth: The number of directors of the corporation shall be fixed by the By-Laws, and may be altered from time to time as may be provided therein; provided, however, that no alteration or amendment of the By-Laws altering or changing the number of directors shall be effective

without the affirmative vote or consent in writing of at least two-thirds (2/3rds) of the outstanding shares of the corporation entitled to vote. In case of any increase in the number of directors, the additional directors shall be elected as may be provided in the By-Laws.

"All corporate powers of the corporation shall be exercised, and the business of the Corporation shall be managed, by the Board of Directors, except as otherwise provided by law or this Certificate of Incorporation or any amendment thereof.

"Directors need not be stockholders.

"In furtherance and not in limitation of the powers conferred by statute, the Board of Directors is hereby expressly authorized, from time to time:

"Subject to the provisions of the Certificate of Incorporation and or any amendment thereof and to any By-Laws adopted or altered from time to time by the stockholders, to make and alter the By-Laws of the corporation; to fix the amount to be reserved as working capital of the corporation over and above its capital stock paid in; to declare and pay dividends upon the shares of its capital stock in the manner now or hereafter permitted by the laws of the State of Delaware; to set apart out of any of the funds of the corporation available for dividends a reserve or reserves for any proper purpose and or to abolish any such reserve in the manner in which it was created; to borrow money and to contract debts and to authorize or cause to be executed and or issued bonds, promissory notes, bills of exchange, debentures and other obligations and evidences of indebtedness of the corporation, whether secured by mortgage, deed of trust, pledge or otherwise, or unsecured; and to authorize or cause to be created, executed, delivered, filed and or recorded deeds of trust, mortgages, pledges and liens of or upon the real and personal property of the corporation.

"To determine whether and to what extent and at what times and places and under what conditions and regulations the accounts and books of the corporation (other than the stock book), or any of them, shall be open to inspec-

tion by stockholders, and no stockholder shall have any right to inspect any account, book or document of the corporation, except as conferred by statute or authorized by the stockholders or directors.

"At any meeting of the Board of Directors to sell, lease or exchange all of the corporation's property and assets including its good will and its corporate franchises upon such terms and conditions as its Board of Directors deem expedient and for the best interests of the corporation, when and as authorized by the affirmative vote of the holders of at least two-thirds (2/3rds) of the stock issued and outstanding having voting power given at a stockholders' meeting duly called for that purpose, or when authorized by the written consent of the holders of at least two-thirds (2/3rds) of the voting stock issued and outstanding.

"The Board of Directors may, by resolution or resolutions, passed by a majority of the whole board, designate one or more committees, each committee to consist of two or more of the directors of the corporation, which to the extent provided in said resolution or resolutions or in the By-Laws of the corporation, shall have and may exercise the powers of the Board of Directors in the management of the business and affairs of the corporation, and may have power to authorize the seal of the corporation to be affixed to all papers which may require it. Such committee or committees shall have such name or names as may be stated in the By-Laws of the corporation or as may be determined from time to time by resolution adopted by the Board of Directors.

"Both stockholders and directors shall have power to hold their meetings within and or without the State of Delaware, and to keep the books of the corporation (subject to the provisions of the statutes) outside of the State of Delaware at such places as may be from time to time designated by the Board of Directors.

"Subject to the provisions of the Certificate of Incorporation and or any amendments thereof, the corporation may in its By-Laws confer powers upon its directors in ad-

dition, to the powers and authority expressly conferred upon them by statute."

Further Resolved that the proper officers of this corporation be, and hereby are, authorized to file the necessary certificate effecting said amendment with the Secretary of State of Delaware."

Further Resolved that the Secretary be, and hereby is, directed to file with the proper state official of any state in which this corporation is authorized to do business as a foreign corporation, a certified copy of the certificate of amendment and/or any other instrument as may be required by the laws of such state.

and declaring said amendment advisable and calling a meeting of the stockholders of said corporation for consideration thereof.

Second: That thereafter, pursuant to the aforesaid resolution of its Board of Directors, a special meeting of the stockholders of said corporation was duly called and held, at which meeting the necessary number of stockholders as required by statute voted in favor of the amendment

Third: That said amendment was duly adopted in accordance with the provisions of Section 26 of the General Corporation Law of Delaware as amended.

Fourth: That the capital of said corporation will not be reduced under or by reason of said amendment.

In Witness Whereof, said Canadian River Gas Company has caused its corporate seal to be hereunto affixed and this certificate to be signed by N. K. Moody, its President, and Geo. Baird, its Secretary, this 10th day of April, 1935.

CANADIAN RIVER GAS COMPANY,
Incorporated Under the Laws of
Delaware.
By: N. K. MOODY, President
By: GEO. BAIRD, Secretary.

[Verification omitted.]

State of Delaware, Office of Secretary of State,

I, Josiah Marvel, Jr., Secretary of State of the State of Delaware Do Hereby Certify that the above and foregoing is a true and correct copy of Certificate of Amendment of Certificate of Incorporation of the "Canadian River Gas Company", as received and filed in this office the eighteenth day of April, A. D. 1935, at 1 o'clock P. M.

In Testimony Whereof, I have hereunto set my hand and official seal at Dover this third day of November in the year of our Lord one thousand nine hundred and thirty-nine.

JOSIAH MARVEL, JR.,
(Seal) Secretary of State.

Certificate of Incorporation of Canadian River Gas Company.

First: The name of this corporation is: Canadian River Gas Company.

Second: Its principal office in the State of Delaware is located at No. 7 West Tenth Street, in the City of Wilmington, County of New Castle. The name and address of its resident agent is Corporation Trust Company of America, No. 7 West Tenth Street, Wilmington, Delaware.

Third: The nature of the business or objects or purposes to be transacted, promoted or carried on are:

To store, transport, buy and sell oil, gas, salt, brine and other mineral solutions; also sand and clay for the manufacture and sale of clay products.

To establish and maintain an oil business with authority to contract for the lease and purchase of the right to prospect for, develop and use coal and other minerals, petroleum and gas; also the right to erect, build and own all necessary oil tanks, cars and pipes necessary for the operation of the business of the same.

To search for, mine, bore, dig for, produce, refine, manufacture, treat, compress, blend, use, store, prepare for market, contract for, purchase or otherwise acquire, sell,

exchange, and generally to deal in natural and artificial gas, helium, petroleum and other oils, coal, sulphur, lignite and other minerals and mineral substances, and all kinds of products and by-products thereof, including natural gas gasoline and casing head gasoline, and all implements and materials used in the production, manufacture, storage, transportation and sale of said gas, oil and or minerals and products and or by-products thereof.

To lay, maintain, own, lease or otherwise acquire, and operate such pipe line or lines as may be necessary or convenient for the transportation and delivery of natural and or artificial gas and or oil purchased, produced or sold by the corporation.

To erect, build, install, construct, purchase, or otherwise acquire, lease, own, possess, operate, maintain and or contract and deal with respect to all power and gasoline plants, compressing and pumping stations, and or boosters, and or all water, telephone, telegraph and or electric transmission lines, rights of way, easements, privileges, and or other interests in lands or property necessary or desirable in connection with the laying, building, installing, constructing, owning, leasing, acquiring, operating, and or maintaining of said pipe lines, and or the business of dealing in natural and artificial gas, petroleum and other oils, minerals and mineral substances as herein provided.

To buy, sell, lease and improve lands, build houses, structures, vessels, cars, wharves, docks and piers.

To acquire, own, operate, exchange and sell leases, licenses, or other contracts for the purpose of drilling and developing lands for oil and gas, and to purchase or otherwise acquire, own, operate, and develop, sell and dispose of, oil and gas lands.

To enter in and carry out contracts of every kind pertaining to its business, and to acquire, use, sell, grant and dispose of patents, copy-rights and trade-marks and any licenses or other rights or interests therein or thereunder.

To acquire by purchase, subscription or otherwise, guarantee principle of and dividends and or interest on, hold for investment or otherwise, and use, sell, assign, transfer,

mortgage, pledge, hypothecate, exchange or otherwise dispose of shares of stock, bonds, debentures, notes, scrip, securities, evidences of indebtedness, bills of exchange, contracts or obligations of any corporation or corporations, association or associations, domestic or foreign, or of any firm or individual of the United States or any state, territory or dependency thereof or any foreign country, or any municipality or local authority within or without the United States, and also to issue in exchange therefor stocks, bonds or any other securities or evidences of indebtedness of this corporation, and while the owner or holder of any such property, to receive, collect and dispose of the interest, dividends and income on or from such property and to possess and exercise in respect thereto all of the rights, powers and privileges of ownership, including all voting power thereon.

To purchase, hold, sell and transfer shares of its own capital stock; provided that it shall not use its funds and property for the purchase of its own shares of capital stock when such use would cause an impairment of its capital; and provided further that shares of its own capital stock belonging to it shall not be voted upon directly or indirectly.

To sue and be sued in any court of law or equity and to delegate by power of attorney to any person or persons authority to commence, prosecute, defend, compromise or settle any claims, actions or suits in behalf of or against the corporation, either at law or in equity or otherwise.

To do all and everything necessary and proper for the accomplishment of the objects enumerated in this Certificate of Incorporation or any amendment thereof or necessary or incidental to the protection and benefit of the corporation, and in general to carry on any lawful business necessary or incidental to the attainment of the objects of the corporation whether or not such business is similar in nature to the objects set forth in this Certificate of Incorporation or any amendment thereof.

To do any or all things herein set forth to the same extent and as fully as natural persons might or could do,

and in any part of the world, and as principal, agent, contractor or otherwise, and either alone or in conjunction with any other persons, firms, associations or corporations; to conduct its business in all its branches in the State of Delaware, other states, the District of Columbia and the territories and colonies of the United States, and in any foreign countries, but subject to the laws thereof, respectively; to have one or more offices in and or out of the State of Delaware; to acquire, hold, purchase, mortgage, lease, pledge, hypothecate, convey, sell or otherwise dispose of, real and personal property in this State and in any of the several states, territories, possessions and dependencies of the United States, the District of Columbia and in foreign countries, but subject to such laws, respectively, as aforesaid; to borrow money and contract debts necessary or advisable in the transaction of the corporation's business or the exercise of its corporate rights, privileges or franchises or for any other lawful object or purpose of its incorporation; to issue bonds, debentures, promissory notes, bills of exchange and other obligations and evidences of indebtedness whether secured by mortgage, pledge or otherwise, or unsecured, for money borrowed or in payment for property purchased or acquired, or for any other lawful objects; to secure such bonds, debentures, promissory notes, bills of exchange and other obligations or evidences of indebtedness and interest thereon by mortgage, deed of trust, pledge and or hypothecation of the corporation's property; and to acquire, and pay for in cash, stocks or bonds of this corporation or otherwise, the good will, rights, assets and property, and to guarantee, undertake or assume the whole or any part of the obligations or liabilities of any person, firm, association or corporation.

In general, to carry on any other business in connection with the foregoing, whether manufacturing or otherwise, either as principal or otherwise and either alone or in connection with other corporations, associations, firms or individuals, and to have and exercise all the powers conferred, the act hereinafter referred to.

The foregoing clauses shall be construed both as objects and powers; and it is hereby expressly provided that the

foregoing enumeration of specific powers shall not be held to limit or restrict in any manner the powers of the corporation.

Provided that nothing herein shall be construed to authorize the corporation to transport gas or oil for others as a carrier for hire or to sell gas or oil for others as a carrier for hire or to sell gas or oil except by special contract, or to constitute the corporation a common purchaser of gas or oil or a public utility corporation.

Provided, further, that nothing herein contained shall be construed to authorize the corporation to transact business in any state, territory, district, colony or country contrary to the laws thereof, and such objects are to be carried on in the several states, territories, districts, colonies or countries, only when and where permissable under the laws thereof.

Fourth: The total number of shares that may be issued by the corporation is Twenty-five Thousand (25,000) all of which are to be without par value; and the amount of capital with which the corporation is to commence business is One Hundred (100) shares.

The board of directors, without action by the stockholders, may, from time to time, issue shares of authorized capital stock of the corporation and fix the consideration for which shares of the capital stock of the corporation without nominal or par value may be issued; and the shares of stock of the corporation without nominal or par value, whether authorized by this certificate of incorporation or by subsequent increase of the authorized number of shares of stock or by amendment of this certificate of incorporation or by consolidation or merger or otherwise, may be issued for such consideration and on such terms and in such manner as may be fixed from time to time by the Board of Directors; provided, however, that no capital stock of the corporation shall at any time be issued or allotted, nor shall any right or privilege to subscribe thereto or to purchase such stock be granted, except upon the terms of the then existing shareholders having the prior right to subscribe for and take such additional stock in proportion to their holdings at such price or for such consideration as the

Board of Directors may determine, subject to such adjustment as said Board may from time to time determine upon with a view to avoiding the allotment of fractions of shares.

Each stockholder shall at every meeting of the stockholders be entitled to one vote in person or by proxy for each share of the capital stock held by such stockholder; provided, however, that at all elections of directors of the corporation, each stockholder shall be entitled to as many votes as shall equal the number of his shares of stock multiplied by the number of directors to be elected, and he may cast all of such votes for a single director or may distribute them among the number to be voted for, or any two or more of them as he may see fit.

Fifth: The names and places of residence of each of the original subscribers to the capital stock and the number of shares subscribed for by each are as follows:

Name	Residence	No. of Shares
N. K. Moody	Independence, Kansas	98
Dana H. Kelsey	Independence, Kansas	1
Fred S. Cook	Tulsa, Oklahoma	1

Sixth: This corporation is to have perpetual existence.

Seventh: The private property of the stockholders shall not be subject to the payment of corporate debts to any extent whatever.

Eighth: The number of directors of the corporation shall be fixed by the By-Laws, and may be altered from time to time as may be provided therein; provided, however, that no alteration or amendment of the By-Laws altering or changing the number of directors shall be effective without the affirmative vote or consent in writing of at least two-thirds (2/3rds) of the outstanding shares of the corporation entitled to vote. In case of any increase in the number of directors, the additional directors shall be elected as may be provided in the By-Laws.

All corporate powers of the corporation shall be exercised, and the business of the corporation shall be managed, by the Board of Directors, except as otherwise pro-

vided by law or this Certificate of Incorporation or any amendment thereof.

Each director shall be a stockholder of the corporation but no director need be a resident of the State of Delaware.

In furtherance and not in limitation of the powers conferred by statute, the Board of Directors is hereby expressly authorized, from time to time:

Subject to the provisions of the Certificate of Incorporation and or any amendment thereof and to any by-laws adopted or altered from time to time by the stockholders, to make and alter the By-Laws of the corporation; to fix the amount to be reserved as working capital of the corporation over and above its capital stock paid in; to declare and pay dividends upon the shares of its capital stock in the manner now or hereafter permitted by the laws of the State of Delaware; to set apart out of any of the funds of the corporation available for dividends a reserve or reserves for any proper purpose and/or to abolish any such reserve in the manner in which it was created; to borrow money and to contract debts and to authorize or cause to be executed and/or issued bonds, promissory notes, bills of exchange, debentures and other obligations and evidences of indebtedness of the corporation, whether secured by mortgage, deed of trust, pledge or otherwise, or unsecured; and to authorize or cause to be created, executed, delivered, filed and/or recorded deeds of trust, mortgages, pledges and liens of or upon the real and personal property of the corporation.

To determine whether and to what extent and at what times and places and under what conditions and regulations the accounts and books of the corporation (other than the stock book), or any of them, shall be open to inspection by stockholders, and no stockholder shall have any right to inspect any account, book or document of the corporation, except as conferred by statute or authorized by the stockholders or directors.

At any meeting of the Board of Directors to sell, lease or exchange all of the corporation's property and assets including its good will and its corporate franchises upon

such terms and conditions as its Board of Directors deem expedient and for the best interests of the corporation, when and as authorized by the affirmative vote of the holders of at least two-thirds (2/3rds) of the stock issued and outstanding having voting power given at a stockholders' meeting duly called for that purpose, or when authorized by the written consent of the holders of at least two-thirds (2/3rds) of the voting stock issued and outstanding.

The Board of Directors may, by resolution or resolutions, passed by a majority of the whole board, designate one or more committees, each committee to consist of two or more of the directors of the corporation, which to the extent provided in said resolution or resolutions or in the By-Laws of the corporation, shall have and may exercise the powers of the Board of Directors in the management of the business and affairs of the corporation, and may have power to authorize the seal of the corporation to be affixed to all papers which may require it. Such committee or committees shall have such name or names as may be stated in the By-Laws of the corporation or as may be determined from time to time by resolution adopted by the Board of Directors.

Both stockholders and directors shall have power to hold their meetings within and or without the State of Delaware, and to keep the books of the corporation (subject to the provisions of the statutes) outside of the State of Delaware at such places as may be from time to time designated by the Board of Directors.

Subject to the provisions of the Certificate of Incorporation and or any amendments thereof, the corporation may in its By-Laws confer powers upon its directors in addition to the foregoing and in addition to the powers and authority expressly conferred upon them by statute.

Ninth: The corporation reserves the right to amend, alter, change or repeal any provisions contained in this Certificate of Incorporation or any amendment hereof in the manner now or hereafter authorized or prescribed by statute, and all rights of the stockholders of the corporation are granted subject to this reservation; provided,

however, that no such amendment, alteration, change or repeal in any wise limiting, restricting or changing (a) said prior right of stockholders to purchase stock of the corporation or (b) said voting rights of stockholders including said right of cumulative voting or (c) said proportion of the outstanding shares necessary to authorize the sale, lease or exchange of all the corporation's property and assets including its good will and corporate franchises or (d) said proportion of the outstanding shares necessary to authorize any alteration or amendment of the By-laws altering or changing the number of directors, shall be effective without the affirmative vote or written consent of the holders of at least two-thirds (2/3rds) of the stock issued and outstanding having voting power.

We, the undersigned, being each of the original subscribers to the capital stock hereinbefore named, for the purpose of forming a corporation to do business both within and without the State of Delaware, and in pursuance of the General Corporation Law of the State of Delaware, being Chapter 65 of the Revised Code of Delaware, and the acts amendatory thereof and supplemental thereto, do make and file this Certificate hereby declaring and certifying that the facts herein stated are true; and do each respectively agree to take at a price per share to be fixed by the Board of Directors the number of shares of stock hereinbefore set forth, waiving all requirements of the statutes of Delaware relating to notice of assessments on the stock hereby subscribed; and accordingly hereunto have set our respective hands and seals this 18th day of February, A. D. 1928.

N. K. Moody. (L.S.)
Dana F. Kelsey. (L.S.)
Fred S. Cook. (L.S.)

State of Kansas, County of Montgomery, ss.

Be It Remembered That on this, 18th day of February, A. D. 1928, personally came before me, a Notary Public in and for said county and State, N. K. Moody, Dana H. Kelsey and Fred S. Cook, all the parties to the foregoing Certificate of Incorporation, known to me personally to be such and severally acknowledged the said Certificate to be

the act and deed of the signers respectively and that the facts therein stated are truly set forth.

Given under my hand and seal of office the day and year aforesaid.

CECIL R. BUCKLES, Notary Public

My commission expires: March 21, 1928. Cecil R. Buckles, Notary Public, Montgomery Co., Kans.

State of Delaware, Office of Secretary of State,

I, Josiah Marvel, Jr., Secretary of State of the State of Delaware, do hereby certify that the above and foregoing is a true and correct copy of Certificate of Incorporation of the "Canadian River Gas Company," as received and filed in this office the twenty-fourth day of February, A. D. 1928, at two o'clock P. M.

In Testimony Whereof, I have hereunto set my hand and official seal at Dover, this third day of November in the year of our Lord one thousand nine hundred and thirty-nine.

JOSIAH MARVEL, JR.,
(Seal) Secretary of State.

On March 31, 1928, Canadian River received a certificate to do business in Texas, which was renewed for a period of ten years on March 17, 1938, both of which were included as Exhibit 12 herein.

All the capital stock, including that originally issued to the directors as qualifying shares, was finally issued to Southwestern for $1 and so remained at December 31, 1939. (Schutte, Vol. VI, pp. 855, 856.) On June 5, 1928, the directors and stockholders authorized the issuance of $11,000,000 First Mortgage Twenty-year 6% Sinking Fund Gold Bonds under a trust indenture with Equitable Trust Company, now succeeded by Chase National Bank of New York, as successor trustee. All of the bonds were purchased by Colorado Interstate for cash at par. (Spencer, Vol. 1, p. 65.) The bonds were dated June 1, 1928, payable June 1, 1948. Beginning June 1, 1930, and periodically thereafter bonds were redeemed through the sinking fund in accordance with the trust indenture and at De-

cember 31, 1939, the total amount of bonds outstanding was $5,057,000, all still owned by Colorado Interstate. At that date, Canadian River also had outstanding and in the hands of Colorado Interstate $1,348,254.14 of 6% notes sold, from time to time, at par for cash to finance Canadian River's construction. They were redeemable in equal monthly installments over a period of one hundred and twenty months from the date of issuance or by May 31, 1948, whichever is the shorter period. (Schutte, Vol. VI, pp. 856, 857.)

Said trust indenture under which Canadian River's bonds were issued is Exhibit No. 22, and covers all of Canadian's properties, producing, gathering and transmission, then existing and thereafter acquired, and all contracts, and, by supplemental indenture thereto dated June 1, 1928, expressly covers the January 3, 1928, contract with Colorado Interstate Gas Company, sometimes referred to as the "Cost Contract". In addition to customary provisions in trust indentures, said Exhibit No. 22, in Articles Nos. IV, V, and VI thereof, provides as follows:

Article IV.

Particular Covenants of the Company.

The Company further covenants and agrees with the Trustee for the benefit of the Trustee and of the several holders for the time being of the bonds and coupons as hereinafter set forth and for better securing and assuring the payment of all bonds any time issued and outstanding under this Indenture and interest thereon and the Sinking Fund provided for in said Indenture.

Section 1. The Company will duly and punctually pay or cause to be paid the principal of each and every of the bonds and the interest accrued thereon at the times and places and in the manner mentioned in the bonds or the coupons thereto appertaining according to the true intent and meaning thereof. The interest on the coupon bonds shall be payable only upon presentation and surrender of the coupons therefor, as such coupons respectively shall mature, or upon presentation of temporary bonds without

coupons for proper endorsement of such payment thereon. When and as paid, all coupons shall forthwith be cancelled. The interest on the registered bonds without coupons shall be payable only to the registered holder thereof. The Company will not, directly or indirectly, extend or assent to the extension of the time of payment of any coupons or claim for interest on any of the bonds and will not, directly or indirectly, be a party to or approve any such arrangement, by purchasing or refunding such coupons or claims for interest, or in any other manner.

Sec. 2. The Company has good and valid title to and is lawfully seized and possessed of the trust estate, and has good right and lawful authority to convey, mortgage, pledge, hypothecate and transfer the same, as provided in and by this Indenture. The Company covenants that the properties hereby conveyed, mortgaged, pledged, hypothecated and transferred or intended so to be or contracted so to be, are subject to no mortgage or lien or encumbrance whatsoever except as stated in the descriptions thereof respectively herein contained and that, save as aforesaid and as may be herein permitted, it will not create or suffer to be created or permit to exist any lien or charge having priority over or equality with the lien created by or provided for by the terms of this Indenture upon the trust estate or any part thereof, except any lien or charge existing on any property at the time of the acquisition thereof by the Company which may be acquired by the Company after the execution and delivery of this Indenture.

Sec. 3. The Company, for the purpose of further securing the bonds under this Indenture, will from time to time assign, transfer, set over, pledge and hypothecate to the Trustee any and all contracts by virtue of which it may be or may become entitled to purchase gas and will from time to time cause to be executed and delivered to the Trustee such supplemental mortgage or mortgages as may be necessary or proper to effectively subject to the lien hereof any and all property which may be made the basis for the payment of money or the obtaining of a release under Article III or Article IX hereof, and any or all property which is intended to be subject to the lien hereof. And the Company will do, execute, acknowledge and

deliver, and will cause to be done, executed, acknowledged and delivered, by any other corporation or person obligated to the Company so to do, all and every such further acts, deeds, conveyances, transfers and assurances in law as the Trustee shall reasonably require for the better assuring, conveying, assigning and confirming unto the Trustee all and singular the hereditaments and premises, estate and property hereby conveyed or assigned, or intended to be conveyed or assigned, or which the Company hereafter may become bound to convey or assign to the Trustee.

Sec. 4. Presentation for payment of bonds and coupons and service of notices or demands to or upon the Company in respect of any and all of the bonds and coupons secured by this Indenture, or in respect of any matter under this Indenture or under any indenture supplemental hereto, may be made upon the Company at the principal office of the Trustee in the Borough of Manhattan, in the City and State of New York. The Trustee is hereby irrevocably constituted and appointed the representative of the Company for the purpose of such presentation and demand and the receipt of any such notice. But the Trustee shall be under no liability to the Company, or to any other corporation or person in respect of any such presentation, demand or notice, except to give written notice forthwith to the Company of any demand or notice other than a demand pursuant to the terms in this Indenture for the payment of the interest on, or principal of or premium on any bond outstanding hereunder as and when the same shall be due and payable.

Sec. 5. The Company from time to time will duly pay and discharge or will cause to be paid and discharged as and when due and payable all taxes, assessments and governmental charges lawfully imposed upon the trust estate or any part thereof or upon the production or income and profits thereof, the lien whereof would be prior or equal to that created by or provided for by the terms of this Indenture, including all taxes, assessments and governmental charges lawfully imposed upon the lien or interest of the Trustee in respect of the trust estate, so that the lien and priority thereon created by or provided for by the terms of this Indenture shall be fully preserved at the cost

of the Company, without expense to the Trustee or to the bondholders; provided, however, that the Company shall have the right to contest, by legal proceedings, any tax, assessment or charge, and pending such contest may delay or defer the payment thereof.

Sec. 6. The Company will except as otherwise permitted by this Indenture perform or comply with all the conditions, covenants, terms, stipulations and provisions of any and all leases or other instruments under which it holds rights covered by this Indenture in oil or gas lands or any instruments supplemental hereto, and at its own expense will do or cause to be done all things necessary to preserve and keep in full force and effect all of its rights under said leases and instruments and shall and will diligently preserve all rights, franchises and privileges to it granted and on it conferred by law or otherwise, and will comply with the laws of the State of Delaware and with the laws of any other state and of the United States of America, in such form and manner as counsel learned in the law shall advise and will, except as otherwise permitted by this Indenture, preserve its corporate existence and will at all times diligently carry on and conduct its business and affairs, maintain, preserve and keep in good repair, working order and condition and equip with suitable appliances the trust estate, and will from time to time make all needful and proper repairs, replacements, alterations and renewals thereto or thereof, so that at all times the value of the security for the bonds issued hereunder and the efficiency of the trust estate shall be fully preserved and maintained.

Sec. 7. The Company without unreasonable delay will pay and discharge, or cause to be paid and discharged, or will make adequate provision to satisfy and discharge, all lawful claims and demands of mechanics, laborers, employees and others which if unpaid might by law be given precedence over or equality with the lien created by or provided for under the terms of this Indenture as a lien or charge upon the trust estate, or any part thereof, or the income thereof; provided, however, that the Company shall have the right to contest by legal proceedings any such claim or demand and pending such contest may delay or defer the payment or discharge thereof.

Sec. 8. The Company will charge to operation all royalties and carrying charges under or in connection with the gas leases; but bonuses payable in connection with the acquisition of gas leases shall be deemed to be not operating expenses but capital charges and in respect thereof, under the limitations stated in Article III, the Company shall be entitled to require that monies deposited hereunder shall be paid to it.

Sec. 9. The Company will fully perform all the obligations assumed by it or which may be assumed by it by modifications made in the manner in this Indenture provided in the four contracts described as follows, to-wit:

(a) A certain contract bearing date the third day of January 1928 whereby the Company has agreed to produce, sell and deliver and the Amarillo Oil Company has agreed to purchase, receive and pay for gas for consumption in Amarillo, Texas, and its environs, at the place or places, for the price or prices, and under the terms and conditions set forth in said contract, a duplicate original of which is delivered by the Company to the Trustee simultaneously with the execution and delivery of these presents.

(b) A certain contract bearing date the third day of January 1928 whereby the Company has agreed to produce, sell and deliver and the Amarillo Oil Company has agreed to purchase, receive and pay for gas for consumption in that part of Texas known as the Texas Panhandle, at the place or places, for the price or prices, and under the terms and conditions set forth in said contract, a duplicate original of which is delivered by the Company to the Trustee simultaneously with the execution and delivery of these presents.

(c) A certain contract bearing date the third day of January 1928 whereby the Company has agreed to produce, sell and deliver and the Colorado Interstate Gas Company has agreed to purchase, receive and pay for gas for consumption in Colorado and elsewhere as therein provided, at the place or places, for the price or prices, and under the terms and conditions set forth in said contract, a duplicate original of which is de-

livered by the Company to the Trustee simultaneously with the execution and delivery of these presents.

(d) A certain contract bearing date the third day of January 1928 between the Company and the Amarillo Oil Company wherein and whereby the Company has acquired the right to purchase any gas wells drilled on the lands described in Paragraph First of the Granting Clauses of this Indenture by the owner of the oil rights therein and whereby the Company is obligated to sell to the owners of the oil rights in the lands described in Paragraph First of the Granting Clauses of this Indenture any oil wells drilled thereon by the Company, all for the price or prices and under the terms and conditions set forth in said contract, a duplicate original of which is delivered by the Company to the Trustee simultaneously with the execution and delivery of these presents;

and the Company will require the other parties to said contracts to fully perform the obligations assumed by such other parties therein, and the Company will not modify or permit or consent to the modification of such contracts without first obtaining the consent of the Trustee thereto.

Sec. 10. The Company will furnish to the Trustee on the first day of January of each and every year a statement of its operations for the production of gas from its own properties and of its purchases of gas from other producers and its estimate of its probable production and purchases of gas and its probable sales of gas during the two years immediately following the date of each statement, and if at any time the Trustee is of the opinion that the Company's operations for the production of gas from its own properties and/or purchases of gas from other producers are not sufficient to enable the Company to deliver all the gas probably required by its customers and to fully and properly protect the trust estate as the security for the payment of the Company's bonds, then the Trustee may demand that the Company shall drill such wells and make such improvements and conduct such operations and make such purchases of gas as the Trustee shall specify, and upon receipt of such demand by the Trustee the Company shall drill such wells and make such improve-

ments and conduct such operations and make such purchases of gas as shall be specified in said demand.

Sec 11. The Company will not make any sales of gas other than those for which provision is made in the Company's contract dated January 3rd, 1928 with the Amarillo Oil Company for the sale of gas for consumption in Amarillo, Texas, and its environs, the Company's contract dated January 3rd, 1928 with the Amarillo Oil Company for the sale of gas for consumption in that part of Texas known as the Texas Panhandle, the Company's contract dated January 3rd, 1928 with the Colorado Interstate Gas Company for the sale of gas for consumption in Colorado and elsewhere as provided in said contract, duplicate originals of which are delivered to the Trustee simultaneously with the execution and delivery of these presents, and any contracts which the Company may hereafter make with the Amarillo Oil Company for the sale of gas to it to supply additional customers located in Texas north of the line drawn from the point where the boundary line between the eastern side of Texas known as the Texas Panhandle and the western side of Oklahoma intersects the Red River, which point is near the center of the easterly boundary line of Childress County, Texas, to a point formed by the intersection of the boundary line between the western side of Texas known as the Texas Panhandle and the eastern side of New Mexico with a boundary line between the northern side of Texas and the southern side of New Mexico, which point is at or near the northwest corner of Winkler County, Texas, until it shall first have obtained the consent of the Trustee thereto and the Company will not modify, amend or enlarge any contract for the sale of gas so made without it shall first have obtained the consent of the Trustee thereto. In case of any application by the Company for the consent of the Trustee under this Section 11, the Company shall furnish the Trustee at the time of such application with full data concerning the gas which the Company has available from its own wells and under its contracts to purchase gas from other producers and concerning the amount of gas which the Company is obligated to supply under existing contracts or commitments and under the new contract or commitment for which the Trustee's consent is

sought. Upon application by the Company to the Trustee therefor, the Trustee shall grant such consent, if in its opinion the contract, or modification amendment or enlargement is manifestly in the interest of the trust estate, and, if said application shall be accompanied by consent in writing of the holder of a majority of the bonds then issued and outstanding hereunder, such application shall be immediately granted by the Trustee as being manifestly in the interest of the trust estate. Should the Company make such contracts with the consent of the Trustee, the Company will forthwith assign such contracts to the Trustee as further security for this Indenture.

Sec. 12. The Company will purchase and acquire all wells, interest in wells or the right to receive any part or all of the production of wells which at any time and from time to time it may be entitled under and by virtue of a certain contract called "Operating Contract" dated the third day of January 1928 between it and the Amarillo Oil Company, a duplicate original of which is delivered to the Trustee simultaneously with the execution and delivery of these presents, to purchase or acquire unless it shall first obtain from the Trustee permission to refrain from or delay making such purchase or acquisition.

Sec. 13. The Company will not disburse any of the funds it may receive from (a) the sale of its capital stock; (b) this Indenture or the sale of bonds issued pursuant hereto; (c) the Colorado Interstate Gas Company as loans under the operation of Articles Third and Eighth of the Company's contract dated January 3rd, 1928 with that Company, a duplicate original of which is delivered to the Trustee simultaneously with the execution and delivery of these presents; or (d) the sale of natural gas, helium, natural gas gasoline, or other things or materials it may sell or otherwise dispose of in any manner other than (a) to pay or to provide for the payment of interest and/or principal on bonds issued and outstanding hereunder, (b) to the Trustee hereunder for the reduction or liquidation of the liability herein established; (c) in making provisions for the performance of the Company's contract dated January 3rd, 1928 with the Colorado Interstate Gas Company, the Company's three contracts each dated January

3rd, 1928 with the Amarillo Oil Company, duplicate originals of which are delivered to the Trustee simultaneously with the execution and delivery of these presents, and such contracts for the sale of gas as may be made pursuant to the provisions of Article IV, Section 11 hereof; or (d) for the operation and acquisition of properties made or to be made subject to the lien hereof or for the operation and acquisition of properties necessary or appropriate for the performance of the Company's contracts described in this Section 13 of this Article IV and other contracts made in the manner in this Indenture provided.

Sec. 14. The Company will not issue any bonds hereunder in any manner other than in accordance with the provisions of this Indenture and the agreements in that behalf herein contained.

Sec. 15. The Company will record, file and renew this Indenture and every Indenture supplemental hereto which may hereafter be executed, all in such manner, at such times and in such places as may be required by law in order fully to preserve and protect the security of the bondholders and the rights of the Trustee.

Article V.

Section 1. As a Sinking Fund for the retirement of the bonds, to be applied as hereinafter provided, the Company covenants and agrees that it will pay to the Trustee on (a) June 1st, 1930, and semi-annually thereafter on the first day of December and the first day of June in each year to and including the first day of December 1932, the sum of Three Hundred Nine Thousand One Hundred Eighty-Nine Dollars ($309,189); (b) on June 1st, 1933, and semi-annually thereafter on the first day of December and the first day of June in each year to and including the first day of December 1937, the sum of Three Hundred Six Thousand Two Hundred Sixteen Dollars ($306,216.); (c) on June 1st, 1938, and semi-annually thereafter on the first day of December and the first day of June in each year to and including the first day of December 1942, the sum of Three Hundred Three Thousand Two Hundred Forty-three Dollars ($303,243.); and (d) on June 1st, 1943, and semi-annually thereafter on the first day of December

and the first day of June in each year to and including the first day of December 1947, the sum of Three Hundred Thousand Two Hundred Seventy Dollars ($300,270.); provided, however, the Company shall be required to pay such amounts to such Sinking Fund only so long as any of the bonds remain outstanding.

In lieu of paying any Sinking Fund installment in cash, in whole or in part, the Company may deliver to the Trustee for cancellation bonds which shall have been previously authenticated and delivered hereunder, and previously acquired by the Company and shall receive credit therefor on account of such Sinking Fund installment for bonds so delivered for cancellation an amount equal to (a) if such bonds are delivered for cancellation on or before June 1st, 1933, One Hundred Four per cent. (104%) of the principal amount of the bonds so delivered for cancellation; (b) if such bonds are delivered for cancellation after June 1st, 1933 but on or before June 1st, 1938, One Hundred Three per cent. (103%) of the principal amount of the bonds so delivered for cancellation; (c) if such bonds are delivered for cancellation after June 1st, 1938 but on or before June 1st, 1943, One Hundred Two per cent. (102%) of the principal amount of the bonds so delivered for cancellation; and (d) if such bonds are delivered for cancellation after June 1st, 1943, One Hundred One per cent. (101%) of the principal amount of the bonds so delivered for cancellation.

Sec. 2. All monies received by the Trustee under this Article shall be applied by the Trustee, from time to time, as rapidly as shall be reasonably practicable but not later than forty-five (45) days prior to the next ensuing Sinking Fund payment date, to the purchase of bonds at the lowest price obtainable but not exceeding (a) One Hundred Four per cent. (104%) of the principal amount thereof, plus accrued interest for bonds purchased on or before June 1st, 1933; (b) One Hundred Three per cent. (103%) of the principal amount thereof, plus accrued interest for bonds purchased after June 1st, 1933 but on or before June 1st, 1938; (c) One Hundred Two per cent. (102%) of the principal amount thereof, plus accrued interest for bonds purchased after June 1st, 1938 but on or before

June 1st, 1943; and (d) One Hundred One per cent (101%) of the principal amount thereof, plus accrued interest for bonds purchased after June 1st, 1943, at private or public sale on stock exchanges or otherwise as the Trustee may deem advisable. The Trustee is authorized to use funds from the Sinking Fund for the payment of premium and accrued interest on any bonds redeemed or purchased by the Trustee for the Sinking Fund and the Company covenants to reimburse the Trustee for the account of the Sinking Fund forthwith upon the request of the Trustee, the amount of any accrued interest paid on the redemption or purchase of bonds for the Sinking Fund accruing subsequent to the payment of the installment of the Sinking Fund applied to such redemption or purchase and no payment on account of interest shall be credited to the Company's Sinking Fund obligations.

If, upon the expiration of the time limited as aforesaid for such purchase of bonds, the Trustee shall not have purchased bonds to an amount sufficient to exhaust the Sinking Fund monies available therefor, then the amount of such monies remaining in its hand, if Ten Thousand Four Hundred Dollars ($10,400) or more (or any amount less than Ten Thousand Four Hundred Dollars ($10,400) if so requested by the Company), shall be applied on the next ensuing Sinking Fund payment date to the redemption by lot of bonds at the redemption price (a) of One Hundred Four per cent. (104%) of the principal amount thereof and accrued interest, if such next ensuing redemption date is on or before June 1st, 1933; (b) of One Hundred Three per cent. (103%) of the principal amount thereof and accrued interest, if such next ensuing redemption date is after June 1st, 1933 and on or before June 1st, 1938; (c) of One Hundred Two per cent. (102%) of the principal amount thereof and accrued interest, if such ensuing redemption date is after June 1st, 1938 and on or before June 1st, 1943; and (d) of One Hundred One per cent. (101%) of the principal amount thereof and accrued interest, if such next ensuing redemption date is after June 1st, 1943; and the Company covenants to reimburse the Trustee for the account of the Sinking Fund forthwith upon the request of the Trustee the amount of any accrued

quent to the payment of the installment of the Sinking Fund applied to such redemption. Any amount of Ten Thousand Four Hundred Dollars ($10,400) or less not so applied shall be added to the Sinking Fund installment next payable hereunder, and, together with said installment, applied in accordance with the provisions of this Section 2.

Prior to the date of the first advertisement of notice of redemption of bonds for the Sinking Fund as hereinbelow provided, the Trustee shall designate by lot, in such manner as the Trustee in its uncontrolled discretion shall determine, the serial numbers of such principal amount of bonds as such applicable monies shall suffice, as near as may be, to redeem on the next ensuing Sinking Fund payment date.

Thereupon the Trustee shall give notice in the name of the Company once a week for four successive weeks (in each instance upon any day of the week) in such form as it shall deem appropriate of the bonds to be called for redemption and the serial numbers thereof, in a daily newspaper, published in the English language, of general circulation in the Borough of Manhattan, City and State of New York. The first publication of such notice is to be not later than thirty (30) days nor earlier than forty (40) days prior to the next ensuing Sinking Fund payment date, provided, however, that if every bond so designated for redemption shall be a full registered bond, no notice of redemption shall be published in the newspaper as aforesaid. A similar notice shall be mailed by registered letter at least thirty (30) days prior to the redemption date to each registered holder of bonds called for redemption at the last address of such holder appearing on the bond register or registers of the Company.

Notice having been given as above provided, the bonds designated therein shall become due and payable on the date and in the manner and at the place designated in said notice at the redemption price (a) of One Hundred Four per cent. (104%) of the principal amount thereof plus accrued interest if such designated date of payment is on or before June 1st, 1933; (b) of One Hundred Three per cent. (103%) of the principal amount thereof, plus accrued interest if such designated date of payment is after June

1st, 1933 and on or before June 1st, 1938; (c) of One Hundred Two per cent. (102%) of the principal amount thereof, plus accrued interest if such designated date of payment is after June 1st, 1938 and on or before June 1st, 1943; and (d) of One Hundred One per cent. (101%) of the principal amount thereof, plus accrued interest if such designated date of payment is after June 1st, 1943, and from and after the date of redemption so designated (unless default shall be made in the payment of such bonds upon the presentation thereof), interest on such bonds shall cease, and of the Sinking Fund monies then held by the Trustee, an amount sufficient to redeem the bonds so called for redemption shall be deemed segregated for the benefit of the bonds so called and the coupons thereto appertaining maturing on the redemption date and shall on and after the date so designated stand in lieu of the security of this Indenture and any instruments supplemental thereto with regard to such bonds and coupons, and such bonds shall not be entitled to the benefits of this Indenture or any instruments supplemental hereto and shall not be considered as outstanding, and said Sinking Fund monies shall be held by the Trustee for and to be paid by it to the holders of such bonds at the redemption price prevailing on the date such bonds became payable, plus accrued interest to the date of redemption so designated as and when the same, with coupons maturing on and after the redemption date attached thereto, shall be surrendered to the Trustee at any time thereafter, duly assigned to bearer if registered, and the Trustee shall not be liable to the holders of such bonds for interest on the Sinking Fund monies so held by the Trustee for their account.

All bonds which have been redeemed or purchased as herein provided shall be forthwith cancelled and delivered to the Company and the Company shall not issue any bonds under this Indenture in lieu of said bonds so exchanged.

Article VI.

Remedies of Trustee and Bondholders.

Section 1. No coupon which in any way, at or after maturity, has been transfetred or pledged separate and apart from the bond to which it appertains shall, unless

accompanied by such bond, be entitled, in case of a default hereunder, to any benefit of or from this Indenture, except subject to the prior payment in full of the principal of all the bonds and of all coupons not so transferred or pledged, with interest thereon at the same rate as was borne by said bonds. In case the time for payment of any coupon shall be, directly or indirectly, extended, in contravention of the provisions of Article IV, Section 1, hereof, whether or not such extension be by or with the consent of the Company such coupon shall not be entitled in case of default hereunder to any benefit of or from this Indenture, except subject to the prior payment in full of the principal of all the bonds and of all coupons not so transferred, with interest thereon at the same rate as was borne by said bonds. If any coupon on any of said bonds at or after maturity, shall be owned by the Company, then such matured coupon shall not be entitled to the benefit or security of this Indenture; and the Company covenants that all such coupons so owned by it at or after their maturity shall promptly be cancelled.

SEC. 2. If any one of the following events, herein called events of default, shall happen, that is to say:

1. Default shall be made in the payment of any instalment of interest on any of the bonds when and as the same shall become due and payable in accordance with the terms of this Indenture and such default shall continue for the period of thirty days;

2. Default shall be made in the payment of the principal of any of the bonds, when and as the same shall become due and payable, whether at maturity or by declaration or otherwise;

3. Default shall be made in the payment of any instalment of the Sinking Fund in accordance with the terms of this Indenture and such default shall continue for a period of thirty days;

4. Default shall be made in the observance or performance of any other of the covenants of this Indenture or of any supplemental indenture permitted by this Indenture and said default shall continue for the period of ninety days after written notice by the Trus-

tee shall have been given to the Company, specifying such default and requiring the same to be remedied, and shall not be made good or secured to the satisfaction of the Trustee or provision deemed by the Trustee to be adequate made therefor;

5. By the decree of a court of competent jurisdiction the Company shall be adjudicated bankrupt, or, if an order shall be made or an effective resolution passed for the winding up of the Company, or a receiver be appointed, unless such resolution shall be for the purposes of consolidation, merger or sale as specified in Article XI hereof;

6. The Company shall institute proceedings in voluntary bankruptcy, or shall make an assignment for the benefit of creditors or shall admit in writing its inability to pay its debts as they become due or corporate action shall be taken by the Company in furtherance of any of the aforesaid purposes;

7. The Company shall fail to fully perform the obligations now assumed by it under and by virtue of a contract between the Company and the Colorado Interstate Gas Company dated January 3rd, 1928 and the three contracts between the Company and the Amarillo Oil Company each dated January 3rd, 1928, duplicate originals of which are delivered to the Trustee simultaneously with the execution and delivery of these presents, or which may be hereafter assumed by it under and by virtue of any amendments of said contracts made in the manner in this Indenture provided;

8. The Company shall fail to require the Colorado Interstate Gas Company to fully perform all the obligations assumed by it in its contract with the Company dated January 3rd, 1928 or to require the Amarillo Oil Company to fully perform all of the obligations assumed by it in its three contracts with the Company each dated January 3rd, 1928, duplicate originals of which are delivered to the Trustee simultaneously with the execution and delivery of these presents, or all the obligations which may be hereafter assumed by said companies under and by virtue of any

amendments of said contracts made in the manner in this Indenture provided;

9. If the Company shall fail to drill such wells or make such improvements or conduct such operations or make such purchases of gas as shall be specified in any demand made by the Trustee pursuant to the provisions of Section 10 of Article IV hereof;

10. If, without first obtaining the consent of the Trustee thereto, the Company shall make any contract for the sale of gas in any substantial quantity, covering any period of more than thirty (30) days' time, with any person, firm, corporation or association of persons, other than the contracts herein authorized, which in the opinion of the Trustee would tend to depreciate the trust estate or tend to impair the ability of the Company to successfully perform and carry out, those contracts herein expressly authorized, and upon security of which the payment of the bonds herein provided for is predicated, or which shall tend to impair the security for the payment of said bonds;

11. If the Company violates any of the provisions of Section 13 of Article IV hereof;

12. Any default shall be made or act shall be done which shall be specified in any supplemental indenture permitted by this Indenture to constitute an event of default.

Then and in each and every such case during the continuance of such event of default, the Trustee may, and upon the written request of the holders of twenty-five per cent. of the amount of bonds then outstanding, shall, by notice in writing sent by registered mail to the Company and addressed to it at Independence, Kansas, or at such other address as may have been specified in a resolution of the Board of Directors of the Company, a certified copy of which shall have been furnished to the Trustee, declare the principal of and interest then accrued on all the bonds then outstanding to be due and payable, and upon such declaration, the same shall become and be immediately due

and payable, anything in this Indenture or in said bonds contained to the contrary notwithstanding.

Sec. 3. In case of the happening of any one or more of the events of default enumerated in Section 2 of this Article VI, then in each and every such event of default, during the continuance thereof, the Trustee shall be entitled to a receiver in a court of equity and the Trustee personally or by its agents or attorneys may enter upon and take possession of the trust estate or any part thereof and may exclude the Company, its agents and servants wholly therefrom, and the Trustee having and holding the same, either personally or by receivers, agents, servants or attorneys, may use, operate, manage and control said trust estate or any part thereof and conduct the business thereof to the best advantage of the holders of the bonds hereby secured; and upon every such entry, at the expense of the trust estate, from time to time may make all such necessary or proper repairs, renewals, replacements and useful alterations, additions, betterments and improvements to the trust estate as to the Trustee may seem judicious, and may purchase or otherwise secure the use of additional tools and machinery for use thereon, and either in the name of the Company, or otherwise, as the Trustee shall deem best, may manage and operate the trust estate or any part thereof and exercise all rights and powers of the Company in respect thereof, and the Trustee shall be entitled to collect and receive all earnings, income, rents, issues and profits thereof; and after deducting expenses incurred hereunder and all payments which may be made for taxes, assessments, insurance and prior or other proper charges thereon or upon any part thereof, as well as just and reasonable compensation for the services of the Trustee and all attorneys, agents, clerks, servants and other employés by it properly engaged, the Trustee shall apply the monies arising as aforesaid as follows:

In case the principal of the bonds hereby secured shall not have become due, to the payment of the interest in default in the order of the maturity of the instalments of such interest, with interest thereon at the same rate as was borne by the bonds on which such interest shall be in default; such payments to be made

ratably to the persons entitled thereto, without discrimination or preference.

In case the principal of the bonds hereby secured shall have become due, by declaration or otherwise, to the payment of the amounts due for interest on and principal of said bonds, ratably to the persons entitled to such payment without any discrimination or preference.

These provisions, however, are not intended in anywise to modify the provisions of Section 1 of this Article VI, but are subject thereto.

In the event of the exercise by the Trustee of any of the rights and powers conferred upon it by the terms of this Section, the Trustee and its nominee or nominees are hereby irrevocably constituted and appointed the agents and attorneys of the Company, in its name and stead to use, operate, manage and control in whole or in part, so much and such parts of the Company's business as the Trustee may in its discretion deem necessary or appropriate to the operation of the several properties composing the trust estate, and to collect, and receive all earnings, income, issues and profits derived from or derivable from business so operated and to pay and apply the same in the manner hereinbefore prescribed in this Section; with full power in the Trustee to constitute others, either individuals or corporations, in the exercise of the whole or any part of the power hereby conferred.

If, after the application as aforesaid of the money, rentals and any other income of the trust estate and the operation thereof any surplus shall remain in the hands of the Trustee, the Trustee shall pay over such surplus to the Company; provided, however, that the Trustee shall not make any such payment if the Trustee has been notified in writing by not less than ten per cent. in amount of the bondholders that at the time the Company is in default under this Indenture.

Sec. 4. In case of the happening of any of the events of default enumerated in Section 2 of this Article VI, then and in each and every such event of default, during the continuance of such default, either (a) the Trustee, per-

sonally or by agent or attorney, with or without entry, in its discretion, may sell, subject to any liens thereon which then shall be prior and superior to the rights of the Trustee under this Indenture, to the highest and best bidder who will assume the performance of the obligations of the Company under its contract bearing date the third day of January 1928, with the Colorado Interstate Gas Company for the sale of gas to that company, a duplicate original of which is delivered to the Trustee simultaneously with the execution and delivery of these presents, all and singular the trust estate, and all right, title and interest therein and right of redemption thereof, which sale shall be made at pubic auction at such place or places and at such time or times and upon such terms as the Trustee may fix and briefly specify in the notice of sale to be given as herein provided, or as may be required by law; or (b) the Trustee may proceed to protect and to enforce the rights of the trustee and of the holders of the bonds secured by this Indenture, by a suit or suits in equity or at law, whether for the specific performance of any covenant or agreement contained herein or in aid of the execution of any power herein granted, or for foreclosure or sale under this Indenture or for the enforcement of any other appropriate legal or equitable remedy, as the Trustee, being advised by counsel, may deem most effectual to protect and enforce any rights or duties hereunder.

Sec. 5. In case of the happening of any of the events of default enumerated in Section 2 of this Article VI, then at any time or times during the continuance of such events of default, it shall be the duty of the Trustee upon the written request of the holders of twenty-five per cent. in principal amount of the bonds then outstanding, and upon being indemnified as hereinafter provided, to take all steps needful for the protection and enforcement of its rights and the rights of the holders of the bonds issued and outstanding hereunder, and to exercise the power of entry or sale herein conferred or to be conferred by other deeds, acts, conveyances, transfers and other instruments as herein provided, or both, or to take appropriate judicial proceedings by action, suit or otherwise, as the Trustee, being advised by counsel, shall deem most expedient in the

interest of the holders of the bonds hereby secured; but anything in this Indenture to the contrary notwithstanding, the holders of a majority in principal amount of the bonds hereby secured then outstanding from time to time shall have the right to direct and control the action of the Trustee in any proceedings under this Article VI, including the right to cause the stay or abandonment of any such proceeding or the waiver of any default hereunder; provided, however, that nothing in this Section 5 shall be deemed to require the Trustee to perform in any jurisdiction any act which by the law of such jurisdiction the Trustee is forbidden or is without legal capacity to perform, or to perform any act which in its opinion would involve it in expense or liability without being indemnified to its satisfaction or to perform any act which it may be advised by counsel it should not perform.

Sec. 6. In the event of any sale, whether made under the power of sale granted herein or in any other deed, act, conveyance, transfer or other instrument herein provided for, or under or by virtue of judicial proceedings, or of some judgment or decree of foreclosure and sale, the whole of the trust estate shall be sold in one parcel and as an entirety and the purchaser or purchasers at any sale shall be required to assume the performance of the obligations of the Company under its contract bearing date the third day of January 1928, with the Colorado Interstate Gas Company for the sale of gas to that company, a duplicate original of which is delivered to the Trustee simultaneously with the execution and delivery of these presents.

Sec. 7. In case of any sale by the Trustee in the exercise of the powers herein conferred upon it, such sale shall be made at the Court House door in the City of Amarillo, the county seat of Potter County, Texas, in which a part of the real and personal properties herein described is situated, and notice of such sale shall be given in the manner and form and for the length of time required by the Texas statutes for valid sales to be made under the powers of a Deed of Trust of properties situated in the State of Texas. In addition to the notice required to be given by the statutes of the State of Texas, the Trustee shall prepare and publish a notice at least six times in some

daily newspaper published in the English language of general circulation, in the Borough of Manhattan, in the City and State of New York which publication shall begin not more than sixty days and not less than thirty days prior to the proposed date of sale. Such notice shall properly identify this Indenture, shall state the time when and place where the sale is to be made, and shall contain a brief general description of the property to be sold. The purchaser or purchasers at any such sale shall be required to assume the performance of the obligations of the Company under its contract bearing date the third day of January 1928 with the Colorado Interstate Gas Company for the sale of gas to that company, a duplicate original of which is delivered to the Trustee simultaneously with the execution and delivery of these presents.

Sec. 8. From time to time the Trustee or other person acting therein may adjourn any sale to be made under the provisions of this Indenture by announcement at the time and place appointed for such sale or for such adjourned sale or sales; and without further notice or publication, such sale may be made at the time and place to which the same shall be so adjourned.

Sec. 9. Upon the completion of any sale or sales under or by virtue of this Indenture, the Trustee shall execute and shall deliver to the accepted purchaser good and sufficient deeds or other instruments conveying, assigning and transferring the property sold. The Trustee and its successors are hereby irrevocably appointed the attorneys of the Company, in its name and stead, to make all necessary conveyances and assignments of the property sold, and for that purpose they may execute all necessary deeds and instruments of assignment and transfer and may substitute one or more persons with like power, the Company hereby ratifying and confirming all that its said attorneys, or such substitute or substitutes, shall lawfully do by virtue hereof. Nevertheless, the Company, if so requested by the Trustee, shall join in the execution and delivery of such conveyances, assignments and transfers.

Any such sale made under or by virtue of this Indenture or any other deed, act or other instrument provided for herein, whether under the power of sale herein granted or

pursuant to judicial proceedings, shall operate to divest all right, title, interest, claim and demand, either at law or in equity, of the Company, in and to the property sold, and shall be a perpetual bar, both at law and in equity, against the Company, its successors and assigns, and against any and all persons, claiming or to claim the property sold or any part thereof, from, through or under the Company or its successors or assigns.

Sec. 10. The receipt of the Trustee, or other person authorized to receive the same, for the purchase money, shall be a sufficient discharge therefor to any purchaser of the property or any part thereof sold as aforesaid; and no such purchaser, or his representatives, grantees or assigns, after paying such purchase money and receiving such receipt, shall be bound to see to the application of such purchase money upon or for any trust or purpose of this Indenture, or in any manner whatsoever be answerable for any loss, mis-application or non-application of any such purchase money, or be bound to inquire as to the authorization, necessity, expediency or regularity of any such sale.

Sec. 11. In case any sale under the provisions of this Article VI be made on account of default whether made under the power of sale granted herein or by any other deed, act or other instrument or pursuant to judicial proceedings, the whole of the principal sum of the bonds hereby secured, if not previously due, shall at once become due and payable, anything in said bonds or in this Indenture to the contrary notwithstanding.

Sec. 12. The purchase money, or the proceeds or avails of any such sale, whether made under the power of sale granted herein or by any other deed, act or other instrument or pursuant to judicial proceedings, together with any other sums which then may be held by the Trustee under any of the provisions of this Indenture as part of the trust estate, shall be applied as follows:

First: To the payment of the cost and expenses of such sale, including a reasonable compensation to the Trustee, its agents, attorneys and counsel, and of all expenses, liabilities or advances made or incurred by the Trustee under this Indenture, and to the payment

of all taxes, assessments and liens prior to the liens of this Indenture, and other deeds, acts, or other instruments provided for herein except any taxes, assessments or other superior liens subject to which such sale shall have been made.

Second: To the payment equally and ratably of the whole amount then owing or unpaid for principal and interest, upon the bonds and coupons hereby secured with interest on the principal and the overdue instalments of interest at the same rate as was borne by the bonds whereof the principal or instalments of interest may be overdue; and in case such proceeds shall be insufficient to pay in full the whole amount so due and unpaid, then to the payment of such principal and interest, without preference or priority of principal or interest, or of interest over principal, or of any instalment of interest over any other instalment of interest, ratably to the aggregate of such principal and accrued and unpaid interest, except as otherwise provided in Section 1 of this Article VI.

Third: Any surplus remaining after the payments provided for in paragraphs *First* and *Second* of this Section, shall be paid over to the Company, its successors or assigns, or to whomsoever may be lawfully entitled to receive the same.

Sec. 13. Upon any sale as aforesaid, any purchaser, for the purpose of making settlement or payment for the property purchased, shall be entitled to use and apply any bonds and any matured and unpaid coupons issued under this Indenture, by presenting said bonds and coupons so that there may be credited as paid thereon the sums applicable to such payment pursuant to the provisions of Section 12 of this Article VI; and such purchaser shall be credited on account of the purchase price of the property purchased with the sums payable out of the net proceeds of such sale on the bonds and coupons so presented; and at any such sale any bondholder or any other person may bid for and purchase such property, and may make payments therefor as aforesaid, and upon compliance with the terms of sale, may hold, retain and dispose of such property without further accountability therefor.

Sec. 14. The Company covenants and agrees that it will not at any time insist upon or plead, or in any manner whatever claim or take the benefit or advantage of, any stay or extension allowed by any law now or at any time hereafter in force; nor will it claim, take or insist on any benefit or advantage from any law now or hereafter in force providing for the valuation or appraisement of the trust estate, or any part thereof prior to any sale or sales thereof to be made pursuant to any provision contained in this Indenture or any deeds, acts, or other instruments provided for herein or to the decree of any court of competent jurisdiction, nor after any such sale or sales will it claim or exercise any right conferred by any statute enacted pursuant to the laws of any State or sub-division thereof, or otherwise, to redeem the property so sold, or any part thereof; and it hereby expressly waives all benefit and advantage of any such law or laws and covenants that it will not hinder, delay or impede the execution of any power herein granted and delegated to the Trustee, but that it will suffer and permit the execution of every such power as though no such law or laws had been made or enacted.

Sec. 15. No holder of any bond or coupon hereby secured shall have any right to institute any suit, action or proceeding in equity or at law for the foreclosure of the liens and charges of this Indenture or of other deeds, acts or instruments executed pursuant hereto or for the execution of any trust hereof or thereof or for the appointment of a receiver, or for any other remedy hereunder or thereunder, unless the holders of twenty-five per cent. in principal amount of the bonds hereby secured, then outstanding, shall have requested the Trustee in writing to take action in respect of the matter complained of, and shall have afforded to it a reasonable opportunity either to proceed to exercise the powers herein granted, or to institute such action, suit or proceeding, and shall also have offered to the Trustee security and indemnity satisfactory to it against the costs, expenses and liabilities to be incurred therein or thereby, and the Trustee shall have refused or neglected to act on such notice, request and indemnity; and such notification, request and offer of indemnity are hereby declared, in every such case, at the option of the Trustee, to be condi-

tions precedent to the execution of the powers and trusts of this Indenture and to any action or cause of action for foreclosure as aforesaid or for the appointment of a receiver or for any other remedy hereunder or thereunder; it being understood and intended that no one or more holders of bonds and coupons shall have any right in any manner whatever to affect, disturb, or prejudice the liens of this Indenture or any instruments supplemental hereto by his or their action, or to enforce any right hereunder or thereunder, except in the manner herein provided, and that all proceedings at law or in equity shall be instituted, had and maintained in the manner herein provided and for the equal benefit of all holders of such outstanding bonds and coupons. The Trustee in its own discretion may institute any suit, action or proceeding in equity or at law without the request of any bondholder or without the indemnity provision for which is herein made.

All rights of action under this Indenture may be enforced by the Trustee without the possession of any of the bonds or coupons hereby secured or by the production thereof on the trial or other proceedings relative thereto, and any such suit or proceedings instituted by the Trustee shall be brought in its own name, and any recovery of judgment shall be for the ratable benefit of the holders of said bonds and coupons and the other indebtedness hereby secured, except as otherwise provided in Section 1 of this Article VI.

Sec. 16. Except as herein expressly provided to the contrary, no remedy herein conferred upon or reserved to the Trustee, or to the holders of bonds hereby secured, is intended to be exclusive of any other remedy, but each and every such remedy shall be cumulative and shall be in addition to every other remedy given hereunder or now or hereafter existing at law or in equity or by statute.

Sec. 17. No delay or omission of the Trustee or of any holders of bonds secured by this Indenture to exercise any right or power arising from any default continuing as aforesaid shall impair any such right or power, or shall be construed to be a waiver of any such default or an acquiescence therein.

Sec. 18. The Company covenants and agrees that (1) in case default shall be made in the payment of any interest

due and payable on any bond or bonds at any time outstanding and secured by this Indenture, and such default shall have continued for the period of thirty days, or (2) in case default shall be made in the payment of the principal of any of such bonds when the same shall have become due and payable, whether upon the maturity of said bonds, or upon a declaration as authorized by this Indenture, or upon a sale as set forth in Section 11 of this Article VI, or (3) in case default shall be made in the payment of any instalment of the Sinking Fund in accordance with the terms of this Indenture and such default shall continue for a period of thirty days—then, upon demand of the Trustee, the Company will pay to the Trustee, for the benefit of the holders of the bonds and coupons hereby secured, then outstanding, the whole amount that then shall have become due and payable on all such bonds and coupons then outstanding, for interest or principal, or both, as the case may be, with interest upon the overdue principal and instalments of interest at the rate of six per cent. (6%) per annum; and in case the Company shall fail to pay the same forthwith upon such demand, the Trustee in its own name, and as the Trustee of an express trust, shall be entitled to recover judgment against the Company for the whole amount so due and unpaid.

The Trustee shall be entitled to recover judgment as aforesaid, either before or after or during the pendency of any proceedings for the enforcement of its rights under this Indenture or under any other deeds, acts or instruments executed pursuant hereto, and the right of the Trustee to recover such judgment shall not be affected by any entry or sale hereunder, or under any instrument supplemental hereto, or by the exercise of any other right, power or remedy for the enforcement of the provisions of this Indenture, and in case of a sale of the property subject to this Indenture, or any instrument supplemental hereto, and of the application of the proceeds of sale to the payment of the debt secured by this Indenture, the Trustee in its own name, and as trustee of an express trust shall be entitled to enforce payment of and to receive all amounts then remaining due and unpaid upon any and all of the bonds issued under this Indenture then outstanding for the benefit of the holders thereof, and shall be entitled to

recover judgment for any portion of the debt remaining unpaid, with interest at the rate of six per cent. (6%) per annum. No recovery of any such judgment by the Trustee and no levy or any execution under any such judgment upon property subject to this Indenture, or any instruments supplemental hereto, or upon any other property, shall in any manner or to any extent affect the lien of this Indenture, or any instruments supplemental hereto, upon the trust estate or any part thereof, or any rights, powers or remedies of the Trustee hereunder, or any lien, rights, powers or remedies of the holders of the bonds hereby secured, but such lien, rights, powers and remedies of the Trustee and of the bondholders shall continue unimpaired as before.

Any monies thus collected by the Trustee under this section shall be applied by the Trustee toward payment of the amounts then due and unpaid upon such bonds and coupons in respect of which such monies shall have been collected, ratably and without any preference or priority of any kind (except as provided in Section 1 of this Article VI), according to the amounts due and payable upon such bonds and coupons, respectively, at the date fixed by the Trustee for the distribution of such monies, upon presentation of the several bonds and coupons and stamping such payment thereon, if partly paid, and upon surrender thereof, if fully paid.

Nevertheless, the foregoing provisions of this Section and the powers hereby granted to the Trustee are strictly subject to the limitation that, if by the commencement of any action at law to recover judgment for any amount due and unpaid upon said bonds or coupons or hereunder, or by the exercise of any other remedy prior to or concurrently with proceedings to enforce the lien of this Indenture, or any instruments supplemental hereto, upon the trust estate, the lien of this Indenture or any instruments supplemental hereto, upon any of the trust estate or the security hereby provided for would be surrendered, waived or lost, then, despite the foregoing provisions of this Section, the Trustee shall not have power to commence such action at law or to exercise such prior or concurrent remedy.

The Trustee may, for the purpose of determining whether or not by the commencement of any such action at law or by the exercise of any such other remedy the lien of this In-

venture, or any instruments supplemental hereto, upon any of the trust estate or the security hereby provided would be surrendered, waived or lost, take and follow the opinion of counsel approved by it, who may be counsel for the Company, and the Trustee shall under no circumstances be in any way liable or responsible in any court or forum to the holders or owners of any of the bonds and coupons issued hereunder or to any other person for any action taken or omitted by it in accordance with such opinion of counsel.

Sec. 19. The Trustee shall, at the expense of the Company, have power to institute and to maintain such suits and proceedings or to take such other action as it may be advised shall be necessary or expedient to prevent any impairment of the security hereunder by any acts of the Company, or of others, in violation of this Indenture, or unlawful, or as the Trustee may be advised shall be necessary or expedient to preserve and to protect its interests and the security and interests of the holders of the bonds and coupons issued hereunder, in respect of the property subject to this Indenture, or in respect of the income, earnings, rents, issues and profits thereof, including power to institute and to maintain suits or proceedings to restrain the enforcement of, or compliance with, or the observance of, any legislative or other governmental enactment, rule or order that may be unconstitutional or otherwise invalid, if the enforcement of, or compliance with, or observance of, such enactment, rule or order would impair the security hereunder or be prejudicial to the interests of the holders of the bonds issued hereunder or of the Trustee.

Sec. 20. Upon filing bill in equity or upon commencement of any other judicial proceedings to enforce any right of the Trustee or of the bondholders under this Indenture, the Trustee shall be entitled to exercise the right of entry and also any and all other rights and powers herein conferred and provided to be exercised by the Trustee upon the occurrence and continuance of default as herein provided, and as a matter of right the Trustee shall be entitled to the appointment of a receiver of the mortgaged premises and property and of the earnings, income, revenue, rents, issues or profits thereof, with such other powers as the court making such appointment shall confer.

Sec. 21. Nothing contained in this Indenture, or in the bonds issued hereunder, expressed or implied, is intended, or shall be construed, to give to any person or corporation, other than the parties hereto and the holders of bonds and coupons secured by this Indenture any legal or equitable right, remedy or claim under or in respect of this Indenture, or under any covenant, condition or provision herein and therein contained; all such covenants, conditions and provisions being intended to be and being for the sole and exclusive benefit of the parties hereto and thereto and of the holders of bonds and coupons issued hereunder.

CARL H. SCHUTTE, a witness for the Commission, and its principal Examiner of Accounts, testified concerning the organization and corporate history of Canadian as follows (Vol VI, pp. 850-857):

By Mr. March:

Q. Have you made an examination of the books and records and accounts of the Canadian River Gas Company?

A. Yes.

Q. Where was that examination made?

A. The work that I personally did was at Colorado Springs and work was performed under my supervision at the office in New York City.

Q. Have you made an examination to ascertain the corporate history of the Canadian River Gas Company?

A. That's right.

Q. I wonder if you can just give us briefly the corporate history of that company?

A. All right, sir.

Mr. Campbell: If the Examiner please, at this point, Colorado Interstate Gas Company wishes to make the same objection to Mr. Schutte's testimony as heretofore made to that of Mr. O'Connor, which I won't repeat in detail, but the reasons being that he's employed solely by the Power Commission and not an impartial witness and for the reasons stated at length at the time we objected to Mr. O'Connor's statement. We believe we are denied due process.

Mr. March: If it please the Examiner, I want to state here for the record, that objection is really humorous, because on the same theory the people they pay to testify here would be disqualified from testifying because they would be influenced by the people who pay them, and furthermore, I'd like to direct the Examiner's attention to this; that anyone who knows anything about administrative procedure at all knows that this hearing was constituted by due process, that the courts have sustained an examiner sitting in a case paid by the Commission and other employes of that Commission acting as witnesses in the case. Why, it would be—it's just as sensible to say that opposing counsel shouldn't practice before a court because he's an officer of the court. That's just about what the whole thing amounts to; so I just want the record to show, and I challenge counsel, if they've got something here, to bring in the cases and show us in regard to the situation here.

Mr. Campbell: If the Examiner please, I don't want to argue the matter. I simply want to preserve whatever legal rights we've got. We don't want to burden the record with repeating that objection to every F. P. C. witness, and if it may be understood that we have interposed that objection to all Federal Power Commission witnesses, we wont be interrupting the proceeding further. We simply wish to preserve our rights, whatever they may be.

The Trial Examiner: Mr. Keffer?

Mr. Keffer: I just want the record to show that the Canadian River also makes the same objection for the reasons as given by the Colorado Interstate.

The Trial Examiner: As far as the Examiner is concerned, of course this is an administrative procedure and the Examiners, of course, have no objection to counsel stating their position or preserving what rights counsel deem that it has in the matter.

The objection will be overruled and it will be perfectly all right, Mr. Campbell, if you desire to make such an objection to each of Commission's counsel witnesses. The objection will be overruled.

You may proceed, Mr. March.

By Mr. March:

Q. You may continue, Mr. Schutte.

A. The Canadian River Gas Company was incorporated under the laws of the state of Delaware on February 24, 1928, with an authorized capital stock of 25,000 shares, without par value. Its charter provides for perpetual existence.

The organization of Canadian River Gas Company appears to have been pursuant to the Memorandum of Stipulations agreed upon between Southwestern Development Company, Cities Service Company, and Standard Oil Company (New Jersey), dated April 5, 1927.

The nature of the business to be transacted is set forth in the Certificate of Incorporation—

Mr. Keffer: Now, if the Examiner please, just there—I haven't seen this statement, but the witness obviously has drawn a conclusion which I think is subject to an objection, in giving an assumption upon his part as to the reasons for the incorporation of Canadian River.

Now, again, if I might have read the statement in its entirety, maybe I would have no objection. Otherwise, I hesitate to let it go without objection, not knowing what is coming.

Mr. March: Why don't you reserve your objection until you hear the statement? In other words, this witness is testifying here. He just happens to be reading his testimony into the record, just like Mr. Hill read his into the record.

Mr. Keffer: Well, of course, the objections were made as he went along and copies were available whereby they could—I don't know that it make a whole lot of difference.

The Trial Examiner: Let me say this, Mr. Keffer, that of course the witness made and did state a conclusion there, no doubt, but these statements will be carefully weighed and gone into, and perhaps we may—let the witness proceed. If you desire, the Examiner later will hear you on a motion to strike.

Mr. Keffer: All right, if that may be understood, because I may not have any.

The Trial Examiner: You understand in the first instance, Mr. Keffer, the statement of the witness will be weighed for whatever the testimony might be worth.

You may proceed, Mr. Schutte.

The Witness: The nature of the business to be transacted is set forth in the Certificate of Incorporation. In general the corporation was organized with broad powers to carry on a business in gas, oil, and other extractive enterprises. It is worthy of note, however, that a proviso in the Certificate of Incorporation specifies that the broad powers, contained therein shall not be construed as authorizing the corporation to transport gas and oil for others as a carrier for hire, or to sell gas or oil, except by special contract, or to constitute the corporation a common purchaser of gas or oil, or a public utility corporation.

The incorporators and original subscriptions to capital stock were:

N. K. Moody, Independence, Kansas	98 shares
Dana H. Kelsey, Independence, Kansas	1 share
Fred S. Cook, Tulsa, Oklahoma	1 share
Total	100 shares

The Board of Directors at a meting held on March 27, 1928 authorized the issuance of one hundred shares of capital stock of the corporation to the original incorporators or their assignees upon receipt of payment therefor at the rate of one dollar per share, and issuance to the Southwestern Development Company or to its order 24,900 shares of the capital stock upon payment therefore at the rate of one dollar per share. The records, however, show the issuance and delivery of 24,995 shares of capital stock to Southwestern Development Company and the issuance of five additional shares to other parties for a total consideration of one dollar.

The differences between the transaction as authorized and as executed were eliminated by action of the stock-

holders in annual meeting on March 7, 1933, when the transaction as executed was ratified.

The capital stock as originally issued on June 5, 1928 was to the following:

Southwestern Development Company	24,995 shares
W. S. Fitzpatrick	1 share
N. K. Moody	1 share
A. R. Jones	1 share
R. W. Gallagher	1 share
J. M. Parker	1 share
Total	25,000 shares

The requirement that directors be stockholders was annulled on June 10, 1935, and the qualifying shares were transferred to Southwestern Development Company; thus at December 31, 1939 there was outstanding only capital stock certificate No. 12, dated May 19, 1939, issued to Southwestern Development Company for 25,000 shares or all of the capital stock outstanding as of December 31, 1939.

Colorado Interstate Gas Company provided all of the funds required to finance Canadian River Gas Company through the purchase of the latter company's bonds or by advances secured by notes. Canadian River Gas Company's trust indenture is to Chase National Bank, New York, Trustee, successor Trustee to the Equitable Trust Company of New York; is dated June 1, 1928; and covers its "First Mortgage and Collateral Trust Twenty Year Six Per Cent Sinking Fund Gold Bonds" payable June 1, 1948, of which there were issued,

June 27, 1928	$8,470,000.00
December 3, 1928	740,000.00
December 30, 1929	1,790,000.00
Total	$11,000,000.00

all of which were acquired by the Colorado Interstate Gas Company.

Beginning June 1, 1930 and periodically thereafter, bonds were redeemed through the sinking fund in accordance with

trust indenture provision. On December 31, 1939 the total amount of bonds outstanding was $5,057,000.00, owned by Colorado Interstate Gas Company.

Canadian River Gas Company six per cent notes to Colorado Interstate Gas Company outstanding as of December 31, 1939 was $1,348,254.14. These notes have been issued from time to time by Canadian River Gas Company to finance its construction. They are redeemable in equal monthly installments over a period of twenty years from the date of issuance or by May 31, 1948, whichever is the shorter period. The interest is payable semi-annually on January 1st and July 1st.

(Vol. VI, pp. 850-857.)

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5. Colorado Interstate Purchases Rights of Ways, Highway Crossing Permits, Constructs Its Properties and Begins Business. Description of Its Business.

As shown by Exhibit 1, the project parties had tentatively agreed upon FB&D as engineers and operators of the property. Edgar G. Hill, Vice President of FB&D, testified that early in the summer of 1927, his firm was asked to put survey and right of way crews on the job "with the knowledge that the project might never materialize. * * * If it didn't materialize we were to get our out-of-pocket expenses and that's all." (Hill, Vol. II, pp. 222, 223.)

Maps of the transmission line are contained in Exhibits 5, 13, 36-K, 36-L, 36-M, 36-O, 36-P, 68 and 70 introduced by the companies and in Exhibits 44, 46 and 48 introduced by the Commission.

* * * * *

AREAS
COAL, OIL AND
COMPETITI
SC
COLORADO

50 0

SOURCE OF INFORMATION – CO
OIL & GAS FIELDS AND PIPE L

POWDER RIVER REGION
WIND RIVER REGION
SALT CREEK FIELD
LANCE CREEK FIELD
NEBRASKA
400 M.
300 M.
GREEN RIVER REGION
HANNA FIELD
ROCK CREEK FIELD
UTAH
WYOMING
UINTA REGION
NORTH PARK FIELD
100 M.
50 M.
DENVER
DENVER REGION
SOUTH PARK FIELD
COLORADO SPRINGS
CANON CITY FLD.
PORTLAND
PUEBLO
ORDWAY
SUGAR CITY
KANSAS
COLORADO
NEW MEXICO
RATON MESA REGION
SAN JUAN RIVER REGION
CERRILOS FIELD
FOWLER
MANZANOLA
LAS ANIMAS
LA JUNTA
HUGOTON FIELD
OKLAHOMA
CLAYTON
TEXLINE
CAN. RIV. GAS CO.
TEXAS
DALHART
HARTLEY
AMARILLO FIELD
BURKBURNETT FIELD
500 M.
RANGER FIELD

LEGEND

- Natural Gas Transmission Line owned and operated by Colorado Interstate Gas Co. and Canadian River Gas Co.
- Other Company's Natural Gas Transmission Line
- Oil Transmission Line
- Approximate limits of Natural Gas producing areas
- Approximate limits of Oil producing areas
- Approximate limits of Natural Gas and Oil producing areas
- Approximate limits of Coal producing areas

Y-528 10-4-40

AREAS PRODUCTIVE OF
COAL, OIL AND NATURAL GAS FUELS
COMPETITIVE TO NATURAL GAS
SOLD BY THE
COLORADO INTERSTATE GAS CO.

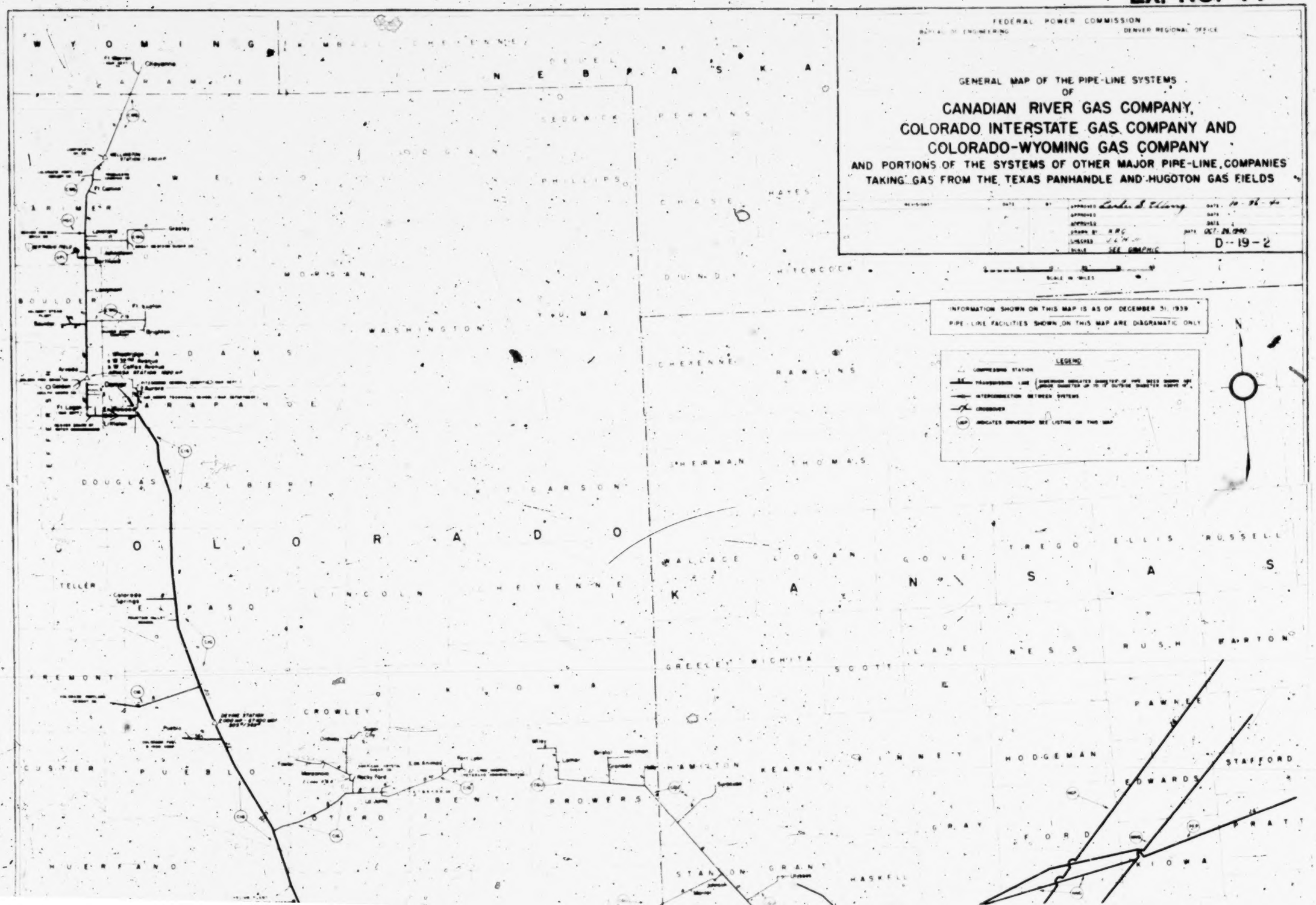
SCALE OF MILES
50 0 50 100 150

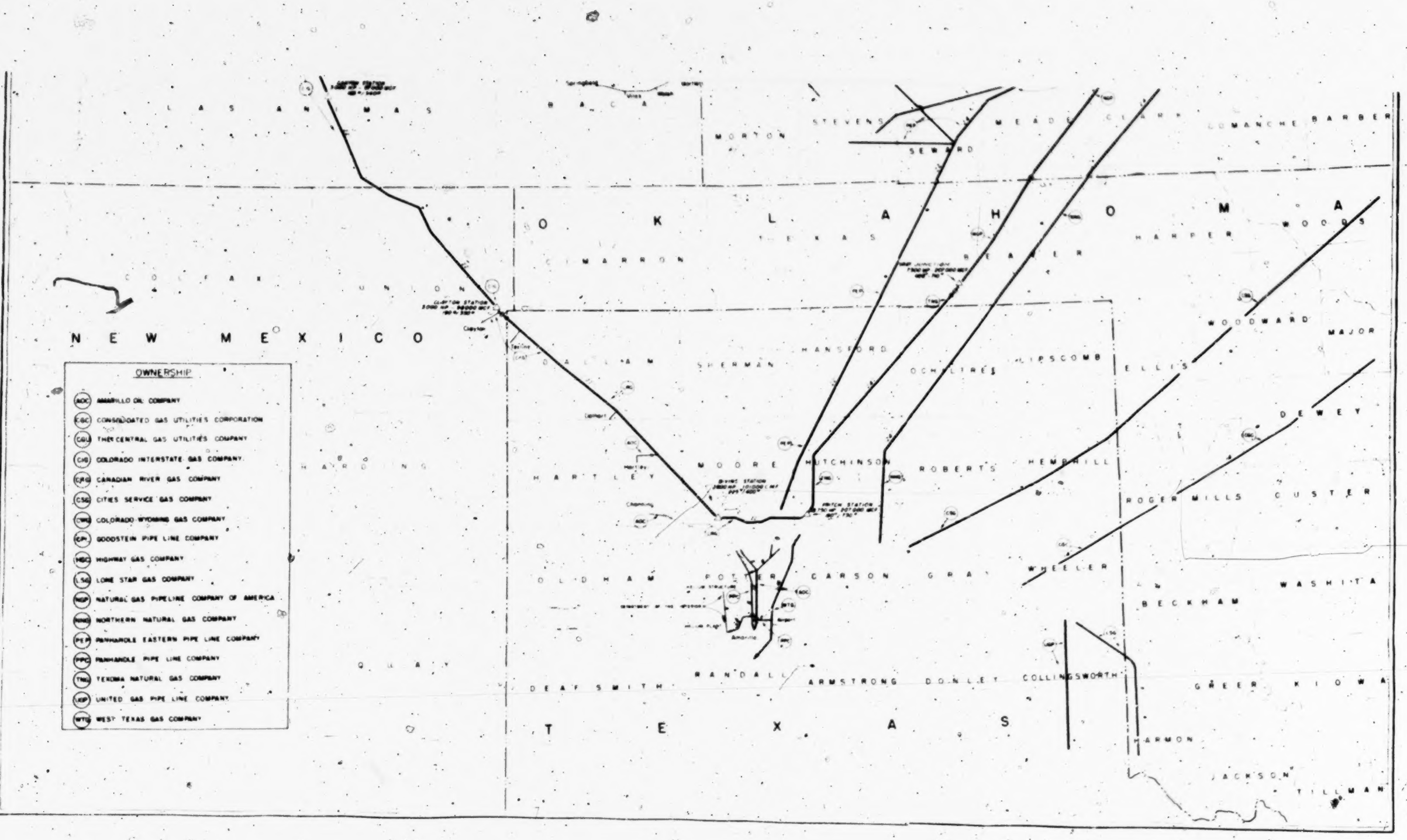
Ford, Bacon & Davis
Incorporated
Engineers
PHILADELPHIA NEW YORK CHICAGO

SOURCE OF INFORMATION – COAL FIELDS FROM U.S. GEOLOGICAL SURVEY
OIL & GAS FIELDS AND PIPE LINES FROM U.S. GEOL. SURV. AND O. & G. JOURNAL

POWDER RIVER REGION
SALT CREEK FIELD
LANCE CREEK FIELD
NEBRASKA
HANNA FIELD
ROCK CREEK FIELD
NORTH PARK FIELD
100 M.
50 M.
DENVER
DENVER REGION
SOUTH PARK FIELD
COLORADO SPRINGS
CANON CITY FLD
PORTLAND
KANSAS
PUEBLO
ORDWAY
SUGAR CITY
FOWLER
MANZANOLA
LAS ANIMAS
LA JUNTA
200 M.
RATON MESA REGION
HUGOTON FIELD
OKLAHOMA
CLAYTON
TEXLINE
CARLSBAD GAS CO.
TEXAS
300 M.
DALHART
HARTLEY
AMARILLO FIELD
OKLAHOMA KANSAS FIELD
400 M.
BURKBURNETT FIELD
500 M.
RANGER FIELD

EX. NO. 44


FEDERAL POWER COMMISSION
DENVER REGIONAL OFFICE
GENERAL MAP OF THE PIPE-LINE SYSTEMS
OF
CANADIAN RIVER GAS COMPANY,
COLORADO INTERSTATE GAS COMPANY AND
COLORADO-WYOMING GAS COMPANY
AND PORTIONS OF THE SYSTEMS OF OTHER MAJOR PIPE-LINE COMPANIES
TAKING GAS FROM THE TEXAS PANHANDLE AND HUGOTON GAS FIELDS
D-19-2
INFORMATION SHOWN ON THIS MAP IS AS OF DECEMBER 31, 1939
PIPE-LINE FACILITIES SHOWN ON THIS MAP ARE DIAGRAMATIC ONLY
LEGEND
COMPRESSING STATION
INTERCONNECTION BETWEEN SYSTEMS
CROSSOVER
INDICATES OWNERSHIP SEE LISTING ON THIS MAP
N
WYOMING
NEBRASKA
COLORADO
KANSAS
OKLAHOMA
LARIMER
WELD
BOULDER
ADAMS
ARAPAHOE
DOUGLAS
ELBERT
LINCOLN
EL PASO
TELLER
FREMONT
CROWLEY
OTERO
BENT
PROWERS
KIOWA
CUSTER
PUEBLO
HUERFANO
LAS ANIMAS
MORGAN
WASHINGTON
YUMA
PHILLIPS
SEDGWICK
PERKINS
LOGAN
CHASE
HAYES
DUNDY
HITCHCOCK
CHEYENNE
RAWLINS
THOMAS
SHERMAN
WALLACE
GREELEY
WICHITA
SCOTT
LANE
NESS
RUSH
BARTON
TREGO
ELLIS
RUSSELL
HAMILTON
KEARNY
FINNEY
HODGEMAN
PAWNEE
EDWARDS
STAFFORD
PRATT
GRAY
FORD
STANTON
GRANT
HASKELL


OWNERSHIP
AOC AMARILLO OIL COMPANY
CGC CONSOLIDATED GAS UTILITIES CORPORATION
CGU THE CENTRAL GAS UTILITIES COMPANY
CIG COLORADO INTERSTATE GAS COMPANY
CRG CANADIAN RIVER GAS COMPANY
CSG CITIES SERVICE GAS COMPANY
CWG COLORADO WYOMING GAS COMPANY
GPL GOODSTEIN PIPE LINE COMPANY
HGC HIGHWAY GAS COMPANY
LSG LONE STAR GAS COMPANY
NGP NATURAL GAS PIPELINE COMPANY OF AMERICA
NNG NORTHERN NATURAL GAS COMPANY
PEP PANHANDLE EASTERN PIPE LINE COMPANY
PPC PANHANDLE PIPE LINE COMPANY
TNG TEXOMA NATURAL GAS COMPANY
UGP UNITED GAS PIPE LINE COMPANY
WTG WEST TEXAS GAS COMPANY
NEW MEXICO
TEXAS
OKLAHOMA
LAS ANIMAS
BACA
PROWERS
KIOWA
MORTON
STEVENS
SEWARD
MEADE
CLARK
COMANCHE
BARBER
TEXAS
CIMARRON
HARPER
WOODS
COLFAX
UNION
HARDING
QUAY
CURRY
ROOSEVELT
LINCOLN
TORRANCE
GUADALUPE
SAN MIGUEL
MORA
SAN JUAN
RIO ARRIBA
TAOS
COLFAX
UNION
DALLAM
SHERMAN
HANSFORD
OCHILTREE
LIPSCOMB
ELLIS
WOODWARD
MAJOR
DEWEY
CUSTER
ROGER MILLS
BECKHAM
WASHITA
HARTLEY
MOORE
HUTCHINSON
ROBERTS
HEMPHILL
OLDHAM
POTTER
CARSON
GRAY
WHEELER
DEAF SMITH
RANDALL
ARMSTRONG
DONLEY
COLLINGSWORTH
GREER
HARMON
JACKSON
TILLMAN

Hill testified:

"I had in the summer of 1927 organized survey and rights of way crews and sent them to Texas and Colorado and when I arrived in Colorado Springs in October of 1927 the surveys had been practically completed and much of the rights of way had been purchased.

"The construction of the gathering lines in the field and the main line to a point just outside the city limits of Denver, with a branch line to a point just outside the city limits of Pueblo, was completed about July 1, 1928, and natural gas was then first delivered to the Public Service Company at Denver.

"After this construction was completed, I remained at Colorado Springs as manager of the project, still representing Ford, Bacon & Davis, Inc. I continued in this position until the end of 1929, when I was succeeded by Frank J. Trelease, who was also a representative of Ford, Bacon & Davis, Inc., and who became the manager of the properties.

"The lines were built in the name of, and the rights of way and highway crossing rights therefor obtained in the name of Ford, Bacon & Davis, Inc." (Vol II, pp. 177, 178.)

" • • • There could be no question then about utility status because Ford, Bacon & Davis certainly was not a public utility for one thing. We couldn't condemn it if we wanted to." (Vol. II, p. 224.)

"About the time of the completion of the construction work, and as I recollect, about June 5, 1928, these properties, including rights of ways and highway crossing permits, were transferred by Ford, Bacon & Davis, Inc. to Canadian River Gas Company and Colorado Interstate Gas Company, the Canadian River taking title to all of the properties and rights of way south of a point near Clayton, New Mexico, and the Colorado Interstate taking title to the properties north of said point. • • •

"In following out the instructions that we were to

operate the properties as private companies and not claim or exercise any of the rights of public utilities or common carriers, we never engaged in any local distribution or sale of natural gas. Neither company ever transported natural gas for others. Canadian River only transported its own gas from its own wells to the point of delivery to the Colorado Interstate near Clayton, New Mexico, and Colorado Interstate only transported its own gas from that point to points in Colorado. We never exercised or attempted to exercise the right of eminent domain or condemnation. We never obtained or applied for any franchise from any municipality. We never obtained or applied for any other special grants or privileges of any kind. We originally did obtain in the name of Ford, Bacon & Davis, Inc., and later, in a few cases, in the name of Colorado Interstate Gas Company, permits from the proper authorities in connection with the crossing or use of highways, and paid whatever fee or charge that was required. In applying for these highway crossing permits, we never represented that either of the companies was a common carrier or public utility. We never made any filings of tariffs or schedules of charges or prices, or of any rules or regulations, with any governmental authority. We never applied for or received any certificate of public convenience or necessity.

"Neither company ever advertised in newspapers or any other manner that it would sell gas to the public generally. All of the gas sold was under written contracts, after private negotiations concerning price, quantity, time of delivery, and so forth." (Vol. II, pp. 178, 179.)

H. F. Benson, of FB&D, who had actual charge of the procurement of rights of ways under Hill, testified:

"* * * I was sent by my employer to Colorado Springs, Colorado, in May 1927, primarily to take charge of the procurement of rights of way for the pipe line to be built between the Amarillo, Texas gas field and the Denver City gate.

"My employer instructed me that all rights of way had to be purchased; that the pipe line was not to be operated as a common carrier *of* public utility; that we were not to exercise or attempt to exercise any right of condemnation or eminent domain. I was also instructed that wherever it was necessary to cross underneath a highway we were to buy the right from the state or county, as the case might be, and were likewise not to represent that we were a common carrier or public utility.

"I proceeded under these instructions. We procured rights of way by purchase from the land owners and paid whatever was finally necessary after negotiation. We paid a minimum price of fifty cents per rod. In many cases we had to pay in excess of this rate, sometimes paying more than five dollars per rod. In a few cases we were not able to purchase a right of way over the surveyed or projected route of the line, and I advised my employer to that effect and the route of the line had to be changed in a few cases on that account. In one case that I now recall, we were only able to get the right of way by purchasing the land owner's whole tract of land. This was the case of Mr. Sowers, in Pueblo County, Colorado. We bought this whole farm because it was not feasible to change the route of the line. In some other cases we purchased the right of way where there was a mortgage on the land. Later, when the mortgage was foreclosed, and we were not able to come to terms with the holder of the indebtedness, we went in and purchased the whole farm or ranch at the foreclosure sale in order to protect our right of way." (Vol. II, pp. 273, 274, 275.)

Witness identified Exhibit 28, being typical right of way deed from M. W. Sellers, Las Animas County, Colorado, to FB&D covering a right of way of 163 rods in consideration of the payment of $163, and witness stated that except for amount paid, the deed was typical of all right of ways procured from landowners "for the entire line in Colorado, New Mexico and Texas." (Vol II, pp. 275, 276.) Continuing, Benson stated:

"* * * After title to the line was conveyed by Ford, Bacon & Davis, Inc. there were some rights of way taken directly in the name of Canadian River Gas Company or Colorado Interstate Gas Company, as the case might be, but they, too were all purchased in the same manner as the rights of way from Sellers and Wootten, and the same form of right of way grant or deed was executed.

"My job was also to purchase from the county commissioners and the State Highway Department, wherever that was necessary, rights to cross underneath highways. In this connection I never represented to any highway department or board of county commissioners or any other public officials, that Ford, Bacon & Davis, Inc. was a public utility or common carrier. I simply stated that we were building the pipe line and wanted the right to cross underneath the highway, and we stood ready to pay whatever was required." (Vol. II, p. 277.)

Through Benson there was then introduced permits or grants from states and counties to cross underneath their highways with the pipe line. The State Highway Department of Colorado granted to FB&D on January 25, 1928 such rights (Exhibit 29). Douglas County, Colorado, made a grant to FB&D dated January 23, 1928 (Exhibit 30). The witness testified that nine other counties in Colorado, through which the line passed, granted similar rights (Vol. II, p. 280). Union County, New Mexico, granted rights to FB&D dated January 4, 1928 (Exhibit 31). Union County was the only one crossed in New Mexico (Vol. II, p. 280). The State Highway Department of New Mexico advised Benson that no consent from them was necessary to cross highways in Union County (Vol. II, p. 281). The grant from Potter County, Texas, to FB&D dated March 15, 1928 (Exhibit 32), the witness stated, was similar to grants from Moore, Hartley, Dallam, Hutchinson and Carson, the other counties crossed by the line in Texas (Vol. II, p. 282).

The State Highway Department of Texas granted, on February 1, 1928, the right to cross underneath State High-

way No. 5 at a point in Moore County, Texas (Exhibit 33), which Benson testified was typical of all other highway grants obtained in Texas (Vol. II, p. 283). The State of Colorado granted to FB&D right of way over certain state lands not a part of the public highways on July 11, 1928, for which $985.90 was paid (Exhibit 34). The State of New Mexico made a similar grant to FB&D to cross state lands not included in public highways on November 28, 1927, for which $62.75 was paid (Exhibit 35), which Benson said was typical of similar grants from the State of New Mexico.

The aforesaid Exhibits 28 to 35 were all admitted without objection (Vol. II, pp. 275 to 285, inc.).

Continuing the witness testified:

> "I was instructed by Ford, Bacon & Davis, Inc. that in no case was the line or any lateral to enter any municipality. I was careful, in procuring right of ways to check the survey of the line, to be certain that it did not enter any municipality. I know of my own knowledge that the line does not lie inside the municipal limits of any town or city, and we never sought or acquired any right of way or privilege from any municipality." (Vol. II, pp. 285, 286.)

He then stated:

> "While I was procuring right of ways and highway crossing rights for Ford, Bacon & Davis, Inc., I was approached by various people who inquired as to the possibility of their purchasing natural gas. Many of the land owners inquired as to whether they could arrange to tap the line and purchase natural gas. Some of them offered to sell a right of way much cheaper if they could arrange to purchase natural gas. Our people explained to them, under instructions from Ford, Bacon & Davis, Inc., that gas was not to be sold except to a limited number of purchasers under private contract and that we could not sell to the public generally. • • •
>
> "In some instances this refusal to sell gas resulted in the payment of very large prices for rights of way.

As an example of this refusal to sell gas generally, a group of people at Timpas, Colorado, inquired of me as to the possibility of purchasing gas for their community, and I wrote them a letter that our company was not engaged in the general distribution or sale of gas. (Vol. II, pp. 286, 287.)

* * * * *

"Since the original line was built, it has only been necessary to get a small amount of right of way for a few laterals. All of it has been purchased and paid for, and covered by grants or deeds just like the original purchases, except that it has been taken in the name of Colorado Interstate Gas Company or Canadian River Gas Company, as the case might be. Practically all the purchases have been in the name of the Colorado Interstate Gas Company." (Vol. II, p. 288.)

The witness then testified that after completion of the line, he left the employment of FB&D and became an employee of Colorado Interstate. Continuing, he said:

"From the beginning, I have been generally familiar with the business of these companies. I know of all the sales now being made by Colorado Interstate Gas Company, and I know that it is not selling gas to any one except under contracts which have been filed with the Federal Power Commission, pursuant to General Order No. 53, and under six (6) additional contracts to six industrial consumers.

"To my knowledge neither company has ever filed any application for or procured any certificate of public convenience and necessity.

"To my knowledge neither company has ever filed any schedules or tariffs or rates or prices, or any rules or regulations covering service, with the Public Utilities Commission of the State of Colorado or of New Mexico, or of any other state, or with any municipal authority.

"In 1932 the Public Utilities Commission of the State of Colorado commenced a proceeding to deter-

mine whether Colorado Interstate Gas Company should be required to obtain a certificate of public convenience and necessity. * * * I familiarized myself with this case and was prepared to testify. Colorado Interstate Gas Company successfully resisted the claim."

* * * * * *

"In connection with the business of these companies I never heard of either company advertising or in any way offering to sell gas to the public generally, and as I have already stated, I was instructed to the contrary, and advised people inquiring of me that gas was only being sold to a few customers under private contract." (Vol. II, pp. 228 to 294.)

The witness testified that the Highway Department of Colorado and the counties granted the crossing rights applied for without any attempt to classify his company as a public utility. (Vol. II, pp. 299, 300.)

Payne, Colorado Interstate's first president, testified:

"The company never engaged in distributing gas generally to consumers, it made no filings of schedules with the Public Service Commission of Colorado, never advertised that it would sell gas to all who might apply, had no general schedule of rates, and made no sale of gas except pursuant to a special contract negotiated with each customer.

"It never sought or obtained any franchise right or privilege from any governmental authority to engage in the sale of gas and did not construct its pipe line in any municipality. It never held itself out as being willing to sell generally to the public. (Vol. IV, p. 514.)

* * * * * *

"The company did not have the power of eminent domain and never exercised or attempted to exercise that power. All of its property was purchased after negotiation with the owner." (Vol. IV, p. 515.)

Hendee, manager of both companies since July, 1936, testified.

"* * * During my management the operation of

the companies has been carried on along the same lines as testified to in this case by Edgar G. Hill.

"During my management neither company has sold any gas to anyone except under written contracts. I am familiar with the contracts that each company filed with the Federal Power Commission pursuant to its General Order No. 53.

"Canadian River has not sold during my management any gas except under its written contracts so filed with the Commission.

"Colorado Interstate has not sold any gas except under its written contracts so filed with the Commission, and under six (6) additional written contracts covering the direct sale of gas not for resale to industrial consumers.

"The Canadian River has transported only its own gas from its own wells to the point of delivery to the Colorado Interstate near Clayton, New Mexico, and the Colorado Interstate has only transported its own gas from that point to points in Colorado.

"We never exercised or attempted to exercise the right of eminent domain or condemnation. We never obtained or applied for any franchise from any municipality. We never obtained or applied for any special grants of privileges of any kind. We have not had occasion to apply for any additional highway permits during my management. We never made any filings of tariffs or schedules of charges or prices, or rules or regulations, with any state or municipal authority. We never applied for or received any certificate of public convenience or necessity.

"We never advertised in newspapers or in any other manner that either company would sell gas to the public generally. All of the gas sold was under written contracts after private negotiations concerning price, quantity, time of delivery, and so forth." (Vol. III, pp. 309, 310.)

On cross examination Hendee testified that his company

exercised no supervision over the industrial load of Public Service in Denver and had no arrangement with that company other than the contract under which his company received 85% of the gross, and that his company had no joint bookkeeping with Public Service concerning industrial gas and that the two companies were entirely separate (Vol. III, pp. 320 to 325).

* * * * *

Q. Where do you maintain your office as manager of the two companies?

A. Colorado Springs.

Q. Are both offices under your direction there?

A. Yes, they are.

Q. Both the Colorado Interstate Gas Company and the Canadian River Gas Co.?

A. Yes.

(Vol. III, p. 332.)

* * * * *

---

6. Canadian River Gas Company Purchases Rights of Ways, Highway Crossing Permits, Acquires Gas Leaseholds and Wells, Constructs Its Properties and Begins Business. Description of Its Business

The testimony of Hill, Benson and Hendee respecting these matters as related to Colorado Interstate, and just abstracted, applied equally to Canadian River and will not be here repeated.

Spencer testified:

"During the fall of 1927 and the spring of 1928, representatives of Southwestern and Amarillo Oil Company were busily engaged in satisfying various title requirements of counsel in connection with gas rights and wells to be conveyed to Canadian River, including the discharge of certain outstanding mortgage liens. These gas rights and properties were finally cleared and conveyed to Canadian River by Amarillo Oil Company in the summer of 1928. Prior thereto, Canadian River had commenced drilling additional wells, constructing gathering lines and a transmission line from the field

(Bivins Station) to Clayton, New Mexico; also a compressor plant and gasoline absorption plant at Bivins. The first deliveries of gas by Canadian River to Colorado Interstate were made in the summer of 1928." (Vol. I, pp. 64, 65.)

The witness then described Canadian River's three contracts with Colorado Interstate, Amarillo Oil and Clayton Gas Company, reprectively, abstracted hereinafter under that subject head. Continuing, he said:

"Canadian River has never filed any schedule of rates or prices for the transportation or sale of natural gas with any public body except Federal Power Commission, and in that instance it was done under protest with a full reservation of all legal and constitutional rights. Excluding one or two emergency transactions of minor importance, it has never offered to sell or sold gas to any parties except the customers heretofore named, and it has never been a purchaser of gas in the field. It has produced and owned all of the gas which it has transported, and it has never transported gas for others for hire.

"Canadian River has never exercised the right of eminent domain in connection with the condemnation of rights of way, or otherwise. Its pipe lines in some instances do cross public highways. In all cases rights of way have been acquired and paid for through private negotiation. It has never used the streets and alleys of any municipality, except in the City of Amarillo for a telephone line restricted to its own business use. It has not obtained rights of way from any state or other public body which were conditioned upon pipe line operations as a common carrier.

"Canadian River has no public grants or franchises of any character whatsoever, except its Certificate of Incorporation from the State of Delaware and its permit to do business as a foreign corporation in the state of Texas." (Vol. I, pp. 68, 69.)

Witness then referred to the requirement of the Texas

Railroad Commission in 1936 that it and all other pipe line companies file annual reports on forms supplied by the Commission and on which the term "gas utility" was used. The witness identified Exhibit 21, being facing sheet placed on this return and on all subsequent returns, reading in part:

> "This report is filed by Canadian River Gas Company solely because of the demand made by the Railroad Commission to file the same.
>
> "The Canadian River Gas Company denies that it is a gas utility or a public utility in fact or as defined by the Texas Statutes. This report is filed under protest and with a reservation of the right to contest at any time the authority of the Railroad Commission to require the filing of this or similar reports, and reserves the right at all times to contest any contention that the Company is a gas utility or public utility, as a matter of fact or as defined by the Texas Statutes."

Continuing the witness stated:

> "Canadian River's business is divided into three principal operating functions—production, gathering, and transportation of natural gas. It does not occupy a monopolistic or exclusive position in any one of these fields, because of the facts hereinafter stated. The production and sale of natural gas, particularly in the Texas Panhandle field, is a highly competitive undertaking." (Vol. 1, pp. 69, 70.)

* * * * *

Continuing, he said:

> "Pipeline rights of way and the facilities necessary for the transportation of gas are available to all who are willing and able to assume the hazards, and pay the costs, involved. Nine companies supplying domestic and industrial gas to Chicago, Minneapolis, Denver, Dallas, Des Moines, and other Cities have acquired leases in and operate pipe lines out of the Texas Panhandle

field. The business of transporting and selling gas in the territory occupied by Canadian River is open to all.

"Commencing in the year 1931, several so-called conversation (conservation) statutes have been enacted by the Texas State Legislature and orders issued pursuant thereto by the Texas Railroad Commission, which were designed to compel the gas pipe line companies to share their pipe line markets by purchasing gas from other producers in the field with unconnected wells. In each instance Canadian River has opposed the validity of these statutes and orders, either by filing an action against the Railroad Commission of Texas or by associating itself with others similarly situated in the prosecution of such an action. This position was taken by Canadian River because it believed that all of these statutes and orders represented an attempt to invade its private status and to abrogate and imperil its private contracts. The company's position has been consistently upheld by the courts." (Vol. I, pp. 70, 71.)

Witness further testified that the Texas franchise tax provided one method of computation for general business corporations and another for public utility corporations, and that Canadian River's tax had been computed on the basis of a general corporation and not of a public utility (Vol. I, p. 73).

In answer to the question as to why his company was not a common purchaser of gas in the field, he stated • • • ."

The Company Witness Spencer's full statement on this subject, taken from Vol. I of the official transcript, page 134, line 23, to page 136, line 22, is included under Title 2, (pages 448 to 449, this record.)

Exhibit B to Stipulation and Designation of Printed Record.

Supra, in connection with the description of the business of Colorado Interstate Gas Company, there is abstracted

the evidence showing that Robert W. Hendee is the General Manager of both Colorado Interstate Gas Company and Canadian River Gas Company (Vol. III, pp. 308, 332, et seq.), with headquarters at Colorado Springs, Colorado. Canadian River Gas Company has a field operating office in Amarillo, Texas (Hendee, Vol. III, p. 332). The dispatching of gas over the whole system is under Mr. Hendee's charge, with the Chief Dispatcher operating out of the Colorado Springs office. Certain production records are kept in the Amarillo office, but the company's current books and records, especially those relating to its financial matters, and its main corporate records are in the Colorado Springs, Colorado, office (Vol. XVIII, pp. 2563, et seq.). Colorado Interstate Gas Company and Canadian River Gas Company are operated as a single unit (Rhodes, Vol. VIII, pp. 1143-1144), and under a common management (F. H. Lerch, Jr., President, Colorado Interstate Gas Company, Vol. 102 (1), p. 15850), with the basic data being kept in the Colorado Springs office (p. 15866).

The names of the officers and directors, as shown by Exhibit No. 143, are set forth below, following which are listed their addresses:

Officers:

N. K. Moody	President	Tulsa, Oklahoma
P. C. Spencer	Vice Pres.	New York, N. Y.
A. R. Jones	Vice Pres.	Kansas City, Mo.
R. E. Wertz	Vice-Pres.	Amarillo, Texas
Geo. Baird	Secretary and Treasurer	New York, N. Y.
J. O. Shields	Asst. Treasurer	Colo. Springs, Colo.
W. M. Wright	Asst. Secretary	Amarillo, Texas
E. A. Sickels	Asst. Secretary	Tulsa, Oklahoma

Directors:

N. K. Moody	Tulsa, Oklahoma
P. C. Spencer	New York, N. Y.
A. R. Jones	Kansas City, Mo.
R. K. Mullin	Kansas City, Mo.
E. A. Sickels	Tulsa, Oklahoma

7. Gas Sales Contracts of Canadian River Gas Company.

Spencer testified:

"Canadian River's gas sales through the operation and use of these properties and facilities are limited to three individual customers, i. e., Colorado Interstate, Amarillo Oil Company and Clayton Gas Company, all of which are covered by privately negotiated contracts, as shown in Exhibit No. 15. Deliveries to Colorado Interstate are made at two points (1) Clayton, New Mexico, for the Denver pipe-line market, and (2) Gray, Oklahoma, for the Chicago pipeline market. Deliveries to Amarillo Oil Company are made at the well for the City of Amarillo and Channing markets and at different points along Canadian River's pipeline system for Dalhart, Hartley and Texline, Texas, markets. Deliveries to Clayton Gas Company are made at the Clayton town-border * * *." (Vol. I, pp 65, 66.)

"The terms and conditions of the Colorado Interstate contract were negotiated and agreed upon in the first instance by representatives of Standard and Cities Service on behalf of Colorado Interstate, and representatives of Southwestern on behalf of Canadian River. The terms and conditions of the sales contracts with Amarillo Oil Company were negotiated and agreed upon by the parties with the advice, consent and approval of Colorado Interstate. The gas sales contract with Clayton Gas Company was originally entered into by Colorado Interstate and was negotiated by representatives of Southwestern on behalf of Clayton Gas Company, and representatives of Colorado Interstate on its own behalf." (Vol. I, pp. 67, 68.)

Payne, representing the Standard, testified as to the long negotiations on behalf of his principal leading up to the memorandum of stipulations of April 5, 1927 (Exhibit 1) and then to the contract between Canadian and Colorado Interstate next described (Vol. IV, p. 510, et seq. Vol. CII, p. 15760, et seq.). This testimony has already been referred to supra.

Exhibit 16 herein is the original contract dated January 3, 1928, but actually signed June 5, 1928, between Canadian and Colorado Interstate, which was filed with the Commis-

sion prior to this hearing and on or about August 19, 1938, pursuant to General Order No. 53. In its letter to the Commission of that date transmitting not only this contract but contracts with Clayton Gas Company and the Amarillo Oil Company, Canadian made this reservation of right:

> "It is understood that compliance with the above-mentioned order will not be construed as a waiver by the company of its rights to contest the jurisdiction of the Commission in any proceeding instituted under said act affecting such company." (Exhibit 16, p. 2.)

Parenthetically, a similar written reservation of right was made by Canadian in its response to General Order No. 51, and various subsequent orders, which responses were introduced herein as Exhibits 13 and 14.

In a later letter to the Commission dated December 15, 1939, transmitting supplemental agreements between Canadian and Amarillo Oil Company dated July 1, 1931, and June 1, 1938, respectively, Canadian made a further reservation with respect to its contracts with Amarillo by stating that such contracts were filed merely for information and that the Commission had no jurisdiction over them "since they did not involve the transportation and/or sale of natural gas in interstate commerce." (Exhibit 16, p. 1.)

This contract of January 3, 1928 (Exhibit 16), conformed to but amplified in detail the memorandum of stipulations agreed to on April 5, 1927, between the project parties (Exhibit 1) as to the sales under contract at "cost" by Canadian to Colorado Interstate. Its term was limited to twenty years from the date Colorado Interstate began to deliver gas to Public Service and so long thereafter as Canadian had the gas and Colorado Interstate could sell it profitably under the contract (Ex. 16, p. 34). This term conformed to the term in the memorandum agreement of April 5, 1927 (Exhibit 1, p. 8), which in turn conformed to the expiration date of Public Service's franchise in Denver (Ex. 24, p. 34).

Parenthetically it may be here stated that Colorado Interstate's contract with Public Service (Exhibit 7-1), and hereinafter abstracted under the heading "Gas Purchase and Sales Contracts of Colorado Interstate," is for twenty years

after deliveries of gas began, but it is further provided that Public Service is not obligated to take gas after February 8, 1947, the date of the expiration of its twenty year franchise, unless the people have voted them a new or extended franchise in the meantime.

This contract with Colorado Interstate (Exhibit 16) refers to Canadian as "Seller" and Colorado Interstate as "Buyer."

* * * * *

EXHIBIT NO. 16.

Canadian River Gas Company.

630 Fifth Avenue, New York, N. Y.

December 15, 1939.

Mr. Leon M. Fuquay, Secretary Federal Power Commission, Washington, D. C.

Dear Sir: In response to your request of December 9, 1939, I am enclosing herewith copies of agreements entered into between Canadian River Gas Company and Amarillo Oil Company under dates of July 1, 1931, and June 1, 1938, respectively, supplementing and amending in certain respects the original agreement between the same parties dated January 3, 1928, which is Exhibit B to Rate Schedule FPC No. 1 heretofore filed with the Commission by Canadian River Gas Company.

Copies of the above supplemental agreements are being furnished to you as a matter of information, and are not being filed in any sense as a rate schedule over which the Commission has any jurisdiction, since they do not involve the transportation and/or sale of natural gas in interstate commerce.

Yours very truly,

P. C. SPENCER, Vice President.

Southwestern Development Company
630 Fifth Avenue
New York, N. Y.

August 19, 1938.

Federal Power Commission, Washington, D. C.
Re: Order No. 53, Natural Gas Act.

Gentlemen: On behalf of Canadian River Gas Company I hand you herewith four copies of the following schedules of rates (including contracts pertaining thereto) and four copies of reports required in connection therewith pursuant to the Commission's Order No. 53 promulgated on July 5, 1938, under the terms and provisions of the Natural Gas Act:

(1) Contract Sales to Colorado Interstate Gas Company.

(2) Contract Sales to Clayton Gas Company

It is understood that compliance with the above mentioned order will not be construed as a waiver by the Company of its rights to contest the jurisdiction of the Commission in any proceeding instituted under said Act affecting such company.

Please address all communications in connection with the above schedules to the undersigned:

Yours very truly,

P. C. SPENCER,
630 Fifth Avenue (Room 2757),
New York, N. Y.

Rate Schedule FPC No. 1.

Agreement Between Canadian River Gas Company and Colorado Interstate Gas Company.

THIS AGREEMENT, made and entered into this Third day of January, 1928, by and between CANADIAN RIVER GAS COMPANY, a corporation organized and existing under the laws of the State of Delaware (hereinafter called "SELLER"),

party of the first part, and COLORADO INTERSTATE GAS COMPANY, likewise a corporation organized and existing under the laws of the State of Delaware (hereinafter called "Buyer"), party of the second part,

WITNESSETH: That the parties hereto, in consideration of the covenants and promises herein set forth and of the sum of One Dollar ($1.00) in hand paid by each to the other, the receipt of which is hereby acknowledged, have mutually covenanted and agreed and do hereby mutually covenant and agree as follows:

FIRST: Seller agrees to sell and deliver to Buyer and Buyer agrees to purchase and receive from Seller the natural gas required by Buyer to supply its customers in and near Denver, Pueblo and Colorado Springs, Colorado, and elsewhere along and near the pipe line which Buyer contemplates constructing from near Clayton, New Mexico, to Denver, Colorado, with branches to Pueblo, Colorado Springs, Concrete and Portland, Colorado, and, upon the election of Buyer, the natural gas required by Buyer to supply any other customer of Buyer, but Seller shall not be required to deliver to Buyer any natural gas in excess of the quantity produced by operations conducted as provided in Articles Third and Fourth hereof and/or purchased remaining after Seller has delivered to the Amarillo Oil Company the amount required to be currently delivered under its two contracts with that Company bearing the same date as this contract, copies of which are annexed hereto and marked Exhibits "B" and "C", and after Seller has delivered to or for the account of the United States the amount required to be currently delivered under its contract with the United States dated January 3rd, 1928, copy of which is Exhibit "B" attached to the contract between the Seller and the Amarillo Oil Company, a copy of which said contract is annexed hereto and marked Exhibit "B".

SECOND: The natural gas hereby sold shall be delivered by Seller and received by Buyer at the junction near Clayton, Union County, New Mexico, between the pipe lines to be constructed by Seller and Buyer as hereinafter provided; such junction point is hereinafter referred as "CLAYTON JUNCTION".

THIRD: Seller agrees that all lands, gas leaseholds, gas rights, gas contracts and gas properties described in the schedule which is Exhibit "A" attached to the contract between the Seller and the Amarillo Oil Company, a copy of which said contract is annexed hereto and marked Exhibit "B", and all similar properties hereafter acquired by Seller will be diligently operated in a skilful and methodical way to accomplish the production of sufficient natural gas for delivery hereunder and under Seller's contracts with the Amarillo Oil Company, Exhibits "B" and "C" and under Seller's contract with the United States which is Exhibit "B" attached to the contract between the Seller and the Amarillo Oil Company, a copy of which said contract is annexed hereto and marked Exhibit "B", and under any contracts Seller may make for delivery to other consumers located in that part of Texas north of the line hereinafter in this Article described. If at any time and from time to time The Equitable Trust Company of New York, Trustee under a certain Indenture of Mortgage dated June 1st, 1928, given by Seller to such Trustee, is of the opinion that Seller's operations for the production of natural gas and or Seller's purchases of natural gas from other producers are not sufficient to enable Seller to deliver all the natural gas it is required to deliver hereunder and under its contracts with the Amarillo Oil Company (Exhibits "B" and "C"), and under its contract with the United States which is Exhibit "B" attached to the contract between the Seller and the Amarillo Oil Company, a copy of which said contract is annexed hereto and marked Exhibit "B", and under any other contracts Seller may make for delivery to other consumers and for the protection and payment of the bonds for which said Trust Company is Trustee, together with the Sinking Fund provided for in said mortgage and the interest on all oustanding bonds, and shall demand that Seller shall drill such wells and make such improvements and conduct such operations and make such purchases of natural gas as may be specified in such demands as being necessary or desirable to enable Seller to deliver natural gas as required in said contracts, and funds out of the proceeds of Seller's said mortgage to The Equitable Trust Company of New York, Trustee, are not available to pay the costs thereof, then Buyer shall loan to Seller any amounts in the

opinion of said Trustee necessary to pay such costs, and if funds out of the proceeds of said mortgage are not available to pay Seller's cost of perpetuating, renewing, extending or purchasing additional gas leaseholds, gas rights, gas contracts and/or gas estates, as provided in Article Fourth hereof, the perpetuation, renewing, extending or purchasing of which shall have been first approved by Buyer, then Buyer shall loan to Seller any amounts necessary to pay such costs. All amounts so loaned by Seller to Buyer during the first ten (10) years after the beginning of the calendar month in which Buyer begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado, except such part of the amounts loaned as may be used by Seller in drilling wells for natural gas which do not result in procuring natural gas in commercial quantities, are to be repaid by Buyer to Seller in one hundred twenty (120) equal monthly installments, and Seller shall pay semi-annually on the first day of January and the first day of July in each year interest at six percent (6%) per annum on any unpaid balances. Such part of the amounts so loaned by Buyer to Seller as may be used by Seller in drilling wells for natural gas which do not result in procuring natural gas in commercial quantities and all amounts so loaned by Seller to Buyer after the first ten (10) years after the beginning of the calendar month in which Buyer begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado, are to be repaid by Buyer to Seller within one (1) year from the day such loan is made, and Seller shall pay interest at six percent (6%) per annum. Seller shall not make any contract that may impair its capacity to produce natural gas for delivery to Buyer, provided, however, that all deliveries under and pursuant to Seller's contract with the Amarillo Oil Company, Exhibit "B" shall have preference over deliveries to Buyer hereunder, and the deliveries under and pursuant to Seller's contract with the Amarillo Oil Company, Exhibit "C", to the extent that such deliveries are of natural gas to be supplied to domestic consumers, shall have preference over deliveries to Buyer hereunder. Seller shall also have the right to deliver natural gas to or for the account of the United

States in accordance with its contract with the United States which is Exhibit "B" attached to the contract between the Seller and the Amarillo Oil Company, a copy of which said contract is annexed hereto and marked Exhibit "B", and all deliveries thereunder shall have preference over deliveries to Buyer hereunder. Seller shall also have the right to make any additional sales to the Amarillo Oil Company for resale by it to the West Texas Gas Company or others to supply additional consumers located in Texas north of a line drawn from the point where the boundary line between the eastern side of that part of Texas known as the Texas Panhandle and the western side of Oklahoma intersects the Red River, which point is near the center of the easterly boundary line of Childress County, Texas, to a point formed by the intersection of the boundary line between the western side of that part of Texas known as the Texas Panhandle and the eastern side of New Mexico with the boundary line between the northern side of Texas and the southern side of New Mexico, which point is at or near the northwest corner of Winkler County, Texas, not now supplied directly by it or through the Panhandle Pipe Line Company or the Amarillo Gas Company. Any such sales to or for consumers located in Amarillo, Texas and its environs shall have preference over deliveries to Buyer hereunder and any such sales to or for domestic use in the territory described shall also have preference over deliveries to Buyer hereunder. Subject only to the foregoing reservations, the requirements of Buyer for natural gas shall have first preference and call at all times during the continuance of this contract on all the natural gas contained in or to be produced from Seller's lands, gas leaseholds, gas rights, gas reserves and gas wells, presently held or hereafter acquired in the nature of covenants running with the lands in all hands, and on all the natural gas purchased by Seller from other producers.

FOURTH: Seller agrees that it will use its best efforts to renew or extend the gas leaseholds, gas rights, gas contracts and gas estates described in the schedule which is Exhibit "A" attached to the contract between the Seller and the Amarillo Oil Company, a copy of which said contract is annexed hereto and marked Exhibit "B" and sim-

ilar properties hereafter acquired by Seller, and to prevent lapse, forfeiture or expiration. Buyer shall have the right to renounce its right to receive natural gas from any of the gas leaseholds, gas rights, gas contracts or gas estates described in said schedule which is Exhibit "A" attached to the contract between the Seller and the Amarillo Oil Company, a copy of which said contract is annexed hereto and marked Exhibit "B".

FIFTH: The natural gas delivered by Seller to Buyer hereunder shall be natural gas as produced in its natural state from the wells, except that Seller may extract or permit the extraction of natural gasoline from its natural gas and may extract or permit the extraction of any helium content of the natural gas, but Seller shall not subject its natural gas nor permit its natural gas to be subjected to any treatment in the extraction of natural gas gasoline or otherwise which shall change the chemical composition of any of its component parts or which will dilute it. The natural gas delivered by Seller to Buyer shall be only natural gas which is commercial in quality and condition, and should any of the natural gas produced by Seller or any of the natural gas purchased by Seller from other producers contain sulphur in quantities which render it unsatisfactory for domestic use or unfit for commercial or industrial use, Seller shall cleanse such natural gas or cause it to be cleansed of its sulphur content before delivering it to Buyer. If the natural gas supplied by Seller to Buyer contains a gross heating value of less than eight hundred (800) B. t. u.'s per cubic foot, Buyer, on giving ten (10) days' written notice to Seller, shall have the right to suspend taking natural gas hereunder until such time as Seller is prepared to supply Buyer with natural gas containing a gross heating value of not less than eight hundred (800) B. t. u.'s per cubic foot.

SIXTH: Seller agrees to construct, maintain and operate in a skilful and methodical manner to accomplish the delivery of natural gas as herein provided, a main pipe line not less than twenty-two (22) inches outside diameter of pipe, extending from such location as may be selected by it in Moore County near the intersection of the Moore-

Potter County line and the Highway between Amarillo and Delhart, Texas, which location is hereinafter referred to as the "AMARILLO COMPRESSING STATION SITE," a distance of about eighty-four (84) miles to a point near Clayton, Union County, New Mexico, and to construct, maintain and operate in a skilful and methodical manner a system of field gathering pipe lines to connect all its natural gas producing wells and all places at which it receives natural gas from other producers with Seller's main pipe line at the Amarillo Compressing Station site in order that natural gas produced by Seller and purchased from other producers may be delivered into Seller's main pipe line. Seller shall not be required to construct gathering lines to deliver natural gas produced from wells located on the Cliffside Structure described in the contract between Seller and the United States dated January 3rd, 1928, copy of which is Exhibit "C" attached to the contract between the Seller and the Amarillo Oil Company, a copy of which said contract is annexed hereto and marked Exhibit "B."

SEVENTH: Seller agrees to construct and put into operation at said Amarillo Compressing Station site, within six (6) months after notice from Buyer, and to thereafter maintain and operate in a skilful and methodical manner a main compressing station of such horsepower and gas compressing capacity as may be required by Seller's natural gas market in order to deliver natural gas at the Clayton Junction at the maximum pressure in Seller's main pipe line resulting from the discharge pressure of three hundred twenty-five (325) pounds gauge per square inch at said compressing station. Seller also agrees that it will from time to time and within six (6) months after receiving notice from Buyer so to do construct and put into operation and thereafter operate in a skilful and methodical manner such additional machinery at said Amarillo Compressing Station site and such additional compressing stations on its natural gas gathering pipe line system and supplemental to the Amarillo Compressing Station as Buyer may require. If, at the time Buyer gives Seller notice to install additional machinery at said Amarillo Compressing Station site and/or additional compressing stations on its natural gas gathering pipe line system and supplemental

to its Amarillo Compressing Station, funds out of the proceeds of Seller's mortgage to The Equitable Trust Company of New York, Trustee, are not available to pay the cost thereof, then Buyer shall loan to Seller any amounts necessary to pay such costs. The amount of each such loan made before ten (10) years after the beginning of the calendar month in which Buyer begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado is to be repaid by Seller to Buyer in one hundred twenty (120) equal monthly installments, and the amount of each such loan made after such ten (10) years is to be repaid by Seller to Buyer in such number of equal monthly installments as there may be remaining full months before twenty (20) years after the beginning of the calendar month in which Buyer begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado, and Seller shall pay semi-annually on the first day of January and the first day of July in each year interest at six per cent (6%) per annum on any unpaid balances of all loans.

EIGHTH: Buyer agrees to construct and put into operation a pipe line not less than twenty (20) inches outside diameter of pipe, extending from the site outside the city line of Denver, Colorado, near where the Colorado Boulevard crosses Cherry Creek, which site Buyer agrees to select and purchase for a measuring station and junction with the city pipe line system of the Public Service Company of Colorado, and thence a distance of about two hundred sixty-six (266) miles to the Clayton Junction, and there connecting with Seller's pipe line. Buyer also agrees to construct and put into operation branch lines of adequate diameter to supply Colorado Springs and Pueblo, Colorado, and any other customers secured by Buyer located along and near Buyer's main pipe line at Concrete and Portland, Colorado, and such other customers as Buyer may elect to supply with natural gas purchased from Seller.

NINTH: Prior to the time when Seller is required to commence operating its Amarillo Compressing Station, Seller agrees to deliver said natural gas into Buyer's pipe line as aforesaid at such pressure as will result from delivering

said natural gas into Seller's twenty-two (22) inch pipe line at the Amarillo Compressing Station site at the highest pressure which its wells and the wells of those from whom it buys natural gas will make such deliveries, or at such lower pressure as may be specified from time to time by Buyer. After the time when Seller is required to commence operating its Amarillo Compressing Station, Seller agrees to deliver said natural gas into Buyer's pipe line as aforesaid at such pressure as will result from delivering said natural gas into Seller's twenty-two (22) inch pipe line at the discharge side of Seller's Amarillo Compressing Station at a discharge pressure of three hundred twenty-five (325) pounds gauge per square inch or at such low pressure as may be specified from time to time by Buyer.

TENTH: For each one thousand (1,000) cubic feet of natural gas delivered during each three (3) months of the period commencing when Seller begins making deliveries of natural gas hereunder and continuing until the beginning of the three (3) months' period in which Seller commences making deliveries of natural gas to the Amarillo Oil Company at a central point at the Amarillo Compressing Station Site, pursuant to the provisions of the contracts between Seller and the Amarillo Oil Company (Exhibits "B" and "C"), Buyer agrees to pay Seller a price which shall be determined by adding:

(1) Seller's entire cost, including natural gas used for fuel and charged at the average price being paid by Seller for natural gas purchased from other producers, or, if Seller is not purchasing natural gas from other producers, then at the fair market value thereof at the mouth of the well in the field, during the year ending with the day preceding the beginning of such three (3) months' period, of drilling wells for natural gas which do not result in procuring natural gas in commercial quantities, provided, however, there shall not be included herein any item of cost incurred after ten (10) years after the beginning of the calendar month in which Buyer begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado.

(2) Such amount as may be necessary during the year ending with the day preceding the beginning of such three (3) months' period to amortize on a ten (10) year basis Seller's entire cost, including natural gas used for fuel and charged at the price provided in sub-paragraph (1) of this Article Tenth, during the first ten (10) years after the beginning of the calendar month in which Buyer begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado, of drilling wells for natural gas which result in procuring natural gas in commercial quantities.

(3) Seller's entire cost, including natural gas used for fuel and charged at the price provided in sub-paragraph (1) of this Article Tenth, during the year ending with the day preceding the beginning of such three (3) months' period, of drilling wells for natural gas irrespective of whether such wells result in procuring natural gas in commercial quantities; provided, however, that no amounts shall be included pursuant to this sub-paragraph (3) in determining the price for any period prior to ten (10) years after the beginning of the calendar month in which Buyer begins making deliveries of natural gas purchased from seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado;

(4) Seller's entire cost, including natural gas used for fuel and charged at the price provided in sub-paragraph (1) of this Article Tenth, during the year ending with the day preceding the beginning of such three (3) months' period, of producing natural gas, maintaining producing equipment, operating wells, all rentals paid by Seller in carrying its gas leaseholds, gas rights and gas estates; all royalties on gas wells and gas production; the purchase price paid by Seller to producers or vendors thereof for natural gas, other than that used for fuel, purchased; all expense, other than the purchase price, of procuring natural gas purchased by Seller from other producers; all costs of the foregoing operations and maintenance not otherwise herein enu-

merated, and two-thirds (2/3rds) of all unallocated general, administrative and office expenses which it is agreed represents that part thereof properly chargeable to the operation, preservation and maintenance of its gas leaseholds, gas rights, gas contracts and gas estates described in the schedule which is Exhibit "A" attached to the contract between the Seller and the Amarillo Oil Company, a copy of which said contract is annexed hereto and marked Exhibit "B" or hereafter acquired, and to the operation and maintenance of its gas wells, and producing equipment; provided, however, there shall not be included herein any charge of any kind or character which Seller can avoid with respect to gas leaseholds, gas rights or gas estates from which Buyer has renounced its right to have natural gas delivered to it hereunder; and, provided further, there shall not be included herein any item elsewhere included in the provisions of this Article Tenth; and, provided further, there shall not be included herein any item the amortization of which is included in subparagraph (2) of this Article Tenth.

(5) Such amount as may be necessary, during the year ending with the day preceding the beginning of such three (3) months' period, to amortize on a ten (10) year basis Seller's entire cost of acquiring renewals of existing leases and of acquiring new leases, contracts and other rights to produce natural gas; provided, however, that only Seller's cost, during the ten (10) years beginning with the first day of the calendar month in which Buyer begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado, shall be included in the amount to be so amortized.

(6) Seller's entire cost, during the year ending with the day preceding the beginning of the three (3) months' period commencing ten (10) years after the first day of the calendar month in which Buyer begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado and during the year end-

ing with the day preceding the beginning of each three (3) months' period thereafter, of acquiring renewals of existing leases and of acquiring new leases, contracts and other rights to produce natural gas.

(7) All Seller's cost for the year ending with the day preceding the beginning of such three (3) months' period of performing its obligations under its contracts with the Amarillo Oil Company, copies of which are annexed hereto and marked Exhibits "B" and "C", excluding, however, any costs elsewhere included in this Article Tenth.

(8) One-half (½) of all amounts which Seller is required to pay during the year ending with the day preceding the beginning of such three (3) months' period to The Equitable Trust Company of New York, Trustee, under and pursuant to the terms of the First Mortgage and Deed of Trust dated June 1st, 1928, given by Seller to said Trustee.

(9) All amounts which Seller is required to pay during the year ending with the day preceding the beginning of such three (3) months' period for interest on account of loans made to it pursuant to the operation of Article Third hereof and all amounts which Seller is required to pay during such year on account of the principal of loans made to it pursuant to the operation of Article Third hereof, except such amounts of said principal as have been expended by Seller for any of the operations described in sub-paragraphs (1) to (6) inclusive of this Article Tenth, which amounts are charged into Seller's cost of producing natural gas.

(10) All amounts which Seller is required to pay, during the year ending with the day preceding the beginning of such three (3) months' period, for interest and on account of the principal of loans made to it by the Colorado Interstate Gas Company, provided, however, there shall not be included under this sub-paragraph (10) any amount Seller is required to pay for interest or on account of the principal of loans made to it pursuant to the operation of Articles Third or Seventh of this agreement.

(11) All of Seller's cost during the year ending with

the day preceding the beginning of such three (3) months' period of maintaining meters and other equipment, facilities and installations for measuring natural gas, and of measuring natural gas.

(12) All taxes, except taxes on net income or net profits, payable during the year ending with the day preceding the beginning of such three (3) months' period, because of the ownership or operation by Seller of its natural gas wells, drilling equipment and other facilities and property used or useful by Seller in the performance of its obligations under this contract, its obligations under its two contracts with the Amarillo Oil Company, copies of which are annexed hereto and marked Exhibits "B" and "C", and under its contract with the United States which is Exhibit "B" attached to the contract between the Seller and the Amarillo Oil Company, a copy of which said contract is annexed hereto and marked Exhibit "B", and gas leaseholds, gas rights and gas estates owned by Seller; provided, however, there shall not be included in this item any taxes which are included in the provisions of sub-paragraph (15) of this Article Tenth.

and by dividing the total thus ascertained by a divisor which shall be the sum of all the thousands of cubic feet of natural gas delivered by Seller to all purchasers during the year ending with the day preceding the beginning of such three (3) months' period, and by adding to the amount thus ascertained an amount determined by adding:

(13). All of Seller's cost, including natural gas used for fuel and charged at the price provided in sub-paragraph (1) of this Article Tenth, during the year ending with the day preceding the beginning of such three (3) months' period, of maintaining and operating gathering pipe lines, supplemental compressing stations, main compressing stations, main pipe lines and other equipment, facilities and installations maintained by Seller and used or useful for gathering, compressing, transporting and delivering natural gas as herein provided, such cost to include all expenses not enumerated which are properly chargeable to the maintenance and operation of such gathering pipe lines, supplemental com-

pressing stations, main compressing stations, main pipelines and other equipment, facilities and installations maintained by Seller and used or useful for gathering, compressing, transporting and delivering natural gas as herein provided, and one-third (1/3rd) of all of Seller's unallocated general, administrative and office expenses which it is agreed represents that part thereof properly chargeable to the operation and maintenance of Seller's main compressing stations; provided, however, there shall not be included herein any item which has been included in sub-paragraphs (1) to (10) inclusive of this Article Tenth;

(14) One-half (1/2) of all amounts which Seller is required to pay during the year ending with the day preceding the beginning of such three (3) months' period to The Equitable Trust Company of New York, Trustee, under and pursuant to the terms of the First Mortgage and Deed of Trust given by Seller to said Trustee.

(15) All amounts which Seller is required to pay during the year ending with the day preceding the beginning of such three (3) months' period for interest and on account of the principal of loans made to it pursuant to the operation of Article Seventh hereof.

(16) All taxes, except taxes on net income or net profits, payable during the year ending with the day preceding the beginning of such three (3) months' period, because of the ownership or operation by Seller of its gathering pipe lines, supplemental compressing stations, main compressing stations, main pipe lines and other equipment facilities and installations maintained by Seller and used or useful for the purpose of gathering, compressing, transporting and delivering natural gas hereunder.

and by dividing the total thus ascertained by a divisor which shall be the sum of all the thousands of cubic feet of natural gas sold and delivered by Seller to Buyer hereunder during the year ending with the day preceding the beginning of such three (3) months' period.

For each one thousand (1,000) cubic feet of natural gas

delivered during each three (3) months of the period commencing with the three (3) months' period in which Seller begins making deliveries of natural gas to the Amarillo Oil Company at a central point at the Amarillo Compressing Station site under and pursuant to the provisions of either of Seller's two contracts with the Amarillo Oil Company, copies of which are annexed hereto and marked Exhibits "B" and "C", and continuing until the beginning of the three (3) months' period in which Seller commences making deliveries of natural gas to the Amarillo Oil Company after compression at the Amarillo Compressing Station Buyer agrees to pay Seller a price which shall be determined by adding:

(1*a*) The amounts for the year ending with the day preceding the beginning of such three (3) months' period described in sub-paragraphs (1) to (12) inclusive of this Article Tenth as though said sub-paragraphs were here set forth in full.

(2*a*) All of Seller's cost, including natural gas used for fuel and charged at the price provided in sub-paragraph (1) of this Article Tenth, during the year ending with the day preceding the beginning or such three (3) months' period, of maintaining and operating gathering pipe lines, supplemental compressing stations and other equipment, facilities and installations maintained by Seller and used or useful for gathering and transporting natural gas to its Amarillo Compressing Station site, such cost to include all expenses not enumerated which are properly chargeable to the maintenance and operation of such gathering pipe lines, supplemental compressing stations and other equipment, facilities and installations maintained by Seller and used or useful for gathering and transporting natural gas to its Amarillo Compressing Station site; provided, however, there shall not be included herein any item which has been included in sub-paragraph (1*a*) of this Article Tenth.

(3*a*) That proportion of one-half (½) of all the amounts which Seller is required to pay during the year ending with the day preceding the beginning of

such three (3) months' period to The Equitable Trust Company of New York, Trustee, under and pursuant to the terms of the First Mortgage and Deed of Trust given by Seller to said Trustee, that Seller's capital investment in gathering pipe lines, supplemental compressing stations and other equipment, facilities and installations used or useful for gathering natural gas and transporting it to its Amarillo Compressing Station site bears to Seller's entire capital investment in gathering pipe lines, supplemental compressing stations, main compressing stations, main pipe lines and other equipment, facilities and installations used or useful in gathering, compressing, transporting and delivering natural gas sold by it.

(4*a*) That proportion of all amounts which Seller is required to pay during the year ending with the day preceding the beginning of such three (3) months' period for interest and on account of the principal of loans made to it pursuant to the operation of Article Seventh hereof that Seller's capital investment in gathering pipe lines, supplemental compressing stations and other equipment, facilities and installations used or useful in gathering natural gas and transporting it to its Amarillo Compressing station site bears to Seller's entire capital investment in gathering pipe lines, supplemental compressing stations, main compressing stations, main pipe lines and other equipment, facilities, and installations used or useful in gathering compressing, transporting and delivering natural gas sold by it.

(5*a*) All taxes, except taxes on net income or net profits, payable during the year ending with the day preceding the beginning of such three (3) months' period because of the ownership or operation by Seller of its gathering pipe lines, supplemental compressing stations and other equipment, facilities and installations used or useful for gathering natural gas and transporting it to the Amarillo Compressing Station site.

and by dividing the total thus ascertained by a divisor

which shall be the sum of all the thousands of cubic feet of natural gas delivered by Seller to all purchasers during the year ending with the day preceding the beginning of such three (3) months' period, and by adding to the amount thus ascertained an amount determined by adding:

(6*a*) All of Seller's cost, including natural gas used for fuel and charged at the price provided in subparagraph (1) of this Article Tenth, during the year ending with the day preceding the beginning of such three (3) months' period, of maintaining and operating main compressing stations, main pipe lines and other equipment, facilities and installations maintained by Seller and used or useful for compressing, transporting after compression and delivering natural gas as herein provided, such cost to include all expenses not enumerated which are properly chargeable to the maintenance and operation of such main compressing stations, main pipe lines and other equipment, facilities and installations maintained by Seller and used or useful for compressing, transporting after compressing, and delivering natural gas as herein provided, and one-third (1/3) of all of Seller's unallocated general, administrative and office expenses which it is agreed represents that part thereof properly chargeable to the operation and maintenance of Seller's main compressing stations; provided, however, there shall not be included herein any item which has been included in subparagraphs (1*a*) and (2*a*) hereof.

(7*a*) That proportion of one-half ($\frac{1}{2}$) of all amounts which Seller is required to pay during the year ending with the day preceding the beginning of such three (3) months' period to The Equitable Trust Company of New York, Trustee, under and pursuant to the terms of the First Mortgage and Deed of Trust given by Seller to such Trustee, that Seller's capital investment in main compressing stations, main pipe lines and other equipment, facilities and installations used or useful for compressing and transporting after compression natural gas for delivery hereunder bears to Seller's entire capital investment in gathering pipe lines, supplemental compressing stations, main com-

pressing stations, main pipe lines and other equipment, facilities and installations used or useful in gathering, compressing, transporting and delivering natural gas sold by it.

(8*a*) That proportion of all amounts which Seller is required to pay during the year ending with the day preceding the beginning of such three (3) months' period for interest and on account of the principal of loans made to it pursuant to the operation of Article Seventh hereof that Seller's capital investment in main compressing stations, main pipe lines and other equipment, facilities and installations used or useful for compressing and transporting after compression natural gas for delivery hereunder bears to Seller's entire capital investment in gathering pipe lines, supplemental compressing stations, main compressing stations, main pipe lines and other equipment, facilities and installations used or useful in gathering, compressing, transporting and delivering natural gas sold by it.

(9*a*) All taxes, except taxes on net income or net profits, payable during the year ending with the day preceding the beginning of such three (3) months' period, because of the ownership or operation by Seller of its main compressing stations, main pipe lines and other equipment, facilities and installations used or useful for the purpose of compressing and transporting after compression natural gas delivered hereunder.

and by dividing the total of the items described in the aforesaid sub-paragraphs (6*a*) to (9*a*) inclusive by a divisor which shall be the sum of all the thousands of cubic feet of natural gas sold and delivered by Seller to Buyer during the year ending with the day preceding the beginning of such three (3) months' period.

For each one thousand (1,000) cubic feet of natural gas delivered during each three (3) months of the period commencing with the three (3) months' period in which Seller begins making deliveries of natural gas to the Amarillo Oil Company from Seller's Amarillo Compressing Station after

compression, under and pursuant to the provisions of either of Seller's two contracts with the Amarillo Oil Company, copies of which are annexed hereto and marked Exhibits "B" and "C", and continuing thereafter for so long as this contract continues in force, Buyer agrees to pay Seller a price which shall be determined by adding:

(1*b*) The amounts for the year ending with the day preceding the beginning of such three (3) months' period described in sub-paragraphs (1) to (12) inclusive of this Article Tenth as though said sub-paragraphs were here set forth in full.

(2*b*) All of Seller's cost, including natural gas used for fuel and charged at the price provided for in sub-paragraph (1) of this Article Tenth, during the year ending with the day preceding the beginning of such three (3) months' period, of maintaining and operating gathering pipe lines, supplemental compressing stations, main compressing stations and other equipment, facilities and installations maintained by Seller and used or useful for gathering and transporting natural gas to its Amarillo Compressing Station and there compressing such natural gas, such cost to include all expenses not enumerated which are properly chargeable to the operation and maintenance of such gathering pipe lines, supplemental compressing stations, main compressing stations and other equipment, facilities and installations maintained by Seller and used or useful for gathering natural gas, transporting it to its Amarillo Compressing Station and there compressing it, and one-third (1/3) of all of Seller's unallocated general, administrative and office expenses which it is agreed represents that part thereof properly chargeable to the operation and maintenance of Seller's main compressing stations; provided, however, there shall not be included herein any item which has been included in sub-paragraph (1*b*) of this Article Tenth.

(3*b*) That proportion of one-half (1/2) of all the amounts which Seller is required to pay during the year ending with the day preceding the beginning of such three (3) months' period to The Equitable Trust

Company of New York, Trustee, under and pursuant to the terms of the First Mortgage and Deed of Trust given by Seller to said Trustee, that Seller's capital investment in gathering pipe lines, supplemental compressing stations, main compressing stations and other equipment, facilities and installations used or useful for gathering natural gas, transporting it to its Amarillo Compressing Station and there compressing it, bears to Seller's entire capital investment in gathering pipe lines, supplemental compressing stations, main compressing stations, main pipe lines and other equipment, facilities and installations used or useful in gathering, compressing, transporting and delivering natural gas sold by it.

(4*b*) That proportion of all amounts which Seller is required to pay during the year ending with the day preceding the beginning of such three (3) months' period for interest and on account of the principal of loans made to it pursuant to the operation of Article Seventh hereof that Seller's capital investment in gathering pipe lines, supplemental compressing stations, main compressing stations and other equipment, facilities and installations used or useful in gathering natural gas, transporting it to its Amarillo Compressing Station and there compressing it, bears to Seller's entire capital investment in gathering pipe lines, supplemental compressing stations, main compressing stations, main pipe lines and other equipment, facilities and installations used or useful for gathering, compressing, transporting and delivering natural gas sold by it.

(5*b*) All taxes, except taxes on net income or net profits, payable during the year ending with the day preceding the beginning of such three (3) months' period because of the ownership or operation by Seller of its gathering pipe lines, supplemental compressing stations, main compressing stations and other equipment, facilities and installations used or useful for gathering natural gas, transporting it to its Amarillo Compressing Station and there compressing it.

and by dividing the total thus ascertained by a divisor which shall be the sum of all the thousands of cubic feet of natural gas delivered by Seller to all purchasers during the year ending with the day preceding the beginning of such three (3) months' period, and by adding to the amount thus ascertained an amount determined by adding:

(6*b*) All of Seller's cost, during the year ending with the day preceding the beginning of such three (3) months' period, of maintaining and operating main pipe lines and other equipment, facilities and installations maintained by Seller and used or useful for transporting after compression natural gas for delivery hereunder, such cost to include all expenses not enumerated which are properly chargeable to the operation of such main pipe lines and other equipment, facilities and installations maintained by Seller and used or useful for transporting after compression natural gas as herein provided; provided, however, there shall not be included herein any item which has been included in sub-paragraphs (1*b*) and (2*b*) hereof.

(7*b*) That proportion of one-half (½) of all amounts which Seller is required to pay, during the year ending with the day preceding the beginning of such three (3) months' period, to The Equitable Trust Company of New York, Trustee, under and pursuant to the terms of the First Mortgage and Deed of Trust given by Seller to such Trustee, that Seller's capital investment in main pipe lines and other equipment, facilities and installations used or useful for transporting after compression natural gas for delivery hereunder bears to Seller's entire capital investment in gathering pipe lines, supplemental compressing stations, main compressing stations, main pipe lines and other equipment, facilities and installations used or useful in gathering, compressing, transporting and delivering natural gas sold by it.

(8*b*) That proportion of all amounts which Seller is required to pay, during the year ending with the day preceding the beginning of such three (3) months' period for interest and on account of the principal of loans made to it pursuant to the operation of Article

Seventh hereof that Seller's capital investment in main pipe lines and other equipment facilities and installations used or useful for transporting after compression natural gas for delivery hereunder bears to Seller's entire capital investment in gathering pipe lines, supplemental compressing stations, main compressing stations, main pipe lines and other equipment, facilities and installations used or useful in gathering, compressing, transporting and delivering natural gas sold by it.

(9*b*) All taxes, except taxes on net income or net profits payable during the year ending with the day preceding the beginning of such three (3) months' period, because of the ownership or operation by Seller of its main pipe lines and other equipment facilities and installations used or useful for the purpose of transporting after compression natural gas delivered hereunder.

and by dividing the total of the items described in the aforesaid sub-paragraphs (6*b*) to (9*b*) inclusive by a divisor which shall be the sum of all the thousands of cubic feet of natural gas sold and delivered by Seller to Buyer during the year ending with the day preceding the beginning of such three (3) months' period.

ELEVENTH: Seller shall furnish, install, operate and maintain at its own expense a regulating and metering station properly equipped with orifice meters and recording gauges or other type of meter or meters of standard make, as may be mutually agreed, at or near the discharge side of Seller's Amarillo Compressing Station; or, before such station is constructed and in operation, at or near Seller's Amarillo Compressing Station site, and the amount of natural gas passing through said meters, less any amount thereafter delivered by Seller to purchasers other than Buyer, shall be the amount of natural gas to be paid for by Buyer.

The measuring equipment so installed by Seller, together with any buildings erected by it for such equipment, shall be and remain its property. Buyer shall have access to said metering equipment at all reasonable times but the reading, calibrating and adjusting thereof and changing of charts shall be done only by the employees or agents of

Seller. Charts and records from such metering equipment shall remain the property of Seller. Upon request of Buyer, Seller will submit to Buyer records and charts from its metering equipment, subject to return by Buyer, within ten (10) days after receipt thereof, after which return the charts and records shall be kept on file by Seller for the mutual use of both parties. At least twice each month, and on dates as near the first and sixteenth of the month as practicable, Seller shall calibrate its meter in the presence of representatives of Buyer and the parties shall jointly observe any adjustments which are made in the meter should such adjustments be necessary, and if the check meters hereinafter provided for have been installed, the same shall also be calibrated by Buyer in the presence of representatives of Seller and any adjustments jointly observed should such adjustments be necessary. If either party at any time desires a test of any meter or if either party at any time observes a variation between the delivery meter and its check meter, if any such check meter is installed, it will promptly notify the other party and the parties will then co-operate to secure an immediate calibration test and joint observation of any adjustments and the meter shall then be adjusted to accuracy and corrections jointly made for the monthly settlements. Each company shall give to the other company notice of the time of all tests of meters sufficiently in advance of the holding of the tests so that the other company may conveniently have its representatives present. If upon any test any metering equipment is found to be inaccurate by one per cent. (1%) or more, registrations thereof shall be corrected at the rate of such inaccuracy for any period which is definitely known and agreed upon, but in case the period is not definitely known and agreed upon, then for a period extending back one-half ($\frac{1}{2}$) of the time elapsed since the last date of calibration, not exceeding, however, eight (8) days. Following any test, metering equipment found inaccurate shall immediately be restored as closely as possible to a condition of accuracy. If for any reason meters are out of service and/or out of repair so that the amount of natural gas delivered cannot be ascertained or computed from the reading thereof, the natural gas delivered through the period

such meters are out of service and/or out of repair shall be estimated and agreed upon by the parties hereto upon the basis of the best data available, using the first of the following methods which is feasible:

(*a*) By correcting the error if the percentage of error is ascertainable by calibration, test or mathematical calculation.

(*b*) By using the registration of any check meter or meters if installed and accurately registering.

(*c*) By estimating the quantity of delivery by deliveries during the preceding periods under similar conditions when the meter was registering accurately.

The unit of measurement for the natural gas deliverable under this agreement shall be one thousand (1,000) cubic feet of natural gas at a base temperature of sixty (60) degrees Fahrenheit and at a base pressure of two (2) pounds gauge pressure above fourteen and four-tenths (14.4) pounds absolute atmospheric pressure and the readings and registrations of the metering equipment herein provided for shall be computed into such units. For the purpose of measurement, the natural gas deliverable hereunder shall be assumed to obey Boyle's Law and the average absolute atmospheric (barometric) pressure shall be assumed to be fourteen and four tenths (14.4) pounds to the square inch, irrespective of the actual elevation or location of the delivery point above sea level or of variations in such barometric pressure from time to time. If meters other than the orifice type are used, then in computing the readings and registrations of such metering equipment into the units above specified, the physical characteristics of the natural gas which affect such computations shall be given each their due consideration and the determination of such physical characteristics shall be made by standard apparatus and methods and at such time and places as, in accordance with good practice, may be agreed upon from time to time between the delivering company and the receiving company. For meters of the orifice type, the following factors shall be given due consideration, viz:

(*a*) The temperature of the natural gas flowing

through the meter shall be obtained by the use of a recording thermometer so installed that it may properly record the temperature of the natural gas flowing through the meter. The average temperature recorded each day shall be used in computing measurements.

(*b*) The specific gravity of the natural gas shall be determined twice monthly by joint test on days as near the first and sixteenth of the month as practicable or as much oftener as is found necessary in practice. The method of test used shall be by Edward's Balance or by such other method as shall be agreed upon by the parties. The regular test at the first of the month shall determine the specific gravity to be used in computations for the measurement of natural gas deliveries during the first fifteen (15) days of such calendar to be applicable from the day made and through the month or until changed by special test, the special test following days to and including the fifteenth day of such calendar month. The regular test made on the sixteenth of the month shall determine the specific gravity to be used in computations for the measurement of natural gas deliveries in that part of such calendar month commencing with the sixteenth day and continuing until the end thereof or until changed by special test, the special test to be applicable from the day made through the remaining days in such calendar month.

Buyer may at its option and at its cost and expense install and operate check metering equipment, but the metering equipment of Seller shall be used for determining the amounts of natural gas delivered under this agreement. The check metering equipment so installed by Buyer, together with any buildings erected by it for such equipment, shall be and remain its property. Whenever the point of delivery, as specified herein, is on the premises of Seller, Seller grants to Buyer the right of free ingress and egress to such metering equipment at all times for the purposes of installation, operation, repair and/or removal. The check metering equipment and the method of installation of the same shall be of such standard type for the measurement of natural gas as is approved by both companies, but Buy-

er shall have the right to replace such equipment at any time with metering equipment of equal grade subject to the approval of Seller as to type and method of installation. In the event check metering equipment is installed by Buyer, Seller shall have access to the same at all reasonable times, but the reading calibrating and adjusting thereof and the changing of charts shall be done only by employees or agents of Buyer. Charts and records from said check metering equipment shall remain the property of Buyer. Upon request of Seller, Buyer will submit to Seller records and charts from said metering equipment, together with calculations, therefrom for Seller's inspection and verification, subject to return by Seller within ten (10) days after receipt thereof.

TWELFTH: Seller shall render to Buyer on or before the fifteenth (15th) day of each month a statement showing:

(*a*) The amount of natural gas delivered to Buyer during the calendar month immediately preceding and the amounts of payment or payments computed in the manner provided in Article Tenth hereof then due from Buyer to Seller therefor; provided, however, that payments for natural gas delivered during the period commencing when Seller begins making deliveries of natural gas hereunder and continuing until one (1) year after the beginning of the calendar month in which Buyer begins making deliveries of natural gas purchased hereunder to the Public Service Company of Colorado or to the Colorado Fuel & Iron Company, shall be included in said statement at the assumed cost of eight and sixty-five hundredths cents (8.65c) per one thousand (1,000) cubic feet, and within thirty (30) days after the expiration of such period, Seller shall compute its cost in the manner provided in sub-paragraphs (1) to (16) inclusive of Article Tenth hereof, except if, during this period, the amount of natural gas delivered by Seller to Buyer shall be less than twice the amount of natural gas delivered by Seller to the Amarillo Oil Company under Seller's two contracts with that Company, Exhibits "B" and "C", then no

amount for interest or Sinking Fund shall be included under sub-paragraph (9) of Article Tenth hereof, and when such cost shall have been determined, it shall be the amount to be paid by Buyer to Seller for each one thousand (1,000) cubic feet of natural gas delivered during such first year, and if during the period the amount of natural gas delivered by Seller to Buyer has been less than twice the amount of natural gas delivered by Seller to the Amarillo Oil Company under Seller's two contracts with that Company, Exhibits "B" and "C", then the total amount to be paid by Buyer to Seller shall be increased by two-sixths (2/6th) of all the amounts for interest and Sinking Fund which Seller is required to pay during such period to The Equitable Trust Company of New York, Trustee, under and pursuant to the terms of the First Mortgage and Deed of Trust given by Seller to said Trustee. When the foregoing computation has been made, there shall be made a proper adjustment of payments already made.

(*b*) The amount by which Seller's cost of operations during the preceding month, including amounts necessarily paid for interest and on account of principal of loans made to it pursuant to the operation of Articles Third and Seventh hereof, which amounts are not included in the cost of operations, and including amounts necessarily paid to The Equitable Trust Company of New York, Trustee, under and pursuant to the terms of the First Mortgage and Deed of Trust given by Seller to said Trustee, shall have exceeded Seller's receipts from all sources during the preceding month.

(*c*) All amounts received by Seller during the preceding month from the United States under and pursuant to the contract between Seller and the United States dated January 3rd, 1928, which is Exhibit "B" attached to the contract between the Seller and the Amarillo Oil Company, a copy of which said contract is annexed hereto and marked Exhibit "B", in excess of the amounts which Seller is required to pay the Amarillo Oil Company under and pursuant to the provi-

sions of Article IV of Seller's contract with the Amarillo Oil Company, copy of which is hereto annexed and marked Exhibit "B".

(*d*). All amounts by which Seller's receipts during the preceding month from sales of gasoline and helium extracted from natural gas exceed Seller's cost during such month of maintaining and operating plants and facilities for the extraction of natural gas gasoline and/or helium. Seller agrees to sell all natural gas gasoline and helium extracted at the highest price obtainable therefor under the usual trade practices.

(*e*) All amounts by which the amounts due from the Amarillo Oil Company to Seller for natural gas sold during the preceding month under and pursuant to the contract between Seller and the Amarillo Oil Company, copy of which is annexed hereto and marked Exhibit "C", exceed Seller's cost of producing, transporting, compressing and delivering such natural gas, computed in the manner described in Seller's contract with the Amarillo Oil Company, copy of which is hereto annexed and marked Exhibit "B".

(*f*) The amount by which the amounts due for natural gas sold during the preceding months other than under the contracts herein mentioned exceed Seller's cost of producing, transporting, compressing and delivering such natural gas computed in the manner described in Seller's contract with the Amarillo Oil Company, copy of which is hereto annexed and marked Exhibit "B".

(*g*) All net amounts received by Seller during the preceding month from any source whatsoever, excepting only amounts received by Seller or due to it under and by virtue of this agreement and amounts included in sub-paragraphs (*c*) (*d*) (*e*) (*f*) and (*h*) of this Article Twelfth.

(*h*) The amount by which Seller's receipts during the preceding calendar month from all sources shall have exceeded Seller's costs of operations during the preceding month, including amounts necessarily paid for interest and on account of principal of loans made

to it pursuant to the operations of Articles Third and Seventh hereof, which amounts are not included in the cost of operations, and including amounts necessarily paid to The Equitable Trust Company of New York, Trustee, under and pursuant to the terms of the First Mortgage and Deed of Trust given by Seller to said Trustee.

Buyer agrees to pay to Seller at its office at Amarillo, Texas, on or before the twenty-fifth (25th) day of the month, the amount by which the sum of the items mentioned in sub-paragraph (*a*) and (*b*) of this Article Twelfth shall exceed the sum of the items mentioned in sub-paragraphs (*c*) to (*h*) inclusive of this Article Twelfth. If at any time the sum of the items mentioned in sub-paragraphs (*c*) to (*h*) inclusive of this Article Twelfth shall exceed the sum of the items mentioned in sub-paragraphs (*a*) and (*b*) of this Article Twelfth, then the amount of such excess shall be carried forward and credited against the amounts due from Buyer in any subsequent month or months. Payments by Buyer in accordance with the provisions of this Article Twelfth shall be full payment for all natural gas sold and delivered by Seller to Buyer during the period covered by the statement.

THIRTEENTH: Seller agrees to keep proper books, records and accounts according to approved methods, so as to reflect accurately and in detail monthly and annually its investments, income, expenses and profits and in particular its cost of producing and obtaining natural gas, the sources and costs of any natural gas purchased from other producers, the cost compressing and transporting natural gas and its sale of natural gas with names of purchasers and prices received, together with any other sources of revenue in detail, and to procure from all those to whom it sells natural gas as and when required by Buyer statements in detail of such purchasers' sales of natural gas to its customers; copies of contracts and records of sales and any other data that may be material to the proper administration of this contract and shall furnish Buyer monthly on or before the last day of each month a copy of its financial statement showing the above items and accounts for the preceding

month and copies of all the statements, contracts, records of sales and other data material in the proper administration of this contract which Buyer has requested Seller to procure from its customers. Buyer shall have the right at all reasonable times to go upon the property of Seller and to make such inspection and investigation of same as it may desire and to examine and audit Seller's books, accounts, contracts, meters and records.

FOURTEENTH: If at any time and from time to time during the term hereof Seller shall be unable or fail to deliver the full amount of natural gas required by Buyer hereunder, then Buyer shall have the right, during such time as Seller so fails to furnish the required amount of natural gas, to purchase or otherwise obtain natural gas from any available source or manufacture or permit its customers to manufacture gas to supply, at its own expense, such portion of the requirements of its customers as is not obtainable from Seller. If for any period during the term hereof Seller is unable or fails to deliver the full amount of natural gas required by Buyer hereunder, and Buyer shall manufacture or permit its customers to manufacture gas to supply the requirements of Buyer or its customers which would have been supplied with natural gas received hereunder had such supply been sufficient, the amount of natural gas to be sold and delivered hereunder by Seller and purchased and received by Buyer thereafter shall be at Buyer's option reduced by the amount of gas manufactured by Buyer or by Buyer's customers to supply Buyer or its customers during such period of shortage which would have been supplied with natural gas sold hereunder if such natural gas had been available.

FIFTEENTH: If any dispute arises between the parties to this contract which they are unable to settle, the same shall be submitted to arbitration. Within ten (10) days after the written request of either party for arbitration, Seller shall appoint one arbitrator and Buyer shall appoint one arbitrator, and the two so chosen, within ten (10) days after the appointment of the second of the two so chosen, shall select a third. In case either Seller or Buyer shall fail to name an arbitrator within ten (10) days after the written request of either party for arbitration, the arbitrator appointed by the other party shall be the sole arbitrator. The

three arbitrators may act by a majority and the arbitrator or arbitrators, as the case may be, shall forthwith hear the parties, after notice to Seller and Buyer, and shall make their award within ninety (90) days from the submission of the matter to them and said award shall be final and conclusive upon the parties.

SIXTEENTH: This contract shall continue for twenty (20) years from the day Buyer begins delivery of natural gas purchased from Seller to the Public Service Company of Colorado and so long thereafter as Seller has available for delivery to Buyer hereunder quantities of natural gas which Buyer determines are profitable for it to buy under the terms of this contract. Buyer agrees to use diligent effort to complete its pipe line to the extent necessary to be ready to take deliveries from Seller on or before the first day of August, 1928, and agrees to give Seller at least three (3) months' notice of the day it will begin taking natural gas. Seller agrees to use diligent effort to complete its pipe line to the point of connection with Buyer's pipe line at the Clayton Junction and its system of gathering pipe lines to its wells at the maturity of said notice, whereupon the purchase and sale of natural gas hereunder shall become effective.

SEVENTEENTH: In the event of either party being rendered unable wholly or in part by *force majeure* to carry out its obligations under this contract other than to make payments of amounts due hereunder, it is agreed that on such party giving notice and full particulars of such *force majeure* in writing or by telegraph to the other party as soon as possible after the occurrence of the cause relied on, then the obligations of the party giving such notice, so far as they are affected by such *force majeure*, shall be suspended during the continuance of any inability so caused but for no longer period, and such cause shall, so far as possible, be remedied with all reasonable dispatch.

The term "*force majeure*" as employed herein shall mean acts of God; strikes, lockouts, or other industrial disturbances, acts of the public enemy, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraint of rulers and peoples, civil disturbances, explosions, breakage

or accident to machinery or lines of pipe, the necessity for making repairs and/or alterations in machinery or lines of pipe, freezing of wells or lines of pipe, sudden partial or entire failure of natural gas wells, and any other cause, whether of the kind herein enumerated or otherwise, not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to overcome.

EIGHTEENTH: All notices to be given hereunder by Seller to Buyer shall be given by registered mail or by delivering the same to Buyer at its office at Colorado Springs, Colorado, or at such other office as may be hereafter designated by Buyer for the purpose, and all notices to be given by Buyer to Seller shall be given by registered mail or delivering the same to Seller at its office at Amarillo, Texas, or at such other office as may be hereafter designated by Seller for the purpose.

NINETEENTH: This agreement shall inure to the benefit of and be binding upon the successors and assigns of the parties hereto. Whenever any corporation is referred to herein, such reference shall be deemed to include the successors and assigns of any such corporation.

TWENTIETH: In view of the possibility of natural gas being found along the pipe line of Buyer or within piping distance of the communities supplied directly or indirectly with natural gas by Buyer, it is agreed that it may be desirable for Buyer to arrange for purchase of such natural gas and the marketing thereof and Seller agrees to use its best efforts to cooperate with Buyer in the disposal of such natural gas. Upon the purchase of such natural gas by Buyer or upon the failure of Buyer to purchase or dispose of it or to participate in the purchase or disposal thereof, whereupon Buyer's customers purchase and take such natural gas instead of purchasing natural gas from Buyer, then to such extent Buyer shall be relieved from its obligation to purchase all of its requirements of natural gas from Seller hereunder.

TWENTY FIRST: As between the parties hereto, Seller shall be in control and possession of the natural gas deliverable hereunder and responsible for any damage or injury caused thereby until the same shall have passed the

point of connection between Seller's and Buyer's pipe lines at the Clayton Junction, after which Buyer shall be deemed to be in exclusive control and possession thereof and responsible for any such injury or damage.

TWENTY-SECOND: Seller agrees that it will do all things necessary to perform its two contracts with the Amarillo Oil Company, copies of which are annexed hereto and marked Exhibits "B" and "C" and its two contracts with the United States which are Exhibits "B" and "C" attached to the contract between the Seller and the Amarillo Oil Company, a copy of which said contract is attached hereto and marked Exhibit "B"; that it will take all steps necessary or proper to require the Amarillo Oil Company and the United States to perform such contracts; and Seller will not permit the cancellation of said contracts nor any modification thereof which will affect the volume of natural gas to be delivered hereunder or the price to be paid therefor without first obtaining the consent of Buyer thereto. Seller also agrees that it will not consent to the cancellation nor any modification which will affect the volume of natural gas delivered hereunder or the price to be paid therefor of the contracts between the Amarillo Oil Company and the Panhandle Pipe Line Company, the Amarillo Gas Company, and the United States Zinc Company, copies of which contracts are Exhibits "E", "F", and "G" attached to the contract between Seller and the Amarillo Oil Company, copy of which is annexed hereto and marked Exhibit "B", without first obtaining the consent of Buyer thereto.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be duly signed by its respective officers the day and year first above written.

CANADIAN RIVER GAS COMPANY

By W. S. FITZPATRICK

Attest: President

VICTOR A. IORE

[SEAL] Secretary.

COLORADO INTERSTATE GAS COMPANY

By CHRISTY PAYNE

Attest: President

E. E. DU VALL

[SEAL] Secretary.

STATE OF NEW YORK, }
COUNTY OF NEW YORK, } ss.:

Before me, CHAS. E. HILL, a notary public of New York County, New York, on this day personally appeared W. S. FITZPATRICK and VICTOR A. IOBE, President and Secretary, respectively, of CANADIAN RIVER GAS COMPANY, known to me to be the persons and officers whose names are subscribed to the foregoing instrument, and severally acknowledged to me that the same was the act of the said Canadian River Gas Company, a corporation, and that they executed the same as the act of such corporation for the purposes and consideration therein expressed, and in the capacities therein stated.

GIVEN under my hand and seal of office, this the 5th day of June A. D. 1928.

CHARLES E. HILL
Notary Public, Kings Co. No. 580
Kings Co. Register's No. 9254

[SEAL] Certificate Filed in New York County No. 731
New York County Register's No. 9495
Commission Expires March 30, 1929

STATE OF NEW YORK, }
COUNTY OF NEW YORK, } ss.:

Before me, CHAS. E. HILL, a notary public of New York County, New York, on this day personally appeared CHRISTY PAYNE and E. E. DU VALL President and Secretary, respectively, of COLORADO INTERSTATE GAS COMPANY, known to me to be the persons and officers whose names are subscribed to the foregoing instrument, and severally acknowledged to me that the same was the act of the said Colorado Interstate Gas Company, a corporation, and that they executed the same as the act of such corporation for the purposes and consideration therein expressed, and in the capacities therein stated.

GIVEN under my hand and seal of office, this the 5th day of June A. D. 1928.

CHARLES E. HILL
Notary Public, Kings Co. No. 580
Kings Co. Register's No. 9254

[SEAL] Certificate Filed in New York County No. 731
New York County Register's No. 9495
Commission Expires March 30, 1929

Exhibit "B."

THIS AGREEMENT, Made and entered into this third day of January, A. D. 1928, by and between CANADIAN RIVER GAS COMPANY, a corporation organized and existing under the laws of the State of Delaware, party of the first part, hereinafter called SELLER, and the AMARILLO OIL COMPANY, a corporation organized and existing under the laws of the State of Texas, party of the second part, hereinafter called BUYER:

WITNESSETH: That the parties hereto, in consideration of the covenants and payments herein set forth, and of the sum of One Dollar ($1.00) in hand paid by each to the other, receipt of which is hereby acknowledged, have mutually covenanted and agreed and do hereby mutually covenant and agree as follows:

1. Seller agrees to sell and deliver to Buyer and Buyer agrees to purchase and take from Seller and pay for:

(*a*) All the natural gas in excess of that purchased by Buyer from other producers required by Buyer for sale under and pursuant to the contract hereto annexed and marked Exhibit "E" to the Panhandle Pipe Line Company to supply the customers of the Panhandle Pipe Line Company in the City of Amarillo and its environs in the State of Texas;

(*b*) All the natural gas in excess of that purchased by Buyer from other producers required by Buyer for sale under and pursuant to the contract hereto annexed and marked Exhibit "F" to the United States Zinc Company to supply the United States Zinc Company's smelter located at Amarillo, Texas;

(*c*) All the natural gas in excess of that purchased by Buyer from other producers required by Buyer to supply any customers located in the City of Amarillo or its environs in the State of Texas which Buyer, Panhandle Pipe Line Company or the Amarillo Gas Company now has or may hereafter acquire.

Buyer shall at all times take and pay for hereunder from Seller or pay for that proportion of its total requirements for natural gas from all sources that the amounts of natural

gas taken by the Colorado Interstate Gas Company under and pursuant to its contract dated January 3rd, 1928, with Seller, from Seller's own wells, bears to the total amount of natural gas taken by the Colorado Interstate Gas Company under said contract, provided, however, Seller shall not at any time be required to deliver natural gas hereunder in excess of the amount which it has available for delivery as defined in Article III hereof. The part of its total requirements which Buyer shall take and pay for hereunder or pay for shall be determined each three (3) months by Seller and notice given to Buyer within fifteen (15) days after the end of each three (3) months' period, and the amount thus determined, reduced after the United States exercises its option to purchase the Cliffside Structure by that part of the natural gas taken during such three (3) months by Buyer from the discharge side of the helium plant under Article IV hereof which bears the same proportion to all the natural gas taken during such three (3) months from the discharge side of the helium plant that the amount of natural gas taken by the Colorado Interstate Gas Company from the wells of the Canadian River Gas Company bears to all the natural gas taken by the Colorado Interstate Gas Company from the Canadian River Gas Company, shall establish the minimum amount of natural gas to be taken by Buyer hereunder during the three (3) months beginning with the first day of the month following the notice. The minimum deliveries to be taken by Buyer shall be made and taken as nearly as practicable in equal daily amounts with an allowable daily variation of ten per cent. (10%) more or less than the amount currently applicable, but deliveries each six (6) months, May 1st to November 1st and November 1st to May 1st, shall be in exact accord with the current amount. Buyer agrees that it will do all things necessary to perform its contracts with the Panhandle Pipe Line Company and the United States Zinc Company, copies of which are hereto annexed and marked Exhibits "E" and "F" respectively; that it will take all steps necessary or proper to require the Panhandle Pipe Line Company and the United States Zinc Company to perform such contracts, and Buyer will not permit the cancellation of said contracts or any modification thereof which will affect Buyer's ability or obligation to take from Seller the proportion of its total requirements herein agreed upon without first obtaining the consent of Seller thereto

II. The natural gas hereby sold shall be delivered by Seller and received by Buyer at the gate valves on Seller's wells and/or the pipe connection points at which Seller receives natural gas bought for delivery hereunder from other producers. Buyer agrees to maintain pipe lines connected to certain of Seller's wells which are now connected to Buyer's pipe line, and to furnish and install other pipe lines from time to time to such additional wells or to such pipe connection points at which Seller receives natural gas bought for delivery hereunder from other producers, as such new places of connection or gate valves of wells may be designated by Seller in order to deliver the volumes to meet Buyer's requirements. If and when requirements of Buyer make it necessary that, instead of taking its deliveries of natural gas hereunder from Seller at Seller's wells or at said pipe connection points, Buyer receive deliveries at a central point, the natural gas hereby sold shall be delivered by Seller and received by Buyer at Seller's Amarillo Compressing Station site located at such point as may be selected by Seller near the intersection of the Moore-Potter County line and the highway between Amarillo and Dalhart, Texas, from Seller's gathering pipe line system, and Buyer shall construct and maintain its pipe line or pipe lines to such compressing station site. If and when the requirements of Buyer make it necessary that Buyer receive the natural gas hereby sold at a higher pressure than that available from Seller's wells or at the pipe connection points at which Seller receives natural gas purchased from other producers or from Seller's gathering lines at the Amarillo Compressing Station site, then Seller will construct, put into operation and maintain at its Amarillo Compressing Station site compressing facilities sufficient to enable it to deliver natural gas hereunder at a discharge pressure sufficient to meet the requirements of Buyer but not exceeding three hundred and twenty-five (325) pounds gauge per square inch at said station and thereafter the natural gas hereby sold shall be delivered by Seller and received by Buyer from Seller's Amarillo Compressing Station and Buyer shall construct and maintain its pipe line or pipe lines to such compressing station.

III. Seller agrees that all lands, gas leaseholds, gas rights, gas contracts and gas properties described in the

schedule hereto annexed, made a part hereof and marked Exhibit "A," and all similar properties hereafter acquired and all its compressing facilities, pipe lines, wells, meters and connections will be diligently operated in a skilful and methodical way to accomplish the production of sufficient natural gas for delivery hereunder and for delivery to the United States under and pursuant to Seller's contract hereto annexed and marked Exhibit "B," and the delivery of natural gas so produced shall be full performance of Seller's obligations herein assumed to deliver natural gas. Seller shall have the right but shall not be required to deliver hereunder to Buyer any natural gas purchased by Seller from other producers. Seller reserves the right to contract with the United States for submission of its helium bearing natural gas for helium extraction purposes as provided in the contract between Seller and the United States (Exhibit "B"), and Seller also reserves the right to sell to the United States that part of its gas leaseholds, gas rights and gas properties described in the contracts between Seller and the United States, dated May 17, 1927 and March 23, 1928, respectively, copies of which are hereto annexed and marked Exhibit "C" and "D," respectively, and Seller reserves the right to use natural gas from its wells for fuel in its drilling for natural gas and for fuel in the operation of any compressing stations now or hereafter constructed and operated by Seller, but subject to such reservations and to them only the requirements of Buyer hereunder shall have first preference and call at all times during the continuance of this contract on all the natural gas contained in or to be produced from Seller's lands, gas leaseholds, gas rights, gas reserves and gas wells presently held or hereafter acquired in the nature of covenants running with the lands in all hands.

IV. The Seller agrees to construct the pipe line mentioned and described in its contract with the United States, Exhibit "B", and upon the completion of such construction, to lease such pipe line to Buyer for operation until such time as the United States shall exercise its option to buy such pipe line or until such time as the right of the United States to buy such pipe line shall expire. The rental to be paid under such lease shall be One Hundred Dollars ($100.00) per year.

Buyer agrees to perform all of Seller's obligations with respect to the transportation, submission to helium extraction and disposal of residue gas set forth in Seller's contract with the United States, Exhibit "B".

Seller agrees to pay to Buyer, as and when received, all amounts paid by the United States to it with respect to the transportation, submission to helium extraction, loss in helium extraction and all other amounts due under the contract, Exhibit "B", excepting only amounts due with respect to the drilling of wells.

If the United States fails to exercise its option to purchase the Cliffside Structure as provided in the contracts between Seller and United States, Exhibits "C" and "D", the Buyer thereupon shall purchase from Seller the pipe line constructed pursuant to the provisions of Seller's contract with the United States, Exhibit "B" and pay therefor the cost of such pipe line and improvements therein together with interest on such cost and improvements at six per cent. (6%) per annum.

V. Seller agrees that it will use its best efforts to renew or extend the gas leaseholds, gas rights, gas contracts and gas estates described in the schedule hereto annexed and marked Exhibit "A", and to prevent lapse, forfeiture or expiration, but Seller shall have the right to surrender or forfeit leases now owned or subsequently acquired, when, in its judgment, exercised in good faith, such leases are proven worthless for commercial natural gas production, and thereupon Seller shall be relieved of all obligation to furnish hereunder natural gas from or with respect to leases surrendered.

VI. For each one thousand (1,000) cubic feet of natural gas, delivered during the period commencing on the date hereof and ending at the beginning of the calendar month in which the Colorado Interstate Gas Company commences making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to Public Service Company of Colorado, Buyer agrees to pay to Seller a price which shall be Seller's cost. For the purpose of ascertaining the amount to be paid each month for natural gas delivered in the preceding month, Seller's cost shall be assumed to be five cents (5c). Within thirty (30) days after the end of

such period. Seller shall compute its cost in the manner provided in sub-paragraphs (1) to (14) inclusive of this Article VI, except that there shall not be included in items (1), (2) and (3) thereof the cost of any wells drilled by Seller during this period, and, provided further, that there shall be included in item (8) thereof only one-eighth (1/8th) of the interest accruing on or with respect to any Indenture of First Mortgage and Deed of Collateral Trust or Bonds issued by Seller, and, provided further, that there shall not be included any amounts for Sinking Fund payments due under and by virtue of any Indenture of First Mortgage and Deed of Collateral Trust given by Seller. When such cost shall have been determined, the proper adjustment of amounts paid or to be paid for the period shall be made.

For each one thousand (1,000) cubic feet of natural gas delivered during the period beginning with the first day of the calendar month in which the Colorado Interstate Gas Company commences making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado, and continuing for one (1) year thereafter, Buyer agrees to pay Seller's cost. For the purpose of ascertaining the amount to be paid each month for natural gas delivered in the preceding month of this period, Seller's cost shall be assumed to be five cents (5¢). Within thirty (30) days after the end of this period, Seller shall compute its cost in the manner provided in sub-paragraphs (1) to (14) of this Article VI, provided, however, that if during this period the amount of natural gas delivered by Seller to Buyer shall be more than one-half (1/2) the amount of natural gas delivered by Seller to the Colorado Interstate Gas Company under Seller's contract with that Company dated January 3rd, 1928, then, in computing Seller's cost for the period, no amounts for interest or Sinking Fund shall be included under or pursuant to the provisions of sub-paragraph (8) of this Article VI, and in lieu thereof the total amount to be paid by Buyer to Seller for natural gas delivered during this period as thus determined shall be increased by adding thereto one-sixth (1/6th) of all the amounts for interest and Sinking Fund which Seller is required to pay during such period to The Equitable Trust Company of New York, Trustee, under and pursuant to the terms of the Indenture

of First Mortgage and Deed of Collateral Trust given by Seller to said Trustee. If the amount thus determined is greater or less than the amount of the payments already made by Buyer to Seller for natural gas delivered during this period, the proper adjustment of amounts paid or to be paid shall be made.

For each one thousand (1,000) cubic feet of natural gas delivered during each three (3) months of the period commencing with the beginning of the twelfth (12th) calendar month after that in which the Colorado Interstate Gas Company begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado and continuing for so long as this contract remains in force, Buyer agrees to pay Seller a price which shall be determined by adding:

(1) Seller's entire cost, including natural gas used for fuel and charged at the average price being paid by Seller for natural gas purchased from other producers, or, if Seller is not purchasing natural gas from other producers, then at the fair market value thereof at the mouth of the well in the field, during the year ending with the day preceding the beginning of such three (3) months' period, of drilling wells for natural gas which do not result in procuring natural gas in commercial quantities; provided, however, that there shall not be included herein any item of cost incurred after ten (10) years after the beginning of the calendar month in which the Colorado Interstate Gas Company begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado.

(2) Such amount as may be necessary during the year ending with the day preceding the beginning of such three (3) months' period to amortize on a ten (10) year basis Seller's cost, including natural gas used for fuel and charged at the price provided in subparagraph (1) of this Article VI, during the first ten (10) years after the beginning of the calendar month in which the Colorado Interstate Gas Company begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public

Service Company of Colorado, of drilling wells for natural gas which result in procuring natural gas in commercial quantities.

(3) Seller's entire cost, including natural gas used for fuel and charged at the price provided in sub-paragraph (1) of this Article VI, during the year ending with the day preceding the beginning of such three (3) months' period, of drilling wells for natural gas irrespective of whether such wells result in procuring natural gas in commercial quantities; provided, however, that no amount shall be included pursuant to this sub-paragraph (3) in determining the price for any period prior to ten (10) years after the beginning of the calendar month in which the Colorado Interstate Gas Company begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado.

(4) Seller's entire cost, including natural gas used for fuel and charged at the price provided in sub-paragraph (1) of this Article VI, during the year ending with the day preceding the beginning of such three (3) months' period, of producing natural gas, maintaining producing equipment, operating wells, all rentals paid by Seller in carrying its gas leaseholds, gas rights and gas estates; all royalties on gas wells and gas production; the purchase price paid by Seller to producers or vendors thereof for natural gas, other than that used for fuel, purchased; all expense, other than the purchase price, of procuring natural gas purchased by Seller from other producers; all costs of the foregoing operations and maintenance not otherwise herein enumerated, and two-thirds (2/3rds) of all unallocated general, administrative and office expenses which it is agreed represents that part thereof properly chargeable to the operation, preservation and maintenance of its gas leaseholds, gas rights, gas contracts and gas estates described in the schedule annexed hereto and marked Exhibit "A" or hereafter acquired, and to the operation and maintenance of its gas wells and producing equipment; provided, however, there shall not be included herein any item elsewhere included in the provisions of this Article VI; and, provided further, there

shall not be included herein any item the amortization of which is included in sub-paragraph (2) of this Article VI.

(5) Such amount as may be necessary, during the year ending with the day preceding the beginning of such three (3) months' period, to amortize on a ten (10) year basis Seller's entire cost of acquiring renewals of existing leases and of acquiring new leases, contracts and other rights to produce natural gas; provided, however, that only Seller's cost, during the ten (10) years beginning with the first day of the calendar month in which the Colorado Interstate Gas Company begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado, shall be included in the amount to be so amortized.

(6) Seller's entire cost, during the year ending with the day preceding the beginning of the three (3) months' period commencing ten (10) years after the first day of the calendar month in which the Colorado Interstate Gas Company begins making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado, and, during the year ending with the day preceding the beginning of each three (3) months' period thereafter, of acquiring renewals of existing leases and of acquiring new leases, contracts and other rights to produce natural gas.

(7) All charges for the year ending with the day preceding the beginning of such three (3) months' period reasonably necessary for the purpose of maintaining funds or reserves to be used in meeting the cost of renewals, replacements or extraordinary maintenance of compressing stations and facilities used or useful for compressing and delivering natural gas when Buyer requires deliveries made to it after compression at Seller's Amarillo Compressing Station. There shall not be included herein any item of expenditure for current operations or ordinary maintenance.

(8) One-half (½) of all the amounts which Seller is required to pay, during the year ending with the day

preceding the beginning of such three (3) months' period, to The Equitable Trust Company of New York, Trustee, under and pursuant to the terms of the Indenture of First Mortgage and Deed of Collateral Trust given by Seller to said Trustee, increased when Buyer requires deliveries to be made to it at a central point at the Amarillo Compressing Station site by that proportion of one-half (1/2) of all amounts which Seller is required to pay during such year to such Trustee under such Indenture of First Mortgage and Deed of Collateral Trust that Seller's capital investment in gathering pipe lines, supplemental compressing stations and other equipment, facilities and installations used or useful for gathering natural gas bears to Seller's capital investment in gathering pipe lines, main compressing stations, supplemental compressing stations, main pipe lines and other equipment, facilities and installations used or useful in gathering, compressing, transporting and delivering natural gas sold by it, and increased when Buyer requires deliveries to be made to it after compression at Seller's Amarillo Compressing Station by that part of one-half (1/2) of all amounts which Seller is required to pay during such year to such Trustee under such Indenture of First Mortgage and Deed of Collateral Trust that Seller's capital investment in gathering pipe lines, supplemental compressing stations, main compressing stations and other equipment, facilities and installations used or useful for gathering and compressing natural gas bears to Seller's capital investment in gathering pipe lines, main compressing stations, supplemental compressing stations, main pipe lines and other equipment, facilities and installations used or useful in gathering, compressing, transporting and delivering natural gas sold by it.

(9) All amounts which Seller is required to pay, during the year ending with the day preceding the beginning of such three (3) months' period, for interest on account of loans made to it pursuant to the operation of Article Third of its agreement dated January 3rd, 1928 with the Colorado Interstate Gas Company and all amounts which Seller is required to pay during said year on account of the principal of loans made to it

pursuant to the operation of Article Third of its said agreement with the Colorado Interstate Gas Company, except such amounts of said principal as have been expended by Seller for any of the operations described in sub-paragraphs (1) to (6) inclusive of this Article VI, which amounts are charged into Seller's cost of producing natural gas.

(10) All amounts which Seller is required to pay, during the year ending with the day preceding the beginning of such three (3) months' period, for interest and on account of the principal of loans made to it by the Colorado Interstate Gas Company, provided, however, there shall not be included under this sub-paragraph (10) any amount Seller is required to pay for interest or on account of the principal of loans made to it pursuant to the operation of Articles Third or Seventh of Seller's agreement dated January 3rd, 1928 with the Colorado Interstate Gas Company.

(11) All of Seller's cost, during the year ending with the day preceding the beginning of such three (3) months' period, of maintaining meters and other equipment, facilities and installations for measuring natural gas, and of measuring natural gas.

(12) When Buyer is receiving deliveries at a central point at the Amarillo Compressing Station site, that proportion of all amounts which Seller is required to pay during the year ending with the day preceding the beginning of such three (3) months' period for interest and on account of the principal of loans made to it pursuant to the operation of Article Seventh of its agreement with the Colorado Interstate Gas Company dated January 3rd, 1928 that Seller's investment in gathering pipe lines, supplemental compressing stations and other equipment, facilities and installations used or useful in ga[illegible]ring natural gas and transporting it to its Amarillo Compressing Station site bears to Seller's entire capital investment in gathering pipe lines, main compressing stations, supplemental compressing stations, main pipe lines and other equipment, facilities and installations used or useful in gathering, compressing, transporting and delivering natural gas sold by it, and when

Buyer is receiving deliveries of natural gas after compression at the Amarillo Compressing Station, that proportion of all amounts so payable that Seller's capital investment in gathering pipe lines, main compressing stations, supplemental compressing stations and other equipment, facilities and installations used or useful for gathering natural gas, transporting it to its Amarillo Compressing Station and there compressing it bears to Seller's entire capital investment in gathering pipe lines, main compressing stations, supplemental compressing stations, main pipe lines and other equipment, facilities and installations used or useful in gathering, compressing, transporting and delivering natural gas sold by it.

(13) All of Seller's cost, including natural gas used for fuel and charged at the price provided in sub-paragraph (1) of this Article VI, during the year ending with the day preceding the beginning of such three (3) months' period, of maintaining and operating gathering pipe lines, supplemental compressing stations and other equipment, facilities and installations maintained by Seller and used or useful for gathering and transporting natural gas to its Amarillo Compressing Station site, such cost to include all expenses not enumerated which are properly chargeable to the maintenance and operation of such gathering pipe lines, supplemental compressing stations and other equipment, facilities and installations maintained by Seller and used or useful for gathering and transporting natural gas to its Amarillo Compressing Station site, provided, however, that no amount shall be included under this item unless Buyer is receiving deliveries without compression at a central point at the Amarillo Compressing Station site.

(14) All of Seller's cost, including natural gas used for fuel and charged at the price provided for in sub-paragraph (1) of this Article VI, during the year ending with the day preceding the beginning of such three (3) months' period, of maintaining and operating gathering pipe lines, supplemental compressing stations, main compressing stations and other equipment, facilities and installations maintained by Seller and used or useful for gathering, transporting natural gas to

its Amarillo Compressing Station and there compressing such natural gas, such cost to include all expenses not enumerated which are properly chargeable to the operation and maintenance of such gathering pipe lines, supplemental compressing stations, main compressing stations and other equipment, facilities and installations maintained by Seller and used or useful for gathering natural gas, transporting it to its Amarillo Compressing Station and there compressing it, and one-third (1/3rd) of all of Seller's unallocated general, administrative and office expenses which it is agreed represents that part thereof properly chargeable to the operation and maintenance of Seller's main compressing stations: provided, however, that no amount shall be included under this item unless Buyer is receiving deliveries after compression at Seller's Amarillo Compressing Station.

(15) All taxes, except taxes on net income or net profits, payable during the year ending with the day preceding the beginning of such three (3) months' period, because of the ownership or operation by Seller of its natural gas wells, drilling equipment and other facilities and property used or useful by Seller in the performance of its obligations under this contract, its gas leaseholds, gas rights and gas estates, and, when Buyer is receiving deliveries of natural gas at a central point at the Amarillo Compressing Station site, also all taxes, except taxes on net income or net profits, payable because of the ownership or operation by Seller of gathering pipe lines, supplemental compressing stations and other equipment, facilities and installations used or useful for gathering natural gas and transporting it to the Amarillo Compressing Station site, and, when Buyer is receiving deliveries of natural gas after compression at Seller's Amarillo Compressing Station, also all taxes, except taxes on net income or net profits, because of the ownership or operation by Seller of gathering pipe lines, supplemental compressing stations, main compressing stations, and other equipment facilities and installations maintained by Seller and used or useful for gathering natural gas, transporting it to its Amarillo Compressing Station and there compressing it.

and by dividing such total by a divisor which shall be the sum of all the thousands of cubic feet of natural gas sold by Seller during the year ending with the day preceding the beginning of such three (3) months' period.

Should the ascertainment of any of such items of cost be delayed or their amounts change by subsequent information, Seller shall use the best estimate it can make by the exercise of its best judgment in the computation of cost, and semi-annually, on or before the twentieth (20th) day in January and July of each year, an adjustment shall be made between Seller and Buyer to meet the preceding six (6) months' actual cost under items and instructions above set forth.

VII. The natural gas delivered hereunder at the gate valves of Seller's wells shall be natural gas as produced in its natural state from the wells. All natural gas delivered hereunder at pipe connection points at which Seller receives natural gas purchased from other producers shall be natural gas in the state purchased by Seller from such other producers and Seller shall at all times use its best effort to purchase natural gas in its natural state from wells. All natural gas delivered hereunder at a central point at Seller's Amarillo Compressing Station site or from Seller's Amarillo Compressing Station, shall be natural gas resulting from the commingling of natural gas as produced in its natural state from the wells by Seller and natural gas purchased by Seller from other producers.

VIII. At the place or places where delivery of the natural gas is made hereunder, Seller shall furnish, install, operate and maintain, at its own expense, measuring apparatus properly equipped with orifice meters and recording gauges or other type of meter or meters of standard style as may be mutually agreed upon, the measurements of which shall fix the total amount of natural gas delivered by Seller to Buyer.

The measuring equipment so installed by Seller, together with any buildings erected by it for such equipment, shall be and remain its property. Buyer shall have access to said metering equipment at all reasonable times but the reading, calibrating and adjusting thereof and changing of

charts shall be done only by the employees or agents of Seller. Charts and records from such metering equipment shall remain the property of Seller. Upon request of Buyer, Seller will submit to Buyer records and charts from its metering equipment, together with calculations therefrom, for Buyer's inspection and verification, subject to return by Buyer, within ten (10) days after receipt thereof, after which return the charts and records shall be kept on file by Seller for the mutual use of both parties. At least twice each month and on days as near the first and sixteenth of the month as practicable, Seller shall calibrate its meter in the presence of representatives of Buyer and the parties shall jointly observe any adjustments which are made in the meter should such adjustments be necessary and if the check meters hereinafter provided for have been installed the same shall also be calibrated by Buyer in the presence of representatives of Seller and any adjustments jointly observed should such adjustments be necessary. If either party at any time desires a test of any meter, or if either party at any time observes a variation between the delivery meter and its check meter, if any such check meter is installed, it will promptly notify the other party and the parties will then cooperate to secure an immediate calibration test and joint observation of any adjustments and the meter shall then be adjusted to accuracy and corrections jointly made for the monthly settlements. Each company shall give to the other company notice of the time of all tests of meters sufficiently in advance of the holding of the tests so that the other company may conveniently have its representatives present. If upon any test any metering equipment is found to be inaccurate by one per cent (1%) or more, registrations thereof shall be corrected at the rate of such inaccuracy for any period which is definitely known and agreed upon, but in case the period is not definitely known and agreed upon, then for a period extending back one-half (½) of the time elapsed since the last date of calibration, not exceeding, however, eight (8) days. Following any test, metering equipment found inaccurate shall immediately be restored as closely as possible to a condition of accuracy. If for any reason meters are out of service and/or out of repair so that the amount of natural gas delivered cannot be ascertained or computed from the reading thereof, the natural gas delivered through the period

such meters are out of service and or out of repair shall be estimated and agreed upon by the parties hereto upon the basis of the best data available using the first of the following methods which is feasible:

(*a*) By correcting the error if the percentage of error is ascertainable by calibration, test of mathematical calculation.

(*b*) By using the registration of any check meter or meters if installed and accurately registering.

(*c*) By estimating the quantity of delivery by deliveries during preceding periods under similar conditions when the meter was registering accurately.

The unit of measurement for the natural gas deliverable under this agreement shall be One thousand (1,000) cubic feet of natural gas at a base temperature of sixty (60) degrees Fahrenheit and at a base pressure of two (2) pounds gauge pressure above fourteen and four-tenths (14.4) pounds absolute atmospheric pressure and the readings and registrations of the metering equipment herein provided for shall be computed into such units. For the purpose of measurement, the natural gas deliverable hereunder shall be assumed to obey Boyle's Law and the average absolute atmospheric (barometric) pressure shall be assumed to be fourteen and four-tenths (14.4) pounds to the square inch, irrespective of the actual elevation or location of the delivery point above sea level or of variations in such barometric pressure from time to time. If meters other than the orifice type are used, then in computing the readings and registrations of such metering equipment into the units above specified, the physical characteristics of the natural gas which affect such computation shall be given each their due consideration, and the determination of such physical characteristics shall be made by standard apparatus and methods and at such time and places as, in accordance with good practice, may be agreed upon from time to time between the delivering company and the receiving company. For meters of the orifice type, the following factors shall be given due consideration, viz:

(*a*) The temperature of the natural gas flowing through the meter shall be obtained by the use of a

recording thermometer so installed that it may properly record the temperature of the natural gas flowing through the meter. The average temperature recorded each day shall be used in computing measurements.

(*b*) The specific gravity of the natural gas shall be determined twice monthly by joint test on days as near the first and sixteenth of the month as practicable or as much oftener as is found necessary in practice. The method of test used shall be by Edward's Balance or by such other method as shall be agreed upon by the parties. The regular test at the first of the month shall determine the specific gravity to be used in computations for the measurement of natural gas deliveries during the first fifteen (15) days of such calendar month or until changed by special test, the special test to be applicable from the day made and through the following days to and including the fifteenth day of such calendar month. The regular test made on the sixteenth of the month shall determine the specific gravity to be used in computations for the measurement of natural gas deliveries in that part of such calendar month commencing with the sixteenth day and continuing until the end thereof or until changed by special test, the special test to be applicable from the day made through the remaining days in such calendar month.

Buyer may at its option and at its cost and expense install and operate check metering equipment, but the metering equipment of Seller shall be used for determining the amounts of natural gas delivered under this agreement. The check metering equipment so installed by Buyer, together with any buildings erected by it for such equipment, shall be and remain its property. Whenever the point of delivery as specified herein is on the premises of Seller, Seller grants to Buyer the right of free ingress and egress to such metering equipment at all times for the purposes of installation, operation, repair and/or removal. The check metering equipment and the method of installation of the same shall be of such standard type for the measurement of natural gas as is approved by both companies, but Buyer shall have the right to replace such equipment at any time with metering equipment of equal grade subject to the approval of Seller as to type and method of installation.

In the event check metering equipment is installed by Buyer, Seller shall have access to the same at all reasonable times, but the reading, calibrating and adjusting thereof and the changing of charts shall be done only by employees or agents of Buyer. Charts and records from said check metering equipment shall remain the property of Buyer. Upon request of Seller, Buyer will submit to Seller records and charts from said metering equipment, together with calculations therefrom, for Seller's inspection and verification, subject to return by Seller within ten (10) days after receipt thereof.

Seller shall render to Buyer, on or before the fifteenth (15th) day of each month, a statement of the amount of natural gas delivered to Buyer during the calendar month immediately preceding and of the amount of payment or payments then due from Buyer to Seller therefor. The statements of deliveries so furnished by Seller to Buyer shall be conclusive upon the parties excepting as to the corrections and/or adjustments then pending, unless exceptions thereto in writing shall be made by Buyer within ten (10) days after it shall receive such statement.

IX. Buyer agrees to pay Seller at its office in Amarillo, Texas, on or before the twentieth (20th) day of each month for natural gas delivered during the preceding month according to the gas measurements and computations and at the prices hereinbefore provided for and billed on said monthly statement. Should Buyer fail to pay any amount due from it to Seller when such amount is due and such failure to pay continues for sixty (60) days, then Seller may suspend deliveries of natural gas, but the exercise of such right shall be in addition to any and all other remedies available to Seller.

X. Seller agrees to keep proper books, records and accounts, so as to reflect accurately and in detail monthly and annually its investments and expenses, and in particular its cost of producing and obtaining natural gas, the sources and costs of any natural gas purchased from other producers, and its sales of natural gas with names of purchasers, and shall furnish Buyer monthly as soon as practicable after the first of each month a statement showing the above items and accounts for the preceding month.

Buyer shall have the right at all reasonable times to go upon the property of Seller and to make such inspection and investigation of same as it may desire and to examine and audit Seller's books, accounts, contracts, meters and records relating to the above items of accounts.

Buyer agrees to furnish from time to time to Seller a statement in detail of its sales of natural gas to its consumers and furnish Seller copies of its contracts and copies of its records of sales and any other data that, in the opinion of Seller, may be necessary or material in the proper administration of this contract and in the proper administration of any contract which Seller has made or may make for the sale of natural gas and give Seller, from time to time, access to its contracts and records of sales and the right to audit and check the same and to call for any other data that may be material to the natural gas deliveries herein agreed upon.

XI. If for any period of time during the term hereof, Seller shall be unable or fail to deliver the full amount of natural gas required by Buyer hereunder, then Buyer shall have the right, during such time as Seller so fails to furnish the required amount of natural gas, to purchase or otherwise obtain natural gas from any available source to supply, at its own expense, such portion of the requirements of its customers as is not obtainable from Seller.

XII. If any dispute arises between the parties to this contract which they were unable to settle, the same shall be submitted to arbitration. Within ten (10) days after the written request of either party for arbitration, Seller shall appoint one arbitrator and Buyer shall appoint one arbitrator, and the two so chosen, within ten (10) days after the appointment of the second of the two so chosen, shall select a third. In case either Seller or Buyer shall fail to name an arbitrator within ten (10) days after the written request of either party for arbitration, the arbitrator appointed by the other party shall be the sole arbitrator. The three arbitrators may act by a majority and the arbitrator or arbitrators, as the case may be, shall forthwith hear the parties, after notice to Seller and Buyer, and shall make their award within ninety (90) days from the submission of the matter to them and said award shall be final and conclusive upon the parties.

XIII. This contract shall continue for twenty (20) years from the day on which the Colorado Interstate Gas Company begins delivering natural gas purchased from Seller to the Public Service Company of Colorado and so long thereafter as Seller has available for delivery to Buyer hereunder quantities of natural gas which Buyer determines are profitable for it to buy under the terms of this contract.

XIV. In the event of either party being rendered unable wholly or in part by *force majeure* to carry out its obligations under this contract other than to make payments of amounts due hereunder, it is agreed that on such party giving notice and full particulars of such *force majeure* in writing or by telegraph to the other party as soon as possible after the occurrence of the cause relied on, then the obligations of the party giving such notice, so far as they are affected by such *force majeure*, shall be suspended during the continuance of any inability so caused but for no longer period, and such cause shall, so far as possible, be remedied with all reasonable dispatch.

The term "*force majeure*" as employed herein shall mean acts of God, strikes, lockouts or other industrial disturbances, acts of the public enemy, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraint of rulers and peoples, civil disturbances, explosions, breakage or accident to machinery or lines of pipe, the necessity for making repairs and/or alterations in machinery or lines of pipe, freezing of wells or lines of pipe, sudden partial or entire failure of natural gas wells, and any other cause, whether of the kind herein enumerated or otherwise, not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to overcome.

XV. All notices to be given hereunder by Seller to Buyer shall be given by registered mail or delivering the same to Buyer at its office at Amarillo, Texas, or at such other office as may be hereafter designated by Buyer for the purpose, and all notices to be given by Buyer to Seller shall be given by registered mail or delivering the same to Seller at its office at Amarillo, Texas, or at such other office as may be hereafter designated by Seller for the purpose.

XVI. This agreement shall inure to the benefit of and

be binding upon the successors and assigns of the parties hereto. Whenever any corporation is referred to herein, such reference shall be deemed to include the successors and assigns of any such corporation.

XVII. As between the parties hereto, Seller shall be in control and possession of the natural gas deliverable hereunder and responsible for any damage or injury caused thereby until the same shall have been delivered to Buyer, after which delivery Buyer shall be deemed to be in exclusive control and possession thereof and responsible for any such injury or damage.

XVIII. If either party shall fail to perform the covenants or obligations imposed upon it under and by virtue of this contract, then in such event the other party may, at its option, terminate this contract by proceeding as follows:—

The party not in default shall cause written notice to be served on the party in default, stating specifically the cause for terminating this contract and declaring it to be the intention of the party giving the notice to terminate the same; thereupon the party in default shall have thirty (30) days after the service of the aforesaid notice in which to remedy or remove the cause or causes stated in the notice for terminating the contract and if, within said period of thirty (30) days, the party in default does so remove and remedy said cause or causes and fully indemnifies the party not in default for any and all consequences of such breach, then such notice shall be withdrawn and this agreement shall continue in full force and effect. In case the party in default does not so remedy and remove the cause or causes and/or does not indemnify the party giving the notice for any and all consequences of such breach within said period of thirty (30) days and if the party giving the notice does not withdraw the notice, then such agreement shall become null and void from and after the expiration of said period. Any cancellation of this agreement pursuant to the provisions of this article shall be without prejudice to any right of the party not in default to collect any amounts then due to it and without waiver of any other remedy to which the party not in default may be entitled for violation of this contract.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be duly signed by their respective officers the day and year first above written.

CANADIAN RIVER GAS COMPANY,
By W. S. FITZPATRICK
President.

Attest:
VICTOR A. IOBE
[SEAL] Secretary

AMARILLO OIL COMPANY,
By N. K. MOODY
President.

A. B. HOOKINS
[SEAL] Secretary

Exhibit "E".

This Memorandum of a Contract made and entered into by and between AMARILLO OIL COMPANY, a private corporation of Amarillo, Texas, as first party and Perry A. Little, of Buffalo, New York, as second party,

WITNESSETH:

I

First party is the owner of oil and gas leasehold interests in and to divers tracts and parcels of land situated in Potter County and adjoining counties in the State of Texas, and is engaged in drilling, testing and exploiting said lands with the view of developing and producing therefrom oil and gas and their products for commercial purposes. There is now on Section 65, Block 018 in Potter County, a gas well called the Hapgood Well, which it is assumed has a capacity of cubic feet of gas per day.

II

Second party represents himself and others who desire by means of a pipe line to be constructed, to convey all such gas as may be produced by first party as required for the consumption of Amarillo to consumers in and in the vicinity of Amarillo at price herein mentioned, for sale and consumption in the usual course of business.

III

In consideration of the premises aforesaid and $1.00 cash in hand paid, and of the mutual benefits to be derived therefrom, the parties have agreed and hereby do agree as follows:

IV

1. That first party sells and agrees to deliver to second party and his associates or assigns, the gas at any and all wells owned by first party, located in Potter and adjoining counties, from and after the time a proper pipe line is so constructed, connected and completed as to receive such gas, at the price and upon the terms herein stipulated, sufficient to supply all needs of Amarillo and vicinity in the event such gas can be obtained under the terms of this contract.

2. That it is assumed that the one producing well now on Section 65, known as the Hapgood well, has a daily capacity of 10,000,000 cubic feet; and the first party agrees to proceed to drill a second well as soon as possible, not less than one-half mile distant from the Hapgood Well. When such second well shall have been so completed so that the same is producing gas in paying quantities, second party shall have the option of locating and drilling yet another or third well upon the leases owned by first party, the location of which shall not be less than one-half mile from either of the completed wells and at a place to be mutually agreed upon. The cost of such third well will be paid by second party, but the amount so advanced with interest thereon from the time advanced at the rate of 6% per annum, until refunded, will be repaid by first party in gas delivered at the rate herein provided, by deductions from monthly settlements until the full amount has been liquidated; or may be paid in cash at option of first party at any time. If second party elects to put down such third well, it shall be commenced upon the completion of the gas well to be drilled by the first party, that is, when such well is producing gas in paying quantities for commercial purposes, as applied to this contract.

3. That should such third well to be so located and drilled by second party or assigns, be an oil well pro-

ducing oil in paying quantities, the cost of drilling the same shall, nevertheless, be paid for by second party as is herein provided, and second party shall have the right to hold the possession of such oil well including forty (40) acres of land on which same is located until the same has been paid for, and apply the production of all wells to the payment therefor; it being intended and understood that all wells drilled on first party's leases shall be and remain its property, except as mentioned in clause 2, the production thereof, and the proceeds of gas sold through the pipe line being subject to the payment for drilling such well. Should such third well so drilled by second party or his assigns be insufficient to make a total production of gas as is herein contemplated, second party or his assigns is to have the option to locate and drill another well upon the terms and conditions as herein provided for.

4. It is hereby understood and agreed by the parties that should said second well drilled by second party prove to be a dry hole when same has been drilled to the depth of gas strata in said gas field, and after reasonable effort has been made to make same a gas or oil well, the reasonable expense of drilling same shall become a legal obligation of first party.

5. That when three producing wells shall have been thus completed in such territory and are made to produce daily as much as 25,000,000 cubic feet, fairly averaged between the three wells and that the gas from at least two wells be available for the pipe line and so located as to be not less than one-half a mile apart, then the field shall be considered as sufficiently proven and second party as a pipe line company, shall commence preparations to lay and proceed with due diligence to lay a good and sufficient pipe line, not less than eight inches in diameter, so located and connected as to deliver gas from such wells into Amarillo and vicinity.

6. Second party shall pay first party for all gas sold by it to him or said pipe line company eight (8) cents per 1000 cubic feet, to be paid monthly upon meter readings as herein provided.

7. That first party agrees to accept the reading of

meters in the City of Amarillo as a basis for monthly settlements; but it reserves to itself the right or option of installing meters in the field at any time after one year from the time gas was first received into such pipe line; and should first party decide to install meters in the field, then the base of measurement will be agreed upon mutually.

8. That the pipe line company—for whose benefit this contract is made—is to have the first and prior right to take, at the price and upon terms herein stipulated, all gas produced from the lands owned or leased, and all that may be acquired by deed or lease and controlled by first party or its assigns, and located in said fields in Potter and adjoining counties, sufficient to supply Amarillo and vicinity; and first party is to have first and prior right to furnish gas to such pipe line, and the pipe line company is bound to take at said rate, from the first party, to the exclusion of all others, gas produced by first party's wells, up to the capacity of the pipe line, or the consumption in the City of Amarillo and vicinity. The party of the first part reserves the right to sell all gas produced above the requirements of the party of the second part, as stated in this contract, conditioned that such wells shall not be drawn upon to an amount such as to impair the production of said wells as applied to this contract and its obligations, the object being the proper conservation of the gas.

9. It is further agreed and understood by and between the parties hereto, that in order that the party of the second part or assigns may be assured of sufficient ground upon which gas may be produced as needed by said pipe line company, to be drilled or prospected upon as hereinbefore set forth, that the party of the first part hereby agrees that should it hereafter sell all or any part of its leases which it may now own on the following tracts, viz: Sections 62, 63, 64, 65, 66, 70, 71, 72, 93, 102 and 103, Block 018, D. & P. R. R. Co. such assignment will be made as a covenant running with the land that said pipe line company will, if it needs the gas, have the right to develop or endeavor to develop gas upon said property in the hands of the assignee or assignees in accordance with the terms of this contract with the assignor and such assignee

will have the right to pay said pipe line company the reasonable expense for said well. In the event the assignee develops gas in paying quantities the pipe line company shall have the prior right to connect its pipe line with said well or wells paying therefor the rate stipulated herein, and such assignee or assignees will not have the right to sell the gas from the well so developed by him until said pipe line company has refused and failed to exercise its preference to take the gas from said well according to the terms of this contract.

10. In the event of a deficiency of gas for the purpose of meeting the demands of the pipe line company according to the terms of this contract and the party of the first part after having been requested by the pipe line company to develop and it refuses or fails to do so, the pipe line company, in that event, will have the right to purchase gas from others or develop gas on the lands then owned by the party of the first part or on the sections above described and if gas is produced by said pipe line company sufficient to make up said deficiency, such gas will go into said pipe line as the property of said pipe line company, however, it is understood and agreed that said pipe line company shall at all times, in view of above condition mentioned, to-wit, such deficiency, take and pay for all the gas produced by the wells of the party of the first part according to the rate and terms of this contract. It is agreed that any oil well produced by party of the second part in its development work shall become the property of party of the first part upon its paying the reasonable expenses of said well to the party of the second part, provided said oil well affords oil in paying quantities and is developed on land belonging to party of the first part.

11. Second party is to begin preparation for the construction of the pipe line as soon as there is a minimum production of 25,000,000 cubic feet produced by the two or three wells herein first provided for, and shall complete such line within four months from the time 25,000,000 cubic feet is produced at the wells, unavoidable delays and accidents excepted. In the event of unavoidable delays and accidents the time of such exception will be extended proportionately.

12. First party is to reserve the right to the gasoline which may be derived from such natural gas and also reserve the right to sell gas for the consumption of the field for drilling purposes, and to other parties, but it agrees, however, that it will first deliver gas to the pipe line company at the wells to supply the needs of Amarillo and vicinity, except that it reserves the fuel right in all events to drill other wells.

13. The party of the second part may, by written assignment at any time within one year from the date of this instrument, assign this contract and his rights thereunder to a corporation to be formed by him and his associates under and pursuant to the laws of Texas, which corporation shall be legally capable of operating under this contract to the full extent that said party and his associates are required to operate under this contract. Said assignment shall provide that the said proposed company shall, from and after the date thereof in all respects assume and be bound by all the unfilled duties, obligations, covenants and agreements of the said party and his associates, with the same force and effect as if when this contract was made the said company to be formed had legally been in existence, capable of making this contract and had made and entered into the same with the party of the first part in place and stead of the party of the second part. The said company to be formed shall then accept said assignment subject to all its conditions in due form of law, and serve upon the party of the first part a duly certified copy of said assignment and of the resolutions of its Board of Directors accepting the same, and from and after the date of such service, all rights and obligations of said party of the second part shall cease and such rights and obligations shall inure to and become obligatory on said company to be formed.

14. The party of the second part at the time of the execution of this contract, as an evidence of good faith, deposits in the National Bank of Commerce, of Amarillo, the sum of Five Thousand ($5,000.00) Dollars as security for the building of said pipe line as herein agreed. In case said line is built by first party or his assigns as herein

agreed, or in case said first two wells herein referred to or said three wells, if such third well be drilled, do not make a minimum production of said 25,000,000 cubic feet of gas per day, or in case said two wells do not make such production and second party promptly notifies first party of his intention not to drill said third well, then and in either event and on the happening thereof, said $5000.00 shall be forthwith returned to second party.

In case, however, said two wells or said three wells if the third well be drilled as herein provided, do make the minimum production of 25,000,000 cubic feet of gas per day as above provided and second party or his assigns do not build said pipe line or take said gas as herein provided, and promptly so notifies first party, then and in either event and upon the happening thereof, this contract shall become null and void and inasmuch as the damages sustained by first party by reason of the violation thereof by second party could not be readily ascertained and determined, it is mutually agreed that in either of said events, said sum of Five Thousand Dollars shall be paid over to first party as its liquidated and stipulated damages for breach of this contract and not as a penalty.

Executed in duplicate, either copy to be considered an original this 7th day of December, 1918.

AMARILLO OIL COMPANY,
By (Signed) M. C. NOBLES,
President.
Party of the first part.
(Signed) PERRY A. LITTLE.
Party of the second part.

EXhibit "E" (Continued).

Supplemental Contract.

WHEREAS, the undersigned Amarillo Oil Company and Perry A. Little, heretofore entered into their contract bearing date the 7th day of December, A. D. 1918, comprised of four divisions, with divisions IV subdivided into fourteen subdivisions or paragraphs, providing for the production and sale by the Amarillo Oil Company to said

Little (or a pipe line company he might organize) gas to be obtained from certain lands in Potter and adjoining counties then being held by the said Oil Company under lease, as will appear from said contract which is hereby referred to and supplemented; and,

WHEREAS, the undersigned, Albert R. Jones, E. W. Goebel and Frank E. Jones, Administrator, have acquired and claim an undivided one-half interest of the interest of the Amarillo Oil Company in and to said contract; and,

WHEREAS, said original contract upon the part of Perry A. Little was made in contemplation of organizing the undersigned Panhandle Pipe Line Company, which company has been subquently organized and has acquired all the interest of the said Perry A. Little in and to such original contract; and,

WHEREAS, Paragraph 7 of Division IV of said original contract provides, "That first party agrees to accept the reading of meters in the City of Amarillo as a basis for a monthly settlement; but it reserves to itself the right or option of installing meters in the field at any time after one year from the time gas is first received into such pipe line; and should first party decide to install meters in the field, then the basis of measurement will be agreed upon mutually"; and,

WHEREAS, Paragraph 12 of Division IV provides that "The first party is to reserve the right to the gasoline which may be derived from such natural gas and, also reserve the right to sell gas for the consumption of the field for drilling purposes, and to other parties, but it agrees, however, that it will first deliver gas to the pipe line company at the wells to supply the needs of Amarillo and vicinity, except that it reserves the right of fuel in all events to drill other wells," and,

WHEREAS, it is desired to supplement the original con-

tract in reference to said Paragraphs 7 and 12 of Division IV:

NOW, THEREFORE, in consideration of the mutual promises and agreements of the respective parties hereto, it is mutually agreed by between and among the undersigned parties interested as aforesaid, as follows, to-wit:

1. That, since the first party has elected to install meters in the field, the measurement of the gas shall be computed on the basis of two (2) pounds and in accordance with the Foxboro tables and methods of computation.

2. The right is mutually granted by each to the other parties, at all reasonable times and under reasonable conditions, to inspect and compare the meters and the meter readings, in the field on the pipe line, at the city limits of Amarillo, and in the city itself.

3. Either party shall have the right to test the meter in the field but neither party shall test or adjust such meters in the absence of a representative of the others, and the parties agree to have such representative present, on reasonable request, at any and all times; and for this purpose it is understood that a representative of the Amarillo Oil Company will be considered as a representative of the Jones interests, and a representative of the Jones interests will be considered as a representative of the Amarillo Oil Company.

4. In case a meter be found inaccurate, defective, or ceases to register for any period, the same shall be repaired or replaced and the quantity of gas delivered during such period shall be estimated as accurately as possible by the average of other meter or meters and by the amount of gas delivered for the same service during a preceding or succeeding corresponding period of time and under the same conditions. In the event of a disagreement between the parties hereto as to the accuracy of a meter, the said disagreement shall be referred to the Foxboro Meter Company for final adjustment.

5. Paragraph 12 of Division IV of said contract shall be and is hereby amended so as to read as follows:

First party is to reserve the right to sell gas for the consumption of the field for drilling purposes, and to other parties, but it agrees, however, that it will first deliver gas to the pipe line company at the wells to supply the needs of Amarillo and vicinity, except that it reserves the fuel right in all events to drill other wells, and also reserves the right to the gasoline which may be derived from the natural gas delivered under the terms of this contract, and shall have the privilege of erecting the necessary plant and equipment for the purpose of extracting the acid gasoline at any point along the line of second party, and of diverting said gas thru such plant or plants, subject, however, to the following terms and limitation, that is to say:

(a) In case a gasoline extracting plant is located along the main line at any point between the field and the city limits, all gas that passes thru such plant is to be metered by the same type of meter and computed at the same temperature, barometer and pressure base into and out of said extracting plant, at the expense of first party, and any loss or shrinkage in volume is to be deducted from the reading shown by the field meters.

(b) All expenses, charges and damages sustained by the Pipe Line Company arising out of and caused by the fact that a gasoline plant is installed and operated on the pipe line, not including losses in sales of gas by said company are to be paid to the Pipe Line Company by the first party.

(c) The Panhandle Pipe Line Company shall be the sole judge as to whether or not gas is being delivered into its mains at a sufficient pressure to meet the full demands of its business in Amarillo and vicinity, and can at any time demand that the pressure be raised on the discharge side of the gasoline extraction plant sufficient to supply such demands and second party agrees to notify first party promptly when it is possible to reduce the pressure on the discharge side of the extraction plant, and the second party

will not make demands for pressure changes unless it is compelled to do so by the actual demands of its markets but at no time can the Pipe Line Company demand a greater pressure on the discharge side than it is carrying on the inlet side.

(d) It is the intention of the first party to at no time interfere with the delivery of sufficient gas to supply the entire needs of the second party, and it is the intention of the second party to at all times aid the first party by allowing them to reduce the pressure as much as is necessary so long as it does not interfere with the delivery of gas in the city of Amarillo and vicinity in accordance with its franchise, and should the first party at any time feel that the second party was acting arbitrary or unreasonable in their demands for pressure the first party shall have the right to demand that the pressure requirements be submitted to a committee of three for arbitration, one committeeman to be selected by the party of the first part and one by the party of the second part, and the two so selected are to select the third member of the committee.

(e) If such extraction plant be located on the Pipe Line Company's pipe line between the meters thru which it receives gas in the field and the city limits, then first party shall pay to the second party for all gas consumed as fuel to operate the plant, and such gas so consumed must be metered separately and be paid for by the first party at the legal and regular rate charged by the Amarillo Gas Company in Amarillo and vicinity.

(f) In the event the first party, at any time, fails to furnish the Pipe Line Company a sufficient supply of gas, so that the Pipe Line Company does buy gas from others under the provisions of the original contract, and the pipe line connections and location of gasoline extracting plant are such as to pass such gas thru the extracting plant, then the Oil Company shall pay the pipe line company, at the prevailing market price, for such proportion of the total product of such plant as the gas it furnishes bears to the entire amount of gas passing thru the plant.

and in accordance with the relative proportion of the gasoline content of the respective gases, less a reasonable charge for extracting and handling.

(g) At no time will the Pipe Line Company be required to raise the pressure on their line on account of the extracting plant or other plants, or be required to carry more than they see fit in the natural operations of their business, and such pressure shall not be interrupted by the gas extracting plant in such way and manner as to interrupt in the supplying of gas by the Panhandle Pipe Line Company to the Amarillo Gas Company and its patrons and consumers in Amarillo and vicinity.

(h) All gas shall be delivered from the extracting plant as free from injurious extraneous matter as same was received.

(i) In as much as actual practice has demonstrated, that a portion of the gasoline content together with moisture clogs and prevents a free flow of gas through field and main lines, it is here agreed that the first party has the option to eliminate a portion of the gasoline and moisture at or near the wells, sufficient to make safe and practical transportation of the gas. However, should the first party refuse or neglect so to do by August 1st, 1922, then the second party shall have the right to install necessary drip tanks, without absorbent materials, to extract such portion of gasoline and moisture, but only to the extent of rendering the gas suitable for efficient transportation and should the drips fail to remove sufficient gasoline and moisture then another method of removing same shall be mutually agreed upon and the first party reserves the right to themselves at any time and all times to take over the problem of extracting the gasoline and moisture at or near the wells, but at any time thereafter that the first party refuse or neglect so to do by August 1st, 1922, moisture to render the gas suitable for efficient transportation the second party shall again have the right to extract such portion of gasoline and moisture, but only to the saved at any time by the second party shall be its property.

In witness whereof, the parties have caused these presents to be executed, and execute the same as of date the 13th day of March, A. D. 1922.

Attest:
(Signed) J. M. Neely
Secretary

Amarillo Oil Company,
(Signed) M. C. Nobles
President
(Signed) E. W. Goebel
(Signed) Frank E. Jones Administrator
(Signed) Albert R. Jones
Their Agent and Attorney-in-fact
(Signed) Albert R. Jones
Panhandle Pipe Line Company
(Signed) Perry A. Little
President

Attest:
(Signed) T. Lorin Driscoel
Secretary.

* * * * *

Exhibit "E" (Continued).

Supplemental Contract and Agreement.

This Contract and Agreement, made and entered into on this 27th day of November, 1926, by and between the Amarillo Oil Company, a private corporation of Amarillo, Texas, on the one part, and the Panhandle Pipe Line Company, on the other part,

Witnesseth:

Whereas, on the 7th day of December, 1918, a certain contract was entered into by and between the Amarillo Oil Company as party of the first part, and Perry A. Little, party of the second part, which said contract was in the respects indicated therein amended and changed by a Supplemental Contract between the Amarillo Oil Company, E. W. Goebel, Frank M. Jones, Administrator, and Albert R. Jones, and the Panhandle Pipe Line Company, of date March 13, 1922, to which said contracts reference is hereby made, and

WHEREAS, on the 23rd day of November, 1926, in an action instituted in the District Court of Williamson County, Texas, by the State of Texas against the Amarillo Oil Company, the Panhandle Pipe Line Company and Perry A. Little, it was adjudged and decreed that said aforementioned contract of date December 7th, 1918, and especially paragraph eight (8) thereof, violated the provision of the Anti-Trust Laws of the State of Texas, and it was further adjudged and decreed by said Court that further operations under said contract and especially paragraph eight (8) thereof, be perpetually enjoined and restrained, and

WHEREAS, in harmony with said judgment and decree, the Panhandle Pipe Line Company, through its proper officials, and the Amarillo Oil Company, through its proper officials, abrogated and terminated said contract in so far as the same was a violation or found to be a violation of the Anti-Trust Laws of the State of Texas, and the officials of said respective Companies were authorized and directed to inaugurate steps for the purpose of entering into a new contract for the sale and supply of gas which would be in harmony with the Anti-Trust Laws of the State of Texas and not in violation thereof.

NOW, THEREFORE, it is agreed by and between the parties of the first and second part, as follows:

1. That all the provisions of said contracts of date December 7th, 1918, and of date March 13th, 1922, found by the Court to be violative of the Anti-Trust Laws of the State of Texas, or that are violations of the Anti-Trust Laws of the State of Texas, be and the same are hereby expressly abrogated, annulled and discharged, and especially paragraph eight (8) of the contract of December 7th, 1918, is hereby expressly abrogated, annulled and discharged.

2. It is further agreed by and between the parties hereto that said contract of date December 7th, 1918, and the contract supplemental thereto of date March 13, 1922, shall in all other respects continue in full force and effect, according to the terms thereof; provided, however, that nothing herein or in said contracts contained shall be con-

strued as requiring the Amarillo Oil Company to furnish gas to the Panhandle Pipe Line Company, or its successors or assigns, exclusively or to the exclusion of others, or as requiring the Panhandle Pipe Line Company, its successors or assigns, to purchase exclusively or to the exclusion of others, from the Amarillo Oil Company, its successors or assigns, its requirements of gas for the city of Amarillo and vicinity.

That otherwise, and in all other respects, said contracts above referred to shall be and the same are hereby extended and continued in full force and effect, as between the parties hereto.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their respective officers thereunto duly authorized, and their respective corporate seals affixed, the day and year first above written.

AMARILLO OIL COMPANY
By N. K. MOODY
Its President
Party of the First Part

Attest:
A. B. HOOKINS
Secretary.
(SEAL)

PANHANDLE PIPE LINE COMPANY
By H. A. MEYER
Its Vice President
Party of the Second Part.

Attest:
CHAS. H. OLES
Secretary.
(SEAL)

Supplement No. 1 to Rate Schedule FPC No. 1.

This Agreement, made and entered into this First day of October 1929, by and between CANADIAN RIVER GAS COMPANY, a corporation organized and existing under the laws of the State of Delaware (hereinafter called "SELLER"), party of the first part, and COLORADO INTERSTATE GAS

COMPANY, likewise a corporation organized and existing under the laws of the State of Delaware (hereinafter called "BUYER") party of the second part;

WHEREAS, the parties hereto heretofore made and entered into a certain contract bearing date the third day of January 1928 whereby Seller agreed to sell and deliver and Buyer agreed to purchase and receive natural gas in the amounts, for the prices and under the terms and conditions in said contract set forth; and

WHEREAS, it is to the mutual advantage of the parties hereto to amend said contract of January 3rd, 1928 in the manner and to the extent hereinafter provided;

NOW, THEREFORE, THIS AGREEMENT WITNESSETH: That the parties hereto, in consideration of the covenants and promises hereinafter expressed and of the sum of One Dollar ($1.00) in hand paid by each to the other, the receipt of which is hereby acknowledged, have mutually covenanted and agreed and do hereby mutually covenant and agree as follows:

Article 4.

That the paragraph marked FIFTH of the agreement between the parties made and entered into on the third day of January 1928 be and the same is hereby amended so that the said paragraph FIFTH shall read and provide as follows:

"FIFTH: The natural gas delivered by Seller to Buyer hereunder shall be natural gas as produced in its natural state from the wells, except that Seller may extract or permit the extraction of natural gasoline from its natural gas and may extract or permit the extraction of any helium content of the natural gas, but Seller shall not subject its natural gas nor permit its natural gas to be subjected to any treatment in the extraction of natural gas gasoline or otherwise which shall change the chemical composition of any of its component parts or which will dilute it. If the extraction of natural gasoline and or the extraction of any helium content from the natural gas delivered hereunder shall cause a reduction in the gross heating

value of such natural gas, then at the end of each calendar month Seller shall compute the value of the loss in gross heating value of the natural gas delivered hereunder because of the extraction of natural gasoline and/or helium content, assuming for the purpose of such computation that the value of the natural gas delivered hereunder is the average price per thousand cubic feet received by Seller for natural gas sold during that month. Seller shall afford Buyer an opportunity to witness the tests to determine the gross heating value of the natural gas before and after the extraction of natural gasoline and any helium content, and if the tests are not satisfactory to Buyer new tests shall be made by a disinterested person satisfactory to both Buyer and Seller and the result of such tests shall govern. Seller shall advise Buyer of the value of the loss in gross heating value computed as herein provided and, on or before the twenty-fifth day of the month, Seller shall pay to Buyer the amount shown by said statement to be the value of the reduction in gross heating value lost because of the extraction from the natural gas delivered hereunder of natural gasoline and/or any helium content. The natural gas delivered by Seller to Buyer shall be only natural gas which is commercial in quality and condition, and should any of the natural gas produced by Seller or any of the natural gas purchased by Seller from other producers contain sulphur in quantities which render it unsatisfactory for domestic use or unfit for commercial or industrial use, Seller shall cleanse such natural gas or cause it to be cleansed of its sulphur content before delivering it to Buyer. If the natural gas supplied by Seller to Buyer contains a gross heating value of less than eight hundred (800) B.t.u.'s per cubic foot, Buyer, on giving ten (10) days' written notice to Seller, shall have the right to suspend taking natural gas hereunder until such time as Seller is prepared to supply Buyer with natural gas containing a gross heating value of not less than eight hundred (800) B.t.u.'s per cubic foot."

Article II.

The contract between the parties hereto made and executed the third day of January 1928 shall continue in full force and effect except as herein provided, and this amendment shall be effective as of the third day of January 1928.

IN WITNESS WHEREOF, each of the parties hereto have caused this agreement to be duly signed by its respective officers the day and year first above written.

CANADIAN RIVER GAS COMPANY
By (Sgd) W. S. FITZPATRICK (SEAL)
President

Attest:
(Sgd) VICTOR A. IOBE
Secretary

COLORADO INTERSTATE GAS COMPANY
By (Sgd) CHRISTY PAYNE (SEAL)
President

Attest:
(Sgd) E. E. DUVALL
Secretary

Supplement No. 3 to Rate Schedule FPC No. 1.

Canadian River Gas Company and Colorado Interstate Gas Company. 6-1-38.. Supplemental Agreement.

Supplemental Agreement made and entered into June 1, 1938, by and between Canadian River Gas Company, a Delaware corporation, (hereinafter called "Seller"), the first party, and Colorado Interstate Gas Company, a Delaware corporation, (hereinafter called "Buyer"), the second party.

In consideration of the mutual covenants herein contained, the agreement dated January 3, 1928 between the parties hereto as amended by Supplemental Agreement dated October 1, 1929 (hereinafter referred to as the 1928 agreement) relating to the sale by Seller to Buyer of natural gas to supply Buyer's customers in the State of Colorado and elsewhere, be and the same hereby is modified and amended as follows:

1. The third and fourth sentences of Article Third of the 1928 agreement are amended to read as follows:

"All amounts so loaned by Buyer to Seller during the first ten (10) years after the beginning of the calendar month (agreed to be June 1928) in which Buyer began making deliveries of natural gas purchased from Seller to the Colorado Fuel & Iron Company or to the Public Service Company of Colorado, except such part of the amounts loaned as may be used by Seller in drilling wells for natural gas which do not result in procuring natural gas in commercial quantities, are to be repaid by Seller to Buyer in one hundred twenty (120) equal monthly installments, and Seller shall pay semi-annually on the first day of January and the first day of July in each year interest at six percent (6%) per annum on any unpaid balances. All amounts so loaned by Buyer to Seller between June 1, 1938 and June 1, 1948 are to be repaid by Seller to Buyer in such number of equal monthly installments as there may be remaining full months before June 1, 1948, and Seller shall pay semi-annually on the first days of January and July in each year, interest at six percent (6%) per annum on any unpaid balance; and in the event of the extension of this agreement beyond the original twenty (20) year period as provided in Article Sixteenth hereof, all amounts so loaned by Buyer to Seller after June 1, 1948 are to be repaid by Seller to Buyer, in such number of equal monthly installments as there may be remaining full months before the extended termination date, and Seller shall pay semi-annually, on the first days of January and July in each year, interest at six percent (6%) per annum on any unpaid balance, but if no definite extended date of termination is fixed, then all amounts so loaned by Buyer to Seller after June 1, 1948 are to be repaid by Seller to Buyer within one (1) year from the date such loan is made, together with interest thereon at six percent (6%) per annum. Such part of the amounts so loaned by Buyer to Seller at any time after June 1, 1938, as may be used by Seller in drilling wells for natural gas in commercial quantities is to be repaid by Seller to

Buyer within one (1) year from the day such loan is made, together with interest thereon at six percent (6%) per annum."

2. Article Seventh of the 1928 agreement is amended by the addition of the following:

"In the event of the extension of this agreement beyond the original twenty (20) year period as provided in Article Sixteenth hereof, the amount of each such loan made after said twenty (20) year period is to be repaid by Seller to Buyer in such number of equal monthly installments as there may be remaining full months before the extended termination date and Seller shall pay semi-annually on the first days of January and July in each year, interest at the rate of six percent (6%) per annum on any unpaid balance, but if no definite extended date of termination is fixed, then the amount of each such loan made after said twenty (20) year period is to be repaid by Seller to Buyer within one (1) year from the day such loan is made, together with interest thereon at six percent (6%) per annum."

3. Article Tenth, sub-paragraph (1) of the 1928 agreement is amended to read as follows:

"(1) Seller's entire cost, including natural gas used for fuel and charged at the average price being paid by Seller for natural gas purchased from other producers, or, if Seller is not purchasing natural gas from other producers, then at the fair market value thereof at the mouth of the well in the field, during the year ending with the day preceding the beginning of such three (3) months' period, of drilling wells for natural gas which do not result in procuring natural gas in commercial quantities."

4. Article Tenth, sub-paragraph (3) of the 1928 agreement is amended to read as follows:

"(3) Such amount as may be necessary during the year ending with the day preceding the beginning of such three (3) months' period to amortize, on the basis hereinafter described, Seller's entire cost, including natural gas used for fuel and charged at the price provided in sub-paragraph (1) of this Article Tenth, after June 1, 1938, of drilling wells for natural gas which result in procuring natural gas in commercial quantities. Amortization shall be on the basis of such number of equal monthly installments as there may be remaining full months before June 1, 1948; and in the event of the extension of this agreement beyond the original twenty (20) year period as provided in Article Sixteenth hereof, amortization shall be on the basis of such number of equal monthly installments as there may be remaining full months before the extended termination date, but if no definite extended date or termination is fixed, then in determining the price of gas there shall be added under this sub-paragraph (3) Seller's entire cost, including natural gas used for fuel and charged at the price provided in sub-paragraph (1) of this Article Tenth, during the year ending with the day preceding the beginning of such three (3) months' period, of drilling said wells."

5. Article Tenth, sub-paragraph (6) of the 1928 agreement is amended to read as follows:

"(6) Such amount as may be necessary, during the year ending with the day preceding the beginning of such three (3) months' period, to amortize, on the basis hereinafter described, Seller's entire cost after June 1, 1938 of acquiring renewals of existing leases and of acquiring new leases, contracts and other rights to produce natural gas. Amortization shall be on the basis of such number of equal monthly installments as there may be remaining full months before June 1, 1948; and in the event of the extension of this agreement beyond the original twenty (20) year period as provided in Article Sixteenth hereof, amortization shall be on the basis of such number of equal monthly installments as there may be remaining full months be-

fore the extended termination date, but if no definite extended date of termination is fixed, then in determining the price of gas there shall be added under this sub-paragraph (6) Seller's entire cost of acquiring renewals of existing leases and of acquiring new leases, contracts and other rights to produce natural gas, during the year ending with the day preceding the beginning of such three (3) months' period."

6. The natural gas which Buyer requires for delivery to Natural Gas Pipeline Company of America under the terms and provisions of the agreement between Buyer and said Natural Gas Pipeline Company of America dated October 15, 1931, as modified from time to time, is a part of the gas sold and delivered under the terms of said 1928 agreement. Such gas shall be delivered by Seller to Buyer into the pipe line of Natural Gas Pipeline Company of America at the junction between the pipe line owned by Texoma Natural Gas Company and Natural Gas Pipeline Company of America near Gray, Beaver County, Oklahoma. Seller will continue in full force and effect the Lease and Operating Agreement dated October 15, 1931 between Seller and Texoma Natural Gas Company, and the agreement of the same date between the same parties relating to the operation of the Gasoline Plant at Fritch, Texas, and will fully perform all the terms and provisions of each thereof in order to enable Seller to make delivery of gas to Buyer at Gray Junction, Oklahoma.

In determining the cost of all gas sold by Seller to Buyer under said 1928 agreement, the amounts paid by Seller to Texoma Natural Gas Company under said Lease and Operating Agreement dated October 15, 1931 shall be included in Article Tenth, sub-paragraph 13, sub-paragraph 6 (a) or sub-paragraph 6 (b), whichever is applicable at the time.

7. The agreement between the parties hereto made and executed the 3rd day of January, 1928, as amended by Supplemental Agreement dated October 1, 1929, shall continue in full force and effect except as herein provided, and

this Supplemental Agreement shall be effective as of June 1, 1938.

Done the day and year first above written.

CANADIAN RIVER GAS COMPANY
By P. C. SPENCER,
Vice President.

Attest:
By GEO. BAIRD,
(Seal) Secretary.

COLORADO INTERSTATE GAS COMPANY
By F. H. LERCH, JR.,
Vice President.

Attest:
By E. E. DUVALL,
(Seal) Secretary.

This Agreement, made and entered into as of the first day of July, 1931, by and between Canadian River Gas Company, a corporation organized and existing under the laws of the State of Delaware, party of the first part, hereinafter called "Seller", and Amarillo Oil Company, a corporation organized and existing under the laws of the State of Texas, party of the second part, hereinafter called "Buyer":

Whereas, heretofore and under date of the 3rd day of January, 1928, the parties hereto entered into a certain agreement wherein and whereby Seller agreed to sell and deliver and Buyer agreed to purchase and receive natural gas in the amount, under the terms and conditions and for the price therein stated, which natural gas is to be used by Buyer in and about the City of Amarillo, Texas; and

Whereas, it is to the mutual advantage of the parties to modify and change some of the provisions of this agreement:

Now, Therefore, the parties hereto, in consideration of the covenants and payments herein set forth and of the sum of One Dollar ($1.00) in hand paid by each to the

other, receipt of which is hereby acknowledged, have mutually covenanted and agreed and do hereby mutually covenant and agree as follows:

1. For each one thousand (1,000) cubic feet of natural gas delivered by Seller to Buyer on and after July 1, 1931, under and pursuant to sub-paragraphs (a) and (c) of Article 1 of the agreement between Buyer and Seller made and entered into the 3rd day of January, 1928, and for the purposes expressed in said sub-paragraphs, Buyer shall pay to Seller four and one-half cents (4½c) instead of the price provided in said agreement. Buyer shall continue paying four and one-half cents (4½c) per thousand (1,000) cubic feet for the gas delivered under and pursuant to and for the purposes specified in said sub-paragraphs (a) and (c) of Article 1 of said agreement until the total amount of such payments shall equal the total amount of the price for such gas when computed in the manner provided in said agreement between the parties made and entered into the 3rd day of January, 1928, unaffected by this amendment. Thereafter, Buyer shall pay to Seller for all gas delivered under and pursuant to said agreement the price specified therein as though this amendatory agreement had not been made.

For all natural gas delivered at any time by Seller to Buyer pursuant to sub-paragraph (b) of Article 1 of the agreement between Seller and Buyer made and entered into the 3rd day of January, 1928, and for any other gas delivered under said agreement, excepting only gas delivered under and pursuant to and for the purposes specified in sub-paragraphs (a) and (c) of said Article 1 of said agreement, Buyer shall pay to Seller the price or prices specified in said agreement made and entered into the 3rd day of January, 1928, all as though this amendatory agreement had not been made.

2. The agreement between the parties hereto dated the 3rd day of January, 1928, shall continue in full force and effect except as herein modified.

In Witness Whereof, the parties hereto have caused these

presents to be duly signed and executed, the day and year first above written.

CANADIAN RIVER GAS COMPANY
By P. C. SPENCER,
Vice President.

Attest:
A. W. HEINEMANN,
(Seal) Secretary.

AMARILLO OIL COMPANY
By N. K. MOODY, President.

Attest:
A. W. HEINEMANN,
(Seal) Secretary.

Agreement Between Canadian River Gas Company and Amarillo Oil Company. Dated: June 1, 1938.

Supplemental Agreement made and entered into June 1, 1938, by and between Canadian River Gas Company, a Delaware corporation, (hereinafter called "Seller"), the first party, and Amarillo Oil Company, a Texas corporation (hereinafter called "Buyer"), the second party.

In consideration of the mutual covenants herein contained, the agreement dated January 3, 1928 between the parties hereto as amended by Supplemental Agreement dated July 1, 1931 (hereinafter referred to as the 1928 agreement) relating to the sale by Seller to Buyer of natural gas for resale to the Panhandle Pipe Line Company for supply in Amarillo, Texas, and its environs, and for sale to the United States Zinc Company near Amarillo, Texas, be and the same hereby is modified and amended as follows:

1. Article VI, sub-paragraph (1) of the 1928 agreement is amended to read as follows:

> "(1) Seller's entire cost, including natural gas used for fuel and charged at the average price being paid by Seller for natural gas purchased from other producers, or, if Seller is not purchasing natural gas from other producers, then at the fair market value thereof at the mouth of the well in the field, during the

year ending with the day preceding the beginning of such three (3) months' period, of drilling wells for natural gas which do not result in procuring natural gas in commercial quantities."

2. Article VI, sub-paragraph (3) of the 1928 agreement is amended to read as follows:

"(3) Such amount as may be necessary during the year ending with the day preceding the beginning of such three (3) months' period to amortize, on the basis hereinafter described, Seller's entire cost, including natural gas used for fuel and charged at the price provided in sub-paragraph (1) of this Article VI, after June 1, 1938, of drilling wells for natural gas which result in procuring natural gas in commercial quantities. Amortization shall be on the basis of such number of equal monthly installments as there may be remaining full months before June 1, 1948; and in the event of the extension of this agreement beyond the original twenty (20) year period as provided in Article XIII hereof, amortization shall be on the basis of such number of equal monthly installments as there may be remaining full months before the extended termination date, but if no definite extended date of termination is fixed, then in determining the price of gas there shall be added under this sub-paragraph (3) Seller's entire cost, including natural gas used for fuel and charged at the price provided in sub-paragraph (1) of this Article VI, during the year ending with the day preceding the beginning of such three (3) months' period, of drilling said wells."

3. Article VI, sub-paragraph (6) of the 1928 agreement is amended to read as follows:

"(6) Such amount as may be necessary, during the year ending with the day preceding the beginning of such three (3) months' period to amortize, on the basis hereinafter described, Seller's entire cost after June 1, 1938 of acquiring renewals of existing leases and of acquiring new leases, contracts and other rights to produce natural gas. Amortization shall be on the basis of such number of equal monthly installments as

there may be remaining full months before June 1, 1948; and in the event of the extension of this agreement beyond the original twenty (20) year period as provided in Article XIII hereof, amortization shall be on the basis of such number of equal monthly installments as there may be remaining full months before the extended termination date, but if no definite extended date of termination is fixed, then in determining the price of gas there shall be added under this sub-paragraph (6) Seller's entire cost of acquiring renewals of existing leases and of acquiring new leases, contracts and other rights to produce natural gas, during the year ending with the day preceding the beginning of such three (3) months' period."

4. Wherever reference is made in Article VI, sub-paragraphs (9), (10) and (12), or elsewhere in this agreement, to the agreement dated January 3, 1928 between Seller and the Colorado Inferstate Gas Company, it shall be deemed to include the amendments and modifications of said agreement of January 3, 1928 as embodied in Supplemental Agreement dated October 1, 1929 and Supplemental Agreement dated June 1, 1938 between Seller and Colorado Interstate Gas Company.

5. The agreement between the parties hereto made and executed the 3rd day of January, 1928 as amended by Supplemental Agreement dated July 1, 1931, shall continue in full force and effect except as herein provided and this Supplemental Agreement shall be effective as of June 1, 1938.

Done the day and year first above written.

CANADIAN RIVER GAS COMPANY
By P. C. SPENCER,
Vice President.

Attest:
By GEO. BAIRD,
(Seal) Secretary.

AMARILLO OIL COMPANY
By N. K. MOODY, President.

Attest:
By E. A. SICKELS,
(Seal) Asst. Secretary.

The undersigned hereby consents to and approves the above and foregoing Supplement to original agreement between the parties dated January 3, 1928.

COLORADO INTERSTATE GAS COMPANY
(Seal) By F. H. LERCH, JR., Vice President.

EXHIBIT NO. 6.

Commissioners
Clyde L. Seavey, Acting Chairman
Claude L. Draper
Basil Manly
John W. Scott

Address All Communications
to the Commission

Federal Power Commission
Washington

July 9, 1938.

Gentlemen: Enclosed are the following orders entered by the Commission on July 5, 1938, together with the documents prescribed by said orders:

Order No. 51—instituting an investigation of natural gas companies and directing the filing of a report;

Order No. 52—prescribing provisional rules of practice and regulations under the Natural Gas Act, with approved forms, effective July 11, 1938;

Order No. 53—designating the time for filing schedules of rates and charges under section 4 (c) of the Natural Gas Act and certain reports in connection therewith.

Enclosed also is a copy of the Natural Gas Act, approved June 21, 1938.

It is requested that you supply the information sought under Order No. 51 as soon as possible, but not later than August 15, 1938. The purpose of the Commission in requiring the filing of this report is to obtain basic facts concerning the ownership of facilities and the operations of all companies engaged in the business of transporting or selling natural gas for resale. Compliance with this order

will not be construed as a waiver by any reporting company of its right to contest the jurisdiction of this Commission in any proceeding instituted under the Natural Gas Act affecting such company.

The rules and regulations prescribed by Order No. 52 are applicable to those engaged in the transportation of natural gas in interstate commerce or the sale of natural gas in interstate commerce for resale.

The schedules called for by Order No. 53 are those which are or will be in effect upon the date that filing is made, pursuant to the said Order. As will be observed from its terms, Order No. 53 is applicable only to rates and charges made, demanded or received by any natural gas company for or in connection with the transporation of natural gas in interstate commerce or the sale of natural gas in interstate commerce for resale.

Very truly yours,

LEON M. FUQUAY, Secretary.

Enclosures (4)

United States of America Federal Power Commission.

July 5, 1938

Order No. 53

Designating the Time for Filing of Schedules of Rates and Charges Under Section 4 (c) of the Natural Gas Act and Certain Reports in Connection Therewith.

The Commission having under consideration the matter of the filing under Section 4 (c) of the Natural Gas Act of schedules showing all rates and charges for any transportation or sale of natural gas subject to the jurisdiction of the Commission, and the classifications, practices, and regulations affecting such rates and charges together with all contracts which in any manner affect or relate to such rates, charges, classifications and services, hereby orders that:

A. Each natural gas company shall file with the Commission, not later than the date hereinafter specified, schedules showing all rates and charges for, or in connection with any transportation or sale of natural gas subject to the jurisdiction of the Commission, and the classifications, practices, and regulations affecting such rates and charges, together with all contracts which in any manner affect or relate to such rates, charges, classifications and services, in accordance with Part 54 of Provisional Rules of Practice and Regulations under the Natural Gas Act, effective July 11, 1938, promulgated by Order No. 52, issued July 5, 1938.

B. If any agreement or practice pertaining to any such transportation or sale of natural gas is not in writing, the basic terms of such agreement or practice shall be reduced to writing, approved by the parties thereto, and filed with the Commission, as prescribed in paragraph "A" above.

C. The date not later than which schedules shall be filed relating to the transportation or sale of natural gas within the various States, as required by paragraph "A" above, shall be as follows:

1. August 22, 1938 for those schedules covering deliveries within the following States: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming.

2. August 29, 1938 for those schedules covering deliveries within the following States: Alabama, Arkansas, Illinois, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Nebraska, Tennessee, and Wisconsin.

3. September 6, 1938 for those schedules covering deliveries within the following States: Connecticut, Delaware, Florida, Georgia, Indiana, Maine, Massachusetts, Maryland, Michigan, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia, and West Virginia.

D. As to each rate in each instrument filed in accordance with paragraph "A" above, there shall be submitted to the Commission at the time of filing the instrument a report showing by months for a 12-month period ending July 1, 1938, the amount of natural gas transported or sold and the amount charged therefor under each rate in effect during the 12 months ended July 1, 1938, such report to be accompanied by a true copy of a monthly bill rendered thereunder.

LEON M. FUQUAY, Secretary.

By the Commission.

Colorado Interstate Gas Company
30 Rockefeller Plaza
New York

August 22, 1938.

Federal Power Commission,
Washington, D. C.

Dear Sirs: Pursuant to Order No. 53 issued by the Federal Power Commission on July 5, 1938 there are transmitted herewith the schedules of rates and charges of Colorado Interstate Gas Company, required to be filed by Section 4 (c) of the Natural Gas Act.

In filing these schedules, Colorado Interstate Gas Company does not act voluntarily but under duress, and is compelled to file the same by reason of the excessive penalties which would be incurred as a result of a failure to comply with the Act. Such filing is not to be construed as an admission by Colorado Interstate Gas Company that the rates and charges made under the contracts under which it sells natural gas are subject to governmental regulation, and makes reservation of and refuses to waive any constitutional or legal rights which it may have to contest the

authority of the Federal Power Commission to change any rate contained in any of said schedules.

The schedules filed herewith are:

Covering natural gas sold to

Public Service Company of Colorado, Denver, Colorado

The Pueblo Gas and Fuel Company, Pueblo, Colorado

Colorado-Wyoming Gas Company, Denver, Colorado

City of Colorado Springs, Colorado Springs, Colorado

Citizens Utilities Company, La Junta, Colorado

Arkansas Valley Natural Gas Company, Colorado Springs, Colorado

Natural Gas Pipeline Company of America, Chicago, Illinois

Very truly yours,

COLORADO INTERSTATE GAS COMPANY,
By F. H. LERCH, JR.,
Vice President.

The oil rights in the leaseholds described in said agreement of January 3, 1928, between Canadian River Gas Company and Colorado Interstate Gas Company contained in said Exhibit 16, on pages 68 to 90, both inclusive, the description of which leaseholds, by agreement of the parties hereto, has been omitted from this printed record, were owned and held by Parcomis Oil Company. The said Parcomis Oil Company was also the holder of the oil rights in the leaseholds held by Canadian at the time of the hearing herein.

Exhibit 17, 18 and 19 were additional contracts with Amarillo Oil Company covering *intrastate sales* of gas in Texas for Dalhart, Texline, Channing and Hartley, all Texas

municipalities lying in the Texas Panhandle area delimited in Article Third of Exhibit 16, set out above.

Originally Colorado Interstate negotiated and finally made a contract dated June 19, 1928, with Clayton Gas Company of Clayton, New Mexico, for the sale at the city gate of gas for distribution by the Clayton Gas Company in that municipality (Hill, Vol. II, p. 254). Later, and as of June 1, 1933, Colorado Interstate assigned its interest in that contract to Canadian. The original contract and the assignment and supplements thereto constitute Exhibit 20 herein. This contract was filed by Canadian with the Commission under the same reservation of right as mentioned hereinabove with respect to its other contracts.

This contract (Exhibit 20) now between Canadian and Clayton Gas Company, so far as it covers the heat and purity standards and the extraction of gasoline and helium, the methods of delivery metering and billing, and the priorities of domestic customers over industrial users and like matters, are normal and involve no issue in this case. Gas under this contract is delivered at a point "near the city line of Clayton" (Article Third); that is, after a haul over Canadian's line of eighty-six miles from the Bivins Station in the gas field (O'Connor, Ex. 47, p. 3). Accordingly, Article Fifth provides for a price of 30c per Mcf. for the gas delivered for resale to domestic consumers and a price of 20c per Mcf. for gas delivered for resale to industrial consumers and consumers other than domestic consumers and for "gas lost."

Article Fourteenth provides:

> "This contract shall continue for fifteen (15) years from the day the Vendor begins deliveries of natural gas hereunder. It is provided, however, that the gas is to be transmitted through Vendor's 22-inch main line presently under construction for the delivery of gas by Vendor to its markets in Denver, Pueblo and elsewhere, and that if the volume of gas available so declines that Vendor no longer maintains said main line, then Vendor may on one year's written notice to

Vendee, terminate this contract so far as it applies to Clayton and its environs, and on maturity of the notice discontinue deliveries of gas hereunder to said city."

By a series of letters which are included in Exhibit 20, the price of gas was temporarily reduced from time to time. Canadian, on February 21, 1940, in a letter to Clayton Gas Company, extended the term to June 23, 1948, to correspond to the termination date of its contract with Colorado Interstate. This letter agreement continued the reduced rates, namely 25c for gas delivered for resale to domestic consumers and 18c for gas delivered for resale to industrial consumers and consumers other than industrial consumers and for gas lost, to May 1, 1941, and thereafter, subject to cancellation on ninety days' written notice. In the event of such cancellation of such temporary rates, the original rates "shall be resumed." It was further provided in this letter that the provisions for the cancellation of the temporary rates and the resumption of the original rates would not apply to gas resold at Clayton for fuel in its municipal light plant.

The original contract for the purchase of gas from Colorado Interstate Gas Company by Clayton Gas Company was entered into on June 19, 1928 (Exhibit 20).

8. Gas Purchase and Sales Contracts of Colorado Interstate Gas Company.

The evidence of the negotiations between the project parties, Standard, Southwestern and Cities Service, leading up to the memorandum of stipulations of April 5, 1927 (Exhibit 1), and the conditions under which said project parties were willing to undertake the project, including the 40c gate rate, has been abstracted under title 2 supra. The evidence of the negotiations between Cities Service and its subsidiary, Public Service, and Standard and Southwestern on behalf of Colorado Interstate, leading up to the letter proposal of June 8, 1927 (Exhibit 4), wherein the sale of gas at the Denver gate, the Pueblo gate (and the Colorado Springs gate in case a contract could be made for that place) at 40c per Mcf. was confirmed, has been abstracted under Title 2 supra. Additional evidence on this point, including excerpts from Exhibit 249, Hancock's statement of the negotiations on the part of Cities Service, will be abstracted hereafter under "Cost of Contracts."

Colorado Interstate's contract with Canadian has just been abstracted under the head of Canadian's contracts and will not be here repeated.

Payne, Colorado Interstate's first president, testified:

> "During the entire period that I was associated with the management of Colorado Interstate, every contract was separately negotiated with the customer and in every instance the considerations peculiar to that customer's business were considered and the contract of sale made in recognition of those special problems."

(Vol. IV, pp. 514, 515).

After stating that Colorado Interstate was willing to bring the gas to Denver as a private venture, provided there was reasonable expectation that at the end of the twenty-year period it could recover back all of its investment with adequate earnings for the entire period (Vol. IV, p. 516), he stated:

> "The contracts for the sale of gas to Public Service Company and others were made upon this basis." (Vol. IV, p. 516).

"The contract with Public Service Company was finally executed in June, 1928, although dated as of January 3, 1928. At this time Colorado Interstate had not been engaged in the gas business and was under no obligation to enter or carry on that business except upon terms and conditions satisfactory to it." (Vol. IV, pp. 512, 513).

This contract with all amendments, is Exhibit 7-I herein.

Exhibit 7-I.

Federal Power Commission.

Rate Schedule F.P.C. No. 1, also Supplements and Exhibits.
Filed by Colorado Interstate Gas Company,
Colorado Springs, Colorado.

Covering Natural Gas Sold to

Public Service Company of Colorado, Denver, Colorado.

This schedule consists of agreement dated January 3, 1928, Supplemental Agreement dated July 10, 1929, Supplemental Letter dated February 11, 1933, Amendatory Agreement dated August 24, 1934, and Schedule of approved rate for special industrial gas service, Schedule of rate applicable to one customer for special industrial summer dump gas, Schedule of rate to Fitzsimons General Hospital for gas for domestic use, which provide for the sale to Public Service Company of Colorado of all the natural gas requisite to supply consumers in Denver, Colorado, and its environs, and for use in its own power plants, under the terms and conditions set forth therein.

This Agreement, made and entered into this third day of January, A. D. 1928, by and between COLORADO INTERSTATE GAS COMPANY, a corporation organized and existing under the laws of the State of Delaware, hereinafter called the VENDOR, party of the first part, and PUBLIC SERVICE COMPANY OF COLORADO, a Colorado corporation, hereinafter called the VENDEE, party of the second part;

WHEREAS, the Vendor desires to sell and deliver to the Vendee and the Vendee desires to purchase and receive from the Vendor natural gas as hereinafter provided; and

WHEREAS, the Vendor is about to expend sums in excess of Twenty Million Dollars ($20,000,000.) to prepare and equip itself to make deliveries of natural gas as hereinafter provided;

NOW, THEREFORE, THIS AGREEMENT WITNESSETH: That the parties hereto, in consideration of the covenants and payments herein set forth and of the sum of One Dollar ($1.00) in hand paid by each to the other, the receipt of which is hereby acknowledged, have mutually covenanted and agreed, and do hereby mutually covenant and agree as follows:

FIRST: The Vendor agrees to sell and deliver and the Vendee agrees to purchase, take and pay for:

(*a*) All of the natural gas requisite for the supply of the domestic consumers in the City of Denver, Colorado, and its environs now or hereafter connected to and served with gas from the pipe lines of the Vendee;

(*b*) Such amounts of natural gas as may be requisite to fulfill contracts made with the consent and approval of the Vendor by the Vendee for the sale of natural gas to consumers other than domestic consumers; and

(*c*) Such amounts of natural gas as the Vendee may desire for use in its power plant or plants, which amounts, if desired upon terms and conditions other than those applying to natural gas for domestic use hereunder, are deliverable only with the consent and approval of the Vendor;

provided, however, that the Vendor shall not be obligated to sell and deliver natural gas in excess of the amount it has currently available for delivery, as defined in Articles Tenth and Eleventh hereof.

SECOND: The Vendor agrees to construct and put into operation a pipe line of not less than twenty (20) inches outside diameter of pipe, extending from a site outside the City line of the City of Denver, Colorado, near where

Colorado Boulevard crosses Cherry Creek, which site shall hereafter be selected and purchased by the Vendor for a measuring station and junction with the City pipe line system of the Vendee, thence to a site near the Town of Clayton, Union County, New Mexico. Said site near Clayton, New Mexico, shall be selected and purchased by the Vendor as the location for a junction between the Vendor's pipe line and the pipe line of the Canadian River Gas Company, from which the Vendor receives natural gas for delivery hereunder and the Vendor agrees that it will not sell for consumption in Denver, Colorado, or in any place located in or abutting on the low or intermediate pressure distribution plant maintained by the Vendee at Denver, Colorado, any natural gas transported through said pipe line to any person, firm or corporation other than the Vendee.

THIRD: The Vendee agrees to convert its artificial gas distribution plant supplying the City of Denver, Colorado, and environs, into a natural gas distribution plant and to make such additions and changes as will insure, so far as the capacity of the distribution plant will do so, an adequate and uniform pressure of natural gas throughout in keeping with good practice in cities where natural gas is supplied for house heating, as well as other domestic purposes, and to so construct the converted plant that a pressure of forty (40) pounds gauge to the square inch at the point of delivery of natural gas by the Vendor hereunder will give uniform and adequate pressure throughout the Vendee's distribution plant. The Vendee shall construct pipes of adequate capacity to connect up its existing distribution plant with the pipe lines of the Vendor, and cooperate in order that the Vendor may install a connection of the Vendor's and Vendee's pipe lines, so that natural gas to be received from the Vendor may be conducted in and throughout the entire system of pipe lines to which any of the customers of the Vendee may be connected.

FOURTH: The place of delivery of the natural gas deliverable hereunder is at said metering and junction site (hereinafter called "CHERRY CREEK STATION") near the

City line, and the Vendor shall there furnish, install, operate and maintain at its own expense a regulating and measuring station, properly equipped with orifice meters and recording gauges or other type of meter or meters of standard style, as may be mutually agreed upon, the mesuremeants of which shall fix the total amount of natural gas delivered by the Vendor to the Vendee.

The measuring equipment so installed by the Vendor, together with any buildings erected by it for such equipment, shall be and remain its property. The Vendee shall have access to said metering equipment at all reasonable times but the reading, calibrating and adjusting thereof and changing of charts shall be done only by the employees or agents of the Vendor. Charts and records from such metering equipment shall remain the property of the Vendor. Upon request of the Vendee, the Vendor will submit to the Vendee records and charts from its metering equipment, together with calculations therefrom, for the Vendee's inspection and verification, subject to return by the Vendee, within ten (10) days after receipt thereof, after which return the charts and records shall be kept on file by the Vendor for the mutual use of both parties. At least twice each month, and on dates as near the first and sixteenth of the month as practicable, the Vendor shall calibrate its meter in the presence of representatives of the Vendee and the parties shall jointly observe any adjustments which are made in the meter should such adjustments be necessary, and, if the check meters hereinafter provided for have been installed, the same shall also be calibrated by the Vendee in the presence of representatives of the Vendor and any adjustments jointly observed should such adjustments be necessary. If either party at any time desires a test of any meter or if either party at any time observes a variation between the delivery meter and its check meter, if any such check meter is installed, it will promptly notify the other party and the parties will then cooperate to secure an immeditae calibration test and joint observation of any adjustments and the meter shall then be adjusted to accuracy and corrections jointly made for the monthly settlements. Each company shall give to the other company notice of the time of all tests of meters sufficiently in ad-

vance of the holding of the tests so that the other company may conveniently have its representatives present. If, upon any test, any metering equipment is found to be inaccurate by one per cent. (1%) or more, registrations thereof shall be corrected at the rate of such inaccuracy for any period which is definitely known and agreed upon, but in case the period is not definitely known and agreed upon, then for a period extending back one-half (½) of the time elapsed since the last date of calibration not exceeding, however, eight (8) days. Following any test, metering equipment found inaccurate shall immediately be restored as closely as possible to a condition of accuracy. If for any reason meters are out of service and/or out of repair so that the amount of natural gas delivered cannot be ascertained or computed from the reading thereof, the natural gas delivered through the period such meters are out of service and/or out of repair shall be estimated and agreed upon by the parties hereto upon the basis of the best data available, using the first of the following methods which is feasible:

(*a*) By correcting the error if the percentage of error is ascertainable by calibration, test or mathematical calculation.

(*b*) By using the registration of any check meter or meters if installed and accurately registering.

(*c*) By estimating the quantity of delivery by deliveries during preceding periods under similar conditions when the meter was registering accurately.

The unit of measurement for the natural gas deliverable under this agreement shall be one thousand (1,000) cubic feet of natural gas at a base temperature of sixty (60) degrees Fahrenheit and at a base pressure of eight (8) ounces gauge pressure above twelve and seven-tenths (12.7) pounds absolute atmospheric pressure and the readings and registrations of the metering equipment herein provided for shall be computed into such units. For the purpose of measurement, the natural gas deliverable hereunder shall be assumed to obey Boyle's Law and the average absolute atmospheric (barometric) pressure shall

be assumed to be twelve and seven-tenths (12.7) pounds to the square inch, irrespective of the actual elevation or location of the delivery point above sea level or of variations in such barometric pressure from time to time. If meters other than the orifice type are used, then in computing the readings and registrations of such metering equipment into the units above specified, the physical characteristics of the natural gas which affect such computations shall be given each their due consideration and the determination of such physical characteristics shall be made by standard apparatus and methods and at such time and places as, in accordance with good practice, may be agreed upon from time to time between the delivering company and the receiving company. For meters of the orifice type, the following factors shall be given due consideration, viz:

(*a*) The temperature of the natural gas flowing through the meter shall be obtained by the use of a recording thermometer so installed that it may properly record the temperature of the natural gas flowing through the meter. The average temperature recorded each twenty-four (24) hour day shall be used in computing measurements.

(*b*) The specific gravity of the natural gas shall be determined twice monthly by joint tests on days as near the first (1st) and sixteenth (16th) of the month as practicable or as much oftener as is found necessary in practice. The method of test used shall be by Edward's Balance or by such other method as shall be agreed upon by the parties. The regular test at the first (1st) of the month shall determine the specific gravity to be used in computations for the measurement of natural gas deliveries during the first fifteen (15) days of such calendar month or until changed by special test, the special test to be applicable from the day made and through the following days to and including the fifteenth (15th) day of such calendar month. The regular test made on the sixteenth (16th) of the month shall determine the specific gravity to be used in computations for the measurement of natural

gas deliveries in that part of such calendar month commencing with the sixteenth (16th) day and continuing until the end thereof or until changed by special test, the special test to be applicable from the day made through the remaining days in such calendar month.

The Vendee may at its option and at its cost and expense install and operate check metering equipment, but the metering equipment of the Vendor shall be used for determining the amounts of natural gas delivered under this agreement. The check metering equipment so installed by the Vendee, together with any buildings erected by it for such equipment, shall be and remain its property. Whenever the point of delivery as specified herein is on the premises of the Vendor, the Vendor grants to the Vendee the right of free ingress and egress to such metering equipment at all times for the purposes of installation, operation, repair and/or removal. The check metering equipment and the method of installation of the same shall be of such standard type for the measurement of natural gas as is approved by both companies, but the Vendee shall have the right to replace such equipment at any time with metering equipment of equal grade subject to the approval of the Vendor as to type and method of installation. In the event check metering equipment is installed by the Vendee, the Vendor shall have access to the same at all reasonable times but the reading, calibrating and adjusting thereof and the changing of charts shall be done only by employees or agents of the Vendee. Charts and records from said check metering equipment shall remain the property of the Vendee. Upon request of the Vendor, the Vendee will submit to the Vendor records and charts from said metering equipment, together with calculations therefrom for the Vendor's inspection and verification, subject to return by the Vendor within ten (10) days after receipt thereof.

The Vendor shall render to the Vendee, on or before the fifteenth (15th) day of each month, a statement of the amount of natural gas delivered to the Vendee during the calendar month immediately preceding and of the amount of payment or payments then due from the Vendee to the Vendor therefor at the special prices for natural gas used

or sold for industrial purposes and at the City gate price for the remainder of the natural gas. The statements of deliveries so furnished by the Vendor to the Vendee shall be conclusive upon the parties excepting as to the corrections and/or adjustments then pending, unless exceptions thereto in writing shall be made by the Vendee within ten (10) days after it shall receive such statement.

FIFTH: In order to keep account of the natural gas sold to the Vendee at the City gate, and natural gas sold or used for industrial purposes and paid for at the agreed industrial rate, the Vendee shall, on or before the fifth (5th) day of each calendar month render a statement to the Vendor showing separately the quantity of natural gas used by the Vendee in any of its power plants and the quantity consumed by each of the Vendee's industrial consumers and each of them at the industrial tariff, in the preceding calendar month. The quantities used by the Vendee in its power plants and the quantities consumed by the Vendee's industrial consumers each month shall be paid for by the Vendee to the Vendor at the agreed industrial rates hereinafter set forth and on the basis of measurement applied by the Vendee to such industrial consumers; such quantities, however, for the purpose of ascertaining the volume of natural gas delivered for domestic purposes in each calendar month, shall be computed at a pressure of eight (8) ounces above twelve and seven tenths (12.7) pounds average absolute atmospheric (or barometric) pressure to the square inch, and upon such basis shall be deducted by the Vendor from the total amount of natural gas registered in such calendar month by the Vendor's Cherry Creek Station meter or meters and the remainder shall be considered the amount of natural gas to be paid for to the Vendor at the City gate price hereinafter set forth. In these measurements, it is agreed that no allowance shall be made for leakage or for failure of the Vendee to collect from any of its consumers, or for the Vendee's allowances to consumers because of defective consumers' meters or meter readings, it being the intention of the parties hereto that all natural gas delivered by the Vendor to the Vendee and measured at Cherry Creek Station shall be paid for by the Vendee to the Vendor as above stipu-

lated. The Vendee shall read all meters through which it measures natural gas used or sold for industrial purposes, as near the end of each calendar month as is practicable, and the Vendor's Cherry Creek Station meter or meters shall also be read by the Vendor at the end of each calendar month.

SIXTH: The prices to be paid by the Vendee to the Vendor for natural gas hereunder shall be as follows:

(*a*) During the entire period of this contract, the City gate price which the Vendee shall pay the Vendor for natural gas purchased and taken shall be forty cents (40c) per thousand cubic feet, except as provided in sub-paragraphs (*b*) and (*c*) of this Article Sixth.

(*b*) For natural gas purchased by the Vendee from the Vendor for resale under commercial or industrial contracts, which contracts shall have been submitted to and approved by the Vendor, the price payable to the Vendor shall be eighty-five per cent (85%) of the price chargeable by the Vendee to such commercial or industrial consumers under such approved contracts, provided, however, that the price to be paid by the Vendee to the Vendor shall not be more than forty cents (40c) per thousand cubic feet.

(*c*) For natural gas purchased by the Vendee from the Vendor for use in any of its power plant or plants, the price payable to the Vendor shall be eighty-five percent (85%) of the same price or scale of prices at which the Vendee is selling, under contracts approved by the Vendor, natural gas to an industrial consumer using similar quantities unless the parties may agree from time to time that some other price shall apply.

SEVENTH: The Vendee agrees to pay the Vendor at its office in Colorado Springs, Colorado, on or before the twentieth (20th) of the month, for said natural gas deliveries of the preceding month according to the natural gas measurements and computations and at the prices hereinbefore provided for and billed on said monthly statement. Should the Vendee fail to pay any amount due from it to

the other party when such amount is due, interest thereon shall accrue at six per cent (6%) per annum from the date when such amount was due to the date of payment. If such failure to pay continues for sixty (60) days, then the Vendor may suspend deliveries of natural gas, but the exercise of such right shall be in addition to any and all other remedies otherwise available to the Vendor.

EIGHTH: The Vendee agrees to adopt and use every reasonable effort to secure from time to time in the City of Denver, Colorado, and its environs a schedule of rates which will tend to stimulate sales of natural gas for house heating as well as for cooking, laundry work and hot water heating, and to make every reasonable effort to increase and build up sales of natural gas, and engage and pay for the services of the natural gas department of H. L. Doherty & Company to direct such efforts, doing among other things, to the extent such department deems advisable, the following:

1. Attaching any and all new consumers abutting on existing lines and extending present distribution systems throughout any sections where profitable consumers may be secured.

2. Introduction of and demonstrations of the workings and benefits of proper burners and appliances designed for the use of natural gas. Demonstration and sale of natural gas heating and other natural gas appliances at convenient point or points where public interest may be attracted and secured, and sale of such appliances at fair prices and on reasonable terms of payment, and on installment terms of payment when consumer desires, if found necessary to stimulate sales of gas.

3. Advertising the advantages of natural gas in local papers, distribution of pamphlets to interest and educate the public in the use of natural gas, and the holding of frequent educational campaigns and natural gas demonstrations together with personal solicitations.

4. Making a thorough survey of the commercial and industrial sales possibilities; instituting schedules of rates to attract the major portion of this business;

making extensions of low pressure or city high pressure lines as may be necessary to meet the requirements of these classes of consumers.

5. To make available for the purpose of increasing sales of natural gas the following minimum expenditures for the use of the sales department:

1st year, an amount equal to $2.00 per consumer then attached to lines.

2nd year, an amount equal to $1.50 per consumer then attached to lines.

3rd year, an amount equal to $1.00 per consumer then attached to lines.

4th year, an amount equal to $.75 per consumer then attached to lines.

5th year, an amount equal to $.50 per consumer then attached to lines.

NINTH: The Vendee agrees to keep proper books, records and accounts, according to approved methods, so as to reflect accurately and in detail the number of consumers and the quantity of gas sold to each consumer and each class of consumers, and the rates and charges, and the gas, if any, obtained by manufacturing or from sources other than the Vendor, and the Vendor shall have the right at all reasonable times to go upon the property of the Vendee and to make such inspection and investigation of same as may be pertinent to a check up of the Vendee's classification of consumers and gas rights, charges and sales, and this shall include the right to inspect the Vendee's books, accounts, meters and records for such information as may aid in an audit or settlement of accounts between the parties.

The Vendee shall install and maintain at all times during the continuance of this contract accurately registering meters to measure the Vendee's sales of gas at other than domestic rates, and shall make inspection thereof regularly as is good practice in the operation of gas distribution and promptly make such repairs to or changes in meters as may be proper to maintain accurate measurements.

TENTH: The Vendee acknowledges that the production of

natural gas from wells and the transportation thereof over long distances are subject to accident, interruptions, diminution of pressure and failure of supply. The Vendor, however, expressly agrees that it will exercise reasonable diligence and care to avoid any shortage or interruption of supply of natural gas hereunder, but it shall not be liable for any damage or loss that may be occasioned by any shortage or failure, or shortage of production of gas wells or fields, breakage or accident to lines or equipment, fires, strikes, riots, floods and other acts of whatever nature, due to causes beyond its control and interruptions by governmental or court orders. The Vendor shall only be bound to furnish natural gas to the full extent that it may be able to do so through the exercise of reasonable care and diligence in the procuring of natural gas from its gas purchase contracts, and in the transportation thereof through its lines to the point of delivery and at such pressure and for such period of time as natural gas is available.

It is expressly agreed by the Vendee that the Vendor may interrupt its service hereunder for the purpose of making necessary alterations and repairs to its pipe lines and compressing station equipment and machinery, but only for such time as may be reasonable or unavoidable, and the Vendor shall give to the Vendee except in case of an emergency, reasonable notice of its intention so to do, and shall endeavor to arrange such interruption so as to inconvenience the Vendee, and its consumers, as little as possible.

Nothing herein contained shall in any way abridge the right of the Vendor at any time to sell, transport and deliver natural gas to others than the Vendee, or restrict or reserve the Vendor's properties, or any part of them, for the exclusive benefit of this contract, but the Vendor shall not give other contracts any priority or preference above the obligations hereunder. It is agreed that in case of shortage, either temporarily or permanently, of natural gas and necessity for curtailment of service to any classes of consumers, the demands of domestic consumers of the Vendor, the Vendee and/or of other distributing customers to which the Vendor may sell natural gas, are to be preferred over service to industrial consumers and of the amount remaining deliveries, if any, under the provisions of sub-paragraph

(*b*) of Article First hereof, for the Vendee's industrial consumers shall be such part as the requirements of its industrial consumers bear to the requirements of industrial consumers of the Vendor, the Vendee and of other distributing customers to which the Vendor may sell natural gas: provided, however, that such domestic consumers' perference and such right to receive natural gas for industrial users shall not be exercised so as to deprive the Colorado Fuel & Iron Company of the volume of natural gas needed to complete open hearth heats then in jeopardy and to keep its furnaces warm during extreme domestic demand upon the Vendor's pipe line, or so as to deprive any other industrial or commercial consumer which requires a small proportion of its normal demand to prevent damage to its appliances.

ELEVENTH: It is understood that the Vendor purposes to obtain its natural gas, for delivery hereunder, by purchase from the Canadian River Gas Company, which owns or holds under lease or contract large reserves of natural gas in the Counties of Hartley, Oldham, Moore, Potter, Carson and Hutchinson, Texas, in what is known as the Amarillo Gas Field, and a copy of the contract between the Vendor and the said Canadian River Gas Company is attached hereto, and the Vendor shall not be required to supply hereunder natural gas from any other source, but the Vendor shall have the right, if it so elects, to supply hereunder natural gas from other sources provided such other natural gas is not substantially inferior in quality to the natural gas then being produced from the said Amarillo Gas Field. The Vendor shall not renounce the right it has under and by virtue of its contract with the Canadian River Gas Company, copy of which is attached hereto, to receive natural gas from any of the gas leaseholds, gas rights, gas contracts or gas estates described in Exhibit "A" attached to the contract between the Canadian River Gas Company and the Amarillo Oil Company, a copy of which contract is annexed as Exhibit "B" to the contract between the Vendor and the Canadian River Gas Company, a copy of which is annexed hereto, unless the Vendor shall first deliver to the Vendee a statement in writing, under the corporate seal of the Vendor that the gas leaseholds, gas rights, gas contracts, or gas estates, the subject of such renunciation, by reason of the Vendor's own

operations or explorations or the operations or explorations of others, are believed by the Vendor to be without substantial value, or until the consent of the Vendee to such renunciation shall have been obtained, provided, however, the Vendor shall have the unrestricted right to renounce, surrender or waive any right it has under and by virtue of its said contract with the Canadian River Gas Company, copy of which is attached hereto, to receive gas produced from lands described in the certain option agreement dated the 17th day of May 1927 between the United States of America and the Amarillo Oil Company and a certain other option agreement dated the 23rd day of March 1928 between the United States of America and the Amarillo Oil Company, in the event, and only in the event, the United States of America exercises its rights to purchase the gas leaseholds, gas rights or gas estates described in said agreements.

If the natural gas supplied by the Vendor to the Vendee contains a gross heating value of less than eight hundred (800) B. t. u.'s per cubic foot at Denver, Colorado, the Vendee, on giving ten (10) days' written notice to the Vendor, shall have the right to suspend taking natural gas hereunder until such time as the Vendor is prepared to supply the Vendee with natural gas containing a gross heating value of not less than eight hundred (800) B. t. u.'s per cubic foot. If the Vendor shall fail to give to the Vendee, within sixty (60) days from the date on which the Vendee gives such notice, written notice that the Vendor is taking or causing to be taken such steps as will in the sole opinion of the Vendor enable it to resume within one hundred eighty (180) days after the giving of such notice, the delivery of natural gas containing a gross heating value of not less than eight hundred (800) B. t. u.'s per cubic foot at Denver, Colorado, the Vendee shall have the right to terminate this contract and all the obligations of both parties hereunder, excepting only the obligation to pay for natural gas already delivered, and if, after having given notice that it is taking or causing to be taken such steps as will in its opinion enable it to deliver natural gas containing a gross heating value of not less than eight hundred (800) B. t. u.'s per cubic foot at Denver, Colorado, the Vendor shall fail to resume, within one hundred eighty (180) days after the giving of such notice, the de-

livery of natural gas containing a gross heating value of not less than eight hundred (800) B. t. u.'s per cubic foot at Denver, Colorado, the Vendee shall then have the right to terminate this contract and all the obligations of both parties hereunder, excepting only the obligation to pay for natural gas already delivered.

TWELFTH: It is mutually understood and agreed that the requirements of domestic consumers of the Vendee shall be fully supplied from the natural gas delivered hereunder in preference to consumers purchasing natural gas for industrial or commercial purposes, and that the Vendor can be required to supply natural gas to be used for industrial or commercial purposes only where the same is sold under contracts which have first been submitted and approved in writing by the Vendor and which expressly provide that natural gas will be supplied thereunder only insofar as the same is not necessary to meet the requirements of domestic consumers supplied by the Vendor, the Vendee and/or other distributing customers to which the Vendor may sell or supply natural gas.

If for any period of time during the term hereof, the Vendor shall be unable or fail to deliver the full amount of natural gas required by the Vendee and deliverable hereunder, then the Vendee shall have the right, during such time as the Vendor so fails to furnish the required amount of natural gas, to purchase or otherwise obtain, at its own expense, natural gas from any available source or manufacture gas to supply such portion of the requirements of its consumers as is not obtainable from the Vendor. Any gas manufactured to make up the Vendee's requirements which the Vendor is failing to supply shall be deemed to be supplied to domestic consumers and the volume deducted from the current volume for which the Vendee is to pay the Vendor at the City gate price for domestic consumption, but any natural gas obtained from sources other than the Vendor to make up such requirements shall be deemed to be supplied to the consumers using gas for industrial or commercial purposes and paying the lowest prices and only the excess, if any, of such natural gas so obtained from sources other than the Vendor over the total gas supplied for industrial or commercial purposes shall be deemed to be gas

supplied for domestic consumption, displacing *pro tanto* the natural gas supplied by the Vendor at the City gate price. If, for any period of time during the term hereof, the Vendor is unable or fails to deliver the full amount of natural gas required by the Vendee hereunder, and the Vendee shall manufacture gas to supply any portion of the requirements of its customers which would have been supplied with natural gas received hereunder had such supply been sufficient, then at the option of the Vendee the amount of natural gas to be sold and delivered hereunder by the Vendor and purchased and received by the Vendee shall thereafter be reduced by the amount of gas manufactured by the Vendee to supply its customers, during such period of shortage, which would have been supplied with natural gas sold hereunder if such natural gas had been available.

THIRTEENTH: The natural gas deliverable hereunder shall be natural gas as produced in its natural state from the wells, except that the Vendor may extract or permit the extraction of any helium content and the natural gas gasoline from said natural gas, but shall not subject its natural gas nor permit its natural gas to be subjected to any treatment in the extraction of natural gas gasoline or otherwise, which shall change the chemical composition of any of its component parts, or which will dilute it. The Vendor is to tender delivery to the Vendee only of natural gas which is commercial in quality and condition.

FOURTEENTH: This contract shall continue for twenty (20) years from the day the Vendor is ready to begin deliveries of natural gas hereunder. It is provided, however, that for such time after the expiration on February 8th, 1947, of the Vendee's existing franchise to distribute natural gas in the City of Denver, Colorado, as the Vendee is prevented from distributing natural gas in the City of Denver, Colorado, and charging therefor rates substantially equal to those established in its existing franchise, because it does not have a franchise right or other right to do so, the Vendee shall have the right to suspend taking natural gas hereunder. The Vendee agrees to use its best efforts to extend or renew its existing franchise or to procure a new franchise in place thereof or to procure such other right as will enable it to distribute natural gas in Denver, Colorado, after the expira-

tion; on February 8th, 1947, of its present franchise, and if the Vendee is able to procure a franchise or other suitable right to distribute natural gas in Denver, Colorado, after February 8th, 1947, when it is not required to take natural gas hereunder and after twenty (20) years after the day the Vendor is ready to begin deliveries of natural gas hereunder, it shall offer to the Vendor the first opportunity to supply natural gas at the prices and on the terms at which the Vendee is then able to secure its requirements of natural gas from any other responsible party. The Vendor agrees to use diligent effort to complete its pipe line to the extent necessary to be ready to supply natural gas hereunder to the Vendee on or before the first day of July, 1928, and deliveries of natural gas hereunder shall commence on that day, or as soon thereafter as the Vendor's pipe line is ready to operate, and agrees to give the Vendee at least three (3) months' notice of the day it will begin deliveries. The Vendee agrees to be ready to receive and distribute natural gas at the maturity of said notice, whereupon the purchase and sales of natural gas hereunder shall become effective.

FIFTEENTH: In the event of either party being rendered unable wholly or in part by *force majeure* to carry out its obligations under this contract other than to make payments or amounts due hereunder, it is agreed that on such party giving notice and full particulars of such *force majeure* in writing or by telegraph to the other party as soon as possible after the occurrence of the cause relied on, then the obligations of the party giving such notice, so far as they are affected by such *force majeure*, shall be suspended during the continuance of any inability so caused but for no longer period, and such cause shall, so far as possible, be remedied with all reasonable dispatch.

The term "*force majeure*" as employed herein shall mean acts of God, strikes, lockouts, or other industrial disturbances, acts of the public enemy, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts arrests and restraint of rulers and peoples, civil disturbances, explosions, breakage or accident to machinery or lines of pipe freezing of wells or lines of pipe, sudden partial or entire failure of natural gas wells, and any other cause, whether of the kind herein enumerated or

otherwise, not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to overcome.

SIXTEENTH: All notices to be given hereunder by the Vendor to the Vendee shall be given by registered mail or by delivering the same to the Vendee at its office at Denver, Colorado, or at such other office as may be hereafter designated by the Vendee for the purpose, and all notices to be given by the Vendee to the Vendor shall be given by registered mail or by delivering the same to the Vendor at its office at Colorado Springs, Colorado, or at such office as may be hereafter designated by the Vendor for the purpose.

SEVENTEENTH: This agreement shall inure to the benefit of and be binding upon the successors and assigns of the parties hereto. Whenever any corporation is referred to herein, such reference shall be deemed to include the successors and assigns of any such corporation.

EIGHTEENTH: In view of the possibility of natural gas being found along the pipe line of the Vendor or within piping distance of the City of Denver, Colorado, and its environs, it is agreed that it may be desirable to arrange for purchase of such natural gas by the Vendor and the marketing thereof hereunder while the natural gas of the Canadian River Gas Company is reserved for the future, and the Vendee agrees to use its best efforts to cooperate with the Vendor in the disposal of such natural gas. Upon failure of the Vendor to purchase or dispose of any such natural gas or to participate in the purchase or disposal thereof, then the Vendee shall have the right to purchase and market that part of such natural gas which, if such purchase were not made, would be offered for sale to its customers. Otherwise during the continuance of this agreement the Vendee is to purchase all of its natural gas requirements for Denver, Colorado, and its environs from the Vendor.

NINETEENTH: As between the parties hereto, the Vendor shall be in control and possession of the natural gas deliverable hereunder and responsible for any damage or injury caused thereby until the same shall have been delivered to the Vendee at Cherry Creek Measuring Station, after which delivery the Vendee shall be deemed to be in exclusive

control and possession thereof and responsible for any such injury or damage.

TWENTIETH: It is covenanted and agreed that if either party shall fail to perform any of the covenants or obligations imposed upon it under and by virtue of this contract, then in such event the other party may at its option terminate this contract by proceeding as follows: The party not in default shall cause a written notice to be served on the party in default, stating specifically the cause for terminating this contract and declaring it to be the intention of the party giving the notice to terminate the same; thereupon the party in default shall have thirty (30) days after the service of the aforesaid notice in which to remedy or remove the cause or causes stated in the notice for terminating the contract, and if within said period of thirty (30) days the party in default does so remove and remedy said cause or causes and fully indemnify the party not in default for any and all consequences of such breach, then such notice shall be withdrawn and this agreement shall continue in full force and effect. In case the party in default does not so remedy and remove the cause or causes and/or does not indemnify the party giving the notice for any and all consequences of such breach, within said period of thirty (30) days, then this agreement shall become null and void from and after the expiration of said period. Any cancellation of this agreement pursuant to the provisions of this Article shall be without prejudice to the party not in default to collect any amounts then due to it and without waiver of any other remedy to which the party not in default may be entitled for violation of this contract.

TWENTY-FIRST: The Vendor agrees to maintain at its Cherry Creek Station a pressure of natural gas in its pipe line of not less than forty (40) pounds gauge to the square inch, when and so long as it is able to secure, as herein provided, from the Canadian River Gas Company sufficient natural gas to meet the current requirements of the Vendee, and in complying with this covenant, the Vendor agrees to install and operate compression facilities and operate its pipe line and use the storage capacity thereof in accordance with good gas pipe line practice, in order to meet the varying demands of the Vendee's market hereunder.

It is mutually understood and agreed that the Vendee shall keep the Vendor at all times fully informed of all facts tending to show the amount of natural gas which will be necessary from time to time to supply its requirements hereunder.

In Witness Whereof, the parties hereto have caused this agreement to be duly signed by their respective officers the day and year first above written.

COLORADO INTERSTATE GAS COMPANY
[Seal] By CHRISTY PAYNE, President.

Attest:
E. E. DUVALL, Secretary.

PUBLIC SERVICE COMPANY OF COLORADO
[Seal] By THOS. I. CARTER, Vice-President.

E. E. MCWHINEY, Asst. Secretary.

EXHIBIT NO. 7-H.

Rate Schedule F. P. C. No. 2
Exhibits and Supplements

Filed by
Colorado Interstate Gas Company,
Colorado Springs, Colorado.

Covering Natural Gas Sold To
The Pueblo Gas and Fuel Company,
Pueblo, Colorado.

This schedule consists of Agreement dated January 3, 1928, Schedule of approved rate available for special industrial gas service, Schedule of rate approved for Summit Pressed Brick Company, and Amendatory Agreement dated August 24, 1934, which provide for the sale to The Pueblo Gas and Fuel Company of all the natural gas requisite to supply consumers in Pueblo, Colorado, and its environs, under the terms and conditions set forth therein.

This Agreement, made and entered into this third day of January A. D. 1928, by and between the COLORADO INTERSTATE GAS COMPANY, a corporation organized and existing under the laws of the State of Delaware, (hereinafter called the "VENDOR"), party of the first part, and THE PUEBLO GAS

AND FUEL COMPANY, a corporation organized and existing under the laws of the State of Colorado, (hereinafter called the "VENDEE"), party of the second part,

WHEREAS, the Vendor desires to sell and deliver to the Vendee and the Vendee desires to purchase and receive from the Vendor natural gas as hereinafter provided, and

WHEREAS, the Vendor is about to expend sums in excess of Twenty Million Dollars ($20,000,000) to prepare and equip itself to make deliveries of natural gas as hereinafter provided;

NOW, THEREFORE, THIS AGREEMENT WITNESSETH: That the parties hereto, in consideration of the covenants and payments herein set forth and of the sum of One Dollar ($1.00) in hand paid by each to the other, the receipt of which is hereby acknowledged, have mutually covenanted and agreed and do hereby mutually covenant and agree as follows:

FIRST: The Vendor agrees to sell and deliver and the Vendee agrees to purchase, take and pay for:

(*a*) All of the natural gas requisite for the supply of the domestic consumers in the City of Pueblo, Colorado, and its [illegible]virons now or hereafter connected to and served with gas from the pipe lines of the Vendee; and

(*b*) Such amounts of natural gas as may be requisite to fulfill contracts made with the consent and approval of the Vendor by the Vendee for the sale of natural gas to consumers other than domestic consumers;

provided, however, that the Vendor shall not be obligated to sell and deliver natural gas in excess of the amount it has currently available for delivery as defined in Articles Tenth and Eleventh hereof.

SECOND: The Vendor agrees to construct and put into operation a pipe line of not less than twenty-two (22) inches outside diameter of pipe from a site near Clayton, New Mexico, which shall be selected and purchased by the Vendor as the location for a junction between the Vendor's pipe line and the pipe line of the Canadian River Gas Company, from which the Vendor receives natural gas for delivery hereunder, to its compressing station site near the Arkansas

River about ten (10) miles east of Pueblo, Colorado, and a pipe line of not less than twelve (12) inches outside diameter of pipe extending from said compressing station located on a site consisting of Lots Nos. 156, 157, 158, 159 and 160 of Frances Subdivision, being part of Section 6, Township 21 South, Range 64 West of the Sixth Principal Meridian, according to the recorded plat of said Subdivision, in Pueblo, County, which site (hereinafter sometimes called the "PUEBLO MEASURING STATION") shall be selected and purchased by the Vendor for a measuring station and junction with the City pipe line system of the Vendee and the Vendor agrees that it will not sell for consumption in Pueblo, Colorado, or in any place located in or abutting on the area served by the low or intermediate pressure distribution plant maintained by the Vendee at Pueblo, Colorado any natural gas transported through said pipe line to any person, firm or corporation other than the Vendee and other than to the Colorado Fuel & Iron Company under a contract contained in the Colorado Fuel & Iron Company's offer dated February 19 1927 to Ford, Bacon & Davis, Inc. accepted by Ford, Bacon & Davis, Inc. in two letters of acceptance to the Colorado Fuel & Iron Company dated February 2, 1928 and May 1, 1928 and under any agreement which may be hereafter made for the sale of gas to the Colorado Fuel & Iron Company for its own industrial purposes.

THIRD: The Vendee agrees to convert its artificial gas distribution plant supplying the City of Pueblo, Colorado, and its environs into a natural gas distribution plant and to make such additions and changes as will insure, so far as the capacity of the distribution plant will do so, an adequate and uniform pressure of natural gas throughout in keeping with good practice in cities where natural gas is supplied for house heating as well as other domestic purposes, and to so construct the converted plant that a pressure of forty (40) pounds gauge to the square inch at the point of delivery of natural gas by the Vendor hereunder will give uniform and adequate pressure throughout the Vendee's distribution plant. The Vendee shall construct pipes of adequate capacity to connect up its existing distribution plant with the pipe lines of the Vendor and cooperate in order that the Vendor may install a connection of the Vendor's and the Vendee's pipe lines so that the natural gas to be received from the

Vendor may be conducted in and throughout the entire system of pipe lines to which any of the customers of the Vendee may be connected.

FOURTH: The place of delivery of the natural gas deliverable hereunder shall be at the metering and junction site called the Pueblo Measuring Station and the Vendor shall there furnish, install, operate and maintain at its own expense and risk a measuring station properly equipped with orifice meters and recording gauges, or other type of meter or meters of standard style as may be mutually agreed upon, the measurements of which shall fix the total amount of natural gas delivered by the Vendor to the Vendee.

The measuring equipment so installed by the Vendor, together with any buildings erected by it for such equipment, shall be and remain its property. The Vendee shall have access to said metering equipment at all reasonable times but the reading, calibrating and adjusting thereof and changing of charts shall be done only by the employees or agents of the Vendor.

Charts and records from such metering equipment shall remain the property of the Vendor. Upon request of the Vendee, the Vendor will submit to the Vendee records and charts from its metering equipment together with calculations therefrom for the Vendee's inspection and verification, subject to return by the Vendee within ten (10) days after receipt thereof, after which return the charts and records shall be kept on file by the Vendor for the mutual use of both parties. At least twice each month and on days as near the first and sixteenth of the month as practicable, the Vendor shall calibrate its meter in the presence of representatives of the Vendee and the parties shall jointly observe any adjustments which are made in the meter should such adjustments be necessary and if the check meters hereinafter provided for shall have been installed the same shall also be calibrated by the Vendee in the presence of representatives of the Vendor and any adjustments jointly observed should such adjustments be necessary. If either party at any time desires a test of any meter or if either party at any time observes a variation between the delivery meter and its check meter, if any such check meter is installed, it will promptly notify the other party and the parties will then

cooperate to secure an immediate calibration test and joint observation of any adjustments, and the meter shall then be adjusted to accuracy and corrections jointly made for the monthly settlements. Each party shall give to the other party copies of the time of all tests of meters sufficiently in advance of the holdings of the tests so that the other party may conveniently have its representatives present. If upon any test any metering equipment is found to be inaccurate by one per cent. (1%) or more, registrations thereof shall be corrected at the rate of such inaccuracy for any period which is definitely known and agreed upon, but in case the period is not definitely known and agreed upon then for a period extending back one-half (½) of the time elapsed since the last date of calibration, not exceeding, however, eight (8) days. Following any test, metering equipment found inaccurate shall immediately be restored as closely as possible to a condition of accuracy. If for any reason meters are out of service and/or out of repair so that the amount of natural gas delivered cannot be ascertained or computed from the reading thereof, the natural gas delivered through the period such meters are out of service and/or out of repair shall be estimated and agreed upon by the parties hereto upon the basis of the best data available, using the first of the following methods which is feasible:

(*a*) By correcting the error if the percentage of error is ascertainable by calibration, test of mathematical calculation.

(*b*) By using the registration of any check meter or meters if installed and accurately registering.

(*c*) By estimating the quantity of delivery by deliveries during the preceding periods under similar conditions when the meter was registering accurately.

The unit of measurement for the natural gas deliverable under this agreement shall be one thousand (1,000) cubic feet of natural gas at a base temperature of sixty (60) degrees Fahrenheit and at a base pressure of eight (8) ounces gauge pressure above twelve and seven-tenths (12.7) pounds absolute atmospheric pressure, and the readings and registrations of the metering equipment herein provided for shall be computed into such units. For the purpose of measure-

ment, the natural gas deliverable hereunder shall be assumed to obey Boyle's Law and the average absolute atmospheric (barometric) pressure shall be assumed to be twelve and seven-tenths (12.7) pounds to the square inch, irrespective of the actual elevation or location of the delivery point above sea level or of variations in such barometric pressure from time to time. If meters other than the orifice type are used, then in computing the readings and registrations of such metering equipment into the units above specified, the physical characteristics of the natural gas which affect such computation shall be given each their due consideration and the determination of such physical characteristics shall be made by standard apparatus and methods and at such time and places as, in accordance with good practice, may be agreed upon from time to time between the delivering company and the receiving company. For meters of the orifice type, the following factors shall be given their due consideration, viz:

(a) The temperature of the natural gas flowing through the meter shall be obtained by the use of a recording thermometer so installed that it may properly record the temperature of the natural gas flowing through the meter. The average temperature recorded each twenty-four (24) hour day shall be used in computing measurements.

(b) The specific gravity of the natural gas shall be determined twice monthly by joint test on days as near the first and sixteenth of the month as practicable or as much oftener as is found necessary in practice. The method of test used shall be by Edward's Balance or by such other method as shall be agreed upon by the parties. The regular test at the first of the month shall determine the specific gravity to be used in computations for the measurement of natural gas deliveries during the first fifteen (15) days of such calendar month or until changed by special test, the special test to be applicable from the day made and through the following days to and including the fifteenth day of such calendar month. The regular test made on the sixteenth of the month shall determine the specific gravity to be used in computations for the measurement of natural gas deliveries in

that part of such calendar month commencing with the sixteenth day and continuing until the end thereof or until changed by special test, the special test to be applicable from the day made through the remaining days of such calendar month.

The Vendee may at its option and at its cost and expense install and operate check metering equipment, but the metering equipment of the Vendor shall be used for determining the amounts of natural gas delivered under this agreement. The check metering equipment so installed by the Vendee, together with any buildings erected by it for such equipment, shall be and remain its property. Whenever the point of delivery as specified herein is on the premises of the Vendor, the Vendor grants to the Vendee the right of free ingress and egress to such metering equipment at all times for the purposes of installation, operation, repair, and/or removal. The check metering equipment and the method of installation of the same shall be of such standard type for the measurement of natural gas as is approved by both companies, but the Vendee shall have the right to replace such metering equipment at any time with metering equipment of equal grade subject to the approval of the Vendor as to type and method of installation. In the event check metering equipment is installed by the Vendee, the Vendor shall have access to the same at all reasonable times, but the reading, calibrating and adjusting thereof and the changing of charts shall be done only by employees or agents of the Vendee. Charts and records from said check metering equipment shall remain the property of the Vendee. Upon the request of the Vendor, the Vendee will submit to the Vendor records and charts from said metering equipment together with calculations therefrom for the Vendor's inspection and verification, subject to return by the Vendor within ten (10) days after receipt thereof.

The Vendor shall render to the Vendee, on or before the fifteenth day of each month, a statement of the amount of natural gas delivered to the Vendee during the calendar month immediately preceding and of the amount of payment or payments then due from the Vendee to the Vendor therefor at the special prices for natural gas sold or used for industrial purposes and at the City gate price for the re-

mainder of the natural gas. The statement of deliveries so furnished by the Vendor to the Vendee shall be conclusive upon the parties except as to the corrections and or adjustments then pending, unless exceptions thereto in writing shall be made by the Vendee within ten (10) days after it shall receive such statement.

FIFTH: In order to keep account of the natural gas sold to the Vendee at the City gate rate and the natural gas sold for industrial purposes and paid for at the agreed industrial rate, the Vendee shall, on or before the fifth day of each calendar month, render a statement to the Vendor showing separately the quantity of natural gas consumed by each of the Vendee's industrial consumers and each of them at the industrial tariff in the preceding calendar month. The quantities of natural gas consumed by the Vendee's industrial consumers in each month shall be paid for by the Vendee to the Vendor at the agreed industrial rates hereinafter set forth and on the basis of measurements applied by the Vendee to such industrial customers, such quantities, however, for the purpose of ascertaining the volume of natural gas delivered for domestic purposes in each calendar month shall be computed at the pressure of eight (8) ounces above twelve and seven-tenths (12.7) pounds average absolute atmospheric (or barometric) pressure to the square inch, and upon such basis shall be deducted by the Vendor from the total amount of natural gas registered in such calendar months by the Vendor's Pueblo Measuring Station meter or meters, and the remainder shall be considered the amount of natural gas to be paid for by the Vendor at the City gate price hereinafter set forth. In these measurements, it is agreed that no allowance shall be made for leakage or for failure of the Vendee to collect from any of its consumers or for the Vendee's allowances to consumers because of defective consumers' meters or meter readings, it being the intention of the parties hereto that all natural gas delivered by the Vendor to the Vendee and measured at the Pueblo Measuring Station shall be paid for by the Vendee to the Vendor as above stipulated. The Vendee shall read all meters through which it measures natural gas used or sold for industrial purposes as near the end of each calendar month as is practicable and the Vendor's Pueblo Measuring

Station meter or meters shall be read by the Vendor at the end of each calendar month.

SIXTH: The prices to be paid by the Vendee to the Vendor for natural gas hereunder shall be as follows:

(*a*) During the entire period of this contract, the City gate price at which the Vendee shall pay the Vendor for natural gas purchased and taken shall be forty cents (40c) per thousand cubic feet except as provided in subparagraph (*b*) of this Article Sixth.

(*b*) For natural gas purchased by the Vendee from the Vendor for resale under commercial or industrial contracts, which contracts shall have been submitted to and approved by the Vendor, the price payable to the Vendor shall be eighty-five per cent. (85%) of the price chargeable by the Vendee to such commercial or industrial consumers under such approved contract, provided, however, that the price to be paid by the Vendee to the Vendor shall not be more than forty cents (40c) per thousand cubic feet.

SEVENTH: The Vendee agrees to pay the Vendor at its office in Colorado Springs, Colorado, on or before the twentieth of the month for said natural gas deliveries of the preceding month according to the natural gas measurements and computations and at the prices hereinbefore provided for and billed on said monthly statements. Should the Vendee fail to pay any amount due from it to the other party when such amount is due, interest thereon shall accrue at six per cent. (6%) per annum from the date when such amount was due to the date of payment. If such failure to pay continues for sixty (60) days, then the Vendor may suspend deliveries of natural gas, but the exercise of such right shall be in addition to any and all remedies otherwise available to the Vendor.

EIGHTH: The Vendee agrees to adopt and use every reasonable effort to secure from time to time in the City of Pueblo, Colorado, and its environs a schedule of rates which will tend to stimulate sales of natural gas for house heating as well as for cooking, laundry work and hot water heating and to make every reasonable effort to increase and build up sales of natural gas, and engage and pay for the services

of the Natural Gas Department of H. L. Doherty & Company to direct such efforts, doing among other things, to the extent such Department deems advisable, the following:

(1) Attaching any and all new customers abutting on existing lines and extending present distribution systems throughout any section where profitable consumers may be secured.

(2) Introduction of and demonstrations of the workings and benefits of proper burners and appliances designed for the use of natural gas. Demonstration and sale of natural gas heating and other natural gas appliances at convenient point or points where public interest may be attracted and secured, and sale of such appliances at fair prices and on reasonable terms of payment and/or installment terms of payment, when consumer desires, if found necessary to stimulate sales of natural gas.

(3) Advertising the advantages of natural gas in local papers, demonstration of automobiles to interest and educate the public in the use of natural gas, and the holding of frequent educational campaigns and natural gas demonstrations, together with personal solicitations.

(4) Making a thorough survey of the commercial and industrial sales possibilities, instituting schedules of rates to attract the major portion of this business, making extensions of low pressure or City high pressure lines as may be necessary to meet the requirements of these classes of consumers.

(5) To make available for the purpose of increasing sales of natural gas the following minimum expenditures for the use of the sales department:

First year: an amount equal to $2.00 per customer then attached to lines:

Second year: an amount equal to $1.50 per customer then attached to lines:

Third year: an amount equal to $1.00 per customer then attached to lines:

Fourth year: an amount equal to $0.75 per customer then attached to lines:

Fifth year: an amount equal to $0.50 per customer then attached to lines:

NINTH: The Vendee agrees to keep proper books, records and accounts according to approved methods so as to reflect accurately and in detail the number of consumers, the quantity of gas sold to each consumer, and each class of consumers and the rates and charges and the gas, if any, obtained by manufacturing or from sources other than the Vendor but the Vendor shall have the right at all reasonable times to go upon the property of the Vendee and to make such inspection and investigation of the same as may be pertinent to a check-up of the Vendee's classification of consumers and gas rates, charges and sales, and this shall include the right to inspect the Vendee's books, accounts, meters and records for such information as may aid in the audit or settlement of the accounts between the parties.

The Vendee shall install and maintain at all times during the continuance of this contract accurately registering meters to measure the Vendee's sales of gas at other than domestic rates and shall make inspection thereof regularly as is good practice in the operation of gas distribution and promptly make such repairs to or changes in meters as may be proper to maintain accurate measurements.

TENTH: The Vendee acknowledges that the production of natural gas from wells and the transportation thereof over long distances are subject to accident, interruptions, diminution of pressure and failure of supply. The Vendor, however, expressly agrees that it will exercise reasonable diligence and care to avoid any shortage or interruption of supply of natural gas hereunder, but it shall not be liable for any damage or loss that may be occasioned by any shortage or failure or shortage of production of gas wells or fields, breakage or accident to lines or equipment, fires, strikes, riots, floods and other acts of whatever nature due to causes beyond its control and interruptions by Governmental or court orders. The Vendor shall only be bound to furnish natural gas to the full extent that it may be able to do so through the exercise of reasonable care and diligence in procuring natural gas from its gas purchase contracts and in the transportation thereof through its lines to the point of delivery and at such pressure and for such period of time as natural gas is available.

It is expressly agreed by the Vendee that the Vendor may interrupt its services hereunder for the purpose of making necessary alterations and repairs to its pipe lines and compressing station equipment and machinery but only for such time as may be reasonable or unavoidable, and the Vendor shall give to the Vendee, except in case of emergency, reasonable notice of its intention so to do and shall endeavor to arrange such interruption so as to inconvenience the Vendee and its consumers as little as possible.

Nothing herein contained shall in any way abridge the right of the Vendor at any time to sell, transport and deliver natural gas to others than the Vendee or restrict or reserve the Vendor's properties or any part of them for the exclusive benefit of this contract, but the Vendor shall not give other contracts any priority or preference above the obligations hereunder. It is agreed that in case of shortage, either temporarily or permanently of natural gas and necessity for curtailment of service to any class of consumers, the demands of domestic consumers of the Vendor, the Vendee/and or of other distributing customers to which the Vendor may sell natural gas, are to be preferred over service to industrial consumers, and of the amount remaining, deliveries, if any, under the provisions of sub-paragraph (*b*) of Article First hereof for the Vendee's industrial consumers shall be such part as the requirements of its industrial consumers bear to the requirements of industrial consumers of the Vendor, the Vendee and of other distributing customers to which the Vendor may sell natural gas, provided, however, that such domestic consumers' preferences and such right to receive natural gas for industrial users shall not be exercised so as to deprive the Colorado Fuel & Iron Company of the volume of natural gas needed to complete open hearth heats then in jeopardy and to keep its furnaces warm during extreme domestic demand upon the Vendor's pipe lines, or so as to deprive any other industrial or commercial consumer which requires a small proportion of its normal demand to prevent damage to its appliances.

ELEVENTH: Is is understood that the Vendor proposes to obtain its natural gas for delivery hereunder by purchase from the Canadian River Gas Company which owns or holds under lease or contract large reserves of natural gas in the

Counties of Hartley, Oldham, Moore, Potter, Carson and Hutchinson, Texas, in what is known as the Amarillo Gas Field and a copy of the contract between the Vendor and said Canadian River Gas Company is attached hereto, and the Vendor shall not be required to supply hereunder natural gas from any other source, but the Vendor shall have the right, if it so elects, to supply hereunder natural gas from other sources, provided such other natural gas is not substantially inferior in quality to the natural gas then being produced from the said Amarillo Gas Field. The Vendor shall have the unrestricted right to renounce, surrender or waive any right it has under and by virtue of its said contract with the Canadian River Gas Company, copy of which is attached hereto, to receive gas from the lands described in said contract.

If the natural gas supplied by the Vendor to the Vendee contains a gross heating value of less than eight hundred (800) B.t.u.'s per cubic foot at Pueblo, Colorado, the Vendee, on giving ten (10) days' written notice to the Vendor, shall have the right to suspend taking natural gas hereunder until such time as the Vendor is prepared to supply the Vendee with natural gas containing a gross heating value of not less than eight hundred (800) B.t.u.'s per cubic foot. If the Vendor shall fail to give the Vendee, within sixty (60) days from the date on which the Vendee gives such notice, written notice that the Vendor is taking or causing to be taken such steps as will in the sole opinion of the Vendor enable it to resume, within one hundred eighty (180) days after the giving of such notice, the delivery of natural gas containing a gross heating value of not less than eight hundred (800) B.t.u.'s per cubic foot at Pueblo, Colorado, the Vendee shall have the right to terminate this contract and all the obligations of both parties hereunder, excepting only the obligation to pay for natural gas already delivered, and if after having given such notice that it is taking or causing to be taken such steps as will in its opinion enable it to deliver natural gas containing a gross heating value of not less than eight hundred (800) B.t.u.'s per cubic foot at Pueblo, Colorado, the Vendor shall fail to resume, within one hundred eighty (180) days after the giving of such notice, the delivery of natural gas containing a gross heating value of not less than eight hundred (800) B.t.u.'s per cubic foot at

Pueblo, Colorado, the Vendee shall then have the right to terminate this contract and all the obligations of both parties hereunder, excepting only the obligation to pay for natural gas already delivered.

TWELFTH: It is mutually understood and agreed that the requirements of domestic consumers of the Vendee shall be fully supplied with natural gas delivered hereunder in preference to consumers purchasing natural gas for industrial or commercial purposes and that the Vendor can be required to supply natural gas to be used for industrial or commercial purposes only where the same is held under contracts which have first been submitted to and approved in writing by the Vendor and which expressly provide that natural gas will be supplied hereunder only insofar as the same is not necessary to meet the requirements of domestic consumers supplied by the Vendor, the Vendee and/or other industrial customers to which the Vendor may sell or supply natural gas.

If, for any period of time during the term hereof, the Vendor shall be unable or fail to deliver the full amount of natural gas required by the Vendee and deliverable hereunder, then the Vendee shall have the right, during such time as the Vendor so fails to furnish the required amount of natural gas, to purchase or otherwise obtain at its own expense natural gas from any available source or manufacture gas to supply such portion of the requirements of its consumers as is not obtainable from the Vendor. Any gas manufactured to make up the Vendee's requirements which the Vendor has failed to supply shall be deemed to be supplied to domestic consumers and the volume deducted from the current volume for which the Vendee is to pay the Vendor at the City gate price for domestic consumption, but any natural gas obtained from sources other than the Vendor to make up such requirements shall be deemed to be supplied to the consumers using gas for industrial or commercial purposes and paying the lowest prices, and only the excess, if any, of such natural gas so obtained from sources other than the Vendor over the total natural gas supplied for industrial or commercial purposes shall be deemed to be gas supplied for domestic consumption displacing, pro tanto, the natural gas supplied by the Vendor at the City gate price. If, for any period of time during

the term hereof, the Vendor is unable or fails to deliver the full amount of natural gas required by the Vendee hereunder, the Vendee shall manufacture gas to supply any portion of the requirements of its customers which would have been supplied with natural gas received hereunder had such supply been sufficient, then at the option of the Vendee the amount of natural gas to be sold and delivered hereunder by the Vendor and purchased and received by the Vendee shall thereafter be reduced by the amount of gas manufactured by the Vendee to supply its customers during such period of shortage which would have been supplied with natural gas sold hereunder if such natural gas had been available.

THIRTEENTH: The natural gas delivered hereunder shall be natural gas as produced in its natural state from the wells except that the Vendor may extract or permit the extraction of any helium content and the natural gas gasoline from said natural gas, but shall not subject its natural gas nor permit its natural gas to be subjected to any treatment in the extraction of natural gas gasoline or otherwise which shall change the chemical composition of any of its component parts or which will dilute it. The Vendor is to tender deliveries to the Vendee only of natural gas which is commercial in quality and condition.

FOURTEENTH: This contract shall continue for twenty (20) years from the day the Vendor is ready to begin deliveries of natural gas hereunder. It is provided, however, that for such time after the expiration on April 6, 1953 of the Vendee's existing franchise to distribute natural gas in the City of Pueblo, Colorado, as the Vendee is prevented from distributing natural gas in the City of Pueblo, Colorado, and charging therefor rates substantially equal to those established in its existing franchise because it does not have a franchise right or other right to do so, the Vendee shall have the right to suspend taking natural gas hereunder. The Vendee agrees to use its best efforts to extend or renew its existing franchise or to procure a new franchise in place thereof or to procure such other right as will enable it to distribute natural gas in Pueblo, Colorado, after the expiration on April 6, 1953 of its present franchise, and if the Vendee is able to procure a franchise or other suitable right to

distribute natural gas in Pueblo, Colorado, after April 6, 1953 when it is not required to take natural gas hereunder and after twenty (20) years after the day the Vendor is ready to begin deliveries of natural gas hereunder, it shall offer to the Vendor the first opportunity to supply natural gas at the price and on the terms at which the Vendee is then able to secure its requirements of natural gas from any other responsible party. The Vendor agrees to use diligent effort to complete its pipe line to the extent necessary to be ready to supply natural gas hereunder to the Vendee on or before the first day of July 1928 and deliveries of natural gas hereunder shall commence on that date or as soon thereafter as the Vendor's pipe line is ready to operate, and agrees to give the Vendee at least three (3) months' notice of the day it will begin deliveries. The Vendee agrees to be ready to receive and distribute natural gas at the maturity of said notice, whereupon the purchases and sales of natural gas hereunder shall become effective.

FIFTEENTH: In the event of either party being rendered unable wholly or in part by force majeure to carry out its obligations under this contract, other than to make payments of the amounts due hereunder, it is agreed that on such party giving notice and full particulars of such force majeure in writing or by telegraph to the other party as soon as possible after the occurrence of the cause relied on, then the obligations of the party giving such notice, so far as they are affected by such force majeure, shall be suspended during the continuance of any inability so caused but for no longer period, and such cause shall so far as possible be remedied with all reasonable dispatch."

The term "force majeure" as employed herein shall mean acts of God, strikes, lockouts or other industrial disturbances, acts of the public enemy, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraint of rulers and peoples, civil disturbances, explosions, breakage or accident to machinery or line of pipe, freezing of wells or lines of pipes, sudden partial or entire failure of natural gas wells, and any other cause, whether of the kind herein enumerated or otherwise, not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to overcome.

SIXTEENTH: All notices to be given by the Vendor to the Vendee shall be given by registered mail or by delivering the same to the Vendee at its office at Pueblo, Colorado, or at such other office as may be hereafter designated by the Vendee for the purpose, and all notices to be given by the Vendee to the Vendor shall be given by registered mail or by delivering the same to the Vendor at its office at Colorado Springs, Colorado, or at such other office as may be hereafter designated by the Vendor for the purpose.

SEVENTEENTH: This agreement shall inure to the benefit of and be binding upon the successors and assigns of the parties hereto. Whenever any corporation is referred to herein, such reference shall be deemed to include the successors and assigns of such corporation.

EIGHTEENTH: In view of the possibility of natural gas being found along the pipe line of the Vendor or within piping distance of the City of Pueblo, Colorado, and its environs, it is agreed that it may be desirable to arrange for the purchase of such natural gas by the Vendor and the marketing thereof hereunder while the natural gas of the Canadian River Gas Company is reserved for the future, and the Vendee agrees to use its best efforts to cooperate with the Vendor in the disposal of such natural gas. Upon failure of the Vendor to purchase or dispose of any such natural gas or to participate in the purchase or disposal thereof, then the Vendee shall have the right to purchase and market that part of such natural gas which, if such purchase were not made, would be offered for sale to its customers. Otherwise during the continuance of this agreement, the Vendee is to purchase all of its natural gas requirements for Pueblo and its environs from the Vendor.

NINETEENTH: As between the parties hereto, the Vendor shall be in control and possession of the natural gas deliverable hereunder and responsible for any damage or injury caused thereby, until the same shall have been delivered to the Vendee at the Pueblo Measuring Station after which the Vendee shall be deemed to be in exclusive control and possession thereof and responsible for any such injury or damage.

TWENTIETH: It is covenanted and agreed that if either

party shall fail to perform any of the covenants or obligations imposed by it under and by virtue of this contract, then in such event the other party may at its option terminate this contract by proceeding as follows: The party not in default, shall cause a written notice to be served on the party in default, stating specifically the cause for terminating this contract and declaring it to be the intention of the party giving the notice to terminate the same, thereupon the party in default shall have thirty (30) days after the service of the aforesaid notice in which to remedy or remove the cause or causes stated in the notice for terminating the contract, and if within said period of thirty (30) days the party in default does so remedy and remove said cause or causes and fully indemnifies the party not in default for any and all consequences of such breach, then such notice shall be withdrawn and this agreement shall continue in full force and effect. In case the party in default does not so remedy and remove the cause or causes and/or does not indemnify the party giving the notice for any and all consequences of such breach, within said period of thirty (30) days, then this agreement shall become null and void from and after the expiration of said period. Any cancellation of this agreement pursuant to the provisions of this Article shall be without prejudice to the party not in default to collect any amounts then due to it and without waiver of any other remedy to which the party not in default may be entitled for violation of this contract.

TWENTY-FIRST: The Vendor agrees to maintain at its Pueblo Measuring Station a pressure of natural gas in its pipe line of not less than forty (40) pounds gauge to the square inch when and so long as it is able to secure, as herein provided, from the Canadian River Gas Company sufficient natural gas to meet the current requirements of the Vendee, and in complying with this covenant the Vendor agrees to install and operate compressing facilities and operate its pipe line and use the storage capacity thereof in accordance with good pipe line practice in order to meet the varying demands of the Vendee's market hereunder.

It is mutually understood and agreed that the Vendee shall keep the Vendor at all times fully informed of all facts tending to show the amount of natural gas which will be

necessary from time to time to supply its requirements hereunder.

In Witness Whereof, the parties have caused this agreement to be duly signed by their respective officers the day and year first above written.

COLORADO INTERSTATE GAS COMPANY
[Seal] By CHRISTY PAYNE, President.
Attest:
E. E. DUVALL, Secretary.

THE PUEBLO GAS AND FUEL COMPANY
[Seal] By THOS. I. CARTER, Vice-President.
E. E. McWHINEY, Asst. Secretary.

Colorado Interstate sells gas to Citizens Utilities Company (hereafter called "Citizens") which is the distributing company operating at La Junta, Rocky Ford Swink, Las Animas, Ordway, Manzanola, Sugar City and Fowler. These are all small Colorado towns in the valley of the Arkansas River. Citizens is the successor company to Public Utilities Consolidated Corporation (hereafter called PUCC), which went through bankruptcy. (Hill, Vol. II, pp. 199, 200). Colorado Interstate originally built an eight-inch branch line eastward from Pueblo to supply PUCC with gas for distribution in La Junta, Rocky Ford and Swink under a contract entered into in 1929. (Hill, Vol. II, pp. 199-200). The present contract between Colorado Interstate and Citizens covering the supply of gas for La Junta, Rocky Ford and Swink, together with amendments thereto, is Exhibit 7-D herein. The contracts between Colorado Interstate and Citizens covering the supply of gas and resale by Citizens at Las Animas, Ordway, Sugar City, Manzanola and Fowler were originally executed by Arkansas Valley Natural Gas Company, hereafter called "Arkansas" and were then assigned by Arkansas to Citizens and are included as Exhibits 7-A and 7-B herein. (Hendee, Vol. IV, p. 628).

Exhibit 7-D, the present contract, dated May 1, 1937, with Citizens for its supply of gas at La Junta, Rocky Ford and Swink, is substantially similar to the other contracts of Colorado Interstate. Article Fifth provides that the price at the city gate for domestic gas shall be 40c per Mcf, with the

further provision that for gas in excess of 1800 cu. ft. per customer per month the gate price shall be 36c per Mcf. For industrial gas the price shall be 75% of the price chargeable by the vendee under industrial contracts to be approved by vendor, provided such price shall not exceed 40c per Mcf. Article Thirteenth limits the term of the contract until the first day of May, 1942. The contract contains the provisions similar to Colorado Interstate's other contracts covering the heat and purity standards for the gas, the place for delivery outside the municipal limits, the method of measurement, the billing and the payment for the gas, interruptions due to force majeure, as defined, the preference of domestic over industrial gas and the right of the distributing company to obtain competitive natural gas from other sources or manufacture gas in case of the vendor's failure to deliver, and the consequent reduction of vendee's obligations to take gas under the contract pro tanto and other such matters.

Exhibit 7-A, the contract covering the supply of gas at Las Animas, Colorado, and Exhibit 7-B, covering the supply at Ordway, Sugar City, Manzanola and Fowler, Colorado, now existing between Colorado Interstate and Citizens, were, as above stated, originally executed with Arkansas. These contracts cover the supply of a relatively small amount of gas. The 1940 census of population for these towns shows: Las Animas, 3,232; Ordway, 1,150; Sugar City, 565; Manzanola, 531; Fowler, 922.

This contract now with Citizens for the supply of gas at the Las Animas city gate (Exhibit 7-A), follows substantially the terms of Colorado Interstate's other contracts. Article Sixth provided that for the first two years after delivery began, the city gate price should be 40c per Mcf. and thereafter 45c, provided, however, that if after the expiration of the two-year period the vendee had been able to secure 375 domestic consumers, consuming an average of 75,000 cu. ft. per consumer per year, or a total domestic consumption equivalent thereto, then the city gate rate for domestic gas would remain at 40c per Mcf. For gas other than domestic, the price would be 85% of that charged by the vendee under contracts to be approved by the vendor, but such price should not exceed that for domestic gas. The term of the contract was made to conform to the project

term and Article Fourteenth provided that it would expire June 23, 1948. Other articles of the contract covered heat and purity standards for the gas, the place for delivery outside the Las Animas city limits, the method of measurement, billing and payment for the gas, interruptions due to force majeure, as defined, the preference of domestic over industrial gas, and the provision that if and to the extent the vendor was unable to deliver gas, the vendee would have the right to obtain competitive natural gas from other sources or manufacture gas and cut down pro tanto the obligation of the vendee to take under the contract.

By an amendment of April 2, 1939, the contract was enlarged to cover the supply of gas for the unincorporated community of Fort Lyon, approximately four miles east of Las Animas. By an amendment dated December 5, 1935, the price of gas was changed so that for the first 1800 cu. ft. of domestic gas the rate was 40c per Mcf. and for the excess, provided the vendee would reduce its domestic rates 2c per Mcf., the rate would be 36c per Mcf. For gas sold under commercial and industrial contracts, the rate was changed to 75% of the price chargeable by the vendee, but in no case in excess of 40c per Mcf. under contracts to be approved by the vendor. This amendment also gave to Arkansas 15% of the gross revenue received by Colorado Interstate under an industrial contract with the United States Veterans Hospital at Fort Lyon in consideration of Arkansas' maintenance of Colorado Interstate's branch line to the Hospital. This amendment of December 5, 1935, was effective for the period beginning the first day of May, 1935, and terminating April 30, 1937, but by letter agreements from time to time, the arrangement was continued. Colorado Interstate's payment to Arkansas for the upkeep by the latter of a part of the former's transmission line just mentioned, was terminated by an agreement dated April 1, 1940, all of which amendments are included in Exhibit 7-A. Colorado Interstate's contract now with Citizens for the supply of gas at the town gates of Ordway, Sugar City, Manzanola and Fowler (Exhibit 7-B), and the amendments thereto are, except as here noted, precisely the same as the contract (Exhibit 7-A) just abstracted.

In Exhibit 7-B the price for domestic gas was originally

fixed at 40c per Mcf. without regard to quantity. The price for industrial or commercial gas was fixed at 85% of the price charged by the vendee, but not in excess of 40c per Mcf. under contracts to be approved by the vendor. By the 1935 amendment the same price as fixed for the city gate at Las Animas was put into effect and continued in effect thereafter. Under all these contracts with Citizens, the maximum gate rate reduction that can be earned by the amendments of 1934 is 4c, thus bringing the gate rate to 36c (Hendee, Vol. IV, pp. 627, 628).

Colorado Interstate originally made with Arkansas a contract (Exhibit 7-C) similar to Exhibits 7-A and 7-B with amendments similar to the amendments to Exhibits 7-A and 7-B for the supply of a small amount of gas, which Arkansas in turn sold to the Fountain Valley School south of Colorado Springs. This contract is still in effect and is the only remaining business of Arkansas Valley.

Colorado Interstate's contract with the City of Colorado Springs for the supply at the city gate of gas for distribution by the city in its municipally owned distribution system, is Exhibit 7-E herein. It was originally made by the city and Arthur K. Lee on July 13, 1930, but was completely amended June 12, 1931, and thereafter assigned to Colorado Interstate. Colorado Springs is a Home Rule or Charter city under the Colorado Constitution, and the contract was signed on behalf of the city by George Birdsall, Mayor.

In the contract Lee is described as vendor and the city as vendee. The first article provides:

> "The vendor agrees to construct and complete on or before August 1st, 1931, an eight-inch (8") or larger inside diameter steel pipe line of the best material and according to the latest engineering practices from such point as may be selected on the main pipe line of the Colorado Interstate Gas Company extending from Clayton, New Mexico, to Denver, Colorado, to the City and on or before August 1, 1931, unless the completion of such line by that time is prevented by the Vendor's inability to procure in the usual manner the necessary rights of way therefor, and on the completion of said line to begin the delivery of natura. gas produced in such field as may be selected by the vendor to the City at the City Gate hereinafter mentioned."

Article Second provided that for gas sold to the city for resale to domestic consumers the rate would be 40c per Mcf. For gas sold by the city to industrial and commercial consumers under contracts to be approved by the vendor, the rate would be 85% of that collected by the vendee, but not in excess of 40c per Mcf. For gas used by the city itself in its power plant, the rate would be 11c per Mcf. for the first five years and thereafter a price to be agreed upon by the parties. Article Fourth provided:

> "The vendor at the time of the execution of this agreement has deposited with the City his certified check payable to the City for the sum of Twenty-five Thousand Dollars ($25,000.00) for the purpose of guaranteeing that he will—
>
> "(a) On or before the first day of August, 1931, execute and deliver to Ford, Bacon and Davis, Inc., or to the Colorado Interstate Gas Company, an assignment of this contract, which assignment will obligate such Assignee to perform the provisions of this contract;
>
> "(b) On or before the first day of August, 1931, construct or cause to be constructed, the pipe line from a point on the main pipe line of the Colorado Interstate Gas Company to the City Gate herein specified and be ready to begin the delivery of natural gas hereunder to the City."

This article then provided for the forfeiture to the city of this sum if these conditions were not fulfilled. The term of the contract was made to conform to the project term, Article Seventh providing that "this contract shall continue until the 19th day of June, 1948." In Article Ninth it was provided:

> "The City agrees to adopt from time to time, to apply throughout its natural gas distribution pipe line system, a schedule of rates which will tend to stimulate sales of natural gas for house heating as well as for cooking, laundry work and hot water heating. Such schedule of rates applicable to consumers within the City limits to be not in excess of the following schedule which is a net rate:
>
> "For the first four hundred cubic feet or less of gas

used per month ninety cents (90c); (by amendment hereafter abstracted, this rate is now 75c.)

"For the next six hundred cubic feet of gas used per month fifteen cents (15c) per 100 cubic feet;

"For the next one thousand cubic feet of gas used per month twelve cents (12c) per 100 cubic feet;

"For the next one thousand cubic feet of gas used per month seven and one-half cents (7½c) per 100 cubic feet;

"For the next seven thousand cubic feet of gas used per month six cents (6c) per 100 cubic feet; (By amendment hereafter abstracted, this rate is now 5½c.)

"Additional cubic feet used per month five cents (5c) per 100 cubic feet. (By amendment hereafter abstracted, this rate is now 4½c.)"

Article Tenth provided:

"The City agrees that the Vendor may sell, assign, transfer and set over this contract and its interest therein to Ford, Bacon and Davis, Inc., or to the Colorado Interstate Gas Company and if the vendor shall so assign this contract and his interest therein to Ford, Bacon and Davis, Inc., the City further agrees that Ford, Bacon and Davis, Inc., may sell, assign, transfer and set over unto the Colorado Interstate Gas Company this contract and its interest therein and that such assignments shall not require the written consent of the City. However, this contract shall not be otherwise assignable without the written consent of the City."

Other articles provide for the preference of domestic over industrial and commercial gas, the heat and purity standards of the gas, the point of delivery at the city gate just outside the city limits, the metering, billing and payment, interruptions to *force majeure*, as defined, and like matters not now in issue.

As a part of Exhibit 7-E there is included the assignment of the contract on June 15, 1931, by Lee to FB&D and likewise the assignment on July 10, 1931, by FB&D to Colorado Interstate. There is also included in the exhibit a supplemental agreement dated July 28, 1931 between the City of

Colorado Springs and Colorado Interstate, wherein the assignments by Lee to FB&D and then the assignment by FB&D to Colorado Interstate are confirmed and Articles Seventh and Ninth of the original contract between the city and Lee are amended. Article Seventh was amended to read:

> "This contract shall continue until the 19th day of June, 1948. The city agrees to begin taking natural gas under this contract on or before the 15th day of September, 1931."

The amendment to Article Ninth is not material to any issue in this case.

This exhibit also includes the amendment by the city and the company dated April 30, 1935, providing for voluntary reduction in the gate rate by Colorado Interstate to increase the domestic and house heating consumption similar to the amendments made in the Denver and Pueblo contracts and abstracted above. Under this amendment the gate rate is reduced by 4c to 36c per Mcf. upon the sales of certain quantities of gas and upon additional sales there are graduated decreases in the gate rate, aggregating a maximum additional 2c reduction; that is down to a minimum gate rate of 34c (Hendee, Vol. IV, p. 627). By letter agreement of August 26, 1936, the city and company agreed on a rate for the industrial gas sold to the city for its power plant of 11c per Mcf., which should be good until cancelled by one hundred twenty days' notice, either party to the other.

Hill of FB&D, first operating manager of the pipe line of Colorado Interstate under the operating agreement with FB&D, testified that his principals attempted to get a gas supply contract with the city before the city contracted with Lee. He stated:

> "The first negotiations were unsuccessful because the parties were unable to get together on terms, but later, as I recollect in 1931, a supply contract was finally entered into. In this instance we had to negotiate the contract in the face of severe competition arising from an abundant and cheap supply of coal in the vicinity of Colorado Springs." (Vol. II, p. 180).

In the meantime, Lee was successful in negotiating a con-

tract with the city. This contract Colorado Interstate was willing to purchase from Lee after it had been amended to provide a satisfactory gate rate. Hill and Benson testified that FB&D, acting for Colorado Interstate, negotiated the purchase and assignment of this Lee contract with Pratt and Dunham, brokers who represented Lee. The agreement was that through FB&D Colorado Interstate would pay to Pratt and Dunham a total of $275,000. This $275,000 payment was also in consideration of Lee's transfer to Arkansas of his franchises at Ordway, Sugar City, Manzanola, and Fowler. This agreement was carried out. (Hill, Vol. II, pp. 180, 195, 196, 199, 211, 212, 214, 215; Payne, Vol. IV, pp. 539, 541, inc.). This account of the transaction was confirmed by Arthur K. Lee in his testimony before the Federal Trade Commission (Ex. 10, pp. 359 to 372, inc.). The franchises of Lee at Ordway, Sugar City, Manzanola, and Fowler (as well as Lee's franchises in four other villages, which were never exercised by anyone) were transferred immediately to Arkansas and were never exercised or operated by Colorado Interstate (Hill, Vol. II, p. 215; Lusk, Vol. XVII, pp. 2430, 2431).

Other evidence as to the negotiation of this contract for the supply of gas at the Colorado Springs city gate is abstracted hereafter under "Cost of Contracts."

Colorado Interstate's next contract is one with Natural Gas Pipe line Company of America (hereafter called "Pipe Line Company of America"), dated October 15, 1931, which, together with the amendments thereto, is Exhibit 7-G herein.

EXHIBIT NO. 7-G.

Federal Power Commission.

Rate Schedule F.P.C. No. 8, also Supplements and Exhibit.

Filed by Colorado Interstate Gas Company,
Colorado Springs, Colorado.

Covering Natural Gas Sold to
Natural Gas Pipeline Company of America, Chicago, Illinois.

This schedule consists of Two Agreements dated October 15, 1931, Supplementa. Agreements dated respectively December 22, 1931, October 27, 1932, November 9, 1933, October 2, 1934, two dated September 4, 1935, January 30 1936.

March 26, 1937 and Letter Agreement dated July 27, 1938, which provide for the sale to Natural Gas Pipeline Company of America of 25% of the natural gas requirements of its pipe line, under the terms and conditions set forth therein.

Agreement Between Colorado Interstate Gas Company and Natural Gas Pipeline Company of America, Dated October 15, 1931.

THIS AGREEMENT, dated October 15, 1931, between COLORADO INTERSTATE GAS COMPANY, a corporation of the State of Delaware, which corporation is hereinafter referred to as "SELLER", and NATURAL GAS PIPELINE COMPANY OF AMERICA (formerly known as Continental Construction Corporation), a corporation of the State of Delaware, which corporation is hereinafter referred to as "BUYER",

WITNESSETH:

WHEREAS Buyer has constructed a natural gas pipeline from a point near Gray, Beaver County, Oklahoma, to a point near Joliet, Illinois, and may construct branches to Milwaukee, Wisconsin, and to other points; and

WHEREAS during the period of this agreement Buyer may increase materially the capacity of the pipeline now constructed by additions thereto, or by constructing additional pipelines to transport natural gas from Gray, Beaver County, Oklahoma, to the points above named and others; and

WHEREAS Buyer desires to purchase from Seller twenty-five percent (25%) of the natural gas requirements of the said pipeline as it now exists or may hereafter be added to or supplemented and a similar part of the requirements of any such additional pipeline hereafter constructed as it shall exist at the time of completion or thereafter be added to or supplemented and expects to purchase from Texoma Natural Gas Company the balance of such requirements; and

WHEREAS Seller desires to sell to Buyer twenty-five percent (25%) of the requirements of said pipelines:

NOW THEREFORE, in consideration of the mutual covenants herein contained, the parties do hereby covenant and agree as follows:

FIRST: Seller agrees to sell and deliver to Buyer, and Buyer agrees to purchase and receive from Seller, subject to the limitations hereinafter expressed, such quantities of natural gas as shall average monthly as nearly as is practicable through good operations twenty-five percent (25%) of the total amount of gas transported at any time during the continuance of this agreement by Buyer through any part or all of its pipeline or pipelines now or hereafter constructed between Gray, Beaver County, Oklahoma, and Joliet, Illinois, Milwaukee, Wisconsin, and any other points to which any gas transported through any part of Buyer's said pipeline or pipelines shall be delivered. If at any time during the continuance hereof Buyer shall sell or otherwise dispose of all or any part of its main pipeline or pipelines between Gray, Oklahoma and Joliet, Illinois, there shall be imposed upon the person acquiring the same as a condition of such sale or disposal the obligation to take from Seller at the point of delivery herein specified and upon the other terms and conditions herein provided twenty-five percent (25%) of the gas transported through the main pipeline or pipelines or the part thereof so sold or disposed of. If at any time during the continuance hereof Buyer shall sell or otherwise dispose of any branch pipeline or pipelines such sale or disposal may be made free from any obligation on the part of the person acquiring the same to take from Seller any gas transported through such branch pipeline or pipelines, but if Buyer shall thereafter furnish all or any part of the gas transported through such branch pipeline or pipelines, then Seller shall have the right to furnish to Buyer hereunder twenty-five percent (25%) of any quantity of gas which Buyer shall so furnish.

SECOND: Seller shall deliver and Buyer shall receive the natural gas hereby sold at the junction near Gray, Beaver County, Oklahoma, between a certain pipeline owned by Texoma Natural Gas Company and the said pipeline of Buyer, such junction point being hereinafter sometimes referred to as "Gray Junction", and title to the gas delivered hereunder shall pass from Seller to Buyer at the said point of delivery. Buyer hereby consents to the delivery on the premises of Buyer at Gray Junction of the natural gas to be delivered by Seller to Buyer hereunder, said premises being more particularly described as follows: the east thirty

(30) acres of the northwest quarter ($NW^1/_4$) of the northeast quarter ($NE^1/_4$) of section fifteen (15), township one north (T1N), range twenty east (R20E), in Beaver County, Oklahoma.

THIRD: If, during the continuance of this agreement, natural gas, except natural gas produced in Parmer, Castro, Swisher, Briscoe, Hall or Childress Counties, Texas or any counties north thereof in the State of Texas shall be found which, if not otherwise disposed of, would in the opinion of Buyer be offered in markets to be served from its said pipeline or pipelines or from any extension thereof and such natural gas is taken by Buyer the quantity of natural gas which Seller is required to sell and deliver and Buyer is required to purchase and receive hereunder shall be reduced by a quantity which shall be twenty-five percent (25%) of the quantity of such natural gas so taken by Buyer.

FOURTH: The gas delivered hereunder shall be natural gas as produced in its natural state, except that Seller may extract or permit the extraction of natural gasoline and/or helium (but not propane or butane except so far as is necessary in the extraction of natural gasoline and/or helium, such propane and butane to be restored to the gas to the extent practicable) and may treat such natural gas in order to bring it within the standards of purity hereinafter in this Article expressed.

When the natural gas delivered by Seller to Buyer hereunder is transported to Seller by any means other than pursuant to a certain Lease and Operating Agreement dated October 15, 1931, between Canadian River Gas Company and Texoma Natural Gas Company, then the natural gas delivered by Seller to Buyer hereunder:

(a) shall be commercially free from solid and/or liquid matter;

(b) shall not contain more than one grain of hydrogen sulphide per one hundred (100) cubic feet, provided that this purity requirement shall be considered as satisfied if a strip of white filter paper, recently moistened with a solution of one hundred (100) grains of lead acetate in one hundred (100) cubic centimeters of water, be exposed to the gas for one and one-half ($1^1/_2$) minutes in an apparatus previously purged, through which the

gas is flowing at the rate of approximately five (5) cubic feet per hour, the gas not impinging from a jet upon the test paper, and after this exposure the test paper is found not distinctly darker than a second paper freshly moistened with the solution and not exposed to the gas;

(c) shall not contain more than thirty (30) grains of total sulphur per one hundred (100) cubic feet;

(d) shall not contain an amount of moisture at any time exceeding that corresponding to saturation at the natural temperature of the gas at the point of measurement of the volume thereof as hereinafter provided and at the pressure at such point, and that the water shall not be present in liquid phase;

provided, however, that in the event any portion of any natural gas delivered to Buyer by vendors other than Seller shall contain a greater amount of hydrogen sulphide and/or a greater amount of total sulphur than the amount specified herein, Seller during the period of such delivery by such other vendor of Buyer shall be privileged to deliver to Buyer a like proportion of natural gas of the same sulphur content, but shall not deliver the same to Buyer commingled with any other gas then being delivered by it which conforms to the requirements as to sulphur content hereinbefore set forth, unless such other vendor of Buyer shall at the time be delivering to Buyer such gas in such commingled state.

The sulphur content of the natural gas delivered by Seller to Buyer under the circumstances mentioned in this Article shall for the purposes hereof be deemed to be that determined by tests made or caused to be made by Buyer at least once each day of samples of natural gas taken from the gas stream from which deliveries are made as near as conveniently may be to the point where deliveries of such natural gas are made hereunder or at such other place as the parties may agree upon.

Should such tests disclose the presence of sulphur or hydrogen sulphide in excess of the amounts above specified, then Buyer may, upon advising Seller of its intention so to do, refuse to accept further deliveries of natural gas from Seller hereunder until such time as the gas at the point where such samples were taken shall conform to the

foregoing sulphur content requirement. Advice given by Buyer by telegraph, telephone or in writing to the person in charge of Seller's office at Colorado Springs, Colorado, shall be deemed to have been given to Seller for the purposes of this Article.

FIFTH: The volume of natural gas to be paid for by Buyer to Seller hereunder for any month shall be the volume of natural gas delivered during such month by Canadian River Gas Company to Fritch Station (or to any other compressor station used to compress for transportation to Gray, Beaver County, Oklahoma, the natural gas deliverable hereunder) as computed from the readings of the meters for which provision is made in Article Eleventh hereof; which said computed volume shall be reduced two percent (2%) during the period in which the natural gasoline shall be extracted under the provisions of a certain gasoline plant operating agreement between Texoma Natural Gas Company and Canadian River Gas Company dated October 15, 1931, from the natural gas after such metering thereof and prior to the delivery of the gas to Buyer hereunder, in order to compensate for the shrinkage in volume of the said gas caused by the extraction of natural gasoline therefrom. At the end of any calendar year hereafter the percentage reduction in volume may be changed by agreement of the parties hereto so as to conform to the conditions then existing which affect such percentage.

SIXTH: The natural gas delivered hereunder shall (after the extraction of the natural gasoline therefrom, if such extraction occurs) contain not less than one thousand (1,000) British thermal units per cubic foot at an assumed absolute pressure of fourteen and sixty-five hundredths (14.65) pounds per square inch and at a base temperature of sixty degrees Fahrenheit (60° F.), except that if Buyer shall at any time purchase from Texoma Natural Gas Company natural gas having a British thermal unit content of less than the amount above specified, Seller may during the same period deliver to Buyer hereunder natural gas having such lesser British thermal unit content. It is understood and agreed by the parties that in the process of extracting gasoline from the raw natural gas a certain number of heat units will be taken therefrom. For the purpose of making computations hereunder, thirty-five (35) British thermal units

per cubic foot of the raw natural gas shall be deemed to be the amount so taken. At the end of any calendar year hereafter, the number of British thermal units which are deemed to be so removed in the extraction of gasoline may be changed by agreement of the parties hereto so as to conform to the conditions then existing which affect the number thereof.

Hourly tests of the British thermal unit content of the stream of gas passing through the meters, provision for which is made in Article Eleventh hereof, shall be made or caused to be made by Buyer, at a point after such gas has passed through the said meters and before it has entered the compressors at Fritch Station. If such tests show a British thermal unit content in such gas, at the pressure and temperature hereinabove specified, equal to one thousand (1,000) British thermal units per cubic foot plus thirty-five (35) British thermal units per cubic foot or such other number of British thermal units per cubic foot as shall at the time of such tests be agreed to represent the number of British thermal units which will be taken from the raw natural gas in the subsequent extraction of gasoline therefrom, the gas then being delivered hereunder shall be accepted as complying with the requirements of this Article. In the event that the hourly average of the British thermal unit content of such gas as disclosed by the tests taken in any twenty-four hour period is less than the amount above specified, Buyer may immediately advise Seller of such condition and unless, within forty-eight (48) hours after such notice, the British thermal unit content of the gas as determined by a test or tests made at the place and in the manner above specified conforms to the following requirements, Buyer may upon further advice to Seller, of its intention so to do, refuse to receive further deliveries of gas hereunder from Seller until such time as further tests made at the place and in the manner above specified shall disclose that the gas so tested again conforms to the said British thermal unit content requirement. Advice by telegraph, telephone or in writing given by Buyer to the person in charge of Seller's office at Colorado Springs, Colorado, shall be deemed for the purposes of this Article to be given to Seller.

Buyer shall make available to Seller daily the results of tests made by or for Buyer of the British thermal unit

content and sulphur content of the natural gas then being purchased by it from Texoma Natural Gas Company and from Seller. Seller shall have full opportunity to have a representative present at any such test or tests.

SEVENTH: The pressure at which the gas sold by Seller hereunder shall be delivered by it into Buyer's pipeline or pipelines at Gray Junction shall be the same pressure as is being maintained from time to time by Texoma Natural Gas Company for the purpose of making deliveries under its contract with Buyer dated October 15, 1931.

EIGHTH: For the gas delivered hereunder in any month prior to October 1, 1946, Buyer shall pay to Seller (a) a sum calculated at seven cents (7¢) for each one thousand (1,000) cubic feet of gas delivered, and in addition (b) a sum equal to all amounts paid or to be paid by Canadian River Gas Company to Texoma Natural Gas Company for that and all preceding months under the hereinbefore mentioned Lease and Operating Agreement between them dated October 15, 1931, to the extent that such amounts have not theretofore been paid by Buyer to Seller under this clause (b) of this paragraph. In the event of the termination, during the period of this agreement, of the said Lease and Operating Agreement without fault on the part of Canadian River Gas Company, Buyer shall pay to Seller as a part of the price for natural gas thereafter delivered hereunder, in lieu of the amount specified in the foregoing clause (b), the amount of the cost which shall have been incurred for such month by Seller in transporting or causing to be transported from Fritch Station to Gray Junction the natural gas delivered hereunder during such month; or at its option shall at its cost furnish or cause to be furnished transportation from Fritch Station to Gray Junction of the natural gas to be delivered hereunder.

For the gas delivered hereunder in any month after September 30, 1946, Buyer shall pay to Seller (a) a sum calculated by multiplying the hereinafter defined cost to Canadian River Gas Company (which shall include any successor to said company) per one thousand (1,000) cubic feet of producing and gathering natural gas during such month in the area described in Article Fourteenth hereof, by the number of thousands of cubic feet of gas delivered, and in addition (b) a sum equal to ten percent (10%) of a

sum computed by taking the sum calculated as described in clause (a) of this sentence and deducting therefrom Canadian River Gas Company's cost of extracting natural gasoline from its natural gas and amounts paid by Canadian River Gas Company for royalties on natural gasoline extracted from its natural gas and adding to the result all amounts received by Canadian River Gas Company from the sale of gasoline extracted by or for it from its natural gas after deducting therefrom the cost to it of the marketing of such gasoline, and in addition (c) a sum equal to all amounts paid or to be paid by Canadian River Gas Company to Texoma Natural Gas Company for that and all preceding months under the hereinbefore mentioned Lease and Operating Agreement between them dated October 15, 1931, to the extent that such amounts have not theretofore been paid by Buyer to Seller under this clause (c) of this paragraph, and under clause (b) of the first paragraph of this Article Eighth. In the event of the termination, during the period of this agreement, of the said Lease and Operating Agreement without fault on the part of Canadian River Gas Company, Buyer shall pay to Seller as a part of the price for gas thereafter delivered hereunder, in lieu of the amount specified in the foregoing clause (c), the amount of the cost which shall have been incurred for such month by Seller in transporting or causing to be transported from Fritch Station to Gray Junction the natural gas delivered hereunder during such month; or at its option shall at its cost furnish or cause to be furnished transportation from Fritch Station to Gray Junction of the natural gas to be delivered hereunder.

The cost to Canadian River Gas Company of producing each one thousand (1,000) cubic feet of natural gas as above referred to, shall be determined by adding—

(1) Canadian River Gas Company's entire cost, including natural gas used for fuel and charged at the average price being paid by Canadian River Gas Company for natural gas purchased from other producers, or if Canadian River Gas Company is not purchasing natural gas from other producers, then at the fair market value thereof at the mouth of the well in the field, of drilling wells for natural gas in the area described in Article Fourteenth hereof, irrespective of

whether such wells result in procuring natural gas in commercial quantities, or are dry holes, or result in procuring oil, and the cost to Canadian River Gas Company of purchasing gas wells in said area from the owners of oil rights in oil and gas leases; provided, however, there shall not be included under this sub-paragraph (1) of Article Eighth any item of cost incurred by Canadian River Gas Company for the drilling of wells not reasonably necessary under good operating conditions to supply its then existing customers and properly carry on its operations;

(2) Canadian River Gas Company's entire cost, as incurred in the said area, of maintaining producing equipment, of operating wells, of extracting natural gasoline from its natural gas, of rentals paid by it in carrying its gas and oil leaseholds, rights and assets, and of all royalties on natural gas, on natural gasoline extracted therefrom, and on oil, including in such cost any natural gas used by it for fuel in the foregoing operations and charged at the price provided in sub-paragraph (1) of this Article Eighth, together with all costs of the foregoing operations and maintenance not otherwise herein enumerated and litigation expense, public liability and damages resulting from its operations in the said area;

(3) Canadian River Gas Company's entire cost of acquiring renewals of leases and of acquiring new leases and other rights to produce natural gas in the said area; provided, however, there shall not be included under this sub-paragraph (3) of Article Eighth any cost of acquiring new leases or other rights to produce natural gas in said area beyond those reasonably necessary to enable Canadian River Gas Company to supply gas to customers then under contract with it and to establish reasonable reserves for the future performance of then existing contracts.

(4) Canadian River Gas Company's cost of measuring natural gas produced in said area and of maintaining meters and other equipment, facilities and installations for measuring natural gas.

(5) all taxes assessed against Canadian River Gas

Company because of the ownership or operation by it in the said area of its natural gas and oil wells, drilling equipment and other facilities, of property used or useful by it in the production of natural gas and oil, and of oil and gas leaseholds, rights and assets, but not including in this item any amount for taxes on net income or net profits;

(6) that part of all unallocated general administrative and office expense of Canadian River Gas Company which is properly chargeable to the operations and maintenance referred to in the foregoing sub-paragraphs (1) to (5) inclusive of this Article Eighth;

and by deducting from the total thus determined the sum of the following amounts—

(7) any amounts included in sub-paragraph (1) of this Article Eighth for the cost of natural gas actually produced by Canadian River Gas Company and used by it in the drilling of wells and any amounts included in sub-paragraph (2) of this Article Eighth for the cost of natural gas actually produced by Canadian River Gas Company and used by it in the manner there specified;

(8) any amounts received by Canadian River Gas Company from the sale of oil produced by it from any well in said area after deducting from the total amounts received therefor the cost to it of the marketing thereof;

(9) all amounts received by Canadian River Gas Company from the sale of gasoline extracted by or for it from natural gas produced in the said area after deducting from the total amounts received therefor the cost to it of the marketing thereof;

(10) all amounts received by Canadian River Gas Company from the sale of any gas or oil well drilled by it after September 30, 1946, in said area, including among other items the sale of any oil well to the owner of the oil rights under the lease on which such well is drilled;

(11) all amounts received by Canadian River Gas Company for property and salvage of property installed or acquired by it in the said area after September 30, 1946, the cost of which is or has been included in com-

putations of the cost of producing gas made in accordance with this Article Eighth;

and by dividing the remainder by the number of thousands of cubic feet of natural gas produced by Canadian River Gas Company in the said area and sold by it, including the number of thousands of cubic feet of natural gas used by it as fuel in compressing gas at its Amarillo Compressing Station or any other trunk line compressor station hereafter constructed or acquired by it and used by it for similar purposes, but excluding from such sales any quantity of natural gas produced by Canadian River Gas Company and used by it in the operations referred to in sub-paragraphs (1) and (2) of this Article Eighth.

The cost to Canadian River Gas Company of gathering each one thousand (1,000) cubic feet of natural gas, as hereinbefore referred to, shall be determined by adding—

(12) Canadian River Gas Company's entire cost, including natural gas used in connection therewith and charged at the price provided in sub-paragraph (1) of this Article Eighth, of installing or acquiring gathering pipe lines, field or supplemental compressor stations and other equipment, installations and facilities used by or useful to it for gathering natural gas produced by it in the said area and transporting natural gas from the points of production thereof in the said counties to Fritch Station, to the site of the Amarillo Compressing Station of Canadian River Gas Company, and to the site of any other similar trunk line compressor station to which it may hereafter deliver such natural gas;

(13) Canadian River Gas Company's entire cost of maintaining and operating gathering pipe lines, field or supplemental compressor stations and other equipment, installations and facilities used by or useful to it for gathering natural gas in the said area and transporting natural gas from the points of production thereof in the said area to Fritch Station, to the site of the Amarillo Compressing Station of Canadian River Gas Company, and to the site of any other similar trunk line compressor station to which it may hereafter deliver such natural gas, together with all costs not above enumerated which are properly chargeable to the maintenance and operation of such gathering system;

(14) that part of Canadian River Gas Company's unallocated general, administrative and office expenses which is properly chargeable to the maintenance and operation of such gathering system;

(15) all taxes assessed against Canadian River Gas Company because of the ownership or operation by it of such gathering system, not including in this item any amount for taxes on its net income or net profits;

and by deducting from the total thus determined the sum of the following amounts—

(16) any amounts included in sub-paragraphs (12) to (15) inclusive of this Article Eighth for the cost of natural gas actually produced by Canadian River Gas Company and used by it in the installation and/or the operation and maintenance of the gathering system referred to in said sub-paragraphs;

(17) all amounts received by Canadian River Gas Company for property and salvage of property installed or acquired by it in the said area after September 30, 1946, the cost of which is or has been included in computations of the cost of gathering natural gas made in accordance with this Article Eighth;

(18) the amount of any revenue received by Canadian River Gas Company for the transportation of natural gas for hire through any part of the said gathering system for any other persons;

and by dividing the remainder thus ascertained by the number of thousands of cubic feet of natural gas delivered out of the said gathering system by Canadian River Gas Company. The quantity of natural gas delivered out of the said gathering system at Canadian River Gas Company's Amarillo Compressing Station shall be assumed to be the quantity measured at the discharge side of said station plus the quantity used as fuel at said station.

No amount for amortization of cost of wells drilled or of property installed or acquired by Canadian River Gas Company prior to October 1, 1946, or any cost or expense incurred by it in connection with the drilling of such wells, installation or acquisition of such property shall be included in any of the computations made under the provisions of

this Article Eighth. The entire cost to Canadian River Gas Company of installing or acquiring any property installed or acquired by it after September 30, 1946, the cost of which enters into the foregoing computations under the provisions of this Article Eighth, shall be charged, for the purpose of such computations, during the month in which such cost is incurred, and no amount shall thereafter be included on account of the amortization of any such property.

The cost to Canadian River Gas Company of producing each one thousand (1,000) cubic feet of natural gas during any month after September 30, 1946, ascertained as above provided, shall be added to the cost to it of gathering each one thousand (1,000) cubic feet of natural gas during such month, ascertained as above provided, and the sum thus obtained shall be taken as the cost to it of producing and gathering each one thousand (1,000) cubic feet of natural gas during such month for the purpose of computing the price to be paid by Buyer to Seller for natural gas delivered to Buyer hereunder during such month as hereinbefore in this Article Eighth provided.

NINTH: If this agreement continues after September 30, 1946, then at the time of the termination hereof, the salvage value of the then remaining casing, pipe lines, machinery, equipment and all other apparatus installed or acquired by Canadian River Gas Company in the said area after September 30, 1946, the cost of which has been included in computations of the cost to Canadian River Gas Company of producing and gathering natural gas in accordance with Article Eighth hereof, shall be determined by agreement of the parties or, upon their failure to agree, then by arbitration in the manner hereinafter in Article Nineteenth provided, and within thirty days after such determination by agreement or by arbitration Seller shall pay to Buyer the part of the thus determined salvage value represented by the proportion which the amount of gas purchased hereunder by Buyer after September 30, 1946, bears to the total amount of gas produced by Canadian River Gas Company in the said area after said date.

TENTH: Seller will provide Buyer with any opportunity Seller possesses or can demand to inspect books, records and accounts containing original entries of items entering into the computation of the cost of producing and gathering

natural gas in accordance with the provisions of Article Eighth hereof, and of any sum to be paid under the provisions of Article Ninth hereof.

ELEVENTH: Seller shall furnish, install, operate and maintain, or cause to be furnished, installed, operated and maintained, a metering station properly equipped with orifice meters and recording gauges or such other type of meter or meters of standard make and design as may be mutually agreed upon, at or near the intake side of Fritch Station (or of any other compressor station used to compress for transportation to Gray, Beaver County, Oklahoma, the natural gas delivera- hereunder), in such manner as to accomplish the measu- ent of natural gas contemplated in Article Fifth hereof.

The metering equipment so installed by or for Seller, together with any buildings erected by or for it for such equipment shall be and remain its property or the property of the person or corporation erecting such equipment and buildings. If the metering station to be installed as herein provided shall be on the premises of Texoma Natural Gas Company, Buyer will obtain for and grant to Seller or to the person or corporation installing the metering equipment for Seller, the right of free ingress and egress to such metering equipment at all times for the purposes of installation, operation, repair and/or removal. Buyer shall have access to said metering equipment at all reasonable times, but the reading, calibrating and adjusting thereof and changing of charts, shall be done only by the employees, agents or representatives of Seller, or of the person or corporation erecting such equipment. Charts and records from such metering equipment shall remain the property of Seller or the property of the person or corporation installing such equipment for Seller. Upon request of Buyer, Seller will submit to Buyer records and charts from such metering equipment subject to return by Buyer within ten (10) days after receipt thereof, after which return the charts and records shall be kept on file for the mutual use of both parties. At least once each month and on a date as near the first of the month as practicable, Seller shall calibrate the said meters or cause the same to be calibrated in the presence of a representative of Buyer and the parties shall jointly observe any adjustments which are made in the

meters should such adjustments be necessary, and if the check meters hereinafter provided for have been installed, the same shall also be calibrated or caused to be calibrated by Buyer in the presence of representatives of Seller and any necessary adjustments jointly observed. For purposes of measurement and meter calibration the atmospheric pressure shall be assumed to be thirteen (13) pounds per square inch irrespective of variations in the actual atmospheric pressure from time to time. If either party at any time desires a test of any meter or if either party at any time observes a variation between the delivery meter and its check meter, if any such check meter is installed, it will promptly notify the other party, and the parties will then cooperate to secure an immediate calibration test and joint observation of any adjustment. Each party shall give to the other notice of the time of all tests of meters sufficiently in advance of holding the tests so that the other may conveniently have its representative present. If upon any test any metering equipment is found to be inaccurate by two percent (2%) or more, but not otherwise, registrations thereof and any payments based on such registrations shall be corrected at the rate of such inaccuracy for any period of inaccuracy which is definitely known and agreed upon, but in case the period is not definitely known and agreed upon, then for a period extending back one-half of the time elapsed since the last date of calibration, not exceeding, however, fifteen (15) days. Following any test any metering equipment found inaccurate shall immediately be adjusted to measure accurately. If for any reason meters are out of service and/or out of repair so that the quantity of natural gas cannot be ascertained or computed from the readings thereof, the quantity of natural gas delivered during the period such meters are out of service and/or out of repair shall be estimated and agreed upon by the parties hereto upon the basis of the best data available using the first of the following methods which is feasible:

(a) by correcting the error if the percentage of error is ascertainable by calibration, test of mathematical calculation;

(b) by using the registration of any check meter or meters if installed and accurately registering;

(c) by estimating the quantity of deliveries by deliv-

eries during preceding periods under similar conditions when the meter was registering accurately.

The unit of volume of natural gas delivered under this agreement shall be one (1) cubic foot of natural gas at a base temperature of sixty degrees Fahrenheit (60° F.) and at an absolute pressure of sixteen and four-tenths (16.4) pounds per square inch, and the readings and registrations of the metering equipment herein provided for shall be computed into such units. The true physical characteristics of the natural gas which affect such computations, including deviations from Boyle's Law, shall be given each its due consideration, and the determination of such physical characteristics shall be made in such manner and with such apparatus as is satisfactory to both parties, which shall be preferably in a manner and with apparatus approved by the United States Bureau of Standards. The temperature of the natural gas flowing through the meter shall be obtained by the use of a recording thermometer so installed that it will properly record such temperature. The average temperature recorded each day shall be used in computing measurements for that day. The specific gravity of the natural gas shall be determined or caused to be determined by Seller at or near the point of metering at least once each day. Seller shall advise Buyer of the time at which specific gravity tests are to be made in order that Buyer may conveniently have its representative present. The Edwards type specific gravity balance or other equipment acceptable to both parties shall be used.

Buyer may at its option and at its cost and expense install and operate or cause to be installed and operated check metering equipment, but the metering equipment installed by or for Seller shall be used for determining the amounts of natural gas delivered under this agreement. The check metering equipment so installed by or for Buyer, together with any buildings erected for such equipment, shall be and remain Buyer's property or the property of the person so installing it. Whenever such check metering equipment is located on premises of Seller, Seller

grants to Buyer the right of free ingress and egress to such metering equipment at all times for the purposes of installation, operation, repair and or removal. The check meters may be of the orifice type or of such other standard type for the measurement of natural gas as is approved by both parties. In the event check metering equipment is installed by or for Buyer, Seller shall have access to the same at all reasonable times, but the reading, calibrating and adjusting thereof and the changing of charts shall be done only by repersentatives of Buyer or of the person or corporation installing the same. Charts and records from said check metering equipment shall remain the property of Buyer. Upon request of Seller, Buyer will submit to Seller records and charts from said check metering equipment together with calculations therefrom for Seller's inspection and verification, subject to return by Seller within ten (10) days after receipt thereof.

TWELFTH: The total heating value of the natural gas delivered hereunder shall be determined hourly, as near the beginning of each hour as is practicable, by means of a Thomas recording calorimeter. The accuracy of the Thomas recording calorimeter shall be checked daily by means of a Junkers type of flow calorimeter operated according to the method of the United States Bureau of Standards. The Thomas and Junkers type calorimeters shall be installed, maintained and operated or caused to be installed, maintained and operated by Buyer. If at any time the Thomas recording calorimeter is out of service or not operating properly for any reason, hourly determinations of total heating value shall be made by the Junkers calorimeter and such hourly determinations shall be used in computing averages. The Thomas recording calorimeter shall be deemed operating properly when the total heating value as recorded by it does not vary from the total heating value as determined by the Junkers calorimeter by more than ten (10) British thermal units per cubic foot. Seller shall have the right to examine the said calorimeter equipment and test records at any reasonable hour and to have a representative present at all tests and adjustments of such calorimeter equipment.

THIRTEENTH: Seller shall render to Buyer on or before the fifteenth day of each month a statement of the quantity of natural gas delivered hereunder by Seller during the calendar month next preceding and of the amount due from Buyer therefor, and shall accompany said statement with all supporting charts available to Seller, which charts shall be returned to Seller after examination. Buyer agrees to make payment on or before the twenty-seventh day of each month for all natural gas delivered during the preceding calendar month. Should Buyer fail to pay any amount due to Seller when the same is due, interest thereon shall accrue at the rate of six percent (6%) per annum from the date when such amount is due until the same is paid. If such failure to pay continues for sixty (60) days, Seller may suspend deliveries of natural gas hereunder, but the exercise of such right shall be in addition to any other remedies available to Seller.

FOURTEENTH: The gas to be delivered hereunder by Seller shall be natural gas as produced in its natural state from the lands, gas leaseholds, gas rights, gas contracts and gas properties now or hereafter owned by Canadian River Gas Company, in Potter, Oldham, Hartley and Sherman counties, Texas; in that part of Moore County, Texas, south of an east and west line nine and one-half (9½) miles north of and parallel to the southern boundary of said county; in that part of Hutchinson County, Texas, south of an east and west line nine and one-half (9½) miles north of and parallel to the southern boundary of said county and west of a north and south line eight (8) miles east of and parallel to the western boundary of said county; and in that part of Carson County, Texas, west of a north and south line six and one-half (6½) miles east of and parallel to the western boundary of said county and north of an east and west line twelve (12) miles south of and parallel to the northern boundary of said county, and such lands, gas leaseholds, gas rights, gas contracts and gas properties in the hands of any subsequent owner. Seller agrees that it will throughout the term hereof preserve and

exercise any rights granted to it in a certain contract dated January 3, 1928, between Seller and Canadian River Gas Company and any further rights granted to it in any other or supplemental contract between said parties, to require Canadian River Gas Company at all times to use its best efforts to renew or extend its gas leaseholds, gas rights, gas contracts and gas estates and to operate its properties diligently and in a skillful and methodical way to accomplish the production and delivery to Seller of sufficient natural gas to satisfy Seller's obligations hereunder, and under any contracts deliveries under which have priority over the deliveries hereunder.

Seller reserves the right upon thirty (30) days previous written notice to Buyer to consent to the abandonment by Canadian River Gas Company of any of the lands, gas leaseholds, gas rights, gas contracts, gas properties and gas wells now or hereafter belonging to that company and to renounce its right to receive natural gas from any of the lands, gas leaseholds, gas rights, gas contracts, gas properties and gas wells now or hereafter owned by Canadian River Gas Company, when the properties, the subject of such abandonment or renouncement, are not capable of producing gas in commercial quantities and if Buyer does not within thirty (30) days after receipt of such notice object to such abandonment or renouncement then it shall be conclusively presumed that such lands, gas leaseholds, gas rights, gas contracts, gas properties and gas wells so to be abandoned or renounced are not capable of producing gas in commercial quantities.

Seller shall also during the continuance hereof have the right to renounce its right under the contract dated January 3, 1928 to receive gas from any of the lands, gas leaseholds, gas rights, gas contracts, gas properties and gas wells that are now owned by Canadian River Gas Company which that company may desire to sell, transfer or otherwise dispose of free from the obligations of said contract dated January 3, 1928, and to consent to such sale, transfer or other disposition by Canadian River Gas Com-

pany of such lands, gas leaseholds, gas rights, gas contracts, gas properties and gas wells free from the obligations of said contract dated January 3, 1928; provided, however, such right of renouncement and consent shall not be exercised with respect to more than twenty-five percent (25%) of the lands, gas leaseholds, gas rights, gas contracts, gas properties and gas wells now owned by Canadian River Gas Company.

Seller shall not consent to the sale, transfer or other disposition free from the obligations of said contract dated January 3, 1928, of, or renounce any right it may have to receive natural gas from, any lands, gas leaseholds, gas rights, gas contracts, gas properties and gas wells in said area hereafter acquired by Canadian River Gas Company and capable of producing gas in commercial quantities unless Seller shall acquire the right equivalent in all respects to the right created by said contract to receive gas from other lands in said area of an equivalent value for natural gas purposes.

FIFTEENTH: The obligations of Seller hereunder are subject

(1) to the reservation by Canadian River Gas Company of the natural gas reserved by such Company in its contract dated January 3, 1928, with Seller;

(2) to a reservation of the quantity of natural gas required by Seller to supply its customers in and near Denver, Pueblo, and Colorado Springs, Colorado, and of any quantity of natural gas Seller may require to supply any others to whom Seller has heretofore obligated itself to supply gas.

(3) to the terms of the operating agreement between Canadian River Gas Company and the Amarillo Oil Company dated the 3rd day of January, 1928, defining their respective operating rights in leases jointly owned.

Nothing herein contained shall obligate Seller to deliver natural gas hereunder in excess of the quantity available

to it under its contract dated January 3, 1928, with Canadian River Gas Company after deducting therefrom quantities sufficient to supply the reservations herein mentioned.

Nothing in this agreement shall in any way restrict or limit the right of Seller at any time to sell, transport and deliver natural gas purchased by Seller from Canadian River Gas Company to others than Buyer, provided, however, that

(a) Seller shall give natural gas to be delivered hereunder priority over any such natural gas to be delivered under any contract or arrangement except those included in the reservations (1) and (2) hereinbefore stated, and

(b) Seller shall refrain from making hereafter and consenting that Canadian River Gas Company may make hereafter any sale or sales exclusive of those hereunder and exclusive of those for which reservations are made in this Article Eifteenth, of natural gas from the gas leaseholds, gas rights, gas contracts, gas estates and gas wells of Canadian River Gas Company in quantities in excess of eighteen billion two hundred fifty million (18,250,000,000) cubic feet per year, measured upon the basis provided in Article Eleventh hereof.

SIXTEENTH: On or before April 1 of each year Buyer shall notify Seller in writing of the estimated maximum daily quantity of gas which it expects to call upon Seller to deliver in any twenty-four (24) hour period from four (4:00) o'clock P. M. Central Standard Time of any day to the same hour of the next succeeding day during the twelve (12) months period beginning on such April 1. Buyer shall notify Seller not later than twelve (12:00) o'clock noon Central Standard Time each day of the quantity of natural gas it desires to have Seller deliver during the twenty-four (24) hour period begining at four (4:00) o'clock P. M. Central Standard Time of such day, but the quantity specified in such notice shall not be more than

the maximum daily quantity specified in the last preceding annual notice, unless the Seller agrees to accept notice calling for the delivery of a larger quantity. Such daily notice may be given by telegraph or telephone or in writing and shall be considered to have been delivered to Seller when given to the person in charge of Seller's office at Colorado Springs, Colorado. If in any day twenty-five percent (25%) of Buyer's requirements of gas as specified in Article First shall exceed the maximum estimated quantity as specified in the last annual notice and/or the estimated quantity as specified in the daily notice for such day, Seller shall notwithstanding that fact be entitled subject to the provisions of this agreement to deliver twenty-five percent (25%) of Buyer's said requirements for that day.

If during any forty-eight (48) hour period consisting of two consecutive twenty-four (24) hour periods as above defined, the quantity of gas tendered by Seller hereunder

(a) shall be less than the aggregate of the quantities specified by Buyer in the daily notices for such consecutive twenty-four (24) hour periods, given as hereinbefore in this Article Sixteenth provided; and

(b) shall be less than one-third of the quantity delivered during such forty-eight (48) hour period to Buyer by Texoma Natural Gas Company under the agreement between Buyer and Texoma Natural Gas Company dated October 15, 1931; and

(c) shall be less than a quantity equal to twice the estimated maximum daily quantity specified in the last annual notice;

then such occurrence, unless caused by *force majeure* as defined in Article Eighteenth hereof, shall be considered for the purposes of this Article a "deficiency of delivery". Upon the occurrence of a second deficiency of delivery by Seller within any period of twelve (12) consecutive months Buyer shall have the right at its option by written notice to Seller within sixty (60) days after such deficiency of de-

livery shall have occurred either (1) to avail itself of any right or remedy to which Buyer may be entitled at law or in equity except for the cancellation of this agreement or (2) to curtail deliveries by Seller to the extent and for the period hereinafter provided. In case Buyer shall elect to curtail deliveries, the right of Seller to deliver to Buyer twenty-five percent (25%) of Buyer's requirements as provided in Article First hereof shall thereafter during the remainder of the calendar month in which such second deficiency of delivery shall have occurred and during the next succeeding eleven (11) calendar months, be diminished in proportion to the extent of such second deficiency of delivery, after which time Seller's right to deliver the full quantity specified in Article First hereof shall be restored. If during the remainder of the calendar month in which such second deficiency of delivery shall occur or during the next succeeding eleven calendar months a further deficiency of delivery shall occur, Buyer shall again have the right at its option by written notice to Seller within sixty (60) days after such further deficiency of delivery shall have occurred either (1) to avail itself of any right or remedy to which Buyor may be entitled at law or in equity except for the cancellation of this agreement or (2) further to curtail the right of Seller to deliver gas to Buyer hereunder as existing immediately prior to the occurrence of such further deficiency of delivery in proportion to the extent of such further deficiency of delivery for a further like period commencing at the time such further deficiency occurred; and so on successively in the case of further deficiencies of delivery beyond the third occurring during the period in which the right of Seller to deliver gas to Buyer hereunder shall have been so diminished.

A deficiency of delivery shall be deemed to have occurred on the day in which the forty-eight (48) hour period shall have ended. Notwithstanding the diminution as hereinabove provided of Seller's right to deliver gas hereunder, Buyer shall have the right at any time to require that

subsequent deliveries of gas by Seller shall be increased up to a maximum equal to the quantity specified in Article First hereof, and any exercise by Buyer of such right if complied with by Seller shall to the extent of the increased quantity so requested by Buyer and supplied by Seller remove the effect of any previous deficiencies of delivery. Any failure by Seller to comply with any requirement of Buyer for increased deliveries during any period of diminution as hereinabove provided shall not create a new deficiency of delivery. No waiver or election of rights hereunder by Buyer in case of any deficiency or delivery shall prejudice or affect the rights or remedies of Buyer in case of any subsequent deficiency of delivery regardless of when such subsequent deficiency shall occur.

SEVENTEENTH: This agreement shall continue until and including September 30, 1946 and thereafter at the election of Buyer for an additional period of two (2) years upon notice by Buyer to Seller given on or before September 30, 1944, and shall continue thereafter for successive periods of two (2) years each at the election of Buyer upon notice by Buyer to Seller given not less than fourteen months prior to the beginning of each two (2) year extension of its desire for such extension.

EIGHTEENTH: In the event of either party being rendered unable wholly or in part by *force majeure* to carry out its obligations under this agreement other than to make payment of amounts due hereunder, it is agreed that on such party giving notice and full particulars of such *force majeure* in writing or by telegraph to the other party as soon as possible after the occurrence of the cause relied on, then the obligations of the party giving such notice so far as they are affected by such *force majeure* shall be suspended during the continuance of any inability so caused but for no longer period, and such cause shall, so far as possible, be remedied with all reasonable dispatch.

The term "*force majeure*" as employed herein shall mean acts of God, strikes, lockouts or other industrial disturbances, acts of the public enemy, wars, blockades, insur-

rections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraints of rulers and peoples, civil disturbances, explosions, breakage or accident to machinery or line of pipe, the necessity for making repairs and or alteration in machinery or lines of pipe, freezing of wells or lines of pipe, partial or entire failure of natural gas wells and any other cause, whether of the kind herein enumerated or otherwise not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to overcome.

NINETEENTH: If the parties hereto are unable to agree upon salvage values as provided in Article Ninth hereof and it therefore becomse necessary to determine the same by arbitration, then within ten days after written request of either party for such arbitration, Seller shall appoint one arbitrator and Buyer shall appoint one arbitrator and the two so chosen, within ten days after the appointment of the second of the two so chosen, shall select a third. In case either Seller or Buyer shall fail to name an arbitrator within ten days after written request of either party for such arbitration, the arbitrator appointed by the other party shall be the sole arbitrator. In case the two arbitrators chosen as above provided are unable to agree upon a third arbitrator then such third arbitrator shall be appointed by the person who is the Judge of the United States District Court for the Western District of Oklahoma. The three arbitrators may act by a majority, and the arbitrator or arbitrators, as the case may be, after notice to Seller and Buyer, shall proceed to hear and consider the matter, and shall make his or their award within ninety days after the submission of the matter and such award shall be final and conclusive upon both parties. The expense of the arbitration shall be divided equally between the parties.

TWENTIETH: Seller hereby agrees to warrant generally the title to all gas delivered hereunder, and will indemnify Buyer and save it harmless from all suits, actions, debts, accounts, damages, costs and expenses arising from or out

of the adverse claim or claims of any or all persons to said gas.

TWENTY-FIRST: All notices to be given hereunder by Seller to Buyer shall be given by registered mail or by delivering the same to Buyer at its office at 20 North Wacker Drive, Chicago, Illinois, or at such other office as may hereafter be designated by Buyer for the purpose, and, except as elsewhere herein specifically provided, all notices to be given by Buyer to Seller shall be given by registered mail or by delivering the same to Seller at its office at Colorado Springs, Colorado, or at such other office as may hereafter be designated by Seller for the purpose.

TWENTY-SECOND: This agreement may be assigned by either of the parties hereto to any person, firm or corporation acquiring all of the assets of such party, but it may not be otherwise assigned without the consent of the other party thereto. Whenever any corporation is referred to herein such reference shall be deemed to include the successors and assigns of such corporation.

TWENTY-THIRD: As between the parties hereto Seller, or those making deliveries of natural gas hereunder for it, shall be in control and possession of the natural gas deliverable hereunder and responsible for any damage or injury caused thereby until the same shall have passed the point of connection between Seller's pipeline or the pipeline of the person or corporation making delivery for Seller and Buyer's pipelines at Gray Junction, after which Buyer shall be deemed to be in exclusive control and possession thereof and responsible for any such injury or damage.

TWENTY-FOURTH: The word "gas" wherever used herein shall mean natural gas.

IN WITNESS WHEREOF, the parties hereto have caused their names to be signed hereto and their respective corporate

seals to be affixed and attested by their respective officers thereunto duly authorized as of the date first above written.

COLORADO INTERSTATE GAS COMPANY,
[SEAL] By CHRISTY PAYNE, President.
Attest: E. E. DUVALL, Secretary.

NATURAL GAS PIPE LINE COMPANY OF AMERICA,
[SEAL] By H. O. CASTER, President.
Attest: E. E. McWHINEY, Asst. Secretary.

Colorado Interstate Gas Company Exhibit A to Rate Schedule F.P.C. No. 8.

Lease and Operating Agreement Between Texoma Natural Gas Company and Canadian River Gas Company. Dated October 15, 1931.

This Indenture of Lease and Operating Agreement, dated as of October 15, 1931, between TEXOMA NATURAL GAS COMPANY (hereinafter called "Lessor"), a corporation organized and existing under the laws of the State of Delaware, and CANADIAN RIVER GAS COMPANY (hereinafter called "Lessee"), a corporation organized and existing under the laws of the State of Delaware,

WITNESSETH:

WHEREAS Lessor is the owner of a certain natural gas compressor station located at a point in Hutchinson County, Texas, hereinafter specifically described, and of a certain pipe line extending from the said point to a point in Beaver County, Oklahoma, hereinafter specifically described, and of certain telephone lines and other equipment auxiliary to the compressor station and pipe line above referred to, which said property is designed to transport natural gas from the said point in Texas to the said point in Oklahoma: and

WHEREAS Lessee desires to obtain the use of an interest in the said facilities for the transportation to the said point in Oklahoma of its natural gas: and

WHEREAS the parties hereto have reached an agreement pursuant to which Lessor will lease to Lessee an interest in said property, with a further agreement by which the said property will be maintained and operated for the transportation of the natural gas of Lessor and that of Lessee between the said points upon the terms and conditions hereinafter stated;

NOW THEREFORE, for and in consideration of ten dollars ($10.00) and other valuable considerations by each of the parties hereto to the other in hand paid, the receipt of which is hereby mutually acknowledged, and in consideration of the mutual covenants and conditions hereinafter set forth and the benefits to the parties hereto expected to result therefrom, the parties hereto do hereby agree with each other as follows:

Article 1.

Lessor by these presents demises and leases unto Lessee, its successors and assigns, an undivided twenty-five percent (25%) interest in and to the property located in the States of Texas and Oklahoma, consisting of a compressor station, a pipe line and telephone lines, and all equipment auxiliary thereto, together with all parallel lines, if any, that may hereafter be constructed, more fully described as follows:

All that pipe line together with the easements and/or rights of way for constructing, maintaining, replacing and operating the same, including all pipes, pumps, engines, buildings, structures, tanks, meters, tools and appliances, together with telephone systems, and other real and personal property used in connection therewith, described generally as follows:

Beginning at a point 3187 feet east and 670 feet north of the southwest corner of Section Five (5), Block Y-2, Tyler Tap RR Survey, Hutchinson County, Texas; said point being the center line and south face of the block gate on Lessee's intake;

Thence extending in a general northeasterly direction a distance of 165,850 feet to a point in the County line between Hutchinson and Hansford Counties, Texas;

Thence continuing in a general northeasterly direction through Hansford County, Texas, a distance of 127,971 feet to a point in the County line between Hansford and Ochiltree Counties, Texas;

Thence continuing in a general northeasterly direction through Ochiltree County, Texas, a distance of 76,333 feet to a point in the County line between Ochiltree County, Texas, and Beaver County, Oklahoma;

Thence continuing in a general northeasterly direction through Beaver County Oklahoma, a distance of 25,407 feet to a point 4257.9 feet west and 50 feet north of the southeast corner of Section Fifteen (15), Township One (1) North, Range Twenty (20) East, Beaver County Oklahoma, being the center line and southwest face of a certain main line gate valve, said point being hereinafter referred to as "Gray Junction".

A compressor station, hereinafter referred to as "Fritch Station", together with all equipment, machinery, tools, appliances and other personal property and facilities now or hereafter used or useful for the complete and proper compression and transportation to Gray, Oklahoma, of natural gas produced in the Panhandle section of Texas, irrespective of whether such additional facilities are connected to or operate independently of the herein described facilities; the compressor station herein referred to being located upon the following described property in Hutchinson County, State of Texas:

A portion of Section five (5), Block Y-2, Tyler Tap RR Company Survey, containing 80 acres of land described by metes and bounds as follows: Beginning at a point 660 feet east, and 660 feet north of the southwest corner of said Section five (5); thence north parallel with the west line of said Section, 1320 feet to a point for corner; thence east parallel with the south line of said Section, 2640 feet to a point for corner; thence south 1320 feet to a point for corner; thence west 2640 feet to the place of beginning.

Nothing herein contained shall be construed as vesting in Lessee any interest in or to Lessor's gasoline and re-

frigerating plants located on the tract last above described, which plants are specifically excluded from this lease.

It is the intention of the parties hereto to include under the terms of this lease all compressor stations, pipe lines, telephone lines and all other equipment, facilities and installations maintained by the Lessor at any time during the continuance hereof and used or useful for the purpose of compressing natural gas at Fritch Station and transporting such natural gas from there to Gray Junction.

The estate hereinafter created in Lessee is hereinafter called the "Demised Estate", and the property of Lessor in which such estate is hereby created is hereinafter called the "Property".

TO HAVE AND TO HOLD the Demised Estate unto Lessee, its successors and assigns, for the period and upon the terms and conditions herein set forth, subject, however, in all respects to the prior lien of a certain Indenture, dated as of December 15, 1931, made by Lessor to The Chase National Bank of the City of New York, as trustee (hereinafter called the "Indenture"), to which reference is hereby made, which Indenture covers and is intended to cover the Property herein demised, together with other property of Lessor, and is made to secure an issue of bonds of Lessor, to be issued as in said Indenture provided and also subject, as to all rights-of-way, to any present or future liens which may exist or may be created by Farm Mortgages and Other Liens affecting the land covered by such rights-of-way as such terms are therein defined.

Lessor reserves the right, power and authority to mortgage or remortgage the Property from time to time for any purpose it may authorize, prior to the lien of these presents as though this lease had not been entered into, and Lessee hereby agrees to execute and deliver such further instrument or instruments subordinating this lease to the lien of any such mortgage or mortgages as shall be desired by any mortgagee or trustee or proposed mortgagee or trustee under any such mortgage and Lessee hereby irrevocably appoints Lessor the attorney-in-fact of Lessee to execute and deliver any such instrument or instruments for and on behalf of Lessee.

Article II.

The term of this lease shall begin on October 15, 1931, and shall continue until and including September 30, 1946, and thereafter, at the option of the Lessee, for successive periods of two (2) years each upon notice by Lessee to Lessor given not less than one (1) year prior to the beginning of each such two (2) year period of its desire for such extension, and such option of renewal and extension shall be considered as having been exercised unless Lessee gives Lessor notice in writing at least one (1) year prior to the beginning of such extension period of its intention not to exercise such privilege or option of renewal or extension. Lessee may at any time on thirty (30) days notice in writing to Lessor of its desire so to do, terminate this Lease and Operating Agreement.

Article III.

Lessee covenants and agrees to pay on or before the last day of each calendar month, as rental hereunder for the next preceding calendar month, an amount equal to twenty-five percent (25%) of the interest and of the sinking fund and/or other retirement charges on all bonds, notes or other indebtedness of Lessor then outstanding, the proceeds of which are shown by Lessor's books to have been invested in the Property, in accordance with a detailed statement of the amount so payable to be presented in writing by Lessor to Lessee on or before the tenth day of the month in which the payment is due. Lessee further covenants and agrees that it will not use the herein Demised Estate for the purpose of transporting natural gas to any point other than to the property described in Article VI hereof.

Article IV.

Lessor hereby covenants and agrees that so long as there are outstanding any bonds, notes or other evidences of indebtedness secured by lien or mortgage upon any of the Property it will pay and discharge the principal and interest thereof when and as the same become due and payable and will in all respects comply with and perform all of the covenants and provisions on its part to be performed and complied with under the terms of any such mortgage

or mortgages. In the event that Lessor shall at any time during the continuance of this lease fail to pay promptly upon the day when the same becomes due any installment of interest or any other sum due from it under the terms of any mortgage upon the Property, Lessee may, but shall be under no obligation to, pay the same for the account of Lessor and deduct such payment with interest at the rate of six percent (6%) per annum from any amounts thereafter due from Lessee to Lessor hereunder. Lessor agrees to comply with and conform to all laws and ordinances of any municipality or other governmental authority affecting the Property. Lessee shall at all times during the term hereof have the right, but shall not be under obligation to pay, cancel and clear off all liens, charges and claims upon and against the Property on account thereof or arising therefrom, and to redeem the Property from any sales on account thereof or arising therefrom, from time to time, and any amount so paid by Lessee, including reasonable expenses and interest, may be deducted by Lessee from any amounts thereafter due from Lessee to Lessor hereunder. All sums so paid by Lessee shall bear interest at the rate of six percent (6%) per annum from the date of such payment so long as they remain unpaid by Lessor, and the same may be collected by suit at law or in any other legal way.

Article V.

Upon Lessee's failure to pay the rental herein required to be paid by it when the same is due, or upon Lessee's failure to comply with any of the conditions of this Lease and Operating Agreement the same may, at the option of Lessor, be terminated by proceeding as follows: Lessor shall cause written notice to be personally served on the President, Vice President, Secretary or Treasurer of Lessee, stating specifically the cause for terminating this Lease and Operating Agreement and declaring it to be the intention of Lessor to terminate the same. Thereupon Lessee shall have thirty (30) days after the service of the aforesaid notice in which to remedy or remove the cause or causes stated in such notice for terminating this Lease and Operating Agreement, and if within said period of thirty (30) days Lessee does so remedy or remove said cause or

causes, then such notice shall be withdrawn and this Lease and Operating Agreement shall continue in full force and effect. If Lessee does not so remedy and remove the cause or causes of default within said period of thirty (30) days, then this Lease and Operating Agreement shall become null and void from and after the expiration of said period. The failure or omission of Lessor to exercise the rights in this paragraph contained shall not operate to bar, abridge or destroy the right of Lessor to give notice of any subsequent breach of any of the conditions of this Lease and Operating Agreement by Lessee.

Article VI.

Lessor shall have the right to sell or otherwise dispose of any part of the Property free from the lien hereof and of any mortgage thereon without the consent of Lessee, upon compliance with the terms and provisions of such mortgage, and the basis of computing the rental or other sums payable by Lessee hereunder shall not thereby be reduced or otherwise affected, provided that Lessor shall not sell or dispose of any of the Property without substituting therefor other property and/or equipment, to the end that the efficient operation of the aforesaid-described pipeline and compressor station shall at all times continue and be available to Lessee for the delivery of any gas which it may be required to deliver to a purchaser taking delivery at any point located on the following described tract with the consent of the owner of the said tract, viz.: the east thirty (30) acres of the northwest quarter (NW¼) of the northeast quarter (NE¼) of section fifteen (15), township one North (T1N), range twenty east (R20E), in Beaver County, Oklahoma.

Article VII.

Lessor shall operate, maintain and keep in a good and reasonable state of repair the Property during the term hereof, upon the terms and conditions hereinafter set out. The parties hereto shall at all times during the term hereof have joint possession of the Property, and nothing in this Lease and Operating Agreement contained shall be deemed to, or shall, affect such right of possession.

Article VIII.

Lessee covenants and agrees to pay to Lessor on or before the last day of each calendar month that part of the cost to Lessor, as shown by its books, of operating, repairing and maintaining the Property for the next preceding calendar month, in accordance with a detailed statement of such cost to be presented in writing by Lessor by the tenth day of the month in which the payment is due, which bears the same proportion to the total amount of such cost which the quantity of gas delivered by Lessee to Fritch Station during such preceding calendar month bears to the total quantity of gas delivered to said Station during such month.

Article IX.

Any payment by Lessee under Article III or Article VIII hereof shall not prejudice the right of either party to adjustment of any statement to which it has taken exception or may within six (6) months after presentation thereof take exception. Should Lessee fail to pay any amount due to Lessor when the same is due, interest thereon shall accrue at the rate of six percent (6%) per annum from the date when such amount is due until the same is paid.

Article X.

Lessee may at all reasonable times audit the books of Lessor to determine the accuracy of its records insofar as they concern the payment of any amounts due or claimed to be due from Lessee hereunder and to satisfy itself as to the proper operation of the Property.

Article XI.

The parties agree that the conditions upon which they shall respectively deliver natural gas into the Property at Fritch Station are as follows:

SECTION 1. All natural gas delivered to Fritch Station by Lessor, Lessee and any others shall be separately measured near the intake side of said Station.

SECTION 2. Such gas shall be raw natural gas as produced in its natural state from the wells and

(a) shall be commercially free from solid and/or liquid matter;

(b) shall not contain more than one (1) grain of hydrogen sulphide per one hundred (100) cubic feet; provided that this purity requirement shall be considered as satisfied if a strip of white filter paper, recently moistened with a solution of one hundred (100) grains of lead acetate in one hundred (100) cubic centimeters of water, be exposed to the gas for one and one-half (1½) minutes in an apparatus previously purged, through which the gas is flowing at the rate of approximately five (5) cubic feet per hour, the gas not impinging from a jet upon the test paper, and after this exposure the test paper is found not distinctly darker than a second paper freshly moistened with the solution and not exposed to the gas;

(c) shall not contain more than thirty (30) grains of total sulphur per hundred (100) cubic feet;

(d) shall not contain an amount of moisture at any time exceeding that corresponding to saturation at the natural temperature of the gas in the main pipe line at Lessee's meter and at the pressure at such point, and that the water shall not be present in liquid phase;

provided, however, that each party may before delivery of its natural gas treat said gas in order to bring it within the standards of purity hereinabove in this Article specified and may extract helium therefrom; and provided, further, that in the event that any portion of the natural gas delivered by Lessor at any time to Fritch Station shall contain a greater amount of hydrogen sulphide and/or a greater amount of total sulphur than the amounts specified herein, Lessee during the period of such delivery by Lessor shall be privileged to deliver to Fritch Station a like portion of natural gas of the same sulphur content, but shall not deliver the same to Fritch Station commingled with any other gas then being there delivered by it which conforms to the requirements as to sulphur content first hereinabove in this Article stated, unless Lessor shall at the time be delivering to Fritch Station such gases in such commingled state.

SECTION 3. Lessor shall make tests for sulphur content at least once each day of the natural gas delivered to Fritch Station by it and by Lessee, and shall promptly advise Lessee of the result of any test which shows a sulphur content in the gas in excess of the above requirements. Lessee shall be notified of the time and place of all such tests and shall be afforded an opportunity to have its representative present at the same. Should such tests at any time disclose the presence in the gas being delivered by Lessee of hydrogen sulphide or of total sulphur in excess of such requirements then Lessor may, upon advising the person in charge of the office of Lessee at Amarillo, Texas, by telegraph, telephone or in writing, refuse to receive further deliveries of natural gas from Lessee at Fritch Station until such time as the natural gas of Lessee at the point of intake into Fritch Station shall conform to the foregoing sulphur content requirements.

SECTION 4. The raw natural gas to be delivered to Fritch Station by Lessee shall contain sufficient heat units so that after any gasoline therein contained shall have been extracted therefrom by or on behalf of Lessee, such natural gas will contain not less than one thousand (1000) British thermal units per cubic foot, at an assumed absolute pressure of fourteen and sixty-five hundredths (14.65) pounds per square inch and at a base temperature of sixty degrees Fahrenheit (60° F.), except that if Lessor shall at any time deliver to Fritch Station raw natural gas having a British thermal unit content of less than the amount so specified to be delivered to Fritch Station by Lessee, then Lessee shall during the period of delivery by Lessor of such gas have the privilege of delivering to Fritch Station raw natural gas having such lessor British thermal unit content.

It is understood and agreed by the parties that in the process of extracting gasoline from the raw natural gas a certain number of the heat units will be taken therefrom. For the purpose of making computations hereunder thirty-five (35) British thermal units per cubic foot of the raw natural gas shall be deemed to be the amount so taken. At the end of any calendar year hereafter, the number of British thermal units which are deemed to be so removed in the extraction of gasoline may be changed by agreement

of the parties hereto so as to conform to the conditions then existing which affect the number thereof.

For the purpose of determining the British thermal unit content of the raw natural gas delivered respectively by the parties hereto to Fritch Station, hourly tests shall be made by Lessor from samples taken from the pipeline or pipelines of the parties hereto near the intake side of Fritch Station. Lessee shall be notified of the time and place of all such tests and shall be afforded an opportunity to have its representative present at the same. If such tests show an hourly average British thermal unit content in such gas in any twenty-four (24) hour period, at the pressure and temperature above specified, equal to one thousand (1000) British thermal units per cubic foot plus thirty-five (35) British thermal units per cubic foot or such other number of British thermal units per cubic foot as shall at the time of such test be agreed to represent the number of British thermal units which will be taken from the raw natural gas in the subsequent extraction of gasoline therefrom, the gas then being delivered by Lessee to Fritch Station shall be accepted as complying with the requirements of this Article.

SECTION 5. In the event that the hourly average of the British thermal unit content of the raw natural gas delivered to Fritch Station by Lessee in any twenty-four (24) hour period is less than the amount specified in the foregoing Section (4) of this Article, Lessor may immediately advise the person then in charge of the office of Lessee at Amarillo, Texas, by telegraph, telephone or in writing of such condition and if within forty-eight (48) hours after such advise, the British thermal unit content of the natural gas as determined by a test or tests made as above specified still fails to meet the foregoing requirements, Lessor may upon further advice to Lessee, given in like manner, of its intention so to do, refuse to receive from Lessee further deliveries of gas at Fritch Station until such time as further tests made as above specified shall disclose that the gas then tendered for such delivery by Lessee conforms to the said British thermal unit requirement.

SECTION 6. Lessee shall deliver the said raw natural gas to Fritch Station at a gauge pressure of not less than one hundred and fifty (150) pounds per square inch.

Article XII.

SECTION 1. For the purpose of accomplishing the measurement of the natural gas delivered by the respective parties to Fritch Station, as provided in Section 1 of Article XI hereof, the parties hereto shall respectively furnish, install, operate and maintain, at their separate cost and expense, metering stations properly equipped with orifice meters and recording gauges or such other type of meters of standard make as may be mutually agreed upon, located at or near the intake side of Fritch Station, and on their respective pipe lines. The quantities of natural gas measured by such respective meters shall be deemed to be the quantities of natural gas delivered by the parties respectively to Fritch Station, and such quantities shall be used in computing the charges provided for in Article VIII hereof.

SECTION 2. The metering equipment so installed by the parties, together with any buildings erected by them for such equipment, shall be and remain the property of the party so installing and erecting such equipment and buildings. Each party shall have access to said metering equipment of the other party at all reasonable times, but the reading, calibrating and adjusting thereof and the changing of charts shall be done only by the employees, agents or representatives of the party installing and operating the metering equipment. Charts and records from such metering equipment shall remain the property of the respective parties. Upon request of either party, the other party shall submit to it records and charts from said metering equipment, together with calculations therefrom, for its inspection and verification, subject to return within ten (10) days after receipt thereof, after which return the charts and records shall be kept on file for the mutual use of both parties. At least once each month and on a date as near the first of the month as practicable, each party shall calibrate its meters or cause its meters to be calibrated in the presence of a representative of the other party and the parties shall jointly observe any adjustments which are made in the meters should such adjustments be necessary, and if the check meters hereinafter provided for have been installed, the same shall be calibrated by the party operating the check metering equipment in the presence of a representative of the other party and any adjustments joint-

ly observed should such adjustments be necessary. For purposes of measurement and of meter calibration the atmospheric pressure shall be assumed to be thirteen (13) pounds per square inch irrespective of variations in the actual atmospheric pressure from time to time. If either party at any time desires a test of any meter or if either party at any time observes a variation between the delivery meter and its check meter, if any such check meter is installed, it will promptly notify the other party, and the parties will then cooperate to secure an immediate calibration test and joint observation of any adjustments. Each party shall give to the other notice of the time of all tests of meters sufficiently in advance of holding the tests so that the other may conveniently have its representative present. If upon any test any metering equipment is found to be inaccurate by two per cent (2%) or more, but not otherwise, registrations thereof and any payments based on such registrations shall be corrected at the rate of such inaccuracy for any period of inaccuracy which is definitely known and agreed upon, but in case the period thereof is not definitely known and agreed upon, then for a period extending back one-half of the time elapsed since the last date of calibration, not exceeding, however, fifteen (15) days. Following any test any metering equipment found inaccurate shall immediately be adjusted to measure accurately. If for any reason meters are out of service and/or out of repair so that the quantity of natural gas cannot be ascertained or computed from the reading thereof, the quantity of natural gas delivered through the period such meters are out of service and/or out of repair shall be estimated and agreed upon by the parties hereto upon the basis of the best data available using the first of the following methods which is feasible:

(a) by correcting the error if the percentage of error is ascertainable by calibration, test or mathematical calculation;

(b) by using the registration of any check meter or meters if installed and accurately registering;

(c) by estimating the quantity of deliveries by deliveries during preceding periods under similar conditions when the meter was registering accurately.

SECTION 3. The unit of volume of natural gas delivered to Fritch Station by the respective parties shall be one (1) cubic foot of natural gas at a base temperature of sixty degrees Fahrenheit (60° F.) and at an absolute pressure of sixteen and four-tenths (16.4) pounds per square inch, and the readings and registrations of the metering equipment herein provided for shall be computed into such units. The true physical characteristics of the natural gas which affect such computations, including deviations from Boyle's Law, shall be given each its due consideration, and the determination of such physical characteristics shall be made in such manner and with such apparatus as is satisfactory to both parties, which shall be preferably in a manner and with *appartus* approved by the United States Bureau of Standards. The temperature of the natural gas flowing through the meters of each party shall be obtained by the use of recording thermometers so installed that they will properly record such temperature. The average temperature so recorded each day shall be used in computing measurements for that day. The specific gravity of the natural gas delivered to Fritch Station by each party shall be determined by such party at or near the point of metering at least once each day. Each party shall advise the other of the time at which specific gravity tests are to be made in order that the other may conveniently have its representative present. The Edwards type specific gravity balance or other equipment acceptable to both parties shall be used.

SECTION 4. Either party may at its option and at its cost and expense install and operate check metering equipment to verify the measurement of the natural gas delivered by the other party to Fritch Station, but the metering equipment installed by or for the party delivering the gas shall be used for determining the quantities of natural gas delivered by it under this agreement. The check metering equipment so installed, together with any buildings erected for such equipment, shall be and remain the property of the party installing it. The check meters may be of orifice type or of such other standard type for the measurement of natural gas as is approved by both parties. In the event check metering equipment is installed by either party, the other shall have access to the same at all reasonable times, but the reading, calibrating and adjusting thereof and the changing of charts shall be done only by employees

or agents of the party installing it. Charts and records from said check metering equipment shall remain the property of the party installing it. Upon request of either party, the other will submit to the party making the request records and charts from its metering equipment together with calculations therefrom for the other's inspection and verification, subject to return within ten (10) days after receipt thereof.

Article XIII.

The total heating value of the natural gas delivered by each party to Fritch Station shall be determined hourly by Lessor at or near the intakes to said station as near the beginning of each hour as is practicable, by means of a Thomas recording calorimeter. The accuracy of the Thomas recording calorimeter shall be checked daily by means of a Junkers type of flow calorimeter operated according to the method of the United States Bureau of Standards. The Thomas and Junkers type calorimeters shall be installed, maintained and operated by and at the expense of Lessor. If at any time the Thomas recording calorimeter is out of service or not operating properly for any reason, hourly determinations of total heating value shall be made by the Junkers calorimeter and these hourly determinations shall be used in computing averages. The Thomas recording calorimeter shall be deemed operating properly when its recorded heating value does not vary from the total heating value as determined by the Junkers type of flow calorimeter by more than ten (10) British thermal units per cubic foot. Lessee shall have the right to examine Lessor's calorimeter equipment and test records at any reasonable hour and to be present at all tests and adjustments of such calorimeter equipment.

Article XIV.

Lessee shall give to Lessor on or before the eighth day of each month a statement of the quantity of natural gas delivered to Fritch Station by it during the preceding calendar month and shall accompany said statement with the supporting charts, which charts shall be returned to Lessee after examination.

Article XV.

In the event of either party being rendered unable wholly or in part by *force majeure* to carry out its obligations under this lease and operating agreement other than to make payments of amounts due hereunder, it is agreed that on such party giving notice and full particulars of such *force majeure* in writing or by telegraph to the other party as soon as possible after the occurrence of the cause relied on, then the obligations of the party giving such notice so far as they are affected by such *force majeure*, shall be suspended during the continuance of any inability so caused but for no longer period, and such cause shall, so far as possible, be remedied with all reasonable dispatch.

The term "*force majeure*" as employed herein shall mean acts of God, strikes, lockouts, or other industrial disturbances, acts of the public enemy, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraints of rulers and peoples, civil disturbances, explosions, breakage or accident to machinery or lines of pipe, the necessity for making repairs and/or alterations in machinery or lines of pipe, freezing of lines of pipe and any other cause, whether of the kind herein enumerated or otherwise, not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to overcome.

Article XVI.

All notices to be given hereunder by Lessee to Lessor shall be given by registered mail or by delivering the same to Lessor at its office at Amarillo, Texas, or at such other office as may be hereafter designated by Lessor for the purpose, and all notices to be given by Lessor to Lessee, except as herein specifically provided otherwise, shall be given by registered mail or by delivering the same to Lessee at its office at Amarillo, Texas, or at such other office as may be hereafter designated by Lessee for the purpose.

Article XVII.

Lessor shall indemnify and save Lessee harmless from any damage or injury caused in the transportation of natural gas from the time such natural gas is delivered by Lessee into the Property at Fritch Station until such natural gas is delivered out of the Property at Gray Junction.

Article XVIII.

This Lease and Operating Agreement may be assigned by either of the parties hereto to any person, firm or corporation acquiring all of the assets of such party, but it may not be otherwise assigned without the written consent of the other party hereto. Whenever any person, firm or corporation is referred to herein such reference shall be deemed to include the successors and assigns of such person, firm or corporation.

IN WITNESS WHEREOF, the parties hereto have caused their names to be signed hereto, and their respective corporate seals to be hereunto affixed and attested by their respective officers thereunto duly authorized, as of the date first above written.

TEXOMA NATURAL GAS COMPANY,
[Seal] By H. O. CASTER, President.

Attest:
C. C. KELLEY, Secretary.

CANADIAN RIVER GAS COMPANY,
[Seal] By N. K. MOODY, Vice-President.
Attest:
VICTOR A. IBOE, Secretary.

Colorado Interstate Gas Company Supplement No. 1-A. Effective date December 1, 1931. Filing date February 1, 1939 to Rate Schedule FPC No. 8.

Continental Construction Corporation
20 N. Wacker Drive
Chicago, Illinois.

60 Wall Street, New York, N. Y., December 22, 1931.

Mr. Christy Payne, President Colorado Interstate Gas Company, 26 Broadway, New York City.

Dear Mr. Payne: We propose for your acceptance that that part of the gas purchased by this Company from Colorado Interstate Gas Company under our October 15, 1931 contract, for the sale of natural gas at Gray, Oklahoma, which is equal to 25% of the gas marketed by us as "industrial dump", shall, for a period of two years from and after December 1, 1931, be paid for at the price of four (4) cents per M.C.F., and for three years thereafter, at a

price of five (5) cents per M.C.F., instead of the price named in our said contract of October 15, 1931. This is in accordance with the agreement reached with Mr. N. K. Moody on November 19, 1931.

The quality, pressure base, point of delivery and other terms of purchase and sale shall conform to those embodied in the said gas purchase contract dated October 15, 1931.

If the above terms governing this supplementary agreement are satisfactory will you please signify your acceptance by executing and returning one copy?

Very truly yours,

NATURAL GAS PIPELINE CO. OF AMERICA,
By: FLOYD C. BROWN, Vice President

Accepted:

COLORADO INTERSTATE GAS COMPANY,
By: CHRISTY PAYNE, President.

Colorado Interstate Gas Company Supplement No. 1-B. Effective date December 1, 1936. Filing date February 1, 1939, to Rate Schedule FPC No. 8 (Supersedes Supplement No. 1-A to Rate Schedule FPC No. 8).

Natural Gas Pipeline Company of America
20 N. Wacker Drive
Chicago, Illinois

October 27, 1932.

Mr. Christy Payne, President, Colorado Interstate Gas Company, 26 Broadway, New York City, N. Y.

Dear Mr. Payne: We propose for your acceptance that the letter of agreement, dated December 22, 1931, between Colorado Interstate Gas Company and Natural Gas Pipeline Company of America, concerning the sale to us of twenty-five per cent (25%) of the gas marketed by us as "industrial dump", be extended for an additional period of one (1) year, so that the price which we shall pay to you for such gas shall, for a period of two (2) years from and after December 1, 1931, be four cents (4c) per M. C. F., and for four (4) years thereafter be five cents (5c) per M. C. F., instead of the price set forth in the contract, between said companies, dated October 15, 1931. Otherwise, the provis-

ions of said letter of agreement of December 22, 1931, shall remain unchanged.

If this proposal is satisfactory to you, will you please signify your acceptance by executing and returning one copy of this letter to us.

Very truly yours,

NATURAL GAS PIPELINE COMPANY OF AMERICA,
By FLOYD C. BROWN,
Vice-President.

Accepted:
COLORADO INTERSTATE GAS COMPANY,
By CHRISTY PAYNE, President.

Colorado Interstate Gas Company Supplement No. 1-C. Effective date December 1, 1933. Filing date February 1, 1939 to Rate Schedule FPC No. 8 (Supersedes Supplement No. 1-B to Rate Schedule FPC No 8).

Natural Gas Pipeline Company of America
20 N. Wacker Drive
Chicago, Illinois

November 9, 1933.

Mr. R. W. Gallagher, Room 1543—26 Broadway, New York, N. Y.

Dear Mr. Gallagher, We propose for your acceptance that the letter form of agreement dated October 27, 1932, between Colorado Interstate Gas Company and Natural Gas Pipeline Company of America, concerning the sale to us of twenty-five per cent (25%) of the gas marketed by us as "industrial dump", shall be modified to provide that the price we pay to you for

(a) natural gas for boiler fuel shall be three and one-half cents (3½c) per M.C.F. for a period of two (2) years from and after December 1, 1933, and five cents (5c) per M.C.F. for the next two (2) years thereafter, and

(b) natural gas for other "industrial dump" uses shall be five cents (5c) for four (4) years from December 1, 1933 as heretofore agreed.

Otherwise, the provisions of said letter of agreement of October 27, 1932 shall remain unchanged. The quality, pressure base, point of delivery and other terms of purchase and sale shall conform to those embodied in the gas purchase contract between Colorado Interstate Gas Company and Natural Gas Pipeline Company of America, dated October 15, 1931.

If the above terms governing this supplementary agreement are satisfactory, will you please signify your acceptance by executing and returning one copy of this letter.

Yours very truly,

NATURAL GAS PIPELINE COMPANY OF AMERICA,
By: FLOYD C. BROWN,
Vice-President.

Accepted:
COLORADO INTERSTATE GAS COMPANY,
By: R. W. GALLAGHER, President.

Colorado Interstate Gas Company Supplement No. 2. Effective date October 2, 1934. Filing date August 19, 1938 to Rate Schedule FPC No. 8.

Natural Gas Pipeline Company of America
20 N. Wacker Drive
Chicago, Illinois
Phone Randolph 0278-L.D.411

October 2nd, 1934.

Colorado Interstate Gas Company, Colorado Springs, Colorado.

Att: Mr. Frank J. Trelease

Gentlemen: The Gas Purchase Contract between Natural Gas Pipeline Company of America and Colorado Interstate Gas Company, dated as of October 15, 1931, in paragraph Eleventh thereof provides:

> "The specific gravity of the natural gas shall be determined or caused to be determined by Seller at or near the point of metering at least once each day. Seller shall advise Buyer of the time at which specific gravity tests are to be made in order that Buyer may

conveniently have its representative present. The Edwards type specific gravity balance or other equipment acceptable to both parties shall be used."

I believe that you understand that the daily tests at Fritch are being made by Texoma Natural Gas Company, whose laboratory is so occupied with the daily tests that little time remains for other work found essential. This other work could be performed with additional help, but in an endeavor to economize we are proposing that the specific gravity tests provided for daily in the Gas Purchase Contract be performed bi-weekly instead of daily for so long a time as shall be agreeable to the respective parties, and if at any time either of the parties desire to revert to the daily tests that can be done by either party notifying the other of its desire. We do not believe that any material accuracy will be sacrificed in performing these tests bi-weekly instead of daily. It is our desire to effect this change at the earliest possible date on account of economic reasons and your earliest attention to this matter will be appreciated.

If the above arrangement is satisfactory, kindly have an officer of your company execute the acceptance in the space provided for below on the extra copy which is enclosed to you herewith and return it to us at which time we will immediately make effective the proposed change.

Yours very truly,

FLOYD C. BROWN,
Vice-President and General Manager.

Accepted:

COLORADO INTERSTATE GAS COMPANY,
By F. H. LERCH, JR., Vice-President.

FCB:eg

Colorado Interstate Gas Company Supplement No. 3. Effective date September 4, 1935. Filing date August 19, 1938 to Rate Schedule FPC No. 8.

Natural Gas Pipeline Company of America
20 N. Wacker Drive
Chicago, Illinois
Phone Randolph 0278-L.D 411

September 4, 1935

Colorado-Interstate Gas Company, Colorado Springs, Colorado.

Dear Sirs: With reference to the agreement between our respective companies dated October 15, 1931 covering the sale of natural gas to this company, Article Fifth of said agreement provides that the volume of natural gas to be paid for by Buyer to Seller under said agreement for any month shall be the volume of natural gas delivered during such month by Canadian River Gas Company to Fritch Station as computed from the readings of the meters for which provision is made in Article Eleventh of said agreement.

We are informed by Canadian River Gas Company that said company desires to deliver a portion of such natural gas to the Fritch Station of Texoma Natural Gas Company by first delivering it at a connection into the main gathering line of Texoma Natural Gas Company near the Northeast Corner of Section 100, Block 5, I&GN RR Company Survey, in Carson County, Texas; such portion to be so delivered to be that quantity of natural gas which Canadian River Gas Company can lawfully deliver at said connection from what is known as the Sanford well in Section 11, Block 3, AB&M Survey, in Carson County, Texas. It is contemplated that Texoma Natural Gas Company will in turn deliver such natural gas from said Sanford well into Texoma's Fritch Station through its own gathering system and meter.

This company is agreeable to such arrangement; provided, however, that such delivery of natural gas into Texoma's gathering system shall be only such quantity as Canadian River is able to put into Texoma's said gathering system against the varied working pressures therein, and the quantity of such natural gas shall be that quantity measured by a meter placed at such point of connection. Measurements shall be in accordance with the said agreement dated October 15, 1931 above referred to

The said meter and necessary measuring equipment and facilities shall be installed and maintained by and shall be the property of said Canadian River Gas Company but the changing of charts shall be done by employees of Texoma Natural Gas Company, which charts shall be given by Texoma Natural Gas Company to Canadian River Gas Company immediately after it has finished with its use thereof.

If the above is acceptable to your company, kindly so indicate in the space provided for below.

Very truly yours,

NATURAL GAS PIPELINE COMPANY OF AMERICA,
By: FLOYD C. BROWN,
Vice-President and General Manager.

Accepted as of the 4th day of September, 1935.
COLORADO-INTERSTATE GAS COMPANY,
By H. C. COOPER, President.

Colorado Interstate Gas Company Supplement No. 1. Effective date September 4, 1935. Filing date February 1, 1939 to Exhibit A to Rate Schedule FPC No. 8.

Texoma Natural Gas Company
405 Rule Building
Amarillo, Texas

September 4, 1935.

Canadian River Gas Company, Exchange National Bank Building Tulsa, Oklahoma.

Dear Sirs: With reference to the two agreements between our respective companies, each dated October 15, 1931, known respectively as the Lease and Operating Agreement and the Gasoline Plant Operating Agreement, both of which agreements contemplate that the quantity of natural gas delivered by Canadian River to the Fritch Compressor Station of Texoma shall be the quantity of natural gas measured by Canadian River's meter at said Fritch Station, we are informed that Canadian River desires to deliver a portion of such natural gas to Texoma's Fritch Station by

first delivering it at a connection into the main gathering line of Texoma near the Northeast Corner of Section 100, Block 5, I&GN RR Company Survey, in Carson County, Texas; such portion to be so delivered to be that quantity of natural gas which Canadian River can lawfully deliver at said connection from what is known as the Sanford well in Section 11, Block 3, AB&M Survey, in Carson County, Texas. It is contemplated that Texoma will in turn deliver such natural gas from said Sanford well into Texoma's Fritch Compressor Station through its own gathering system and meter.

Texoma is agreeable to such arrangement; provided, however, that such delivery of natural gas into Texoma's gathering system shall be only such quantity as Canadian River is able to put into Texoma's said gathering system against the varied working pressures therein, and the quantity of such natural gas shall be that quantity measured by a meter placed at such point of connection. Measurements shall be in accordance with the unit of measurement described in Section 3, Article XII of said Lease and Operating Agreement.

The said meter and necessary measuring equipment and facilities shall be installed and maintained by Canadian River and shall be the property of Canadian River but the changing of charts shall be done by employees of Texoma Natural Gas Company, which charts shall be given by Texoma Natural Gas Company to Canadian River Gas Company immediately after it is has finished with its use thereof.

If the above is acceptable to your company, kindly so indicate in the space provided for below.

Yours very truly,

TEXOMA NATURAL GAS COMPANY,
By: FLOYD C. BROWN,
Vice-President and General Manager.

Accepted this 12th day of Sept., 1935.
CANADIAN RIVER GAS COMPANY,
By: P. C. SPENCER, Vice President.

Colorado Interstate Gas Company Supplement No. 1-D. Effective date December 1, 1937. Filing date October 22, 1938 to Rate Schedule FPC No. 8. (Supersedes Supplement No. 1-C to Rate Schedule FPC No. 8)

Natural Gas Pipeline Company of America
20 N. Wacker Drive
Chicago, Illinois

January 30, 1936.

Colorado Interstate Gas Company, Room 2800, 30 Rockefeller Plaza, New York, New York.

Dear Sirs: We propose for your acceptance that the letter form of agreement dated November 9, 1933, between Colorado Interstate Gas Company and Natural Gas Pipeline Company of America, concerning the sale to us of twenty-five per cent (25%) of the gas marketed by us as "industrial dump", shall be modified to provide that the price we pay to you for

(a) natural gas for boiler fuel shall for the period from December 1, 1935 to December 31, 1938 be five cents (5¢) per MCF., and

(b) natural gas for other "industrial dump" uses shall for the period from December 1, 1935 to December 31, 1938 be five cents (5¢) per MCF.

The quality, pressure base, point of delivery and other terms of purchase and sale shall conform to those embodied in the gas purchase contract between Colorado Interstate Gas Company and Natural Gas Pipeline Company of America, dated October 15, 1931.

If the above terms governing this supplementary agree-

ment are satisfactory, will you please signify your acceptance by executing and returning one copy of this letter.

Yours very truly,

NATURAL GAS PIPELINE COMPANY OF AMERICA,
By: FLOYD C. BROWN,
Vice-President.

Accepted:
COLORADO-INTERSTATE GAS COMPANY,
By F. H. LERCH, JR., Vice-President.

Colorado Interstate Gas Company Supplement No. 1-E. Effective date January 1, 1939. Filing date August 19, 1938 to Rate Schedule FPC No. 8. (Supersedes Supplement No. 1-D to Rate Schedule FPC No. 8).

Natural Gas Pipeline Company of America
20 N. Wacker Drive
Chicago, Illinois
Phone Randolph 0278-L.D.411

March 26, 1937

Colorado Interstate Gas Company, Room 2953, 30 Rockefeller Plaza, New York, New York.

Dear Sirs: We propose for your acceptance that the letter form of agreement dated January 30, 1936, between Colorado Interstate Gas Company and Natural Gas Pipeline Company of America, concerning the sale to us of twenty-five per cent (25%) of the gas marketed by us as "industrial dump," shall be modified to provide that the price we pay to you for

(a) Natural gas for boiler fuel for the period from December 1, 1935 to December 31, 1939, shall be five cents (5¢) per M.C.F.,

(b) Natural gas for other "industrial dump" uses shall for the period from December 1, 1935 to December 31, 1939, be five cents (5¢) per M.C.F.

The quality, pressure base, point of delivery and other terms of purchase and sale shall conform to those embodied in the gas purchase contract between Colorado Interstate

Gas Company and Natural Gas Pipeline Company of America, dated October 15, 1931.

If the above terms governing this supplementary agreement are satisfactory, will you please signify your acceptance by executing and returning one copy of this letter.

Yours very truly,

NATURAL GAS PIPELINE COMPANY OF AMERICA,
By: FLOYD C. BROWN,
Vice-President.

Accepted:
COLORADO-INTERSTATE GAS COMPANY,
By F. H. LERCH, JR., Vice-President.

Colorado Interstate Gas Company Supplement No. 1-F. Effective date January 1, 1940. Filing date August 19, 1938 to Rate Schedule FPC No. 8. (Supersedes Supplement No. 1-E to Rate Schedule FPC No. 8.)

Natural Gas Pipeline Company of America
20 N. Wacker Drive
Chicago, Illinois

July 27, 1938.

Colorado Interstate Gas Company, Room 2800, 30 Rockefeller Plaza, New York, New York.

Dear Sirs: Under the existing letter agreement dated March 26, 1937 between Colorado Interstate Gas Company and Natural Gas Pipeline Company of America, natural gas equal to 25% of the natural gas marketed by us as boiler fuel and special interruptible industrial gas is being sold to us at a price of 5¢ per M.C.F. for the period expiring December 31, 1939.

We propose that such letter agreement be extended so that for the period extending until December 31, 1941 all of such gas shall be paid for by us at the price of 5¢ per M.C.F., instead of the price named in the agreement between us dated October 15, 1931.

The quality, pressure base, point of delivery and other

terms of purchase and sale shall conform to those embodied in the gas purchase contract between us dated October 15, 1931, as modified from time to time.

If the above terms governing this matter are satisfactory, will you please signify your acceptance by executing and returning one copy of this letter.

Very truly yours,

NATURAL GAS PIPELINE COMPANY OF AMERICA,
By: FLOYD C. BROWN,
Vice-President.

Accepted:
COLORADO-INTERSTATE GAS COMPANY,
By F. H. LERCH, JR. 8/9/38
Vice-President.

Beginning on about December 10, 1925, Colorado-Wyoming purchased gas out of the "Wellington" gas field in Colorado, and transported it by pipe line approximately 14 miles to Fort Collins, Colorado, and sold it at the city gate to the distributing company, Poudre Valley Gas Company, and co-incidentally sold gas to Portland Cement Company near Fort Collins. Gas purchases from the Wellington field declined each year as the field became depleted, and they ceased in March, 1937. In 1930, Colorado-Wyoming made other arrangements to get gas from the Berthoud field in Colorado, but purchases from this field also declined, due to the depletion of the field, and now are only two per cent of Colorado-Wyoming's requirements. In 1926 Colorado-Wyoming also began purchasing natural gas from the Wellington, Colorado field, which purchases continued in diminishing quantities until 1937. The witness Bosworth, in Exhibit 120, described Colorado-Wyoming's history, including its discovery well in the Wellington field, its investment in, and the construction of its properties, and the gradual exhaustion of the field. Colorado-Wyoming entered into a contract with Colorado Interstate for a supply of gas, dated October 3, 1929, Exhibit 7-F herein.

Exhibit 7-F

Federal Power Commission
Rate Schedule F. P. C. No. 3
Exhibits and Supplements.

Filed By
Colorado Interstate Gas Company,
Colorado Springs, Colorado.

Covering Natural Gas Sold To
Colorado-Wyoming Gas Company,
Denver, Colorado.

This schedule consists of Agreement dated October 3, 1929, Supplemental Agreement dated October 8, 1929, Supplemental Letters dated respectively February 5, 1930, May 5, 1930, May 8, 1930, May 12, 1930, March 28, 1938, March 29, 1938, June 30, 1938, and Schedule of approved rate applicable to Colorado Portland Cement Company, and Letter dated August 25, 1939, which provide for the sale to Colorado-Wyoming Gas Company of all the natural gas requisite to supply consumers in nothern Colorado, and southern Wyoming, under the terms and conditions set forth therein.

Colorado Interstate Gas Company Rate Schedule FPC No. 3 Effective date September 28, 1929. Filing date August 19, 1938.

This Agreement made and entered into this 3rd day of October, A. D., 1929, by and between Colorado Interstate Gas Company, a Delaware corporation hereinafter called the Seller, party of the first part, and Colorado Wyoming Gas Company, a Delaware corporation, hereinafter called the Buyer, party of the second part.

Whereas, the Seller now has undisposed of and available for sale, in and through its pipe line, a supply of natural gas in excess of the deliveries now required of it, under commitments heretofore made by it and particularly those certain contracts entered into by it with Public Service Company of Colorado and The Pueblo Gas and Fuel Company, both of date of 3rd day of January, 1928, and a cer-

tain application for natural gas by the Colorado Fuel & Iron Company made to, and after agreed modifications, accepted by Ford, Bacon & Davis, Inc. and assigned June 5th, 1928 to and accepted by Seller with the consent of said Colorado Fuel & Iron Company, and the Seller is now able to deliver such gas to the Buyer and the Buyer desires to purchase and receive from the Seller natural gas, as hereinafter provided, and

Whereas, the Buyer is about to expend substantial sums to prepare and equip itself to connect with and make such deliveries of natural gas from the facilities of the Seller as the Buyer may require to satisfy the present and future demands of its customers in northern Colorado and southern Wyoming, as hereinafter provided, and

Whereas, thereafter the Buyer will be able by reason of its pipe line connection with the pipe line of Seller to render emergency service to Seller for the maintenance of its deliveries to Public Service Company of Colorado at Denver, Colorado, in the event of a temporary breakdown of Seller's pipe line and to the extent of natural gas available to the Buyer from sources of supply other than the Seller, in excess of the requirements of the Buyer's customers, including distributing customers, for domestic purposes.

Now, Therefore, the parties hereto in consideration of the covenants and payments herein set forth and of the sum of One Dollar ($1.00) in hand paid by each to the other, receipt of which is hereby acknowledged, have and do mutually covenant and agree as follows:

First: The Seller agrees to sell and deliver and the Buyer agrees to purchase, take and pay for:

(a) Such natural gas as may be requisite to supply Buyer's requirements of natural gas to supply its present and future contracts and commitments to domestic consumers and its present and future contracts and commitments to companies distributing natural gas to domestic consumers, in cities, towns and communities in northern Colorado and southern Wyoming, now or hereafter connected to and served with natural gas from the pipe lines of the Buyer.

(b) Such amounts of natural gas as may be requisite to fulfill contracts and commitments made with the consent and approval of Seller by the Buyer for the sale of natural gas to consumers other than domestic consumers; and

(c) Such amounts of natural gas as the Buyer may desire for use in its compressing station or power plants, which amounts, if desired upon terms and conditions other than those applying to natural gas for domestic use hereunder, are deliverable only with the consent and approval of the Seller;

Provided, However, that the Seller shall not be obligated to sell and deliver natural gas in excess of the amount it has currently available for delivery, as hereinafter, in Articles Seventh and Eighth defined.

Second: The natural gas hereby agreed to be sold and purchased shall be delivered by Seller and received by Buyer at a metering and junction site and station to be located as follows: to-wit, three quarters of a mile north of the corporate limits of the Town of Littleton, Colorado, in the southeast quarter of the northwest quarter of Section Nine (9), Township Five (5) South, Range Sixty-eight (68) West, of the Sixth P. M., Arapahoe County, Colorado, hereinafter called "Arapahoe Station", at which station said natural gas shall be delivered from the pipe line of Seller to the pipe line of Buyer. The Seller shall there furnish, install, operate and maintain, at its own expense, a regulating and measuring station properly equipped with orifice meters and recording gauges or other type of meter or meters of standard style, as may be mutually agreed upon, the measurements of which shall fix the total amount of natural gas delivered by the Seller to the Buyer.

The measuring equipment so installed by the Seller, together with any buildings erected by it for such equipment, shall be and remain its property. The Buyer shall have access to said metering equipment at all reasonable times but the reading, calibrating and adjusting thereof and changing of charts shall be done only by the employees or agents of the Seller. Charts and records from such metering equipment shall remain the property of the Seller. Up-

on request of the Buyer, the Seller will submit to the Buyer records and charts from its metering equipment, together with calculations therefrom, for the Buyer's inspection and verification, subject to return by the Buyer, within ten (10) days after receipt thereof, after which return the charts and records shall be kept on file by the Seller for the mutual use of both parties. At least twice each month, and on dates as near the first and sixteenth of the month as practicable, the Seller shall calibrate its meter in the presence of representatives of the Buyer and the parties shall jointly observe any adjustments which are made in the meter should such adjustments be necessary, and, if the check meters hereinafter provided for have been installed, the same shall also be calibrated by the Buyer in the presence of representatives of the Seller and any adjustments jointly observed should such adjustments be necessary. If either party at any time desires a test of any meter or if either party at any time observes a variation between the delivery meter and its check meter, if any such check meter is installed, it will promptly notify the other party and the parties will then co-operate to secure an immediate calibration test and joint observation of any adjustments and the meter shall then be adjusted to accuracy and corrections jointly made for the monthly settlements. Each company shall give to the other company notice of the time of all tests of meters sufficiently in advance of the holding of the tests so that the other company may conveniently have its representatives present. If, upon any test, any metering equipment is found to be inaccurate by one per cent (1%) or more, registrations thereof shall be corrected at the rate of such inaccuracy for any period which is definitely known and agreed upon, but in case the period is not definitely known and agreed upon, then for a period extending back one-half (1/2) of the time elapsed since the last date of calibration not exceeding, however, eight (8) days. Following any test, metering equipment found inaccurate shall immediately be restored as closely as possible to a condition of accuracy. If for any reason meters are out of service and/or out of repair so that the amount of natural gas delivered cannot be ascertained or computed from the reading thereof, the natural gas delivered through the period such meters are out of service and/or out of re-

pair shall be estimated and agreed upon by the parties hereto upon the basis of the best data available, using the first of the following methods which is feasible:

(a) By correcting the error if the percentage of error is ascertainable by calibration, test or mathematical calculation.

(b) By using the registration of any check meter or meters if installed and accurately registering.

(c) By estimating the quantity of delivery by deliveries during preceding periods under similar conditions when the meter was registering accurately.

The unit of measurement for the natural gas deliverable under this agreement shall be one thousand (1,000) cubic feet of natural gas at an assumed temperature of sixty (60) degrees Fahrenheit and at a base pressure of eight (8) ounces gauge pressure above twelve and four-tenths (12.4) pounds absolute atmospheric pressure and the readings and registrations of the metering equipment herein provided for shall be computed into such units. For the purpose of measurement, the natural gas deliverable hereunder shall be assumed to obey Boyle's Law and the average absolute atmospheric (barometric) pressure shall be assumed to be twelve and four tenths (12.4) pounds to the square inch, irrespective of the actual elevation or location of the delivery point above sea level or of variations in such barometric pressure from time to time. If meters other than the orifice type are used, then in computing the readings and registrations of such metering equipment into the units above specified, the physical characteristics of the natural gas which affect such computations shall be given each their due consideration and the determination of such physical characteristics shall be made by standard apparatus and methods and at such time and places as, in accordance with good practice, may be agreed upon from time to time between the delivery company and the receiving company. For meters of the orifice type, the following factors shall be given due consideration, viz:

(a) The temperature of the natural gas flowing through the meter shall be assumed to be sixty (60)

degrees Fahrenheit and no adjustments shall be made for actual temperatures or variations therein.

(b). The specific gravity of the natural gas shall be determined twice monthly by joint tests on days as near the first (1st) and sixteenth (16th) of the month as practicable or as much oftener as is found necessary in practice. The method of test used shall be by Edward's Balance or by such other method as shall be agreed upon by the parties. The regular test at the first (1st) of the month shall determine the specific gravity to be used in computations for the measurement of natural gas deliveries during the first fifteen (15) days of such calendar month or until changed by special test, the special test to be applicable from the day made and through the following days to and including the fifteenth (15) day of such calendar month. The regular test made on the sixteenth (16th) of the month shall determine the specific gravity to be used in computations for the measurement of natural gas deliveries in that part of such calendar month commencing with the sixteenth (16th) day and continuing until the end thereof or until changed by special test, the special test to be applicable from the day made through the remaining days in such calendar month.

The Buyer may at its option and at its cost and expense install and operate check metering equipment, but the metering equipment of the Seller shall be used for determining the amounts of natural gas delivered under this agreement. The check metering equipment so installed by the Buyer, together with any buildings erected by it for such equipment, shall be and remain its property. Whenever the point of delivery as specified herein is on the premises of the Seller, the Seller grants to the Buyer the right of free ingrss and egress to such metering equipment at all times for the purposes of installation, operation, repair and or removal. The check metering equipment and the method of installation of the same shall be of such standard type for the measurement of natural gas as is approved by both companies, but the Buyer shall have the right to replace such equipment at any time with metering equipment of equal grade subject to the approval of the Seller as to type and method of installation. In the event check metering

equipment is installed by the Buyer, the Seller shall have access to the same at all reasonable times, but the reading, calibrating and adjusting thereof and the changing of charts shall be done only by employees or agents of the Buwer. Charts and records from said check metering equipment shall remain the property of the Buyer. Upon request of the Seller, the Buyer will submit to the Seller records and charts from said metering equipment, together with calculations therefrom for the Seller's inspection and verification, subject to return by the Seller within ten (10) days after receipt thereof.

The Seller shall render to the Buyer, on or before the fifteenth (15th) day of each month, a statement of the amount of natural gas delivered to the Buyer during the calendar month immediately preceding and of the amount of payment or payments then due from the Buyer to the Seller therefor at the special prices for natural gas used or sold for industrial purposes and at the City gate price for the remainder of the natural gas. The statements of deliveries so furnished by the Seller to the Buyer shall be conclusive upon the parties excepting as to the corrections and/or adjustments then pending, unless exceptions thereto in writing shall be made by the Buyer within ten (10) days after it shall receive such statement.

Third: The prices to be paid by the Buyer to the Seller for natural gas, so to be delivered hereunder, shall be as follows:

(a) During the period of this contract, the Arapahoe Station price which the Buyer shall pay the Seller for natural gas purchased and taken by the Buyer hereunder shall be:

17c per thousand cubic feet for the first five (5) years of the life of this contract

20c per thousand cubic feet for the second five (5) years of the life of this contract

22-1/2c per thousand cubic feet for the third five (5) years of the life of this contract; and

25c per thousand cubic feet for the fourth five (5) years of the life of this contract.

except as next provided in sub-paragraphs (b) and (c) of this Article Third.

(b) For natural gas purchased by the Buyer from the Seller hereunder and delivered by the Buyer, directly, or indirectly, through its companies distributing natural gas purchased from Buyer, under commercial or industrial contracts, which contracts shall have been submitted to and approved by the Seller, the price payable to the Seller shall be fifty percent (50%) of the average price per thousand cubic feet chargeable by the Buyer to such commercial or industrial consumers under such approved contracts, including service, demand, minimum, commodity and other charges;

(c) For natural gas purchased by the Buyer from the Seller for use in any of its compressing stations or power plant or plants, the price payable to the Seller shall be fifty percent (50%) of the same price or scale of prices at which the Buyer is selling, under contracts approved by the Seller, natural gas to an industrial consumer using similar quantities, unless the parties hereto agree from time to time that some other price shall apply.

Fourth: In order to keep account of the natural gas sold to the Buyer at the Arapahoe Station rate, and natural gas sold or used for commercial and industrial purposes and to be paid for at the agreed industrial rate, the Buyer shall, on or before the fifth (5th) day of each calendar month, render a statement to the Seller showing the quantity of natural gas consumed by commercial and industrial consumers and each of them, at the industrial tariff, in the preceding calendar month. The quantities consumed by commercial and industrial consumers each month shall be paid for by the Buyer to the Seller at the industrial-commercial rates hereinabove in sub-paragraph (b) of Article Third provided for and on the same basis of measurement as set forth in Article Second. To ascertain the volume of gas delivered for domestic purposes in each calendar month the quantities of gas delivered for commercial and industrial purposes thus determined shall be deducted by the Seller from the total amount of natural gas registered in such calendar month by the Seller's Arapahoe Sta-

tion meter or meters and the remainder shall be considered the amount of natural gas to be paid for to the Seller at the Arapahoe Station price hereinabove in sub-paragraph (a) of Article Third set forth. In these measurements, it is agreed that no allowance shall be made for leakage or for failure of the Buyer to collect from any of its customers, or for the Buyer's allowance to customers because of defective consumers' meters or meter readings, it being the intention of the parties hereto that all natural gas delivered by the Seller to the Buyer and measured at Arapahoe Station shall be paid for by the Buyer to the Seller as above stipulated. The Buyer shall read or cause to be read all meters through which is measured natural gas used or sold for commercial and industrial purposes, as near the end of each calendar month as is practicable, and the Seller's Arapahoe Station meter or meters shall also be read by the Seller at the end of each calendar month.

Fifth. The Buyer agrees to pay the Seller at its office in Colorado Springs, Colorado, on or before the twentieth (20th) of the month, for said natural gas deliveries of the preceding month according to the natural gas measurements and computations and at the prices hereinbefore provided for and billed on said monthly statement. Should the Buyer fail to pay any amount due from it to the Seller when such amount is due, interest thereon shall accrue at six percent (6%) per annum from the date when such amount was due to the date of payment. If such failure to pay continues for sixty (60) days, then the Seller may suspend deliveries of natural gas, but the exercise of such right shall be in addition to any and all other remedies otherwise available to the Seller.

Sixth. The Buyer agrees to keep proper books, records and accounts, according to approved methods, so as to reflect accurately and in detail the number of commercial and industrial consumers and the quantity of gas sold to each such consumer and the Seller shall have the right at all reasonable times to go upon the property of the Buyer and to make such inspection and investigation of same as may be pertinent to a check up of the Buyer's classification of consumers, and this shall include the right to inspect the Buyer's books, accounts, meters and records for such in-

formation as may aid in an audit or settlement of accounts between the parties.

The Buyer shall install and maintain or cause to be installed and maintained at all times during the continuance of this contract accurately registering meters to measure the Buyer's deliveries of gas at other than domestic rates, and shall make or cause to be made inspection thereof regularly as is good practice in the operation of gas distribution and promptly make or cause to be made such repairs to or changes in meters as may be proper to maintain accurate measurements.

Seventh. The Buyer acknowledges that the production of natural gas from wells and the transportation thereof over long distances are subject to accident, interruptions, diminution of pressure and failure of supply. The Seller, however, expressly agrees that it will exercise reasonable diligence and care to avoid any shortage or interruption of supply of natural gas hereunder, but it shall not be liable for any damage or loss that may be occasioned by any shortage or failure, or shortage of production of gas wells or fields, breakage or accident to lines or equipment, fires, strikes, riots, floods and other acts of whatever nature, due to causes beyond its control and interruptions by governmental or court orders. The Seller shall only be bound to furnish natural gas to the full extent that it may be able to do so through the exercise of reasonable care and diligence in the procuring of natural gas from its gas purchase contracts, and in the transportation thereof through its lines to the point of delivery and at such pressure and for such period of time as natural gas is available.

It is expressly agreed by the Buyer that the Seller may interrupt its service hereunder for the purpose of making necessary alterations and repairs to its pipe lines and compressing station equipment and machinery, but only for such time as may be reasonable or unavoidable, and the Seller shall give to the Buyer, except in case of an emergency, reasonable notice of its intention so to do, and shall endeavor to arrange such interruption so as to inconvenience the Buyer and its consumers, as little as possible.

Nothing herein contained shall in any way abridge the

right of the Seller at any time to sell, transport and deliver natural gas under present contracts or contracts which may hereafter be negotiated, to others than the Buyer, or restrict or reserve the Seller's properties, or any part of them for the exclusive benefit of this contract and it is expressly understood that this contract is subject to the obligations to sell and deliver natural gas imposed upon the Seller by those two certain contracts heretofore entered into by it with Public Service Company of Colorado and The Pueblo Gas and Fuel Company both of date of 3rd day of January, 1928. It is agreed that in case of shortage, either temporarily or permanently, of natural gas and necessity for curtailment of service to any classes of consumers, the demands of domestic consumers of the Seller, the Buyer and/or of other distributing customers to which the Seller or Buyer may sell natural gas, are to be preferred over service to industrial consumers and of the amount remaining, deliveries, if any, for industrial consumers served by the Buyer shall be such part as the requirements of such industrial consumers bear to the requirements of industrial consumers of the Seller, the Buyer and of other distributing customers to which the Seller may sell natural gas; provided, however, that such domestic consumers' preference and such right to receive natural gas for industrial users shall not be exercised so as to deprive the Colorado Fuel & Iron Company of the volume of natural gas needed to complete open hearth heats then in jeopardy and to keep its furnaces warm during extreme domestic demand upon the Seller's pipe line, or so as to deprive any other industrial or commercial consumer which requires a small proportion of its normal demand to prevent damage to its appliances.

Eighth. It is understood that the Seller obtains its natural gas for delivery hereunder, by purchase from the Canadian River Gas Company, under contract with that Company of date the 3rd day of January, 1928, which owns or holds under lease or contract large reserves of natural gas in the counties of Hartley, Oldham, Moore, Potter, Carson and Hutchinson, Texas, in what is known as the Amarillo gas field, and that the Seller shall not be required to supply hereunder natural gas from any other source, but the Seller shall have the right, if it so elects, to supply hereunder natural gas from other sources provided such other

natural gas is not substantially inferior in quality to the natural gas then being purchased from the said Amarillo gas field. The Seller shall not renounce the right it has under and by virtue of its contract with the Canadian River Gas Company to receive natural gas from any of the gas leaseholds, gas rights, or gas estates described and referred to in the contract between the Canadian River Gas Company and the Amarillo Oil Company, of date of 3rd day of January, 1928, *unless* the Seller shall first deliver to the Buyer a statement in writing under the corporate seal of the Seller that the gas leaseholds, gas rights, gas contracts or gas estates, the subject of such renunciation, by reason of Seller's own operations or explorations or the operations or explorations of others, are believed by the Seller to be without substantial value, or until the consent of the Buyer to such renunciation shall be obtained, provided, however, it is understood and agred that Seller has renounced, surrendered and waived any right it has under and by virtue of its said contract with the Canadian River Gas Company to receive gas produced from lands described in the certain option agreement dated the 17th day of May, 1927, between the United States of America and the Amarillo Oil Company, and a certain other option agreement dated the 23rd day of March, 1928, between the United States of America and the Amarillo Oil Company, for the reason that the United States of America has exercised its rights to purchase the gas leaseholds, gas rights or gas estates described in said agreements.

Ninth. The natural gas deliverable hereunder shall be natural gas as produced in its natural state from the wells, except that the Seller may extract or permit the extraction of any helium content and the natural gas gasoline from said natural gas, but shall not subject its natural gas nor permit its natural gas to be subjected to any treatment in the extraction of natural gas gasoline or otherwise, which shall change the chemical composition of any of its component parts, or which will dilute it. The Seller is to tender delivery to the Buyer only of natural gas which is commercial in quality and condition.

Tenth. This contract shall continue for twenty (20) years from the date the Buyer first receives deliveries of

natural gas hereunder (and the Buyer agrees to prepare and equip itself to receive such deliveries as soon as reasonably may be) subject to termination at an earlier date either:

(a) at the option of the Seller if and upon the expiration or termination within said twenty (20) year period of Buyer's gas purchase contract with the Canadian River Gas Company of date the 3rd day of January, 1928, referred to above in paragraph Eighth;

or

(b) if and upon the Seller ceasing within said twenty (20) year period to operate its pipe line extending from near Pueblo, Colorado, to Denver, Colorado.

Eleventh. In the event of either party being rendered unable wholly or in part by Force Majeure to carry out its obligations under this contract other than to make payments of amounts due hereunder, it is agreed that on such party giving notice and full particulars of such Force Majeure in writing or by telegraph to the other party as soon as possible after the occurrence of the cause relied on, then the obligations of the party giving such notice, so far as they are affected by such Force Majeure, shall be suspended during the continuance of any inability so caused but for no longer period, and such cause shall, so far as possible, be remedied with all reasonable dispatch.

The term "Force Majeure" as employed herein shall mean acts of God, strikes, lockouts, or other industrial disturbances, acts of the public enemy, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests, and restraint of rulers and peoples, civil disturbances, explosions, breakage or accident to machinery or lines of pipe, freezing of wells or lines of pipe, sudden partial or entire failure of natural gas wells, and any other cause, whether of the kind herein enumerated or otherwise, not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to overcome.

Twelfth. All notices to be given hereunder by the Seller

to the Buyer, shall be given by registered mail or by delivering the same to the Buyer at its office at Denver, Colorado, or at such other office as may be hereafter designated by the Buyer for the purpose, and all notices to be given by the Buyer to the Seller shall be given by registered mail or by delivering the same to the Seller at its office at Colorado Springs, Colorado, or at such other office as may be hereafter designated by the Seller for the purpose.

Thirteenth. This agreement shall inure to the benefit and be binding upon the successors and assigns of the parties hereto. Whenever any corporation is referred to herein, such reference shall be deemed to include the successors and assigns of any such corporation.

Fourteenth. As between the parties hereto, the Seller shall be in control and possession of the natural gas deliverable hereunder and responsible for any damage or injury caused thereby until the same shall have been delivered to the Buyer at Arapahoe Station, after which delivery the Buyer shall be deemed to be in exclusive control and possession thereof and responsible for any such injury or damage.

Fifteenth. It is covenanted and agreed that if either party shall wrongfully breach any of the covenants or obligations imposed upon it by this contract to an extent affecting substantially its performance or materially prejudicing the other party, then in such event the other party may, at its option, terminate this contract by proceeding as follows: The party not in default may cause a written notice to be served on the party in default, stating specifically the cause for terminating this contract and declaring it to be the intention of the party giving the notice to terminate the same; thereupon the party in default shall have thirty (30) days after the service of the aforesaid notice in which to remedy or remove the cause or causes stated in the notice for terminating the contract, and if within said period of thirty (30) days the party in default does so remove and remedy said cause or causes and fully indemnifies the party not in default for any and all consequences of such breach, then such notice shall be withdrawn and this agreement shall continue in full force and effect. In

case the party in default does not so remedy and remove the cause or causes and or does not indemnify the party giving notice for any and all consequences of such breach, within said period of thirty (30) days, then this agreement shall become null and void from and after the expiration of said period. Any cancellation of this agreement pursuant to the provisions of this Article shall be without prejudice to the party not in default to collect any amounts then due to it and without waiver of any other remedy to which the party not in default may be entitled for violation of this contract.

Sixteenth. The Buyer agrees, in the event of temporary shortage of natural gas available in the pipe line of Seller due to causes beyond the control of the Seller and upon request of the Seller, to deliver to Seller at the connection between the pipe line of the Buyer and the pipe line of the Seller at Arapahoe measuring station such natural gas as may be required by the Seller to supply the requirements of The Public Service Company of Colorado for its domestic consumers in Denver, but only to the extent that the Buyer has natural gas then available and undisposed of by it in excess of deliveries then required of the Buyer under contracts and commitments with its customers, including distributing customers, for domestic purposes. Such deliveries shall continue only during the period of emergency. Measurement of said natural gas so delivered to the Seller shall be made at the Arapahoe measuring station under the terms and conditions of measurement set forth in Article Second hereof, and the Seller shall pay the Buyer for such gas the price per thousand cubic feet currently payable to the Seller by the Public Service Company of Colorado for domestic purposes.

Seventeenth. The Seller agrees to maintain at its Arapahoe Station a pressure of natural gas in its pipe line of not less than fifty (50) pounds gauge to the square inch whenever and as long as it has available, sufficient natural gas to meet the current requirements of the Buyer and to install and operate the requisite compression facilities and to operate its pipe line and use the storage capacity thereof in accordance with good pipe line practice in order to main-

tain such pressure and to meet the varying demands of the Buyer's market hereunder.

It is mutually understood and agreed that the Buyer shall keep the Seller at all times fully informed of all facts tending to show the amount of natural gas which will be necessary from time to time to supply its requirements hereunder.

In Witness Whereof, the parties hereto have caused this agreement to be duly signed by their respective officers the day and year first above written.

COLORADO INTERSTATE GAS COMPANY,
By CHRISTY PAYNE, President.
Attest: E. E. DUVALL, Secretary.
(Corporate Seal)

COLORADO-WYOMING GAS COMPANY,
By C. J. SHORTESS,
Vice-Pres. & Gen. Mgr.

Attest: H. P. DAVIS, Secretary.
(Corporate Seal)

Colorado Interstate Gas Company Supplement No. 1. Effective date September 28, 1929. Filing date August 19, 1938 to Rate Schedule FPC No. 3.

Supplemental Agreement.

This Agreement, made and entered into this 8th day of October, 1929, by and between Colorado Interstate Gas Company, a Delaware corporation, party of the first part, and Colorado Wyoming Gas Company, a Delaware corporation, party of the second part.

Whereas, the parties hereto hertofore and under date the 3rd day of October, 1929, entered into contract for the sale and delivery by first party, as Seller, and the purchase and receipt by second party, as Buyer, of natural gas under the terms and conditions and at the prices therein provided, and

Whereas, the parties hereto have agreed, upon the happening of certain conditions and contingencies hereinafter

specified, to increase the agreed price to be paid by the Buyer to the Seller for natural gas during the third and/or fourth five year periods of the life of said contract as set forth in sub-paragraph (a) of Article Third thereof.

Now, Therefore, the parties hereto in consideration of the covenants and payments hereunder set forth and of the sum of One Dollar ($1.00) in hand paid by each to the other, receipt of which is hereby acknowledged, have and do mutually covenant and agree as follows:

If and when the conditions and contingencies hereinafter specified occur, then beginning with the eleventh and/or the sixteenth year of the life of said contract, as the case may be, and continuing as hereinafter provided, Article Third of said contract shall read as follows:

Third. The prices to be paid by the Buyer to the Seller for natural gas, so to be delivered hereunder, shall be as follows:

(a) During the period of this contract, the Arapahoe Station price which the Buyer shall pay the Seller for natural gas purchased and taken by the Buyer hereunder shall be:

17¢ per thousand cubic feet for the first five (5) years of the life of this contract

20¢ per thousand cubic feet for the second five (5) years of the life of this contract

22-1/2¢ per thousand cubic feet for the third five (5) years of the life of this contract; and

25¢ per thousand cubic feet for the fourth five (5) years of the life of this contract,

except as next provided in sub-paragraph (b) of this Article Third.

(b) For natural gas purchased by the Buyer from the Seller hereunder and delivered by the Buyer, directly or indirectly through its distributing customers, under commercial or industrial contracts, the price payable to the Seller shall be fifty per cent (50%) of the average price per thousand cubic feet charged the ultimate consumer for such gas so used for commercial or

industrial purposes, including service, demand, minimum, commodity and other charges, provided however that every commercial or industrial contract under which the Seller would receive or is offered less than twelve and one half cents (12-1/2¢) per thousand cubic feet shall be submitted to and approved by the Seller before the provisions of this sub-paragraph (b) shall apply to such contract.

Provided, however, that said price after the end of the tenth (10th) year shall be increased under the following conditions:

(c) If the average annual net earnings derived by the Buyer from the sale and distribution by the Buyer of natural gas purchased by it from the Seller under this contract during the eighth, ninth and tenth years of the life hereof, computed for this purpose on the basis of using a price of 22-1/2¢ per thousand cubic feet instead of the agreed rate of 20¢ applicable to such years for gas purchased from the Seller, are in excess of 12%, before deduction of interest, depreciation and federal taxes, upon the average annual physical investment of Buyer during said years as hereinafter in sub-paragraph (d) of this Article Third defined, the price to be paid to the Seller under sub-paragraph (a) of this Article Third for each one thousand (1,000) cubic feet of gas delivered during the eleventh to the fifteenth years, inclusive, shall be 22-1/2¢ and an amount determined by dividing 60% of the amount by which such earnings, so ascertained, may be in excess of said 12% return by the average amount of gas sold in said eighth, ninth and tenth years for domestic purposes. Likewise, if the average annual net earnings derived by the Buyer from the sale and distribution by the Buyer of natural gas purchased by it from the Seller under this contract during the thirteenth, fourteenth and fifteenth years, computed for this purpose on the basis of using a price of 25¢ per thousand cubic feet instead of the agreed rate of 22-1/2¢ applicable to such years for gas purchased from the Seller, are in excess of 12% before the deduction of interest, depreciation and federal taxes upon the average annual physical in-

vestment of Buyer during said years as hereinafter in sub-paragraph (d) of this Article Third defined the price to be paid to the Seller under sub-paragraph (a) of this Article Third for each one thousand (1,000) cubic feet of gas delivered during the sixteenth to the twentieth years, inclusive, shall be the price per thousand cubic feet payable during the eleventh to the fifteenth years, inclusive, and an amount determined by dividing 60% of the amount by which such average annual net earnings were in excess of such 12% return by the average amount of gas sold in said thirteenth, fourteenth and fifteenth years for domestic purposes.

(d) The physical investment of Buyer to be averaged for said years and upon which average the percentage of average net earnings are to be computed under the provisions of sub-paragraph (c) of this Article Third shall be and constitute the sum of the following items of plant investment, without deduction for depreciation, to-wit:

(1) The entire investment cost of the Buyer in that portion of its pipe line system including compressor station or stations and other facilities used in connection therewith about to be constructed by the Buyer, and extending from the Arapahoe measuring station, hereinbefore located and described, to the regulator and measuring station of Buyer in the City of Ft. Collins, Colorado.

(2) The entire investment cost of the Buyer in any and all branch, extension, or additional pipe lines and facilities which may be constructed or acquired by the Buyer and which receive deliveries of natural gas from and through said Arapahoe measuring station or other facilities of the Seller.

(3) The investment cost of the Buyer in that portion of the present pipe line system and facilities of the Buyer extending in and from the City of Ft. Collins, Colorado, to and into the City of Cheyenne, Wyoming, utilized in connection with the sale and distribution by the Buyer of natural gas purchased from the Seller under this contract. For the purposes hereof

such investment shall be that proportion of the entire investment which the volume of natural gas purchased by the Buyer from the Seller hereunder and distributed through such facilities bears to the total volume of natural gas transported through said facilities. It is agreed that the present entire investment cost of the Buyer in such pipe line and facilities is the sum of Six Hundred Thousand ($600,000) Dollars to which shall be added any and all additional capital investment in said pipe line system and facilities constructed or acquired by the Buyer north of the City of Ft. Collins, Colorado.

In Witness Whereof, the parties hereto have caused this agreement to be duly signed by their respective officers the day and year first above written.

COLORADO INTERSTATE GAS COMPANY,
By CHRISTY PAYNE, President.

Attest
E. E. DUVALL, Secretary.
(Corporate Seal)

COLORADO WYOMING GAS COMPANY,
By C. J. SHORTESS,
Vice-Pres. & Gen. Mgr.

Attest
H. P. DAVIS, Secretary.
(Corporate Seal)

Colorado Interstate Gas Company Exhibit A to Rate Schedule FPC No. 3.

February 5, 1930.

Mr. J. D. Creveling, Henry L. Doherty & Co., 60 Wall Street, New York, N. Y.

Dear Mr. Creveling: I am sorry to report that an error crept into the agreement between Colorado Interstate Gas Company and Colorado Wyoming Gas Company, executed October 3, 1929, in that in paragraph Tenth, sub-division (a), second line, the word "Buyer's" is used instead of the word "Seller's" in referring to a gas purchase contract between Seller and the Canadian River Gas Company dated January 3, 1928.

I should be glad if you would call this to the attention of the Colorado Wyoming Gas Company and have an acknowledgment of the mistake. It is only an error of reference and this explanation and acknowledgment might be sufficient.

Yours very truly,

CHRISTY PAYNE.

Colorado Interstate Gas Company Exhibit A to Rate Schedule FPC No. 3.

Clarence J. Shortess, Vice Pres. & Genl. Mgr.
Harvey P. Davis, Secretary
Colorado-Wyoming Gas Company
407 Continental Oil Building
Denver, Colorado

May 5, 1930.

Mr. Christy Payne, Vice-Pres., Colorado Interstate Gas Co., 26 Broadway, New York City, N. Y.

Dear Mr. Payne: Beg to advise that we have corrected contract between Colorado Interstate Gas Company and Colorado-Wyoming Gas Company, paragraph "10" subparagraph "A" page 9 to read "sellers" instead of "buyers". This is in compliance with your request.

Yours very truly,

COLORADO WYOMING GAS COMPANY,
By C. J. SHORTESS,
Vice-Pres. & Gen. Mgr.

CJS:W

Colorado Interstate Gas Company Exhibit A to Rate Schedule FPC No. 3.

May 8, 1930.

Mr. C. J. Shortess, Vice-Pres. & Gen. Mgr., Colorado-Wyoming Gas Company, 407 Continental Oil Building, Denver, Colorado.

Dear Mr. Shortess: We regret to bother you again in the matter of the error in the October 3, 1929 contract be-

tween Colorado Interstate Gas Company and Colorado-Wyoming Gas Company.

Your letter of May 5th advising that you have corrected your copy of the contract, quotes the correct paragraph and sub-paragraph, but refers to page 9 of the agreement, whereas the error in question appears on page 16* in the contract, last word of the second line, sub-division (a), Paragraph Tenth.

We call this matter to your attention again to avoid any confusion, since there is a sub-division (a) on page 9 of the agreement, which is not involved in this correction.

Yours very truly,

CHRISTY PAYNE.

EED:JM

(*Page 17 in appended copy of contract of October 3, 1929)

Colorado Interstate Gas Company Exhibit A to Rate Schedule FPC No. 3.

Clarence J. Shortess, Vice Pres. & Genl. Mgr.
Harvey P. Davis, Secretary
Colorado-Wyoming Gas Company
407 Continental Oil Building
Denver, Colorado

May 12, 1930.

Mr. Christy Payne, Vice-Pres., Colorado Interstate Gas Co., 26 Broadway, New York City, N. Y.

Dear Mr. Payne: We are in receipt of your letter calling our attention to an error. We wish to state that the correction in contract mentioned was made on Page 16*, paragraph 10, sub-paragraph "A". In using page 9, instead of page 16, in our letter of May 5th to you—this was a typographical error on our part, so the correction has been made proper.

Yours very truly,

C. J. SHORTESS, Vice-Pres. & Gen. Mgr.

CJS:W

(*Page 17 in appended copy of contract of October 3, 1929)

Colorado Interstate Gas Company Supplement No. 2. Effective date April 1, 1938. Filing date February 1, 1939 to Rate Schedule FPC. No. 3.

Colorado-Wyoming Gas Company
407 Continental Oil Building
Denver, Colorado

March 28, 1938.

Mr. R. W. Hendee, Manager, Colorado Interstate Gas Company, Colorado Springs, Colorado.

Dear Mr. Hendee: We have executed industrial contract with Colorado Portland Cement Company for service to their LaPorte plant and in accordance with your request of the 15th inst., we are enclosing two copies of the new contract as signed.

We presume you desire one of these for your files, the other for approval and return to us.

Very truly yours,

H. P. Davis, Secretary.

HPD:ED

Colorado Interstate Gas Company Supplement No. 2. Effective date April 1, 1938. Filing date February 1, 1939 to Rate Schedule FPC No. 3.

Colorado Interstate Gas Company
Colorado Springs, Colo.

March 29, 1938.

Colorado-Wyoming Gas Company, 407 Continental Oil Building, Denver, Colorado. Attention of Mr. H. P. Davis.

Gentlemen: This will acknowledge receipt of your letter of March 28th enclosing for our approval and files a copy of your renewal contract, dated March 28, 1938, with The Colorado Portland Cement Company, for a period of nine months from April 1, 1938.

The terms and conditions of this renewal are satisfactory to Colorado Interstate Gas Company. It is under-

stood, of course, that you will be billed at the rate of 9-1/2c per M.c.f. for all gas sold by you under this contract.

We have retained both copies of this instrument for our files. However, if you need the extra copy, please let us know.

Very truly yours,

ROBERT W. HENDEE.

cc-W. R. Bearsley. RWH:t

Colorado Interstate Gas Company Supplement No. 3. Effective date July 1, 1938. Filing date August 19, 1938 to Rate Schedule FPC No. 3.

Colorado Interstate Gas Company
30 Rockefeller Plaza
New York

June 30, 1938.

Colorado-Wyoming Gas Company, Denver, Colorado.

Dear Sirs: The agreement between Colorado-Wyoming Gas Company and the undersigned respecting the reimbursement of Colorado-Wyoming Gas Company for certain expenditures in connection with the construction of facilities for the serving of gas to the communities known as Edgewater and Mount Air, in the vicinity of Denver, Colorado, having been fulfilled and complied with by us, it is hereby agreed that effective July 1, 1938 the price for natural gas sold by us to you, which in turn you resell to Public Service Company of Colorado for distribution in Edgewater and Mount Air, shall be thirty-five cents (35c) per M. c. f. All other terms and conditions of the existing agreement between us shall apply with respect to the delivery of such gas.

Your acceptance of this noted on the space provided below will constitute this as an agreement between us for so

long as Public Service Company of Colorado purchases gas from you for distribution in said communities.

Very truly yours,

COLORADO INTERSTATE GAS COMPANY,
By F. H. LERCH, JR.,
Vice-President.

The foregoing accepted: Aug. 4, 1938.
COLORADO-WYOMING GAS COMPANY,
By C. J. SHORTESS, Vice-Pres. & Gen. Mgr.

Colorado Interstate Gas Company Exhibit A to Supplement No. 2 to Rate Schedule FPC No. 3.

Colorado-Wyoming Gas Company
Denver, Colorado

Rate applicable to sale of gas to Colorado Portland Cement Company for industrial purposes is $.12 per thousand cubic feet.

The foregoing rate has been approved by Colorado Interstate Gas Company which receives $.095 per thousand cubic feet.

Colorado Interstate Gas Company Supplement No. 1. Filing date: August 26, 1939 to Supplement No. 1 to Rate Schedule FPC No. 3.

Colorado Interstate Gas Company
30 Rockefeller Plaza
New York

August 25, 1939

Federal Power Commission, Washington, D. C.

Gentlemen: Reference is made to Rate Schedules FPC No. 3, and Supplement No. 1 thereto, filed August 19, 1938, by Colorado Interstate Gas Company, effective date September 28, 1929, consisting of agreements dated respectively October 3, 1929, and October 8, 1929, covering the sale of natural gas by Colorado Interstate Gas Company to Colorado-Wyoming Gas Company.

Article Third (a) of said agreement of October 3, 1929, as modified by the Supplemental Agreement of October 8, 1929, provides that the price to be paid by the Buyer to the Seller for natural gas for resale other than under industrial or commercial contracts shall be 22½c per thousand cubic feet for the third five years of the life of the contract, that is, for the five-year period commencing September 28, 1939, provided, however, that the price of such gas shall be increased above 22½c per thousand cubic feet if certain conditions respecting earnings of Buyer during the preceding three years of the contract have been fulfilled.

In compliance with Order No. 57 of your Commission, we hereby submit the information and data specified in Part 54, Sec. 54.3 C of the Provisional Rules of Practice and Regulations under the Natural Gas Act, with respect to said changes in rate:

(1) Reasons for the proposed change and the desirability thereof:

The periodic changes in rates provided in said agreements of October 3, 1929, and October 8, 1929, cannot be regarded as new rate negotiations as of the date of change.

The purpose in charging rates in the earlier periods of the contracts lower than those provided to be charged ultimately by successive periodic increases was to assist the Buyer in meeting charges incident to the installation of its pipe line transmission system and subsequently to aid in building up Buyer's load. This plan was agreed to instead of the fixing of a flat price to apply to all gas sold throughout the entire period of the contract.

(2) Pertinent data supporting the statements at (1) above:

In this connection, reference is made to said agreements of October 3, 1929, and October 8, 1929.

(3) An estimate of the probable sales and revenues under the rates after the proposed changes become effective, for a period of 12 months thereafter:

Estimate of probable sale @ 22½c 1,225,000 Mcf.
Estimate of probable revenue $275,000.00.

The information required to determine whether or not the price of gas during the third five-year period commencing September 28, 1939, will be greater than 22½c per thousand cubic feet will not be available until after September 28, 1939. If it develops that under the terms of the agreement the price of gas is to be greater than 22½c per thousand cubic feet, further report will be made as a supplement to this present report.

Very truly yours,

COLORADO INTERSTATE GAS COMPANY,
By F. H. LERCH, JR., President.

Via Registered Mail.

Federal Power Commission.
Supplements Nos. 4-A, 4-B, 4-C
to
Rate Schedule F.P.C. No. 3.

Filed By

Colorado Interstate Gas Company,
Colorado Springs, Colorado.

Covering Natural Gas Sold To
Colorado-Wyoming Gas Company,
Denver, Colorado.

This schedule consists of Letters dated respectively December 28, 1938, December 31, 1938 and January 6, 1939, approving rate applicable to sale of natural gas for resale to Colorado Portland Cement Company for industrial use.

Colorado Interstate Gas Company Supplement No. 4-A. Effective date January 1, 1939. Filing date January 7, 1939 to Rate Schedule FPC No. 3 (Supersedes Supplement No. 2 to Rate Schedule FPC No. 3).

Colorado-Wyoming Gas Company
Denver, Colorado.

December 28, 1938.

Mr. R. W. Hendee, Colorado Interstate Gas Co., Colorado Springs, Colo.

Dear Mr. Hendee: Enclosed herewith are two copies of gas contract with Colorado Portland Cement Plant which were executed today. This contract is for a term of 12 months beginning January 1, 1939 and the rate and terms thereof are identical with the expiring contract.

We have a verbal understanding with Mr. Morse to the effect that if this contract is not approved by your company by reason of the failure of the Federal Power Commission to permit the contract to become effective, said contract will become void and of no effect.

Yours very truly,

H. P. Davis, Secretary.

Colorado Interstate Gas Company Supplement No. 4-B. Effective date January 1, 1939. Filing date January 7, 1939 to Rate Schedule FPC No. 3 (Supersedes Supplement No. 2 to Rate Schedule FPC No. 3).

Colorado-Wyoming Gas Company
Denver, Colorado.

December 31, 1938.

Mr. R. W. Hendee, Manager, Colorado Interstate Gas Co., Colorado Springs, Colo.

Dear Sir: With reference to contract dated December 28, 1938 between Colorado Wyoming Gas Company and Colorado Portland Cement Company for natural gas service at their Laporte plant for the year 1939, copy of which was submitted to you for approval, the price which we propose to pay for gas received from you to supply this customer is nine and one-half (9½c) cents per M.C.F., delivered to us at Arapahoe Measuring Station.

Your approval of this rate is requested.

Yours very truly,

HPD:ED H. P. Davis, Secretary.

Colorado Interstate Gas Company Supplement No. 4-C. Effective date January 1, 1939. Filing date January 7, 1939 to Rate Schedule FPC No. 3 (Supersedes Supplement No. 2 to Rate Schedule FPC No. 3).

Colorado Interstate Gas Company
30 Rockefeller Plaza,
New York.

January 6, 1939.

Colorado-Wyoming Gas Company, Denver, Colorado.

Attention: Mr. H. P. Davis, Secretary.

Gentlemen: Referring to your letters of December 28 and 31, 1938, addressed to Mr. R. W. Hendee, this is to advise you that Colorado Interstate Gas Company hereby approves the agreement entered into by you with Colorado Portland Cement Company under date of December 28, 1938 for supplying natural gas for industrial use in the plant of Colorado Portland Cement Company near La Porte, Colorado, at the price of twelve cents (12c) per thousand cubic feet, for the term of twelve (12) months from January 1, 1939, with the understanding that Colorado-Wyoming Gas Company will pay Colorado Interstate Gas Company at the rate of nine and one-half cents (9½c) per thousand cubic feet for all gas delivered to you for this account and sold by you under said contract, and with the further understanding that Colorado Interstate Gas Company does not undertake to furnish a full and uninterrupted supply of gas, but may at any time and without notice discontinue in whole or in part the furnishing of gas for the purpose of said contract.

Before this approval can be effective it must be filed with the Federal Power Commission pursuant to the terms of the Natural Gas Act and the rules and regulations of the Commission promulgated thereunder. Such filing will be made by Colorado Interstate Gas Company and in the event the same does not become effective within at least thirty (30) days, the approval given above shall become null and void.

Yours very truly,

COLORADO INTERSTATE GAS COMPANY,
By: F. H. LERCH, JR.,
Vice-President

Federal Power Commission.
Supplement No. 5
to
Rate Schedule FPC No. 3

Filed By
Colorado Interstate Gas Company,
Colorado Springs, Colorado.

Covering Natural Gas Sold To
Colorado-Wyoming Gas Company,
Denver, Colorado.

This schedule consists of Letter Agreement dated May 10, 1939, covering the sale to Colorado-Wyoming Gas Company of surplus natural gas for resale to Public Service Company of Colorado for industrial use in its Valmont electric power plant near Boulder, Colorado.

Colorado Interstate Gas Company Supplement No. 5. Effective date May 13, 1939. Filing date May 20, 1939 to Rate Schedule FPC No. 3.

Colorado Interstate Gas Company
30 Rockefeller Plaza
New York.

May 10, 1939.

Colorado-Wyoming Gas Company, Denver, Colorado.

Gentlemen: You have advised us that due to the emergency caused by the shortage of coal, you are able to sell surplus natural gas, if available, to Public Service Company of Colorado for industrial use in its Valmont electric power plant located near Boulder, Colorado.

Colorado Interstate Gas Company is willing to furnish gas to you for resale for such industrial use, for a period of thirty (30) days and continuing thereafter subject to cancellation upon thirty (30) days' notice by either party, at the price to Colorado Interstate Gas Company of nine and one-half cents (9½c) per one thousand (1,000) cubic feet.

All other terms and conditions of the existing agreement

between us shall apply with respect to the delivery of such gas.

This agreement is subject to being filed with the Federal Power Commission and becoming effective in accordance with the Natural Gas Act of 1938 and can not be considered an obligation by Colorado Interstate Gas Company until it does so become effective.

Yours very truly,

COLORADO INTERSTATE GAS COMPANY,
By WM. A. DOUGHERTY,
Vice President.

Accepted: May 17th, 1939.

COLORADO-WYOMING GAS COMPANY,
By C. J. SHORTESS, Vice President.

Federal Power Commission.
Supplement No. 6
to
Rate Schedule FPC No. 3

Filed By

Colorado Interstate Gas Company,
Colorado Springs, Colorado.

Covering Natural Gas Sold To
Colorado-Wyoming Gas Company,
Denver, Colorado.

This schedule consists of letters dated March 29, 1940 and April 12, 1940, approving rate applicable to sale of natural gas for resale to The Colorado Portland Cement Company for industrial use.

Colorado Interstate Gas Company Supplement No. 6. Effective Date: , Filing Date: April 13, 1940 to Rate Schedule FPC No. 3 (Supersedes Supplement No. 4 to Rate Schedule FPC No. 3).

Colorado-Wyoming Gas Company
Continental Oil Building
Denver, Colorado.

March 29, 1940.

Mr. R. W. Hendee, Manager, Colorado Interstate Gas Co., Colorado Springs, Colo.

Dear Sir: We have secured contract with Colorado Portland Cement Company under date of March 26, 1940 for industrial gas service at their Laporte plant for the period April 1, 1940 to December 31, 1940 and enclose herewith two copies of this contract.

The price which we propose to pay you for gas delivered to us for this customer's usage is 9½c per M.C.F. delivered to us at your Arapahoe measuring station.

Your approval of this rate is requested as early as possible. In as much as the customer advises that they may possibly open their plant as early as April 7. This opening date is contingent on their receiving certain orders for cement which they anticipate. Otherwise they probably will not go into operation before the 20th or the 25th of April.

Yours very truly,

HPD:LK encl. H. P. DAVIS, Secretary.

Colorado Interstate Gas Company Supplement No. 6. Effective Date: . Filing Date: April 13, 1940 to Rate Schedule FPC No. 3 (Supersedes Supplement No. 4 to Rate Schedule FPC No. 3).

Colorado Interstate Gas Company
30 Rockefeller Plaza
New York.

April 12, 1940.

Colorado-Wyoming Gas Company, 407 Continental Oil Building, Denver, Colorado.

Attention: Mr. H. P. Davis, Secretary.

Gentlemen: Referring to your letter of March 29, 1940, addressed to Mr. R. W. Hendee, this is to advise you that Colorado Interstate Gas Company hereby approves the agreement entered into by you with The Colorado Portland

Cement Company under date of March 26, 1940 for supplying natural gas for industrial use in the plant of The Colorado Portland Cement Company near Laporte, Colorado, at the price of twelve cents (12c) per thousand cubic feet, for the term of nine months from April 1, 1940, with the understanding that Colorado-Wyoming Gas Company will pay Colorado Interstate Gas Company at the rate of nine and one half cents (9½c) per thousand cubic feet for all gas delivered to you for this account and sold by you under the said contract, and with the further understanding that Colorado Interstate Gas Company does not undertake to furnish a full and uninterrupted supply of gas, but may at any time and without notice discontinue in whole or in part the furnishing of gas for the purpose of said contract.

Before this approval can be effective, it must be filed with the Federal Power Commission pursuant to the terms of the Natural Gas Act and the rules and regulations of the Commission promulgated thereunder. Such filing will be made by Colorado Interstate Gas Company and in the event the same does not become effective within at least thirty (30) days, the approval given above shall become null and void.

Yours very truly,

COLORADO INTERSTATE GAS COMPANY,
By F. H. LERCH, JR., President.

Federal Power Commission.
Supplement No. 7
To
Rate Schedule FPC No. 3

Filed By
Colorado Interstate Gas Company,
Colorado Springs, Colorado.

Covering Natural Gas Sold To
Colorado-Wyoming Gas Company,
Denver, Colorado.

This schedule consists of letters dated May 15, 1933 and July 28, 1933, approving rate applicable to sale of natural

gas for ultimate resale to Jewish Consumptives' Relief Society.

Colorado Interstate Gas Company Supplement No. 7. Effective date: July 28, 1933. Filing date: April 23, 1940 to Rate Schedule FPC No. 3.

Colorado Interstate Gas Company
Colorado Springs, Colorado

May 15, 1933.

Mr. H. P. Davis, Secretary, Colorado-Wyoming Gas Co.,
Continental Oil Building, Denver, Colorado.

Dear Mr. Davis: This is in reply to your letter of April 5th, enclosing contracts between the Public Service Company of Colorado and the Jewish Consumptives' Relief Society and Craig Colony dated February 22, 1933 and March 22, 1933, respectively, submitted for our approval.

In this connection we wish to advise that 50% of the price chargeable by the Public Service Company to the consumers will not give the Colorado Interstate Gas Company 12½c per M.c.f. for the gas sold and delivered to you for that purpose, and accordingly while the contracts you submitted are satisfactory in all other respects, we cannot approve them unless it is agreed that our price covering the sale of this gas to you at our Arapahoe station shall be 75% of the price chargeable by the Public Service Company of Colorado to the consumers, as shown by the contracts which you have submitted.

Of course, it is understood that this offer if accepted by you will in no wise affect any other contracts which you or your distributing companies may make with industrial consumers, nor will it affect the terms and conditions of the contract between the Interstate Company and your Company dated March 3, 1929, and as amended by supplemental contract dated October 8, 1929.

If this offer is accepted by your Company please so ad-

vise us and you may then consider that the Interstate Company has approved the contracts in their present form.

Yours very truly,

COLORADO INTERSTATE GAS COMPANY,
FORD, BACON & DAVIS, INC.,
General Managers,
By FRANK J. TRELEASE,
Resident Engineer.

FJT:AS

Colorado Interstate Gas Company Supplement No. 7. Effective date: July 28, 1933. Filing date: April 23, 1940 to Rate Schedule FPC No. 3.

Colorado Wyoming Gas Company

July 28, 1933.

Mr. Frank J. Trelease, Resident Engineer, Colorado Interstate Gas Company, Colorado Springs, Colorado.

Dear Mr. Trelease: Reference is made to your letter of May 15, 1933, wherein you offer to accept an amount equal to 75% of the gross revenue as billed by Public Service Company of Colorado to J. C. R. S. Hospital and Craig Colony, in payment for gas delivered to these customers, in lieu of the original contract rate of 50% of gross revenue provided said 50% does not result in a rate below 12½c per M.C.F.

We have given this offer careful consideration and find that insofar as the Craig Colony contract is concerned your offer would result in a slight penalty to us over the original contract rate and we therefore wish to withdraw our request for approval of this contract. However, with respect to J.C.R.S. Hospital contract, we will accept your offer and will agree to pay a price for this gas equivalent to 75% of the amount billed to the customer.

On the above basis we have re-computed your charges for gas delivered to J.C.R.S. and Craig Colony during the period 1-26-33 to 6-25-33 and find that there is a credit of $66.18 due us. Please have your office review these charges and if you find we are correct, render credit of above amount to our account.

Yours very truly,

H. P. DAVIS, Secretary.

All of the foregoing contracts of Colorado Interstate with these seven customers, namely, Public Service, Pueblo Gas and Fuel, the City of Colorado Springs, Citizens, Arkansas, Pipe Line Company of America and Colorado-Wyoming, were filed by Colorado Interstate with this Commission on August 22, 1938, under a letter stating that such filing was not voluntary but under duress, denying that the company was subject to the jurisdiction of the Commission, and denying that the contracts were subject to regulation and reserving the company's other constitutional and legal rights and the right to contest the authority of the Commission to change any contract price. This letter is a part of Exhibit 6 herein.

In addition to these foregoing contracts with the seven named customers covering gas for *resale*, the company also has industrial contracts with five customers, namely, American Crystal Sugar Company, Atchison, Topeka & Santa Fe Railway Company, Colorado Fuel & Iron Corporation and Colorado Portland Cement Company and United States of America (Department of Interior and United States Veterans Bureau) for *direct* sale of industrial gas. These contracts are listed in Exhibit 8 and are set out in full in Exhibit 9 herein.

EXHIBIT NO. 9.

Application for Natural Gas.

Denver, Colorado, February 19, 1927.

To Ford, Bacon & Davis, Inc., 115 Broadway, New York, New York.

The undersigned makes application and agrees to pay for natural gas by meter for all of our fuel requirements for our entire plant located at Pueblo, Colorado, and known as the Minnequa Plant, excepting from our requirements hereunder our use of all the residuals from our coke plant, including tar, gas, middlings, washer-waste, and all other residual and waste products incident to the manufacturing of coke in our by-product coke ovens, and gas from our blast furnaces, in both cases as now or hereafter produced, and excepting also boiler fuel at all boilers for the generation of steam. The fuel requirements to be supplied here-

under are estimated at this time to be an average of 12,500,000 cubic feet per day of twenty-four hours, which are to be supplied upon the following terms and conditions:

1. The rate to be paid by us for the gas supplied in each calendar month based upon a meter pressure of eight ounces and payable on or before the 10th day of each month for the gas supplied during the preceding month, shall for the first five years of the ten-year period hereinafter specified be sixteen cents per thousand cubic feet of gas so supplied; for the next five years such rate shall be eighteen cents per thousand cubic feet of gas so supplied. If the gas is required or supplied at a meter pressure exceeding eight ounces, the quantities supplied by reason of excess pressure shall be computed and paid for according to Boyle's Law, adopting 12.4 pounds as atmospheric pressure and 60 degrees Fahrenheit as an average temperature, without other allowances for temperature and barometric conditions.

2. The gas deliverable hereunder shall be merchantable natural gas as produced from your wells, or merchantable natural gas as received by you under any purchase contracts you may make, except that you shall have the right to extract the natural gasoline content from all the natural gas deliverable hereunder, but not otherwise to modify the natural gas. It is agreed that the price to be paid by us for the gas delivered is based upon a gross heat unit content of not less than 950 B.T.U. per cubic foot, measured at a meter pressure of eight ounces above 12.4 pounds atmospheric pressure, at a temperature of 60 degrees Fahrenheit. In the event that the gross heat unit content of the gas furnished hereunder falls below 950 B.T.U. per cubic foot at a measurement pressure of eight ounces above 12.4 pounds atmospheric pressure, at a temperture of 60 degrees Fahrenheit, it is agreed that the price payable by us for gas hereunder shall in such event be proportionately reduced. If the average heat unit content of the natural gas to be supplied hereunder shall at any time be less than 600 B.T.U. for a period of thirty days, then we reserve the immediate right upon notice to cancel this contract.

3. You are to lay your supply line to a point mutually convenient on our property where you shall furnish and set

your meter and regulator, and we are to furnish and install service lines from the meter to our fuel appliances and equip the same for use of gas and to furnish a building suitable for housing meter and regulator. You agree to maintain at the point of delivery of gas to us a pressure of not less than ten pounds and not more than thirty pounds gauge to the square inch, and as nearly as may be practicable, at a constant pressure of fifteen pounds gauge to the square inch.

4. You shall be responsible for the gas until delivered through said meter and regulator, but shall not be responsible for our pipe line laid beyond the meter nor for damages or loss to person or property resulting from our use of the gas.

5. We shall have the right, from time to time, to shut down or to cease to operate our works or to slow down for any cause which we shall deem sufficient, but we agree that if we discontinue the use of gas for said plant for six consecutive months out of any twelve months, you may, at your option, cancel and terminate this contract. You may at any time upon reasonable notice temporarily shut off the gas to be supplied hereunder for the purpose of making necessary repairs; you shall not be held liable for failure to furnish an adequate supply of gas arising from any cause not the result of your negligence. In case of interruption you shall restore service at the earliest possible time, and give as prompt notice as possible of such variation in the supply. If, after written notice from us, you shall fail to supply sufficient gas for our plant during any period of four months, we expressly reserve the right at our option and upon notice to you to cancel and terminate this contract. We understand that the gas which you will supply us hereunder will be from the same source as the supply of gas for the cities of Pueblo, Colorado Springs, Denver, and other places, and, in emergencies or cases of temporary shortage of gas, the demands of domestic consumers upon said supply are to be preferred over service to us hereunder, and we agree that you may under said circumstances pro rate any remainder, after demands of domestic consumers, among your industrial consumers. Nothing herein, however, shall give you the right to exercise such domestic

preference so as to deprive us of the volume of gas needed to complete open hearth heats then in jeopardy and to keep our furnaces warm during extreme domestic demand upon your pipe line.

6. You may at your election suspend deliveries hereunder or terminate this contract for our failure to pay bills hereunder when due, for failure to use gas for fuel in operating our works as aforesaid in accordance with the spirit and intent of this application, or for violation of any of the provisions hereof, without prejudice to your recourse to other remedies otherwise available to you.

7. It is our duty to verify the registrations of the meter and promptly complain if the meter becomes inaccurate; statements of meter registrations shall be rendered monthly by you and said registrations shall be conclusive on both parties up to and including the last regular monthly statement preceding complaint. From and after the last monthly statement preceding complaint, the registrations of the meter, if the meter is inaccurate and during the time it is so out of repair, shall be corrected by the percentage of error found upon test of the meter, or if impracticable to obtain the percentage of error by such test, the registrations shall be estimated by mutual agreement upon the basis of the amount of gas registered by the meter when in proper working order and when a similar amount of subjects were supplied with gas.

8. This application shall be binding upon us for a period of twelve months from date hereof within which time it is contemplated that you will endeavor to secure contracts or franchise contracts in or with the cities of Denver, Colorado Springs and Pueblo upon terms which will justify you in the construction of a pipe line from gas fields in Texas or elsewhere to the Denver, Colorado Springs, Pueblo district; if not accepted within said twelve months by you or by a company which you may organize or nominate for this business, it shall be null and void, but if so accepted by you or by said company or nominee, it shall form a contract to continue for a term of ten years from the date gas is first furnished hereunder, which shall not be later than twenty-four months from the date of such acceptance and

shall extend to and be binding upon our respective successors and assigns, and the election by you, or by a company which you may organize or nominate therefor, within twelve months from the date hereof, to construct said pipe line, shall be conclusively presumed as an acceptance by you or by said company or nominee of the terms of this application. It is also agreed that such contract shall continue in force after the expiration of the definite term above specified until either party gives one year's written notice to terminate same at the expiration of which time the supply of gas under such contract shall cease.

9. In consideration of the terms of this application the undersigned hereby grants to you an option for a period of twelve months from the date hereof within which time you may elect to furnish us, for a period of five years from the date gas is first furnished hereunder, natural gas of the quality hereinbefore described by meter for all our boiler fuel requirements for the generation of steam in the Minnequa Plant, including buildings owned or leased by us on nearby property and used in connection with our business located at Pueblo, Colorado, excepting from our requirements hereunder our use of all the residuals from our coke plant, including tar, gas, middlings, washer-waste, and all residuals and waste products incident to the manufacturing of coke in our by-product coke ovens, and gas from our blast furnaces, in both cases as now or hereafter produced. The boiler fuel requirements to be supplied hereunder are estimated at this time to be an average of 7,500,000 cubic feet per day of twenty-four hours, and such option to you shall be binding upon our respective successors and assigns. We agree to pay for such natural gas by meter for such boiler requirements ten cents per thousand cubic feet of gas so supplied. Except as in this paragraph 9 otherwise stated, the provisions of said application, paragraphs 1 to 8 inclusive thereof shall apply to and be binding upon you and us with respect to such gas as you may furnish under the option by this paragraph given.

THE COLORADO FUEL & IRON COMPANY,
By J. F. WELBORN, President.

Witness:
J. B. MARKS.

26 Broadway
New York

February 1, 1928.

Christy Payne
Personal.

Mr. J. F. Welborn, President, Colorado Fuel & Iron Company, Pueblo, Colorado.

Dear Mr. Welborn: Ford, Bacon & Davis, Inc., at the request of the Colorado Interstate Gas Company, is today forwarding to you an acceptance of the natural gas application for your Minnequa Plant covering the requirements excepting the boiler plant.

As to the Boiler Plant for which the gas in the application is covered in Option paragraph Ninth, we have asked Ford, Bacon & Davis, to reserve action for a few days. It is our intention and desire to supply that gas for five years at 10 cents per thousand, but owing to the negotiations which are being conducted for a natural gas franchise rate in Pueblo and to the peculiar status of the negotiations at Colorado Springs between the Public Service Company and the Municipal authorities, we feel compelled to ask you if your Company would grant a three months extention of the Option on the 10 cent gas. This would give us until May 19th, 1928, to make that part of the contract binding and would still give plenty of time for piping arrangements and for the gas burners to be secured and installed before the Gas Company is ready to make its deliveries. By the way, the pipe line is making such fine headway that there is a possibility that it might be ready to have gas at your plant August 1st, but of this exact date we will give you ample notice.

If you feel that you may, without prejudice to the interests of your Company, grant the extension of three months it would be greatly appreciated. In the meantime we will make every effort to clear up our contract negotiations so as to be able to give notice of acceptance well within the extended time. A form of extension is submitted for your consideration.

Yours very truly,

P:P (Signed) CHRISTY PAYNE.

Enclosure.

Ford, Bacon & Davis, Inc.
115 Broadway
New York
New York, February 2, 1928.

Denver Pipe Line
Colorado Fuel & Iron Company, Denver, Colorado.

Dear Sirs: Contracts or franchise contracts in or with the Cities of Denver, Colorado Springs and Pueblo upon terms which will justify the undersigned in the construction of a pipe line from gas fields in Texas or elsewhere to the Denver, Colorado Springs and Pueblo districts having been secured, the undersigned, Ford, Bacon & Davis, Inc., hereby accepts your application dated February 19, 1927 for natural gas for all your fuel requirements for your entire plant located at Pueblo, Colorado, and known as the Minnequa Plant, with the limitations specified in the unnumbered first paragraph of your said application.

We do not at this time either accept or reject the option contained in the paragraph numbered 9 of your application dated February 19, 1927 and hereby reserve such option for acceptance or rejection at a later date.

The undersigned, Ford, Bacon & Davis, Inc., understands that this acceptance makes the first eight paragraphs of your application dated February 19, 1927 a binding contract for the supply of natural gas in the quantities, for the prices and under the terms and conditions therein specified.

Your acknowledgment of the receipt of this communication will be appreciated.

Very truly yours,
FORD, BACON & DAVIS, INC.,
By (Signed) G. W. BACON,
Vice President.

GWB:EB
Copy to Mr. Payne, Mr. Von Phul, Munroe, Mr. Hill.

(Draft of Letter).

Denver, Colorado, February 15th, 1928.

Ford, Bacon & Davis, Inc., 115 Broadway, New York, N. Y.

Gentlemen: We, the Colorado Fuel & Iron Company, presented to you our application dated February 19, 1927

whereby among other things, we, by paragraph thereof numbered 9, granted you an option to supply us with natural gas for all our boiler fuel requirements for the generation of steam in our Minnequa Plant, including buildings owned or leased by us on nearby property and used in connection with our business at Pueblo, Colorado excepting from our requirements our use of all the residuals from our coke plant, including tar, gas, middlings, washer waste and all other residuals and waste products incident to the manufacture of coke in our by-product coke ovens, and gas from our blast furnaces, which option was to be exercised by you within twelve months after February 19, 1927. Now, in consideration of your having accepted our application for natural gas in accordance with the first eight paragraphs of our said application, we extend the time within which you may exercise the option contained in paragraph numbered 9 of said application to and including the 19th day of May, 1928.

Very truly yours,

COLORADO FUEL & IRON COMPANY.
By J. F. WELBORN, President.

The Colorado Fuel and Iron Company,
Denver, Colorado
J. F. Welborn, President

February 15, 1928

Ford, Bacon & Davis, Inc., 115 Broadway, New York.

Gentlemen: This is acknowledgment of receipt of your letter of February 2, 1928 in which you state that you accept the terms of a proposal for the use of natural gas in our Steel Plant at Pueblo, Colorado in accordance with a communication termed "Application For Natural Gas" dated at Denver, Colorado February 19, 1927; except, however, as to paragraph 9 of that application, which relates to an option therein granted to you to elect whether or not you will for the period described and at rates proposed furnish an additional amount of natural gas for use under boilers, etc.

Additional questions are now pending relative to exten-

sion of the option period mentioned in paragraph 9, so eliminating from this communication reference to that, we coincide with your view that your letter of February 2, 1928 is an acceptance of the proposal of February 19, 1927 and the two combined constitute a contract for the purpose and in accordance with the terms described in the proposal, leaving, however, the matter described in paragraph 9 for further consideration.

Yours very truly,

J. F. WELBORN.

Exercise of Option.

New York, May 1, 1928.

Colorado Fuel & Iron Company, Denver, Colorado.

Dear Sirs: The undersigned, Ford, Bacon & Davis, Inc., desires to exercise the option contained in the paragraph numbered "9" of your application for natural gas dated February 19, 1927, addressed to Ford, Bacon & Davis, Inc., to furnish you for the period of five years from the date gas is first furnished under said application natural gas of the quality described in said application by meter for all of your boiler fuel requirements for the generation of steam in your Minnequa Plant, including buildings owned or leased by you on nearby property and used in connection with your business located at Pueblo, Colorado, excepting from such requirements your use of all residuals from your Coke Plant, including tar, gas, middlings, washer-waste and all other residuals and waste products incident to the manufacture of coke in your by-product coke ovens and gas from your blast furnaces, in both cases as now or hereafter produced, you to pay for natural gas furnished by meter for such boiler requirements ten cents (10c) per thousand cubic feet of gas so supplied, and hereby gives you notice of its exercise of such option.

Your acknowledgment of the receipt of this notice will be appreciated.

Very truly yours,

FORD, BACON & DAVIS, INC.,

(Signed) WM. VON PHUL,

President.

Copies to Messrs. E. E. DuVall, E. G. Hill.

The Colorado Fuel and Iron Company
Denver, Colorado
J. B. Marks, Executive Vice President

May 4, 1928.

Mr. William von Phul, President, Ford, Bacon & Davis, Inc., 115 Broadway, New York City.

Dear Sir: I have your letter of May 1st which constitutes your formal acceptance of paragraph nine of our contract for the use of natural gas for boiler and other heating purposes in and about our Minnequa Plant.

Very truly yours,

JBM/MP J. B. MARKS.

This Agreement, made this 5th day of June 1928, by and between Ford, Bacon & Davis, Inc., a corporation duly organized and existing under and by virtue of the laws of the State of New Jersey, party of the first part, and the Colorado Interstate Gas Company, a corporation duly organized and existing under and by virtue of the laws of the State of Delaware, party of the second part;

Whereas, in an application for natural gas dated February 19th, 1927, the Colorado Fuel & Iron Company applied for and offered to purchase natural gas in the amounts, for the price or prices and under the terms and conditions set forth in said application; and

Whereas, said application has been modified, extended and accepted by Ford, Bacon & Davis, Inc., as appears in the letters dated respectively February 1st, 1928, February 2nd, 1928, February 15th, 1928, February 15th, 1928, May 1st, 1928 and May 4th, 1928, copies of which are attached hereto; and

Whereas, said application and acceptances now constitute a valid and binding contract between the party of the first part hereto and the Colorado Fuel & Iron Company; and

Whereas, the party of the first part hereto received and accepted said application for and on behalf of the party of the second part hereto;

Now, Therefore, It Is Agreed:

1. That the party of the first part hereto does hereby sell, assign, transfer and set over unto the party of the second part hereto all of its rights, title and interest, including the right to receive payment of amounts now due or which hereafter may become due, in, to and under its contract with the Colorado Fuel & Iron Company set forth in said application and letters, copies of which are hereto attached.

2. That the party of the second part hereby accepts the assignment from the party of the first part of the said contract and hereby agrees to fully perform the obligations assumed by the party of the first part hereto under or by virtue of said contract and to save the said party of the first part hereto harmless therefrom.

In Witness Whereof, the parties hereto have caused these presents to be duly signed by their respective officers the day and year first above written.

FORD, BACON & DAVIS, INC.,
By WM. VON PHUL, President.

Attest:
H. F. STORCK, Secretary.
(Corporate Seal)

COLORADO INTERSTATE GAS COMPANY,
By CHRISTY PAYNE, President.

Attest:
E. E. DUVALL, Secretary.
(Corporate Seal)

We hereby consent to the foregoing assignment.

THE COLORADO FUEL & IRON COMPANY,
By J. F. WELBORN, President.

Attest:
WENDELL STEPHENS, Secretary.
(Corporate Seal)

[Verification omitted.]

Colorado Interstate Gas Company
Colorado Springs, Colorado

October 18, 1929.

Colorado Fuel & Iron Co., Pueblo, Colorado. Attention Mr. W. A. Maxwell, Vice President.

Dear Sirs: Referring to your letter of October 9th, addressed to Mr. Hill, and confirming telephone conversation with you of today we are willing to permit you to substitute oil for the by-product tar which you are now burning in conjunction with natural gas, in the open hearth furnaces at your plant, with the understanding that an equivalent heating value only of the oil will be substituted for the tar which you may sell, so that our natural gas sales to the Open Hearth Department will remain constant.

Our people in the East are looking into the question of the use of straight natural gas in open hearth furnaces in both the Cleveland and Pittsburgh districts, and hope that you will be able to send a representative to those places to obtain this information as soon as the necessary arrangements have been made within the next couple of weeks.

From our conversation today, it seems to be your feeling that you have already secured full information as to the use of straight natural gas in the steel mills in the above Districts, and you are doubtful as to our being able to secure any information that would be of value to you at your Minnequa plant.

As soon as we receive further information from our people, we will advise you as to the location of the plants they wish to have your representative visit so that you can decide whether it will be of interest to you to get this information.

Yours very truly,

COLORADO INTERSTATE GAS CO.,
By JOHN BARBERY (Signed).

JB:AS

Colorado Interstate Gas Company

26 Broadway, New York, July 21, 1933.

Colorado Fuel & Iron Company, Pueblo, Colorado.

Dear Sirs: We wish to confirm the agreement made with you under date of June 1, 1933 with respect to natural gas to be sold for use at your plant at Pueblo, Colorado. The Colorado Interstate Gas Company is to continue to furnish and you are to continue to take natural gas for all your boiler fuel requirements for the generation of steam in the Minnequa Plant and buildings on nearby property, for the period commencing June 19, 1933 and ending at midnight June 18, 1938, in the amounts and under all the terms and conditions specified in paragraph 9 of the application dated February 19, 1927 addressed to Ford, Bacon & Davis, Inc., which application was thereafter accepted by Ford, Bacon & Davis, Inc., and by them assigned to the Colorado Interstate Gas Company. You are to pay for gas so furnished nine and one-half (9½¢) per thousand cubic feet and all payments are to be made at the time and under the conditions specified in said application.

In consideration of your continuing to purchase natural gas for boiler fuel as heretofore provided herein, the price for all natural gas delivered between June 19, 1933 and June 18, 1938, both dates inclusive, under the heretofore mentioned application of February 19, 1927 (excepting natural gas for boiler fuel requirements delivered under paragraph 9 thereof) shall be sixteen cents (16¢) per thousand cubic feet instead of the price specified in said application.

We trust you will indicate your acceptance of this confirmation of the agreement between us by signing and returning the enclosed duplicate original hereof.

Yours very truly,
COLORADO INTERSTATE GAS COMPANY,
By R. W. GALLAGHER, President.

Accepted:
COLORADO FUEL & IRON COMPANY,
By ARTHUR ROEDER, President.
July 26, 1933.

The Colorado Fuel and Iron Company
Arthur Roeder, Receiver,
Denver, Colorado.

April 19, 1934.

Colorado Interstate Gas Company, Colorado Springs, Colorado.

You are hereby notified that Arthur Roeder, Receiver of the properties of The Colorado Fuel and Iron Company by virtue of an order entered in the District Court of the United States for the District of Colorado on August 1, 1933, in the case of Bankers Trust Company, Trustee vs. The Colorado Fuel and Iron Company, has elected to adopt and continue in force the Contract between Colorado Interstate Gas Company and The Colorado Fuel and Iron Company, dated June 5, 1928, concerning:

Concerns the sale of natural gas by the Gas Company to C. F. & I., for the use at the Minnequa Steel Plant at Pueblo, Colorado.

Yours truly,

ARTHUR ROEDER, as Receiver of the Properties of the Colorado Fuel and Iron Company,
By D. C. McGREW, Receiver's Agent.

Notice. Date August 6, 1936.

To: Colorado Interstate Gas Company, Colorado Springs, Colorado.

Gentlemen: You are hereby notified that pursuant to orders of the United States District Court for the District of Colorado, and in accordance with the Plan of Reorganization of The Colorado Fuel and Iron Company, dated March 1, 1935 as filed in and later approved and confirmed by said court, the assets of every kind or nature of said The Colorado Fuel and Iron Company and of Arthur Roeder as Receiver and of Arthur Roeder as Trustee thereof, were conveyed and transfered as of July 1, 1936 to the new Company provided in said Plan; that is, The Colorado Fuel and Iron Corporation, a Colorado corporation.

Among the assets so conveyed is a certain contract, lease or agreement described as follows:

Contract between Colorado Interstate Gas Company and The Colorado Fuel and Iron Company dated June 5, 1928 whereby Colorado Interstate Gas Company sells natural gas to The Colorado Fuel and Iron Company for use at the Minnequa Steel Plant at Pueblo, Colorado.

As of July 1, 1936, therefore, all rights, privileges and liabilities of said The Colorado Fuel and Iron Company, Arthur Roeder as Receiver or Arthur Roeder as Trustee thereof under said agreement were assigned to The Colorado Fuel and Iron Corporation.

Yours very truly,

THE COLORADO FUEL AND IRON COMPANY,
ARTHUR ROEDER, Trustee,
By D. C. McGREW.

Colorado Interstate Gas Company
30 Rockefeller Plaza, New York.

March 7, 1938.

Colorado Fuel & Iron Corporation, Pueblo, Colorado.

Dear Sirs: The existing agreement under which the undersigned is selling gas to you for use at your plant at Pueblo, Colorado, expires June 18, 1938. As a result of certain court proceedings, and in accordance with the plan of reorganization of the Colorado Fuel & Iron Company, dated March 1, 1935, you have succeeded to all the rights of the Colorado Fuel & Iron Company in and to said agreement for the sale of natural gas, and notification thereof was given us by letter dated August 6, 1936 from Arthur Roeder, Trustee of Colorado Fuel & Iron Company. This agreement is made up of a number of papers, consisting of the following:

Application to Ford, Bacon & Davis, Inc., for natural gas, dated February 19, 1927, by Colorado Fuel & Iron Company, and modifications and acceptances thereof, being letters between Colorado Fuel & Iron Company, and Ford.

Bacon & Davis, Inc., dated respectively February 1, 1928, February 2, 1928, February 15, 1928 (two letters), May 1, 1928, May 4, 1928, agreement dated June 5, 1928 between Ford, Bacon & Davis, Inc., and Colorado Interstate Company assigning the contract respecting the sale of natural gas to the undersigned, letter dated October 18, 1929 relating to the substitution of oil for by-product tar, letter agreement dated July 21, 1933, in which the price of gas used for boiler fuel was fixed at 9½¢ per 1,000 cubic feet, and gas used for other purposes at 16¢ per 1,000 cubic feet.

Copies of the documents constituting said agreement are attached and identified by the signatures of the officers of Colorado Fuel & Iron Corporation and the undersigned.

It is hereby agreed between us that said agreement for sale and purchase of natural gas is extended from and after June 18, 1938 for a period of five years, under all of the terms and conditions as the same now exist, and at the prices of 9½¢ per 1,000 cubic feet for gas used for boiler fuel and 16¢ per 1,000 cubic feet for gas used for other purposes.

Your acceptance of this on the space provided below will constitute a firm agreement for the period specified.

Very truly yours,

COLORADO INTERSTATE GAS COMPANY,
By F. H. LERCH, JR., Vice-President.

Accepted May 3, 1938.

THE COLORADO FUEL AND IRON CORPORATION,
By W. A. MAXWELL, Vice President.

Payne testified that it was essential to get the C. F. & I. business in order to make the project feasible. That was because of "the volume of gas that could be used by the steel company and the price it could afford to pay * * *. The importance was if the project did not have that volume of gas it would not have sales enough to support the project." And speaking of the contract finally negotiated, he said: "I should say it was a very essential contract and a profitable one. The line could not have been built for the Denver domestic load or the C. F. & I. load alone. It had to have both." (Vol. CII, pp. 15809-15810). On cross examination Payne testified that he never heard of any attempts on the part of Cities Service to secure such business from C. F. & I. (p. 15810).

C. F. & I. owned extensive coal lands and mines and orig-

inally used coal exclusively as a fuel in its furnaces, etc. The contract had to be negotiated in the face of this competition (Hill, Vol. II, p. 218; Vol. III, p. 422, et seq.; Rhodes, Vol. IX, pp. 1210, 1211, 1212). In addition to this evidence, already abstracted, Rhodes of FB&D testified:

> "Mr. Towers of our organization, to whom I have referred, re-referring to him as a steel man, who was brought up in the steel industry, went into the steel mills down there and investigated all of their processes. He found out what fuels they were using and found out what the cost was for those fuels. He and Mr. Bacon were then able to convince the operators of the Colorado Fuel & Iron that this contract would save them some money." (Vol. XIV, pp. 1942, 1943).

During the life of the original contract, C. F. & I. went into receivership. By letter dated August 6, 1936, the trustee, pursuant to an order of the United States District Court notified Colorado Interstate that all of the bankrupt's rights and privileges under the contract had been assigned to the new company, Colorado Fuel and Iron Corporation, a Colorado corporation, as of July 1, 1936. (Exhibit 9.)

The original contract so assumed by the new corporation would expire by its own limitation June 18, 1938. Just prior to that time Hendee, then manager of Colorado Interstate, started negotiations for a renewal at increased prices. He negotiated for some time with Maxwell, president of C. F. & I. without success. (Hendee, Vol. III, pp. 326, 328). Finally Lerch, then vice-president of Colorado Interstate negotiated a five-year extension from and after June 18, 1938, at a price of 16¢ per Mcf for all industrial gas except boiler fuel gas, which was to be at 9½¢ per Mcf. This extension was effected by letter agreement dated March 7, 1938, which continued in force and effect all of the other limitations, conditions and provisions of the original contract (Exhibit 9).

Colorado Interstate Gas Company, in its contract with Ford, Bacon & Davis, Inc., engineers for the construction of the line, stated that it was obligated to begin deliveries of gas December 1, 1928 to the distributing companies in the various municipalities involved, for distribution in the fall and winter of 1928, and to supply Colorado Fuel & Iron Company's plant at Pueblo at as early a date as possible (Para-

graph 11, Exhibit 323). Canadian River Gas Company, in its similar contract with the same engineers for the construction of its properties, recited that it desired to begin deliveries of gas to Colorado Fuel & Iron Company December 1, 1928, and as much earlier as possible (Paragraph 11, Exhibit 322). In each contract, the engineers obligated themselves to use all diligence, and were directed to employ additional help to complete construction within the times mentioned. Deliveries to C. F. & I. began June 19, 1928, and to Public Service Company, at the Denver gate, on June 23, 1928.

Colorado Interstate's present contract with American Crystal Sugar Company is also included in Exhibit 9. Hill testified to the negotiations of the original contract with this company's predecessor, American Beet Sugar Company, and an unsuccessful attempt to negotiate a similar contract with Holly Sugar Company. He was unable to complete negotiations with the Holly Company because the same interests that controlled that company also had extensive coal properties. The contract with the American Beet Sugar Company, however, was finally closed "in competition with other fuel, particularly coal". (Hill, Vol. II, pp. 179, 180, 216.) The present contract with the successor company is in substitution of a prior contract dated December 31, 1934. It is restricted to the sale of gas for "purely industrial purposes", and is for a four-year term from and after January 1, 1939. The price is 11¢ per Mcf. with the further provision that the Sugar Company may have the option to elect to take gas in quantities and at a price given to any other sugar company in the vicinity of Rocky Ford, Colorado, "having load factor and volume characteristics similar to those of vendee." Article Seventh of the contract covers the preference of domestic over the industrial gas and contains provision for the interruption of service in case of shortage, similar to the provisions of the C. F. & I. contract which it refers to (Exhibit 9). Provision for the delivery, measurement, billing and payment for gas is also made.

Colorado Interstate's contract with the Atchison, Topeka & Santa Fe Railway Company, hereafter called "Santa Fe" or "vendee", was originally made November 23, 1929, and, with all amendments and supplements thereto, is contained in Exhibit 9. Hill, Colorado Interstate's first manager, testified that this contract was negotiated by him "in competition

with other fuels, particularly coal." (Vol. II, pp. 179, 180.) And again: "I had to figure against the mining costs of the coal to the Santa Fe plus the out-of-pocket cost of hauling it from the mine to La Junta. They wouldn't let me take the coal price plus the freight rate and figure against that. They said: 'No, we haul that ourselves and the only part of that cost that comes out of our pocket in cash is the mining cost, and that is what you boys figure it on.'" (Vol. II, pp. 216, 217.) Continuing, he said that the price for gas had to cut under such coal prices, otherwise the business would not have been obtained; that Colorado Interstate's industrial contracts were not uniform because they were acquired on a purely competitive basis and that his company's charges had to meet such competitive conditions. (Vol. II, pp. 217, 218.) The original contract was for gas to be used as fuel in the main power plant of the vendee at La Junta with the option in the vendee also to take gas for "boiler and other industrial fuel uses in and about its public property (other than the main power plant and its passenger depot, division office and Harvey House at La Junta" and the ice plant located on vendee's property, if vendee should acquire title to that plant. The price was fixed at 12¢ per Mcf. Article Seventh expressly acknowledged the preference of domestic over all industrial gas, including that to be sold to the vendee, similar to the provision in the C. F. & I. contract to which reference was made. The term was for five years. Provisions were included covering the purity and heat standards of the gas, the methods of delivery, metering, billing and payment, interruptions due to *force majeure*, as defined, similar to those contained in the other industrial contracts already abstracted, but with variations to fit the vendee's business. By agreements included in Exhibit 9, the contract was enlarged to cover the sale of gas used by the vendee for "firing of locomotives" and use in its "tire racks and forges" at La Junta, with provisions that in case of shortage in the supply of gas, the vendee would use coal or oil or other fuel for that purpose. After the expiration of the original term and by successive amendments the term of the contract was extended. It is now provided that such contract shall be extended from year to year until either party shall give the other thirty days' notice prior to the expiration of such one-year term.

Colorado Interstate's contract with the Colorado Port-

land Cement Company was dated October 22, 1930 (Exhibit 9), covering the sale of gas "from March to October inclusive and for longer periods each year by mutual agreement, if seller has gas and capacity available." The price is fixed at 10¢ per Mcf. and the contract is for a term of fifteen (15) years after deliveries begin. The contract covers other provisions as to purity and heat standards of the gas and the method of delivery, measurement, billing and payment, comparable to like provisions in the other industrial contracts but varied to meet the vendee's methods of doing business.

Colorado Interstate has two contracts with the United States Government. One is with the Department of Interior, originally made August 2, 1929 between Colorado Interstate and the Helium Company, Inc., later assigned to its parent company, the Girdler Corporation, Incorporated, and finally assigned by that company to the United States Government and accepted by the Government through the Secretary of Interior. The other is with the United States Veterans Bureau (Veterans Administration Facility) dated May 12, 1939. Both are included in Exhibit 9 herein. The first contract, now with the Department of Interior, covered the sale of gas for use as a fuel in the helium extraction plant near Thatcher, Colorado. The price for the gas was at a graduated rate as follows:

First	400 cu. ft. per month	$ .90	
Next	600 cu. ft. per month	.15 per	100 cu. ft.
Next	1,000 cu. ft. per month	1.20 per	1,000 cu. ft.
Next	1,000 cu. ft. per month	.75 per	1,000 cu. ft.
Next	7,000 cu. ft. per month	.60 per	1,000 cu. ft.
Next	90,000 cu. ft. per month	.50 per	1,000 cu. ft.
Next	400,000 cu. ft. per month	.25 per	1,000 cu ft.
Over	500,000 cu. ft. per month	.20 per	1,000 cu. ft.

This contract acknowledged the preference of domestic over industrial gas in language similar to that in other industrial contracts and likewise referred to such provisions in the C. F. & I. contract. The term was for five years after deliveries of gas began, which could not be later than ninety days after the date of the agreement. With appropriate variations to meet the vendee's methods of doing business, the contract covered such matters as heat and purity stand-

ards, methods of delivery, metering, billing and payment, already adverted to in other industrial contracts. After the expiration of the original term of the contract and by letter of November 13, 1939, Colorado Interstate proposed to the Secretary of the Interior that the sales be continued under the same terms and conditions except that the price be 40¢ per Mcf., for one year from and after August 23, 1939 and thereafter subject to cancellation by either party on three months' written notice to the other.

The contract was with the Veterans Bureau for the use of gas at the "Veterans Administration Facility" or Hospital at Fort Lyons, Colorado, is for one year but is "renewable from year to year for an additional period of four years, subject to availability of appropriations therefor, without further action on the part of either party, unless cancelled by the Government after ninety days' written notice to the company that the facility at Fort Lyons, Colorado, is to be closed, or because of cancellation by failure of either party to live up to the terms and conditions of the contract after due notice in writing of such failure." The government agreed to take a minimum of 100,000,000 cu. ft. in reasonable proportions each month and to pay therefor at the rate of 19¢ per Mcf. To take care of interruptions, the government agreed to equip certain of its boilers for burning oil and to keep in stock a small supply of oil. Colorado Interstate agreed that if the oil fuel had to be used, it would reimburse the government for the difference in cost in the oil so used and the gas which it replaced, provided the interruption of gas service was due to some cause for which the company was responsible. The contract contained provisions with respect to heat and purity standards and methods of delivery of the gas and the metering, billing and payment therefor, varied to meet governmental requirements. As a part of Exhibit 9 and as a supplement to this contract, there is contained a statement presumably required by the government and made by the company to the effect that the rates in the contract "are not subject to change by any public service or any other governmental commission during the period of the contract, since such rates are not subject to regulatory jurisdiction of any such governmental authority."

9. Fuel Situation in the Territory of Colorado Interstate Gas Company.

Then Hill, first manager of Colorado Interstate's properties, testified as to the negotiations of its contracts for the direct sale of gas to industrial consumers in competition with other fuels, and that natural gas displaced such other fuels. He stated that the contract with the Santa Fe Railroad had to meet the mine price of coal, without any allowance for transportation. He stated that the one originally made with American Beet Sugar, now with its successors, American Crystal Sugar, had to displace cheap coal, and the company failed to get a contract with Holly Sugar Company because of coal competition. He testified as to the same competitive conditions encountered in negotiating every other direct sale contract. He testified to the effect that C.F.&I. was at that time producing coal from its own mining properties. This same witness made a study of the conditions under which Respondents had operated, and would, in his opinion, continue to operate, and which, in his opinion, were competitive.

His studies are found as Exhibits 36-A to 36-S inclusive herein. In addition to his practical experience with Colorado Interstate, his qualifications were: Graduated from Sheffield Scientific School of Yale University in 1904; from then until 1918 he was with Snow Steam Pump Works of Buffalo; then he became Chief Engineer of Southwestern Gas Company of Independence, Kansas, and in 1920 went with FB&D as an engineer and was first engaged in making appraisals of a large number of natural gas properties in the Appalachian Field. He became a vice president of FB&D in 1926 and a director in 1930. During that time he also served as president and operating head of Northwestern Utilities Limited, of Edmonton, Canada, operating a natural gas system in a territory underlain by coal mines. The natural gas was sold in competition with that coal and with wood. Later he managed the properties of Interstate Natural Gas Company operating in the Monroe, Louisiana, gas field and piping the gas to Baton Rouge and New Orleans. With respect to that company he stated:

> "In my efforts to build the load of that company I was in immediate competition with fuel oil and found

that my industrial sales, if made, had to be made in the face of that competition and also in competition with wood and coal and manufactured gas." (Vol. III, p. 345).

Later he was general manager of Southern Natural Gas Corporation. That company's line extended from the same Monroe field to Birmingham, Atlanta and other towns in Mississippi, Alabama and Georgia, where he faced extensive competition from coal, particularly in Alabama. (Vol. III, pp. 340, 347). Referring to the factual data assembled in Exhibits 36-A to 36-S inclusive, he said:

"The factual data here compiled shows that this natural gas has to be sold against the competition of other fuels, principally coal and oil; and that these competitive fuels are now being used in large quantities throughout the areas which offer possible markets for the company's gas. It further shows that important natural gas fields exist in Kansas and Wyoming within economic transmission distance of markets supplied by Colorado Interstate Gas Company and that these markets could be supplied with gas from such competitive fields.

"It is concluded from the facts and studies assembled in this statement that the Company's business has to be operated as a highly competitive enterprise and that the business cannot be operated as a monopoly because control of it could not be used to require consumers to pay a price for the gas above the price it would bring under competition; in other words, above its worth to consumers as a fuel competitive to other fuels equally available to them in the open market.

"Because of the inherent characteristics of natural gas as compared with coal and oil, it is generally accepted as a fuel having convenience factors which make it worth more per heating unit than the other fuels. The convenience factors of natural gas most commonly recognized are cleanliness, freedom from ash or waste, simplicity of burner equipment, easy control of combustion, reliability of transport to consumers and in the fact that consumers do not have to invest money in

storage facilities or in supplies of the gas fuel which is paid for only as used. The marketing of natural gas in the face of established use and availability of the lower priced fuels which do not have all of these advantages therefore requires competitive sales effort to convince the consumer that all of such advantages exist in natural gas and have a value to him which he cannot get in any other form of fuel.

"That the basic competition above outlined affects the sale of natural gas in markets supplied by facilities of the Colorado Interstate Gas Company is shown by the following analysis and exhibits. These have been prepared from a study of the use, availability and relative cost of the competitive fuels in the areas where natural gas supplied by Colorado Interstate Gas Company is at present offered for sale. This study shows in general that

"1. There are large reserves of coal, oil and natural gas in or near the markets supplied by Colorado Interstate Gas Company which are or can be sold in competition with that company's natural gas.'

"2. Fuels competitive to natural gas are generally cheaper than this fuel, for the same quantity of heat.

"3. There is a much greater use of coal than there is of natural gas in the company's markets. The coal tonnage equivalent to natural gas sold by the company since the start of its operations is only about 10 per cent of total coal production of Colorado in the same period.

"'4. The advantage which local Colorado coal has over natural gas from the standpoint of competitive cost, justifies the conclusion that coal should continue to maintain its position as the principal fuel used for domestic heating purposes.

"5. Existing coal resources commercially available in Colorado are sufficient for several hundred years' supply, at present rates of production.

"6. Although fuel oil has some of the convenience factors found in natural gas for both domestic and industrial application, it generally costs less for the same quantity of heat. The use of fuel oil in the company's markets for natural gas has been steadily increasing and is judged to be the most serious competitor of natural gas among users to whom the convenience factors found in both types of fuel have a special appeal.

"7. There are large reserves of crude oil within economic transportation distance of the company's markets for natural gas, which assures a long-term supply of heating oils." (Vol III, pp. 355 to 358).

The areas of productive coal, oil and natural gas competitive to the natural gas sold by Colorado Interstate are shown on Exhibit 36-K. The coal fields were platted on this map in acordance with the U. S. Geological Survey and the oil and gas fields and pipe line from that Survey and the Oil and Gas Journal. This map shows the other existing pipe lines through which natural gas and oil can be supplied in competition with Colorado Interstate. Map 36-L shows the eight railroads available for the transportation of the competitive coal, oil and other fuels in the respondents' territory. Maps 36-M and 36-N show the network of improved highways available for the transportation by motor vehicle of these competitive fuels, and Map 36-O shows the location of the numerous operating coal mines in the coal fields underlying Denver, Colorado Springs and Pueblo and other communities served by the contract customers of respondents.

More specifically as to the competition from coal, he showed in 36-A the annual production in net tons. While this production gradually declined from 9,848,000 tons in 1928 to 5,676,000 tons (United States Bureau of Mines and Saward's Manual), Colorado was still "the largest producer of coal of any state west of the Mississippi River." (Vol. III, p. 366). In 36-B, based on United States Bureau of Mines reports and annual reports of State Inspector of Mines of Colorado, he showed the location of the coal production in Colorado by counties and stated that "approximately 50 to 60 per cent of all the coal produced in Colo-

rado is mined within 50 miles of the coal-consuming areas centering in Denver, Colorado Springs and Pueblo where the principal markets for the company's gas are located; and that 85 to 90 per cent of the total Colorado production is mined within about 110 miles of these areas." (Vol. III, p. 367). In Exhibit 36-C, also based on United States Bureau of Mines figures, he showed the production of by-product coke in Colorado and the increase of that product for domestic use from 68 net tons in 1928 to 1,992 in 1937, the last year for which figures were available. He stated that the Bureau of Mines estimated in 1937 that there were in 1937, 319 billion tons of bituminous, sub-bituminous and lignitic coal in Colorado, half of which could be commercially mined by present methods and which accessible portion amounted to 10 per cent of the total bituminous coal reserves of the United States. (Vol. III, pp. 370, 371). In 36-K, based on Monthly Labor Review published by United States Department of Labor, he showed that the average retail price per ton of bituminous coal in sizes for domestic use had declined from $10.27 in 1928 to $7.79 in 1938. Illustrating the present competition from coal for house heating purposes, he described the Lincoln Park Project in Denver, in which 346 family units were just now being built. A central plant would furnish hot water and radiator steam heat to the entire group. It would use coal exclusively in automatic stokers built by Iron Fireman Company, Inc. "Slack sub-bituminous coal will be used and negotiations are at present under way for a contract to supply the estimated annual requirements of 2,000 tons. It is thought that the cost per ton will be less than $3.00." (Vol. III, p. 393). From Colorado mines alone, there was shipped by rail and truck in 1937, the last year for which complete figures could be obtained, "995,708 tons of domestic sizes of coal * * * into the three areas of Denver, Colorado Springs and Pueblo." (Vol. III, p. 373).

As to the number of retailers of coal, he stated:

> "There were, as of October 1, 1940, 378 licensed dealers in the city of Denver of whom 294, according to city records, have established offices within the city. The balance of 84 without offices are judged by the city clerk to be truck operators.

"• • • •

"As of October 11, 1940 there were 47 retail coal dealers in Colorado Springs, and 18 known truck coal dealers making a total of 65 dealers in that city. However, since there is no present law requiring licenses other than common carrier license restrictions, there are probably more than 18 truck coal dealers in this city.

"• • • •

"There were as of October 11, 1940, 43 retail coal distributors in Pueblo. Estimates of truckers or individuals selling coal from their own trucks were estimated at between 20 and 50." (Vol. III, pp. 398, 399).

He stated that this cheap and abundant supply of coal furnished severe competition to the respondents not only in the direct sales of gas for industrial purposes but to its customers who resold gas for house heating and water heating purposes and, to a less extent, for cooking. He stated that if the prices of coal were increased that would relieve competition from coal but if the prices were reduced competition from that fuel would, of course, increase (Vol. IV, pp. 575, 576).

In Exhibit 36-R, he showed for Colorado and other states the percentage of gas, oil, wood and coal being used for the heating of urban homes. Since 72% of the urban population of the state is found in Denver, Colorado Springs and Pueblo (Vol. III, p. 390), he stated that those percentages would obtain in those three cities. He summarized the situation by stating that ten years after the advent of natural gas, the other competitive fuels still supplied nearly 90% of the market, 82.1% of such homes using coal; 10.7% using gas; 6.5% using fuel oil; and 7/10ths of 1% using wood.

As to the competition from fuel oil, he pointed to the nearby oil fields shown on the maps 36-K (Appendix A) and the existing oil pipe line from the important Lance Creek Field in Wyoming extending southward to Denver. He stated:

"The Denver, Colorado Springs and Pueblo market

areas are within practical pipe line and rail transportation distances from the large amounts of crude oil reserve in Colorado and adjacent states." (Vol. III, p. 379).

In Exhibit 36-F, he listed the four petroleum refineries and cracking plants in Denver, the one in Pueblo and those in Boulder and Fort Morgan, just outside of Denver, and the ones in Craig, La Plata, Alamosa and Rangely, also in Colorado but more remote from Denver, all engaged in producing fuel oil. Two of the Denver plants are of 3,000 barrels per day capacity (Vol. III, p. 425). In Exhibit 36-S he showed the drop in tank prices of such oil. In Exhibit 36-Q he showed the increase from less than 5,000,000 gallons of oil used in 1932 to approximately 8,500,000 in 1938 in Colorado. On data included in his opinion, he stated that 72% of this fuel oil was used in Denver, Colorado Springs and Pueblo (Vol. III, p. 390). There were 43 oil burner dealers in the state as of January 31, 1938 (Vol. III, p. 399). The chief competition from fuel oil comes from the owners or tenants of office buildings, apartments, middle size and large residences and from industrial users. According to a recent Denver telephone directory, there are 50 dealers selling fuel oil in the city (Vol. III, p. 434).

As an instance of this competition from fuel oil he cited the construction, just completed, of the so-called Country Club Gardens Apartments, comprising altogether 187 family units divided into five buildings, each with its own central heating and hot water plant. Each building is equipped with oil and gas burners. If gas is used, it will have to be in competition with No. 6 heavy fuel oil "obtainable under contract at 2½¢ per gallon" (Vol. III, p. 394). He concluded that fuel oil was a keen competitor in house heating, water heating, but not for cooking because of its odor and soot. (Vol. III, p. 396).

Electricity, he found not to be in important competition with natural gas as a source of heating, stating, however, that there were a number of domestic consumers in Denver, Colorado Springs and Pueblo who prefered electricity for cooking regardless of its higher cost. (Vol. III, p. 397). He also pointed out that electricity was in direct competi-

tion with natural gas for refrigeration. (Vol. III, p. 397). As to competition from other sources of natural gas, he pointed to the Berthoud, Colorado field already connected to the pipe line of the respondent, Colorado-Wyoming, and to the other small proven fields in Colorado and to the possibility of larger fields being found in Colorado, probably extensions of the enormous Hugoton, Kansas field, the presently known limits of which lie just across the Colorado-Kansas border and the possibility of extensions of the Wyoming fields shown on Exhibit 36-K. With respect to these Colorado gas fields, he concluded: "Probably not enough exploratory work has been done to definitely establish their gas reserves." He gave statistics showing the reserves in the nearby Wyoming fields and in the huge Hugoton, Kansas field and facts as to the feasibility of competitions from these fields with shorter pipe lines than those of respondents (Vol. III, pp. 383 to 389).

The witness Hill presented a study of the comparative costs on a British Thermal Unit (Btu.) basis of natural gas, fuel oil and coal. This study he designated as his Table 10 but it was admitted herein under the designation Exhibit 36-J, as follows:

"Table No. 10
Comparative Cost of Fuels
Basis—1,000,000 Btu.

Type of Fuel and Unit Cost	Equivalent Cost per Million Btu. (A)	Equivalent Cost Adjusted for Relative Range of Burning Efficiencies 75%	80%	85%
Natural Gas—850 Btu. per cu ft.:				
at $0.06 per Therm ($0.510/Mcf.)	$0.60	$0.800	$0.750	$0.706
at .07 per Therm (.575/Mcf.)	.70	.933	.875	.824
at .08 per Therm (.680/Mcf.)	.80	1.067	1.000	.941
		50%	55%	60%
Coal—10,000 Btu. per lb.:				
at $5.00 per Ton	$0.25	$0.500	$0.455	$0.417
at 6.00 per Ton	.30	.600	.545	.500
at 7.00 per Ton	.35	.700	.636	.583
at 8.00 per Ton	.40	.800	.727	.667
at 9.00 per Ton	.45	.900	.818	.750
at 10.00 per Ton	.50	1.000	.909	.833
Coal—11,000 Btu. per Lb.:				
at $5.00 per Ton	.227	.454	.413	.378
at 6.00 per Ton	.273	.546	.496	.455
at 7.00 per Ton	.318	.636	.578	.530
at 8.00 per Ton	.364	.728	.662	.607
at 9.00 per Ton	.409	.818	.744	.682
at 10.00 per Ton	.455	.910	.827	.758
Coal—12,000 Btu. per Lb.:				
at $5.00 per Ton	.208	.416	.378	.347
at 6.00 per Ton	.250	.500	.455	.417
at 7.00 per Ton	.292	.584	.531	.487
at 8.00 per Ton	.333	.666	.605	.555
at 9.00 per Ton	.375	.750	.682	.625
at 10.00 per Ton	.417	.834	.758	.695
Coal—13,000 Btu. per Lb.:				
at $5.00 per Ton	.192	.384	.349	.320
at 6.00 per Ton	.231	.462	.420	.385
at 7.00 per Ton	.269	.538	.489	.448
at 8.00 per Ton	.308	.616	.560	.513
at 9.00 per Ton	.346	.692	.629	.577
at 10.00 per Ton	.385	.770	.700	.642
		70%	75%	80%
Fuel Oil—138,500 Btu. per Gal.:				
at $0.06 per Gal.	$0.433	$0.619	$0.577	$0.541
at .07 per Gal.	.505	.721	.673	.631
at .08 per Gal.	.578	.826	.771	.723

Note: (A) Without considering Relative Burning Efficiencies."

For the purpose of comparison, he used natural gas at price ranges of 6, 7 and 8¢ per therm. The evidence is that the price is 7¢ per therm obtained only from 1929 to 1934 and that now it is 6¢ per therm. When he prepared the foregoing table of the exhibit, he did not consider fuel oil below 6¢ per gallon or coal below $5.00 per ton, but on arriving in Denver for the hearing and inspecting new housing projects, he found, as already abstracted in part, that the owners were contracting for a supply of bituminous and stoker coal at $3.00 per ton (Vol. III, p. 416) and for fuel oil at $1.00 per barrel or 2½¢ per gallon (Vol. III, pp. 426, 427, 432). In further explanation of Exhibit 36-J Hill stated:

> "The first column to the left of that table shows the equivalent cost per million British thermal units of natural gas and coal of heating value ranging from 10,000 Btu's.. per pound to 13,000 Btu's. per pound at various prices per ton and of fuel oil of 138,500 Btu's. per gallon and various prices per gallon without considering any difference in burning efficiencies between the three fuels; that is, if the oil burned with the same efficiency these relative equivalent costs per million Btu's. of the various fuels would hold. Naturally they don't. They aren't all burned at the same efficiency in domestic appliances.
>
> "The next line from the left shows the equivalent cost per million Btu's. of natural gas burned at 75 per cent efficiency against coal burning 50 per cent efficiency and oil burned at 70 per cent efficiency.
>
> "The next column shows the same figures for gas burned at 80 per cent efficiency, coal at 55 per cent efficiency and oil at 75 per cent efficiency, and the column to the right shows the same figures with gas burned at 85 per cent efficiency, coal at 60 per cent efficiency and fuel oil at 80 per cent efficiency." (Vol. III, pp. 407, 408).

On being asked if those burning efficiencies were such as were met with in practical operations, he replied:

> "The figures in the right-hand column are somewhat

higher than would be met with in all but the largest installations, and the figures * * * in the first and second columns from the left more nearly represent realizable efficiency." (Vol. III, p. 408).

On the basis of data already testified to (and abstracted hereinabove) and particularly his Table 10 (Exhibit 36-J), this witness also prepared a chart numbered 3 by him but admitted herein as Exhibit 36-S (Vol. III, p. 408).

Among other things this Exhibit 36-S shows the comparative costs, on a heat unit basis, to the consumer as between natural gas, coal, fuel oil and manufactured gas. For the purpose of comparison he employed the customary unit saying:

"The British thermal unit is the recognized measure of heat, of the heating value, whether of coal oil or gas as a fuel."

" * * *

"A therm contains 100,000 British thermal units."

(Vol. III, p. 406).

This exhibit shows that prior to the change-over on August 1, 1928, from manufactured to natural gas, manufactured gas cost the consumer for house heating purposes slightly in excess of 12¢ per therm in 1924; slightly more than 14¢ in 1925 and 1926; and a little less than 14¢ in 1927. After the cut-over, natural gas cost the consumer for such purposes nearly 7¢ per therm from 1929 to 1934 inclusive; then dropped to slightly above 6¢ per therm for the period 1935 to 1938 inclusive; and from 1939 to date has remained at 6¢ per therm. The house heating customers using Grade 1 fuel oil paid a fraction more than 6¢ per therm to mid-year 1933 and since then has paid slightly less than 6¢ per therm. Using Grade 2 fuel oil he has paid from 1933 slightly less than 5¢ per therm. Using bituminous coal he paid slightly in excess of 4¢ per therm for the period 1925 to 1929 inclusive; then there was a decline in price and since 1933 he has paid approximately 3¢ per therm. In further explanation of this chart Hill stated:

"This demonstrates that both coal and oil have price

advantages over gas in the domestic market. The cost differentials favoring coal over gas are greater than those favoring oil over gas.

"On this chart are also plotted the ratios of cost of gas to cost of coal, for the average house-heating use of 1,650 therms annually, for the years 1924 to 1938, with adjustment for burning efficiencies shown on the chart.

"The sharp drop in this ratio occuring in 1928 and 1929 was due to the reduction in rates paid for natural gas below those paid in prior years for manufactured gas. The rising trend of the ratio of cost of gas to cost of coal occurring in the years 1931 to 1933 was due mainly to drop in coal prices beginning in 1931. Since 1933 the ratio of gas to coal costs has been trending down and at present appears to be stabilized at about 1.25 to 1.30; that is, on the bases shown, the heat content of natural gas costs the consumer about 25 to 30 per cent more than the less convenient coal which indicates roughly what the consumer, free to use coal, pays for the convenience factors present in natural gas. * * * " (Vol. III, pp. 402, 403).

And again:

"The average rates for househeating gas shown in the space at the middle of the chart shows the average rates for househeating gas, grade No. 1 oil, grade No. 2 oil and bituminous coal rated at 12,000 Btu. per pound, therm prices ranging at the present time from slightly over six cents for natural gas to between three and four cents per therm for bituminous coal with a therm price of No. 1 grade househeating oil slightly less than six cents; on No. 2 grade, somewhat less than five cents per therm.

"The curve at the bottom of the chart shows computed ratios of cost of gas and cost of coal based on different burning efficiencies of the two fuels. * * * " (Vol. III, p. 404).

The witness Sands, an engineer, and the witness Bosworth, a graduate engineer and investment banker and one

of the organizers and now chairman of the Board of Directors of Northern Oklahoma Gas Company, and a director of Petroleum Finance Corporation of Texas engaged in the exploration and production of oil, both longtime residents of Denver and familiar with the territory in which respondent sells its gas, gave their opinion as to competitive conditions under which the gas is sold. (Sands, Exhibit 92, pp. 14 and 15, and Vol. XIX, pp. 2706 to 2717; Bosworth, Exhibit 93, pp. 7, 8, 9 and Vol. XX, pp. 2837 to 2842.)

Sands, whose qualifications as consulting engineer in rate matters for municipalities and distributing companies in Colorado, including Denver, (abstracted hereinafter under Title 11), on being cross examined by the Commission attorney with respect to competition between natural gas and other fuels said:

Q. Let's begin from right now for the next few years. Let's take the next five years. How about that?

A. I would say that in the next five years the consumption of gas in Denver would not vary very much from its present status.

Q. Not very much from its present status?

A. That is my assumption.

Q. And over that period of time, even if there were a rate reduction, there would be no perceptible change in volume of gas?

A. That might be. It all depends upon the size of the rate reduction and the conditions of the competing markets.

Now, we are speaking on total domestic, we aren't speaking on cooking and refrigeration. We're speaking about total domestics, of which house-heating is a material part, and any change in the line, either of volume of Mcf. or of dollars would be influenced by the action of coal people and the oil people. People won't pay too much on convenience factors. They will pay a certain amount, but the rank and file won't pay too much for it. We all like luxury. We all like convenience, but there is a limit to which we will go. I'm not evading your question, but I'm just trying to show the factors that make it hard to *rognosticate*, and I assume that it is going to stay about even as far as dollars and cents are concerned.

Q. Then, it is too difficult to prognosticate what the future demand will be?

A. Very difficult, very difficult on this line, very difficult, particularly at the present.

(Vol XIX, pp. 2733-2734.)

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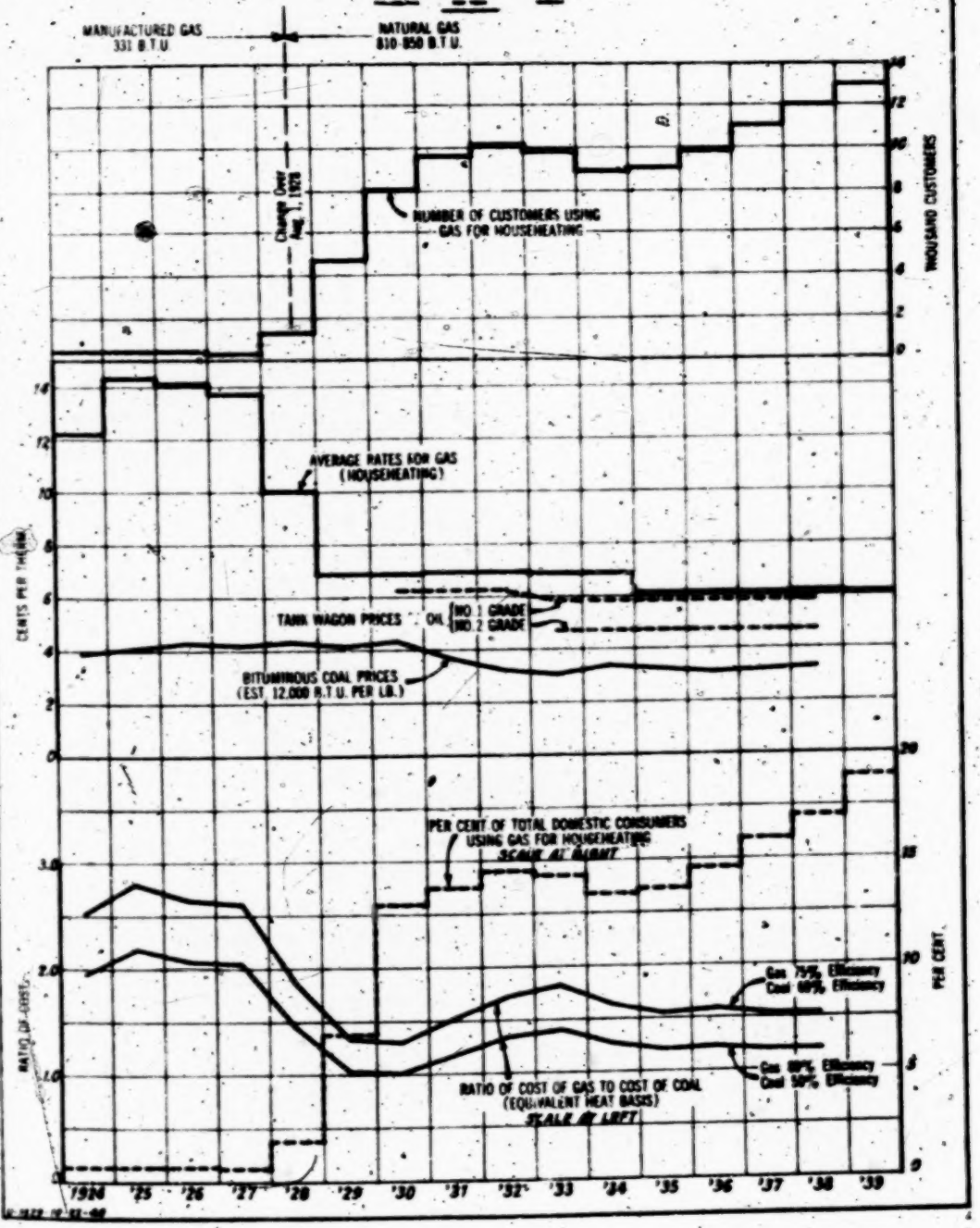
CHART NO. 11305

RELATION OF COMPETITIVE FACTORS AFFECTING SALE OF NATURAL GAS FOR HOUSEHEATING

—DENVER AREA—

Exhibit No. 36-B

Fowler, Bacon & Davis
Engineers



10. Comparison of Present Day Costs of Natural Gas With Cost of Manufactured Gas.

Some of the evidence on this subject offered by the witness Hill has just been abstracted under Title 9 supra and will not be repeated at length.

The City of Denver's franchise grant to Public Service for the disfribution of manufactured gas was admitted herein, without objection, as Exhibit 24. In Section 5 the flat price to all consumers and for all uses was prescribed as follows: "Per 1,000 cu. ft. used per month, 90¢," and in Section 6 it was provided that the gas should be measured at 60° Fahrenheit, under a pressure of 30 inches of mercury and saturated with water vapor. It was then specified:

> "For the rates herein prescribed the company shall maintain a daily average total heating value of gas so tested at not less than 400 Btu. per cu. ft."

The ordinance of the City of Denver of September 14, 1927, amending the franchise rates of Public Service "for the unexpired term of said franchise" was also admitted herein, without objection, as Exhibit 25. The franchise as so amended prescribed a heat standard for natural gas of 800 Btu. and then set forth the schedule of rates as follows: For the first 400 cu. ft., 90¢; next 600 cu. ft. at the rate of 15¢ per 100; next 1,000 cu. ft. at the rate of 12¢ per 100; next 1,000 cu. ft. at the rate of 7½¢ per 100; next 7,000 cu. ft. at the rate of 6¢ per 100; and for the excess above 10,000 cu. ft. at the rate of 5¢ per 100.

The witness Hill in his Exhibit 36-S took these ordinance rates and heat standards and made a comparison of the costs per therm of the manufactured and natural gas in the Denver area. While both the manufactured and natural gas were by the terms of the two ordinances to be *measured or metered* under the moisture, temperature and pressure standards therein set forth and already abstracted, it was of course necessary for this engineering witness to compare the heating value at the burner tip under atmospheric conditions at the Denver altitude. This resulted in 331 Btu. for the manufactured gas and 810+ Btu. for the natural gas. In this Exhibit 36-S, as already stated, he found

that manufactured gas thus cost the househeating customer in 1924 slightly in excess of 12¢ per therm; in 1925 and 1926 slightly in excess of 14¢ per therm; in 1927 slightly less than 14¢ per therm. After the cut-over the natural gas cost the househeating customer approximately 7¢ per therm from the period 1929 to 1934 inclusive. For the period 1935 to 1938 inclusive, it cost slightly in excess of 6¢ per therm; since 1939 it has remained at 6¢ per therm.

The City of Pueblo's franchise grant to the distributing company, Pueblo Gas and Fuel Company, was admitted herein without objection as Exhibit 39. Section 5, by reference to Ordinance No. 1237, fixed the price of manufactured gas with 400 Btu. heat content for domestic purposes as follows: $1.50 for the first 400 cu. ft. or less; for the next 2,600 cu. ft., at the rate of $1.20 per 1,000 cu. ft.; and all in excess of 3,000 cu. ft. at the rate of 90¢ per 1,000. All these quantities and rates are stated on a per month basis. Industrial rates ranged from 70¢ per 1,000 for the first 50,000 cu. ft. to 45¢ per 1,000 for all in excess of 100,000 cu. ft., with a minimum requirement of 100 cu. ft. per hour. In addition there was for both services a customer charge of $15 per year and a discount for payment of bills within ten days. Section 7 of Exhibit 39 prescribed for the natural gas a heat standard of 800 Btu. per cu. ft. In Section 6 the price was fixed at 90¢ for the first 600 cu. ft. or less; 15¢ per 100 cu. ft. for the next 600 cu. ft.; 12¢ per 100 for the next 1,000 cu. ft.; 7½¢ per 100 for the next 1,000 cu. ft.; and 6¢ per 100 for the next 7,000 cu. ft.; and 5¢ per 100 for all amounts in excess of 10,000 cu. ft. These last two rates were amended by Ordinance No. 1336, admitted without objection as Exhibit 40 herein, to 5.2¢ per 100 cu. ft. and 4.2¢ per 100 cu. ft. respectively.

The evidence contained in Hill's Exhibit 36-S, and in Exhibits 24 and 25 relating to Denver, and 39 and 40 relating to Pueblo, were received without objection. The witness Sands offered for the petitioner Exhibit 296, in which he set forth his computation of comparative costs, which he stated was based on reports filed by the distributing companies with the Colorado Public Utilities Commission, as between manufactured and natural gas, first to the consumer and then to the disfributing company. This witness

had already presented on behalf of the company Exhibit 92 entitled "Fair Return for Colorado Interstate Gas Company", in which his qualifications as an expert are set forth at length.

These qualifications are abstracted hereinafter under Title 29 "Necessary Rate of Return"; however, at this point we refer to the following statement from Exhibit 92, which was admitted herein: "Independent consulting engineer since 1927. Rate analysis and design of electric rates for the Home Gas and Electric Company, Greeley, Colorado; City of Glenwood Springs, Colorado; * * * municipal plant of Oak Creek, Colorado; * * * City of Delta, Colorado, * * * of gas rates for the Cheyenne Light, Heat, and Power Company, Cheyenne, Wyoming; of electric and gas rates for the City of Fort Collins, Colorado; of electric, gas, and water rates for the City of Denver, Colorado. Inventory and appraisal of utilities and industrial plants which has involved the following appraisals which have been made for security issues, rate making, or for condemnation purposes: The Public Service Company of Colorado, electric and gas systems in Denver, Colorado; Public Service Company of Colorado, electric system in Fort Collins, Colorado * * *" and numerous other companies and municipalities listed therein. In his testimony the witness stated:

> "The relative costs of manufactured gas and natural gas on a heat basis are herein compared. The rates on manufactured gas that were in force just prior to the adoption of natural gas in Denver, Colorado Springs, and Pueblo, respectively, are compared with the rates in force in 1939 for natural gas, by reducing the rates per thousand cubic feet of both manufactured and natural gas to the cost to the customer per million Btu's. at the customer's meter.
>
> "The calculations are based on the data set forth in the study, and are further based on public records, copies of which are fully verified and consist of reports filed with the Colorado Public Utilities Commission, and certified copies of Rate Schedules, Ordinances, and Franchises, all of which are listed in Appendix A.

"There are also set forth analyses of the operating costs and operating revenues of manufactured gas in Denver, Colorado Springs, and Pueblo for the year 1927, and these are compared with the operating costs and operating revenues for natural gas for the year 1939, in each of the three cities.

"The following is a digest of the complete comparison of the cost to the customer of one million Btu.'s of both manufactured and natural gas. These costs are more amply set forth in the Appendix B.

Comparison of Costs Per Million Btu. to the Customer of Manufactured and Natural Gas at Typical Monthly Consumptions for Domestic and Commercial Purposes.

"In the following table is given the cost per million Btu. to the customer of typical monthly consumptions. The cubic foot heading mentioned in the left-hand column are cubic feet of natural gas and in Columns (aa) and (a) are shown the costs per million Btu. of manufactured gas, had the customer taken the same number of Btu. as contained in the quantities of natural gas indicated.

"The burner tip pressure varies somewhat in the different cities and consequently all the computations are based on atmospheric pressure. Results shown, therefore, are comparable and give a true relation to each other.

"Table of Pressures

City	Alt.*	Barometer in inches	Atmos. Press. pounds per square inch	Ratio Atmos. Press. to S. L.	Average Btu. Value Natural Gas Per Cu. Ft. for Dec. 1939
Sea Level		30.0	14.7		991
Denver	5280	24.6	12.05	0.820	813
Colo. Sprgs.	5900	23.96	11.74	0.800	793
Pueblo	4700	25.08	12.29	0.836	828

*From Colorado Year Book—1938-39.

Btu. Value Manufactured Gas Used in Calculating Comparative Costs

City	Btu. at 30"-60° F.	Btu. at Atmos. Press.	Basis
Denver	400	328	Min. stated Franchise 1927
Colo. Spgrs.	475	380	Affidavit by City Manager
Pueblo	400	334	Report to Colorado PUC

Denver

Cubic Feet Per Month	Cost to the Customer per Million Btu. (aa)	(a)	(b)	(c)
2,000	2.74	2.91	1.85	1.85
6,000	1.68	1.68	1.09	1.14
50,000	1.18	1.18	.60	.69
100,000	1.14	1.14	.56	.65

Colorado Springs

Cubic Feet Per Month	Cost to the Customer per Million Btu. (aa)	(a)	(b)	(c)
2,000	4.21	1.89	1.80	1.80
6,000	3.89	1.84	1.08	1.14
50,000	1.74	1.74	.61	.70
100,000	1.66	1.66	.57	.67

Pueblo

Cubic Feet Per Month	Cost to the Customer per Million Btu. (aa)	(a)	(b)	(c)
2,000	4.79	4.48	1.81	1.81
6,000	4.39	2.39	1.07	1.12
50,000	4.22	1.53	.58	.68
100,000	4.20	1.52	.55	.64

(aa) Lowest cost of manufactured gas for general domestic and general commercial. Appendix B.
(a) Lowest cost of manufactured gas for general domestic with house-heating. Appendix B.
(b) Cost of natural gas, 'General and househeating' (Rate IG, 3G) and 'Commercial spaceheating' (Rate 7G).
(c) Cost of natural gas, 'General Commercial' (Rate 5G).
(d) Cost of natural gas, 'General and househeating' (Schedule No. 1) and 'Commercial spaceheating' (Schedule No. 1B).
(e) Cost of natural gas, 'General Commercial' (Schedule 1A).

"All the cities have a number of industrial rates for natural gas. Most of these are special purpose rates and a comparison is made only of one of these rates as typical of the others. The rate that is selected is the natural gas rate to be used in industrial manufacturing, urban, and the typical quantity that is selected in the following tabulation is 1,500,000 cubic feet per month.

"This table shows the direct comparison for a domestic customer using 2,000 cubic feet per month of natural gas, a general domestic customer using 50,000 cubic feet of natural gas per month for househeating, a general commercial customer using 15,000 cubic feet of natural gas per month, and an industrial customer using 1,500,000 cubic feet of natural gas per month.

There are also shown the comparative costs to the customers of manufactured gas, had such customers used manufactured gas at the rates in effect prior to the introduction of natural gas and taken the same number of Btu. as contained in the quantities of natural gas indicated. It will be noted that at these respective consumptions the savings to the customer on the respective purchases is shown in the tabulation." (Vol. CI, pp. 15597 to 15601).

This tabulation is set forth on page 4 of Exhibit 296:

"Comparative Costs per Million Btu. to Customer of Stated Typical Monthly Amounts of Natural Gas and of Amounts of Manufactured Gas Containing Equivalent Total Heat Value

	2,000 cu. ft. Ceneral Domestic	50,000 cu. ft. hseheating gen. dom. (a)	15,000 cu. ft General Commercial (c)	1,500,000 cu ft. Industrial Manufcturing (b)
Denver District				
Mfd. Gas	$ 2.74	$ 1.18	$ 1.31	$ .92
Nat. Gas	1.85	.60	.86	.24
% Savings				
Nat. over Mfd.	32.48%	49.15%	34.35%	73.91%
Colorado Springs				
Mfd. Gas.	$ 4.21	$ 1.74	$ 2.13*	$ 1.58
Nat. Gas.	1.80	.61	.87	.25
% Savings				
Nat. over Mfd.	57.24%	64.94%	59.15%	84.18%
Pueblo				
Mfd. Gas.	$ 4.79	$ 1.53	$ 4.27**	$ 1.73
Nat. Gas	1.81	.58	.84	.24
% Savings				
Nat. over Mfd.	62.21%	62.09%	80.33%	86.13%

* Taken on Optional Service Schedule No. 3 available for domestic service.

** Taken on Illuminating or Fuel Gas Rate.

(a) Where demand rate is used for manufactured gas, maximum hourly demand of 300 cu. ft. is assumed.

(b) Where demand rate is used for manufactured gas, maximum hourly demand of 15,000 cu. ft. is assumed.

(c) Where demand rate is used for manufactured gas, maximum hourly demand of 200 cu. ft. is assumed."

Proceeding with his testimony the witness then explained reports filed by the City of Colorado Springs as a distributor of natural gas and of the Public Service Company and of Pueblo Gas and Fuel Company with the Public Utilities Commission of the State of Colorado, he had made an analysis of the operating costs, exclusive of depreciation and taxes, and of the revenues in each city for manufactured gas for the year 1927 and for natural gas for the year 1939. These analyses were set forth in detail on pages 5 and 10 inclusive. He then stated: (Exhibit 296, p. 11; Vol. CI, pp. 15602-15604 inc.)

"The following table is a recapitulation of the savings effected. These savings are in the operating cost (exclusive of depreciation and taxes) and the operating revenue per 1,000,000 Btu.

	Operating Expense per Million Btu.		
	Denver District	Colo. Springs	Pueblo
Manufactured Gas—1927	$ 1.69	$ 2.40	$ 4.06
Natural Gas—1939	.49	.37	.60
Savings	1.20	2.03	3.46
Per Cent Savings 1939 over 1927	71.01%	84.58%	85.22%

	Operating Revenue per Million Btu.		
	Denver District	Colo. Springs	Pueblo
Manufactured Gas—1927	$ 2.23	$ 4.17	$4.35
Natural Gas—1939	.67	.51	.80
Savings	1.56	3.66	3.55
Per cent Savings 1939 over 1927	69.96%	87.77%	81.61%

On cross examination, Sands testified:

Q. This study is only intended to show what the gas costs?

A. To the customer.

Q. Sold by whom?

A. The distributing company.

Q. By the distributing company?

A. Yes, sir.

Q. You cover the subject of artificial gas or manufactured gas, too?

A. That is correct.

Q. That also contemplates burner tip sales by distributing companies?

A. That is correct.

Q. Then, the matter of sales at the city gate by the transmission company is not in this picture?

A. Not as far as cost is concerned—yes, it is, as far as cost is concerned. The cost is taken into consideration.

Q. What cost?

A. The cost to the distributing company for gas purchased from the pipe line company.

Q. The cost to the distributing company?

A. Yes.

Q. Do you attempt to show what it costs the transmission company to deliver gas at the various city gates?

A. No.

Q. You don't attempt to make any study in this exhibit of that?

A. No.

Q. You don't purport to do that?

A. No.

(Vol. CI, pp. 15606-15607.)

* * * * *

Q. You took the reports and made these calculations yourself? These aren't calculations of the companies?

A. Oh, no, they are my calculations.

Q. They are related solely to the burner tip costs charged by distributing companies?

A. That is right.

Q. Of both natural and artificial gas?

A. That is right.

Q. Where is the artificial gas sold at present?

A. I didn't get your question, Mr. Lange.

Q. Where at present is the artificial gas sold that is referred to on Page 2?

A. Artificial gas was sold in 1927 or just prior to the initiation of natural gas.

Q. Is there any artificial gas sold either in Denver, Colorado Springs, or Pueblo, Colorado, at the present time?

A. Not that I know of.

Q. How long has it been since there has been any artificial gas sold in any one of those three places?

A. Natural gas came in at Denver in 1929; Colorado Springs, 1931—let me read that over. It came into Denver in 1928; Colorado Springs, 1931; Pueblo, 1928.

Q. Since those dates, there has been no artificial gas manufactured or sold in any of those three places?

A. I think during an interruption—

Q. Other than temporary interruptions?

A. Other than temporary interruptions, there was none that I know of sold.

Q. Then these comparisons between natural and artificial gas don't relate to any presently operating artificial gas sales in either one of those towns?

A. Manufactured gas relates to the conditions maintained as far as gas quality and rates were concerned prior to the initiation of natural gas.

Q. But not at the present time?

A. Not at the present time.

Q. Or at any time since those three years mentioned?

A. I state in the first part of my report: "There are also set forth analyses of the operating costs and operating revenues of manufactured gas in Denver, Colorado Springs and Pueblo for the year 1927, and these are compared with the operating costs and operating revenues for natural gas for the year 1939 in each of the three cities."

Q. You have never been connected with any natural gas distributing company, have you?

A. No.

Q. Or any manufactured gas distributing company?

A. No.

Q. Or any natural gas transmission company?

A. No.

Q. Now, this schedule on Page 4, headed "Comparative Costs per Million BTU," is that the burner tip cost paid?

A. That reads: "Comparative cost per million BTU to customer of stated typical monthly amounts of natural gas and of amounts of manufactured gas containing equivalent total heat value." That is to the customer.

Q. To the burner tip customer?

A. To the ultimate customer.

Q. By the distributing company?

A. That is right.

Q. This confines itself entirely to manufactured gas on Page 4?

A. No, you are mistaken. It is a comparative cost per million BTU to customer of stated typical monthly amounts of natural gas and of amounts of manufactured gas containing equivalent total heat value.

Q. It is a comparison of BTU heat value, that is right. Now, this does not in any manner relate to the city gate rate of the natural gas at any one of the three places?

A. No.

(Vol. CI, pp. 15609-15611.)

* * * * *

Q. Well, what I wanted to get definitely clear—and thank you, Mr. Dougherty—that makes it perfectly clear that this isn't just a study of rate schedules or costs to ultimate consumers as taken from those rate studies, but it is a computation made by this witness to determine costs.

A. In this connection, yes.

Q. Of producing and selling manufactured gas in 1927 and of distributing and selling natural gas in 1939.

Mr. Dougherty: The witness has not made these figures up himself. As he said, he has taken the reports of the respective distributors of gas.

Mr. Lange: That's right.

Mr. Dougherty: And simply transported those figures to his papers and then made computations to get his detailed Mcf.

Mr. Lange: That's right. I just wanted to be sure that that's what he did.

Q. That is correct, Mr. Sands?

A. That is correct.

Q. Then these are cost studies with reference to those several companies that are distributing gas, constructed by you from reports filed with the regulatory agencies?

A. That's correct.

(Vol. CI, pp. 15615-15616.)

* * * * *

Upon offer of the Exhibit, counsel for the Commission objected to its admissibility, and the Examiner sustained the objection. The following proceedings were had:

Mr. Dougherty: I'd like now to offer in evidence Exhibit 296.

Mr. Lange: Mr. Examiner, we object to the introduction of this exhibit. It is entirely different from an exhibit that may take—reports filed with regulatory agencies by companies participating in the proceeding and just setting forth those reports as they are, but here a witness comes and does the very thing that this whole rate proceeding has been carried on for five or six months for. If you could determine costs in that fashion, why have a rate proceeding that takes this period of time?

This witness takes those reports and attempts to make cost analyses of them. Certainly if that could be done, we have done a great many useless things in attempting to bring witnesses here who have made accounting studies and engineering studies and from those, then, the Examiner

and the Commission will determine cost; but to permit an exhibit like this to be introduced, you are even going on beyond putting price indices in the record that was criticized in the West case years ago.

Now, in addition to that, this witness comes in and attempts to make a comparison after he has constructed what he terms cost comparison of costs of fuel between manufactured gas that is not manufactured here any more and hasn't been for years, and the natural gas.

We are attempting in this proceeding—the entire scope and object of this proceedings has been to present facts and figures on which the Examiner and the Commission can determine the reasonableness of natural gas rates in so far as the companies that are in this proceeding are concerned. We aren't attempting to fix any rate for artificial gas or relate the rates that we fix in this proceeding as to rates that may have been charged by companies distributing artificial gas.

The first point is the fact that every one of these studies pertains to distributing companies. This Commission is not attempting, and could not if it wanted to under the Natural Gas Act, fix distribution rates. We haven't any province in this proceeding to relate the matter that goes into the fixing of natural gas rates at the city gates to distribution rates, per se. Those are all local distribution companies that are set forth in the exhibit. For that reason the exhibit is not competent testimony and doesn't present competent evidence in a proceeding of this character.

So for all of those reasons, Mr. Examiner, I seriously urge not only the testimony but that the exhibit be stricken.

Mr. Dougherty: If the Examiner please, I think everyone will recall part of our case, that the contract was made by the distributing companies in 1938 and Colorado Springs in 1931, setting prices for a period of years to 1948. We have contended right along in this case that those rates as established by those contracts are reasonable and fair rates.

This is testimony that bears on the question of the reasonableness of the contract rates. If there is any public interest in a proceeding of this sort, I take it that it involves what is going to happen in the way of prices which

the ultimate consumer will be charged. I don't think Messrs. Lange and March are fighting for the stockholders of Public Service Company of Colorado. It is the consumer that has to finally pay.

This shows the reduction in price to the public in these communities as a result of the introduction of natural gas and shows also the increases in volumes and sales of gas in those communities from 1928 up to date and that we think bears very directly on the reasonableness of the prices which are charged to those consumers by the distributing companies which in turn, as it is clearly shown by this exhibit, is based on reduced operating expenses at lower costs to the distributing companies themselves.

We have put in testimony as to the competitive fuel situation in Colorado, which bears to that; so that on that feature of our case we think it is very pertinent testimony to determine the question of whether or not the contract rates are reasonable.

There is not any one single way of determining reasonableness of rates. That is, the matter of taking valuation of property, operating expenses and rate of return is not the only way in which that question can be solved, so that that is the purpose that we have in putting in this exhibit and we think it is pertinent testimony.

The Trial Examiner: Quite frankly, Mr. Dougherty, the Examiner is unable to see wherein this particular testimony and the evidence is relevant and material to this proceeding.

The proceeding itself has for its purpose the determination of whether or not the rates now being charged by the respondents in this proceeding are unjust, unreasonable or unduly discriminatory.

Now, to the Examiner, the determination of that question has its genesis in the earning of a fair rate of return upon the property that is used and useful in rendering public service, and I think the Commission in prior proceedings has indicated that same view.

I know of no shortcut or formula whereby the matters that we are called upon to determine here can be determined by a comparison with other fuels. I think it will be agreed that if that could have been done, certainly we would have saved a great deal of time and a great deal of expense to everyone concerned in this proceeding.

Now, as to the matter of the ability of the companies to compete in the market with other fuels, that, of course, is another proposition, but I don't conclude that this exhibit in its entirety is directed at that particular issue in this proceeding. In other words, it deals with manufactured gas and there is no evidence here in the proceeding to show that manufactured gas represents a threat to the ability of the company to make sales to its present customers; and in view of that, the Examiner is rather inclined to sustain the objection of Commission's counsel and also to grant Commission's counsel's motion to strike the oral testimony pertaining to the exhibit.

Mr. Dougherty: May I have an exception, and my offer to prove will consist of the testimony given by Mr. Sands and the exhibit, which, of course, will remain in the record but which will remain as having been physically stricken.

The Trial Examiner: Very well.

(Vol. CI, pp. 15626-15631.)

* * * * *

11. Increased Use of Natural Gas in Competition With Other Fuels.

The Witness Hill in his Exhibit 36-S shows the increase in the number of customers, using gas for househeating in the Denver area, 1924 to 1939 inclusive. From 1924 to 1927 the number of such customers was less than 1,000. After the change-over August 1, 1928 to natural gas, the number has ranged upward until it reached approximately 13,000 in 1939. In his Exhibit 36-S he also shows the "per cent of total domestic consumers using gas for househeating" in the Denver area. Prior to August 1, 1928 the number was less than 1%. In 1939 it was almost 20% (Vol. III, pp. 404, 405).

He testified on cross examination that he had just been informed by Public Service Company employees that they then had in Denver "17,000 gas heating installations". (Vol. III, p.430). At the same time he also testified that so far as domestic consumers using gas for cooking were concerned, the distributing company had "succeeded in selling the domestic cooking market" (Vol. III, p. 434); and that such market was saturated" (Vol. III, pp. 431, 438).

The Witness Rhodes of FB&D, which firm first operated the Colorado Interstate properties, on cross examination testified as to Denver as follows:

> "I would say this town was very close to being saturated. * * * I would say the market is saturated with consumers. With respect to all domestic consumers of gas, they are using gas." (Vol. IX, pp. 1205, 1206.)

The Witness Hill in Exhibit 36-G set forth the "Estimated Equivalent Tonnage of Coal Displaced by Use of Natural Gas Sold by Colorado Interstate Gas Company, Years 1929-1939 Inclusive." Describing this exhibit he said:

> "This is considered to indicate the maximum tonnage of coal displaced by this gas, because a part of this tonnage would have been displaced by competitive fuel oil if natural gas had not been available.
>
> "Comparison of the tonnage shown as displaced by gas with the total Colorado coal production is made for each year 1929-1939. From this it appears that the tonnage equivalent of natural gas sold in each year has risen from 4.9 per cent of total state production in 1929 to 15 per cent in 1939." (Vol. III, pp. 400, 401.)

On being cross examined with respect to Exhibit 36-G and the displacement of coal by gas he stated that the increased use of natural gas and the efficient use of other fuels had all contributed to the decrease in coal production. There had been a constant increase in gas consumption and a constant decrease in coal consumption. When asked: "Is there anything to indicate to you that that ratio won't be maintained?" he replied:

> "A. Yes.
> "Q. What's that?
> "A. The capacity of the whole Interstate system.

"Q. In other words, you come right back to the proposition that you are practically operating to capacity now.

"A. I say we are operating at peak capacity; that is, on peak days. Of course on non-peak days there is still room for substantial volume of additional business by way of leveling out the total factor and increasing the total sales without increasing the peak-day requirements.

"Q. You couldn't take care of a 12-months period, any additional load?

"A. We would have to be privileged to shut off this additional business on peak days or else increase the facilities required to bring that much additional gas to Denver on a peak day." (Vol. III, pp. 452, 453.)

This same WITNESS HILL, on further cross examination, however, testified as follows:

Q. And you state you had to go up against the coal competition?

A. I did.

Q. Who was the coal company which tried to outbid you for the business? What was the coal company?

A. I can't give you the precise name at the moment, whatever coal companies were the source of the coal fuel at the time. In the case of the Holly Sugar Company at Swink I competed with the coal companies that were owned by the same interests that owned the Holly Sugar.

Q. Who owned the Holly Sugar?

A. The interests were in Colorado Springs and I forget the man's name.

Q. In other words, the same interest that owned the coal?

A. That's it, and I had to figure just the cost of the coal rather than against—

Q. The cost for them to mine the coal?

A. That's it, and the Santa Fe, I had to figure against the mining cost of the coal to the Santa Fe plus the out-of-pocket cost of hauling it from the mine to La Junta. They wouldn't let me take the coal price plus the freight rate and figure against that. They said, "No, we haul that ourselves and the only part of that cost that comes out of our pocket in cash is the mining cost, and that is what you boys figure it on."

Q. So in figuring your gas rates to these large industries you had to cut under the coal prices?

A. Absolutely.

Q. It was purely competitive?

A. Purely competitive.

Q. You did cut under coal prices? You cut clear under, or you wouldn't have gotten the business?

A. Otherwise we wouldn't have gotten the business.

Q. About what rate did your contract provide for that you mention?

A. I would say that it was under twenty cents a thousand.

Q. Was it a lot lower than that?

A. I said under twenty cents a thousand.

Q. Wasn't it twelve cents a thousand?

A. It might have been. There may have been cases where it was twelve.

Q. And some cases ten?

A. I couldn't recall, but I wouldn't be surprised.

Q. In other words, these interests get gas at varying rates. There is no uniformity?

A. No.

Q. Purely a competitive proposition?

A. Absolutely.

Q. And you just charged what you could?

A. What we could under competitive conditions.

Q. Now, did you have anything to do with the negotiation of the Colorado Fuel & Iron Company contract—corporation?

A. No.

Q. Ford, Bacon & Davis, Inc. negotiated that contract?

A. Yes, they did.

Q. For Colorado Interstate?

A. Yes. I think really before Colorado Interstate was formed and when the project was at its embryo, that was one of the essentials.

Q. That was one of the factors to the original agreement. They had to have the money in the bank before they could even go forward with the project?

A. You have said it. You are absolutely right.

Q. Who did negotiate that contract?

A. George W. Bacon and James F. Towers.

Q. What was their position?

A. George W. Bacon was Chairman of the Board of Directors and Towers was Vice President.

Q. Was the Colorado Fuel & Iron Corporation the largest owner of coal lands in Colorado?

A. I couldn't say.

Q. They were large?

A. They were very substantial.

Q. They furnished all their coal from their own properties?

A. Well, I couldn't say that. If you say so I'll accept it.

Q. I wouldn't want you to accept—

A. Well, they may be, but I don't know. I never had occasion to find out.

Q. In other words, you never had anything to do with that contract?

A. No, sir.

Q. In fact, you don't know just how important that contract was?

A. Oh, indeed I do. It was the keystone to the arch, you might say, one of the pillars of the church.

Q. You had to have the Denver business?

A. That was one of them.

Q. This pillar down there at Colorado Fuel & Iron, that pillar gets its gas at about twelve cents, doesn't it?

A. I would say it averages less than fifteen. I don't know what precise figure.

(Vol. II, pp. 216-219.)

* * * * *

Q. You prepared this report—do you consider you prepared this for both the Canadian River Gas Company and the Colorado Interstate Gas Company?

A. No. I outlined in the report here the Colorado Interstate principal consuming centers.

Q. Did you consult with the Public Service Company of Colorado?

A. I think that Mr. Drew got some assistance here, not much; that is, he was here and I know that he met some of their people and I think that they may have given him some help in getting some of his information. I know they gave me some.

Q. What did they give you?

A. They gave me transportation.

Q. They gave you transportation?
A. Yes, sir.
Q. In what?
A. An automobile and a driver.
Q. They gave you all that—oh, you mean they furnished you with the transportation?
A. The means of getting around here to see whoever I wanted to see.
Q. In other words, they turned certain of their facilities over to you?
A. Very courteously, as I expected they would.
Q. How's that?
A. They did so, very courteously.
Q. How long were you here?
A. I used their automobile for perhaps a total of three or four hours.
Q. Did you use any of their staff?
A. One of their men went with me.
Q. And they didn't submit to you any written reports?
A. No.
Q. What portion of this report did they furnish you the data for?
A. None.
Q. Do you know anything about the local gas situation here in Denver?
A. Indeed I do.
Q. Do you know anything about the local coal situation here in Denver personally?
A. Personally in Denver—I've never lived here, no. I was in Colorado Springs only.
Q. You don't know personally and directly whether coal is a very serious competitor here of gas or not, do you?
A. Oh, yes.
Q. It's just hearsay with you, isn't it?
A. It's common knowledge in my profession, I think. If I didn't know that; if I hadn't put myself in a position to know the competitive situation here I would hardly care to appear before this Commission.
Q. I understand, Mr. Hill, you just accumulated a group of data here from public documents and from other sources and you just reproduced it here, you didn't personally write all of these, make all of these analyses and write all these reports, and your men didn't do it, did they?

A. Just what do you mean?

Q. They just compiled here a bunch of statistics which they got from various sources?

A. And which they submitted to me.

Q. And which they submitted to you.

A. Right.

Q. What I'm trying to bring out in the record here is that you didn't personally make an analysis of the coal situation here in Denver?

A. After I got the coal prices and the proper labor statistics and the gas prices with my general knowledge acquired over a period of years, if I couldn't make these deductions here, I would ill deserve my position.

Q. The basic data came from these other sources?

A. Why, yes. Every engineer in making deductions must of necessity be guided by basic data.

Q. How much information in this report did the City of Denver furnish you?

A. The City of Denver—well, let's see. The Commission gave Mr. Drew certain statistical information.

Q. The City Planning Commission?

A. The City Planning Commission.

Q. What did they give you? What data did they give you?

A. Well, let's see—excuse me, the State Planning Commission.

Q. The State Planning Commission?

A. Right. Exhibit 36-N. When I said "City" I'm thinking about New York City where we have a City Planning Commission.

Q. The City Planning Commission gave you that map?

A. They gave it to Mr. Drew.

Q. All of the lines on it like it is here now?

A. I wouldn't swear to it.

Q. I notice here the source of information given on here is the Colorado State Planning Commission and P.U.C., 1935. Is this the latest information you could get on this, was 1935?

A. That's the latest we got. All that shows is the availability of these roads. All you've got to do is to get a car and ride over them and you'll find they are good roads.

Q. Have you ever done that?

A. Indeed I have. I have driven many many thousands

of miles over these highways. Not all of them, but many of them.

Q. What else did you get from the State Planning Commission?

A. I'll have to go through every one of these exhibits and look. Map No. 5, Exhibit 36-O.

Q. I notice, if I'm looking at the right map, all the lines on this map—

A. No, I told you—

Q. Oh, yes, you went over that. I beg your pardon. You got this from the State, or did your assistant?

A. My assistant.

Q. Well, you needn't go any further with that.

I'll ask you about this information you got from this Mr. Wendell Hedgcock, Chief Engineer at Denver Housing Authority. I think you testified and it is on Page 23 of your written statement that these projects used coal because coal was cheaper. How do you know it was cheaper?

A. I know that it can be bought for prices that I understand—well, around three dollars a ton. I know it's cheaper. Mr. Hedgcock didn't tell me that, he told Mr. Drew that, but I went over and looked at the project and looked at the apparatus, the way they were rigging up to burn this coal and I was perfectly certain that coal can be bought for three dollars a ton.

Q. Do you know what the market price of coal is here in Denver?

A. The domestic coal runs up around seven or eight dollars. The price we used as shown in Table No. 8, now that of course, that range of prices is for prepared sizes. Three dollars we are talking about is bituminous, slack and stoker.

Q. Do you know that is the kind of coal they are burning there in that project?

A. They aren't burning any coal there, they are just putting the equipment in.

Q. I mean when they get ready to burn it.

A. I know it is designed to burn that.

Q. You went out and looked at it?

A. Oh, yes, I did.

Q. This engineer didn't tell you it was cheaper for you to use coal, did he?

A. He didn't tell me anything.

Q. You just guess that the reason they were using coal was because it was cheaper to use coal?

A. I didn't guess anything about it. I made that assumption.

Q. Well, call it an assumption.

A. I know that that plant out there is designed to use slack, sub-bituminous stoker, and I'm perfectly certain we won't be able to compete with that.

Q. You just have to assume that. You haven't made a careful study of that; is that right?

A. Well, that's my assumption.

Q. It might be that for all you know, it might be using coal out there because they want to accommodate some of these coal producers here in the state?

A. They aren't using coal out there.

Q. I mean when they do use coal out there. That might be possible.

A. What their basic reason is I don't know, but I make my own assumption.

Q. Yes, I just want to get that clear.

What are you trying to do, sell coal or gas?

A. I'm not trying to sell anything. I'm testifying to the best of my ability at the hearing before the Federal Power Commission at the City of Denver.

Q. Now, as I gather here, it's your contention that it is really cheaper for these people here in Denver to use coal than it is to use gas?

A. That's not my contention, that's my knowledge.

Q. You think it is cheaper to use coal than gas, is that your conclusion?

A. I'm certain it's so. If they are only considering their fuel cost and no other conveniences they wouldn't use gas when they can get coal and oil at these prices. They use gas because they like it.

Q. You didn't have any of this market here to begin with, did you, I mean before they built the pipe line there wasn't any gas sold here in Denver?

A. Oh, yes, manufactured gas.

Q. There wasn't any natural gas, though?

A. No, sir.

Q. Did you take the market away from the coal producers or the manufactured gas plants?

A. Well, we took away, we think, about as much of the coal people's market as I have outlined in that report, and of course the distributors who were formerly handling manufactured gas are now distributing natural gas.

Q. Do you know who the largest coal distributor in Denver was when you built your pipe line up here?

A. Rocky Mountain Fuel. If it wasn't Rocky Mountain Fuel, I don't know.

Q. You aren't familiar with the expenditure of large sums of money by the Colorado Interstate Gas Company to secure the right of way in Denver, are you?

A. Secure the right of way in Denver?

Q. Yes. —I mean, pardon me, I should word that large sums of money to secure the business—the Denver business.

A. What are you driving at?

Q. I'm driving at the expenditure of four hundred and some odd thousand dollars to extend the capital accounts.

A. Whose?

Q. Of Colorado Interstate, to get the business here in Denver.

A. Expended by whom and to whom?

Q. Expenditures; for example, to Mr. Smith.

A. Counsel?

Q. Yes.

A. I am generally familiar with that.

Q. Did you have anything to do with those expenditures?

A. No, sir. Go on from there.

Q. The expenditure of $350,000 to Mr. Bonfils? He was the largest coal operator in Denver, wasn't he?

A. He ran the Post coal company.

Q. Wasn't he the largest distributor of coal in Denver?

A. I don't know.

Q. Do you know anything about the payment of $350,000 to him?

A. No, I don't.

Q. By the Colorado Interstate Gas Company?

A. I didn't know they made that payment.

Q. You don't know anything about that?

A. No.

Q. You don't really know who was distributing coal or anything about it at the time you put natural gas in here?

A. No, at the time we put natural gas in here I knew

the Post Coal Company was here. I saw their ads scattered in the newspapers.

Q. They aren't in operation now, are they? Do you know whether that company is in operation now or not?

A. I do not. I don't know anything about their affairs.

Q. Do you know what companies are the biggest competitors here in town now of the Public Service Company of Colorado—coal companies.

A. No.

Q. Do you know whether there are any companies here that are serious competitors or not?

A. I don't know any specific ones. I know coal is a competitor.

Q. You know that generally as an engineer. You wouldn't have to come to Denver to know that; just as a general reputation?

A. Well, for instance, you couldn't make that statement in the City of Dallas or the City of Amarillo. You'd have to know your city and the situation in order to make a statement of that kind.

Q. I mean you didn't have much trouble in getting the business of these large industries, did you, Colorado Fuel & Iron, for example?

A. That negotiation was handled prior to my coming out here by two of our organizations. They succeeded in getting that business. How much effort it took them I couldn't say. They were here quite a long while.

Q. Do you know that Colorado Fuel & Iron Company is the largest holder of coal lands in Colorado?

A. I don't.

Q. Do you know that the Rockefellers control the Colorado Fuel & Iron?

A. I don't.

Q. But you do know that the gas price in that contract was fixed purely on a competitive basis?

A. I know what the prices were and I know that they were arrived at after negotiations and discussions, and I also know the comparable prices for natural gas and coal fuels in the steel district of Alabama. Now I didn't negotiate this Colorado Fuel & Iron contract. I'm going to answer your question yes and say they were on competitive basis.

Q. I believe you stated here in your testimony that in some cases the domestic use of coal—I mean the domestic use of gas, where the price to domestic consumers was reduced for these purposes like waterheating and all of that, it immediately increased the use of gas for that purpose?

A. Well, Denver has a highly promotional rate as you undoubtedly know, a rate with a very steep slope. Now does that answer your question? Yes, a very steep, quick breaking promotional rate.

Q. In order to get this large industrial load that you have here in Colorado you had to underbid the coal men, didn't you?

A. I had to show the consumer a lower overall cost if he used my gas than if he kept on with his present fuel. If that answers your question, yes, I think the answer would be yes. On the strict thermal content basis, I didn't have to underbid him, no.

Q. When you went up to a large industrial, you sold him on the idea that it would be cheaper to use gas; it would mean more to his business?

A. More money.

Q. He could produce his product cheaper, labor costs and everything?

A. Everything taken into account.

Q. Yes. If you went out here to sell this gas to domestic consumers, you didn't make that kind of argument, did you?

A. I didn't try to sell any gas to domestic consumers.

Q. Do you think that the people that did didn't make that argument?

A. Why, it's obvious that when natural gas came into Denver the domestic consumer got a lower rate.

Q. Than they had from manufactured gas?

A. Right.

Q. In the large industries, they don't care whether the gas is dirty or clean, do they? What I mean—

A. You couldn't burn dirty gas.

Q. What I mean is this, pardon me—what I mean is this, that wouldn't be the deciding factor in whether or not they used gas or coal?

The Trial Examiner: In other words, they wouldn't consider the convenience of natural gas?

The Witness: All they look at is the dollars.

The Trial Examiner: That's what you mean?

By Mr. March:

Q. But you testified here that the residential consumer, although they can't get gas as cheap as they can coal, they use gas because—a great many of them do—because it's cleaner and more convenient?

A. Yes, I think that is a correct statement.

Q. That is the sole reason. If they were going in to get the most economical heating commodity they would use coal, wouldn't they?

A. They would use kerosene, I think.

Q. You said coal in here, didn't you?

A. Well, let's read it.

Q. Kerosene—I don't recall that, do you?

A. In the middle of Page 25.

Q. They would use kerosene?

A. Yes, sir. If they wanted to get their cooking for the lowest dollar they would use kerosene.

Q. Do you know how much kerosene comes into Denver?

A. I know there are four refineries here in Denver that are making it.

Q. How many?

A. Four.

Q. Where are they?

A. Right around town here.

Q. How big are they?

A. One of them is about—I'd say from looking at them about three thousand barrels a day, for two of them. I've got them here in an exhibit—moderate sized refineries, two pretty nice ones.

Q. Do you know whether the use of kerosene is increasing or decreasing for fuel use in Denver?

A. I understand the use is very negligible.

Q. It is very negligible?

A. Very negligible.

Q. It is cheaper but they don't want to use it?

A. That's right.

Q. Why don't they?

A. They don't like it.

Q. It is inconvenient?

A. Inconvenient and smelly stuff.

The Trial Examiner: The hearing will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. March:

Q. Kerosene isn't a serious competitor, then?

A. In Denver?

Q. Yes.

A. No, sir.

Q. Not even a potential competitor?

A. I would say a potential competitor but not an actual competitor.

Q. What type of fuel is second cheapest fuel in Denver?

A. Oil—for cooking you mean?

Q. For—we'll say cooking first.

A. Cooking—I put electricity the most expensive, gas the next, coal next and kerosene last.

Q. What about your industrial?

A. Industrial?

Q. Yes.

A. That somewhat depends upon the nature of the use but with fuel oil here at a dollar a barrel, two and a half cents a gallon roughly, if you had very much of it I think that you would find fuel oil a competitor in the higher grade uses with coal still the most serious competitor in the lower grade uses.

Q. Gas is the cheapest fuel for industrial use in Denver, isn't it—large industrial use?

A. I would say that it should be.

Q. You don't know?

A. Well, I say it should be. You see you have got to consider the application.

Q. All of this testimony is just on a bunch of assumptions, isn't it?

A. Oh, no, no, no. I haven't testified here that gas is the cheapest fuel. I say it is a competitive fuel. It makes its way—it fights its way by competition against other fuel. It has to struggle to live. It has struggled.

Q. Which is the cheapest fuel, for large industrial users?

A. It depends on the rate.

Q. Don't you know what the rate is?

A. Well, I know that they have got a bottom step in Denver here of twelve cents which is the lowest step. That ought to do pretty well competitively.

Q. I see, you just don't know what the cheapest is, though, do you?

A. Well,—

Q. In other words, you don't want to answer that directly?

A. You can't answer it directly, you can't.

Q. Can you answer any of these questions directly which is the cheapest fuel?

A. Well, ask me one and see.

Q. Well, we've left the industrial consumer. Now we'll go over to something you can probably answer right off—domestic consumers.

A. The domestic consumer?

Q. Yes.

A. You are talking about dollars and cents only?

Q. Talking about which is the cheapest for the domestic consumer in Denver.

A. I have already answered that question and I'll answer it again.

Q. Yes.

A. I think that if the domestic consumer is thinking about dollars only he'll use kerosene. If he used kerosene first he'll use coal next; he'll use gas next and he'll use electricity last. Does that answer your question?

Q. Yes. Now, if you would answer that question as fluently for the industrial load—

A. I can't without knowing the rate applicable, the class rate applicable.

Q. You don't know what the rates are here in Denver?

A. Well, I don't know every class rate in the industrial schedule. I haven't made any pretense of knowing it.

Q. You were chiefly interested in domestic loads when you made your study?

A. Domestic load and knowing that the situation with respect to the industrial business was about the same here

as it is on the other portion of the Colorado Interstate system.

Q. Well, you don't have any other portions—what other portions do you have on the Colorado Interstate system serving domestic gas?

A. I said industrial, I didn't say domestic.

Q. Oh, industrial.

A. Oh, we have Pueblo and Colorado Springs.

Q. How do their rates compare with Denver?

A. The rate in Pueblo is the same. The rate in Colorado Springs is the same except that for the first four hundred feet in Pueblo is fifteen cents cheaper than it is in Denver.

Q. The difference between the domestic rates in Cheyenne and Denver, do you know that?

A. I don't know Cheyenne.

Mr. Dougherty: Excuse me, Mr. March. You said Colorado Springs and then you said the rate for the first four hundred feet in Pueblo is cheaper.

The Witness: No, in Colorado Springs is fifteen cents cheaper than in Denver and Pueblo.

By Mr. March:

Q. You think that oil is a very serious competitor here in Denver for domestic use?

A. For heat?

Q. For heat?

A. Well, it is on a cost basis. There is no reason why it shouldn't be; that is, I know that they had a certain number of oil burners in the area in 1938. I don't know how many they have got now but I know we've got here in Denver, the Public Service fellows say they have approximately got now 17,000 gas heating installations.

Q. Gas heating installations?

A. Yes.

Q. You don't know how many oil heating installations there are?

A. No. I would guess there would be quite a few less, a good many less based on the base figures that I had for 1938.

Q. Well, I don't want your guess.

A. I can't give you the exact figure. I gave you the figure for 1938 but I can't give you the figure for 1940.

Q. Do you know whether the use of oil is increasing or decreasing?

A. Increasing, definitely.

Q. How do you know that?

A. On the charts I showed you.

Q. The price is increasing or decreasing?

A. The price—now let's see. It looks like from Table 9 the prices have been pretty stable for the last eight years.

Q. Small domestic consumers such as householders don't use oil, do they, very much?

A. For what?

Q. For heating or anything else; for cooking.

A. I don't believe they use very much for cooking. I am sure they don't in this part of the country.

Q. You don't know though?

A. Well, I do know. I know the Public Service Company couldn't have the saturation they have if there was much oil competition for domestic cooking.

Q. You know they couldn't charge the rates they do if there was domestic competition, don't you?

A. Well, that doesn't quite make sense because right now the price of kerosene for cooking—

Q. Kerosene is out of the picture as I understand.

A. Because people don't like it.

Q. Yes.

A. But it is perfectly adaptable if—I mean if the price of gas were so high that people had to use a substitute they could use kerosene if they wanted to perfectly well, and save money.

Q. Let's forget about kerosene.

A. All right, talk about coal.

Q. Talk about these questions I've asked you about.

A. Well, you can't use fuel oil for cooking.

Q. That's what I want to know is whether or not the fuel oil is a serious competitor of gas, small domestic; for any purpose.

A. I would say no; that is, with the possible exception of househeating. I would say it wasn't particularly serious there.

Q. Chiefly where the competition of fuel oil comes in is in these large office buildings, isn't it?

A. Office buildings, apartments, industrial uses and I would say in medium sized and larger residences.

Q. Do you know whether or not there is a special gas rate—

Mr. Spencer: Let him finish, please.

Mr. March: Pardon me.

The Witness: Oil at a dollar a barrel is also a potential industrial customer, definitely industrial customer.

By Mr. March:

Q. But I didn't ask you anything about the industrial situation. We have already discussed that.

A. All right, I'll withdraw that.

Q. There is a special rate, competitive gas rate to these large office buildings caused by this competition in fuel oil?

A. I don't know the rate, but I'd say there would have to be one, yes.

Q. In other words, they would have to come down and meet competition there?

A. They certainly would.

Q. The only real competitor so far as the small domestic consumers' business is concerned of gas is coal, then, is that right? I mean serious competitor?

A. I don't think they have a serious competitor in Denver, as a matter of fact. They have potential competitors, but I don't think they have a single serious competitor.

Q. In the coal business?

A. For cooking for the small user.

Q. In other words, they have got that market to themselves?

A. I think that the gas company has succeeded in selling the domestic cooking market.

Q. What about the domestic load, small domestic consumer?

A. What do you mean, "the small domestic load"?

Q. Household consumer, taking all of the small householders' consumption combined, is coal a serious competitor?

A. I think it is, definitely.

Q. It isn't the only serious competitor, is it?

A. But not actually for cooking; that is, hot water heating and house heating, it is a serious competitor, but I consider oil just as serious for house heating, large or small consumers, it doesn't make any difference.

Q. I note here—just one more question about this oil. You don't know who sells oil in Denver, crude oil, do you?

A. Crude oil?

Q. I mean, not crude oil, but this fuel oil.

A. I know that I have seen trucks on the street of the Perry Refining Company labeled "fuel oil." Now,—because they have got "fuel oil" on the side and it stands out. I don't know. I presume others do too, I don't know. I know the telephone book has got about fifty of them as I recollect. I looked them up.

Q. Do you know what percentage of the market they have here in Denver?

A. For domestic heating?

Q. Yes.

A. No. I gave it to you in 1938.

Q. Do you know whether it is on the increase or decrease?

A. I only know that the sales of these oils are increasing and I gather that their use is increasing.

Q. You're just surmising that?

A. They either use it or pour it down the sink, you might say.

Q. You don't know exactly.

A. I made no more detailed study of the use of heating oils by domestic consumers in Denver, any more than I have given in that statement of mine.

Q. Which is very very general?

A. That is a general statement.

Q. Now I want to direct your attention to your exhibit No. 36-S, and also you can look at the same time on Page 30 of your testimony. I note that you have testified that in regard to the increased use—on Page 30—the ratio of gas consumption:

"The sharp drop in this ratio occurring in 1928 and 1929 was due to the reduction in rates paid for natural gas below those paid in prior years for manufactured gas."

A. Yes.

Q. Is that correct?

A. Yes, sir.

Q. And I note here on your Chart 36-S that there has been a constant, almost a constant increase in the use of gas for househeating purposes here in Denver?

A. That's correct.

Q. I notice at the same time there has been a drop in the average rates for househeating purposes?

A. Yes, that's correct.

Q. Is that because of the block rate, that block rate, is it?

A. Promotional block rates, yes.

Q. Don't you think that if the rate in Denver were reduced that there would be an increase in the use of gas in Denver by all types of consumers?

A. No, sir.

Q. Why?

A. Because a change downwards in the rate wouldn't increase the use of gas for cooking.

Q. How about for other purposes? I never said anything about cooking.

A. Yes, you did. You said for all purposes. If I'm wrong the reporter—

Q. You are speaking of cooking first.

A. I see—cooking, there would be no increase in sales.

Q. Why?

A. It takes just so much gas.

Mr. Dougherty: May I request, Mr. March, if you just sort of hold on before you finish so that the reporter can get it.

Mr. March: Yes.

The Witness: It takes just so many heat units of gas to do a given cooking operation. That number of heat units will be used whether the price of gas be one figure or another figure, assuming at all times that the price of gas is within its value. In other words, if the price of gas now was so high that nobody would use it, or that very few people would use it, its consumption would be increased by making it cost less, is that clear? If I haven't we will repeat it.

By Mr. March:

Q. Frankly it isn't but I'll ask you a few more questions. In other words, a person has got to do so much cooking anyway, is that right?

A. That's right.

Q. And a certain number of householders that have gas installed for cooking purposes—

A. They do.

Q. And they have got to eat three meals a day; so therefore they are going to use gas regardless if they have got it installed.

A. Assuming that it is now at a price within the value of it.

Q. They would use just about as much as before?

A. Just as much as before.

Q. Yes, but what about these other people who haven't got so much money would they come in and install gas for cooking purposes?

A. The saturation in Denver here now is such that I doubt that you would gain anything.

Q. In other words, the market for cooking purposes in Denver is completely gas—

A. Substantially so.

Q. Substantially so? They have all that tied up?

A. They seem to have been successful in selling it.

Q. Now that situation exists in no other form of service in Denver, isn't that true?

A. I would say it existed in no other form of gas service.

Q. Yes, gas service. Now let's get on. There is cooking

A. Cooking.

Q. All right, let's get on to your other gas service.

A. Shall we say water heating?

Q. That's very good.

A. I would say that water heating is sensitive to changes in the rate.

Q. In other words, there would be more water heating if you had a lower rate?

A. If the water heating rate were lower I think that there would be more gas used for water heating because the character of water heating service would be changed:

that is, I think there would be more automatic water heaters.

The Trial Examiner: Mr. March, I wonder if you aren't spending considerable time here on something that we really couldn't give a great deal of consideration to in this proceeding.

Mr. March: He puts this exhibit in evidence here. He has come up here as a witness testifying to the various things about the competitive factors here in this gas service. Now, if he doesn't know anything about it, all right. He says he does. I want to know what the real situation is.

The Trial Examiner: You are entirely at liberty to pursue Mr. Hill as to the competitive situation.

Mr. March: That's what I'm dealing with.

The Trial Examiner: But from your questioning I gather that you are attempting to have Mr. Hill state that if the gas rate were reduced that the consumption would therefore increase.

Mr. March: And also it might have a very definite bearing, if the Examiner wants to know what I am driving at, upon this competition with coal. If they reduce the gas rates right here in Denver now and coal is their principal competitor, there will be some question there as to how serious coal will compete then. If they compete seriously now and if these rates are reduced and brought down to what they ought to be, why then there might not be any competition there at all. The gas might have all the business. I want to follow through this competitive proposition. I didn't mean to get to my point that quick.

The Trial Examiner: Mr. March, the witness is testifying to the present situation as I understand it.

Mr. March: This exhibit covers from 1923 through to 1938 and none of it pertains as I understand it to 1940. I haven't seen a schedule in here yet dated 1940.

The Trial Examiner: That's what I mean. His testimony is dealing with the existing competitive situation.

Mr. March: That's what I'm dealing with.

The Trial Examiner: Well, I don't understand your questioning.

Mr. March: I'd like to be permitted to continue.

The Trial Examiner: Go ahead.

Mr. Lange: There is just this point, Mr. Examiner, probably that you may have in mind. We want to pursue this questioning in this respect also: There are a great many assumptions in this exhibit that aren't reflected in actualities. The witness himself stated that they are assumptions and haven't been reduced, or that aren't reflected into actualities existing on this system, particularly not in Denver, and we want to follow through on that and let this record reflect what is actually existing.

Mr. Dougherty: May I just say I don't agree with that so that no one will say I sat quiet when I should have spoken.

Mr. Lange: Well, just say with reference to kerosene. The witness definitely said that that is purely an assumption that the amount used is negligible. Still he sets it up as one of the basic uses or competitive fuels that would probably get into the picture and now I emphasize "probable" because he himself said that it would be within 98 per cent of probability.

The Trial Examiner: I think that it is entirely proper for the Commission's counsel to cross examine with respect to those matters. I am not endeavoring to shut off cross examination. However, it occurred to me that the Commission's counsel was spending some time on a matter that isn't particularly important.

You may proceed, Mr. March.

Mr. March: All right.

Q. You say that if the rates in Denver were reduced, the gas rates for water heating—

A. Water heating.

Q. —there would be an increase in the use of gas for wafer heating.

A. That's my opinion.

Q. Of course there would be a corresponding increase in the sale of gas here in Denver.

A. That's correct.

Q. All right now, let's go to the next type of domestic service.

A. House heating?

Q. House heating.

A. That is, a volume of natural gas sold for house heating—

Q. Yes.

A. —depends entirely upon the ratio between the cost of gas and the cost of the next competitive fuel.

Q. Coal.

A. Yes.

Q. So if the rates were reduced for house heating purposes, gas rates, there would be an increased use of gas for house heating purposes?

A. Yes.

Q. Let's go to the next type of service?

A. Refrigeration.

Q. Yes.

A. I think that comes in the same category as cooking for domestic purposes.

Q. Why?

A. Because the use is so small and the cost of refrigeration, such a large part of the cost of refrigeration, lies in the carrying charges on the equipment. The amount of gas used isn't great. I don't think that a user of refrigeration for domestic purposes will be swayed toward or away from the purchase of an electric refrigerator by change in the price of gas for refrigeration.

Q. You don't know though?

A. That's my experience as a natural gas engineer, experienced in those matters.

Q. How much gas—do you know approximately the ratio between the use of gas and electricity for refrigeration purposes in Denver?

A. The number of gas refrigerators as against electric refrigerators, no I don't.

Q. You do know that electricity is the only competitor there, of course?

A. Except natural ice.

Q. Yes. You don't know what the situation is here in Denver. How can you testify what will be the reaction.

A. I know what the situation is generally in the industry.

Q. The people use gas because they like gas for refrigeration and people use electricity because they like electricity for refrigeration.

A. Yes, and the price doesn't make much difference. It is more a question of salesmanship.

Q. It makes some difference, doesn't it?

A. I don't think it does, frankly. I am trying to answer frankly and that is the best answer I know.

Q. What percentage of the gas sold by—sold in Denver is used for refrigeration purposes?

A. I don't know.

Q. Probably very negligible compared to the whole load, wouldn't you say?

A. Very negligible.

Q. What would you say in regard to cooking?

A. I'd say it was a minor part of the whole load, not a negligible part of it, however.

Q. All right, let's go to the next type of service.

A. Such as?

Q. Domestic service. Is there any more?

A. I don't know of any more.

Q. All right, we'll go to commercial service, then.

A. Generally speaking, a reduction in the price of gas will have a stimulating effect on commercial sales unless they are already saturated.

Q. And they aren't already saturated here in Denver?

A. I don't know.

Q. You don't know anything about the commercial situation?

A. I know the domestic situation only.

Q. There would be an increase there?

A. There should be.

Q. What about small industrial consumers?

A. The small industrial—well, I'd say that if he isn't now using gas and the rates were reduced to a point where they would be competitive with coal, assuming they weren't now competitive, the use of industrial gas by small users should increase.

Q. How about large industrial consumers?

A. The same holds true as to large industrial consumers.

Q. Do you know about what percentage of the load in Denver is commercial, small industrial and large industrial?

A. No, I do not.

Q. You know it is very large, though, don't you?

A. I know the amount of industrial gas sold in Denver is considerable.

Q. And you wouldn't want to make a statement here in the record that in your opinion that if rates were reduced for all types of service here in Denver there wouldn't be more gas used than there is now?

A. In the aggregate?

Q. Yes.

A. I would say that if the rates were reduced there should be more gas sold in the aggregate.

Q. It would be tremendous?

A. I couldn't say there will. It all depends on the extent of reduction and the present competitive situation.

Q. Yes. Do you know anything about what capacity the Colorado Interstate system is operating now?

A. Yes, sir—this day?

Q. This day.

A. How much gas is going through?

Q. What percent of the capacity is being utilized?

A. This day I couldn't say.

Q. Could you take care of this increase here in Denver?

A. At present?

Q. Yes.

A. I am not operating the Colorado Interstate Gas Company. I would say that any substantial increase in the load in Denver would have to be taken care of either by shutting off industrial consumers or by adding facilities to the system.

Q. In other words, this market has reached—is all that you can handle as it stands now?

A. The total volume on peak days is approaching that point and may well exceed it this winter. They exceeded it last winter for one day as I understood from Mr. Hendee's testimony.

Q. You heard Mr. Hendee's testimony?

A. Yes.

Q. Do you agree with his testimony on that point?

A. I think his testimony in that regard wasn't quite accurate. He said the capacity of the system was 126,000,000. That contemplates for this year after certain additions are made.

Q. You are going to make additions?

A. Additions to the stations are now being made as I understand.

Q. What is the capacity now?

A. Well, before the stations had been increased, about 107,000,000 feet.

Q. What effect do you think this national defense situation is going to have on your load?

A. Here?

Q. And all up and down your line.

A. I have made no study of that. I don't know to what extent the Colorado fuel business would increase on that account nor to what extent business here in Denver will increase on that account.

Q. Now, let's go to our electricity situation.

Who sells electricity in Denver, Colorado, do you know?

A. Public Service Company of Colorado.

Q. Is that the same outfit that sells the gas in Denver?

A. Same corporation, I understand, yes.

Q. You know it, don't you?

A. I do.

Q. Well, do you think that company is going to compete with itself?

A. I have nothing to do with the management of that company.

Q. Well, as an engineer would you think that it makes much difference one way or the other whether people use electricity or gas to the Public Service Company of Colorado?

A. Well, I don't know what difference it would make economically; that is, I have never made any studies. They sell both. I think their cooking business here in Denver is largely gas.

Q. Do you know why that is?

A. Well, it's cheaper. Gas is cheaper than electricity. I think it is better.

Q. Well, there can't be very much competition between gas and electricity in Denver in view of the fact that one outfit has got the exclusive right to sell both, can there, only as a commodity?

A. Well, I wouldn't expect to find much competition between the sale of energy for domestic cooking in Denver unless the—unless the one company selling both services had decided on that policy.

Q. When you brought your gas into Denver here and your contract to construct the line, did you have any part in negotiation of the contracts of Public Service of Colorado?

A. Not the original contracts.

Q. Who did have?

A. I don't know. I say I do know. Mr. Christy Payne, I think had a prominent part in the negotiations.

Q. Of Standard Oil Company (N. J.)?

A. Of Standard Oil. I would say that Mr. Joe Creveling undoubtedly had an interest in them and whoever is the head of the Public Service of Colorado here. I've seen the contract, the signature is on it. I didn't participate in the original negotiations but did in certain subsequent ones.

Q. Now I direct your attention to Exhibit 36-G. I note from an examination of that exhibit, Table 7, as far as I can see there has been a consistent increase in the total sales of gas in Denver from 1929 to 1939, with the exception of one year which was 1938, is that correct?

A. That's correct. While these sales are totals, I think that Denver followed the trend. I'm not sure but I think it is a fair assumption that it did.

Q. You don't know whether it followed the trend or not?

A. I think—well, I couldn't swear that it did, but I'm sure that it did.

Q. I note here, though, that the increase from 1938 to 1939 was rather large. Do you know what accounted for that?

A. We had a fall-off industrial activity in 1938, apparently.

Q. That's what knocked that load down?

A. Yes, it looks like it.

Q. You don't know, though?

A. I would say the sale—I would say because the sale for all other purposes accounted for the difference.

Q. Now I notice here you go over to your coal production in Colorado, tons, that column. As I see there there has been a consistent decrease in the amount of coal production in Colorado during this same period.

A. Well, I wouldn't quite hardly say that because in the middle of the period there you will notice some increases but—

Q. It slipped back, though, didn't it?

A. It then did, yes. It has, of course, shown a substantial decrease from 1929 and 1930 to the present.

Q. Yes, about four million, wasn't it?

A. Almost, production in Colorado, yes.

Q. About ten million tons down to about six million tons in 1939. How do you account for that?

A. Increase in competition of other fuels and more efficient uses of all fuels.

Q. In other words, gas was taking the market away from them?

A. Gas was one of the contributing causes without question.

Q. Let's see, did you state in the record the method that you used in computing the tables here?

A. Just take the total therms, the total Btu's. and—the total Btu's. in gas and divide it by the Btu's. in a ton of coal and you will get the resulting displacement of coal. Divide that displacement by the coal production and you will get a percentage.

Q. I think you stated where you get this information from here.

A. I got the sales of gas from the Colorado Interstate Gas Company from Mr. Drew. The coal production is shown how I got that in another exhibit. The rest of it is just arithmetic.

Q. What's that other exhibit? I don't think you stated.

A. Exhibit 36-A.

Q. Natural gas—according to your schedule here it has been able to hold up pretty well against this coal competition, hasn't it?

A. Yes, it has done pretty well.

Q. In fact, it has got the better of the deal according to these figures, didn't it?

A. Just what do you mean by that?

Q. I mean that there has been a constant increase in gas consumption and constant decrease in coal consumption?

A. Yes, sir.

Q. Is there anything to indicate to you that that ratio won't be maintained?

A. Yes.

Q. What's that?

A. The capacity of the whole Interstate system.

Q. In other words, you come right back to the proposition that you are practically operating to capacity now.

A. I say we are operating at peak capacity; that is, on peak days. Of course on non-peak days there is still room for substantial volume of additional business by way of leveling out the total factor and increasing the load sales without increasing the peak-day requirement.

Q. You couldn't take care of a 12-months period, any additional load?

A. We would have to be privileged to shut off this additional business on peak days or else increase the facilities required to bring that much additional gas to Denver on a peak day.

Q. I don't know whether I asked you yesterday or not, but why is it that Colorado Interstate Gas Company hasn't attempted to sell more residential, small residential service all up and down this line, the small towns?

A. You said we hadn't attempted to?

Q. Have you attempted to do it?

A. We don't control the sale of gas at any of these small towns up and down the line.

Q. The Public Service Company of Colorado controls them?

A. Controls Pueblo.

Mr. Dougherty: Right there, Mr. Hill—

The Witness: That is, Pueblo Gas & Fuel. It's another subsidiary of the City Service Organization.

Mr. Dougherty: Also, Mr. Hill, I want to call your attention in connection with your statement that the basis of 36-G was 36-A. Mr. March mentioned it was 36-B. 36-B has the year 1939 and the full year 1938 which is not true of 36-A, so Mr. March was correct.

The Witness: I stand corrected.

By Mr. March:

Q. Now, let's take up this coke situation. All you know about coke production is what you have read from publications?

A. No, I used to be around Pueblo a lot when we were putting gas in and I know that quite a bit of domestic coke is sold there which is made by the Colorado Fuel & Iron in their ovens and sold for domestic use.

Q. Why don't they use coke themselves if it is so cheap?

A. For what?

Q. For their own use.

A. They can't use it for open hearth purposes.

Q. They have to use electricity and gas or what?

A. For open hearth purposes you've got to use some *some* form of gaseous or liquid fuel and a very great part of the gas sold to the Colorado Fuel & Iron is used for melting steel in the open hearth furnaces. The balance is used for miscellaneous operations such as soaking pit operations and some is used for boiler fuel. Now the amount of coke produced down there that is sold is simply a product of their own operations, which was largely sold in those days to company employes. Now what the situation is now I couldn't say. As to whether its use has increased or not as far as company employes is concerned or others, other than what is shown in this table, I couldn't say.

Q. Does coke compete very much with gas in the Denver market?

A. No.

Q. What market does it compete in?

A. Pueblo.

Q. What is the extent of that competition in Pueblo?

A. I haven't reduced it to gas equivalent, but it is—at least I know in the early stages of the company's life it was confined largely to employes of the Colorado Fuel & Iron. I don't consider it a serious competitor at all.

Q. Have you made a study of that situation up in Cheyenne?

A. No, sir.

Q. In regard to any type of fuel competition?

A. No, sir.

Q. Now I notice you have annual oil production in

thousands of barrels, 1925 to 1938, on Page 11 of your testimony. That oil production is comparatively small, isn't it, in the state of Colorado?

A. Small in Colorado.

Q. In fact, it is very small, isn't it?

A. Yes, sir.

Q. Do you know how high Colorado ranks?

A. Oh, it's very small.

Q. Negligible?

A. Yes, sir.

Q. Where would the chief fuel oil—most of the fuel oil be produced that competed, or crude oil which competed with gas in the Denver market?

A. Wyoming and Kansas, principally Wyoming.

Q. Wyoming—you don't know whether it competes up there in Cheyenne very seriously or not, do you?

A. Well, let me see if there is a refinery in Cheyenne listed here. If not, I would say not as much as in Denver.

Q. You don't know, though?

A. I will try to answer. No, I would say that the competition of Cheyenne in oil shouldn't be as great as in Denver because there is no refinery there. It isn't listed anyway.

Q. Would you say Wyoming had very much oil production?

A. Yes, sir.

Q. How does it rank among the states of the Union?

A. I don't know.

Q. Do you know who owns most of the oil leases up there in Wyoming?

A. No, sir.

Q. What company?

A. No, sir.

Q. What part of Kansas would oil competition come from?

A. Northern and Western fields in Kansas.

Q. Do you know who owns most of those oil leases in that portion of Kansas, what company?

A. I know The National Refining Company owns quite a bit. There are other companies, the Continental is represented in there; the Phillips Petroleum—

Q. Texas?

A. City Service.

Q. All of these companies which control Colorado Interstate Gas Company and Canadian River Gas Company?

A. No, no, no, no. Standard Oil of New Jersey isn't represented in the state of Kansas except they had representation there with the Carter Oil Company which is a producing subsidiary. Sinclair, I believe would have.

Q. They have some, Sinclair?

A. Sinclair would have some.

Q. Texas?

A. Texas hasn't got anything to do with this setup here—Texas Corporation?

Q. I just asked you about the Texas Corporation.

A. Oh, they are in there, sure.

Q. City Service?

A. I would expect so.

Q. How's that?

A. I would expect they would have a foot-hold in those fields.

Q. Do you know how much crude oil is shipped to the Denver markets from those fields, fuel oil?

A. No, I don't.

Q Do you know whether it is small or large?

A I would think it would be almost negligible now that the pipe line from the Lance Creek field was built into Denver.

Q. Who built that pipe line?

A. The Rocky Mountain Pipeline Company.

Q. Who controls that company?

A. I don't know.

Q. What is the capacity of that line?

A. 6-inch line.

Q. It comes into Denver?

A. It comes into Denver.

Q. Do you know—

A. The capacity depends on the pressure. I'd say that perhaps 15,000 barrels a day.

Q. Do you know at what capacity it operates at?

A. No.

Q. Do you know what they charge for their oil wholesale on that line, gate rate?

A. No. I wouldn't know. I didn't know there was a gate rate.

Q. Wholesale rate, I mean.

A. The tariff on the transportation from Lance Creek to Denver I don't know. You mean the tariff on the transportation from Lance Creek to Denver?

Q. You state here on Page 33 of your testimony—

The Trial Examiner: May I interrupt you just a moment before you get off 36?

Mr. Hill, you do not mean to infer that the total amount of crude petroleum production shown on Exhibit 36-D is converted into competitive fuel oil, do you?

The Witness: No. The figures given on the left-hand side of the tabulation are simply production of crude petroleum in thousands of barrels.

The Trial Examiner: You don't mean to infer from that that the total production shown is converted to fuel oil for competitive purposes?

The Witness: Oh, no, of course not. That is, only a portion of that would be reduced to fuel oil.

The Trial Examiner: Proceed.

By Mr. March:

Q. How much is produced?

A. Depending upon the process.

Q. You don't know?

A. Well, of course no one knows the total.

Q. Now, on page 13 I want to ask you about that schedule there. You said those figures were reasonably accurate. What do you mean "reasonably accurate"?

A. What page did you give me?

Q. 13. The table on page 13, estimated proven crude oil reserves in Colorado and adjacent states, data from American Petroleum Institute.

A. Well, those of course are estimates.

Q. That is the sense in which you submit that to be reasonably accurate?

A. Where did I use that? I don't see that in my testimony. I may have interjected it.

Q. I put it on my paper here when you interjected it as I recall it.

A. I don't recall it, but I'd say they are estimates and of course subject to errors that all estimates are subject to.

Q. On Page 18 I want to direct your attention to your testimony. I believe you testified that that estimate there was based upon a letter which you received from Mr. Morgan?

A. Yes, sir.

Q. I wonder if you would produce that letter for the record in order to make the record complete?

A. Yes. It is in our files in New York. I'd be glad to get it for you. Will a photostatic copy be all right?

Q. A photostatic copy will be just fine.

Oh, yes, you said on page 19 there is also a natural gas pipe line between Cheyenne and Denver supplying gas from the Colorado Interstate Gas Company's line to Cheyenne, Wyoming, and intermediate points. Is that the Colorado-Wyoming Gas Company line?

A. Colorado-Wyoming line, yes, sir.

Q. Do you know who controls the Colorado-Wyoming?

A. It is a City Service Interest. I don't know just what company controls it.

Q. Do you know if the Public Service Company of Colorado is a Cities Service interest too?

A. I so understand, yes.

Q. Do you know how much the Cities Service, what interest it has in the Interstate Natural Gas Company?

A. Fifteen per cent of the common stock; that is, the interests of the Public Service Company of Colorado.

Q. Yes.

A. I understand it to be fifteen per cent.

Q. Do you know how they vote that stock?

A. I don't know.

Q. How did they vote it when you were managing the properties?

A. I don't know.

Q. How's that?

A. I never had any occasion to find out.

Q. I think I used in asking that last question I used "Interstate Natural Gas Company." It is Colorado Interstate Gas Company.

A. Colorado Interstate Gas Company.

Q. Now I want to ask you, referring to your Exhibit No. 36-L, you see the line in red there. As I understand it they are oil pipe lines?

A. Yes, sir.

Q. Can you tell us what companies operate those oil pipe lines?

A. The line from the Southeastern part of Wyoming going on down to the Southeast is the old Sinclair Teapot Dome line. Just how that is being operated today I couldn't say. It has been operated at various times by Sinclair and I think it is so operated now.

The line coming down from Lance Creek into Denver as I understand it is owned and operated by the Rocky Mountain Pipeline Company.

(Vol. III, pp. 411-463.)

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Q. Do you know anything about the price structure of coal, market prices of coal?

A. What I have shown in my exhibit.

Q. Do you know anything about the law affecting the price of coal?

A. No.

Q. Do you know there is a law recently passed which is going to fix a minimum price for coal?

A. I have heard there was.

Q. Do you think that is going to have some effect on your competition with coal?

A. If the effect of the law tends to increase the retail delivered price of domestic coal in the City of Denver I think that the number of house heating customers using natural gas in the City of Denver will increase and along with that increase will go an increase in the amount of natural gas used for house heating.

Mr. Dougherty: That is assuming that the same gas price—

The Witness: No change in the gas price.

By Mr. March:

Q. But if the gas price goes down there will be considerably further increase in the use of gas?

A. Well, leave out the word "considerably." I don't know, I couldn't measure the intensity, the amount of gas.

Q. Very substantial?

A. If the change in the coal-gas price ratio is substantial the effect on the company's house heating load will also be substantial.

(Vol. IV, pp. 576-577.)

The witness Sands, from the reports filed by the City of Colorado Springs for its distribution system and by the distributing companies, Public Service and Pueblo Gas and Fuel with the Public Utilities Commission of Colorado, made the following summary of the increase in sales of natural gas by said distributors from 1927 to 1939. He also included a comparison for those years of the revenues received by the distributing companies. These increases are set forth in the following table: (Exhibit 296, p. 12).

	"Mcf. Sold	Millions Btu.	Revenue
1927			
Denver District	3,252,107	1,066,691	$2,373,335.35
Colorado Springs	117,402	44,613	186,170.93
Pueblo	118,510.6	39,583	172,233.07
Total 3 cities	3,488,019.6	1,150,887	$2,731,739.35
1939			
Denver District	8,025,148	6,524,445	$4,379,766.00
Colorado Springs	888,394	704,496	362,590.77
Pueblo	462,690	383,107	306,615.71
Total 3 cities	9,376,232	7,612,048	$5,048,972.48
1939 times 1927	2.69	6.61	1.85"

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12. Preferential Service to Domestic Consumers Over Industrial Consumers.

The project parties in their first agreement of April 5, 1927, Exhibit 1 herein, provided that in all the contracts made to carry out the project,

> "it is to be stipulated that the demands of domestic consumers upon the supply of natural gas are to be

preferred over service to industrial consumers and that the remainder may be prorated, after demands of domestic consumers, among commercial and industrial consumers, but that such domestic preference shall not be exercised so as to deprive the Colorado Fuel & Iron Company of the volume of gas needed to complete open hearth heats then in jeopardy and to keep its furnaces warm during exrreme domestic demand upon the pipe line of the Colorado Company, or so as to deprive any other industrial consumer which requires a small proportion of its normal gas demand to prevent damage to its appliances." (Exhibit 1, p. 15).

The complaint herein, the City of Denver itself, in its ordinance of September 14, 1927 (Exhibit 25), recognized the same preference and stated that the Public Service Company of Colorado could charge industrial consumers rates,

"lower and different from those charged for domestic purposes and the Company shall have the right to contract with industrial users for the sale of such natural gas, provided that all such contracts contain a 'cut-off' clause which recognizes the preferred right of the domestic users over the industrial users." (Exhibit 25, p. 5).

The City of Pueblo, in Section 8 of its ordinance of February 20, 1928 (Exhibit 39, p. 4), also recognized this preference in language almost identical with the Denver Ordinance, as follows:

"It is further determined that the rates to be charged by said company for natural gas service to industrial users for heating, manufacturing and power purposes in the City of Pueblo may be lower and different from but not higher than those charged for domestic purposes and the company shall have the right to contract with industrial users for the sale of such natural gas, provided that all such contracts shall contain a 'cut-off' clause which recognizes the preferred right of the domestic users over the industrial users."

The City of Colorado Springs in Article Eighth of its contract of June 12, 1931 with respondent for the purchase of gas at the city gate for distribution through its municipally owned system (Exhibit 7-E) and in its rate schedules quoted

to its customers made the same distinction and preference. Article Eighth of that contract provides:

> "It is mutually understood and agreed that the requirements of domestic consumers of the City shall be fully supplied from the natural gas delivered hereunder in preference to the City's power plant or plants and in preference to consumers purchasing natural gas for industrial or commercial purposes, and that Vendor can be required to supply natural gas to be used for industrial or commercial purposes only where the same is sold under contracts which have been first submitted and approved in writing by the Vendor and which expressly provide that the natural gas will be supplied thereunder only insofar as the same is not necessary to meet the requirements of domestic consumers supplied by the Vendor * * *."

All of the other contracts of the respondent and of Canadian for the sale of gas contain a similar provision. These contracts of respondent, other than that with Colorado Springs just referred to, and cut-off provisions therein are as follows: Exhibit 7-I, contract with Public Service Company of Colorado dated January 3, 1928, Article Twelfth, p. 17; Exhibit 7-H, contract with Pueblo Gas and Fuel Company dated January 3, 1928, Article Tenth, p. 14; Exhibit 7-F, contract with Colorado-Wyoming Gas Company dated October 3, 1929, Article Seventh, p. 14; Exhibit 7-D, contract with Citizens Utilities dated May 1, 1937, Article Ninth, p. 15. Exhibit 9 contains the following contracts: American Crystal Sugar Company dated January 1, 1939, Article Seventh, p. 11; Atchison, Topeka & Santa Fe Railway Company dated November 23, 1929, Article Seventh, p. 10, Colorado Fuel & Iron Corporation dated February 19, 1937, para. 5, p. 4; Colorado Portland Cement dated October 22, 1930, Article XI, p. 11; United States of America dated August 2, 1929, Article Seventh, p. 9; and Veterans Administration Facility dated May 12, 1939, p. 8.

The respondent's customer, Colorado-Wyoming, has similar provisions in all of its contracts. (See Exhibits 102, 103 and 104.)

The witness, William R. Beardsley, who has been superintendent of the meter department of the respondent since

it began business in June, 1928, prepared from company records a statement of all total and partial interruptions of service and line breaks of both respondent and of the Canadian Company from the beginning of service in 1928 to December 31, 1940. His statement was admitted as Exhibit 290. This witness has had superintendence of the metering and measuring of all gas sold by respondent for industrial or commercial, and domestic use and has custody of all records showing such sales and of all records of interruptions to service of all kinds. (Vol. VII; pp. 942 to 954; Vol. XCVIII, pp. 15202 to 15213.)

In Exhibit 290 there is included all instances of line breaks or other casualty and of peak loads resulting in interruptions to or reductions or suspensions of service to industrial or commercial customers served by respondent directly or by distributing companies purchasing from respondent. As abstracted hereafter, there was no reduction or suspension of service to domestic consumers because the gas stored in the line, or as it is sometimes called, the "line pack", was sufficient to supply the domestic users after the industrial or commercial users were cut off or their supply reduced. In this connection reference is made to Rhodes' testimony (Vol. IX, p. 1226) and his Exhibit 66, p. 17, where he states:

> "Furthermore, gas can be drawn from the line in excess of its true or continuous capacity through the skillful use of the storage capacity of the line. In long pipe lines a considerable amount of gas is stored in the line on account of the high pressure at which it operates. This stored gas under proper control may be used to supplement the flow capacity of the line to an extent of about 10 per cent for a single day."

And to the same point reference is made to Exhibit 145 of the Commission's witness Kenneth L. Smith, p. 2, where he states:

> "According to information received from the Bureau of Engineering, the average line pack during the year 1939 was 55,362 Mcf., at a pressure base of 16.4 pounds per square inch absolute."

In Exhibit 290 the following "Statement of Reductions or Suspensions of Service to December 31, 1940" is set

forth. In each case each reduction or suspension is described as being a reduction in deliveries to industrial customers to conserve domestic gas and will not be repeated:

Customer	Date	Duration	Cause
Colorado-Wyoming Public Service of Colo. City of Colorado Springs	7/29/32	24 Hours	Washout on Main Line
Public Service of Colo.	7/26/34	21 Hours	Washout on Main Line
Colorado-Wyoming Public Service of Colo. Pueblo Gas & Fuel Co. City of Colorado Springs	9/14/34	15 Hours	Washout on Main Line
Atchison, T. & S. F. Co. Colorado Fuel & Iron Colorado Portland Cement	9/14/34	15 Hours	Washout on Main Line
Colorado-Wyoming Public Service of Colo.	5/30/35	22 Hours	Washout on Main Line
Colorado-Wyoming Public Service of Colo City of Colorado Springs	7/21/35	15 Hours	Washout on Main Line
Atchison, T. & S. F. Co. Colorado Fuel & Iron Colorado Portland Cement	7/21/35	15 Hours	Washout on Main Line
Public Service of Colo.	2/ 5/37	7 Hours	Freeze-up on Main Line
Colorado-Wyoming	6/ 1/37	33 Hours	Washouts on Canadian's Main Line
Public Service of Colo.	6/ 2/37	66 Hours	
Colorado Portland Cement	6/ 2/37	63 Hours	Washouts on Canadian's Main Line
Veterans Administration Facility	6/ 2/37	36 Hours	
Colorado Fuel & Iron	6/ 2/37	50 Hours	
Colorado Portland Cement	2/ 9/39	24 Hours	High domestic peak load demand
Colorado Portland Cement	1/18/40	14 days*	High domestic peak load demand

*Deliveries to this plant reduced on 1/18/40. Plant then shut down for 14 days of its own accord to do necessary repair work.

Customer	Date	Duration	Cause
City of Colorado Springs City of Colorado Springs	1/18/40 1/25/40	21 Hours 8 Hours	High domestic peak load demand
Colorado Fuel & Iron Colorado Fuel & Iron	1/18/40 1/25/40	36 Hours 24 Hours	High domestic peak load demand
Colorado-Wyoming Public Service of Colo.	1/18/40 1/25/40	30 Hours 8 Hours	High domestic peak load demand
Atchison, T. & S. F. Co.	1/19/40	5 Hours	High domestic peak load demand
Veterans Administration Facility	1/19/40	5 Hours	High domestic peak load demand

Then follows a "Statement of Total Interruptions in Service to December 31, 1940" occurring at or near the town border in each case as follows:

Customer	Date	Duration	Cause
Public Service of Colo.	9/ 9/33	49 Hours	Washout on Main Line
City of Colorado Springs	5/30/35	9 Hours	Washout on Main Line
Colorado-Wyoming	2/ 5/37	6 Hours	Freeze-up on Main Line
Colorado-Wyoming Atchison T. & S. F. Co.	6/ 1/37 & 6/ 2/37	32 Hours 49 Hours	Washout on Canadian's Main Line
Arkansas Valley Fowler Fort Lyon Las Animas Manzanola Ordway Sugar City	9/ 9/37	 11 Hours 8 Hours 9 Hours 11 Hours 12 Hours 14 Hours	Washout on Arkansas Valley Lateral
Citizens Utilities La Junta Rocky Ford	9/ 9/37	 10 Hours 10 Hours	Washout on Arkansas Valley Lateral
American Crystal Sugar	9/ 9/37	10 Hours	Washout on Arkansas Valley Lateral
Atchison T. & S. F. Co.	9/ 9/37	12 Hours	Washout on Arkansas Valley Lateral

Customer	Date	Duration	Cause
Veterans Administration Facility	9/ 9/37	13 Hours	Washout on Arkansas Valley Lateral
Colorado Fuel & Iron	11/13/38	4½ Hours	Pipe failure on lateral to C. F. & I.
Pueblo Gas & Fuel Co.	11/13/38	4½ Hours	Pipe failure on lateral to Pueblo
Colorado Portland Cement	7/30/40	36 Hours	Washout on Portland lateral

There is also set forth "Statement of Total Interruptions in Service to December 31, 1940" of Canadian as follows:

Customer	Date	Duration	Cause
Amarillo Oil Co. at Metering Station, Dalhart, Texas	6/ 3/32	6 to 7 Hours	Washout on Main Line
Amarillo Oil Co. at Metering Station, Texline, Texas	6/ 1/37	36 Hours	Washout on Main Line
Colorado Interstate Near Clayton, N. M.	6/ 1/37	26 Hours	Washout on Main Line
Colorado Interstate Near Clayton, N. M.	6/ 2/37	12 Hours	Washout on Main Line

There is also included for both Canadian and Colorado a complete record of line breaks.

Beardsley explained that because of gas stored in the line or the "line pack" the cutting off or cutting back of service to the industrial or commercial consumers always permitted service to the domestic users (Vol. XCVIII, p. 15208).

Interruptions on the Colorado-Wyoming line were as follows:

In July, 1932, all of the industrial customers were affected although domestic service was maintained by resorting to gas in storage in the line. This was caused by Jimmy Creek Washout. (Vol. XXVIII, p. 3876.)

In the fall of 1934, all industrials were cut off for eight hours. Later in 1934 all industrials cut off eighteen hours. (p. 3877).

In May, 1935, all industrials cut off for twenty-eight hours. (p. 3877).

In December, 1935, there was a five-hour cut-off of "certain customers, occasioned by a line of Colorado-Wyoming Gas Company being broken by a blast." (p. 3877).

On February 5, 1937, due to hydrate stoppage in Colorado Interstate's line, all main line industrials were off sixteen hours and resale industrials were off ten hours. (pp. 3877, 3878).

On February 9, 1937, due to break in Colorado-Wyoming's line from a blast, all main line industrials were off eight hours and resale industrials were off three hours. (p. 3878).

In the latter part of May and early part of June, 1937, due to a washout at Little Perico in Texas, all main line industrials were off for three and one-half days. Resale industrials were off three days. "Domestic service, however, was maintained." (p. 3878).

On January 18 and 19, 1940, all main line industrials discontinued and resale industrials were cut off January 18 to the extent of 705,000 cu. ft. and on January 19 to the extent of 164,000 cu. ft. (p. 3875).

On November 12, 1940, Colorado Portland Cement was cut off from 10:00 P. M. November 12, to 8:00 A. M. November 13, 1940 (p. 3875).

The witness then stated:

> "That, I believe, brings the interruption record down to date with the exception of a few minor interruptions purely local in character, such as the particular supply line being torn out by road construction work or items of that kind. * * *
>
> "Q. Were there any interruptions at all in any domestic service since 1929?
>
> "A. The only interruption which comes to my mind, and it is not a total interruption, is a slight reduction in pressure in certain parts of Cheyenne during the

January 1940 peak day. The town border pressure there with all industrials off and with even the high school building in Cheyenne off for heating purposes, there was a few customers affected at that time." (pp. 3878, 3879).

The witness, Hendee, now manager of respondent and also of Canadian, testified as to many of the instances in which industrial or commercial users had been cut off or their supply reduced during his term of management. (Vol. III, p. 310, et seq.) He stated that it was not always necessary to cut off the industrials but that the domestic load could be maintained by simply "cutting them back"; but if the domestic customers were in jeopardy, he would cut off the industrials. (pp. 318, 319, 320). The cut-off in January, 1940, was for a few hours at first and then had to be repeated in a couple of days. Colorado Portland Cement was using enough gas to keep their appliances warm. The Santa Fe Railroad was using a small amount for the same purpose and Colorado Fuel and Iron was cut back from about 25 million to 14 or 15 million cu. ft. (pp. 320, 322). He made it a practice during sudden cold spells to notify the respondent's direct sale industrial customers in advance if possible that they would be cut back or cut off. (pp. 330, 331). If the peak load situation gets worse in the winter months, he would have to cut off the industrials more frequently. (pp. 335, 336). When asked if they couldn't build more lines, he replied: "Yes, but it may be cheaper to cut off industrial gas than to add looping of lines and so forth." (p. 336). When there was a shortage of gas due to peak loads, he would request the distributing companies to whom respondent sold at the town or border gate, including Colorado-Wyoming, to cut off their industrials. He made his request of Colorado-Wyoming in that manner and that company handled the cut-offs along its line. (pp. 337, 338).

The witness Rhodes also testified as to the cutting off or the reduction in supply of gas to industrials to serve domestic customers. (Vol. XXXII, pp. 4439, 4440; Vol. VIII, pp. 1146, 1147).

A record of all the occasions on which such deliveries to industrial customers were either cut off or reduced, in order to continue service to the domestic users, was supplied to the Commission prior to the hearing according to Beardsley.

"Q. And previously at the request of some of the engineers of the Federal Power Commission, did you give them substantially what is on this sheet?

"A. Yes, sir, the information was originally prepared at the request of Mr. Wing of the Federal Power Commission." (Vol. XCVIII, p. 15207).

The Commission's witness Lester prepared Exhibit 251, "Report on the Review and Analysis of the Contracts, Rates and Billings of Colorado-Wyoming Gas Company" and similar Exhibits 261 and 262 for Canadian and Colorado Interstate respectively.

On being cross examined on his Exhibits 261 and 262 respectively, by counsel for Canadian and Colorado Interstate, his attention was called to page 9 of his statement with respect to Exhibit 262:

"* * * you make certain reference to certain curtailments of service and have stated that that has never taken place because of the shortage of gas supply in the field, but that there have been certain interruptions because of line breaks and some domestic peak loads.

"Now, so far as the industrial customer is concerned, to him the curtailment of his gas is substantially the same thing whether that is caused by a shortage of supply from break in the line or shortage of supply available to him because of increase in demands for domestic customers, would that not be so?

"The Witness: As far as he is concerned, that might or might not be so. What I am driving at is that one would be classed as act of God and another one would be your request due to high domestic peaks.

"Q. Well, when you have a break in the line and in order to keep up whatever your domestic load is at that time, then it becomes necessary to shut off or curtail the industries?

"A. Yes, that is necessary, too.

"Q. That is, whether the lack of capacity is due to increased demands of domestic customers or lack of capacity due to a break which lowers your normal capacity, the result is the same in either event to the industry?

"A. Yes, it could be the same.
"Q. He doesn't get his gas.
"A. I was referring rather to the cause." (Vol. C1, pp. 15645, 15646.)

Q. I see. Now turn to Page 10, will you please? You make reference there in the second paragraph; that is, the first full paragraph on the page, that the gas which is sold for resale to the Denver line has preference over that which goes to the Chicago line but that the gas sold to the Chicago line is at a higher price.

Now, as far as the Canadian River Gas Company is concerned, doesn't it get the same price for gas from the Colorado Interstate Gas Company that goes to Chicago as well as to Denver?

A. Since June the 1st, 1938, that is correct.

Q. Previously the statment you made was true; that is, before that date?

A. Before that date, but it is true that—well, as far as Canadian River goes, but as far as Colorado Interstate that is not so.

Q. Well, what Colorado Interstate does is sell gas to the Chicago line at a fixed price?

A. That is correct, and it is higher than the average price that is delivered to the two lines.

Mr. Lange: You mean higher than the average price delivered to what lines?

The Witness: To Chicago line than to the Denver line.

By Mr. Dougherty:

Q. Turn to Page 13-B, please. You make reference there at the top of the page to a provision whereby the Arkansas Valley Natural Gas Company was to maintain a certain pipe line that went through the Arkansas Valley. Is it your understanding that that contract has now been terminated?

A. That contract has been terminated but in my Exhibit 262 there are certain charges that result from this part of the contract and I have retained it for that purpose.

Q. Now, if you will turn to your group of schedules under Exhibit 262, Table R-4, Sheet 8, you show there the sales to

Natural Gas Pipeline Company of America and show the annual load factor as 73.66 per cent.

Can you tell me what figures you used to arrive at that percentage? The reason I asked, it is a different percentage than the company's records indicate and I am trying to find out where your difference was.

Mr. Lange: Mr. Lester, if it is going to take some considerable time, then I would suggest to the Examiner that we recess early and convene earlier.

The Trial Examiner: How long is it going to take?

The Witness: If I can lay my fingers on the computation, I can do it right away soon.

The Trial Examiner: I take it, Mr. Dougherty, you would like to complete with Mr. Lester now?

Mr. Dougherty: I would, yes, because I was planning on leaving this afternoon and thought I wouldn't come back.

That, however, is the last question I have. I was merely trying to get his figures. The peak day he used and what average day he used for the purpose of getting the annual load factor, is what I wanted.

The Witness: Well, the average day would have been a division of the total consumption by the number of days in the year and the other—that's what I'm looking for here is to find the peak day that—

Mr. Dougherty: I'll tell you what could be done. As I say, that's all the questions I had and that information can be put in the record even though I am not here, and if you will get the peak days that you used for each of the 1937, 1938 and 1939 years, the date and the quantity and just merely put that in the record, it will be satisfactory.

(Vol. CI, pp. 15646-15649.)

In the cross examination of this witness with respect to the analogous Exhibit 251, the matter of the preference of the domestic over the industrial consumers was also brought out by counsel for Colorado-Wyoming. Counsel moved to

strike pages 8 and 8-A of the witness' statement describing Exhibit 251, reading:

> "There have been no interruptions in the Colorado-Wyoming Gas Company's domestic and industrial service at the same time, although domestic service on branch lines has at times been interrupted due to line failure. Industrial service has at times been totally interrupted or reduced so that domestic service could be maintained when washouts or other accidents have affected the pipe line of the Colorado Interstate Gas Company."

Then counsel inquired:

> "Now the facts are, are they not, Mr. Lester, that there has been curtailment and shutoff of industrials to satisfy domestic peak demands when there has been no accidents or washouts of any kind, just simply because there wasn't enough gas in the line to satisfy both demands?
>
> "The Witness: The company did not so furnish me that information and they say it was not of record nor did they know the exact time or period when it did occur." (Vol. LXXXVI, p. 12909).

But on cross examination, when his attention was directed to letters from the company to the Commission dated February 25, 1941, in answer to the Commission's letter of February 24, 1941 (p. 12911) and letter of May 29, 1940, in answer to the Commission's letter of May 9, 1940 (p. 12912) and letter of December 11, 1939, in reply to the Commission's letter of October 19, 1939 (p. 12916), the witness acknowledged that such instances had been brought to the attention of the Commission. On request he read into the record the reply letter of October 19, in which it was stated:

> "I also have in mind several occasions when the domestic peaks were so heavy that industrial plants were asked to reduce their takes during the period of the peak (from one to three hours) after which they were permitted to resume full load operations. No record of such instances has been kept and we are unable to furnish dates and amount of reduction on those occasions." (Vol. LXXXVI, p. 12916).

Further Testimony of the Witness Lester in Connection With the Foregoing Matters.

Cross-Examination.

By Mr. McCreery:

Q. Mr. Lester, what is the purpose of this exhibit?

A. It is to show the charges and rates that the company actually charges on its books.

Q. What does it show?

A. It shows what the charges have been.

Q. What conclusions did you undertake to present by this exhibit?

A. Set them forth for the information that they might contain for the Commission as to what the company has actually charged on the books and the rules and regulations surrounding the rates that it has used in setting up its billings to its respective customers and condensed them into a yearly basis.

Q. It is really your construction of what the operations have been, isn't it?

A. No, it is actually the construction.

Q. You mean that your statement here is other than your conclusion?

A. That is a statement of the things that have been billed and the quantities of gas sold as reported by the directors of the company.

Q. You arrive at certain conclusions, do you not, in this statement and this exhibit?

A. I possibly have arrived at certain conclusions.

Q. If you have, they are your own?

A. That is right.

Q. Now, will you tell me what your definition of load factor is?

A. Load factor is the variation of the average load from the maximum load over a period of time expressed generally in a percentage.

Q. Now, what period of time did you use?

A. One year's time.

Q. Now, in connection with the industrials you used the full period of a year irrespective of the portion of the year in which the industrials were actually utilizing gas, did you not?

A. Yes. The load factor of mine was for a year. Now, I didn't define my load factor as only using that period of a year deducting from the total year only that period of the year for which it had been used. If I had of, I would have got a load factor for perhaps 200 days or 300 days.

Now, we have load factors for months, weeks, days, years, five years, ten years—any period. The stated period of time of mine is a year.

Q. I just asked you what period you used.

A. I just wanted to protect from the question that you may lead to that you are talking of a load factor or perhaps of an output factor. You are perhaps talking of an output factor. I just wanted to keep that straight.

Q. Now, the answer is that you gave no consideration to actual days upon which industrials took gas but treated them as though they took it 365 *years* a year?

A. I followed the definition of the load factor of a year.

Q. That's what you did?

A. I used it for a year, yes.

Q. On that basis?

A. Yes. I wasn't building up an output factor. That's what I'm trying to keep you straight on, your load factor and your output factor.

Q. Now, you state on Page 8-A of your statement that "No records have been kept of occasions when domestic peaks were of sufficient magnitude so that industrial cases were necessarily reduced during the peak load periods." What do you mean by that statement?

A. Why, the company kept no records, only of the information that they had furnished me and which is a table in the exhibit and that is all that they said they had records and data on.

Q. Aren't you mistaken on that, Mr. Lester? All of the meter charts would show exactly what curtailments had been made to satisfy domestic requirements. While they don't have any book records of it, their metered charts would show that, would they not?

A. I believe this was taken directly from the information furnished to me from the company and a direct quotation from them.

Q. I asked you if that information isn't available from metered charts.

A. It may not be. The company informed me that it was not, said no data was kept of it.

Q. No data given?

A. I am sure that statement was taken directly from the company.

Q. These various communications that were made to the Federal Power Commission on that very subject—here is a letter of December 11, 1939, addressed to Mr. O'Connor, Federal Power Commission, in answer to a letter by him to the company of date October 20th, in which the writer, the Vice President and General Manager, says:

"I also have in mind several occasions when the domestic peaks were so heavy that industrial plants were asked to reduce their takes during the period of the peak (from one to three hours) after which they were permitted to resume full load operations."

Now, then, the next sentence is: "No record of such instances has been kept and we are unable to furnish dates and amount of reduction on those occasions."

Did you ask at that time or any other time to see the meter charts?

A. No, I assumed that one request for information would have the same effect as two. I didn't see that two requests would have any more benefit than one, and my quotation I used in there reflects directly—refers directly to that latter sentence that you read from the letter.

Mr. Lange: What is the date of that letter, Mr. McCreery?

Mr. McCreery: That is December 11, 1939, Mr. Lange.

Mr. Lange: Do you have that correspondence with you, Mr. Lester?

Mr. McCreery: His quotation refers to the same letter that talks about industrials to take care of domestic peak demands.

The Witness: I have that.

Mr. Lange: In order to make the record complete, Mr. McCreery, you might read that whole letter into the record.

Mr. McCreery: It will be quite all right, but I am not interested in it at this particular time. I have got some more. I have no objection to it, but I am interested in this witness' statement on Pages 8 and 8-A:

"There have been no interruptions in the Colorado-Wyoming Gas Company's domestic and industrial service at the same time, although domestic service on branch lines has at times been interrupted due to line failure. Industrial service has at times been totally interrupted or reduced so that domestic service could be maintained when washouts or other accidents have affected the pipe line of the Colorado Interstate Gas Company."

Now the facts are, are they not, Mr. Lester, that there has been curtailment and shutoff of industrials to satisfy domestic peak demands when there has been no accidents or washouts of any kind, just simply because there wasn't enough gas in the line to satisfy both demands?

The Witness: The company did not so furnish me that information and they say it was not of record nor did they know the exact time or period when it did occur.

By Mr. McCreery:

Q. In the very letter you are relying on they do state just what I read, do they not, where it says: "I have also in mind several occasions when the domestic peaks were so heavy that industrial plants were asked to reduce their takes during the period of the peak (from one to three hours) after which they were permitted to resume full-load operations."?

A. He said he had that generally in his mind but he couldn't put his finger on any point. Sometimes the memory isn't quite so good and you have to get down to the actual date in order to nail it.

Q. That is what we are undertaking to do right now, Mr. Lester.

A. So I based mine on the information furnished me by the company.

Q. Well, do you know as a matter of fact whether or not

there were such curtailments and cutoffs to satisfy peak demands of domestic consumers?

A. They didn't furnish it to me at that time.

Q. I asked you if it is a fact.

A. At the time that letter is written?

Q. Yes.

A. No, not to my knowledge, and no information was furnished me by the company, although it was definitely requested that it be furnished. I was relying on the company's information.

Q. The answer is in this letter that there were those shutoffs.

A. He couldn't place it. I don't know whether it is or whether it is not. He says, "Oh, yes, I can recall to mind," but he hadn't recalled it to mind when it was.

Q. Are you familiar with similar correspondence between the company and the regional director in the year 1940?

A. I think I have seen that correspondence. Now, definitely I don't know whether I am thinking of the same correspondence that you are talking about there because I haven't the correspondence you are referring to before me.

Q. I will identify it very shortly. Your exhibit is dated October 1940?

A. Yes.

Q. Did you ever read a letter of date February 25, 1941, for instance, in answer to a letter of date February 24th, 1941 in relation to shutoffs to supply domestic peaks during certain portions of the year 1940?

A. When did the date of the shutoffs begin?

Q. These were late in 1940, subsequent to the date of your exhibit.

A. Yes, I have seen that.

Q. And that letter you recall indicated that on November 12 and 13, 1940, the Cement plant, to protect the Cheyenne load during severe cold, was curtailed and the plant ordered out on November 12th at 9:00 p. m., and service resumed at 8:00 a. m., November 13th and on December 12th to 14th, 1940, the Cement plant was curtailed during the period of December 12th, 13th and 14th; from the 12th from 5:00 p. m. to 10:30 p. m., curtailed 800 Mcf.; on December 13th from 10:00 a. m. to 6:00 p. m., curtailed 1500 Mcf., and that on December 14th, rather than suffer further curtail-

ments, they shut down completely at 6:40 a. m. of that day? Did you see that letter?

A. Yes.

Q. You didn't desire to embody it?

A. I was restricting it to the period of that time in my exhibit. If you want to bring that up to date and include that information, it's all right with me. Had I had it I would have included it.

Q. Now, did you also see a letter of May 29th, 1940 in answer to a letter of May 9th, 1940 in which the company stated:

"In our letter of December 11, 1939 addressed to Mr. J. V. O'Connor, we call attention in the last paragraph to the possibility that all industrial loads might have to be shut off during a peak winter day. On January 18th and 19th, 1940, that very thing took place. All industrial loads were ordered off at 9:30 a. m. on January 18th and distribution companies asked to take all steps possible to conserve the gas supply. Public Service Company reported the curtailment of industrial loads near Denver, and Cheyenne Light, Fuel & Power Company reported curtailments at Cheyenne.

"Curtailments to our industrial customers lasted about thirty hours and were estimated at 1270 Mcf.

"Public Service Company reported curtailments of 717 Mcf., and Cheyenne Light, Fuel & Power Company reported curtailments totaling 152 Mcf. at Cheyenne. Low pressure experienced on the Cheyenne distribution system was reported to have resulted in several low pressure complaints."

Did you see that letter at or about the time it was received by the Comission which was some months prior to your exhibit, the date of your exhibit and apparently a considerable time before you completed your statement?

A. No, I didn't see it before that time, no.

Q. When did you put these typewritten sheets into your written statement?

A. I put them in sometime in October 1940.

Q. 1940?

A. Yes.

Q. Well, this particular Page 8 I talked about is one of these typewritten sheets, so that in October it was available

at the *offset* of the Commission, the very thing that you say didn't exist so far as your Page 8 and Page 8-A is concerned.

A. I would like to have that letter before me.

Mr. Lange: That refers to 1940.

Mr. McCreery: That's right.

The Witness: I said I was speaking of the statistical part in there of your interruptions at the end of 1939. My statistical part of it doesn't carry anything beyond 1939 and wouldn't have any reference to 1940 because the statistical part wasn't in there.

By Mr. McCreery:

Q. Even though you prepared these sheets in 1940, you weren't dealing with the1940 conditions or any other conditions than you state you had used originally, is that correct?

A. That is correct.

Q. So in the light of subsequent events which aren't present in your study, your statement at Pages 8 and 8-A would have to be considerably revised, would it not?

A. Well, now, it says here the Public Service Company reported the curtailment and the Cheyenne Light, Fuel & Power Company reported a curtailment of gas, but I just don't see about the Colorado-Wyoming curtailment here.

Q. This is a letter written by the Colorado-Wyoming Gas Company, is it not?

A. Yes.

Q. And is not the Public Service Company and the Cheyenne Light, Fuel & Gas Company, two companies, that were the local distribution companies of Colorado-Wyoming Gas?

A. Yes, it states here that there is possibility of industrial loads having to be shut off.

Q. Then read the next.

A. On January 18 the very thing took place. All industrial loads were ordered off on January 18.

Mr. Lange: What year?

The Witness: January 18, 1940.

By Mr. McCreery:

Q. So that in the light of those conditions your state-

ment on Page 8 and 8-A would have to be altered considerably?

A. Not for 1939. That speaks for 1939 and prior to that.

Q. You undertake to state there were no curtailments or shutoffs of industrial service in 1939 to supply peak load demands.

A. There was no record of it taken and the company has so stated it.

Q. Although they didn't state it was done in 1940?

A. In 1940?

Q. No, in 1939.

A. Oh, no. It says the very thing took place on January 18, 1940, not 1939.

Q. Then look at this letter of December 11, 1939. Read that one to see whether it has happened.

A. It says: "Replying to your request of October 19, we present the attached table which shows the major irregularities in our operation. This includes those instances where the cause originated on the Colorado Interstate Gas Company's system.

"I also have in mind several occasions when the domestic peaks were so heavy that industrial plants were asked to reduce their takes during the period of the peak (from one to three hours) after which they were permitted to resume full load operations. No record of such instances has been kept and we are unable to furnish dates and amount of reduction on those occasions.

"We believe we have a very good record for industrial service, having had to shut off our industrial load for a total of only seven days since starting operations. Half of that time occurred between 5/31 and 6/4/37, when the Interstate's line was washed out in several places by the flood in Little Perico Creek in Texas."

Mr. Lange: Read the last paragraph and we will have the whole thing.

The Witness: "In the past the Colorado Interstate Gas Company has been able to furnish us sufficient pressure to maintain excellent winter service to our industrial plants but as to the loads on their lines have been built up, it has been increasingly difficult to maintain high pressure at

Arapahoe. We find that winter storms now tax our system beyond its capacity and at such times industrial load must be reduced. We are told that we can expect no more than 125."

Mr. Lange: It is addressed to Mr. J. V. O'Connor, Federal Power Commission, Central Savings Bank Building, Denver, Colorado?

The Witness: Yes, sir.

Mr. Lange: It is signed by C. J. Shortess, Vice President and General Manager?

The Witness: Yes, sir.

Mr. Lange: And in order that the record may be complete, Mr. McCreery—

Mr. McCreery: Just a minute. I don't want this interruption. You can put that in later. I want to keep on this point here.

Q. When did you first see that letter?

A. I saw that letter at the time it was received.

Q. After you had seen that letter you wrote this Page 8 and 8-A?

A. Yes, sir, I stated there was no record. The company says: "No record of such instances has been kept," and I so state that no record has been kept.

Q. And you said also that there were no interruptions?

A. Yes.

Q. This letter says the opposite.

A. And I think I qualified the "no record of the interruption."

Q. So that is your conclusion?

A. Sure. It says "There was no recorded interruptions."

Q. I note you state on Page 6 that the Colorado Portland Cement Company—this is from your statement—"The Colorado Portland Cement Company is the main line industrial customer of the Colorado-Wyoming Gas Company farthest from the source of supply."

Was it your idea by that statement to imply that as compared with other industrials they paid too low a price?

A. I merely stated the bald fact that was true and they did—

Q. Isn't this also a very bald fact, that the consumption at the Colorado Portland Cement Company was about twice as great as the combined consumption of all of the industrial users put together?

A. It was considerably greater and that is shown in the report.

Q. That is a bald fact?

A. It is shown in the record and I am merely showing it as per Mcf., as I state. I couldn't state it was per Mcf. and then state it was per million feet of gas. I had to state Mcf.

Q. It was significant to state they were further and paid the lowest price but it wasn't significant to indicate the relative volumes?

A. That was shown in the exhibit itself.

Q. But it didn't justify any comment on your part as you have made here?

A. No, I didn't think about it.

Q. You didn't think about it?

A. No.

Q. What do you mean on Page 8 when you state: "The contractual priority of service rights of customers, of course, are dormant so long as there is available an adequate supply to meet the full requirements of all customers and adequate capacity in lines and equipment?"

A. I meant just what I said, that the company doesn't exercise any priority, any contractual priority as long as adequate service is available to everybody. It is dormant during that period of time.

Q. By that you mean the right is still there to be exercised but it isn't necessary, of course, when they have an adequate supply to exercise it, and they wouldn't exercise it?

A. I wasn't speaking of the right but whether the actual exercise was taken at that time.

Q. I thought perhaps that was what you meant. Now turn to Page 6 of your statement, turning to the top of your page in your second column. What do you mean by "Last block of domestic rate and space heating rate cents Mcf."? What do you mean by that?

A. Well, you have the first block of the rate through there at one price and the last block is at another price. I

placed them on a uniform pressure base rather than on a sales base.

Q. What do you mean by that last block?

A. Your break is in two blocks.

Q. I appreciate that.

A. And this refers to the second part of your rate. You have a two-part rate.

Q. Do they include all gas upon which the four cents is applicable, that is, the space heating gas, or do you know?

A. Yes, it is.

Q. It does?

A. It takes in that break afterwards.

Q. Is the average revenue based upon actual revenue received from purchasing company divided by the Mef. converted to the 14.65 pound pressure base?

A. Could I have a copy of my exhibit?

Mr. Lange: Here is a copy of it.

By Mr. McCreery:

Q. I am referring to Page 8, Mr. Lester.

A. The information came from—yes, that refers to the average of the domestic and space heating.

Q. My question was: "Is this the average revenue as you headed it based upon average revenue you received from purchasing companies divided by the Mef. converted to the 14.65 base?"

A. Yes.

Q. Your answer is yes?

A. Yes.

Q. I notice a quotation on Page 4 of your statement, being at about the middle of the page. It states: "To the full extent it may be able to do so." What is your soure of that quotation?

Mr. Lange: On what page is that, Mr. McCreery?

Mr. McCreery: Page 4 of his statement, Mr. Lange.

The Witness: It comes from the contract.

By Mr. McCreery:

Q. Which contract?

A. I will have to look it up.

Q. Well, I guess that is not important.

A. I haven't all of my working sheets here.

Mr. McCreery: It isn't of sufficient importance so I will withdraw the question, Mr. Examiner.

The Trial Examiner: Very well.

Mr. Lange: He can furnish it at some time during the day when he has time to look it up.

Mr. McCreery: Just have it put into the record, Mr. Lange.

Mr. Lange: Very well.

By Mr. McCreery:

Q. What did you determine the load factor of this company to be for the year 1939?

A. I didn't so state what the load factor of the company was.

Q. It doesn't appear in this study?

A. It doesn't appear in this study, no.

Q. The load factor of the entire company was not material in your study?

A. It is not here in this study.

Q. In arriving at the load factor on these industrials you have gone on a yearly basis, 365 days a year?

A. I don't think there was any reference where it was on a yearly basis.

Q. In the case of customers whose meters were read weekly you simply averaged the weekly meter readings?

A. Yes, sir, I did.

Q. Did you ask to see the charts which would have shown that?

A. No, we requested that information. Having requested the information, the company furnished it to us and we asked for it to be on the same period. I don't see any reason why two requests are better than one.

Q. This doesn't have anything to do with what we were talking about a while ago?

A. That is true—

Q. You said the books and the records of the company were made accessible to you, did you?

A. Yes, certainly. The billing of the company was made accessible.

Q. I asked you if you examined their meter charts.

A. No, I didn't.

Q. All right, you have examined meter charts, haven't you?

A. Yes, sir.

Q. So that you would know they have them?

A. Yes, they have them.

Q. You know what those charts would show, don't you?

A. Yes.

Q. And you know you could have gotten the actual peak demands from those charts as indicated by the lines on the charts, do you not?

A. In certain meters that is correct.

Q. You certainly weren't expecting the company to go back and study all of those charts through for you? If you had wanted to know what those charts contained you could have gone there yourself, couldn't you?

A. No, when I was requesting certain information they probably had the information and had it already drawn out along those lines and kept track of the load factor, what their load factor was.

Q. You didn't get these load factors from the company?

A. I certainly got it from the information furnished by the company.

Q. At least these are the load factors you built in your exhibit?

A. Those factors are only a ratio of dividing figures and the underlying facts upon which the ratio was based were furnished by the company.

Q. But the figures you finally concluded were the load factors of your own compilation?

A. I made the division.

Q. On whatever formula you followed?

A. Yes.

Mr. McCreery: I think that is all.

Redirect Examination.

By Mr. Lange:

Q. Referring to the letter received by the Federal Power Commission from the Colorado-Wyoming Gas Company,

dated December 11, 1939, I will ask you to read the letter that was the basis of the letter received on December 11, 1939.

A. "Colorado Springs, Colorado, October, 19, 1939.

"Mr. C. J. Shortess, Vice President and General Manager, Colorado-Wyoming Gas Company, 407 Continental Oil Building, Denver, Colorado.

"Dear Mr. Shortess: Will you please supply a statement of total interruptions of service at each delivery point, giving in each instance:

"1. Customer

"2. Point of Delivery

"3. Date

"4. Duration

"5. Cause

"Please supply also a statement of instances, other than the above, in which it has been necessary to reduce or suspend service to industrial customers, giving in each instance:

"1. Customer

"2. Whether reduction or suspension of service

"3. Date.

"4. Duration

"5. Cause

"Receipt of this information at an early date will be appreciated. Very truly yours, J. V. O'Connor (signed)."

Q. And in connection with the Colorado-Wyoming Gas Company's letter of December 11, 1939, particularly the statement where they say "We present the attached table," that attached table, Mr. Lester, is that the same as Table No. R-5 appearing in Exhibit No. 251, your exhibit?

A. Yes, it is.

Mr. Lange: I believe that is all, Mr. Examiner.

Mr. McCreery: That is all.

The Trial Examiner: You may step down, Mr. Lester.

(Witness excused.)

Mr. Lange: At this time we desire to offer Exhibit No. 251.

Mr. McCreery: I object to the exhibit for several reasons.

First it is immaterial and irrelevant to any issue in this case. It has no relationship to any determination involved in this case. It is obvious that the factual conclusions drawn in proportions of this statement are not in accordance with the facts as they existed and as they must have existed in the mind of this witness when he read certain things that were before him at the time of the compilation;

And so in that respect, referring particularly to the conclusions drawn by him in Pages 8 and 8-A, it is prejudicial because it distorts the actual facts as they existed and as this witness must have known they existed.

Mr. Lange: Mr. Examiner, this exhibit, as the witness stated, purports to cover the period through December 31, 1939 with the exception of changes in either billings—or, rather, changes in contracts or schedules filed by the company with the Federal Power Commission.

In all other respects the witness purports to cover the period down through December 31, 1939.

Mr. McCreery: I am referring now to what the witness had to have on December 11 1939 when he got this chart that has just been talked about, that is, that portion of the letter, and that objection should not be addressed to the letter but in the form of a motion to strike the portion of Page 8 of the statement beginning with the last paragraph on that page and continuing over to the third line on Page 8-A.

The Trial Examiner: As far as your objection to Exhibit 251 is concerned, Mr. McCreery, I note in going through the exhibit there is information contained that might be quite helpful in the disposition of this proceeding, and in any event, the objections stated to the exhibit, if found to be valid and proper, may later be given consideration by the

Examiner, but at this point the Examiner is inclined to admit Exhibit No. 251 in evidence.

(Exhibit 251, Witness Lester, received in evidence.)

The Trial Examiner: Now, as to the written statement—

Mr. Lange: Mr. Examiner, that written statement also refers to the exhibit necessarily as it was read in connection with the Colorado-Wyoming Gas Company's letter to the Commission dated December 11, 1939. It is not only relevant but very definitely necessary to carry through the very statements contained in the company's letter.

Mr. McCreery: I am showing the Examiner the letter in question.

The Trial Examiner: I think in respect to this particular paragraph, Mr. Lange, the record is quite fully developed on these interruptions. As I recall it, there was considerable testimony prior to the testimony of Mr. Lester concerning that.

Mr. Lange: But, Mr. Examiner, the written statement, as well as Mr. Lester's exhibit, doesn't purport to go beyond December 31, 1939 and as of that time that was exactly what information the witness had upon definite requests made to the company. This is what the Commission's letter to the company states. It is very brief. It not only asks for interruptions generally or for cutoffs, but it distinguishes between the two and points out to the company that the Commission desires to have both as to causes as well as to all factors in connection with either a shutdown or a reduction.

The very definite questions were propounded and certainly in the light of that the witness could rely upon nothing better than what the company submitted. That would be the best evidence.

The Trial Examiner: This, however, is a mere conclusion and has nothing to do with the exhibit, the particular paragraph.

Mr. Lange: The exhibit incorporates those interruptions in service in Schedule R-5, Mr. Examiner. It refers very definitely to them. In fact, the letter from the company

was in response to the Commission's letter attached to it containing a list of those reductions or cutoffs and the items upon the basis of R-5 in the schedule.

The Trial Examiner: There is so much testimony in regard to the shutoffs that as far as the Examiner is concerned, the Examiner would prefer to rely upon the record rather than the statement of Mr. Lester's; therefore, the Examiner is going to entertain the motion of Mr. McCreery to strike that paragraph beginning at the bottom of Page 8 of this written statement and concluding on Page 8-A.

(Vol. LXXXVI, pp. 12904-12930.)

CLAUDE R. LESTER, called as a witness by and on behalf of the Federal Power Commission, being first duly sworn, was examined and testified as follows:

Direct Examination.

By Mr. Lange:

Q. Please state your name.
A. Claude R. Lester.
Q. Where do you reside, Mr. Lester?
A. I reside at Portland, Oregon.
Q. What is your occupation or profession?
A. I have followed the rate game and regulatory.
Q. Regulatory matters?
A. Yes, regulatory matters. I am a professional engineer in the State of Oregon, registered to practice there as well as a qualified engineer.
Q. By whom are you presently employed?
A. By the Bonneville Power Administration.
Q. How long have you been so employed?
A. Since the middle of May last year.
Q. 1940?
A. 1940.
Q. Were you ever employed by the Federal Power Commission?
A. Yes, I was employed by the Federal Power Commission before going to Bonneville.
Q. How long were you so employed?
A. For over a year.

Q. Have you prepared a written statement setting forth your experience and qualifications?

A. I have.

Q. Please read that into the record.

A. "In 1914 I graduated from the University of Michigan with a Bachelor of Electrical Engineering degree. While at the University I took advance courses in accounting and a course in 'Utility Regulations' given by Dean Cooley, and Professors Riggs and Friday.

"After receiving my degree I entered the employment of the Grand Trunk Railway as an electrician. As an employe of this company I assisted in construction of electrical transmission and distribution lines, installation and maintenance of electrical equipment under the Motive Power Department at the electrically operated shops at Toronto and Montreal, Canada, and Battle Creek, Michigan, and the power plant and transmission line at Port Huron for the Sernia Tunnel. I had charge of the evaluation of all electrical lines and equipment under the Motive Power Department of the Western Division of the Grand Trunk Railway pursuant to orders of the Interstate Commerce Commission.

"In 1917 I enlisted in the U. S. Army, serving with the Fifth U. S. Engineers. In France I had charge of the operation of the electrical light plant for Seventh Division Headquarters and installation of other electric light plants in our Army area.

"In 1919 I entered the employment of the United States Emergency Fleet Corporation in Portland, Oregon, as valuation engineer. The work consisted of the evaluation of surplus shipbuilding material, stores, and equipment.

"In 1919 I was employed as engineer by the Southern Pacific Company, and later by the Oregon-Washington Railway and Navigation Company to assist in bringing up to date the Interstate Commerce Commission's valuation pursuant to I.C.C. Order No. 4.

"In 1920 I was employed by the Public Service Commission of Oregon, the name of which was later changed to Public Utilities Commission of Oregon. During the seventeen years in the State regulatory service I served as assistant engineer, engineer, auditor, principal engineer,

chief engineer, and director of engineers. At first I assisted in the investigation of the books and operations of public utilities, valuations, and rate analyses. As chief engineer and director of engineers I had charge of valuations of public utility property and auditing of the public utilities' books. Also had charge of rate studies and preparation of factual evidence in formal proceedings before the Commission and charge of the studies of other problems confronting the engineering and auditing department of a state public utility regulatory body.

"In 1939 I entered the employment of the Federal Power Commission as associate rate investigator. Besides the rate analysis work in this case, I prepared rate analyses in a number of other natural gas matter for the Commission.

"In May 1940 I entered the employment of the Bonneville Power Administration at Portland, Oregon, as rate analyst. My work with the said Administration, at present, consists of analyses of various types of electric rates used by various private and public utilities and studies of additional use to which electric energy may be devoted.

"I am a registered engineer authorized to practice professional engineering in the State of Oregon, No. 1441."

Q. Mr. Lester, during the time that you were in the employ of the Federal Power Commission, what particular branch of the Commissioned service were you connected with?

A. With the rate department of the Federal Power Commission and in rate work and rate investigation.

Q. While you were employed, did you have any assignment in connection with the preparation of the study of the rates of Colorado-Wyoming Gas Company in this proceeding? Also of related matters to rates?

A. I did.

Q. Did you prepare an exhibit in connection with that study?

A. I did.

Q. I will ask you whether this is the exhibit.

A. That is the exhibit.

Mr. Lange: Will the reporter please identify it?

The Trial Examiner: What is the title of it, Mr. Lange?

Mr. Lange: "Report on the Review and Analysis of the Contracts, Rates and Billings of the Colorado-Wyoming Gas Company.

The Trial Examiner: It will be marked for identification as Exhibit No. 251.

(Vol. LXXXVI, pp. 12877-12881.)

* * * * *

Subsequently the Witness testified as follows:

Q. Mr. Lester, at the noon recess Mr. Dougherty had requested figures that you were to furnish?

A. Yes, sir.

Q. Did you locate your working papers showing those items?

A. Yes, I did.

Q. You might give that information to us at this time.

A. The delivery to the Natural Gas Pipeline Company peak day in 1937 was February 27 and the amount was 68,270. In 1938 it was on November 5, the peak day delivery being 78,005.

Q. Mcf.?

A. Mcf. In 1939 the peak day was November 1 and the delivery was 79,653 Mcf.

Q. And what pressure? Was it on a uniform pressure base?

A. The uniform pressure base.

Q. At 14.65?

A. That is correct.

Mr. Lange: Do you have any further questions regarding this information, Mr. Brock?

Mr. Brock: No questions.

By Mr. Lange:

Q. Mr. Lester, returning to your Exhibits 261 and 262, I will ask you whether or not they contain tables showing interruptions in service, point of delivery, date, customer, duration, and cause?

A. There is a table in there showing that information.

Q. Now, then, these Exhibits 262 and 261 were pre-

pared by you and include matters pertaining to both of these companies down through December 31, 1939?

A. That is correct.

Q. Have you had occasion since the completion of these exhibits to study the history of all interruptions in service of both companies, particularly the information that was set forth in the company's exhibit 290, prepared by Mr. Beardsley?

A. Yes, I have reviewed that exhibit.

Q. Please refer to Exhibit 290 at this time and state what your opinions and conclusions are in connection with the interruptions in service of both companies.

A. There has been no further interruptions of the Canadian River Gas Company.

Q. Of the Canadian River Gas Company?

A. Of the Canadian River Gas Company during 1940.

Q. So those interruptions set forth in your Exhibit 261 are all that you have any knowledge of?

A. That is all I have any knowledge of and I commented upon those interruptions.

Q. All right, let us move to the Colorado Interstate Gas Company.

A. In reviewing the information in Exhibit 290, on Table 2 in that Exhibit is a statement of total interruptions in service to December 31, 1940.

Q. That is Table 2 pertaining to which company?

A. The Colorado Interstate Gas Company—I guess there is a mixup on the table numbers in the exhibit.

Q. Is the table the second to the last one in the exhibit?

A. Yes, the second to the last table in the exhibit.

Q. What statement did you have to make with reference to that table?

A. This is the total interruptions of the company and it shows the hours of duration, also indicates the cause for the total interruptions. The cause of the total interruptions in all cases was due to either pipe failure or washout. Washout, of course, is a cause of pipe failure. It is more or less due to the act of Nature.

The main line industrial total interruptions due to physical causes for the 13 years amounted to 111.5 or 1.7 hours per main line industrial customer.

Q. During the entire history of the company?

A. During the entire history of the company. There are also washouts for the Colorado-Wyoming Gas Company and to the city gate included in there. They amounted to 157.5 hours for the entire service of the company.

Q. In the course of the preparation of these two exhibits you have had all relevant data and records available to you for your inspection?

A. Yes, except the last year.

Q. Except the year 1940?

A. Yes, sir.

Q. Now, then, from your examination of the company's records, particularly those records pertaining to suspensions, interruptions, reduction or interruptions in service, did you find during the entire history of the companies that they lost any customers due to interruptions or suspensions of service?

A. No.

Q. If there had been such a customer loss for any one of those reasons, you would have learned of it in connection with your search of the records?

A. Yes, sir, prior to 1940. I haven't searched the record in 1940.

Q. In so far as 1940 is concerned, does this Exhibit 290, which sets forth reductions and suspensions in service, indicate that any of the customers shown ceased purchasing gas from the company?

A. Not for those causes, no. There is one that has—the Citizens Utilities Company took part of the operation over but they are delivering to all of the city gates and same delivery points during 1940. As to those companies whose interruptions are referred to there, they are still delivering to them.

Q. Borrowing Mr. Keffer's use of the homely illustration about "proof of the pudding is in the eating," would you say that the proof of the pudding with reference to whether these customers of the company are taking these suspensions, reductions, or interruptions in service, as a reason for not purchasing further supplies of gas is not in this picture?

A. No.

Q. In other words, there has been no loss of customers in so far as you know due to any one or all of those factors?

A. That is correct. There has been none. No loss.

Now turning over to the reduction in there, the reduction to the main line industrials amounts to 1.7 hours per year per main line customer.

Q. And you have heard—or, I'll ask you whether you did hear any of the testimony that was given by either one or more of the rate of return witnesses setting forth the fact that these interruptions or reductions in service were risks that the company had to face in its business?

A. I heard some of them testifying to that.

Q. Well, it didn't result in their loss of any customers so far as you know?

A. No, it did not result in the loss of any customers.

(Vol. CI, pp. 15652-15657.)

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Docket G-12[illegible]

COLORADO INTERSTATE GAS COMPANY
STATEMENT OF GAS SOLD M.C.F.
(ON UNIFORM PRESSURE BASE OF 14.65 LBS.PER SQUARE INCH)

For Year 1959	Delivery Point	January	February	March	April	May	June	July
Direct Consumers								
American Crystal Sugar Company	Rocky Ford	2,437	2,586	2,021	1,217	752	425	248
Atchison, Topeka & Santa Fe Ry. Co.	La Junta	43,997	39,061	37,586	31,982	29,449	27,486	30,482
Colorado Portland Cement Company	Portland	141,950	115,562	148,745	137,880	137,348	137,957	156,800
Colorado Fuel & Iron Corporation	Pueblo							
Boiler Gas		291,784	327,907	305,606	299,056	297,443	282,568	197,435
Metallurgical Gas		270,713	391,870	378,698	378,366	349,453	275,157	248,686
Total Colorado Fuel & Iron Corporation		562,497	719,777	684,304	677,422	646,896	557,725	446,121
U. S. Department of the Interior	Thatcher	113	99	88	74	58	41	31
Veterans' Administration	Fort Lyon	26,242	27,190	21,970	20,360	13,673	12,885	8,195
Total Direct Consumers		777,436	904,175	806,906	688,893	788,176	676,437	641,877
Arkansas Valley Natural Gas Company	Various	8,674	8,706	6,961	4,958	3,078	1,973	1,754
Citizens Utilities Company	Various	17,695	17,695	16,898	12,809	8,595	6,572	5,807
City of Colorado Springs	Colorado Springs	86,199	82,251	72,349	58,190	54,065	46,491	60,347
Pueblo Gas & Fuel Company	Pueblo	47,975	51,314	39,169	38,251	38,176	30,561	23,961
Public Service Company of Colorado	Various	825,600	898,787	631,184	613,926	427,473	356,342	322,206
Sub-Total		984,083	1,058,613	766,161	787,854	521,317	441,941	414,075
Colorado-Wyoming Gas Company	Littleton	328,301	273,046	190,358	190,998	260,346	234,666	164,780
Total Denver Line		2,112,020	2,235,834	1,763,005	1,740,101	1,569,839	1,353,044	1,220,672
Natural Gas Pipeline Company of America	Gray	1,685,613	1,666,589	1,677,998	1,755,345	1,670,371	1,688,810	1,683,497
Grand Total		3,797,633	3,902,423	3,521,083	3,495,446	3,240,210	3,041,854	2,904,169

Exhibit No. 307 (1)
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COLORADO INTERSTATE GAS COMPANY
STATEMENT OF GAS SOLD M.C.F.
(ON UNIFORM PRESSURE BASE OF 14.65 LBS. PER SQUARE INCH)

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February	March	April	May	June	July	August	September	October	November	December	Total
2,586	2,021	1,217	752	485	248	198	143	189,835	188,076	5,766	332,998
39,661	37,586	31,982	29,449	27,486	30,482	30,365	30,056	36,991	44,368	46,894	427,169
115,562	148,745	137,888	137,348	137,957	156,800	167,519	138,151	140,786	130,657	129,356	1,676,091
327,907	303,686	299,056	257,443	222,568	197,435	200,512	268,475	296,671	373,999	368,084	3,360,920
391,870	378,698	378,166	349,453	275,157	248,686	226,688	245,011	328,699	389,381	390,851	3,896,879
719,777	682,384	651,222	606,896	497,725	446,121	427,200	507,486	625,370	762,380	758,935	7,257,379
99	88	74	58	41	31	30	35	50	57	67	743
27,190	21,970	20,369	13,673	12,885	8,195	9,987	10,090	16,617	21,138	23,361	212,066
984,173	886,586	888,295	788,176	676,437	641,877	635,165	685,881	977,409	1,147,270	965,779	9,906,446
8,706	6,961	4,998	3,070	1,975	1,754	2,648	2,389	4,671	7,833	8,658	61,877
17,685	16,898	12,809	8,595	6,972	5,807	6,158	6,467	8,186	12,992	15,491	133,665
82,251	72,349	58,150	54,068	46,491	60,347	50,801	43,608	66,708	93,407	91,607	889,981
51,314	39,169	38,231	28,176	30,561	23,961	27,779	29,874	36,157	47,989	49,982	450,648
888,797	631,384	633,986	487,473	356,348	388,806	328,888	343,333	473,986	676,888	786,488	6,637,119
1,648,613	766,161	787,854	521,317	444,941	414,075	438,794	485,471	991,868	837,113	898,100	8,088,490
273,646	190,338	190,598	260,346	234,666	161,780	175,183	201,068	298,775	306,778	275,769	2,888,762
2,885,834	1,843,085	1,740,101	1,569,899	1,353,614	1,280,672	1,249,142	1,315,480	1,887,798	2,891,161	2,131,688	20,879,698
1,666,589	1,677,998	1,795,545	1,670,372	1,698,810	1,685,687	1,795,738	1,988,654	1,789,913	1,734,610	1,734,854	20,367,698
3,898,483	3,521,083	3,495,646	3,240,810	3,045,854	2,966,169	3,045,880	2,838,874	3,617,668	4,625,771	3,865,988	41,247,330

Docket G-[illegible]

COLORADO INTERSTATE GAS COMPANY
STATEMENT OF GAS SOLD M.C.F.
(ON UNIFORM PRESSURE BASE OF 14.65 LBS. PER SQUARE INCH)

For Year 1940	Delivery Point	January	February	March	April	May	June	July
Direct Consumers								
American Crystal Sugar Company	Rocky Ford	3,981	2,354	1,516	1,207	426	898	111
Atchison, Topeka & Santa Fe Ry. Co.	La Junta	51,088	42,121	34,413	33,385	32,409	89,781	87,878
Colorado Portland Cement Company	Portland	79,569	123,805	132,891	128,625	134,464	167,951	175,353
Colorado Fuel & Iron Corporation	Pueblo							
Boiler Gas		439,573	354,807	335,847	231,105	241,360	311,614	179,007
Metallurgical Gas		427,576	388,453	319,270	247,691	257,160	296,335	131,142
Total Colorado Fuel & Iron Corporation		867,149	743,260	655,117	478,796	498,520	607,949	310,149
U. S. Department of Interior	Thatcher	95	74	63	53	39	88	89
Veterans' Administration	Fort Lyon	28,854	22,882	19,923	20,895	14,070	9,874	6,591
Total Direct Consumers		1,030,088	933,836	843,323	662,837	679,988	815,365	520,005
Arkansas Valley Natural Gas Company	Various	12,007	8,792	7,509	1,760	1,116	474	279
Citizens Utilities Company	Various	23,690	27,940	16,391	15,608	12,601	9,836	8,071
City of Colorado Springs	Colorado Springs	99,707	83,684	82,133	72,807	65,150	58,958	58,510
Pueblo Gas & Fuel Company	Pueblo	67,444	54,538	42,680	42,469	35,080	30,996	24,694
Public Service Company of Colorado	Various	1,801,875	870,495	681,570	685,418	469,577	372,870	321,476
Sub-Total		1,804,183	1,845,409	830,353	754,042	583,524	473,134	418,930
Colorado-Wyoming Gas Company	Littleton	328,899	261,461	198,726	208,776	200,123	176,512	191,157
Total Denver Line		2,534,340	2,243,789	1,872,382	1,629,675	1,463,575	1,465,011	1,124,152
Natural Gas Pipeline Company of America	Gray	2,341,397	1,743,489	1,662,121	1,651,994	1,795,825	1,515,019	1,788,861
Grand Total		4,875,737	3,987,158	3,534,503	3,281,669	3,259,400	2,980,030	2,913,013

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Exhibit No. 307

COLORADO INTERSTATE GAS COMPANY
STATEMENT OF GAS SOLD M.C.F.
(ON UNIFORM PRESSURE BASE OF 14.65 LBS. PER SQUARE INCH)

January	February	March	April	May	June	July	August	September	October	November	December	Total
3,921	2,354	1,516	1,207	426	298	111	111	131	110,004	807,640	96,589	424,242
51,082	42,121	34,413	33,385	32,409	29,701	27,872	27,686	27,457	31,592	39,466	43,764	420,778
79,569	123,805	138,891	188,625	134,464	167,951	175,333	124,879	123,822	65,961	114,543	172,156	1,542,997
439,573	354,807	335,847	231,185	241,360	311,624	179,007	234,477	210,863	239,818	318,484	363,542	3,459,985
487,576	388,453	319,870	247,691	257,160	296,335	151,148	147,051	188,941	179,118	360,055	364,348	3,387,120
887,149	728,260	685,117	478,754	490,580	607,959	510,129	381,528	399,804	418,956	678,519	727,890	6,787,645
93	74	63	53	39	88	89	89	41	67	94	101	711
28,854	22,022	19,985	20,895	14,770	9,874	6,991	8,279	8,823	14,956	21,162	24,502	200,071
1,090,008	933,836	843,383	668,857	679,988	815,365	520,085	542,452	560,108	641,496	1,061,284	1,044,982	9,355,844
12,007	8,792	7,589	1,760	1,116	474	179	179	503	1,307	2,188	2,854	38,371
23,602	27,940	16,391	15,608	12,601	9,836	8,071	8,016	9,696	11,587	20,165	26,833	191,154
99,707	83,684	82,133	72,807	65,150	58,958	58,510	54,085	73,387	83,581	101,284	110,757	943,943
67,484	54,538	42,600	42,469	35,088	30,996	24,694	25,891	28,370	38,958	58,608	69,181	518,879
1,001,875	870,495	681,570	685,418	469,577	372,870	321,476	331,741	384,716	501,016	809,560	894,398	7,854,078
1,884,183	1,645,469	830,333	758,062	503,584	473,134	418,990	420,692	496,638	636,482	991,765	1,087,413	8,940,465
389,889	284,484	198,786	208,776	200,123	176,518	191,137	178,411	195,805	229,982	332,569	308,840	2,784,850
2,534,340	2,243,789	1,872,388	1,689,675	1,463,575	1,465,011	1,184,158	1,141,515	1,258,085	1,507,880	2,385,758	2,461,235	21,081,197
1,741,397	1,743,489	1,662,121	1,651,984	1,795,885	1,515,019	1,788,861	1,614,298	1,580,148	1,784,784	1,667,282	1,763,998	20,309,016
4,275,737	3,987,158	3,534,509	3,281,669	3,259,400	2,980,030	2,913,013	2,755,807	2,838,173	3,292,584	4,052,980	4,225,187	41,390,241

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COLORADO-WYOMING GAS COMPANY
STATEMENT OF GAS SOLD M.C.F.
(AT UNIFORM PRESSURE BASE OF 14.65 LBS. PER SQUARE INCH)

Per Year 1939	Delivery Point	January	February	March	April	May	June	July	August	September
Direct Customers										
Denver Board of Water Commissioners	Marston Lake	1,664	1,487	1,170	957	110	30	14	19	33
Federal Prison Farm	Denver									
Adolph Coors Company	Golden	1,748	1,809	1,683	1,880	1,147	1,709	490	68	104
Golden Fire Brick Company	Golden	3,796	3,910	995	3,694	6,047	10,582	5,861	5,568	4,837
Public Service Company of Colorado	Valmont					85,054				
Kuner-Empson Company	Brighton	2,362	2,187	2,001	2,197	1,006	914	800	4,314	8,577
Great Western Sugar Company	Johnstown	33,695	34,847	31,708	34,804	35,890	16,841	113	39	16,688
Denver Pressed Brick Company	Loveland	3,333	4,035	1,841	3,161	4,688	5,111	4,914	3,723	3,676
Colorado Portland Cement Company	La Porte	108,634				98,956	126,063	93,568	96,932	96,160
Producers Canning Company	Fort Collins	3						218	32	
Fort Collins Producing Company	Wellington Field	650	808	518	106				92	405
Sub-Total		155,883	49,083	38,916	46,179	172,598	161,580	106,038	110,787	130,478
U. S. War Department										
Fort Logan	Ft. Logan	653	623	587	664	610	768	778	698	591
Fort Warren	Ft. Warren	1,473	1,529	1,346	1,447	1,309	1,312	1,202	1,162	1,218
Total U.S. War Department		2,126	2,152	1,933	2,111	1,919	2,080	1,980	1,860	1,809
Green Gables Country Club	Denver	354	359	275	277	150	108	97		
Domestic Taps	Various	574	591	452	392	177	149	116		
Total Direct Customers		158,917	52,185	41,576	48,959	174,844	163,917	108,231	112,647	132,287
Highway Gas Company	Loveland	466	575	366	336	251	273	431	297	286
Greeley Gas & Fuel Company	Greeley	17,883	19,475	13,870	12,843	8,678	8,092	7,469	7,520	8,653
Cheyenne Light Fuel & Power Company	Cheyenne	34,816	38,722	41,220	42,005	25,148	20,148	15,797	17,814	20,102
Public Service Company of Colorado	Various	121,947	130,722	94,395	87,043	48,765	37,651	32,354	36,584	38,228
Sub-Total		176,112	189,494	151,811	141,227	83,842	66,164	56,051	62,215	67,269

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COLORADO-WYOMING GAS COMPANY
STATEMENT OF GAS SOLD M.C.F.
(ON UNIFORM PRESSURE BASE OF 14.65 LBS. PER SQUARE INCH)

January	February	March	April	May	June	July	August	September	October	November	December	Total
												308
1,664	1,487	1,170	957	110	30	14	19	33	184	824	1,148	7,620
											68	68
1,748	1,809	1,683	1,880	1,447	1,709	490	68	104	1,043	1,744	1,892	15,617
3,796	3,910	995	3,694	6,047	10,582	5,861	5,568	4,837	4,788	3,841	3,581	57,100
				25,054						1,656		26,710
2,362	2,187	2,001	2,197	1,006	914	800	4,314	8,577	4,779	2,474	1,979	33,680
33,695	34,847	31,708	34,804	35,890	16,841	113	39	16,688	37,051	36,441	35,653	312,548
3,333	4,035	1,841	3,161	4,688	5,411	4,914	3,723	3,676	3,776	2,964	3,986	44,878
108,634				98,956	126,063	93,568	96,932	96,160	93,156	94,998	55,985	864,390
3						248	32					283
650	803	518	106				92	405	889	389	699	3,894
155,883	49,883	38,916	46,179	172,598	161,580	106,038	110,787	130,478	145,046	145,871	104,869	1,366,728
653	623	587	664	610	768	778	698	591	593	520	507	7,572
1,473	1,589	1,346	1,447	1,309	1,312	1,202	1,162	1,218	1,264	1,249	1,014	15,555
2,106	2,152	1,933	2,111	1,919	2,080	1,980	1,860	1,809	1,857	1,769	1,551	23,127
354	399	275	277	150	108	97						1,680
574	591	452	392	177	149	116						2,451
158,917	52,185	41,576	48,959	174,864	163,917	108,851	112,647	132,287	146,903	147,040	106,420	1,393,896
466	575	366	336	851	273	431	297	286	453	470	445	4,649
17,883	19,475	13,870	12,843	8,678	8,092	7,469	7,520	8,653	10,991	15,136	16,796	147,406
54,816	58,722	43,280	42,005	25,148	20,148	15,797	17,814	20,102	30,266	43,207	45,562	414,807
121,947	130,722	94,355	87,043	48,765	37,651	32,354	36,584	38,228	64,278	97,771	106,345	896,043

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COLORADO-WYOMING GAS COMPANY
STATEMENT OF GAS SOLD M.C.F.
(ON UNIFORM PRESSURE BASE OF 14.65 LBS. PER SQUARE INCH)

Per Year 1940	Delivery Point	January	February	March	April	May	June	July	August	September
Direct Customers										
Denver Board of Water Commissioners	Marston Lake	1,817	1,818	955	577	101	41	23	19	28
Federal Prison Farm and Miscellaneous	Denver	285	21			12	9	70	124	131
Adolph Coors Company	Golden	2,021	1,935	1,132	1,097	1,045	1,124	1,052	562	66
Golden Fire Brick Company	Golden	1,768	166	609	2,172	3,235	4,135	2,514	4,908	4,907
Public Service Company of Colorado	Valmont									
Ideor-Ehpsem Company	Brighton	2,739	2,705	2,087	1,974	1,136	851	1,900	4,413	10,708
Great Western Sugar Company	Johnstown	35,674	34,673	35,105	26,558	82	18	42	15	46
Denver Pressed Brick Company	Loveland	3,917	4,129	140	1,648	3,923	4,870	4,657	5,183	5,415
Colorado Portland Cement Company	La Porte				34,305	90,718	95,583	116,149	96,770	97,569
Producers Canning Company	Fort Collins							269	374	97
Fort Collins Producing Company	Wellington Field	229	1,330	986	230	62	18	86	30	314
Sub-Total		48,809	46,810	40,954	68,561	100,314	106,049	127,412	112,398	119,873
U. S. War Department										
Fort Logan	Ft. Logan	573	580	479	526	498	635	594	524	589
Fort Warren	Ft. Warren	1,843	1,982	1,091	1,139	1,008	1,353	1,295	1,169	1,290
Total U. S. War Department		1,916	1,782	1,570	1,665	1,506	1,988	1,889	1,693	1,879
Total Direct Customers		50,615	48,602	42,524	70,224	101,820	108,037	129,301	114,091	121,752
Highway Gas Company	Loveland	671	1,199	639	572	531	414	367	423	372
Greeley Gas & Fuel Company	Greeley	23,614	20,223	14,754	13,008	10,160	7,766	6,990	7,197	8,853
Cheyenne Light, Fuel & Power Company	Cheyenne	64,303	56,976	44,897	42,343	29,132	20,879	17,887	17,651	21,874
Public Service Company of Colorado	Various	152,665	129,396	96,018	87,158	58,721	42,059	34,631	36,000	43,089
Sub-Total		241,183	207,794	155,708	143,081	98,544	71,118	59,875	61,271	74,188
Grand Total		292,099	256,396	198,232	213,305	200,364	179,155	189,176	175,362	195,340

Exhibit No. 208 (_)

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COLORADO-WYOMING GAS COMPANY
STATEMENT OF GAS SOLD M.C.F.
(ON UNIFORM PRESSURE BASE OF 14.65 LBS. PER SQUARE INCH)

Delivery Point	January	February	March	April	May	June	July	August	September	October	November	December	Total
Marston Lake	1,817	1,818	955	577	101	41	83	19	88	82	968	1,314	7,773
Denver	285	21			12	9	70	124	131	168	213	288	1,861
Golden	2,021	1,935	1,132	1,097	1,045	1,124	1,052	562	66	210	1,858	1,884	12,788
Golden	1,768	166	609	2,172	3,295	4,135	2,914	4,908	4,907	5,671	3,708	4,325	38,514
Valmont													
Brighton	2,759	2,705	2,087	1,974	1,136	851	1,900	4,413	10,708	2,977	2,374	2,880	36,756
Johnstown	35,674	34,675	35,105	26,558	82	18	42	15	46	13,741	35,709	37,626	219,892
Loveland	3,917	4,189	140	1,618	3,923	4,870	4,697	5,185	5,415	4,403	4,398	978	43,089
La Porte				34,305	90,718	95,583	116,140	96,770	97,569	93,968	96,329	54,580	776,865
Fort Collins							869	374	97		9	12	761
Wellington Field	599	1,390	986	830	62	18	86	30	314	72	957	2,992	7,576
	48,800	46,840	40,954	68,561	100,314	106,049	127,412	112,398	119,873	121,886	145,917	106,241	1,144,045
Ft. Logan	573	580	479	528	498	635	594	524	589	575	721	757	6,933
Ft. Warren	1,843	1,842	1,091	1,135	1,008	1,353	1,295	1,169	1,350	1,594	1,848	2,030	16,318
	1,818	1,782	1,370	1,665	1,506	1,988	1,889	1,693	1,879	2,189	2,569	2,767	23,251
	50,618	48,602	42,524	70,824	101,820	108,037	129,301	114,091	121,152	123,415	148,486	109,008	1,167,296
Loveland	671	1,199	639	572	531	414	367	423	372	502	665	651	7,006
Greeley	23,614	20,295	14,754	13,008	10,160	7,766	6,990	7,197	8,853	11,219	18,397	20,196	162,407
Cheyenne	64,505	56,976	44,897	42,343	29,132	20,879	17,887	17,651	21,874	30,407	52,371	56,430	454,750
Various	152,665	129,396	96,018	87,158	58,721	42,059	34,631	36,000	43,089	65,547	111,895	119,410	975,987
	241,483	207,794	155,708	143,081	98,544	71,118	59,875	61,271	74,188	107,675	182,726	196,687	1,600,150
	892,099	856,396	198,232	213,905	200,364	179,155	189,176	175,362	195,340	231,090	331,212	305,715	2,767,446

The witness Lester stated exhibits 307 and 308 were compiled from figures taken from the Company books.

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13. Description of the Facilities of the "Denver Line" Used and Useful in the Transmission of Gas.

By the term "Denver Line" it is intended hereinafter to describe the transmission system employed in transporting *all* gas sold under this project, as it exists, as distinguished from the one assumed transmission line that would be used and useful in transporting only *resale* gas sold under the project which "Resale Line" is next dealt with under Title 14.

The Denver Line begins at the intake side of the Bivins Compressor Station located in the gas field of the Canadian company at a point in Moore County, Texas, approximately thirty-five miles north of Amarillo. It is at this point that the production and gathering functions of Canadian terminate and the transmission line begins. This transmission line for the transportation of *all* gas includes the following described plant or property:

A. All of the properties of the respondent Colorado Interstate Gas Company beginning with the Denver Meter Station located just outside of the city limits and reaching southward, including all laterals, to the junction with the transmission line of Canadian near Clayton, New Mexico.

b. That part of the properties of Canadian located north of the intake of the Bivins Compressor Station and including that station, the gasoline extraction plant, the dehydration plant, a portion of the general property, automobiles, trucks and the Bivins Camp, and all of the main transmission lines and laterals, measuring station and telephone system, all extending northward to the junction with the transmission line of Colorado Interstate at Clayton, New Mexico.

This portion of the transmission system south of Clayton Junction, belonging to Canadian River, is described in detail in its brief, and the investment in such transmission property, as well as the depreciation, amortization, maintenance and other expenses in connection with the opera-

tion thereof, enters into the cost of gas sold and delivered by that company to this respondent at Clayton Junction. Evidence as to all such matters is dealt with at length in Canadian's brief to which reference is made.

The map of this transmission line, Exhibit 36-K is included as Appendix A herein. Other maps are included in Exhibits 5, 13, 36-K, 36-L, 36-M, 36-O, 36-P, 44, 45, 46, 48, 60, 70, 138, 281, 282. The Commission's witness O'Connor gave a good general description of Canadian's portion of this transmission system in his Exhibit 47 and of this respondent's portion in Exhibit 49. Also in his Exhibit 138-A, he made a written statement concerning his flow map, Exhibit 138. From those exhibits as well as Exxhibits 65, 66, 68, 70, 281 and 282, offered for the companies, and additional Exhibits 139 and 146 submitted for the Commission, we can make the following descriptions of the main items of the transportation system belonging to this respondent from Clayton Junction, New Mexico, north to the Denver Meter Station just outside the City of Denver:

Clayton Junction is approximately seven miles northeast of the town of Clayton, New Mexico. At that point respondent owns a compressor station located approximately 400 feet north of the junction of this transmission line with Canadian. The equipment consists of three 1,000 h.p. Worthington Gas Engine Driven Compressors and appurtenant and auxiliary equipment and necessary housing. (Exhibit 65). The witness O'Connor for the Commission was in error in describing this equipment as consisting of only *two* such 1,000 h.p. units. (Exhibit 49, p. 3). On cross examination he corrected this:

> "Q. Where you say that equipment at Clayton Compressing Station consists of two 1,000 h.p. Worthington Gas Engine Driven Compressors, my understanding is that there are three units. Is that correct?
>
> "A. That is correct. * * * There are three compressors." (Vol. VII, p. 924).

From Clayton Junction in a general northwesterly direction the main transmission line extends approximately seventy-eight miles to the Canyon Compressor Station (O'Connor's Exhibit 49, p. 2). This line, as well as the remainder

of the main transmission line northward to the Devine Compressor Station, is a 22 inch outside diameter lap-welded steel "Dresser-coupled line * * *, and built with single random length pipe averaging 19 feet per joint." (Lee M. Hill's Exhibit 231, p. 2; O'Connor's Exhibit 49, p. 3).

The Canyon Compressor Station is located approximately forty-five miles southeast of Trinidad, Colorado and the equipment consists of "three 1,000 h.p. Worthington Gas Engine Driven Gas Compressors and appurtenant and auxiliary equipment" and necessary housing. (Exhibit 49, p. 3). The line then extends approximately seventy-one miles north to the Devine Compressor Station located eight miles east of Pueblo, Colorado. On this section of the line there are located two maintenance camps—the first, Delhi Maintenance Camp lying about midway between the crossings of the Purgatoire and Apishapa Rivers; the second, the Apishapa Maintenance Camp, lying just north of the crossing with the Apishapa River.

Just north of the Arkansas River there is located the Devine Compressor Station. There the equipment also consists of "two 1,000 h.p. Worthington Gas Engine Driven Gas Compressors and appurtenant and auxiliary equipment" and necessary housing. (Exhibit 49, p. 3).

From the Devine Compressor Station northward to Denver, the main line is of the same type, except that it is reduced in outside diameter from 22 to 20 inches, and extends approximately one hundred and five miles north to the Denver Meter Station at the Denver Gate. (Exhibit 49, p 2). O'Connor, in his Exhibit 49, p. 3, makes the following description of the lateral lines:

> "The lateral lines consist of welded or Dresser coupled steel pipe of various nominal diameters, from 2 inches to 8 inches."

On cross examination; he corrected this statement to read: "* * * from 2 inches to 16 inches". (Vol. XXXIV, p. 4701). Continuing, he states:

> "The principal lateral lines are as follows:"

Lateral Line	Approx. Length (Miles)	Diameter of Pipe (Inches)
American Crystal Sugar Company	2	4
American Crystal Sugar Co. Loop	2	6
Arkansas Valley Lines	32	2, 3, & 4
Aurora-Fitzsimons	8	2, 6, & 8
Colorado Fuel & Iron Corp., Pueblo	12	16
Colorado Springs	6	8
Fountain Valley School	2	2
La Junta	35	6 & 8
Las Animas-Fort Lyon	25	6 & 8
North	7	10
Portland	28	8
Rocky Ford	4	8"

(Exhibit 49, p. 3).

O'Connor stated in this same Exhibit 49, p. 3:

> "The company maintains operators' villages and camps at each compressing station, and at a number of points along the transmission line.
>
> "The company operates its own telephone system from Clayton Junction to Denver, which is located generally on pipe-line right of way.
>
> "The company owns measuring stations at each gas delivery point for the determination of the volume of gas sold."

The Company's witness Rhodes confirmed the foregoing description of the Denver Line with his Exhibit 65 entitled "Statistics as to Physical Property of the Denver Pipe Line 1929 to 1939 inclusive". This witness, as vice president of FB&D, designed the line, participated in its construction and to some extent was concerned with its operation under the management contract of FB&D. On page 3 of his Exhibit 65, he gave a detailed description of the principal river crossings of the pipe line. These crossings were made with multiple or loop lines for safety or insurance in flood times. They are as follows:

"Description

Principal River Crossings (C. I. G. Co.)	Size o.d. (in.)	Weight Per Foot (lb.)	Size or Length
Huerfano River (7 line)	10¾	54.00	9,058 ft.
Arkansas River (6 line)	10¾	54.00	15,224 ft.
Jimmy Camp Creek (3 line)	10¾	43.68	2,727 ft.
St. Charles River (2 line)	10¾	54.00	3,001 ft.
Huerfano Loop	10¾	33.48	1,446 ft.
Apishapa Loop	12¾	41.51	16,507 ft.
Sand Creek Loop	10¾	31.20	13,178 ft."

There was no conflict in the exhibits or testimony offered by the engineers or other persons experienced in the operation of the gas system on behalf of the respondent company, and those offered by the engineers of the Commission as to the "used or useful character" of any item of property in the Denver Line.

* * * * *

Since Mr. George I. Rhodes, for the company, and Messrs. Lee M. Hill and J. V. O'Connor, for the Commission, all testified as engineers under this title and testified on other technical subjects hereinafter, there will be included herein an abstract of the evidence pertaining to the qualifications of each.

Evidence of the fact that Mr. Rhodes is vice-president and director of FB&D, and that in addition he was chief engineer of that firm at the time FB&D designed and constructed the properties of this project, has already been abstracted hereinabove. That abstract shows that he personally checked the design (Exhibit 98, p. 1; Vol. XXII, p. 3150) for this project, and was on the ground participating in the supervision of the construction. It also shows that during the time FB&D operated the property under the management contract, Mr. Rhodes participated in the management and was generally familiar with the problems of the project.

Before going with FB&D, he graduated from Massachusetts Institute of Technology in 1905, with a degree of Bachelor of Science (Vol. VIII, p. 1101). He was then an instructor at his Alma Mater for a year. From 1906 to

1911, he was with the Motive Power Department of Interborough Rapid Transit Company, New York. From 1911 to 1917, he was consulting engineer of White Weld & Company, investment bankers, reporting on properties financed or about to be financed, all with respect to which that investment banking firm had any interest or connection (Vol. VIII, p. 1105). He then stated, for the record, some of the more important of 2,500 clients of FB&D; or its subsidiary, FB&D Construction Corporation, including the United States Government, many of the states of the Union and practically all the largest industrial and utility corporations in America, for which his firm had made studies, designed properties and constructed properties (Vol. VIII, pp. 1103, 1104).

Since 1923, he has been largely occupied with work in the natural gas field. He first estimated the gas reserves of the Monroe, Louisiana, Field. This led to the construction by FB&D of the natural gas burning power station of Louisiana Power & Light Company, which consumes more than 30,000,000 cubic feet per day. He and Edgar G. Hill, of FB&D have shared responsibility and have worked together on all natural gas projects in which FB&D were employed. On the Edmonton, Alberta, Canada, job, Mr. Hill had charge of the construction and he had charge of checking designs and specifications. On the Louisiana pipe line system, Hill also had charge of construction, and he was responsible for compressor stations. On the Denver project, Hill also had charge of construction, but he made preliminary reconnaissance and reports and, as already stated, checked the design. FB&D constructed, as general contractors, the line from Monroe, Louisiana, to Memphis and Jackson, Tennessee. Mr. Hill gave that job his prime attention, but the witness, as chief engineer of FB&D, also did work in connection therewith. Hill had charge of the construction of the line from Monroe, Louisiana, to Eldorado, Arkansas, on which the witness was employed only as an executive of FB&D. FB&D, as general contractors, constructed the line from Monroe to St. Louis, on which the witness made preliminary reconnaissance and reports, and was likewise responsible for the construction. The men in the field reported directly to him. On Southern Natural Gas Company's line from Monroe to Atlanta

Georgia, he made preliminary reconnaissance, and was responsible for the design as well as the supervision of the construction. In fact, he had charge of the whole work and made his headquarters in the field at Birmingham. In addition, he had charge of the financing of that construction, except the corporate relations with public authorities and the bankers. On the line of the Natural Gas Pipe Line Company of America from the Texas Panhandle Field to Chicago, he made the preliminary reconnaissance and reports as to location, costs and markets for one member of the group that finally joined in the financing of that project. He was also responsible for the construction of the Kansas section of the Chicago Line, and Mr. Hill had charge of the construction of the Illinois section of the same line. He had charge of the preliminary reconnaissance and design, and actual charge and supervision of the construction of El Paso Natural Gas Company's extension to Douglas, Arizona, and Cananea, Mexico, and of the enlargement of the capacity of the line from West Texas to El Paso and the Southeast New Mexico gas fields. He made designs and estimated costs of the natural gas system to serve territories served by Cities Service Gas Company. He had the final responsibility for the design and satisfactory construction of the gasoline pipe line from Amarillo, Texas, to East St. Louis, built by Phillips Pipeline Company. He was associated with Mr. Hill, who had the prime responsibility in the construction of the oil pipe line from the East Texas oil field to Shreveport. Also with Mr. Hill he was associated in the construction of a liquid propane pipe line from Charleston, West Virginia, into Kentucky, a gasoline pipe line from Toledo, Ohio to Detroit, Michigan, a gasoline pipe line from Reading, Pennsylvania, to Philadelphia, and also several hundred miscellaneous oil and gas lines scattered throughout the country. These properties were constructed under the direction of FB&D and cost more than $125,000,000. About half of them were operated by FB&D for varying periods of years (Vol. VIII, pp. 1106-1109, inclusive). Since the fall of 1935 he has been engaged principally in valuations, cost determinations and analyses of operations of natural gas properties. He has given particular attention to prevention of corrosion on pipe lines. In addition to his work in the design, construction and

eration, for a time, of the Denver Line, he has recently made a study and examination of its properties in order to testify in this case, and, for that purpose, recently spent several weeks in the field and in the offices of the respondent Colorado and Canadian Companies (Vol. VIII, pp. 1109-1111, inclusive).

Mr. James V. O'Connor has been employed as a gas engineer by the Federal Power Commission since September, 1934. He graduated from Massachusetts Institute of Technology in 1923, with a B.S. in Mechanical Engineering. He attended night sessions of the Graduate School of Business Administration, N. Y. U. from 1927 to 1928. From 1923 to 1928, he was employed by the Brooklyn Edison Company, testing steam power plant equipment, developing improved operating methods, inventorying properties, making forecasts of power sales, output and demands, and miscellaneous tests, investigations, studies and reports on operating problems. From 1929 to 1934, he was employed by the American Gas Association in the collection, compilation and analysis of reports filed by member companies, and in the preparation of reports on production, transportation, distribution and sale of gas, and the preparation of data for the use of the Association's committees, and of data for use with Government agencies, gas utilities and others. Up until 1938, his work was primarily with electric utilities, but since that time it has been concerned with natural gas companies (Vol. VI, pp. 793, 794). All of his work with the American Association was in the office and none in the field (Vol. VII, pp. 874, 875). Until the passage of the Natural Gas Act, his work with the Commission was almost exclusively concerned with electrical companies. After the passage of that Act, his first assignment was to investigate the complaint of a coal dealer concerning discrimination in wholesale natural gas rates to serve an industrial business, lodged against a distributing company taking gas off the Denver Pipe Line (Vol. VII, pp. 875-878). He was then assigned to an investigation of the respondent companies and started work on March 15, 1939, in the office of the Canadian and Colorado Companies at Colorado Springs, and he never did any work on any other natural gas company (Vol. VII, p. 876).

[Testimony of LEE M. HILL.]

Q. State your name, please?

A. Lee M. Hill.

Q. Where do you reside, Mr. Hill?

A. Denver, Colorado.

Q. Where and by whom are you presently employed?

A. The Federal Power Commission.

Q. At the regional office in Denver?

A. Yes.

Q. And what is the nature of your occupation?

A. Associate Engineer.

Q. And how long have you been so employed by the Commission?

A. Since April 10th, 1939.

Q. April 10th, 1939?

A. Yes.

Q. Did you during the time of your employment with the Commission have any assignment in connection with the present—any portion of the present proceedings?

A. Yes, sir.

Q. That is, engineering work in connection with it, particularly the Canadian River Gas Company and the Colorado Interstate Gas Company?

A. Yes, sir.

Q. Now, before going to that, though, I will ask you whether you have before you and can read in the record your qualifications in connection with the work that you are doing with the Federal Power Commission?

A. Yes, sir.

Q. Will you do that now, Mr. Hill?

A. "My name is Lee M. Hill. I reside at Denver, Colorado. I am an engineer by profession. I have been employed by the Federal Power Commission at Denver, Colorado, since April 1939. I have performed engineering duties for the Commission and am now engaged in such duties in the capacity of associate engineer.

"I entered the Alabama Polytechnic Institute in September 1921 and there studied mechanical engineering for three and one-half years. I have passed the required state examination for engineers and am licensed to practice professional engineering in the State of Alabama.

I was employed by W. E. Brown Engineering Company at Miami Beach, Florida as a draftsman and instrument man. My experience with this company was mostly in design and layout of water drainage and distribution systems and sanitary sewers.

"In 1925 I went to Birmingham, Alabama as a draftsman for the Sloss-Sheffield Steel and Iron Company and remained in that capacity until the early part of 1927 when I was made construction engineer. My engineering experience with this company consisted of design, construction and general maintenance of blast furnaces, by-product plants, steam power plants, power transmission systems, water transmission and distribution systems, water filtration plants, coal and ore washers, mine tipples and electrification of mine properties.

"In February 1929 I was employed by the Southern Natural Gas Corporation and later by the Southern Natural Gas Company as a mechanical draftsman and worked on plans of their natural gas pipe line system, extending from the Monroe, Louisiana gas fields across the states of Louisiana, Mississippi, Alabama and into the state of Georgia.

"In 1930 I was made chief draftsman in charge of plans for a number of major pipe line extensions, compressing stations, measuring and regulating stations, and medium and low pressure distribution systems. In the early part of 1931 I was transferred to the operating department and there designed pipe line and compressor station extensions, measuring and regulating stations, industrial installations, distribution systems, and all other engineering work pertaining to maintenance and operation of natural gas transmission and distribution systems.

"In 1938 I was made construction engineer and designed and constructed two additional compressing stations. I left the employment of the Southern Natural Gas Company in April 1939 and since that time have been employed by the Federal Power Commission at Denver, Colorado."

Q. Mr. Hill, I will ask you whether or not in connection with your work with the Commission you have prepared an exhibit covering the determination of composite

service lives of physical properties of Canadian River—of Colorado Interstate Gas Company?

A. Yes, sir, I did.

Q. Is this the exhibit that I show you?

A. Yes, sir.

Mr. Lange: Will the stenographer please identify that?

The Trial Examiner: It will be marked for identification as Exhibit No. 177.

(Exhibit 177, Witness Hill, marked for identification.)

By Mr. Lange:

Q. Mr. Hill, during what period of time since you have been employed with the Federal Power Commission have you worked on this assignment?

A. Ever since I have been with them.

Q. And that was what month and year?

A. April 1939.

Q. April 1939?

A. Yes.

Q. In connection with this work did you actually go over the property?

A. Yes, sir, I did.

Q. And personally saw the items of property that you would describe in those portions of the pipe that are underground and that you inspected at certain points along the line?

A. Well, some of the inspections I made, not all of them.

Q. Not all of them?

A. No. I did inspect all the property.

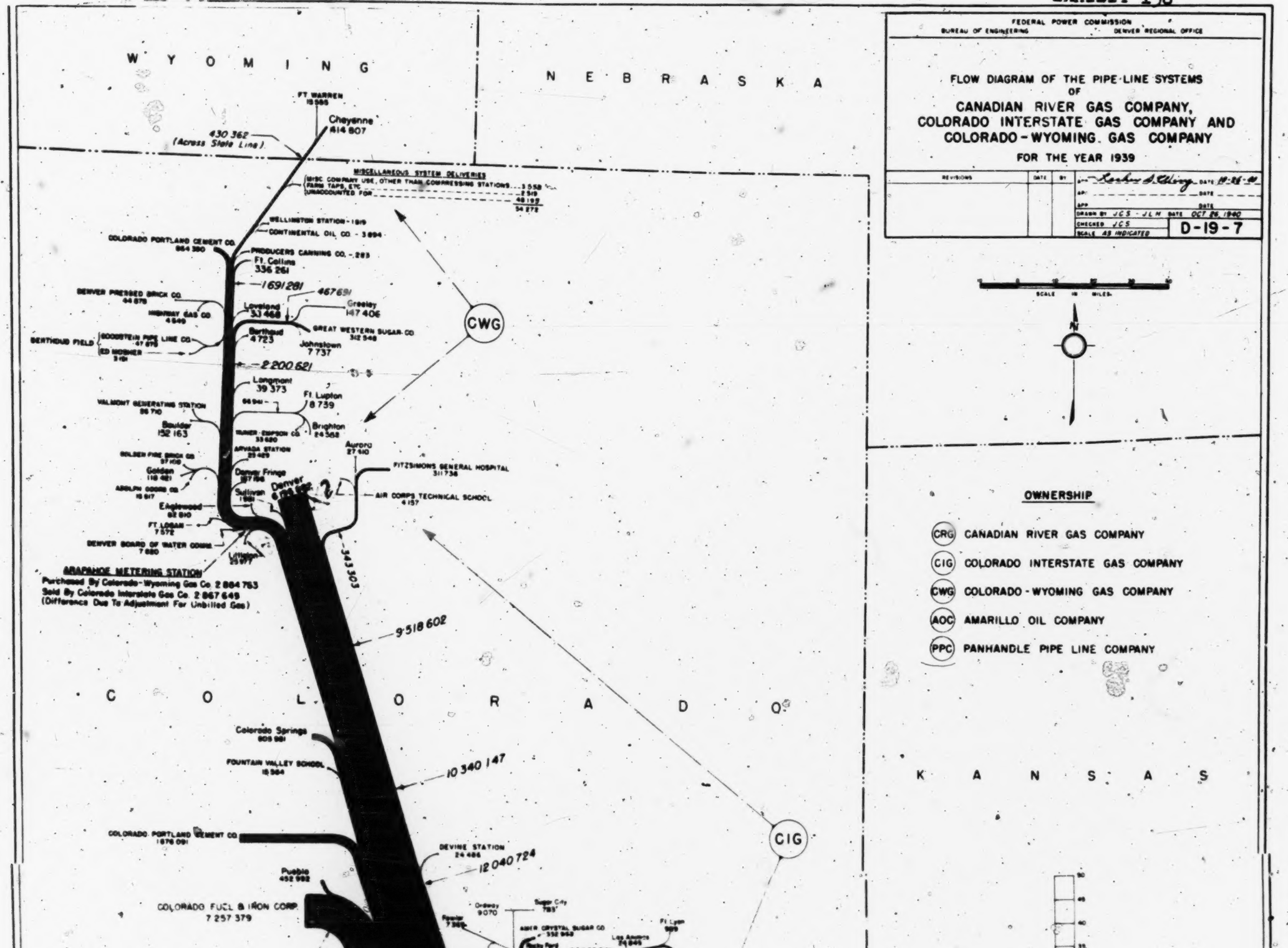
Q. You inspected the compressor stations, too?

A. Yes, sir.

Q. Now, did you in connection with this exhibit prepare—or, rather, turning to Page 1 of this exhibit, will you read that statement which was prepared by you?

(Vol. L, pp. 6957-6961.)

EXHIBIT 138



FEDERAL POWER COMMISSION
BUREAU OF ENGINEERING — DENVER REGIONAL OFFICE

FLOW DIAGRAM OF THE PIPE-LINE SYSTEMS OF CANADIAN RIVER GAS COMPANY, COLORADO INTERSTATE GAS COMPANY AND COLORADO-WYOMING GAS COMPANY

FOR THE YEAR 1939

REVISIONS	DATE	BY

DRAWN BY JCS - JLH DATE OCT 26, 1940
CHECKED JCS
SCALE AS INDICATED

D-19-7

OWNERSHIP

- (CRG) CANADIAN RIVER GAS COMPANY
- (CIG) COLORADO INTERSTATE GAS COMPANY
- (CWG) COLORADO-WYOMING GAS COMPANY
- (AOC) AMARILLO OIL COMPANY
- (PPC) PANHANDLE PIPE LINE COMPANY

EXHIBIT NO. 138-A.

Written Statement of James V. O'Connor.
Flow Diagram.

Canadian River Gas Company, Colorado Interstate Gas Company, and Colorado-Wyoming Gas Company.

Exhibit No. 138 is a graphical map, prepared under my supervision, entitled "Flow Diagram of the Pipe Line Systems of Canadian River Gas Company, Colorado Interstate Gas Company, and Colorado-Wyoming Gas Company for the Year 1939."

The basic data used in preparing the exhibit were obtained from maps and information supplied by the companies, and from information collected by the Commission's engineering and accounting staff from the records of the companies.

The diagram shows, in graphic form, the volumes of gas transmitted by the companies listed on the diagram, the volumes delivered and sold at each delivery point, and the volumes used by the companies or lost in operations, for the year 1939. The diagram, in effect, shows the disposition of the total volume of gas produced by Canadian River Gas Company in the Texas Panhandle Field in 1939.

All figures on the diagram are gas volumes in MCF at 14.65 pounds per square inch absolute. Company records of gas volumes, at various pressure bases, were converted to 14.65 pounds per square inch absolute by multiplying volumes shown on company records by the ratio of the absolute pressure bases on which the volumes were recorded to 14.65. Volumes recorded by the companies have not been corrected for any other factors.

The approximate geographical locations of all gas deliveries are shown on the map. The volume of gas transmitted through the pipe lines is graphically illustrated by the width of the flow lines. In general, their width is directly proportional to the total volume of gas which flowed past any given point during 1939. The volume of gas sold to each direct customer, pipe-line company, and distribution system in 1939 is shown.

In the lower right-hand corner, there is a rectangle which indicates the total well production of Canadian River Gas Company in 1939, amounting to 46,783,394 MCF. The diagram shows that this well production is delivered as follows:

To the Denver Line, 21,059,780 MCF, or 45.0%.

To the Chicago Line, 20,191,512 MCF, or 43.2%.

To Amarillo Oil Company in the field for resale at Channing, and at Amarillo and vicinity, 4,809,758 MCF, or 10.3%.

Company use in the field and free gas to lessors, 722,344 MCF, or 1.5%.

The wide black line extending south indicates the total volume of gas sold by Canadian River Gas Company to Amarillo Oil Company for resale at Amarillo and vicinity under Contracts "B" and "C" (Exhibits 16-B and 16-C in this proceeding). The diagram also shows the disposition of this gas, including the amount ultimately delivered by Panhandle Pipe Line Company to Amarillo Gas Company for resale to consumers in Amarillo, Fritch, and Exell; the volume sold to West Texas Gas Company near Amarillo by Amarillo Oil Company; and the volume delivered to the smelter of the United States Zinc Company at Amarillo by Amarillo Oil Company. This section of the diagram also shows the volume of residue gas which Amarillo Oil Company purchased from the helium plant operated by the United States Bureau of Mines near Amarillo, and resold to the United States Zinc Company.

The wide line extending in a northeasterly direction indicates the volume of gas which Canadian River Gas Company transmitted through the facilities of Texoma Natural Gas Company to Gray Junction, Oklahoma, and sold to Colorado Interstate Gas Company at that point. At the same location, Colorado Interstate Gas Company sold the gas to Natural Gas Pipeline Company of America for resale to direct customers and to distribution companies in Kansas, Nebraska, Iowa and Illinois. Colorado Interstate Gas Company supplies approximately 25 percent, and Texoma Natural Gas Company supplies approximately 75 percent of the total natural gas requirements of Natural Gas

Pipeline Company of America. The diagram shows only the portion supplied by Colorado Interstate Gas Company. If the entire volume transmitted through the facilities of Texoma Natural Gas Company to Gray Junction, Oklahoma to supply Natural Gas Pipeline Company of America were shown, the flow line would be approximately four times as wide.

The line extending in a general northwesterly direction shows the volume of gas handled on the transmission systems owned and operated by Canadian River Gas Company, Colorado Interstate Gas Company, and Colorado-Wyoming Gas Company. Along this interconnected pipeline system, volumes are delivered and sold at various points, and the width of the flow line decreases correspondingly. Slight reductions in the width of the flow line occur at Hartley, Dalhart, and Texline where Canadian River Gas Company sells gas to Amarillo Oil Company for resale to Dalhart Gas Company, and at Clayton, New Mexico where Canadian River Gas Company sells gas to Clayton Gas Company. A more substantial reduction in the width of the main flow line occurs at the point where the La Junta Lateral of Colorado Interstate Gas Company takes off to serve direct customers and distribution systems in the Arkansas Valley in Colorado. A sharp reduction in the width of the flow line occurs at Pueblo due to the large deliveries to Colorado Fuel and Iron Corrporation, and another considerable decrease in the width of the flow line occurs where gas is taken off for delivery to Colorado Portland Cement Company at Portland, Colorado. The flow line is further reduced as deliveries are made to the City of Colorado Springs. A sharp reduction in the width of the flow line occurs at Denver, where deliveries are made to Public Service Company of Colorado. The flow line extending from Denver north, with numerous branches, indicates gas handled and sold by Colorado-Wyoming Gas Company. The flow line for this company decreases in size as deliveries are made to various customers, and terminates as a narrow line at Fort Warren, Wyoming. Fairly substantial reductions in the width of the flow line for Colorado-Wyoming Gas Company occur at the point where the gas is taken off for delivery to Colorado Portland Cement Company at La Porte, and at the Greeley-Johnstown-Great

Western Sugar Company lateral from which gas is delivered to Great Western Sugar Company and also to the distribution systems at Greeley and Johnstown, Colorado.

This diagram serves to graphically portray the relative volumes of natural gas delivered at various points and to various consumers along the pipe-line systems. For instance, the diagram shows that the largest delivery, 20,367,632 MCF, was made at Gray Junction, Oklahoma to Natural Gas Pipeline Company of America; the second largest delivery, 7,257,379 MCF, was made to Colorado Fuel and Iron Corporation at Pueblo, and the third largest delivery, 6,196,882 MCF, was made to Public Service Company of Colorado for resale in Denver.

The diagram also facilitates comparison of the volumes of gas delivered at the several points. For instance, among the many comparisons that can be made, the following are cited here:

(1) Deliveries to the Chicago Line are very nearly equal to deliveries to the Denver Line.

(2) Sales to Colorado Fuel and Iron Corporation at Pueblo are greater than deliveries at any other point on the Denver Line. Sales to Colorado Fuel and Iron Corporation were 1,060,497 MCF, or 17 percent greater than sales to Public Service Company of Colorado at Denver, the second largest delivery on the Denver Line.

(3) Sales by Colorado Interstate Gas Company to Colorado Portland Cement Company at Portland, Colorado, the second largest direct customer on the Denver Line, were 1,676,091 MCF, which is 220,537 MCF greater than the total volume of gas (1,455,554 MCF) sold by Colorado Interstate Gas Company to all distribution systems, except Public Service Company of Colorado.

(4) Sales by Colorado Interstate Gas Company to Colorado Fuel and Iron Corporation and Colorado Portland Cement Company, its two largest direct customers, were 8,933,470 MCF, which is approximately 10 percent more than Colorado Interstate's sales of 8,106,507 MCF to all distribution companies, including Public Service Company of Colorado.

(5) Colorado Interstate's total sales in the Arkansas Valley were 1,153,249 MCF. Of this total, 972,232 MCF, or 85 percent was sold to three direct customers, and the remaining 15 percent, or 181,017 MCF, was delivered to eight distribution systems. Deliveries to each of the three direct customers were greater than total deliveries to all eight distribution systems.

(6) Sales by Colorado Interstate Gas Company to the distribution system at Pueblo, a city of approximately 50,000 population served by a 16-inch pipe line, were 452,992 MCF, or only 9 percent more than sales by Colorado-Wyoming Gas Company to the distribution system at Cheyenne, Wyoming, a city of approximately 20,000 population served by a 6-inch pipe line.

(7) The largest single delivery by Colorado-Wyoming Gas Company is made from the company's Cement Branch line to the Colorado Portland Cement Company at La Porte. This sale was 864,390 MCF in 1939, and was greater than the sum of the deliveries to the two largest distribution systems served, Fort Collins and Cheyenne. Deliveries to the two cities totaled 751,068 MCF.

(8) Colorado-Wyoming's second largest outlet was the Greeley-Johnstown-Great Western Sugar Company branch line. Total sales from this line in 1939 were 467,691 MCF, of which 312,548 MCF or 67 percent was sold to Great Western Sugar Company, a direct customer, and 155,143 MCF or 33 percent was sold to the distribution systems at Greeley and Johnstown, Colorado.

The diagram also shows state lines and the approximate volumes of gas which crossed various state lines through facilities owned or leased by Canadian River Gas Company, Colorado Interstate Gas Company, and Colorado-Wyoming Gas Company. No gas measurements are made at state lines by any of the companies. The volume of gas shown as having crossed the Colorado-Wyoming state line is the sum of deliveries to Cheyenne and Fort Warren, or 430,362 MCF. The volume shown on the diagram as crossing the New Mexico-Colorado state line, 21,038,665 MCF, is the summation of the volumes of gas recorded as sold and used by Colorado Interstate Gas Company north of

that boundary. The volume of gas shown as crossing the Texas-New Mexico state line is the sum of the preceding figure, 21,038,665 MCF, the volume used at Clayton Compressing Station, 68,431 MCF, and the volume sold to Clayton Gas Company, 104,710 MCF, or a total of 21,211,806 MCF. The volume of gas shown on the diagram as crossing the Texas-Oklahoma state line, 20,367,632 MCF, is the amount sold by Colorado Interstate Gas Company to Natural Gas Pipeline Company of America, at Gray Junction, Oklahoma.

14. Description of the Facilities of an Assumed Denver Line Used and Useful in the Transmission of Resale Gas Only.

The witness Rhodes, as the evidence already abstracted shows, took part in the design and personally checked the design of the Denver Line as built. In his Exhibit 98 and his testimony from the stand he described the facilities of a line that would be required to transport *resale* gas only.

The transmission line, as built, was for both direct sale gas and resale gas. It is of 22-inch diameter from the Bivins Station to the Arkansas River in Colorado, and from there on into Denver it is of 20-inch outside diameter. Practically all of the direct sale gas leaves the line in the valley of the Arkansas River (Vol. XXII, p. 3150; O'Connor's Exhibits 138 and 138-A). Colorado Interstate has only two direct sale customers north of the junction of the 22-inch and the 20-inch lines. They are, first, the Colorado Portland Cement Company and, second, the City of Colorado Springs power plant (Rhodes, Vol. XXII, p. 3166). Colorado Interstate's contract with the Colorado Portland Cement Company under which respondent is only obligated to sell gas "from March to October, inclusive, and for longer periods each year by mutual agreement, if seller has gas and capacity available." (Rhodes, Vol. XXII, p. 3166; Exhibit 9.) On peak loads the supply to Colorado Portland Cement Company has been cut off completely (Rhodes, Vol. XXII, p. 3167; Exhibit 290, Beardsley, Vol. VII, p. 942-954; Vol. XCVIII, pp. 15202-15213). After reciting the foregoing facts, Rhodes stated:

> "It is obvious that the extra two inches in diameter south of the Arkansas River was installed primarily for

the purpose of handling this direct sale gas. The principles which governer the design of the present line thus require an all 20-inch Denver line for resale gas alone. These same principles require the 20-inch pipe for such an all 20-inch Denver line to be of the same weight as the 20-inch pipe in the present line north of the Arkansas River.

* * * *

"I might point out that in place of 86.60 pounds per foot for 20-inch pipe, we reduced it to 72.16 pounds per foot for 20-inch pipe which is the weight of the heavy 20-inch pipe north of the Arkansas; and in place of the 79.50 pounds per foot for 22-inch pipe, namely, the light pipe, we used 65.70 pounds, which is the same as the 20-inch pipe."

A line for resale gas alone would not only permit smaller, that is, 20-inch, outside diameter main line throughout its length and of lighter weight, but would also permit the elimination of the following laterals which are used solely in the delivery of direct sale gas:

"Table B

Laterals Not Needed for Resale Gas Alone.

	Length Feet	O. D. Inches	Lb. Per Foot
Colorado Fuel & Iron Branch	1,290	16	52.35
Portland Lateral	145,875	8⅝	18.25
Portland Lateral	2,205	8⅝	33.04
Fort Lyons Extension	25,255	6⅝	12.89
Fort Lyons Extension	2,000	6⅝	25.65
Santa Fe Shops Branch	7,277 (A)	4½	8.63
Harvey House Branch	2,787 (A)	2⅜	3.65
American Crystal Sugar Branch	9,634	6⅝	12.89
American Crystal Sugar Branch	1,105	4½	8.63

Note: (A) All but 2,066 ft. of 4½ in. disposed of in 1939."
(Exhibit 98, p. 3; Rhodes, Vol. XXII, p. 3151)

Likewise, the following laterals now used for both kinds of gas could be reduced in size when employed for resale gas alone:

"Laterals Reduced in Size for Resale Gas Alone.

	Length Feet	As Built O. D. Inches	As Built Lb. Per Foot	For Resale Gas O.D. Inches	For Resale Gas Lb. Per Foot
Pueblo Lateral	60,636	16	52.35	8⅝	18.25
La Junta Trunk	160,001	8⅝	18.25	6⅝	12.89
La Junta Trunk	269	10¾	54.00	8⅝	27.74
La Junta Extension	22,189	6⅝	12.89	6⅝	12.89
La Junta Extension	100	6¾	19.45	6⅝	19.45
Rocky Ford Branch	22,336	8⅝	18.25	6⅝	12.89
Las Animal Extension	2,052	8⅝	18.25	4½	8.63
Las Animal Extension	105,310	6⅝	12.89	4½	8.63
Las Animal Extension	595	6⅝	21.06	4½	8.63
Las Animal Extension	129	4½	8.63	4½	8.63"

(Exhibit 98, p. 4; Rhodes. Vol. XXII, pp. 3152, 3153)

Likewise, the following river crossing facilities could be reduced:

"River Crossing Reduced in Size for Resale Gas Alone

	Length Feet	As Built O. D. Inches	As Built Lb. Per Foot	For Resale Gas O. D. Inches	For Resale Gas Lb. Per Foot
Huerfano River	7 at 1,294	10¾	54.00	.....	.....
Huerfano River	6 at 1,294	.....	.....	10¾	54.00
St. Charles River	2 at 1,500	10¾	54.00	6⅝	25.65"

(Exhibit 98, p. 5; Rhodes, Vol. XXII, p. 3163).

A line built for resale gas alone would not require the following meter stations now used exclusively in measuring direct sale gas: One at Thatcher for the helium plant, U. S. Government; one at Fort Lyons Hospital, U. S. Government; one at American Crystal Sugar Company plant; one at La Junta for the Santa Fe Railroad shops, and one for the Harvey House; one at Colorado Portland Cement; and one main and four branch meters, C. F. & I. plant, Pueblo.

Since at times of peak demand the resale gas employs all of the compressor stations, no such compressor station could be eliminated on a line for resale gas alone. Rhodes stated:

"A 20 inch Denver line for resale gas alone developed under the same principles of design as the 22 inch line

actually built calls for compressor stations in the same locations and initially of the same size as those actually built." (Exhibit 98, p. 6; Vol. XXII, p. 3154.)

Additional facilities for such a "*resale line*" that would be made necessary by estimated future peak loads of resale gas are set forth hereinafter under Title 17, "Peak Load Obligations and Line Capacity of an Assumed Denver Line for Resale Gas Only, as Found Through the Winter 1939-1940, and as Estimated Through 1947, and Estimated Necessary Additional Facilities."

Further Testimony of WITNESS RHODES, on Cross-examination:

Q. Mr. Rhodes, what is the purpose of this exhibit?

A. It shows a description of what would have been built had we been considering only the gas sold for resale.

Q. As I understand it, your firm, Ford, Bacon & Davis, Inc., in 1928, in designing this line designed it for this dual load, both the domestic and industrial consumers, and the retail consumers?

A. That is correct.

Q. At that time did you make any study as to the possibility of constructing a line and the cost of constructing a line just to serve the resale customers?

A. No. At that time we did not make such a study.

(Vol. XXII, pp. 3163-3164.)

* * * * *

Rhodes testified further with reference to the scope of Exhibit 98:

A: "1. Scope of This Exhibit.

"The Denver line was planned, constructed and developed to take care of the markets both for gas to be sold for resale and for gas to be sold directly to the consumer. The line was designed by the Ford, Bacon & Davis, Inc. organization with final check and approval by me as Chief Engineer. The markets for gas sold for resale alone require a line of smaller capacity. This exhibit describes such a Denver pipe line system designed to supply this restricted market but otherwise following the same principles that govern the design and development of the pres-

ent pipe line system. This description is confined to those parts of such a system which differ from the system as actually developed.

"2. Pipe Size in the Main Trunk Line for Resale Gas Alone.

"The trunk line of the present system is of 22-inch pipe from the field to the Arkansas River and 20-inch pipe from the Arkansas River to Denver. Practically all of the direct sale gas is taken off from the main line in the Arkansas River Valley and all but a small fraction of the resale gas is handled through the 20-inch line north of the river.

"It is obvious that the extra two inches in diameter south of the Arkansas River was installed primarily for the purpose of handling this direct sale gas. The principles which governed the design of the present line thus require an all 20-inch Denver line for resale gas alone. These same principles require the 20-inch pipe for such an all 20-inch Denver line to be of the same weight as the 20-inch pipe in the present line north of the Arkansas River. The length and weight of pipe in such a Denver line in comparison with the length and weight of the corresponding pipe used in the present line are shown by Table A."

Q. Mr. Rhodes, if I may interrupt you here, please.

Mr. Dougherty: Will it be sufficient to let this table A go or have it copied in? Which is desired?

The Trial Examiner: I think as long as the table is contained in the exhibit, Mr. Dougherty, that will be sufficient. I don't think there is any necessity for him reading the tables.

By Mr. Dougherty:

Q. You may skip the tables, that table, at any rate, Mr. Rhodes.

A. I might point out that in place of 86.60 pounds per foot for 20-inch pipe, we reduced it to 72.16 pounds per foot for 20-inch pipe which is the weight of the heavy 20-inch pipe north of the Arkansas; and in place of the 79.50

pounds per foot for 22-inch pipe, namely, the light pipe, we used 65.70 pounds, which is the same as the 20-inch pipe.

"3. Pipe Size in Laterals for Resale Gas Alone"—

I will call attention to an error in the heading of Section 3 which I have just noticed. It should read: "Laterals not needed for resale gas alone."

The Trial Examiner: You would strike, Mr. Rhodes, the first three words?

The Witness: I would eliminate "Pipe Size in Laterals" and substitute for that "Laterals Not Needed."

The Trial Examiner: Very well.

Mr. Reporter, please make that physical correction in the record.

The Witness: May we go off the record?

The Trial Examiner: Yes.

(Discussion outside the record.)

The Trial Examiner: On the record.

Mr. Rhodes, will you make that statement now for the record?

The Witness: The subject of the third section should be: "Laterals Not Needed and Pipe Size in Laterals for Resale Gas Alone.

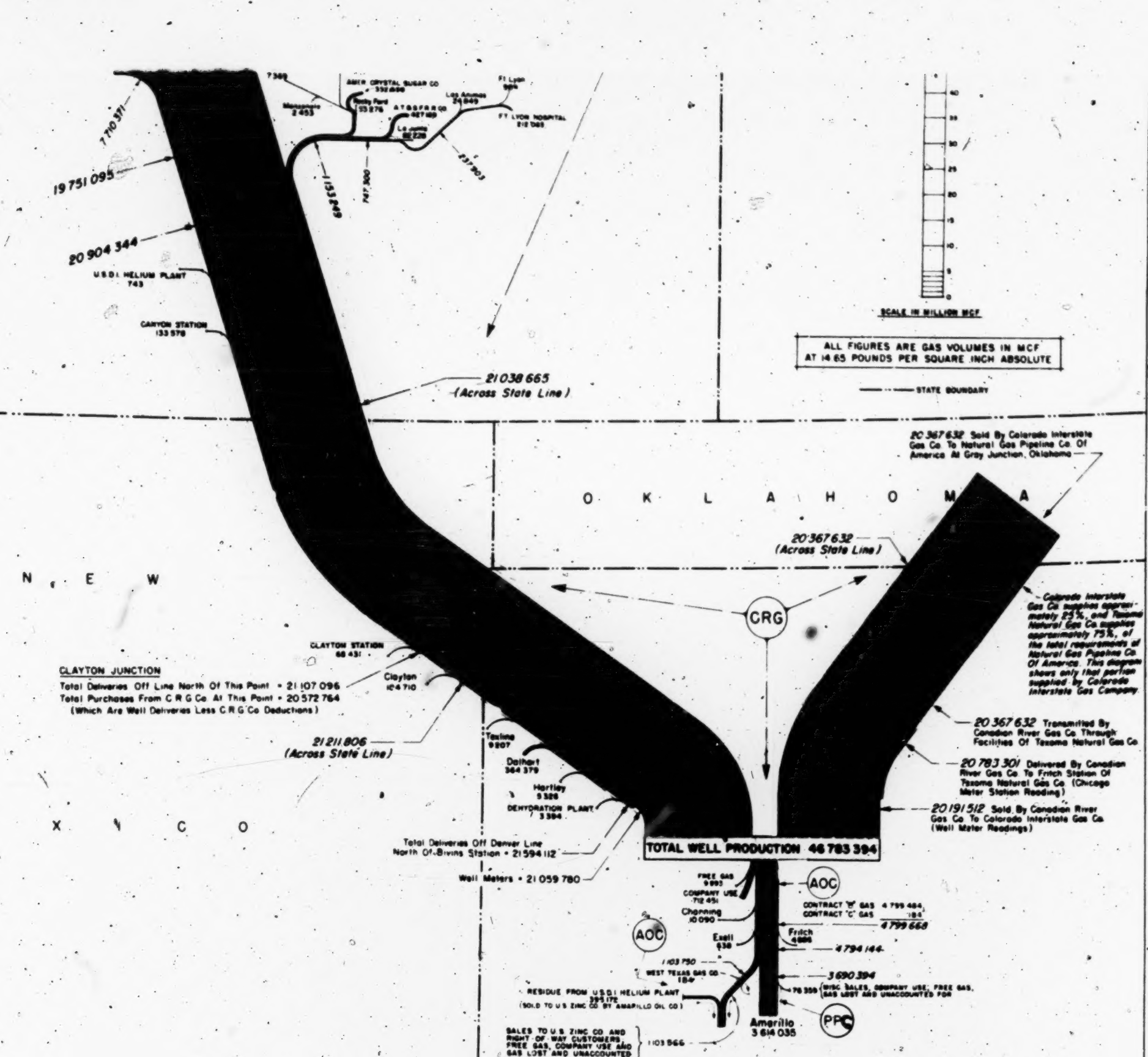
"A system built solely for resale gas has no need for the following laterals that are used solely in the delivery of direct sale gas."

Then there is Table B. I understand we don't need to have it read into the record.

The Trial Examiner: You don't need to read it.

The Witness: "Other laterals of reduced size are sufficient for the delivery of resale gas alone. Such laterals of reduced size for resale gas are shown below in Table C in comparison with the laterals used jointly for resale and direct sale gas:"

I then list Table C.


7 710 371
19 751 095
20 904 344
U.S.D.I. HELIUM PLANT 743
CANYON STATION 133 570
7369
AMER CRYSTAL SUGAR CO 392 696
Masterson 2 453
Ready Farm 13 276
A T & S F R R CO 487 180
Las Animas 24 849
Ft Lyon 984
FT LYON HOSPITAL 212 069
Las Animas 88 228
133 249
747 300
237 903
21 038 665
(Across State Line)
SCALE IN MILLION MCF
ALL FIGURES ARE GAS VOLUMES IN MCF AT 14 65 POUNDS PER SQUARE INCH ABSOLUTE
STATE BOUNDARY
20 367 632 Sold By Colorado Interstate Gas Co To Natural Gas Pipeline Co Of America At Gray Junction, Oklahoma
O K L A H O M A
20 367 632
(Across State Line)
N E W
CRG
Colorado Interstate Gas Co supplies approximately 25%, and Texoma Natural Gas Co supplies approximately 75%, of the total requirements of Natural Gas Pipeline Co Of America. This diagram shows only that portion supplied by Colorado Interstate Gas Company
CLAYTON STATION 68 431
Clayton 104 710
CLAYTON JUNCTION
Total Deliveries Off Line North Of This Point = 21 107 096
Total Purchases From C R G Co At This Point = 20 572 764
(Which Are Well Deliveries Less C R G Co Deductions)
21 211 806
(Across State Line)
Texline 9 807
Dalhart 364 379
Hartley 9 526
DEHYDRATION PLANT 3 384
20 367 632 Transmitted By Canadian River Gas Co Through Facilities Of Texoma Natural Gas Co
20 783 301 Delivered By Canadian River Gas Co To Fritch Station Of Texoma Natural Gas Co (Chicago Meter Station Reading)
20 191 512 Sold By Canadian River Gas Co To Colorado Interstate Gas Co (Well Meter Readings)
X C O
Total Deliveries Off Denver Line North Of Bivins Station = 21 594 112
Well Meters = 21 059 780
TOTAL WELL PRODUCTION 46 783 394
FREE GAS 9 893
COMPANY USE 712 454
AOC
CONTRACT "B" GAS 4 799 484
CONTRACT "C" GAS 184
4 799 668
Channing 10 090
AOC
Exell 638
Fritch 4 806
4 794 144
1 103 750
WEST TEXAS GAS CO 184
3 690 394
RESIDUE FROM U.S.D.I. HELIUM PLANT 395 172
(SOLD TO U.S. ZINC CO BY AMARILLO OIL CO)
78 350
MISC SALES, COMPANY USE, FREE GAS, GAS LOST AND UNACCOUNTED FOR
Amarillo 3 614 035
PPC
SALES TO U.S. ZINC CO AND RIGHT OF WAY CUSTOMERS FREE GAS, COMPANY USE AND GAS LOST AND UNACCOUNTED
1 103 566

"Laterals of the reduced diameter shown above are consistent in size with the laterals already serving communities in which the market for resale gas fixed the size. For instance, the reduced Pueblo Lateral is the same size as the Colorado Springs Lateral whose size was fixed by the resale gas requirements.

"4. River Crossings for Resale Gas Alone.

"The Arkansas River crossing is a part of the 20-inch line north of the river. It supplies the gas carried by that line. It comprises six 10-¾-inch lines, the aggregate flow capacity of which is practically identical with that of the 20-inch pipe. The Huerfano River crossing in the present 22-inch line has seven 10-¾-inch lines instead of the six lines in the Arkansas River crossing. The seventh line is not required in all 20-inch Denver line for resale gas alone.

"The 16-inch Pueblo Lateral now handling both direct sale and resale gas crosses the St. Charles River with two 10-¾-inch lines. The 8-⅝-inch Pueblo Lateral required for resale gas alone requires only two 6-⅝ lines in this same river crossing.

"All other river crossings are of capacity none too great even for a 20-inch line and are required as installed in an all 20-inch Denver line. The loop lines at the Huerfano and Apishapa Rivers and the Sand Creek were installed as insurance against washouts and are required as installed in an all 20-inch Denver line. The river crossings of reduced capacity required in an all 20-inch Denver line for resale gas alone are shown in Table D in comparison with the river crossing lines as actually installed:"

Then follows Table D.

"5. Meter Stations Not Needed for Resale Gas.

"Denver line built for resale gas alone would not require the following meter stations which are used solely for the measurement of direct sale gas:"

Then follows Table E.

"6. Compressor Stations on a 20-inch Denver Pipe Line for Resale Gas Alone.

"A 20-inch Denver line for resale gas alone developed

under the same principles of design as the 22-inch line actually built calls for compressor stations in the same locations and, initially of the same size as those actually built. Such sizes are—Bivins, 3,000 hp.; Clayton, 3,000 hp.; Canyon, 3,000 hp.; and Devine, 2,000 hp.

The capacity of the 20-inch line is most effectively increased in later stages of development by the installation of intermediate booster stations when the ultimate capacities required are commensurate with the expected future resale domestic and regular industrial obligations. Such a step involves installing a 3,000 hp. booster station at Dalhart, an 1,800 hp. booster station near the Cimarron River about midway between Clayton and Canyon, an 1,800 hp. booster station near the Apishapa River about midway between Canyon and Devine and a third booster station of 1,800 hp. near Colorado Springs (later referred to as the 'Springs' station) together with an increase in capacity of the Devine station to 3,200 hp. Vertical 600 hp. multicylinder two cycle engines such as those recently installed in the line are suitable for such booster and peak load service.

"The final stage of development required for the later years involves increasing the capacity of the Dalhart, the Clayton, the Cimarron and the Apishapa stations by 1,200 hp. each.

"In the Bivins station 3,000 hp. is sufficient for resale gas until 1941 when one 600 hp. unit in the present building is required to offset falling suction pressures. A second 600 hp. unit is required to be installed in the present building in 1942. In 1943 three more such units are required in a new building in anticipation of a 150-pound suction pressure.

"The gross net pipe line flow capacities of the several stages of development computed for the geographical load distribution of the resale domestic and regular industrial obligations are shown by Table F. Gross capacity is that with all compressor units in operation. Net capacity is that with the largest unit in each station out of commission. These flow capacities are shown in terms of salable output on the one hand and line input including fuel on the

other hand. The capacities are shown for the whole system north of Bivins and for Colorado Interstate's system north of Clayton."

I believe there is nothing about Table F that I need explain at this time.

"7. Peak Load Obligations and Line Capacity of a Denver Pipe Line for Resale Gas Alone.

"Table G which follows on Page 10 shows in the second and third columns, year by year (a) the total domestic and domestic and regular industrial peak load obligations and (b) the total peak load obligations on account of resale gas, for the entire Denver pipe line in January and February of that year. These obligations cover those actually developed in the past as well as those expected in the future. The figures are based on an exhibit already presented entitled 'Development of Peak Load Obligations and Line Capacity of the Denver Line.'

"The last two columns show the gross and the net continuous pipe line flow capacities in terms of salable output required for a program of development following the same principles as to relation between obligations and line capacity as governed the development of the line actually built. These figures were taken from Table F and are set down to the nearest 1,000,000 cubic feet per day."

In this Table I will call attention to the fact that the capacity is first shown as that with only the Bivins station alone. That capacity, when rounded out, corresponds to the stage of expansion called Initial Expansion in Table F, and the next figure of 62,000,000 "Gross With All Engines Running" corresponds to the first stage of expansion as shown in Table F, and each of the sub-headings increases in flow capacity corresponds with the corresponding stages of the development.

"The following Table H shows the maximum daily volumes of gas required from Canadian River Gas Company to meet full load requirements of a 20-in. Denver line for resale gas alone. These requirements are shown in Mcf. per day at the average pipe line sales pressure base of 13.0 pounds per square inch absolute and also in Mcf. per

day at the field pressure base of 16.4 pounds per square inch absolute. The capacity input to the line from the Bivins station is shown and also the capacity input to the Clayton station for transportation to and sale at points north."

By Mr. Dougherty:

Q. Mr. Rhodes, if you will, turn to Page 4 of Exhibit No. 98 under the heading 4. You refer to the Arkansas River crossing. You say that it consists of six lines each of which is 10-¾-inches in diameter. In your statement there with respect to the aggregate flow capacity of that it says:

"* * * practically identical with that of 20-inch pipe."

Now, by that do you mean that all of these six 10-¾-inch lines together have an aggregate flow capacity of one pipe that would be 20 inches in diameter?

A. That is right for the same pressure drop in crossing the river.

Q. Why is it that one pipe 20 inches in diameter has a gross capacity that is so many times greater than, say, the pipe that is substantially one-half of the diameter of it?

A. There are two reasons. One reason is, of course, the cross-sectional area of the 20-inch pipe is about four times the cross-sectional area of the 10-inch pipe. That would amount to a 4 to 1. In addition to that, as pipes grow larger the coefficient of friction grows smaller, the combined effect of which, doubling the diameter, increases the capacity to carry gas about six times.

Q. Does that same principle explain why a pipe line that is only two inches in diameter greater than that that exists north of the Arrkansas River is able to take care of industrial sales delivered to the Colorado Fuel & Iron Company?

A. Yes, that is true. The flow capacity of the 22-inch line, namely 10 per cent bigger in diameter, is approximately 30 per cent greater than that. In other words, the 22-inch line for exactly the same pressure drop would carry almost 30 per cent more gas, between 25 per cent and 30 per cent. I can't read the chart accurately enough for that.

Q. Is the formula which you used, which you apparently referred to on a chart there, one that is accepted in the natural gas industry as being an accurate and appropriate method of determining pipe line flow capacity?

A. Yes, that is the basis of the Weymouth formula, which is almost in universal use.

Q. That is the formula by Thomas L. Weymouth, the gas engineer?

A. That is true.

Q. As I understand the study which is embodied in this Exhibit 98, is in effect what would have been required if this pipe line were projected only to sell gas to the various public utility companies for distrbution for all purposes by them?

A. That is true, but with the further point that it is the pipe line that would have been built with the same design principles which were used in designing the line as actually built.

Q. As I understand it, you have not attempted to make a reproduction today—not a "reproduction" but a line design as of today of that system?

A. That is true.

Q. You have built this exhibit up on a pipe line project on the basis had it been constructed in 1928 to take care only of the gas sold by Colorado Interstate Gas Company for resale and also whatever is sold between the Bivins station and Clayton?

A. That is correct.

Mr. Dougherty: That is all of the direct we have.

The Trial Examiner: Mr. Dougherty, do you wish to identify this sheet of paper with the exhibit at this time?

Mr. Dougherty: Yes. I want to ask Mr. Rhodes a question about it first.

(Discussion outside the record.)

Mr. Dougherty: There has also been a statement prepared titled "Peak Months Deliveries at Clayton, New Mexico for Colorado Interstate Gas Company's Requirements of Gas Sold for Resale, 1928 to 1947, inclusive," which I would like to have marked for identification as Exhibit No. 99.

The Trial Examiner: It will be marked for identification as Exhibit No. 99.

(Exhibit 99, Witness Rhodes, marked for identification.)

By Mr. Dougherty:

Q. Have you had that statement prepared under your supervision, Mr. Rhodes?

A. Yes, I have. These figures are for the average month of 31 days—I mean the maximum month of 31 days, and the average days in that month are commensurate with the figures shown in Table H in Exhibit 98.

Q. That is the last column of Table H in Exhibit No. 98?

A. The last column of Table H in Exhibit 98 shows the line capacity at Clayton north and this Exhibit 99 shows the average day and the maximum month for the resale of gas in the same years.

Q. I assume that, of course, is something entirely different than during the peak month or any peak day?

A. Yes. The peak day during the peak month is likely to be fully 50 per cent higher than the average day in the peak month.

Q. Do the figures on Exhibit 99 relate, as you state, only to the gas delivered at Clayton for the Colorado Interstate Gas Company, which in turn the Colorado Interstate Gas Company sells to the Public Service Company of Colorado for distribution?

A. It is solely gas sold for resale by the public utility.

Q. Included in that term of "public utility" is termed the municipality of Colorado Springs, is that correct?

A. Yes.

Q. Exhibit No. 79, statement showing the volumes of gas produced in peak months and average daily deliveries in peak months, shows in Column 1: "Peak Month Deliveries" under the heading of "Colorado Interstate Gas Company, Clayton, New Mexico" and then in parenthesis "Denver Line."

That column, I take it, includes not only the quantities of gas that you have shown on Exhibit No. 99 but all gas which Colorado Interstate Gas Company buys at Clayton for sale to the direct industrial customers?

A. That is correct. Mr. Lusk's exhibit shows all of the

gas that goes up the line, whereas this Exhibit No. 99 shows only the resale gas.

Q. And is that same situation true with respect to the figures which are contained in Exhibit No. 66 which is your exhibit referred to as the "Development of Peak Load Obligations"?

A. That is true. My Exhibit No. 66 deals with all of the gas but it breaks it down into considerable detail.

Q. Are these figures on Exhibit No. 99 actual peak month deliveries for the past or at least the average days or computed from that as distinguished from what you referred to as the peak load obligations in Exhibit No. 66 or are these on Exhibit No. 99 the peak load obligations for that month?

A. These figures in Exhibit No. 99 are based on actual deliveries of gas in the maximum months from 1939 back, and estimated future maximum months from 1940 to 1947 that are based on the estimated future sales.

(Vol. XXII, pp. 3149-3163.)

* * * * *

Q. Now, Mr. Rhodes, you have made a careful study of this, I am sure. What size line would you recommend just to take care of the direct industrial consumers?

A. I have never given any consideration to the size of line which would be required by that business because long distance transmission lines ordinarily can't be built economically for these large consumers to whom gas has to be sold at a very low price.

Q. Well, Mr. Rhodes, if you haven't given any study to what size line would be necessary to serve these direct industrial consumers; then just why did you give so much study to the size of line which would be required to take care of these resale consumers?

A. So we would know what size line would be required to handle this particular class of business.

Q. Don't you think that it is—in order to present a fair and complete picture here, you would have to present a companion study which would show just exactly the size of the line you would need to take care of the direct industrial consumers?

A. Why, not at all, because I previously testified that

we wouldn't have built a line up here to serve them in the first place.

Q. You wouldn't have built a line to the Colorado Fuel & Iron to serve it if you hadn't had the Denver load, would you?

A. That's what I just said. Pipe lines are built to serve combinations of industrial and domestic business, but the long lines are really built solely to serve the big industrial consumers particularly when you build your line right into a coal mining territory.

Q. Yes, about the only place where a line just for the benefit of large industrial consumers would be really feasible would be where the industrial consumer is located in some proximity to the source of supply like the American Smelting & Refining Company refinery there in the Amarillo field?

A. Yes, or where the industrial consumers are located at a point more remote from any source of fuel than the gas field.

Q. How long would it take you to make a computation according to your formula there as to what size you would need if you just had the direct industrial customer load?

A. Well, in designing a line you have to design a line to serve this business economically, and I don't believe I can design a line as a companion to this line which could serve the direct sale gas economically.

Q. Of course, you could do it from an engineering standpoint leaving out the economic phases of it, couldn't you?

A. Well, we have to consider the economics of it in the engineering design.

Q. I was just asking the question from an engineering standpoint, just exactly from an engineering standpoint, just exactly what size line you would need to take care of this direct sale industrial load. How long would it take you to compute that?

A. I can give you approximately a size of line which would carry the load under like pressure conditions of this line. That's no job. I can read that off a piece of paper, but it wouldn't design the line. Roughly speaking, it would be a 12-inch line.

Q. A 12-inch line would take care of all the peaks of the complete direct industrial load?

A. It could be made to do so.

Q. It could be made to do so?

A. Yes. I'm just giving you an approximate size of line. Now, there is a great deal more to a pipe line than the diameter of a pipe.

Q. In other words, it could be made to do so. By that you mean that there could be enough pressure put on that small line to push the gas through?

A. It is a matter of how much power you use.

Q. Yes, but, of course, it would be uneconomical to apply the pressure that would be necessary to apply in that 12 inch line?

A. No, I don't think so, but the whole business would cost more to get the gas to Pueblo, for instance, than the Colorado Fuel & Iron would be willing to pay for it.

Q. How many compressor stations would you have to have? Would your have to have more than you do now?

A. I don't know.

Q. It would take quite a bit more compressing stations to build up the pressures necessary to push gas through that 12 inch line, wouldn't it?

A. It might. It's not quite as simple as that.

Q. Well, then, in your opinion would it be necessary to have more compressing stations than you have now, or less?

A. Probably more.

Q. Of course, if you made that a 20 inch line, it would be better from an operating standpoint, wouldn't it?

A. I don't know as it would.

Q. Well, it would, wouldn't it? Would it?

A. Of course, if you made the line big enough you wouldn't have to pump the gas at all, you could run it right from the wells. It is easier to run that kind of a line than one with pumping stations, to be sure.

Q. Of course, you would want to build a line which would be most practical from an engineering standpoint. Would a 20 inch line be more practical from an engineering standpoint than a 12-inch line?

A. Not for that business.

Q. Would you recommend a 12-inch line or a 20-inch line?

A. Well, it certainly wouldn't be a 20-inch line, and as

I state, a 12-inch line—what it would be would be the result of a considerable economic study as to what is the best kind of line to build to handle that business.

Q. You wouldn't want to recommend at this hearing here at this time without additional study that a 12-inch line would take care of this industrial load, would you?

A. No, I wouldn't be willing to recommend any size of line without a very considerable study and probably my indications at the present time would be not to build a line, if that is all the business you had.

The Trial Examiner: The first of that is true, isn't it, Mr. Rhodes? You wouldn't build a line for the sole purpose of serving resale customers; that is, the average resale customer, we'll say, that has a large domestic load and a very few industrial customers?

The Witness: Well, that isn't so clear, because the total volume of business is enough so that you can get the advantage of the big increase in capacity with a small increase in pipe diameter. You see, roughly speaking, it would only cost about 50 per cent more for a 20-inch system than for a 12 inch system, and it will carry two to three times as much load.

The Trial Examiner: Yes, but what I mean is: If you were to connect no industrial customers at all, you would give it considerable study before you would construct a pipe line such as this pipe line?

The Witness: It is very difficult to justify any long pipe line purely for domestic consumers. You don't get enough use out of the capacity that you have to provide. Ordinarily, you wouldn't get on the average more than 25 or 30 per cent use of that capacity which makes it difficult to justify it.

The Trial Examiner: You may proceed, Mr. March.

By Mr. March:

Q. Mr. Rhodes, you have both industrial consumers and domestic consumers on your resale load, do you not?

A. Yes.

Q. Now, let's see, let's turn to Page 7. You state here

regarding suction pressures—I'll read the statement for the record here on Page 7:

"In the Livins station, 3,000 horsepower is sufficient for resale gas until 1941 when one 600-horsepower unit in the present building is required to offset falling suction pressures. A second 600-horsepower unit is required to be installed in the present building in 1942. In 1943 three more such units are required in a new building in anticipation of a 150-pound suction pressure."

Now, I know that we have discussed the suction pressure to a limited extent heretofore, but I want to know how you arrived at your conclusion that by 1943 the suction pressures would reach 150 pounds.

A. It is purely a matter of judgment in watching the way gas fields have been operated, that it would be necessary to have that pressure pulled down to about 150 pounds in the near future to make it easily possible to handle the gas field. I reached that conclusion myself and later talked it over with Max Watson and found that he had reached the identical conclusion at almost the same identical time. It is a matter of having enough difference in pressure between your station and your operating wells to have a convenient means of controlling and dispatching the variations in your load.

Q. If your suction pressure is going to be 150 pounds by 1943, what would be your well pressures?

A. I don't know.

Q. You didn't give that any consideration?

A. No.

Q. That has nothing to do, then, with the declining pressures of the field?

A. Only indirectly.

Q. Well, how, indirectly?

A. Well, as the field pressures go down, naturally the pressure at the compressor stations go down, but I have found it in my experience in watching the behavior of certain other fields with big wells in it, like this field, that it is rather difficult to maintain such pressures of very much over a third of the well pressures and still have the ability to control properly the delivery of gas into the pipe lines.

Now, this 150 pounds which I have taken here is considerably over a third of the virgin pressure of the wells.

Q. What field have you got in mind?

A. I had in mind the Monroe gas field in Louisiana which is a field very similar to this in that it has large wells of 15 or 20 million feet a day, and also the Richland gas field which is near the Monroe gas field and has since been exhausted. In the case of those fields, at the present time with the average well pressures probably—oh, four or five hundred pounds, the compressor stations are running with suction pressures of a hundred pounds or less.

Q. The well pressures are over 400 pounds and the suction pressure less than 100 pounds?

A. Yes.

Q. What has been your experience in observing pressures in the Panhandle field?

A. What?

Q. What has been your experience and your observations in the Panhandle field, the relation between the well pressures and the suction pressure?

A. I haven't made any particular study of that, except as I say, I reached certain conclusions that Mr. Watson completely confirmed when I talked with him about it.

Q. In other words, you are not familiar with the behaviors of the pressures in the Panhandle field?

A. I haven't studied them in detail. I have been familiar with the Panhandle field for more than ten years, but I haven't been operating in the field.

Q. Do you know what the present suction pressure is at the Bivins station?

A. Oh, it varies. I think they are able to keep it up to pretty close to 250 pounds right now.

Q. Do you know what the present average well pressures are, approximately?

A. Whose well pressures?

Q. The present average well pressures in the Panhandle acreage—I mean, the Canadian River acreage in the Panhandle field.

A. Something over 350 pounds.

Q. You don't have in mind the exact figure?

A. Not the exact figure.

Q. If 150 pounds suction pressure would be reached by 1943, then how long would it take to reach, and what will happen by 1947?

A. Why, I think the pressures can probably be held at 150 pounds with increasing difficulty. It is difficult to operate properly unless you have a large margin of pressure between the wells and the delivery points at your compressor stations and they have been working under too narrow a margin recently.

Q. How low do the suction pressures have to go before it is uneconomical to operate?

A. I don't know. I haven't figured that out.

Q. You haven't given that any consideration?

A. No.

(Vol. XXIII, pp. 3210-3219.)

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15. Volume Sales and Revenues of All Gas and of Resale Gas Only, Colorado Interstate, 1928 to 1939, Inclusive, and As Estimated, 1940 to 1947, Inclusive.

Lusk in his Exhibit 43 and in his testimony with respect thereto (Vol. VI, pp. 751-758, 769-778; Vol. IX, pp. 1249, 1250) gave a complete statement of the volume of all kinds of gas sold by both Canadian and Colorado Interstate companies off the Denver line and the revenues derived therefrom 1928 to 1939 inclusive. Beardsley, superintendent since June, 1928 of that department of Colorado Interstate's business charged with gas measurements and the estimates of future sales and gas engineering work, (Vol. VII, pp. 942, 943) assembled the data which FB&D put together as Exhibit 56. In this exhibit and Beardsley's testimony with respect thereto (Vol. VII, pp. 942-1019) are shown estimated future volume sales and revenues therefrom from both companies off this line for the years 1940 to 1947 inclusive. Each exhibit shows volumes on the pressure bases specified in the sales contracts. Other exhibits, some offered by the companies and some by the Commission's witnesses, adverted to past and future volume sales and revenues. The Commission's exhibits do not express the volumes on the contract pressure bases but use 14.65 lbs. per square inch absolute. When the volumes in the several exhibits are reduced to a common pressure basis there is no real con-

fject. These additional exhibits are: 5, 59, 60, 63, 72, 138, 138-A, 226, 226-A, 262, 290, 293, 300 and 307.

Past and estimated future volume sales of Colorado Interstate may be shown as follows:

Mcf. at Contract Pressure Base.

Year Ended Dec. 31	Resale		Direct Sales— Industrial
	Resale— Domestic	Resale— Industrial	
Actual	(1)	(2)	(3)
1928 (7 mo.)	1,159,569	36,695	2,521,748
1929	3,534,927	776,291	8,312,075
1930	4,765,312	2,104,748	8,364,550
1931	5,304,294	3,059,558	7,891,809
1932	5,596,415	3,291,578	6,999,294
1933	4,794,896	2,474,304	7,591,289
1934	4,526,432	2,898,583	8,121,103
1935	5,283,663	3,446,361	8,188,473
1936	5,813,113	4,172,804	11,944,737
1937	6,588,670	4,869,301	11,535,110
1938	6,617,591	4,436,487	9,504,897
1939	6,818,497	4,779,576	11,663,832
Estimated Future			
1940	7,575,000	4,880,380	11,018,800
1941	8,073,000	5,417,400	11,873,800
1942	8,413,000	5,604,500	11,898,800
1943	8,718,000	5,771,600	11,523,800
1944	9,021,500	5,940,200	11,548,800
1945	9,322,500	6,106,300	11,573,800
1946	9,322,500	6,106,300	11,573,800
1947	9,322,500	6,106,300	11,573,800

Column 1 is found as Column 7, Statement A-5, Exhibit 56.
Column 2 is found as Column 8, Statement A-6, Exhibit 56.
Column 3 is found as Column 3, Statement A-4, Exhibit 56.

The only apparent conflict between the above stated volume sales and that shown in any other exhibits is on Schedule 1 of the Commission's exhibit 293 prepared by the witness, O'Connor. There he estimates for the year 1941 *direct* sales by Colorado Interstate to industrial customers in the total amount of 11,540,700 Mcf. on a 14.65 lbs. per square inch absolute basis. Beardsley, for the company, estimated, as shown above, direct sales to industrial customers for that year in the total amount of 11,873,800 Mcf. on the pressure bases specified in the contracts. The variation in the pressure bases accounts in part for the difference in volume figures. The difference in these two estimates is further accounted for in this way: Beardsley included in his figure the amount expected to be sold to the Municipal Power plant at Colorado Springs as an industrial customer, which it is under the contract between the Colorado Interstate and the City of Colorado Springs, (see Exhibit 7-E, pp. 3, 4) whereas O'Connor included this sale in the estimated amount of 470,000 Mcf. on a 14.65 basis as a sale for resale to utilities.

Hendee, general manager of both Canadian and Colorado Interstate, stated that Beardsley for a long time past had been making estimates in the ordinary course of his duties with the companies as to future sales. Such estimates were used in making additions to the compressor stations and other plant and for corporate purposes wholly unconnected with any rate case. He stated that on the basis of such estimates as to future volumes made by Beardsley in the past Canadian had installed a new compressor station at Dalhart and enlarged its existing station at Bivins and that Colorado Interstate had made additions to its stations at Canyon and Devine (Vol. VIII, pp. 1083-1085). From the several exhibits above enumerated, particularly Beardsley's 56 and Lusk's 43, the following statement of Colorado Interstate's revenues from gas sales for past years and as estimated 1940 to 1947 inclusive and miscellaneous rentals may be made as follows:

Calendar Year	Resale Gas		Direct Sale Gas	Rentals
	Domestic Gas	Industrial Gas		
	(1)	(2)	(3)	(4)
Actual				
1928(A)	$ 462,770	$ 8,006	$ 358,785	453
1929	1,404,805	146,432	1,086,425	1,672
1930	1,829,854	338,588	1,105,289	4,199
1931	1,955,392	472,647	971,640	5,702
1932	2,042,631	505,479	858,480	5,150
1933	1,738,060	377,686	934,408	5,350
1934	1,630,312	413,875	980,293	5,493
1935	1,834,747	470,776	987,121	5,520
1936	1,972,331	565,588	1,406,657	6,818
1937	2,218,471	652,901	1,343,411	6,382
1938	2,224,598	607,144	1,083,395	8,088
1939	2,297,015	641,368	1,370,849	8,787
Estimated				
1940	2,556,900	645,743	1,276,525	8,800
1941	2,724,975	699,282	1,389,266	8,800
1942	2,841,775	724,277	1,392,016	8,800
1943	2,945,775	747,492	1,340,566	8,800
1944	3,057,500	770,243	1,343,316	8,800
1945	3,192,600	789,574	1,346,066	8,800
1946	3,192,600	789,574	1,346,066	8,800
1947	2,192,600	789,574	1,346,066	8,800

Column 1 is found as Column 7, Statement B-5, Exhibit 56.

Column 2 is found as Column 8, Statement B-6, Exhibit 56.

Column 3 is found as Column 3, Statement B-4, Exhibit 56.

Column 4 for the years 1928 to 1938 inclusive corresponds to Line 4, Statement C-1, Exhibit 43 and the figures therein for 1939 to 1947 inclusive were given in testimony by the Witness, Lusk, in Vol. XLIX, p. 6737, et seq. There he stated that the rentals in respect to sales of gas of all kinds would be as shown in Column 4 for the years 1940 to 1947 inclusive and that in respect to resale gas alone the figures would be for 1939, $9,843 and for each of the years 1940 to 1947 inclusive they would be $9,856.

16. Peak Load Obligations and Line Capacity of the Denver Line as Found Through the Winter 1939-40, and Estimated Through 1947, and Estimated Necessary Additional Facilities.

The Denver Line, as the evidence already abstracted shows, was designed and constructed by FB&D. The witness, Rhodes, as chief engineer, checked each item of the design. (Vol. XXII, pp. 3149, 3150. Ex. 98, p. 1.) It was necessary to estimate volumes, peak loads and line capacity prior to construction. (Vol. IX, p. 1191.) Preconstruction estimates have been closely borne out. (Vol. IX, pp. 1194, 1195.) For this case he took the record through the winter 1939-1940 and estimated, first, the peak load obligation; second, the line capacity, with estimated additional compressors; and then compared the two through 1947. This study was admitted herein as Exhibit 66. For such study he considered all volumes, loads and deliveries of the Denver Line north of the Bivins compressor station.

As to peak loads he said: "I took the figures that are shown by the books and records of the company as having been delivered to the various consumers on the peak days." (Vol. IX, p. 1181.) He expressed all peak load obligations in "cubic feet per day at the contract basis pressures provided for in the several gas sales contracts. The average base pressure closely approximates 13.0 pounds per square inch absolute." (Ex. 66, p. 1.). These contract bases are shown in Exhibit 59 and, of Colorado Interstate's contracts, six are at 13.2; three are at 12.9; and two, for negligible volume sales; namely to Arkansas Valley Natural Gas Company and to the United States Department of the Interior, are at 12.25 and 12.4 respectively. When weighted for volumes the average approximates 13.0, and the amount of any individual contract base does not vary therefrom by more than 1% to 2%. (Vol IX, pp. 1180, 1181.)

For this study he also considered the priority of domestic over industrial gas specified in each of the sales contracts already abstracted above. No difficulty was encountered in separating out all direct sales of industrial gas, namely: to American Crystal Sugar Company, The Atchison, Topeka and Santa Fe Railway Company, The City of Colorado Springs for its power plant, The C. F. & I.,

The Colorado Portland Cement Company and the United States Government for its Fort Lyon Hospital and for the helium plant at Thatcher. (Ex. 59.) He was also able to separate out the gas sold to distributing companies for resale to special industrial customers, all these being large consumers with daily meter readings available. As to gas sold to the distributing companies for resale to small industrial consumers, called regular industrial customers, he included the amount sold them along with gas sold to domestic users, since the amounts were small and none of them had daily meter readings. (Ex. 66, p. 1.)

The final result of his study is presented as Table X, Page 21 of Exhibit 66, as follows:

Development of Peak Load Obligations and Line Capacities of the Denver Pipe Line.

Mcf. Per Day at Contract Pressure Base

Calendar Year	Peak Load Obligations: Domestic and Regular Industrial	Peak Load Obligations: Total All Classes of Gas	Line Capacity Provided: Net With Spare Engines Out	Line Capacity Provided: Gross With All Engines Running
Actual				
1929	24,454	58,061	70,000	80,000
1930	44,258	89,578	70,000	80,000
1931	56,180	102,737	90,000	108,000
1932	59,025	104,219	90,000	108,000
1933	53,497	91,439	90,000	108,000
1934	48,926	95,974	90,000	108,000
1935	52,266	94,799	90,000	108,000
1936	56,272	113,096	90,000	108,000
1937	63,514	118,563	90,000	108,000
1938	67,366	105,916	90,000	108,000
1939	73,540	133,771	90,000	108,000
1940	79,929	140,926	90,000	108,000
Estimated Future				
1941	89,664	146,996	100,000	124,000
1942	94,092	151,711	100,000	124,000
1943	98,068	155,943	108,000	125,000
1944	102,027	160,161	108,000	125,000
1945	105,952	164,341	108,000	125,000
1946	105,952	164,341	108,000	125,000
1947	105,952	164,341	108,000	125,000

As this same method of determining the peak load obligations and their significance underlies the evidence hereinafter abstracted under the section entitled "Apportionment of Property and Expenses between Direct and Resale Gas, Denver Line" (Rhodes' Exhibit 346, "Methods of Apportioning Costs of the Producing and Gathering Facilities of Canadian River Gas Company and of the Denver Line Between Resale Gas and Direct Sale Gas, 1928 to 1947 Inclusive"), we do here abstract the method and intermediate steps employed in arriving at the results set forth in Table X.

In order to show the effect of weather on the domestic demand, he took the two warm months in the year 1938, during which period the average daily demand was 9,300,000 cubic feet. He then took the two coldest months of the winter of 1938-39, during which period the average daily demand was 32,400,000 cubic feet, the difference between the two average daily demands being 23,100,000 cubic feet, accounted for by cold weather.

The use of gas for house heating begins in some form when the mean temperature falls below 65 deg. F., and such use increases practically in direct proportion as the mean temperature falls below 65 deg. F. The amount by which the mean temperature in any day falls below 65 deg. F. is called the "degree day deficiency" for that day. For instance, if the mean temperature in any day is 55 deg. F., there are 10 degree days deficiency, and when the mean temperature is 45 deg. F. there are 20 degree days deficiency (p. 1154). The sum of the daily degree days deficiency during any period is known as the "total degree days deficiency" for that period. In the Exhibit "degree days deficiency" is abbreviated to "Ddd".

He determined that for the two warm months the average temperature depression Ddd per day was zero and for the two cold months there was 35 Ddd, and by dividing 35 into 23,100,000 he arrived at 660,000 cubic feet per Ddd as representing the increased load due to depression in temperature for one day. He then (p. 1155) developed the maximum domestic obligation for the winter 1938-39 in Table B as follows:

	Cubic Feet
(a) Average daily demand in two cold months at an average temperature depression of 35.0 Ddd.	32,400,000
(b) Increase in daily demand at 15.0 deg. F. below zero with a total temperature depression of 80.0 Ddd, namely 45.0 Ddd. more than the above average, computed at 660,000 cu. ft. per Ddd.	29,700,000
(c) Total estimated daily demand for domestic gas from the Denver line at a mean temperature of 15.0 deg. F. below zero	62,100,000"

(p. 1156)

The maximum demands for the extreme weather in the several areas are shown in Table C, as follows:

		Mean Temperature on Coldest Day (Deg. F.)	Estimated Domestic Load On Such a Day Cu. Ft.)
(a)	Denver Area	—14 deg.	42,157,000
(b)	Colorado-Wyoming area	—20	10,775,000
(c)	Colorado Springs Area	—16	3,251,000
(d)	Pueblo Area	—10	2,230,000
(e)	Arkansas Valley Area	—10	1,304,000
(f)	New Mexico Area	—6	531,000
(g)	Texas Area	—6	1,483,000
	Total	14.5 deg.	61,731,000"

(p. 1157)

The growth in domestic obligations of the Denver Line was determined winter by winter by calculations identical with those above described, and are summarized year by year in comparison with the domestic sales as shown in Table D, as follows:

Calendar Year	"In New Mexico and Colorado Sold During Year Mcf.	Peak Load Obligations Jan. and Feb. Cu. Ft. Per Day	In Texas Sold During Year Mcf.	Peak Load Obligations Jan. and Feb. Cu. Ft. Per Day
1929	3,534,927	21,336,000	127,311	1,206,000
1930	4,765,312	37,017,000	160,243	1,605,000
1931	5,304,294	47,931,000	147,776	1,633,000
1932	5,596,415	49,091,000	129,437	1,338,000
1933	4,811,485	44,072,000	128,942	1,320,000
1934	4,566,300	40,749,000	93,120	1,206,000
1935	5,327,345	43,297,000	126,555	1,310,000
1936	5,860,461	45,241,000	129,898	1,237,000
1937	6,638,703	49,972,000	138,401	1,263,000
1938	6,669,918	54,984,000	129,293	1,269,000
1939	6,874,843	60,248,000	145,962	1,483,000
1940	7,628,500(A)	66,148,000	122,900(A)	1,245,000

Note: (A) These figures estimated."

(p. 1158)

Table E shows the extent to which domestic peak load obligations have increased in the past in comparison with the increase in annual volume of domestic gas sold, as follows:

	"New Mexico and Colorado	Texas
Peak Load Obligations Cu. Ft. per Day		
1939	60,248,000	1,483,000
1929	21,336,000	1,206,000
Increase in 10 years	38,912,000	277,000
Annual Volumes Mcf.		
1939	6,874,843	145,962
1929	3,534,927	127,311
Increase in 10 years	3,339,916	18,651
Increased Peak Load Obligation Cubic feet per day per Mcf: Annual Sales	11.65	14.85"

(p. 1160)

Table F shows such future peak load obligations based on the estimated future volumes submitted by Witness Beardsley, as follows:

	"In New Mexico and Colorado		In Texas	
Calendar Year	Sold During Year Mcf.	Peak Load Obligations Jan. and Feb. Cu. Ft. Per Day	Sold During Year Mcf.	Peak Load Obligations Jan. and Feb. Cu. Ft. Per Day
1939	6,874,843(A)	60,248,000(A)	145,962(A)	1,483,000(A)
1940	7,628,500(A)	66,148,000(A)	122,900(A)	1,245,000(A)
1941	8,127,440	74,841,000	123,500	1,149,000
1942	8,468,350	78,812,000	124,000	1,157,000
1943	8,774,300	82,377,000	124,650	1,167,000
1944	9,078,700	85,923,000	125,200	1,175,000
1945	9,380,600	89,440,000	125,800	1,184,000
1946	9,380,600	89,440,000	125,800	1,184,000
1947	9,380,600	89,440,000	125,800	1,184,000

Note: (A) These figures from Table D."

(p. 1161)

As an illustration of the method used in finding the future obligations shown in Table F, he referred to the 1941 peak load obligation in New Mexico and Colorado, where the annual sales are estimated to increase 1,252,597 Mcf. over 1939, whereas the increased peak load obligation at the rate of 11.65 cubic feet per Mcf. annual sales is thus 11.65 times 1,252,597, which is 14,593,000 cubic feet. This, added to the 60,248,000 cubic feet, the peak load obligation for 1939, results in 74,841,000 cubic feet as the 1941 peak load obligation. (p. 1161.)

As to industrial peak load obligations, he also took the months of January and February 1938-39. These peak loads are largely controlled by industrial activity and the extent to which the use of gas is curtailed or shut off to insure the domestic supply. The industrial load is commonly in excess of the load that occurs at any one time because of non-coincident maximum demands. The winter months of January and February were used in the study because these are the months in which the domestic demands are the greatest, and the obligation so determined reflects the maximum requirements of the industrial consumers to be curtailed as may be necessary in extremely cold weather.

The actual peak requirements of special industrial resale gas and direct sale gas were determined from the daily meter readings, and the sum of the individual peaks for the several consumers in January and February was taken as the total obligation. The peak loads for regular resale industrial gas, for which no daily meter readings were available, were estimated at 2% of the total billings for (p. 1162) January and February.

Table G shows the distribution of the industrial peak obligations to the various areas served (p. 1163).

The industrial peak load obligations were then determined year by year from 1929 to 1940, inclusive, in the manner above described (p. 1164), and Tables H, I and J show, in like manner as is shown with respect to domestic gas, sales volumes each year, and the peak load obligations in January and February of each year, in parallel columns for the years 1929 to 1940.

In recent years the resale industrial gas has been running approximately one-half regular industrial and one-half special industrial (p. 1165). It was assumed that each of these two classes of gas would represent substantially one-half of the volumes of sales. It was also assumed, as past experience had demonstrated, that the relation between peak load obligations and annual sales would continue in the future.

In the case of regular industrial gas, it is shown by Table H that the average annual sales for the years 1937, 1938 and 1939 were 2,363,061 Mcf. per year, and that the average of the peak load obligations was 11,279,000 cubic feet per day, so that the peak load obligations on account of regular industrial gas sales have been 4.77 cubic feet per day for each Mcf. of gas sold during the year. Accordingly, the future peak load obligations for regular industrial gas were estimated as being 4.77 cubic feet per Mcf. per year (p. 1166).

As to peak load obligations year by year, and annual sales of special industrial gas, Table H shows a somewhat erratic relationship in 1939, when the cement plant near Fort Collins was given permission to take gas in January and February. Accordingly, the years 1936, 1937 and 1938 being free from such abnormality, were taken as the guide.

During these years, the average annual sales amounted to 2,257,479 Mcf., and the average of the peak load obligations amounted to 6,876,000 cubic feet per day. So that for each Mcf. of special industrial gas sold in those years, there was an average peak load obligation of 3.05 cubic feet.

On such basis Table K shows year by year the future peak load obligations, calculated as follows: (p. 1167)

	"Regular Industrial Gas		Special Industrial Gas	
Calendar Year	Sold During Year Mcf.	Peak Load Obligations Jan. and Feb. Cu. Ft. Per Day	Sold During Year Mcf.	Peak Load Obligations Jan. and Feb. Cu. Ft. Per Day
1940	2,471,940	11,973,000(A)	2,471,940	7,655,000(A)
1941	2,740,980	13,074,000	2,740,980	8,380,000
1942	2,835,075	13,523,000	2,835,075	8,647,000
1943	2,919,150	13,924,000	2,919,150	8,903,000
1944	3,004,000	14,329,000	3,004,000	9,162,000
1945	3,087,600	14,728,000	3,087,600	9,417,000
1946	3,087,600	14,728,000	3,087,600	9,417,000
1947	3,087,600	14,728,000	3,087,600	9,417,000

Note: (A) Actual."

As to direct sales gas during the three years 1936, 1937 and 1939, as shown in Table J the sales had been relatively stable, except that in the years 1936, 1937 and 1939 they were roughly 50% higher than in prior years. During those three years the average annual volume sales was 11,714,560 Mcf., and the average peak load obligation was 48,047,000 cubic feet per day. 1940 was out of line on account of the cement plant at Portland taking gas during January and February (p. 1168). The estimates for 1942 and 1943 differ so little from the average sales in 1936, 1937 and 1939 that the future obligations for direct sales may reasonably be taken at the average obligation during these three years of 48,047,000 cubic feet per day.

In Table I, the combined peak load obligations 1929 to 1947 are shown, as follows:

Calendar Year	"Colorado and New Mexico Resale		Texas Resale		
	Domestic and Regular Industrial	Special Industrial	Domestic and Regular Industrial	Special Industrial	Direct Sale to Consumer
Actual					
1929	22,947	.....	1,507	.....	33,607
1930	42,270	6,696	1,988	545	38,079
1931	54,055	8,791	2,125	371	37,395
1932	57,180	5,059	1,845	474	39,661
1933	51,738	5,274	1,759	493	32,175
1934	57,430	9,485	1,496	442	37,121
1935	50,609	5,267	1,657	473	36,793
1936	54,572	6,582	1,700	724	49,518
1937	61,757	6,756	1,757	851	47,442
1938	65,677	7,289	1,689	871	30,390
1939	71,606	12,067	1,934	983	47,181
1940	78,121	7,655	1,808	858	52,484
Estimated Future					
1941	87,915	8,360	1,749	900	48,072
1942	92,335	8,647	1,757	900	48,072
1943	96,301	8,903	1,767	900	48,072
1944	100,252	9,162	1,775	900	48,072
1945	104,168	9,417	1,784	900	48,072
1946	104,168	9,417	1,784	900	48,072
1947	104,168	9,417	1,784	900	48,072"

(p. 1169)

In his study the pipe line capacities referred to are the continuous flow capacities with load distributed along the line pro rata with the 1939 peak load obligations (p. 1170). Pipe line capacities were determined with all compressors in service, and with the largest engine in each station out of service. His calculations were based on the full use of the power capacity of the engines in service, which is sometimes not wholly available on account of limitations of compressor cylinder diameters. In calculating the gross capacity of the system with all engines in operation in 1939 geographic distribution of the total combined peak load

obligations was used. In determining the net capacity of the system with the spare compressor equipment out of operation, the 1939 geographic distribution of the domestic and regular industrial peak load obligations was used.

In 1928 when the Denver Line was first completed, its flow capacity was fixed by the power in the Canyon Station. Three 1,000 h.p. units were installed. The Bivins Station of three 1,000 h.p. units was ample to furnish any gas into the line that could be passed through the Canyon Station.

In the fall of 1930 the Clayton Station, containing three 1,000 h.p. units, and the Devine Station of two 1,000 h.p. units, were placed in operation. The line capacity was thus increased, but the Bivins Station was still ample (p. 1171).

In 1939 it was necessary to increase the capacity of the Bivins Station by the installation of a 600 h.p. unit. This was necessary to meet changing field conditions, and the line capacity was not increased.

In 1940 the Dalhart Station was constructed with four 600 h.p. units, and later another unit was added. Canyon Station was reinforced by the addition of a 600 h.p. unit, and the Devine Station by the addition of two 625 h.p. units.

A further step in the development of capacity will be necessary with increasing loads. The critical section of the line is the Devine-to-Denver section, which will require a booster station near Colorado Springs to secure any increase in line capacity. A station of 1800 h.p. in three units will be required, and an additional 600 h.p. unit at Canyon.

As the field pressures drop, additional equipment will be required at Bivins. With a suction pressure of 150 pounds per square inch gauge, a total capacity of 6600 h.p. will be required (p. 1172).

The gross and net flow capacity of the various stages of development were determined as shown on Table N above (p. 1173).

The following Table M (p. 20 of the Exhibit) includes the estimated necessary additional facilities which will be required to meet the estimated future peak obligations:

Stage and Date Completed	Compressor Stations Name	Total HP.	"Pipe Line Flow Capacity" Net with Spare Engines Out	Gross with All Engines Operating
1st—1928	Bivins	3,000		
	Canyon	3,000	70,000	80,000
2nd—1930	Bivins	3,000		
	Clayton	3,000		
	Canyon	3,000		
	Devine	2,000	90,000	108,000
3rd—1941	Bivins	3,600		
	Dalhart	3,000		
	Clayton	3,000		
	Canyon	3,600		
	Devine	3,200	100,000	124,000
4th—Future	Bivins	6,600		
	Dalhart	3,000		
	Clayton	3,000		
	Canyon	4,200		
	Devine	3,200		
	Colo. Springs	1,800	108,000	125,000"

Certain of the working papers, namely, Degree Days, January 25 to 26 inclusive, 1939 and 1940, for Denver, Colorado Springs, Pueblo and La Junta, as shown by the Weather Bureau and used in the foregoing studies, were introduced by the Commission as Exhibits 61 and 62.

17. Peak Load Obligations and Line Capacity of an Assumed Denver Line for Resale Gas Only, as Estimated Through the Winter 1939-1940, and as Estimated Through 1947, and Estimated Necessary Additional Facilities.

The same witness Rhodes, using the same methods as used in the foregoing study for all gas, developed in his Exhibit 98 the following results for an assumed 20 inch line that would take care of resale gas only:

"Table G

Peak Load Obligations and Line Capacities of a 20 Inch Denver Pipe Line for Resale Gas Alone.

Mcf. per Day at Average Sales Contract Pressure Base of 13.0 Pounds Absolute.

Year in Which Peak Occurs in January or February	Peak Load Obligations		Saleable Capacity Provided	
	Domestic and Regular Industrial	Total Resale Gas	Net with Spare Engines Out	Gross with All Engines Running
Actual				
1929	24,454	24,454	45,000	45,000
1930	44,258	51,499	58,000	62,000
1931	56,180	65,342	80,000	87,000
1932	59,025	64,558	80,000	87,000
1933	53,497	59,264	80,000	87,000
1934	48,926	58,853	80,000	87,000
1935	52,266	58,006	80,000	87,000
1936	56,272	63,578	80,000	87,000
1937	63,514	71,121	80,000	87,000
1938	67,366	75,526	80,000	87,000
1939	73,540	86,590	80,000	87,000
1940	79,929	88,442	96,000	103,000
Estimated Future				
1941	89,664	98,924	96,000	103,000
1942	94,092	103,639	96,000	103,000
1943	98,068	107,871	108,000	111,000
1944	102,027	112,089	108,000	111,000
1945	105,952	116,269	108,000	111,000
1946	105,952	116,269	108,000	111,000
1947	105,952	116,269	108,000	111,000"

(Exhibit 98, p. 10).

He also developed the flow capacities of such a 20 inch Denver Line for resale gas alone and the estimated additional necessary facilities, as follows:

"Table F

Flow Capacities of a 20 Inch Denver Pipe Line for Resale Gas Alone.

Mcf. per Day at Average Sales Contract Pressure Base of 13.0 Pounds Absolute.

Stage of Expansion	Compressor Stations Name	Total H.P.	Approximate Pipe Line Flow Capacity Line Input Net	Line Input Gross	Saleable Output Net	Saleable Output Gross
Initial	Bivins	3,000	45,100T	45,100T	45,100T	45,100T
			43,600C	43,600C	43,600C	43,600C
First	Bivins	3,000	58,900T	62,300T	58,400T	61,500T
	Canyon	3,000	56,900C	60,200C	56,400C	59,400C
Second	Bivins	3,000	81,300T	89,100T	80,000T	87,100T
	Clayton	3,000	78,500C	86,100C	77,200C	84,100C
	Canyon	3,000				
	Devine	2,000				
Third	Bivins	3,000	99,600T	107,200T	96,400T	102,500T
	Dalhart	3,000	96,300C	103,700C	93,100C	99,000C
	Clayton	3,000				
	Cimarron	1,800				
	Canyon	3,000				
	Apishapa	1,800				
	Devine	3,200				
	Springs	1,800				
Final	Bivins	6,000	112,000T	116,700T	107,600T	110,700T
	Dalhart	4,200	108,300C	112,900C	103,900C	106,900C
	Clayton	4,200				
	Cimarron	3,000				
	Canyon	3,000				
	Apishapa	3,000				
	Devine	3,200				
	Springs	1,800				

Notes: T These flow capacities are inputs to Canadian's pipe line at Bivins for fuel and all sales from the pipe line north of Bivins.

C These flow capacities are inputs to Colorado Interstate's pipe line at Clayton for fuel and all sales from the pipe line north of Clayton."

(Exhibit 98, p. 8).

One of the working papers used by Rhodes and entitled "Peak Month Deliveries at Clayton, New Mexico, for Colorado Interstate Gas Company's Requirements of Gas Sold for Resale, 1928 to 1947 Inclusive", showing amounts at 16.4 pounds base pressure and being commensurate with the figures set forth in Table H of Exhibit 98, was introduced as Exhibit 99. (Vol. XXII, p. 3161, et seq.)

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18. Original Cost of Colorado Interstate's Portion of the Physical Properties of the Denver Line to December 31, 1939, and as Estimated From 1940 to 1947, Inclusive.

For Colorado Interstate there was introduced, through the witness Lusk, Exhibit 67 entitled "Original cost of the Denver Pipe Line Properties, December 31, 1928 to 1939, Inclusive". It shows such cost for the Canadian River Gas Company as well as Colorado Interstate. Here we deal with the original cost of the physical properties of the Denver Line belonging to Colorado Interstate; that is, that part of the line north of Clayton Junction, but this exhibit shows total original cost of Canadian River's portion of the line in the amount of $4,028,196 as of December 31, 1939. It is also to be noted that here we deal with the physical properties only of Colorado Interstate's portion of said line, leaving for a subsequent section the abstracting of the evidence as to the cost of Colorado Interstate's contracts.

The original cost of the physical properties of Colorado Interstate's portion of said line at December 31, for each of the years 1937, 1938 and 1939, as set forth in Statement 2 of Exhibit 67, is as follows:

Original Cost of Denver Pipe Line Properties at December 31, 1928 to 1939, Inclusive.

Item No.	Account Nos. (Company)	Description	1937	1938	1939
	Owned by Colorado Interstate Gas Co.				
1	218; 219; 221; 223; 224; 227	Compressing Stations	$ 1,563,211	$ 1,629,709	$ 1,617,612
2	218; 220; 226	Transmission Lines	9,505,640	9,509,222	9,499,149
3	218; 222; 225; 227	Measuring Stations	165,901	165,583	160,172
4	218; 219; 223; 227	Other Structures and Equipment	60,845	72,565	79,765
5	255	Telephone System	151,725	151,779	151,764
6	249; 253; 257	General Property	118,638	125,086	132,630
7	Total		$11,565,960	$11,654,844	$11,641,092
8	Adjustment for Items Charged to Expense which are Properly Capital		201,906	244,103	284,806

9 Adjustment for General Construction Costs Applicable to Net Property Additions and Capital Items Expensed	143,845	153,699	155,244
10 Total Original Cost of Colorado Interstate Gas Co. Property	$11,911,711	$12,052,646	$12,081,142

*We show here original cost at December 31 for the years 1937, 1938 and 1939 only. Future Additions are shown infra.

The figure $11,641,092, being the total original cost at December 31, 1939, before the adjustments itemized in Items 8 and 9 supra, corresponds with the actual figure on the books of the company, as both Commission and respondent's accountants agree, except for an item of $14,334.51. The Commission's witness Schutte, on being examined by Commission's counsel with respect to Lusk's Exhibit 67, and particularly Statement 2, said that he had compared it with the books of the company as of December 31, 1939, and the only difference was that one item, which he explained:

> "A. In the transmission group of accounts, which is Item 1 of Statement 2 of Exhibit 67, Mr. Lusk included the cost of five farms that are owned by the Colorado Interstate Gas Company and which are carried on its books and financial statements as other physical property." (Vol. LXV, p. 9389.)

There was then introduced by the Commission, through Schutte, Exhibit 195 entitled "Colorado Interstate Gas Company—Comparison of Original Cost of Denver Pipe Line Properties as of December 31, 1939, per Company Books with Exhibit 67 Introduced by Mr. William A. Lusk," which showed the only difference to be this item of $14,334.48. (For some reason the amount is expressed in Exhibit 195 as 48 cents instead of 51 cents.) This Exhibit shows that in 1927 and 1928 the company purchased rights of way over these five farms and paid an aggregate sum of $543.50, which amount appeared in the Cost of Right of Way, and is included in the transmission groups of account. Each farm had a mortgage on it. Later on the mortgages were foreclosed. Colorado Interstate, not being able to negotiate with the mortgagees, acquired the farms at the foreclosure sales in order to protect their rights of way, at a total cost of $14,334.48 (.51), which was carried, as above stated, not in the transmission groups of account, but as "Other Physical Property."

Through this same witness Schutte, and in his Exhibit 139, the Commission presented its statement or original cost, as follows:

Colorado Interstate Gas Company.
Summary of Investment in Gas Plant Per Books and as Adjusted as of December 31, 1939.

Account No.	Description	Per Books Amount	Adjusted Total	Suspended for Commission's Consideration
(1)	(2)	(4)	(7)	(8)
	Transmission System			
226-D	Main Line and Laterals			
	Pipe	$ 5,432,988.12	$ 5,432,988.12	($ 512.62)
	Other Materials	1,004,337.64	1,004,337.64	
	Construction Costs	2,650,623.60	2,473,469.87	391,039.35
	Total Pipe, Fittings and Construction	$ 9,087,949.36	$ 8,910,795.63	$390,526.73
218-D	Land	2,420.30		
220-D	Rights of Way	110,400.05	273,167.20	
	Total Main Line and Laterals	$ 9,200,769.71	$ 9,183,962.83	$390,526.73
	Compressing System			
218-C	Land	$ 4,104.51	$ 3,904.51	
219-C	Leaseholds	623.25	523.25	
221-C	Structures	185,654.96	195,153.67	$ 7,370.20
224-C	Equipment	1,232,104.97	1,198,313.44	50,866.46
223-C	Other Structures	188,815.99	188,152.60	4,829.14
227-C	Other Equipment	5,320.18	5,320.18	
	Total Compressing System	$ 1,616,623.86	$ 1,591,367.65	$ 63,065.80

CANADIAN RIVER GAS CO. VS. FEDERAL POWER COMM.

Summary of Investment in Gas Plant Per Books and as Adjusted as of December 31, 1939.

Account No.	Description	Per Books Amount	Adjusted Total	Suspended for Commission's Consideration
(1)	(2)	(4)	(7)	(8)
	Measuring System			
218-M	Land			
222-M	Structures			
225-M	Equipment			
227-M	Other Equipment			
	Total Measuring System			
	Other Structures and Equipment			
218-D	Land	926.90	926.90	
219-D	Leaseholds	115.50	115.50	
223-D	Structures	59,573.44	59,603.31	$ 877.82
227-D	Equipment	18,792.11	18,792.11	186.50
	Total Other Structures and Equipment	$ 79,407.95	$ 79,437.82	$ 1,064.32
225-E	Telephone System	$ 146,873.63	$ 155,667.60	$ 1.65
	Total Transmission System	$11,043,675.15	$11,010,435.90	$454,658.50
	Distribution System			
	Measuring System			
218-M	Land	$ 12,210.45	$ 12,210.45	
222-M	Structures	51,534.68	53,085.76	$ 2,023.86
225-M	Equipment	90,293.64	88,539.24	3,045.17
227-M	Other Equipment	3,037.29	3,037.29	
	Total Distribution Measuring System	$ 157,076.06	$ 156,872.74	$ 5,069.03

	Undistributed Fixed Capital			
203	Entrance Rights of Way	350,000.00		
203	Other Expenses During Construction	63,675.61	$ 36,925.61	$ 32,803.59
262	Law Expenditures during Construction	50,899.41	46.00	
266	Interest during Construction	180,866.99	191,901.80	
	Total Undistributed Fixed Capital	$ 645,442.01	$ 228,873.41	$ 32,803.59
	General Property			
249-E	Office Furniture and Equipment	$ 29,108.82	$ 29,108.82	$ 16.18
253-E	Garage Equipment	67,524.79	67,524.79	
256-E	Tools and Equipment	33,930.69	33,930.69	
	Total General Property	$ 130,564.30	$ 130,564.30	$ 16.18
	Franchises and Contracts			
	Book value of stocks issued to Southwestern Development Co. & Cities Service Co.	$ 2,352,941.17		
	Net Cost of City of Colorado Springs, Colorado, contract	236,666.67		
	Total Franchises and Contracts	$ 2,589,607.84		
	Total Gas Plant Accounts	$14,566,365.36	$11,526,746.35	$492,547.30
	Construction Work in Progress	$ 29,677.85	$ 29,677.85	
	Gas Plant Held for Future Use		19,994.71	
	Gas Plant Adjustments		2,352,941.17	
	Total	$14,596,043.21	$13,929,360.08	$492,547.30

In the above summarized statement we have left out Column 3, which showed quantities, and Columns 5 and 6, which showed the Examiner's debit and credit adjustment entries, because we deal with them seriatim hereafter.

Also we deal with that portion of the foregoing statement entitled "Franchises and Contracts" in the next section of this abstract entitled "Costs of Contracts".

The items contained in Column 8, as explained by the witness Schutte, are not presently deducted from original cost but are earmarked for consideration by the Commission. We deal with the evidence respecting them after we have first abstracted the evidence with respect to adjustments already made.

Comparing these two summarized statements of the original cost of the *physical* property of respondent's portion of the Denver Line, as of December 31, 1939, the following items of adjustment are the only ones about which company and Commission disagree. We first deal with the adjustments made by the company (Lusk).

As Item 8, Statement 2, Exhibit 67, Lusk makes annual adjustments "for items charged to expense which are properly capital", which, accumulated to December 31, 1939, amounted to the total of $284,806. He said:

> "In general they represent maintenance and operating expense items which according to my classification, should not have been expense but should have been capitalized." (Vol. IX, pp. 1275, 1276.)

And again:

> "My reason principally behind that is that they are preventive and not corrective measures and therefore should not have been expensed." (p. 1277.)

He knew that when Colorado Interstate began business and was setting up its accounts in 1927 and 1928, it voluntarily used the Pennsylvania Code of Accounts effective January 1, 1920, for natural gas companies as a guide in setting up such books (p. 1277). He referred to and quoted from that code and later extracts therefrom were put to-

gether as Exhibit 75 (XVII, p. 2399). One such quotation is as follows:

> "Betterments are physical changes in structures or equipment, the object of which is to make the structures or equipment affected more useful or of greater capacity than they were at the time of their original installation or acquisition. The utility shall charge as a betterment to the appropriate sub-account of '101. Fixed capital installed since December 31, 1919' account that portion of the cost of such changes as will, when added to the original cost of the structures or equipment bettered, give the cost of the structures or equipment in their bettered condition." (Vol. IX, p. 1279.)

The items covered by this amount he described as cathodic protection of the main line and laterals, rock weighting of the main line, and rip rap and re-inforcement of stream crossings (Vol. IX, pp. 1276, 1279). He then said:

> "From my experience of long transmission pipe lines I am of the opinion they should have been capitalized and not have been charged under expense." (p. 1279.)

Schutte, for the Commission listed these same items in his Exhibit 196 (Vol. LXV, p. 9473) as follows:

1.	Flood and Washout Control	$ 26,637.68
2.	Rock Weighting	46,683.72
3.	Cattle Guards	4,922.70
4.	Bridges	8,052.93
5	Rip Rap and Revetments—River and Stream Crossings	24,400.99
6.	Roads and Culverts	32,380.69
7.	Gravel, Rock and Shale for Main Line	9,921.87
8.	Cathodic Protection	49,935.20
9.	Profile Maps	2,989.53
10	Lowering Lines	638.33
11.	Spare Parts	5,623.84
12.	All Other, Miscellaneous	72,617.88
	Total	$284,806.36

As Item 9, Statement 2, Exhibit 67, Lusk added $155,244 for "Adjustment for General Construction Cost Applicable to Net Property Additions and Capital Items of Expense." He explained that neither Colorado Interstate nor Canadian "had added interest during construction since the days of the initial construction period in 1928, regardless of the amount of additions and betterments they have put in." (Vol. IX, p. 1281.)

He stated further:

> "I included six and a half per cent for engineering, corporate and other administrative costs on all net property additions year by year and in addition to the six and a half per cent I included one and a half per cent for interest on those net fixed capital additions. The six and a half per cent applies to the item 'Expense' which should have been capitalized as shown by Line 8, but the one and a half per cent interest was not computed on the expense item. * * * The interest was computed solely on the items of fixed capital added during the year." (Vol. IX, p. 1280.)

Exhibits 195 and 196, already mentioned, of the Commission's witness Schutte, were offered in rebuttal of Lusk's inclusion in original cost of the three items of $14,334.51, $284,806.36 and $155,244, respectively.

WILLIAM A. LUSK called as a witness by and on behalf of the respondent, being first duly sworn, was examined and testified as follows:

Direct Examination.

By Mr. Brock:

Q. Please state your name.
A. William A. Lusk.
Q. Where do you live?
A. Brooklyn, New York.
Q. What is your occupation?
A. I am chief accountant for Ford, Bacon & Davis, Inc.
Q. How long have you been chief accountant for Ford, Bacon & Davis, Inc.?
A. Well, in this particular line of work with Ford,

Bacon & Davis I could say that it has been for the last ten or twelve years.

Q. What experience have you had in accounting work, that is, accounting work prior to the time that you became connected with Ford, Bacon & Davis, Inc.?

A. I have been with Ford, Bacon & Davis, Inc., approximately eighteen years. Prior to that I spent five years with the Emergency Fleet Corporation as assistant auditor, and general auditor of Wooden Ship Claims just after the termination of the last war. Prior to that I had several years war service, and prior to that I was engaged as a junior accountant in New York City, working for M. G. Corbitt & Company.

I worked for a time for the American Hawaiian Steamship Company, and prior to that I worked for an express company which is now out of business. That was immediately following the evening courses I had taken at Columbia University. That goes back to 1910.

Q. Are you a Certified Public Accountant?

A. No, sir.

Q. During the eighteen years that you have been connected with Ford, Bacon & Davis, Inc. have you been continuously employed in connection with accounting matters?

A. Yes, sir.

Q. Will you describe in some detail the character of work which you have done for Ford, Bacon & Davis during this period of time?

A. Well, Ford, Bacon & Davis, Inc. is engaged principally in engineering and all its related subjects. In that Ford, Bacon & Davis has a special department known as the Valuation Department and Report Department in which is performed all manner and classes of investigation work, and principally engineering and industrial work in connection with merges, consolidations and their related financing, and all engineering in connection with pipe lines. They have built many of the long natural gas transmission lines in the country in which I was connected with it as the general field auditor. They have also been engaged in work for several of the natural gas companies other than the Colorado Interstate and the Canadian, and principally the East Ohio, Hope Natural Gas Company, and the United

Fuel Gas Co. All of these rate hearings and work in connection with rates I have been actively connected with since 1925.

Q. Were these companies that you have just mentioned listed correctly? Did you give the correct corporate names? Will you name them again and try to give them, please?

A. The East Ohio Gas Company, Hope Natural Gas Company, and the United Fuel Gas Co.

Q. And all of that work that you have just described involved accounting work?

A. Yes, sir.

Q. Did you have any contact with the accounting work in connection with the construction of the Colorado Interstate Gas Company?

A. No, sir.

Q. Or the Canadian River?

A. No, sir.

Q. Did you have any contact with the management of these companies by Ford, Bacon & Davis from an accounting standpoint?

A. I wouldn't say actively because when Ford, Bacon & Davis were acting as the managers of those two properties the monthly reports came in and frequently I would be called upon to analyze the monthly reports for presentation in a different form to the executives.

Q. Have you now described fairly and completely your accounting experience in connection with the activities of Ford, Bacon & Davis?

A. I think so, yes, sir.

(Vol. VI, pp. 747-751.)

* * * * *

Q. Now, with reference to Item 8 on Statement 2, which is headed "Adjustment for Items Charged to Expense which are Properly Capital," are those items the ones that covered by this memorandum which is referred to on Page 3 of the exhibit, being entitled "Items Charged to Expense on the books of the Colorado Interstate Gas Company during the period 1930 to 1939, inclusive, which should have been capitalized?

A. Yes, sir.

Q. You understand that that memorandum was furnished to the staff of the Federal Power Commission?

A. That was furnished in April of this year.

Q. Will you tell us just what you did in working out these adjustments as shown opposite Item 8 on Statement 2?

A. Well, I began with all of the maintenance and operation expense of the Colorado Interstate Gas Company. I had the assistance of practically six men in the Colorado Springs office of the Colorado Interstate Gas Company, and they assisted me, working there after hours. We set a program of four hours at night—from five o'clock until nine o'clock—and we worked approximately four weeks in putting together the data that is shown in that 400-page volume submitted to the Federal Power Commission, the summation of which is shown in Line 8 of this exhibit, Statement 2. In general they represent maintenance and operating expense items which according to my classification, should not have been expense but should have been capitalized.

Q. I take it that your investigation resulted in your finding only this amount of $284,806 as of the end of 1939?

A. That is accumulative, that $284,806. It represents the accumulation of $17,000 first shown in 1930 with accumulative additions each year.

Q. What were those items?

A. (Pause.)

Q. I don't mean for you to describe each one in detail, but can you give a general heading of them?

A. In general it consisted of the cathodic protection of the main line and laterals up to 1939. Subsequent to 1939 the expense of that particular operation is being capitalized.

Another large item is the rock-weighting of the main line itself. In other words, it was the placing of rock rip rap over the back fill of the pipe line to insure the line remaining down. From my own limited experience I have seen lots of lines under high pressures float.

Q. Is that when washouts occur?

A. That is when washouts occur, yes, sir, principally.

Q. And when you speak of the weighting, is that the placing of material on top of the pipe line?

A. The placing of rock on top of the back of it.

The Trial Examiner: That cost, Mr. Lusk, was charged to operating expense initially?

The Witness: Yes, sir.

By Mr. Dougherty:

Q. What other headings?

A. There is another item which amounts to quite a substantial sum and that is the rip rap and reinforcement of stream crossings to prevent soil erosion and washout of lines going across the streams. That has also been charged to expenses.

Q. Upon what basis or rule do you determine about these items that you have mentioned that they should properly have been capitalized and not charged to expense?

A. My reason principally behind that is that they are preventive and not corrective measures and therefore should not have been expensed.

Q. Did you have anything to do with the setting up of accounts of this company in the beginning in 1927 and 1928?

A. No, sir.

Q. Do you know whether or not any uniform system of accounts was used as a guide in the setting up of the books?

A. The companies, the Colorado Interstate Gas Company, used the Pennsylvania code in setting up their accounts.

Q. That is the code of accounts as in effect in the State of Penhsylvania for the public utilities for that time?

A. Not now. That was in effect in 1929.

Q. Was it in effect in 1927 and 1928?

A. I wouldn't say.

Q. Was the date 1920? Was that when it was adopted?

A. That was when the code itself became effective.

Mr. Dougherty: I am going to ask you not to answer the questions until I finish them. The reporter can't take both of us down at the same time.

The Trial Examiner: All that system of accounts, that was prescribed by the Pennsylvania Public Utilities Commission?

The Witness: Yes, sir.

By Mr. Dougherty:

Q. That is for Public Utilities in that state?

A. Companies within that state, yes

Q. Are you able to tell whether or not under that code of accounts these various adjustments for various items which you have found and charged to expense should properly be charged to capital?

A. May I refer to the code?

Q. Yes.

A. On Page 44 of the uniform classification of accounts for natural gas companies effective January 1, 1920, and issued by the Public Service Commission of the Commonwealth of Pennsylvania, in the paragraph under "Betterment," it states:

"Betterments are physical changes in structures or equipment, the object of which is to make the structures or equipment affected more useful or of greater capacity than they were at the time of their original installation or acquisition. The utility shall charge as a betterment to the appropriate sub-account of '101. Fixed capital installed since December 31, 1919' account that portion of the cost of such changes as will, when added to the original cost of the structures or equipment bettered, give the cost of the structures or equipment in their bettered condition."

Q. Under that particular provision which you have just read, is it your opinion that these adjusted items should have been charged to capital instead of expense?

A. I think so, yes. From my experience of long transmission pipe lines I am of the opinion they should have been capitalized and not have been charged under expense.

Q. Is it your opinion that whoever had to do with that in the company was in error in so charging it to expense?

A. I do.

Q. Now with respect to Item 9 on Statement 2, will you give us the explanation of how those adjustments were arrived at?

A. Taking the net property addition year by year I increased, or I included in Item 10, rather, six and a half per cent for corporate engineering and other administrative costs.

Q. Is that 10 or 9?

A. 9. It is Line 9.

I included six and a half per cent for engineering corporate and other administrative costs on all net property

additions year by year and in addition to the six and a half per cent I included one and a half per cent for interest on those net fixed capital additions. The six and a half per cent applies to the item "Expense" which should have been capitalized as shown by Line 8, but the one and a half per cent interest was not computed on the expense item.

Q. What was it computed on?

A. The interest was computed solely on the items of fixed capital added during the year.

Q. And those are the ones that are shown against Items 1 to 6?

A. That is right. They are incorporated in the total amounts shown by Item 1 to 6, inclusive.

Q. Were those interest items charged on the company's books?

A. No, sir.

Q. Why did you include them in this statement?

A. The Federal Power Commission code of accounts allows a nominal or reasonable amount, as they put it, of interest to be added to fixed capital when paid out of the company's own funds.

Q. Well, is that interest during construction?

A. As interest during construction.

Q. Are the computations you made in accordance with the provision of the Federal Power Commission code?

A. That is what I followed.

Q. I am speaking now with respect to the interest.

A. Yes, sir.

The Trial Examiner: The practice of the company during these years was to add interest during construction?

The Witness: No, sir, neither company has added interest during construction since the days of the initial construction period in 1928 regardless of the amount of additions and betterments they have put in.

By Mr. Dougherty:

Q. Does Item 10 show the original cost of all of the physical property and other properties of the Colorado Interstate Gas Company that you have described as being a portion of this Denver pipe line?

A. Line 10 is the total original cost of the Colorado In-

terstate Gas Company property devoted to the Denver pipe line.

Q. And then, Item No. 11, what is that?

A. Item 11 is the summation of Line 10 on Statement 1 and Line 14—Line 10 on Statement 2, and Line 14 on Statement 1. It is the total original cost of the Denver line's property owned by both companies combined.

Q. And in your opinion, is that a correct statement of the original cost as recorded on the company's books, together with the adjustments which you have made?

A. Yes, sir.

Q. So that, as I understand it, then, as of December 31, 1939, the original cost of these properties from Bivins station on the line north was $16,109,338?

A. That is correct.

(Vol. IX, pp. 1275-1282.)

Q. Now, Mr. Schutte, will you turn to that written statement and read it and as you read it, relate it to Exhibit 139?

A. "The written statement of Carl H. Schutte.

"This report sets forth the investment of Colorado Interstate Gas Company in gas plant, as of December 31, 1939. By account classification, it shows the value of that plant per the company's books, a series of adjustments made in journal entry form, and the gas plant investment after the application of the adjusting entries. It also shows components of cost of the several classes of plant.

"The adjusting entries, twenty-nine in number, running from No. 200 to No. 228, are given on Pages 1 to 48-D, inclusive. They are of two kinds: those that reclassify plant by transfers of amounts from one plant account to another, which entries are denoted by the letter 'R' prefixed to the numeral, and those that involve account other than plant accounts. The purpose of the entries is to adjust the plant accounts so that they will more nearly reflect the legitimate original cost of gas plant devoted to the public service. The explanation given as a part of each entry states the reason and basis for each adjustment.

"Following the journal entries on Page 49 appears Schedule No. 1. This tabulation shows by plant accounts, grouped according to the functions of the property they represent, the following: the investment per books as of December 31,

1939, the total amount of Examiner's debit and credit adjustments, the adjusted investment accounts as of December 31, 1939, and a list of amounts included in the adjusted investment accounts which are suspended for Commission's consideration. These elements are explainable as follows:

"(a) The investment per books is, with one exception, grouped according to the company's classification. We have classified that portion of the measuring system which relates directly to the sale of gas under distribution system.

"(b) The Examiner's adjustments are the total debits and credits for each plant account taken from a recapitulation of the twenty-six adjusting entries shown in Schedule No. 1A; the difference between total credit adjustments of $3,937,945.92 and total debit adjustments of $3,271,262.79, or $666,683.13, is charged to 'Other Accounts' (Cf. Schedule No. 1A, Column 13).

"(c) The adjusted plant investment (Schedule No. 1, Column 7), is the amount, subject to suspensions shown in Column 8, that is recommended to the Commission for acceptance as the original cost of the company's property.

"(d) The amount suspended for Commission's consideration, $492,547.30, consists of $32,079.71 paid to Standard Oil Company of New Jersey as commissions on purchases made for this company; a credit of $521.46 rebated on material purchased; and $460,989.05 paid to Ford, Bacon & Davis, Inc. for engineering fees and expenses. The reasons for the suspensions are given in entries Nos. 226, 227, and 228.

"Schedule No. 2, which supports transmission system plant, shown in Schedule No. 1, gives the transmission system costs for one main line and sixteen lateral lines. In turn, it is supported by Schedules Nos. 2A, 2B, 2C, and 2D, which show components of cost by four groupings: for main transmission lines, transmission system laterals, transmission system land, and transmission system rights of way, respectively. The components of cost are classified by items of property under each sub-account, analyzed to show labor, materials and miscellaneous, and overhead.

"Schedules Nos. 3 to 14, inclusive, and supporting sched-

ules show for the remaining parts of the transmission system, and for the distribution system, undistributed fixed capital general property, and franchises and contracts, the same type of information that Schedule No. 2 and its supporting schedules show for transmission system main line and laterals.

"Certain items under undistributed fixed capital call particularly for mention. Schedule No. 7, cost components of entrance rights of way, represents an amount of $350,000 paid to F. G. Bonfils, deceased, one time editor of the Denver Post (Cf. Report of Federal Trade Commission made in response to Senate Resolution No. 83, Seventieth Congress, Vol. 82, pp. 624-627).

"This transaction is described at length in the Examiner's Adjusting Entry No. 219.

"Schedule No. 10 and its supporting Schedules 10A, 10B, and 10C show the amount capitalized by the company for interest during construction, the basis of that capitalization, and a recalculation of interest during construction made by the Examiner for adjustment purposes.

"Except for initial construction in 1928 the company capitalized no interest during construction and the Examiner, following the company's policy in this request, has likewise made no allowance for interest during construction for plant constructed subsequent to the period of initial construction.

"Subsequent to the period of the company's initial construction substantial additions have been made, notably the Canon, Clayton, and Levine compressing stations have been built at a cost in excess of $1,600,000.

"Schedules 10, 10A, 10B, and 10C and adjusting entries Nos. 222 and 223, all of which cover interest during construction, are self-explanatory. Schedule 10D shows the allocation of undistributed fixed capital as adjusted by the Examiner to plant accounts.

"Schedule No. 14, an analysis of franchises and contracts, shows the nature of the $2,589,607.84 which makes up this account. The entire amount is the subject of adjustment by the Examiner in adjusting entries Nos. 224 and

225. Of the total, $2,352,941.47 is a write-up of the plant account made to offset the par value of the preferred stock and the recorded value of the common stock issued to associated companies; this amount has been transferred by the Examiner to gas plant adjustments. The remainder of the total, $236,666.57, representing the entire amount of the net recorded cost of the City of Colorado Springs contract, which is described in adjusting entry No. 225, has been transferred to other deferred debits. Further particulars of the amounts in the franchise and contracts account are quite fully set forth by Schedule No. 14 and adjusting entries Nos. 224 and 225.

"Schedule No. 16, four items of which are supported by Schedules Nos. 16A, 16B, 16C, and 16D; is an analysis of overheads and indirect field costs per the company's books as at December 31, 1939, amounting to $826,835.77. The major divisions of these overheads and costs are Ford, Bacon & Davis fees and expenses, purchase commissions, inspection services, taxes during construction, and indirect field costs, and the amount charged to each plant account is set forth in Columns 4 to 13, inclusive.

"For convenience the plant account schedule to which the figures in each of these columns relate is listed below:

Column of Schedule 16		
4	relates to Schedule	2-A—Columns 2 to 8 2-B—Columns 2 to 18
5	relates to Schedule	3-B—Column 6
6	relates to Schedule	3-C—Column 6
7	relates to Schedule	3-D—Column 4
8	relates to Schedule	5-B—Column 5
9	relates to Schedule	5-C—Column 5
10	relates to Schedule	4-B—Column 5
11	relates to Schedule	4-C—Column 4
12	relates to Schedule	6—Column 2
13	relates to Schedule	11—Column 2"

Q. Mr. Schutte, the preparation of Exhibit No. 139, or, rather, in the preparation of Exhibit No. 139, did you have access to all of the accounting records available of the Colorado Interstate Gas Company?

A. Yes, sir, both at Colorado Springs and New York City.

Q. And at New York City?

A. Yes, sir.

Q. And this exhibit was prepared by you and under your direction and supervision?

A. The exhibit was prepared by me and the working papers in part were prepared by me and in part were prepared by my associates.

(Vol. XXXIV, pp. 4707-4713.)

* * * * *

CARL H. SCHUTTE called as a witness by and on behalf of the Federal Power Commission, being first duly sworn, was examined and testified as follows:

Direct Examination.

By Mr. March:

Q. By whom are your employed, Mr. Schutte?

A. By the Federal Power Commission.

Q. How long have you been in the employ of the Commission?

A. Since 1937.

Q. In what capacity?

A. First as examiner of accounts and now as principal examiner of accounts.

Q. What is your profession?

A. Accountant.

Q. I wonder if you would give us a brief history of your experience?

A. I'll be glad to.

The Trial Examiner: What is your full name, Mr. Schutte?

The Witness: Carl H. Schutte, S-c-h-u-t-t-e.

After completion of grammar school, I attended Gem City Business College at Quincy, Illinois. I later completed a course in accounting of Alexander Hamilton Institute and also certain portions of the higher accountancy course offered by LaSalle Extension University.

I have had twenty-seven years of practical experience in utility and other accounting, seventeen years of which was spent with public utility companies, both holding and operating companies, and three and one-half years with the Federal Power Commission as an Examiner of Accounts. Public utility experience commenced in the year 1913 in the consumers' accounting division of the Quincy Gas and Electric Company.

From 1914 to 1919 I was employed by the Southern Illinois Light and Power Company at Hillsboro, Illinois, and St. Louis, Missouri, first in the consumers' accounting division, next in the general accounting division, and for a period of about three years as assistant to the general auditor. The duties of this latter position were that of auditing and distributing expenditures for operation and property additions, as well as the immediate supervision of work performed by the accounting division.

From 1919 to 1923 I was employed as general auditor by Mexico Power Company and its successor, Missouri Utilities Company, the duties of which position were the supervision of all accounting matters of the company.

From 1923 to 1925 I was employed as general auditor by Community Power and Light Company, a holding company, owning and operating public utility properties. In this capacity my duties, among other things, consisted of supervision of all accounting matters, audits, and so forth, and included considerable work with public accountants in connection with audits and examinations concerning properties of which purchases were contemplated.

From 1925 through 1930 I was employed as general auditor and assistant secretary by Commonwealth Utilities Company, a holding company owning and operating public utility and other properties. In this capacity, my duties, among other things, consisted of supervision of all accounting matters, audits, and so forth, and included considerable work with public accountants in connection with audits and examinations concerning properties of which purchase was contemplated.

I was also a member of the Board of Directors of the

subsidiary companies owned or controlled by Commonwealth Utilities Company, in which capacity I acted as coordinator between the parent company and subsidiaries.

From 1930 to 1937 I was employed as an accountant in industrial work, resigning the position of general auditor with the New State Ice Company, Oklahoma City, Oklahoma just prior to my appointment to the staff of the Federal Power Commission in 1937.

By Mr. March:

Q. Have you made an examination of the books and records and accounts of the Canadian River Gas Company?

A. Yes.

Q. Where was that examination made?

A. The work that I personally did was at Colorado Springs and work was performed under my supervision at the office in New York City.

Q. Have you made an examination to ascertain the corporate history of the Canadian River Gas Company?

A. That's right.

Q. I wonder if you can just give us briefly the corporate history of that company?

A. All right, sir.

(Vol. VI, pp. 847-850.)

Exhibit No. 139

Docket G-124

1

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. R-200		
220-D	Transmission System Rights of Way	$156,951.66	
226-D	Transmission System Equipment (Construction Costs)		$156,951.66

To transfer recorded costs of right-of-way surveys, clearing right of way, and damages from Construction Costs where carried on the Company's records, to Right of Way account.

	Right-of-Way Surveys	Clearing Right of Way	Damages	Total
Main Line				
Clayton, New Mexico to Denver, Colorado	$59,446.54	$36,789.37	$40,496.37	$136,732.28
Sand Creek Loop	172.34			172.34
Jimmie Camp Creek Crossing			50.00	50.00
Apishapa Loop	68.53			68.53
Total Main Line	$59,687.41	$36,789.37	$40,546.37	$137,023.15
Laterals				
American Crystal Sugar Lateral and Loop	$ 222.78		$ 107.69	$ 330.47
Arkansas Valley Lateral	1,223.07		702.65	1,925.72
Aurora Lateral and Extension	592.34			592.34
Colorado Fuel and Iron	1,166.62	$ 1,284.99	2,167.75	4,619.36
Colorado Springs	432.60		500.00	932.60
Fort Lyon	129.63		57.00	186.63
La Junta	2,182.07		406.00	2,588.07
Las Animas	1,908.71		1,879.61	3,788.32
North	372.04			372.04
Portland	2,176.88		1,583.79	3,760.67
Pueblo	376.37	176.16		552.53
Rocky Ford	216.41		13.00	229.41
Santa Fe	36.65	13.70		50.35
Total Laterals	$11,036.17	$ 1,474.85	$ 7,417.49	$ 19,928.51
Total Main Line and Laterals	$70,723.58	$38,264.22	$47,963.86	$156,951.66

Docket G-124

Exhibit No. 139

3

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. R-202		
255-E	Telephone System Rights of Way	$946.00	
220-D	Transmission System Rights of Way (Main Line)		$946.00

To reclassify the cost of various easements purchased solely for telephone system right-of-way purposes but recorded as Transmission System Rights of Way, to Telephone System, and consisting of the following payments:

Reference		Grantor	County and Grant No.		Rodage	Cost
1928						
C-26	Memo	Kansas City Life Insurance Co.	Union, N.M.	74	453.9	$250.00
C-26	"	Clyde P. Thomas	do.	84	497.1	275.00
B-25	"	R. W. Mathews	Las Animas, Colo.	24	304.7	125.00
C-26	"	M. W. Sellers	do.	34	162.1	200.00
F-4	"	A.T.& S.F. Ry.	do.	119	13.9	5.00
F-34	"	R. C. White	Pueblo, Colo.	80	128.2	75.00
F-4	"	C.R.I.& P. Ry.	El Paso, Colo.	120	12.1	1.00
1929						
A-31		C. & S. Ry.	Arapahoe, Colo.	109	15.3	15.00
		Total			1,587.3	$946.00

	No. 203		
220-D	Transmission System Rights of Way (Main Line)	$235.00	
	Miscellaneous Income		$235.00

To correct net credit of vouchers erroneously recorded to Colorado Interstate Gas Company rights-of-way costs which are applicable to Canadian River Gas Company.

Reference	Particulars	Amount
1928 March CR-23	Refund received from L. C. Koontz in re change in location of telephone line, Hartley County, Texas, credited in error to Colorado Interstate Gas Company Transmission System Rights of Way	$(250.00)
1929 Sept. J-302	Payment to Fort Worth & Denver Railway Co. for telephone line crossing permit in Potter County, Texas	15.00
	Net of the above	$(235.00)

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 204		
250-11	Reserve for Depreciation - Transmission System	$1,673.59	
220-D	Transmission System Rights of Way (Main Line)		$1,673.59

The above amount represents the original cost of certain transmission system rights of way foreclosed upon by mortgagees, necessitating the repurchase of rights of way over such lands. The Respondent not only failed to remove such original right-of-way costs, but also capitalized the cost of repurchasing same, thus duplicating the cost of such rights of way in its plant account.

If proper provision had been made for the mortgagees' interests in acquiring these rights of way, there should have been no occasion for the loss of such rights of way and the necessity of repurchasing same. According to Mr. H. F. Benson, Respondent's Land Department representative, who was instrumental in the acquisition of rights of way, to have secured releases from all mortgagees (referring to the entire length of the pipe line) would have delayed acquisition of rights of way and delayed the construction of the pipe line.

Mr. Benson also said that it had been the Company's policy to secure releases only when the mortgagors were delinquent in payments due under mortgages and it appeared that foreclosure was probable, in which instances the payment made to the mortgagor for right-of-way grant was generally applied to the reduction of his mortgage.

This entry removes the costs of the ineffective rights of way from plant accounts. The original costs of the ineffective rights of way, together with costs of repurchase, are shown in the following schedule:

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

No. 204 (Cont'd)

ORIGINAL PURCHASES						REPURCHASES		
Voucher Reference	Grant Number	Grantor	Rodage	Cost	Voucher Reference	Grantor	Cost
		Union County, New Mexico					
1927 L-12 Memo	37	J. T. Gilmore	242.1	$ 121.50	1936 A-1-44	Federal Land Bank of Wichita	$ 121.50
1928 A-17 "	19	Sam J. Lusk and D. W. Priestly	250.2	125.50	1936 F-2-33	do.	107.00
1927 L-12 ")	11	Thurman H. Seaman	117.0	(1.00	1939 M-1-19	A. J. Krehbiel, Attorney for	
1928 A-9 ")				(58.59		Mrs. Hattie S. Reichman	58.50
		Las Animas County, Colorado					
1927 L-23 Memo	58	E. L. Dodge	363	182.00	1928 K-169	Charlie E. Barnes	182.00
		Pueblo County, Colorado					
1927 L-12 Memo	23	Wm. R. Brown	191.9	96.00	1935 K-2-1	Denver Joint Stock Land Bank	96.00
1927 L-12 "	28	Ida E. Wineinger	109.5	56.00	1935 E-14	Fowler State Bank	55.00
		El Paso County, Colorado					
1927 L-12 Memo	3	Reed Dysart and S. A. Jones Est.	671.9	336.00	(1932 K-38	Francis O. Heizer	54.85
					(1932 L-38	do.	100.00
1927 L-12 "	18	Malcolm H. Ord, et al.	160.1	82.50	1932 F-193	P. M. Kistler	40.25
1927 L-12 "	34	John G. Evans	403.0	202.50	1933 D-34	J. D. Akerman	201.58
1928 A-9 "	31	Werner A. Hering	165.0	83.00	1934 J-14	Ora and Vera Ader	76.00
		Douglas County, Colorado					
1927 L-12 Memo	21	George J. Dietrich	181.0	182.00	1936 L-1-20	Federal Land Bank of Wichita	90.50
1927 L-12 "	27	Anna M. Baird	46.4	23.50	1935 E-14	Colorado National Bank, Trustee	23.50
1927 L-12 "	38	J. N. Swingle	160.6	81.50	1934 F-14	Denver Joint Stock Land Bank	80.50
		Arapahoe County, Colorado					
1928 A-17 Memo	50	S. A. D. Culbertson	84.0	42.00	1939 K-1-39	The Capitol Life Insurance Co., Denver, Colorado	250.00
		Totals	3,116.3	$1,673.59			$1,537.10

11.53
Exhibit No. 130

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. R-205		
220-D	Transmission System Rights of Way (Main Line)	$200.00	
218-C	Compressor Station Land - Clayton		$200.00

To correct duplicate credit recorded to Transmission System Right of Way costs covering fee purchase of Clayton meter station site, viz:

Voucher Ref.		Acct. 220-D Transmission System Rights of Way	Acct. 218-C Clayton Compressor Station Land	Acct. 218-M Clayton Measuring Station Land
1928				
H-6 Memo	Fee land erroneously charged	$200.00		
M-226	Transfer charge intended for Account 218-M was posted to Account 218-C	(200.00)	$200.00	
1931				
J-242	Transfer intended to correct Voucher M-226,1928	(200.00)		$200.00
	Result	$(200.00)	$200.00	$200.00
	Application of above entry	200.00	(200.00)	
	Corrected result	-	-	$200.00

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. R-206		
220-D	Transmission System Rights of Way		
	Main Line	$ 8,326.94	
	Colorado Fuel and Iron Lateral	207.36	
	Clayton Lateral	96.37	
	Las Animas Lateral	54.57	
	Pueblo Lateral	32.67	
222-M	Measuring System Structures		
	Colorado Fuel and Iron	2.93	
	Clayton	11.75	$ 7.67
	Denver	784.90	656.23
	Pueblo	336.02	231.78
223-C	Other Compressing System Structures		
	Canon Building No. 11 - Dwelling	333.19	319.76
	" " " 12 - Bunkhouse	136.44	130.94
	" " " 13 - 2-car garage	25.20	24.18
	Clayton " " 9 - Bunkhouse	212.10	207.85
	Devine " " 1 - Line walker's dwelling	269.14	255.80
	" " " 7 - 2-car garage	30.07	28.58
223-D	Other (Transmission System) Structures		
	Apishapa Building No. 1 - Dwelling and bunkhouse	110.55	95.92
	" " " 2 - 2-car garage	5.50	4.77
	Travesser " " 1 - Bunkhouse and cabin	346.02	335.75
	" " " 2 - 2-room dwelling	46.62	45.23
	" " " 3 - 3-car garage	14.16	13.74
225-M	Measuring System Equipment		
	Colorado Fuel and Iron	811.37	893.89
	Clayton	46.34	66.22
	Denver	1,478.10	1,622.25
	Pueblo	655.75	728.36
226-D	Transmission System Equipment		
	Main Line	425,147.12	435,507.99
	Arkansas River Crossing	5,412.53	
	Huerfano River Crossing	3,959.74	
	St. Charles River Crossing	1,429.88	
	Colorado Fuel and Iron Lateral	11,498.26	17,756.76
	Clayton Lateral	931.64	11,682.08
	Pueblo	1,708.53	2,336.42
235-E	Telephone System	8,490.41	
	Totals	$472,952.17	$472,952.17

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

No. R-206 (Cont'd)

To substitute Examiner's allocation (per debits above) of the following initial construction overheads, in lieu of the Company's allocation thereof (per credits above) as recorded by its Vouchers M-206 and M-210, December 1928:

Account Number		Amount
258	Ford, Bacon & Davis, Inc. Fees and Expenses	$370,248.89
258	Engineering and Superintendence during Construction	15,792.52
259	General Office Clerks' Salaries during Construction	17,956.36
260	General Officers' and Clerks' Expenses during Construction	8,882.24
261	Office Supplies and Expenses during Construction	7,982.88
263	Injuries and Damages during Construction	123.58
264	Insurance during Construction	6,632.98
265	Taxes during Construction	44,361.99
267	Other Expenditures during Construction	977.32
	Total initial construction overheads allocated by Vouchers M-206 and M-210, 1928	$472,958.76
	Less: Overheads charged to Account 223-C, Canon Building No. 14 (well house) subsequently retired	6.59
	Initial construction overheads subject to reallocation	$472,952.17

The base used by the Company in its allocation omitted Accounts 220-D, Transmission System Rights of Way; 226-D, Transmission System Equipment, River Crossings; and 255-E, Telephone System.

The Company's allocation within the Transmission System Equipment account was based on the mileage of the several lines regardless of the size of pipe, rather than the dollar cost of the individual lines. Due to this method of allocation, the overheads assigned to the several laterals are inequitable.

This entry reallocates such initial construction overheads over all plant accounts as of November 30, 1928 to which they are applicable based on the ratio of the individual plant account to the total investment.

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 207		
451-E	Tax Expense (1928)	$14,787.33	
	Fixed Capital:		
220-D	Transmission System Rights of Way		
	Main Line		$ 260.35
	Colorado Fuel and Iron Lateral		6.48
	Clayton Lateral		3.01
	Pueblo Lateral		1.02
	Las Animas Lateral		1.71
222-M	Measuring System Structures		
	Colorado Fuel and Iron		.09
	Clayton		.37
	Denver		24.54
	Pueblo		10.50
225-M	Measuring System Equipment		
	Colorado Fuel and Iron		25.46
	Clayton		1.45
	Denver		46.04
	Pueblo		20.58
223-C	Other Compressing System Structures		
	Canon Building No. 11 - Dwelling		10.49
	" " " 12 - Bunkhouse		4.29
	" " " 13 - 2-car garage		.79
	Clayton " " 9 - Bunkhouse		6.67
	Devine " " 1 - Line walker's dwelling		8.47
	" " " 7 - 2-car garage		.95
223-D	Other (Transmission System) Structures		
	Apishapa Building No. 1 - Dwelling and bunkhouse		3.46
	" " " 2 - 2-car garage		.17
	Travesser " " 1 - Bunkhouse and cabin		10.82
	" " " 2 - 2-room dwelling		1.46
	" " " 3 - 3-car garage		.44
226-D	Transmission System Equipment		
	Main Line		13,292.48
	Arkansas River Crossing		169.22
	Huerfano River Crossing		123.80
	St. Charles River Crossing		44.71
	Colorado Fuel and Iron Lateral		359.50
	Clayton Lateral		29.13
	Pueblo Lateral		53.42
255-E	Telephone System		265.46

To remove from plant accounts excess Taxes during Construction capitalized by Vouchers L-254 and M-175 in 1928. Total taxes for the year 1928 as shown by Schedule No. 16-D were $59,149.33, of which $44,361.99, the proportionate amount for the 9-month period ended September 30, 1928, was capitalized and $14,787.33, the proportionate amount for the months of October, November and December, was expensed.

In view of the fact that commercial deliveries of natural gas were made to Colorado Fuel and Iron Company located near Pueblo, Colorado, on June 19, 1928, to Pueblo Gas and Fuel Company on June 21, 1928, and to the Public Service Company of Colorado at Denver, Colorado, on June 23, 1928, the period covered by taxes capitalized, January 1 to September 30, 1928, extends beyond a reasonable date for the commencement of commercial operation, the reasonable date for which appears to be July 1, 1928.

Removal by this entry of $14,787.33 of taxes capitalized for the period July 1 to September 30, 1928 leaves $29,574.66 of taxes in the plant accounts for the 6-month period ended June 30, 1928.

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

No. R-208

Account Number		Debit	Credit
220-D	Transmission System Rights of Way		
	Main Line		$ 369.72
	Colorado Fuel and Iron Lateral		9.21
	Clayton Lateral		4.28
	Las Animas Lateral		2.42
	Pueblo Lateral		1.45
222-M	Measuring System Structures		
	Colorado Fuel and Iron		.13
	Clayton		.52
	Denver	$ 21.00	34.85
	Pueblo		14.92
223-C	Other Compressing System Structures		
	Canon Building No. 11	42.00	14.89
	" " " 12		6.10
	" " " 13		1.13
	Clayton " " 9		9.48
	Devine " " 1		12.03
	" " " 7		1.34
223-D	Other (Transmission System) Structures		
	Apishapa Building No. 1	42.00	4.91
	" " " 2		.24
	Travesser " " 1		15.37
	" " " 2		2.07
	" " " 3		.63
225-M	Measuring System Equipment		
	Colorado Fuel and Iron		36.03
	Clayton		2.06
	Denver	147.00	65.63
	Pueblo		29.11
226-D	Transmission System Equipment		
	Main Line	19,337.14	18,877.10
	Arkansas River Crossing		240.32
	Huerfano River Crossing		175.82
	St. Charles River Crossing		63.49
	Colorado Fuel and Iron Lateral	788.42	510.54
	Clayton Lateral	518.70	41.37
	Pueblo Lateral	103.74	75.86
255-E	Telephone System		376.98
	Totals	$21,000.00	$21,000.00

Reallocation of credit for excess accrual of Ford, Bacon & Davis, Inc. construction fee for one month included in accrual per Voucher H-52, 1928, and spread to primary accounts by Vouchers M-206 and M-210, 1928, subsequently corrected by Voucher A-221, 1929. Debits as above cancel Respondent's allocation by Voucher A-221, 1929, and credits as above represent Examiner's allocation of excess accrual on the same basis as used for reallocation of initial construction overheads capitalized per Examiner's Adjusting Entry No. R-206.

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 209		
226-D	Transmission System Equipment - Clayton Lateral	$10,302.24	
225-M	Measuring Station Equipment - Clayton	23.39	
220-D	Rights of Way - Clayton Lateral		$ 89.08
222-M	Measuring Station Structures - Clayton		3.19
	Miscellaneous Income		10,233.36
		$10,325.63	$10,325.63

To adjust the Company's entry by Voucher F-12, June 1933, covering the sale of the Clayton Lateral and meter station as of May 31, 1933 to Canadian River Gas Company. Depreciation reserves in connection therewith are covered by Examiner's Adjusting Entry No.

The differences between Respondent's recorded costs for this property and Examiner's adjusted costs are due to the Respondent's having erroneously allocated its initial construction overheads as recorded by its Vouchers M-206 and M-210, December 1928, first, by omission of several plant accounts in the base on which the allocation was computed, and second, because the allocation of such overheads within the transmission system was based on the mileage of the several lines rather than on the dollar cost thereof, thus inevitably charging to the Clayton Lateral (2-, 3- and 4-inch pipe) the same rate per mile as was charged the main line and other laterals of larger size.

The allocation of the initial construction overheads is adjusted by Examiner's Adjusting Entry No. R-206 which, together with Examiner's Adjusting Entries Nos. 207 and R-208, results in a net adjustment in the cost of the property disposed of to Canadian River Gas Company as above.

Following is a reconciliation of the cost of such property, per books, adjustments applied, and as adjusted by the Examiner:

Account Number	Description	Cost Per Books May 31, 1933	Cost As Adjusted May 31, 1933	Entry No. 209 Adjustment
220-D	Rights of Way	$ 1,606.50	$ 1,695.58	$ (89.08)
226-D	Trans. System Equipment	38,433.00	28,130.76	10,302.24
218-M	Measuring Station Land	100.00	100.00	
222-M	" " Structures	342.28	345.47	(3.19)
225-M	" " Equipment	1,265.10	1,241.71	23.39
	Totals	$41,746.88	$31,513.52	$10,233.36

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. R-210		
221-C	Canon Main Compressor Building	$4,184.17	
224-7C	Canon Compressing Station Equipment Machine Tools		$2,860.25
224-20C	Canon Compressing Station Equipment General Construction		
	Miscellaneous (Freight)		585.60
	Overheads and Other		738.32

To transfer the cost (plus proportionate general construction costs) of one 7½ ton Whiting overhead traveling crane from Canon Compressing Station Equipment, Accounts 224-7C and 224-20C where recorded by Voucher K-299, October 1929, to Canon Main Compressor Building, Account 221-C.

Original costs thereof are as follows:

Voucher 1929		Charged to Account 224-7C	224-20C
G-4	Whiting Corporation -- Payment on crane	$1,375.00	
G-8	do. do.	687.50	
G-213	do. do.	687.50	
G-59	Henry H. Leonard - Hauling crane from Model, Colo., to Canon station	94.25	
H-112	Whiting Corporation - 1 - 15" P.D. cut gear	16.00	
G-16	Colorado Springs National Bank - Payment of draft for freight on crane		$ 585.60
		$2,860.25	$ 585.60
	General construction, including overheads and indirect field costs as of Dec. 31, 1930 - 21.4263% of direct costs		738.32
		$2,860.25	$1,323.92

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. R-211		
221-C	Clayton Main Compressor Building	$3,382.94	
224-7C	Clayton Compressing Station Equipment Machine Tools		$2,929.47
224-20C	Clayton Compressing Station Equipment General Construction		453.47

To transfer the cost (plus proportionate general construction costs) of one 7½ ton double beam hand crane with Type A rope drum hoist, 65' 5" span, 20' rail to floor, 35# rail, from Clayton Compressing Station Equipment, Accounts 224-7C and 224-20C where recorded, to Clayton Main Compressor Building, Account 221-C.

Original costs thereof are as follows:

Voucher 1930			Charged to Account 224-7C	Charged to Account 224-20C
D-127	Maris Bros., Inc., Philadelphia, Pa. Crane	$2,193.00		
	Less cash discount	21.93	$2,171.07	
D-393	Freight on crane	$1,108.80		
	Less claim for overcharge	261.60	847.20	
D-158	Maris Bros., Inc. - Amount deducted from payment of invoices to cover excess freight paid on crane shipped to Clayton, New Mexico		(88.80)	
			$2,929.47	
	General construction costs, including overheads and indirect field costs - 15.4795% of direct costs			$453.47
			$2,929.47	$453.47

	No. R-212		
221-C	Devine Main Compressor Building	$3,416.12	
224-7C	Devine Compressing Station Equipment Machine Tools		$3,018.27
224-20C	Devine Compressing Station Equipment General Construction		397.85

To transfer the cost (plus proportionate general construction costs) of one 7½ ton double beam hand crane from Devine Compressing Station Equipment, Accounts 224-7C and 224-20C where recorded, to Devine Main Compressor Building, Account 221-C.

Original costs thereof are as follows:

Voucher 1930			Charged to Account 224-7C	Charged to Account 224-20C
D-158	Maris Bros., Inc., Philadelphia, Pa. Crane	$2,193.00		
	Less cash discount	21.93	$2,171.07	
E-450	Freight on crane		847.20	
			$3,018.27	
	General construction costs, including overheads and indirect field costs - 13.181568% of direct costs			$397.85
			$3,018.27	$397.85

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 213		
250-11	Reserve for Depreciation - Compressing Station (1939)		
	Canon Compressing Station	$2,910.95	
224-20C	General Construction Costs		$2,910.95

To adjust Respondent's entry retiring certain abandoned station water wells and river dam, primarily on Voucher K-29, October 1939, which entry retired only direct costs, omitting entirely such General Construction Costs (Account 224-20C) as were applicable thereto. The adjustment is based on recorded costs as follows:

		Acct. 224-8	Acct. 224-20 Gen. Const. Applicable
Station Water Wells			
Cost of wells together with motors, pumps, etc., as of December 31, 1930		$19,606.91	$4,201.04
Less:			
Transfer to Transmission Water Line - Purgatoire, in 1932 (Account 224-28C		(2,743.22)	(587.77)
Transfer to Yard Water Lines in 1939 (Account 224-10)		(947.81)	(203.08)
Retirements	Year 1931 $(180.73)		
	" 1932 (80.88)		
	" 1933 (289.03)		
	" 1935 (245.75)		
Additions	" 1939 5.28	(791.11)	(170.64)
Balance at time of retirement entry		$15,124.77	$3,239.55
Cost of Wells Nos. 3 and 4 retained in plant account as operative wells		3,393.58	727.12
Balance retired per Voucher K-29, October 1939, as the cost of abandoned Wells 1, 2, 5 and 6		$11,731.19	
General Construction Costs applicable to 1939 retirement			$2,512.43
General Construction Costs applicable to retirements during years 1931, 1932, 1933 and 1935			170.64
General Construction Costs subject to retirement in connection with station water wells			$2,683.07
River Dam			
Portion of Work Order No. 134 closed to plant accounts in 1932		$ 2,522.11	$ 227.88
Additions - Work Order No. 163 - Year 1934		3,490.84	
Retirements and transfers - Year 1933		(7.12)	
do.	" 1939	(33.00)	
Balance at time of retirement entry		$ 5,972.83	
Retirement per Voucher K-29, October 1939		5,972.83	
General Construction Costs applicable thereto			$ 227.88
Total General Construction Costs applicable to retirements as above			$2,910.95

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 214		
100-4	Gas Plant Held for Future Use	$19,994.71	
219-C	Leaseholds - Canon Compressor Station		$ 100.00
221-C	Compressor Station Structures - Canon (River Pump House)		1,484.52
	Compressing Station Equipment - Canon:		
224-28C	Transmission Water Line (Purgatoire River)		16,626.12
224-20C	General Construction		1,784.07

To transfer the recorded costs of the above items as of December 31, 1939, plus the proportion of General Construction Costs (Account 224-20C) as are applicable to the Transmission Water Line, Purgatoire River (Account 224-28C), from Gas Plant in Service to Gas Plant Held for Future Use, all in accordance with data acquired in the Engineering investigation as outlined in the attached memorandum.

The amount transferred from General Construction Costs, Account 224-20C, represents the proportion of that account applicable to costs recorded in Account 224-28C, Transmission Water Line, Purgatoire River, and is computed as follows:

	Direct Costs to Which Applicable	General Const. Costs Applied
Transfer in 1932 of costs from Work Order No. 41, originally recorded in Account 224-8C by Voucher J-420, 1930	$ 2,743.22	$ 587.77
From closing Work Order No. 134, by Voucher M-43, 1932	13,240.53	1,196.30
Total General Construction Costs applicable		$1,784.07

COPY

No. 214 (Cont'd)

M E M O R A N D U M

Colorado Springs, Colorado
August 15, 1940

Subject: Colorado Interstate Gas Company
Recommended Adjustment in Plant Accounts

At the time of our inspection of Canon Compressing Station in August 1939, it was found that the Purgatoire River pump house, pumping equipment installed therein, and the water line from the river up to the compressing station site were not in use. It was also observed that a dam, which had been constructed across the river downstream from the suction water line, had been washed away.

Information subsequently obtained from examination of company records, and from conversation with the Chief Engineer of the company and the Chief Engineer of Canon Station is summarized as follows:

(1) Due to inadequacy of water supply from wells located on the compressing station site, in 1932 the company built a dam across the Purgatoire River, installed a gas-engine driven pump in a Butler steel building near the dam and a 4" steel water line from the pump house to the station site.

(2) The major portion of the water supply for compressing station use was obtained from the river from 1932 to 1937, although this source was not too satisfactory, because the river water was very hard, and the dam was seriously damaged by floods from time to time.

(3) In 1937, the company obtained a new supply of much softer water from the Arnet wells, which it drilled on a leasehold approximately four miles from the station site. These wells are now the normal source of supply for all plant uses.

(4) The river dam has washed away and costs were retired by the company in 1939. However, the pump house, pumping equipment and water line are still in place and are still on the company books, although not maintained in the same condition as other property at the station. The company thinks that the Arnet wells will continue to deliver an adequate supply of water, but is not certain of it, and has therefore kept the Purgatoire River water supply system in place so that it can be put in operative condition and used if the Arnet wells go dry or become inadequate.

(5) The Purgatoire River water supply system cannot be used for regular or emergency service in its present condition and hence, in our opinion, should not be classified as plant in service. However, the company's past difficulties in securing an adequate supply of water for Canon Station indicate that there is a possibility that the Purgatoire River water supply system may have to be put back in service at some future date, particularly if the Arnet wells go dry or become inadequate, and hence, we recommend that the company's investment in this property as of December 31, 1939 be classified as plant held for future use.

/s/ L. M. Hill
L. M. Hill
Associate Engineer

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 215		
250-11	Reserve for Depreciation - Compressing System (1930)	$266.74	
224-20C	Devine Compressing Station Equipment General Construction		$266.74

To retire $266.65 of expenses incurred in 1928 and $.09 in 1930, first recorded as Account 224-8C, Water Wells, Devine Station, under Work Order No. 5, later recorded as Account 224-20C, General Construction, in closing out Work Order No. 5. Memorandum in work order ledger is to the effect that the well was abandoned before completion and no well was ever drilled.

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 216		
384-C	Devine Compressing Station Maintenance - Compressing Station Equipment (1935)	$1,220.42	
224-1C	Devine Compressing Station Equipment - Pipe and Fittings		$1,220.42

The above amount represents the capitalized portion of expenses incurred during 1935 in connection with work performed under Work Order No. 198, "Reconditioning the main gas piping at Devine Station," the total cost of which aggregated $3,019.54 as follows:

Materials		Total Cost	Charged to Plant Account 224-1C	Charged to Operating Account 384-C
Wire brushes		$ 25.20		$ 25.20
No oxide paint		40.90		40.90
No oxidized paper		45.73		45.73
Sand and gravel		123.06	$ 102.30	20.76
2" pipe, 152'6"		30.92	30.92	
Daubers		5.41		5.41
5/8" garden hose		4.75		4.75
Sundry		15.29	2.50	12.79
		$ 291.26	$ 135.72	$ 155.54
Labor	$1,844.23			
Trucking	792.73			
Miscellaneous - auto expenses, etc.	91.32	2,728.28	1,084.70	1,643.58
Totals - charged on Voucher M-39, December 1935		$3,019.54	$1,220.42	$1,799.12

Following is a copy of memorandum concerning the recording of the costs of Work Order No. 198:

"COLORADO INTERSTATE GAS COMPANY
Colorado Springs, Colo.
1/17/36

"J. O. Shields

Dear Mr. Shields:

"Work Order No. 198, issued for the reconditioning of the main gas piping at Devine Station, indicates upon analysis that part of the cost of this job should be charged to investment, due to the fact that we excavated the old corrosive soil overlying the pipe - removing it entirely and replacing it by the purchase in Pueblo of fine gravel and sand out of Fountain Creek.

"The total cost of the job was $3,019.54 of which $1,799.12 should be charged to expense and $1,220.42 should be charged to investment.

Yours very truly,

/s/ J. P. McClintock"

The above amount of $1,220.42, capitalized by the Respondent, is transferred to Operating Expenses for the reason that the type of expenses incurred in connection with the work performed under Work Order No. 198, as well as the title of the work order and the above copy of memorandum, indicates the character of work as being in the nature of preventive maintenance rather than an addition to the physical plant.

It also appears that the cost of labor and trucking capitalized is the result of an allocation.

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 217		
383-C	Maintenance of Other Transmission System Structures (1939)	$667.79	
223-C	Other Compressing System Structures - Devine		$667.79
	House No. 1	$148.51	
	" " 2	185.54	
	" " 3	37.04	
	" " 4	37.04	
	" " 9	185.58	
	" " 11	37.05	
	" " 12	37.03	

The above amount represents the entire cost of work performed under Work Order No. 343 (1939), which covered the screening, remodeling and painting of porches of houses at the Devine station, as follows:

House No.		Total Cost Allocated	Screening	Remodeling Back Porch	Painting Front Porch	Painting Back Porch
1	Labor	$105.86		$103.57		$ 2.29
	Material	42.65		40.25		2.40
	Total	$148.51		$143.82		$ 4.69
2	Labor	$115.68	$ 8.67	$103.57	$ 1.15	$ 2.29
	Material	69.86	26.02	40.25	1.19	2.40
	Total	$185.54	$ 34.69	$143.82	$ 2.34	$ 4.69
3	Labor	$ 9.82	$ 8.67		$ 1.15	
	Material	27.22	26.02		1.20	
	Total	$ 37.04	$ 34.69		$ 2.35	
4	Labor	$ 9.82	$ 8.67		$ 1.15	
	Material	27.22	26.02		1.20	
	Total	$ 37.04	$ 34.69		$ 2.35	
9	Labor	$115.70	$ 8.67	$103.58	$ 1.15	$ 2.30
	Material	69.88	26.03	40.25	1.20	2.40
	Total	$185.58	$ 34.70	$143.83	$ 2.35	$ 4.70
11	Labor	$ 9.82	$ 8.67		$ 1.15	
	Material	27.23	26.03		1.20	
	Total	$ 37.05	$ 34.70		$ 2.35	
12	Labor	$ 9.80	$ 8.66		$ 1.14	
	Material	27.23	26.03		1.20	
	Total	$ 37.03	$ 34.69		$ 2.34	
Grand Total		$667.79	$208.16	$431.47	$14.08	$14.08

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

No. 217 (Cont'd)

The above total amount, $667.79, is transferred to Operating Expenses for the reason that the expense incurred appears to be maintenance of the several houses, rather than additions thereto.

Following is a copy of Examiner's letter concerning the propriety of capitalizing the costs of this work order, which inquiry remains unanswered:

"Colorado Springs, Colorado
June 7, 1940

"Mr. J. O. Shields, Assistant Treasurer,
Colorado Interstate Gas Company,
Colorado Springs, Colorado.

Dear Sir:

"The entire cost of Work Order No. 343, $667.79, was charged to Fixed Capital Account No. 223 C, Devine Station, houses numbers 1-2-3-4-9-11 and 12, by Voucher H-34, 1939.

"According to the record the work covered by this work order consisted of screening six houses, numbers 2-3-4-9-11 and 12 $ 208.16
remodeling back porches of houses 1-2 and 9 431.47
painting front porches of houses 2-3-4-9-11 and 12 14.08
painting back porches of houses 1-2 and 9 14.08
$ 667.79

"Inasmuch as these houses were erected some years ago, please advise whether this screening is the first screening of these houses, also the character of the remodeling, and the reason for capitalizing the cost of remodeling and painting the porches.

Yours very truly,

E. L. Dunn,
Examiner of Accounts."

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. R-218		
322-M	Measuring System Structures	$1,379.27	
325-M	Measuring System Equipment		$1,379.27

To transfer from Measuring Station Equipment account to Measuring Station Structures account the various pit and other costs as could be readily determined which had been erroneously recorded as equipment costs.

Station	Total	Material	Labor	Fence	Trucking, etc.
Airport Regulator Station, Colorado Springs	$ 209.01	$138.90	$ 70.11		
Apishapa	214.03	214.03	Undetermined		
Fountain Valley School	73.39	73.39	Undetermined		
Hawley	211.20	151.78	59.42		
Littleton-Arapahoe	32.50			$32.50	
Pueblo County Poor Farm	47.28	47.28	Undetermined		
Rocky Ford	8.00			8.00	
Sullivan	583.86	204.44	204.00 (1)		$ 65.10 (1)
					110.32* (1)
	$1,379.27	$829.82	$333.53	$40.50	$175.42

*Miscellaneous expenses
Note (1): Apportioned on dollar basis between Equipment and Structures.

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 220		
146	Other Deferred Debits	$26,750.00	
203	Other Expenses during Construction		$26,750.00

The above amount, paid by New York Office Voucher 361 (1928) to Henry L. Doherty & Company, and recorded on the records at the Colorado Springs, Colorado office by Voucher H-459 (August 1928), represents a payment to Cities Service Company in June 1928 and is indicated as being the repayment of an advance of $25,000.00 "made by Cities Service Company in connection with the Denver franchise," together with interest thereon at the rate of 6% per annum for 14 months amounting to $1,750.00, or a total of $26,750.00.

The vouchers by which the above item was paid and recorded on the Respondent's Colorado Springs, Colorado records were considered to be inadequately supported in that there were no details regarding the date, purpose or nature of the $25,000.00 advance. In response to Examiner's inquiry of March 30, 1940, Mr. J. O. Shields, Assistant Treasurer, Colorado Interstate Gas Company, replied by letter dated April 18, 1940, as follows:

"With reference to your letter of March 30, 1940, to Mr. P. C. Spencer, I wish to advise that the amount of $26,750.00 paid to Cities Service Company was on account of engineers and other employees in connection with the initial acquisition of the rate ordinance and other matters investigating the feasibility of the gas supply for Denver. We have no knowledge of the exact date on which the various services were performed.

"The amount was an amount agreed to in conference and was approved by Mr. Payne on the face of the bill as a result of that conference. The reason for deferring payment was that the question did not come up until approximately the time of settlement when the Cities Service Company made the request. The interest was included because repayment had been deferred and was decided upon as part of the settlement of the charge."

The explanation of the disbursement given by Mr. Shields as above, and the statement rendered by Cities Service Company, both state that the charge was in connection with the Denver franchise.

The total amount of this disbursement is therefore transferred to Other Deferred Debits by the Examiner, for the reason that the information contained in the letter reproduced above is indefinite as to the type of services rendered and does not show conclusively that the costs of such services as were rendered are legitimate plant costs of the Respondent, particularly since the Denver franchise is held by the Public Service Company of Colorado and not by the Respondent, for which reason it is believed inequitable for the Respondent to absorb in its plant accounts expenses incurred in connection with such franchise, either by or for the account of the holder thereof; and for the additional reason that the amount of the disbursement appears to be the result of negotiations between the parties involved, rather than the actual cost of services rendered.

For the above-stated reasons this amount has been removed from the plant accounts and charged to Other Deferred Debits for the Commission's determination as to the disposition thereof.

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 222		
535	Other Interest Charges (1928)	$183,315.48	
534.2	Other Interest Revenues (1928)		$ 2,448.49
266	Interest during Construction (1928)		180,866.99

The Respondent capitalized as Interest during Construction an amount computed as follows:

October 1928 - Interest charged by Standard Oil Company (New Jersey) to September 30, 1928 on advances made for construction purposes for both Colorado Interstate Gas Company and Canadian River Gas Company (Per details, Schedule No. 10, Part 1)	$447,400.55	
Less, Amount charged to Canadian River Gas Company	265,754.56	
Amount absorbed by Colorado Interstate Gas Company		$181,645.99
December 1928 - Interest charged by Interstate Natural Gas Company on expenditures for the account of Ford, Bacon & Davis, Inc. from June 6 to September 30, 1927, and on advances for Benson Special Account from September 30 to December 16, 1927, and Womble Special Account from November 30 to December 16, 1927	$2,225.99	
Less, Amount charged to Canadian River Gas Company (one-fourth)	556.50	
Amount absorbed by Colorado Interstate Gas Company		1,669.49
Total charges		$183,315.48
Less, Amounts credited to Interest during Construction:		
October 1928 - Charge to Canadian River Gas Company for interest on advances during September 1928	$ 271.94	
October 1929 - Correction of error in transferring interest from Ford, Bacon & Davis, Inc. books per Voucher H-332, 1928. It was then credited to Interest Revenue account, whereas it should have been credited to Interest during Construction. Analysis thereof is shown in Schedule No. 10, Part 1	2,176.55	2,448.49
Net amount of Interest during Construction capitalized (Note 1)		$180,866.99

The interest capitalized therefore represents primarily interest on funds advanced by Standard Oil Company (New Jersey) computed from the date of the advance to September 30, 1928, irrespective of the amounts, and periods such funds were actually used for construction purposes.

It is found that while interest on advances, etc., was capitalized to September 30, 1928, the pipe line was placed in commercial operation prior to that date, the first deliveries of natural gas having been made as follows:

To Colorado Fuel and Iron Company on June 19, 1928
To Pueblo Gas and Fuel Company on June 21, 1928
To Public Service Company of Colorado at Denver, Colorado, on June 23, 1928

The entire amount of $180,866.99 of Interest during Construction as charged which is related to funds borrowed rather than computed on direct construction expenditures during the construction period, is therefore removed from the plant account and the amount substituted in lieu thereof, as the result of Examiner's recalculation, is presented in the following Entry No. 223.

Note: (1) The Company has not capitalized Interest during Construction

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 223		
266	Interest during Construction	$191,901.80	
536	Interest Charged to Construction		$191,901.80

To record Examiner's computation of Interest during Construction based on actual construction expenditures to July 1, 1928, which date is considered as being the reasonable date for commencement of commercial operations in consideration of Respondent's having made the first substantial deliveries of natural gas during June 1928, as set out in the preceding entry.

Details of the Examiner's computation are presented in Schedule No. 10-C.

COLORADO INTERSTATE GAS COMPANY
ACCOUNTANT'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 224		
107	Gas Plant Adjustments	$2,352,941.17	
	Franchises and Contracts		$2,352,941.17

The above amount represents the recorded value of capital stocks issued as follows:

To Southwestern Development Company:	
10,000 shares of 6% preferred stock of $100.00 par value each	$1,000,000.00
531,250 shares of no-par value common stock	1,000,000.00
Total stock issued to Southwestern Development Company	$2,000,000.00
To Cities Service Company:	
187,500 shares of no-par value common stock	352,941.17
Total stocks charged to Franchises and Contracts	$2,352,941.17

Copy of the resolutions adopted by the Board of Directors on June 5, 1928, authorizing the issuance of these stocks, is attached.

For the following reasons the entire amount of $2,352,941.17 is considered a write-up of the plant account to offset the par value of the preferred stock and the recorded value of the common stock issued to associated companies:

(1) Apparently no tangible consideration was received by the Respondent for the above stocks issued, and the intangible value, if any, of the consideration received by the Respondent appears questionable. According to the minutes of the Board of Directors at a meeting held June 5, 1928, Canadian River Gas Company refused to enter into a contract under the terms of which the gas supply of the Respondent was to be purchased from Canadian River Gas Company, unless the Respondent should issue to it or its order as part consideration therefor the stocks shown above as being issued to Southwestern Development Company. The latter company at that time owned, and has continuously owned since that time, 100% of the capital stock of Canadian River Gas Company. Also on June 5, 1928, the Board of Directors of Colorado Interstate Gas Company, in order to make contracts for the sale of gas to Pueblo Gas and Fuel Company and Public Service Company of Colorado, both of which companies were owned or controlled by Cities Service Company, authorized the issuance of 187,500 shares of the Respondent's common stock to Cities Service Company. It therefore appears that the Respondent gave common and preferred stocks at a recorded value of $2,000,000.00 for the right to buy gas, and gave common stock at a recorded value of $352,941.17 for the privilege of selling gas to certain customers. The value, if any, to be placed upon these privileges is referred to the Commission for determination.

(2) The minutes of the Board of Directors do not contain any authorization for the value at which the 718,750 shares of no-par common stock were to be recorded. The price of $1.88235294 per share is the same as that which was paid by Standard Oil Company (New Jersey) for 531,250 shares of no-par common stock purchased by it.

Excerpts from Minutes of the Board of Directors' Meeting
Held June 5, 1928

COPY

WHEREAS, The officers of this corporation have negotiated the purchase by this corporation from the Canadian River Gas Company of certain gas to supply customers of this corporation in and near Denver, Pueblo and Colorado Springs, Colorado, and elsewhere along and near the pipe line which this corporation contemplates constructing from near Clayton, New Mexico, to Denver, Colorado, with branches to Pueblo, Colorado Springs, Concrete and Portland, Colorado, and upon the election of this corporation the gas required by it to supply any other customers which it may have, in the amounts, for the price or prices, and under the terms and conditions specified in a certain proposed agreement bearing date the third day of January 1928, submitted to and read at this meeting; and

WHEREAS, Said Canadian River Gas Company has refused to enter into said contract unless this corporation shall issue to it or to its order as part consideration therefor Ten Thousand (10,000) shares of its One Hundred Dollar ($100.00) par value, Six Per Cent. (6%) Preferred Capital Stock and Five Hundred Thirty-one Thousand Two Hundred Fifty (531,250) shares of its Common Capital Stock, and

WHEREAS, It is deemed to be to the best interests of this Corporation to enter into and perform said contract and pay the consideration therefor;

NOW, THEREFORE, BE IT RESOLVED, That the President or any Vice-President of this corporation be and he is hereby authorized to execute with the Canadian River Gas Company the contract in the form presented to and read at this meeting, and the Secretary or any Assistant Secretary of this corporation be and he is hereby authorized and directed to affix thereunto and attest the corporate seal of this corporation; and

FURTHER RESOLVED, That the officers be and they are hereby authorized to issue to the Canadian River Gas Company or to its order Ten Thousand (10,000) shares of the One Hundred Dollar ($100.00) par value, Six Per Cent. (6%) Preferred Capital Stock of this corporation and Five Hundred Thirty-one Thousand Two Hundred Fifty (531,250) shares of the Common Capital Stock of this corporation as part of the consideration for the Canadian River Gas Company entering into said contract with this corporation; and

FURTHER RESOLVED, That the officers of this corporation be and they are hereby directed to do all things necessary or proper to perform said contract in accordance with the terms thereof.

On motion, duly made and seconded, the following Resolution was unanimously adopted:

WHEREAS, This corporation has requested the Public Service Company of Colorado and the Pueblo Gas & Fuel Company, owned or controlled by the Cities Service Company, to enter into contracts with it for the sale of gas to said companies as provided in said contracts; and

WHEREAS, The Cities Service Company has declined and refused to permit or direct its said subsidiaries to enter into such contracts unless there is issued to it One Hundred Eighty-seven Thousand Five Hundred (187,500) shares of the Common Capital Stock of this corporation; and

WHEREAS, It is to the best interests of this corporation to negotiate the sale of gas to said subsidiaries of the Cities Service Company, under the terms set forth in said contracts, and to issue to the Cities Service Company One Hundred Eighty-seven Thousand Five Hundred (187,500) shares of the Common Capital Stock of this corporation;

NOW, THEREFORE, BE IT RESOLVED, That One Hundred Eighty-seven Thousand Five Hundred (187,500) shares of the Common Capital Stock of this corporation be issued to the Cities Service Company in consideration for its directing its said subsidiary companies to enter into, with this

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Docket G-124

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 225		
146	Other Deferred Debits	$236,666.67	
	Franchises and Contracts		$236,666.67

The above amount represents the net recorded cost of the contract with the City of Colorado Springs, Colorado, and consists of:

(1) Payment of $275,000.00 in July 1931 to Guaranty Trust Company, New York City, to be held in escrow for Mr. Arthur K. Lee pending completion of certain formalities, as the consideration for the assignment per agreement of June 5, 1931 between R. J. Dunham and W. D. Pratt (assignors) and Ford, Bacon & Davis, Inc. (assignees) of:

(A) Franchises from the towns of Sugar City, Ordway, Fountain, Crowley, Olney Springs, Fowler, Manzanola, and South Canon, all in Colorado;

(B) Contract dated July 30, 1930, between the City of Colorado Springs, Colorado, and Arthur K. Lee;

(C) Deposits made in connection with franchises and contracts:

$25,000.00 with Colorado Springs
15,000.00 with Ordway
5,000.00 with Sugar City
5,000.00 with Fountain

(D) All the capital stock of the Canon City Gas Company.

(2) Credit of $25,000.00 arising from the recovery in full by Respondent, of the deposit with the City of Colorado Springs.

(3) Credit of $13,333.33 arising from the recovery of two-thirds of the deposits with Ordway and Sugar City. This amount appears to have been collected by Ford, Bacon & Davis, Inc. and passed along by them to the Respondent in March 1932. According to a letter dated February 27, 1940 from Mr. J. O. Shields, Assistant Treasurer of Colorado Interstate Gas Company, the above represented two-thirds of the cost of the franchises, the other one-third being retained by the towns, and the $5,000.00 deposit with Fountain was forfeited because no terms could be agreed upon. Mr. Shields also advised that no record was found of the capital stock of the Canon City Gas Company but he believes that it had no value at any time.

No. 225 (Cont'd)

In response to inquiries made by the Examiner, Mr. John L. Rice, Town Clerk, Ordway, Colorado, advised that a natural gas franchise dated October 6, 1930 was granted to Arthur K. Lee interests; that the $15,000.00 deposit made was to insure compliance with the ordinance; that the Lee interest therein was apparently transferred to Arkansas Valley Natural Gas Company, and on October 5, 1931 a new ordinance was prepared; that $10,000.00 of the deposit was refunded to Arkansas Valley Natural Gas Company, receipt thereof being acknowledged on December 28, 1931; and that $5,000.00 of the deposit appears to have been retained as a forfeiture because of change or failure on the part of the depositors to comply with the original agreement.

Mr. A. M. Sayers, Town Clerk, Fountain, Colorado, advised that a natural gas franchise dated October 24, 1930 was granted to Arthur K. Lee and subsequently assigned to Arkansas Valley Natural Gas Company (date unknown); and that the $5,000.00 deposit was required to guarantee fulfillment of the terms of the franchise and was forfeited because the assignee would not carry out the terms of the franchise but wanted higher rates for gas.

Examiner's inquiry addressed to the Town Clerk of Sugar City, Colorado, was unanswered.

None of the eight communities, the franchises of which were assigned under the terms of the agreement of June 5, 1931, is served directly by the Respondent. The towns of Sugar City, Ordway, Fowler and Manzanola are served by Arkansas Valley Natural Gas Company, which company is understood to be controlled by Ford, Bacon & Davis, Inc.

The entire amount of the net recorded cost of the City of Colorado Springs, Colorado, contract, $236,666.67, has been removed from the plant account and charged to Other Deferred Debits for the Commission's determination as to the disposition thereof, for the following reasons:

(1) The recorded cost includes $11,666.67 representing unrecovered deposits, which should have been disposed of at the time the deposits were determined to be uncollectible.

(2) The payment of $275,000.00 to Mr. Lee covered franchises in eight communities as well as the contract with the City of Colorado Springs. It therefore appears that some allocation of the payment should have been made as between franchise and contract costs for the nine towns and cities involved.

(3) Gas service to four of the communities from which franchises were received was instituted by Arkansas Valley Natural Gas Company shortly after the date the franchises were acquired by the Respondent. It therefore appears that the Respondent gave these four franchises to Arkansas Valley Natural Gas Company free of charge.

(4) The contract to sell gas to the City of Colorado Springs did not cost Mr. Lee anything. It is clearly understood that the city was negotiating for favorable rates and required no payment, except the deposit of $25,000.00 to guarantee performance of the contract. By reimbursing the Lee interests for whatever expenditures they may have made in connection with the acquisition of the franchises and contracts and for preliminary work in connection with their proposed pipe line, plus a possible promoter's profit, Colorado Interstate Gas Company was able to acquire the Lee contract and thereby remove the possibility of a competitive pipe line in the vicinity of its own pipe line.

Docket G-124

COLORADO INTERSTATE GAS COMPANY
SUMMARY OF INVESTMENT IN GAS PLANT
PER BOOKS AND AS ADJUSTED
AS OF DECEMBER 31, 1939

Schedule No. 1
Sheet 1 of 2

Account No. (1)	Description (2)	Per Books Quantity (3)	Per Books Amount (4)	Examiner's Adjustments Debit (5)	Examiner's Adjustments Credit (6)	Adjusted Total (7)	Suspended for Commission's Consideration (8)
	Transmission System						
226-D	**Main Line and Laterals**						
	Pipe	2,266,033'2"	$ 5,432,988.12	$ 12,985.45	$ 12,985.45	$ 5,432,988.12	($ 512.62)
	Other Materials		1,004,337.64	1,340.17	1,340.17	1,004,337.64	
	Construction Costs		2,650,623.60	494,943.08	672,096.81	2,473,469.87	391,039.35
	Total Pipe, Fittings and Construction		$ 9,087,949.36	$ 509,268.70	$ 686,422.43	$ 8,910,795.63	$390,526.73
218-D	Land		2,420.30		2,420.30		
220-D	Rights of Way	131,206.1 rods	110,400.05	167,741.97	4,974.82	273,167.20	
	Total Main Line and Laterals		$ 9,200,769.71	$ 677,010.67	$ 693,817.55	$ 9,183,962.83	$390,526.73
	Compressing System						
216-C	Land	174 acres	$ 4,104.51		$ 200.00	$ 3,904.51	
219-C	Leaseholds	321 acres	623.25		100.00	523.25	
221-C	Structures		185,654.96	$ 10,983.23	1,484.52	195,153.67	$ 7,370.20
224-C	Equipment		1,232,104.97		33,791.53	1,198,313.44	50,866.46
223-C	Other Structures		188,815.99	1,048.14	1,711.53	188,152.60	4,829.14
227-C	Other Equipment		5,320.18			5,320.18	
	Total Compressing System		$ 1,616,623.86	$ 12,031.37	$ 37,287.58	$ 1,591,367.65	$ 63,065.80
	Measuring System						
218-M	Land						
222-M	Structures						
225-M	Equipment						
227-M	Other Equipment						
	Total Measuring System						
	Other Structures and Equipment						
218-D	Land	165.18 acres	$ 926.90			$ 926.90	
219-D	Leaseholds	10.00 acres	115.50			115.50	
223-D	Structures		59,573.44	$ 564.85	$ 534.98	59,603.31	$ 877.82
227-D	Equipment		18,792.11			18,792.11	186.50
	Total Other Structures and Equipment		$ 79,407.95	$ 564.85	$ 534.98	$ 79,437.82	$ 1,064.32
255-E	**Telephone System**		$ 116,875.65	$ 9,436.11	$ 642.14	$ 125,667.60	$ 1.62
	Total Transmission System		$11,043,675.15	$ 699,043.30	$ 732,282.55	$11,010,435.90	$454,658.50
	Distribution System						
	Measuring System						
218-M	Land	12.2007 acres	$ 12,210.45	$ 100.00	$ 100.00	$ 12,210.45	
222-M	Structures		51,534.68	2,878.15	1,327.07	53,085.76	$ 2,023.86
225-M	Equipment		90,293.64	4,403.66	6,158.06	88,539.24	3,046.17
227-M	Other Equipment		3,037.29			3,037.29	
	Total Distribution Measuring System		$ 157,076.06	$ 7,381.81	$ 7,585.13	$ 156,872.74	$ 5,069.03

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COLORADO INTERSTATE GAS COMPANY
SUMMARY OF INVESTMENT IN GAS PLANT
PER BOOKS AND AS ADJUSTED
AS OF DECEMBER 31, 1939

Schedule No. 1
Sheet 2 of 2

Account No. (1)	Description (2)	Per Books Quantity (3)	Per Books Amount (4)	Examiner's Adjustments Debit (5)	Examiner's Adjustments Credit (6)	Adjusted Total (7)	Suspended for Commission's Consideration (8)
	Undistributed Fixed Capital						
203	Entrance Rights of Way		$ 350,000.00		$ 350,000.00		
203	Other Expenses during Construction		63,675.61		26,750.00	$ 36,925.61	$ 32,803.59
262	Law Expenditures during Construction		50,899.41		50,853.41	46.00	
266	Interest during Construction		180,866.99	$ 191,901.80	180,866.99	191,901.80	
	Total Undistributed Fixed Capital		$ 645,442.01	$ 191,901.80	$ 608,470.40	$ 228,873.41	$ 32,803.59
	General Property						
249-E	Office Furniture and Equipment		$ 29,108.82			$ 29,108.82	$ 16.18
253-E	Garage Equipment		67,524.79			67,524.79	
256-E	Tools and Equipment		33,930.69			33,930.69	
	Total General Property		$ 130,564.30			$ 130,564.30	$ 16.18
	Franchises and Contracts						
	Book value of stocks issued to Southwestern Development Company and Citi[illegible] Service Company		$ 2,352,941.17		$ 2,352,941.17		
	Net cost of City of Colorado Springs, Colorado contract		236,666.67		236,666.67		
	Total Franchises and Contracts		$ 2,589,607.84		$ 2,589,607.84		
	Total Gas Plant Accounts		$14,566,365.36	$ 898,326.91	$ 3,937,945.92	$11,526,746.35	$492,547.30
	Construction Work in Progress		$ 29,677.85			$ 29,677.85	
	Gas Plant Held for Future Use			$ 19,994.71		19,994.71	
	Gas Plant Adjustments			2,352,941.17		2,352,941.17	
	Total		$14,596,043.21	$3,271,262.79	$ 3,937,945.92	$13,929,360.08	$492,547.30

Exhibit No. 139

Docket G-124 BAD PRINT (

Statement No. 1

COLUMBIA INTERSTATE GAS COMPANY
COMPARISON OF ORIGINAL COST OF DEVELOPED LIVE PROPERTIES
AS OF DECEMBER 31, 1959, PER COMPANY BOOKS
WITH EXHIBIT NO. 67 INTRODUCED BY MR. WILLIAM A. LUNK

Exhibit No. 10

Account No.	Name	Original Cost Per Books Dec. 31, 1959	Allocation of Undistributed Construction Costs Per Exhibit No. 67 (Note 1)	Original Cost Per Books Adjusted to Include Allocation of Undistributed Construction Costs Dec. 31, 1959	Original Cost Per Statement No. 2 Exhibit No. 67 Dec. 31, 1959	Difference
	(1)	(2)	(3)	(4)	(5)	(6)
	Transmission System					
	Main Line and Laterals					
218 D	Land	$ 2,480.30				
280 D	Rights of Way	110,408.05				
286 D	Transmission Line Equipment	9,087,940.36				
	Total Main Line and Laterals	$ 9,200,789.71	$ [illegible]	$ 9,[illegible]	$ 9,[illegible]	$ [illegible]
	Compressing System					
218 C	Land	$ 4,104.51				
219 C	Leaseholds	685.85				
221 C	Structures	185,651.96				
224 C	Equipment	1,232,104.97				
225 C	Other Structures	188,815.99				
227 C	Other Equipment	5,320.18				
	Total Compressing System	$ 1,616,685.86	$ 988.00	$ 1,617,611.86	$ 1,617,611.86	
	Other Structures and Equipment					
218 D	Land	$ 986.00				
219 D	Leaseholds	115.50				
225 D	Structures	59,573.44				
227 D	Equipment	18,792.12				
	Total Other Structures and Equipment	$ 79,467.06	$ 321.06	$ 79,[illegible]	$ 79,[illegible]	
255 T	Telephone System	$ 151,875.63	$ [illegible]	$ 151,[illegible]	$ 151,[illegible]	
	Total Transmission System	$11,[illegible]	$ [illegible]	$11,[illegible]	$11,[illegible]	$ [illegible]
	Distribution System					
	Measuring System					
218 M	Land	$ 12,210.48				
222 M	Structures	51,534.68				
225 M	Equipment	90,893.44				
227 M	Other Equipment	3,037.89				
	Total Distribution-Measuring System	$ 157,676.05	$ [illegible]	$ 180,[illegible]	$ 180,[illegible]	
	General Property					
219 E	Office Furniture and Equipment	$ 89,108.88				
253 E	Garage Equipment	67,584.79				
256 E	Tools and Equipment	33,930.69				
	Total General Property	$ 190,[illegible]	$ [illegible]	$ 192,690.36	$ 192,690.08	
	Undistributed Fixed Capital					
203	Intangible Rights of Way ($350,000.00)		Omitted from Exhibit No. 67			
203	Other Expenses during Construction	$ 63,675.61	$ (63,675.61)			
262	Law Expenditures during Construction	50,899.41	(50,899.41)			
266	Interest during Construction	180,866.99	(180,866.99)			
	Total Undistributed Fixed Capital	$ [illegible]	$ [illegible]			
	Comparable Totals - Original Cost of Above Items					
	Per Books and Item 7, Statement 2, Exhibit 67	$11,626,757.52		$11,626,757.52	$11,[illegible]	$ [illegible]

Note 1: Based on Plant Accounts (as adjusted by Mr. Lunk) as of December 31, 1959.

Docket G-124 Statement No. 1-A

Exhibit No. 195

COLORADO INTERSTATE GAS COMPANY

ORIGINAL COST OF DENVER PIPE LINE PROPERTY AS OF DECEMBER 31, 1958

PER BOOKS AND AS RECLASSIFIED BY MR. LUSK

AS THE BASIS FOR ALLOCATION OF UNDISTRIBUTED CONSTRUCTION COSTS

	Original Cost Per Books	As Reclassified by Mr. Lusk
	December 31, 1958	
Compressing System	970.95	88,361.00
Transmission System	8,165,107.07	8,153,061.00
Measuring System	72,187.16	88,866.00
Other Structures and Equipment	36,288.82	10,850.00
Telephone System	140,347.35	140,348.00
Other General Property	64,986.81	99,302.00
Total of Above	$8,480,188.14	$8,480,188.00
Undistributed Fixed Capital	$ 897,618.56	$ 897,619.00
Total	$9,377,806.70	$9,377,807.00

Ratio of Undistributed Construction Cost to Direct Costs

$\frac{\$8,480,188.14}{\$295,102.01\ (\$297,618.56\ \text{adjusted})} = 3.18990867\%$

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Docket G-134

COLORADO INTERSTATE GAS COMPANY

COMPARATIVE STATEMENT SHOWING COST OF CERTAIN FARMS, THE COST OF RIGHTS OF WAY PREVIO

Company's Designation (1)	Description (2)	Approximate Acreage (3)	Cost: Purchased From (4)	Date (5)	Voucher Reference (6)	Amount (7)
Anderson Farm	Located in the south half of Section 22, Twp. 26 south, Range 60 west Pueblo County, Colorado	320.00	Public Trustee of Pueblo County, Colorado	Jan. 7, 1932	A-272	$ 112.48
			Legal & Recording Expenses	Mar. 26, 1932	C-236	65.00
						$ 177.48
Castle Farm	Located in the northwest quarter of Section 3, and the northeast quarter of Section 4, Twp. 21 south, Range 63 west, Pueblo County, Colorado	176.71	Public Trustee of Pueblo County, Colorado	July 31, 1930	C-379	$ 7,319.58
			Federal Land Bank of Wichita - for "Loan on Castle Property."	Mar. 13, 1931	C-219	$ 3,887.94
						$11,207.52

The cost of the Castle Farm includes 26 shares of the capital stock of the Bessemer Irrigating Ditch Company, which according to the latter, has a market value of at least $75.00 per share, or the 26 shares owned have a minimum market value of $1,950.00.

Gammer Farm	Consists of the west half of Section 29, lots 1 and 2, the east half of the northwest quarter, and the northeast quarter of Section 30, Twp. 28 south, Range 59 west, Las Animas County, Colorado	636.52	Public Trustee of Las Animas County, Colorado	Nov. 26, 1930	L-207	$ 1,219.75
Green Farm	Located in the east half of Section 29, Twp. 33 south, Range 57 west, Las Animas County, Colorado	320.00	Public Trustee of Las Animas County, Colorado	May 8, 1930	E-246	$ 1,073.00
James Farm	Consists of lots 1 and 2, the east half of the northwest quarter, and the northwest quarter of the northeast quarter of Section 18, Twp. 28 south, Range 59 west, Las Animas County, Colorado	195.69	Public Trustee of Las Animas County, Colorado	June 5, 1931	F-259	$ 656.76

Total Cost of Farms per Books Carried Therein as "Other Physical Property" $14,334.51

Original Cost of Rights of Way across the Identical Farms, which Cost is Included in Plant Account No. 280 D - Transmission

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Statement No. 2

Exhibit No. 195

COLORADO INTERSTATE GAS COMPANY

RATIVE STATEMENT SHOWING COST OF CERTAIN FARMS, THE COST OF RIGHTS OF WAY PREVIOUSLY ACQUIRED THEREON

Approximate Acreage (3)	Cost: Purchased From (4)	Date (5)	Voucher Reference (6)	Amount (7)	Original Cost of Right of Way Retained in Plant Account as of Dec. 31, 1939: Purchased From (8)	Date (9)	Voucher Reference (10)	Book R-O-Way (11)	Cost (12)
	Public Trustee of Pueblo County, Colorado	Jan. 7, 1932	A-272	$ 112.48					
320.00	Legal & Recording Expenses	Mar. 26, 1932	C-236	65.00					
				$ 177.48	H. L. Anderson	Nov. 15, 1927	F.B.& D. Inc. Memo L-12	177.2	$ 89.00
	Public Trustee of Pueblo County, Colorado	July 31, 1930	C-379	$ 7,319.58	L. A. Castle and R. G. Castle	Nov. 15, 1927	do.	853.5	$127.00
					R. G. Castle and J. K. Castle	Mar. 26, 1928	F.B.& D. Inc. Memo C-86	Not stated	47.00
176.71	Federal Land Bank of Wichita - for "Loan on Castle Property."	Mar. 13, 1931	C-219	$ 3,887.94	(In addition $1,000.00 was paid for damages and $207.50 for Dorn release, making the total paid for right of way and damages $1,381.50.)				
				$11,207.52					$174.00

f the capital stock of the Bessemer Irrigating Ditch Company, ue of at least $75.00 per share, or the 26 shares owned here

	Public Trustee of Las				Simon J. Gaumer	Nov. 15, 1927	F.B.& D. Inc. Memo L-12	Option	$ 1.00
636.52	Animas County, Colorado	Nov. 26, 1930	L-207	$ 1,219.75		Jan. 20, 1928	F.B.& D. Inc. Memo A-17	357.5	179.00
									$180.00
	Public Trustee of Las Animas				Alton E. Green	Nov. 15, 1927	F.B.& D. Inc. Memo L-12	Option	$ 1.00
320.00	County, Colorado	May 8, 1930	E-246	$ 1,075.00		Jan. 11, 1928	F.B.& D. Inc. Memo A-9	22.0	11.00
									$ 12.00
	Public Trustee of Las						F.B.& D. Inc.		
195.69	Animas County, Colorado	June 5, 1931	F-259	$ 656.76	J. Paul Jones	Nov. 15, 1927	Memo L-12	177.0	$ 89.50
as "Other Physical Property"				$14,334.51					

stical Farms, which Cost is Included in Plant Account No. 280 D - Transmission System Rights of Way as of December 31, 1939 $543.50

Vol. III

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1954

No. 378

COLORADO INTERSTATE GAS COMPANY, PETITIONER,

vs.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, ET AL.

No. 380

CANADIAN RIVER GAS COMPANY, PETITIONER,

vs.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, ET AL.

ON WRITS OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE TENTH CIRCUIT

PETITIONS FOR CERTIORARI FILED AUGUST 30, 1954.

CERTIORARI GRANTED OCTOBER 11, 1954.

JANUARY 3, 1955.

United States Circuit Court of Appeals

TENTH CIRCUIT.

No. 2550.

COLORADO INTERSTATE GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

No. 2551.

CANADIAN RIVER GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; PUBLIC SERVICE COMPANY OF COLORADO; and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

ON PETITION TO REVIEW AND SET ASIDE ORDERS OF THE FEDERAL POWER COMMISSION.

FILED SEPTEMBER 9, 1942.

VOLUME 3—Pages 1231-1820

[Testimony of CARL H. SCHUTTE, continued.]

By Mr. Lange:

Q. Mr. Schutte, you have heretofore testified in connection with exhibits prepared and submitted in this proceeding?

A. Yes, sir.

Q. I will ask you whether you have also had occasion to examine Exhibit No. 67 that was prepared by Mr. William A. Lusk and heretofore identified in this proceeding, in evidence?

A. Yes, sir.

Q. In connection with that exhibit I will ask you whether you have examined Statement 2 of that exhibit of Mr. Lusk which is described as original cost of Denver pipeline properties at December 31, 1920 to 1939, inclusive?

A. Yes, sir, I did.

Q. Did you find any difference between the amounts shown on that statement and those on the books of the company as of December 31, 1939?

A. In so far as the plant account is concerned, yes, sir.

Q. What was that difference?

A. The difference is $14,334.51.

Q. And what did that consist of?

A. In the transmission groups of accounts, which is Item 1 of Statement 2 of Exhibit 67, Mr. Lusk included the cost of five farms that are owned by the Colorado Interstate Gas Company and which are carried on its books and financial statements as other physical property. The cost of those farms at December 31, 1939 was $14,334.51 and the company's statement shows them in the category of an investment other than its investment in pipe line facilities.

Q. Now, what do those items describe, as in the company's books?

A. The company describes them as Anderson farm, Castle farm, Gaumer farm, the Green farm and the Jones farm.

Q. Do you have any record as to the time of acquisition of those properties per the company's books?

A. Yes, sir. Ford, Bacon & Davis purchased right of way easements prior to and during the construction of the pipe line from the owners of each of these farms. They did not, however, obtain appropriate releases in connection with the mortgages when they acquired those rights of way

or easements. When the right of way over the Anderson farm was purchased in November 1927 the taxes for that year had not been paid, and in 1932 when the tract was sold for unpaid taxes the 1927 tax item was senior to the right of way easement acquired and the sale of the property at public auction and the purchase thereof by other interests would have made the original right of way purchased ineffective.

To protect its right of way across this tract, the company purchased the farm at the tax sale. The Castle, Gaumer, Green and Jones farms were purchased at mortgage foreclosure sales. Due to the fact that the mortgages were senior to the right of way easements acquired and because no releases had been secured when the easements were acquired, the sale of these farms to other interests at a foreclosure would have made those rights of way ineffective.

I think I mentioned once before that Mr. Benson advised us that it had not been the company's policy to acquire releases in cases of mortgages except when it appeared that the mortgage was likely to be foreclosed upon and in those instances where they would secure the necessary releases the payments in such cases were usually applied, with the consent of the mortgagor, as a payment on the mortgage itself.

Q. What Mr. Benson did you have reference to?

A. H. F. Benson, the company's land representative. There were two mortgages on the Castle farm. The first mortgage was held by the Federal Land Bank of Wichita and a second mortgage by Nathan L. and Raymond A. Wheeler.

The holders of the second mortgage foreclosed and the company purchased the property. When the first mortgage became due the company paid that. The cost of the Castle farm includes 26 shares of the capital stock of the Bessemer Irrigating Ditch Company. According to information received from that company its capital stock has a market value of at least $75 per share. Therefore, the 26 shares acquired with the Castle farm have a market value of at least $1950, which, however, has not been segregated from the cost of the farm itself.

The Gaumer, Green and Jones farms were purchased from the public trustee of Las Animas County, Colorado at mortgage foreclosure sales. The same situation holds true there as to releases.

Q. What reason, if any, do you have for not including those—for not recognizing those as properly includable in the original cost as of December 31, 1939?

A. Well, the company had already acquired rights of way over the five farms prior to or during construction period and the costs of those rights of way have been and are still included in the appropriate plant accounts.

To, therefore, include any portion of the farm cost in addition to the costs of such rights of way results in duplication of that particular right of way cost; then, too, these tracts, the area of which is shown on the—well, in an exhibit I have prepared there—are not now and never have been in their entirety devoted to the operation of the company's pipe line facilities, and only that portion of each of the farms as is used for right of way is essential for gas operations.

The Federal Power Commission's Uniform System of Accounts under instructions, gas plant account, Page 44, Item 9, under land and land rights, says:

"The cost of land and land rights acquired in excess of that used in gas operation, shall be included in Account 110, Other Physical Property, or Account 100.4, Gas Plant Held for Future Use, as appropriate."

Section "J" of that particular section states:

"When the purchase of land for gas operations requires the purchase of land not used for such purposes the charge to the specific land account shall be based upon the estimated cost of only that portion which is used for gas operations. The cost of the remaining land shall be included in Account 100.4, Gas Plant Held for Future Use, or 110, Other Physical Property, as Appropriate."

The company has consistently shown the cost of these farms as other physical property and has excluded that amount from its plant account in its statements and on its books, and the tracts in their entirety are not devoted to or

necessary for the operation of the company's pipe line facilities, which is evidenced by the fact that the titles to the five farms as at December 31, 1939 in the names of E. S. Hall, to facilitate the transfer of the properties if an opportunity to sell the farms occurs.

In discussing these items with Mr. H. F. Benson the company's land representative, he told us that a few years ago the United States Government offered to buy the Gaumer and Jones farms which are located in the so-called Colorado Dust Bowl area in connection with reclamation work. The company agreed to sell these farms at the Government price, but because funds for the project were exhausted, the farms were not purchased and are still retained by the company.

Q. You just referred to the fact that you had prepared a compilation making a comparison of costs in connection with these farms. This is the comparative statement you have reference to?

A. Yes, sir.

Mr. Lange: Will the stenographer please mark that for identification?

The Trial Examiner: It will be marked for identification as Exhibit No. 195.

(Exhibit 195, Witness Schutte, marked for identification.)

The Witness: That purports to be a comparison of original cost of the Denver pipe line properties as of December 31, 1939, per company books, with Exhibit No. 67 introduced by Mr. William A. Lusk.

By Mr. Lange:

Q. That is the same exhibit you were just referring to a while ago?

A. Yes, sir.

Q. Now what are the differences that you noted in connection with the Statement 2 of Mr. Lusk's Exhibit 67, particularly items 1 to 7 of that statement?

A. In preparing Statement 2 of Exhibit 67, Mr. Lusk made an allocation of the previously undistributed construction items. This allocation covered other expenses

during construction, $63,675.61; law expenditures during construction, $50,899.41; and interest during construction, $180,866.99, or a total of 295,442.01.

Mr. Spencer: You referred to items 1 to 7 and I am not following you as to what items you are talking about.

The Witness: Exhibit 67.

Mr. Lange: Of Exhibit 67, Statement 2, Mr. Spencer.

Mr Spencer: I see. All right. Excuse me.

The Witness: One item of undistributed construction costs on the books which is rights of-way, in the amount of $350,000 was omitted from the statement—from Mr. Lusk's Exhibit No. 67. Mr. Lusk allocated the items aggregating $295,442.01 to the functional groups rather than to the individual primary accounts, using as a basis the ratio of the total of such undistributed amounts to the direct construction costs as of December 31, 1928, which resulted in the addition to each of the functional groups—functional group figures at December 31, 1928 of 3.4839086 per cent, of the direct costs as undistributed construction expenditures. The allocation of the undistributed construction costs and the application thereof to the book costs as of December 31, 1939 is shown in Statement No. 1 of Exhibit 195 just introduced.

Mr. Spencer: 1-A, you mean, Mr. Schutte?

The Witness: No. 1, Mr. Spencer. In Column 3 is where he makes his allocation.

Mr. Spencer: I see.

The Witness: Which also shows the comparison of the original cost per books adjusted to reflect the inclusion of the undistributed construction costs to functional groups with the amounts for comparable accounts per statement 2 of Exhibit 67.

I agree with Mr. Lusk that the method used for allocation of previously undistributed construction costs is an equitable method of distribution. However, there has been some retirement of property included in the December 31, 1928 investment base to which a proportionate part of the

undistributed construction expenditures should have been applied in recording such retirements. This has been overlooked both as to the company books and in the preparation of Statement 2 of Exhibit 67.

By Mr. Lange:

Q. Well, then, in your opinion how much of those undistributed construction costs should have been retired?

A. Based on the retirements in the transmission system other structures and equipment, telephone system, office furniture and equipment, tools and equipment, and all of the garage equipment, that was in the fixed property account at December 31, 1928, approximately $4,000. This amount of course is subject to adjustment based on the use of the individual primary accounts, as of December 31, 1928, as a basis for the allocation of the previously undistributed construction costs.

The amounts of each of the primary accounts were not available in Mr. Lusk's working papers, he having prepared his statement on functional group rather than on an individual primary account basis.

The total amount of the undistributed construction costs allocated as well as the portion thereof subject to retirement is subject to adjustment based on the Commission's determination as to the inclusion of all of the claimed original costs, whether direct or otherwise.

Q. Now, do you limit these exceptions that you have taken to the statements in No. 2 of Mr. Lusk's Exhibit 67, or are they also applicable to any other exhibits in your opinion?

A. They represent only exceptions taken to the original costs as shown by Statement 2 of Exhibit 67, Items 1 to 7 thereof, inclusive.

Q. Is there any other statement that you wish to make in connection with that, Mr. Schutte? I will ask you whether that same exception would apply in any other exhibit or any other testimony in this proceeding where those same figures are utilized?

A. So far as I know those figures have only been utilized in connection with Exhibit 67.

Q. If they are utilized in any other exhibits or subsequent exhibits your same objections would apply?

A. That is correct.

Q. And your opinion that you have expressed now would apply?

A. Yes, sir.

Mr. Lange: Mr. Examiner, I see there is a typographical error here in the spelling of a word in this exhibit, Statement No. 2, "Comparative Statement Showing Cost of Certain Forms:" The word "Forms," F-o-r-m-s, should be "Farms", F-a-r-m-s.

The Trial Examiner: The second line from the top of the page, Mr. Lange?

Mr. Lange: Yes, sir.

The Trial Examiner: Very well, we will have the reporter make that correction.

Cross Examination.

By Mr. Spencer:

Q. Mr. Schutte, referring to the fact that in your opinion Mr. Lusk has overlooked deducting his undistributed construction costs on items of property that have been retired, I think you said about $4,000 was the amount?

A. That is correct.

Q. Is there any detail on that in this Exhibit No. 195?

A. No, sir.

Q. Have you any more detail that what you gave in your direct testimony?

A. No, sir.

Q. In other words, you haven't reduced the error, if any, to a specific schedule or statement?

A. No, sir.

Q. You have not?

A. I did not do that, Mr. Spencer, because I had already taken exception to certain items that are included in this undistributed cost which I suspended for the Commission's consideration in connection with my plant exhibit which I think is No. 139, and until a determination has been made

elimination in connection with the total amount as recorded on the books for undistributed construction expenditures.

Q. Well, then, how do you arrive at your figure of approximately $4,000? Is that an estimate?

A. Using the recorded book figures.

Q. This Exhibit No. 195 relates to Canadian River Gas Company and Colorado Interstate Gas Company?

A. No, 195 is Colorado Interstate only.

Q. I see, and your objections or criticisms of Mr. Lusk's Exhibit No. 67 relates wholly to transactions involving Colorado Interstate Gas Company?

A. That is correct.

Q. And not Canadian River Gas Company?

A. Canadian River Gas Company is not included, no, sir.

Mr. Spencer: I don't know how much additional cross examination there will be on this exhibit, Mr. Examiner, if any, but whatever there is I would like to reserve until sometime next week.

Mr. Lange: In other words, we will defer offering the exhibit until that time.

Redirect Examination.

By Mr. Lange:

Q. Now, Mr. Schutte, in connection with your *accounging* work on this assignment in the present proceedings and with further relation to the exhibit 67 that has been presented in this proceeding by Mr. Lusk, I will ask you whether you have made a study of and have reduced that study to a written statement as to a discussion of the re-accounting for items previously expensed that are now set up and capitalized by the company?

A. Yes, sir.

Q. Is this the written statement that you have prepared in connection with that?

A. Yes, sir.

Mr. Spencer: Do you mean to say, Mr. Lange, that the company had set up these figures that you refer to? You didn't mean that, did you?

Mr. Lange: No. That is set up in Ford, Bacon & Davis'

Mr Spencer: But not on the books of the company.

Mr. Lange: But not on the books of the company.

Q. Will you proceed, Mr. Schutte, to read that written statement?

Mr. Spencer: Before he starts reading I would like to ask a general question if I may, Mr. Lange.

Mr. Lange: Very well.

Mr Spencer: I might say, Mr. Examiner, before I start asking the questions, the point of my questions is this: a few days ago there was read into the record with a reservation to strike in whole or in part, what I termed a treatise on the subject of original cost by Mr. Kenneth L. Smith. The Examiner has not acted upon that as yet because we haven't been prepared as yet to ask him to, but it seems to me that from the standpoint of orderly procedure in *minimumizing* the record that we ought to eliminate in so far as we can all such treatises as a matter of testimony.

If we have to resort to *treatices* and text books and whatnot for support of our accounting treatment or any other kind of treatment of any other subjects, it seems to me it is a matter to be handled in briefs and to be done by argument rather than to come in here and fill up this record with long extended opinions about this or about that. The evil of it is this: As Mr. Smith comes along and puts in his conclusions on this subject, well, in order to rebut that we come along and we want two or three treatises on the same subject, let us say accountants of equal eminence, and before we get through we have yards and reams and reams of that kind of testimony in this record.

Now, I haven't read through Mr. Schutte's statement here. It may not come in that category at all. As I glance through it here it apparently deals with specific items.

The Witness: Factual.

Mr. Spencer: And factual matters rather than, let us say, scholarly or academic discussions on the subject of re-accounting.

The Witness: That's right.

Mr. Spencer: If he does that, I have no objection. Perhaps my objection wouldn't be warranted if he did go into an academic discussion of it, but I am just suggesting that to the Examiner at this time that the more of this we do the more it is going to be necessary to continue it on rebuttal.

Mr. Lange: Well, this study that Mr. Schutte has made relates specifically to this Exhibit 67 heretofore presented in evidence in this proceeding by Mr. Lusk, and is in the nature of a similar treatment to the one prepared by Mr. Lusk just this afternoon that has been submitted and I think it is definitely pertinent as rebuttal testimony on the part of the Commission and certainly is admissible and very relevant to these proceedings.

Mr. Spencer: Well, if it is that—if it is a factual statement based upon specific entries and items, then I don't object to it at all.

The Trial Examiner: Well, in just glancing through the statement it appears to me that it deals in specific amounts and specific matters. I presume all accounting studies and engineering studies perhaps might include one or two conclusions of the witness, but those matters I think are safely dealt with in a proceeding of this kind.

Mr. Lange: I will ask Mr. Schutte right at this point whether he has approached this problem entirely from an accounting standpoint in relation to this matter that he has in his written statement.

The Witness: Yes, altogether from an accounting standpoint.

Mr. Spencer: Well, let me ask one question there, Mr. Schutte. You are dealing here with specific problems relating to these proceedings all the way through?

The Witness: I am dealing here, Mr. Spencer, with the exact items shown in Exhibit 67, Statement 2, which were supported by a report made by Ford, Bacon & Davis dated April 15, 1940. The total amounts are included in the plant account in Exhibit 67 but the breakdown of those items does not appear anywhere because that report of Ford, Bacon & Davis has not been presented here.

Mr. Spencer: You have a copy of it, however?

The Witness: Yes, sir.

Mr. Spencer: Which was furnished to you, I think, through me in the first instance?

The Witness: I believe so, yes, sir.

Mr. Spencer: I would suggest this, Mr. Examiner, that the witness proceed to read the entire statement into the record without interruption and at the conclusion, counsel on this side of the table shall have the right at some subsequent time to move to strike in whole or in part as to any part or parts thereof that may seem objectionable.

The Trial Examiner: Yes, it will be so understood, Mr. Spencer. I think that is the premise we have proceeded on in all these written statements.

Mr. Lange: That is agreeable.

(Vol. LXV, pp. 9388-9405.)

EXHIBIT 196.

Docket G-124.

Written Statement Re Colorado Interstate Gas Company's Re-Accounting for Items Previously Expensed Which It Now Desires to Capitalize.

Witness Carl H. Schutte, Examiner of Accounts.

In the company's statement of original cost of Denver pipe line properties, Exhibit No. 67 in these proceedings, there is included the amount of $284,806.00 (Statement 2, Item 8) as an Adjustment for Capital Items Charged to Expense.

This amount is now claimed to represent fixed capital additions charged to expense on the books of Colorado Interstate Gas Company because of accounting errors.

The nature and extent of such items are said to be fully described and detailed in the memorandum report by Ford, Bacon & Davis, Inc., entitled "Items Charged to Expense on the Books of Colorado Interstate Gas Company During the Period 1930 to 1939, Inclusive, Which Should Have Been Capitalized," dated April 15, 1940.

These items are summarized briefly as follows:

1.	Flood and Washout Control	$ 26,637.68
2.	Rock Weighting	46,683.72
3.	Cattle Guards	4,923.70
4.	Bridges	8,052.93
5.	Rip Rap and Revetments—River and Stream Crossings	24,400.99
6.	Roads and Culverts	32,380.69
7.	Gravel, Rock and Shale for Main Line	9,921.87
8.	Cathodic Protection	49,935.20
9.	Profile Maps	2,989.53
10.	Lowering Lines	638.33
11.	Spare Parts	5,623.84
12.	All Other, Miscellaneous	72,617.88
	Total	$284,806.36

The expenditures covering these items are shown by component costs and by years in Exhibit No. 196.

1. Flood and Washout Control—$26,637.68

Ford, Bacon & Davis, Inc. explain this item as follows:

"These improvements consist principally of building and placing water breaks, cutting spillways and ditches, contour plowing and terracing, all designed to prevent washouts, to carry off the excess surface water and retard water run off to prevent soil erosion. The work was done along the main line right-of-way and adjoining lands on slopes and in arroyos (so-called bad lands) and canyons."

The cost of this work which was started in the year 1930, and of which approximately 46% was accomplished during the years 1938 and 1939, according to Ford, Bacon & Davis, Inc. analysis, is composed of:

Labor	$16,162.18	60.67%
Trucking	7,447.76	27.96%
Materials	1,227.74	4.61%
Other Costs	1,800.00	6.76%
Total	$26,637.68	100.00%

The company's records show that a considerable portion of the above labor and trucking costs, particularly during recent years, vas for contour plowing and terracing on lands adjacent to the pipe line right of way. The cost of such work, which may be termed both corrective and preventive when performed years after the installation of the pipe line, could in my opinion be considered only as maintenance expenses, since the work was performed to protect the pipe line by anticipating causes of failure or of possible injury to the pipe line in order to maintain the pipe line in satisfactory operatng condition.

The company's records also indicate that a considerable portion was actually repair work made necessary because of prior erosion, the cost of which is definitely maintenance expense.

This work was performe.l primarily by the maintenance division in accordance with plans of the operating management, and the costs thereof charged to expenses consistently throughout the years, a procedure in conformity with good accounting practice and under the system of accounts in use which permitted such accounting.

It is a matter of record that such work performed during the years 1938 and 1939 was considered as maintenance expense by the management, and that the accounting treatment thereof as expense was with management's knowledge and approval is further evidenced by copies of letters received from Mr. J. O. Shields, Assistant Treasurer of the company, received in answer to examiners' inquiries.

February 14, 1940

Mr. Carl H. Schutte, Examiner of Accounts, Federal Power Commission, Central Savings Bank Building, 15th and Arapahoe Streets, Denver, Colorado.

Dear Sir: With reference to your letter of February 1st, relative to the increase in the amount charged to Account 388-D in the year 1938, over 1937 and other previous years, we find that this increase is due to the fact that during the year 1938 the Maintenance Division carried on an extensive Flood Control program which raised the trucking expense and labor charges as a considerable amount of contour plowing was done as

well as the excavation of run-off ditches, etc., in this connection.

Trusting that the above will give you the desired information, we are,

Yours very truly,

J. O. SHIELDS,
Assistant Treasurer.

August 15, 1940.

Mr. Allen M. Early, Examiner of Accounts, Federal Power Commission, Colorado Springs, Colorado.

Dear Sir: In reply to your letter of July 10th requesting reason for increase in Account 388-D for the year 1939, we wish to advise that during the summer of 1938 it was decided to improve our roads, trails, bridges, etc., paralleling the pipe line by grading, gravelling, crushing rock, etc., and a great portion of this work was carried over into 1939. Considerable work was also done at places along the line which were eroded on account of flood water and this appears on our time books as "Water Control". This Water Control was installed in accordance with specifications furnished us by the Federal Soil Erosion Engineers.

The amount of the above was approximately $25,750.00, the major portion of which represents labor and trucking.

Yours very truly,

J. O. SHIELDS,
Assistant Treasurer.

"Other Costs" consist of a payment in 1939 of $1,800.00 to the Pueblo County Board of Commissioners by the company's voucher E-1-16. This item was charged to Maintenance of Compressing Station Equipment, Devine Station.

Explanation of this item given verbally by Mr. J. P. McClintock, General Superintendent, Colorado Interstate Gas Company (November 22, 1940), and by letter from Mr. R. W. Hendee, General Manager, to Mr. Lesher S. Wing, Regional Director, Federal Power Commission, dated June 28, 1940, is that the company owns a 4-inch water line ex-

tending from Pueblo, Colorado to the Devine Compressing Station. During 1939 a 6-foot brick storm sewer was built for a distance of some 200 feet outside the city limits of Pueblo. The County Board of Commissioners proposed to make an open ditch extension thereto of approximately 1800 feet, ending same in an arroyo which the company's 4-inch water line crossed. The open ditch extension would have required the moving of the company's water line, since the company owned no fee right of way in connection therewith, and would therefore have had to acquiesce as to the open ditch construction. The estimated cost of moving the water line was approximately $3,000.00, and the estimated cost of completing the drainage sewer as a 6-foot brick closed sewer was approximately $3,600.00. The company, after a study of the situation, offered to pay half the cost of the brick sewer extension in order to protect its existing water line. This offer was accepted and the company paid $1,800.00 to the Pueblo County Board of Commissioners as a contribution in connection with extending the 6-foot brick sewer.

Under the system of accounts in use at the time of this expenditure (Pennsylvania Code), the cost of moving the line was classified as a maintenance expense, as it is analogous to changing transmission lines (Page 86, account No. 386).

Under the Federal Power Commission Uniform System of Accounts for Natural Gas Companies, effective January 1, 1940, the cost of moving lines is also classified as maintenance expense. (See page 93, par. 2, re: Maintenance, in which the rearranging and changing the location of property not retired is one of the specific items mentioned.)

It follows logically that since the cost of moving the line would have been an expense, the cost when incurred for something which was equivalent to moving of a line would also be classified as an expense.

The accounting treatment accorded this expenditure by the company, when incurred, not only appears to have been correct, but no alternative treatment was possible.

2. Rock Weighting—$46,683.72

Explanation given by Ford, Bacon & Davis, Inc. is as follows:

"To insure against the danger and possible interruption of service resulting from washouts, the Company, in addition to flood control measures, weights down its lines by piling rock on the backfill. Where the ground slopes sufficiently to allow water to follow the pipe line ditch, preventive measures are necessary to divert the water way from the backfill. Rock weighting not only serves to divert water but the added weight on the pipe line overcomes the tendency of floating. Rock weighting must not be confused with repairing and filling up gaps and holes in the backfill. This latter work is a maintenance job of a corrective measure which has not been considered in the amount shown for rock weighting."

The cost of this work which was started in the year 1930, and of which approximately 38.5% was accomplished during the years 1938 and 1939, according to Ford, Bacon & Davis, Inc. analysis, is composed of:

Labor	$27,477.41	58.86%
Trucking	19,135.31	40.99%
Material	71.00	0.15%
Total	$46,683.72	100.00%

Despite the statement contained in the explanation of Ford Bacon & Davis, Inc. that rock weighting lines versus repairing and filling up gaps in the backfill must not be confused, the examination of time and trucking tickets disclosed that such confusion does exist. In fact, many of the tickets examined bore very vague and indefinite explanations as to the exact nature of the work performed, leaving much to one's imagination as to whether rock weighting was actually placed on top of the backfill as a means of retarding or preventing subsequent erosion, or whether part of the original backfill had eroded and the work performed consisted of repairs thereto.

The cost of this work, similar to that in connection with

flood control, may be termed both corrective and preventive when performed years after the installation of the pipe line, and could, in my opinion, be considered only as maintenance expenses, since this work also was performed to protect the pipe line by anticipating causes of failure or of possible injury to the pipe line and in order to maintain the pipe line in satisfactory operating condition.

As in the case of flood control work, this work was performed primarily by the maintenance division in accordance with plans of the operating management, and the costs thereof were charged to expenses consistently throughout the years, a procedure in keeping with good accounting practice and, in my opinion, the only treatment possible under the system of accounts then in use. The description of the work performed, as given by Ford, Bacon & Davis, Inc., indicates that this type of work may have been considered as betterments by it.

The system of accounts (Pensylvania Code) in use during the period this work was performed defines (page 44) betterments as physical changes in structures or equipment, the object of which is to make the structures or equipment affected more useful or of greater capacity than they were at the time of their original installation. Such results do not appear to have been accomplished through the performance of this work.

The Federal Power Commission Uniform System of Accounts for Natural Gas Companies, effective January 1, 1940, designates as Maintenance Costs (page 93) the cost of "Restoring the condition of property by wear and tear, decay, or action of the elements."

3. Cattle Guards—$4,923.70

Explanation given by Ford, Bacon & Davis, Inc. is as follows:

> "Cattle Guards eliminate old type gates which are frequently left open, thus leaving the Company liable for damages, and also save time formerly consumed by Company employees in stopping and opening and shutting gates."

The cost of this work, which was started in the year

1930, according to Ford, Bacon & Davis, Inc., analysis, is composed of:

Labor	$3,434.87	69.76%
Trucking	1,133.02	23.01%
Materials	355.81	7.23%
Total	$4,923.70	100.00%

This work was also performed primarily by the maintenance division, generally utilizing scrap materials. The capitalization of labor and trucking costs for the installation of such materials to which no value has been assigned is always questionable.

Cattle guards as installed constitute very minor items of depreciable property and were in effect replacements of other minor items of property.

As such, it is quite in keeping with sound accounting practice to expense such costs, and was permitted under the system of accounts in use. It is a matter of record that this accounting treatment was in accordance with the discretion of the management as exercised under such system of accounts.

4. Bridges—$8,052.93

Ford, Bacon & Davis, Inc. explanation of this item is as follows:

> "Timber bridges make it possible for line walkers and maintenance crews to save time by avoiding wide detours around canyons. Expenses of repairs and maintenance of old bridges were not considered in this study."

The cost of this work, which was started in the year 1930, and of which approximately 74% was accomplished during the year 1930, according to Ford, Bacon & Davis, Inc. analysis is composed of:

Labor	$1,549.78	19.25%
Trucking	545.28	6.77%
Material	432.84	5.37%
Work Orders	$5,525.03	68.61%
Total	$8,052.93	100.00%

Work Order costs of $5,525.03, assigned to expenses during the year 1930, were:

(a) Work Order No. 19, under which expenditures made in connection with assisting Union County, New Mexico, for the construction of a bridge over Corrumpa Creek, were accumulated. Expenditures made by the company in connection therewith were $2,767.33, of which $2,750.00 was, according to the records, a cash donation to Union County, New Mexico. Private pay roll charges of $4.81 are included in the Work Order cost but excluded from Ford, Bacon & Davis, Inc. analysis.

(b) Work Order No. 20, under which expenditures made in connection with assisting Union County, New Mexico, for the construction of a wagon bridge over Travasea Creek, were accumulated. Expenditures made by the company in connection therewith were $2,786.55, of which $2,750.00 was, according to the records, a cash donation to Union County, New Mexico. Private pay roll charges of $24.04 are included in the Work Order cost, but excluded from Ford, Bacon & Davis, Inc. analysis. Thus, these Work Order costs per books aggregate $5,553.88, which amount less $28.85 private pay roll charges equals the $5,525.03 figure of the Ford, Bacon & Davis, Inc. analysis.

The authorization for Work Order No. 19 bears the following explanation:

"We contemplate assisting Union County, New Mexico, with building a bridge over Corrumpa Creek by a cash donation of $2,750.00 and some preliminary expense.

Location—Corrumpa Creek Union County, N. M."

The Work Order was signed by J. P. McClintock, and approved by E.G.H.

A similar explanation was noted on the authorization for Work Order No. 20, except that it was for the bridge over Travasea Creek.

A notation was made on a letter attached to the company's voucher A-47, 1930, as follows:

> "Charge to Investment, Main Line Construction through Work Orders 19 and 20 because it is for the purpose of making our lines more accessible."

This notation was initialed by L.H.S. The Work Orders were closed and the costs thereof transferred to expense by voucher D-427, April 1930, which voucher was approved by L.H.S., thereby indicating a change of opinion by L.H.S. as to the propriety of capitalizing these expenditures.

The facts are that each of these two bridges is located approximately one mile from the pipe line right of way on county roads, and is owned by Union County, New Mexico. The bridges were not constructed until after the company's pipe line had been completed.

The contributions made to aid in the construction of these bridges cannot be classed as costs of units of property, nor can it be said that due to such expenditures, the company's property is any more useful, more efficient, of greater durability, or of greater capacity. It appears, therefore, that the charging of such costs to expenses or surplus was appropriate.

Other bridge costs now sought to be capitalized are composed primarily of labor and trucking charges, the amounts of which were apparently not considered of sufficient importance to be accumulated by individual jobs under work orders, and were expensed in accordance with the company's general policy.

5. Rip Rap and Revetments—River and Stress Crossings—$24,400.99.

Ford, Bacon & Davis, Inc. explain this item as follows:

"Improvements of this type consist of placing rip

rap on stream banks and building of revetments to prevent soil erosion and resulting washouts. After any appreciable rainfall, Company field crews find many new possible danger spots which require revetment and rip rap jobs."

The cost of this work, which was started in the year 1930 and has been carried on consistently since, according to Ford, Bacon & Davis, Inc. analysis, is composed of:

Labor	$ 5,776.14
Trucking	2,480.84
Work Orders	16,144.01
	$24,400.99

Analysis of the Work Order costs included above and assigned to component costs, results in component costs as follows:

	Per Ford, Bacon & Davis, Inc. Analysis	Revision	Component Costs as Revised	Ratio of Total
Labor	$ 5,776.14	$ 5,050.07	$10,826.21	44.37%
Trucking, excavating, and other machine rentals, automobile expenses, etc.	2,480.84	6,943.33	9,424.17	38.62%
Materials		4,150.61	4,150.61	17.01%
Work Orders	16,144.01	(16,144.01)		
Totals	$24,400.99	$	$24,400.99	100.00%

The performance of this character of work under work orders commenced in the year 1934, and accounts for approximately 66% of the total cost of such work which is now sought to be capitalized.

By individual work orders this work consisted of the following specific jobs:

Work Order No. 166—$4,353.47 Work order authorization reads:

"Repairing banks of Sand Creek to prevent further erosion at the 20" gas line."

This work order was closed in June 1934, and the accumulated costs thereunder aggregating $3,374.18 were transferred to expense. This was in accordance with notation on the work order, signed by J. P. McClintock, General Superintendent and approved by "T", General Manager, which read, "Please charge to Transmission Line Expense." In 1935, the work order was reopened and additional charges of $979.29 were accumulated, which amount was assigned to expenses in July 1935. The work performed under this work order consisted largely of hauling brush from Black Forest to Sand Creek and excavation at Sand Creek.

It is indicated from the text of the explanation of this work order, as well as from the character of the expenditures, that the work performed included that of repairing damages caused by erosion.

Work Order No. 173—$1,021.08 This work order authorization reads:

"Strengthen Line at Jimmie Camp Creek Crossing and Installing Brush Breaker and Sloping Creek Bank to Prevent Further Erosion."

This authorization was signed by J. P. McClintock, General Superintendent, and approved by "T", General Manager, and was dated June 1, 1934.

This work order was closed in August 1934 and the costs accumulated thereunder, aggregating $1,021.08, were transferred to expense. These costs as recorded were:

Labor	$ 509.69
Trucking	399.61
Materials	50.82
Automobile Expenses, etc.	60.96
Total	$1,021.08

Trucking charges include the hauling of brush and trees to the job and rental for an excavator. Material costs include expenditures for trees, explosives and cable.

It is also indicated from the text of the explanation of this work order, as well as from the character of the expenditures, that the work performed included that of repairing damages caused by erosion.

It is noted that piling and rip rap were also placed at the Jimmie Camp Creek crossing during the year 1931. Labor costs for this work were $352.52, and were charged directly to expenses as incurred.

Work Order No. 235—$5,764.21, of which $64.36 was originally capitalized and $5,699.85 expensed. Work order authorization reads:

> "Strengthening Main Line at Huerfano River Crossing."

This work order was closed in November 1936 and of the costs accumulated thereunder which totaled $5,764.21, $64.36 covering the cost of two 10-inch river clamps and bolts was capitalized, and the balance $5,699.85 was expensed. The component costs of this work were recorded as follows:

Labor	$1,004.90
Material	2,646.40
Trucking—excavating machine rental, pile driving, etc	1,777.88
Miscellaneous	335.03
Total	$5,764.21

Material costs consist principally of the cost of:

50—70# steel rails	$ 339.14
190—57# " "	1,162.80
65—52# " "	364.65
Plates, bolts, etc.	62.80
1,550 ft. 2-inch mesh wire fence, 72 inches high	463.65

The work performed consisted of placing and bracing the rails and affixing the wire fence thereto, sloping the river bank and backfilling, principally upstream from the pipe line. The cost of two 10-inch river clamps installed on the pipe line in connection with this work was capitalized.

The work order completion notice, dated October 30, 1936, signed by J. P. McClintock, General Superintendent, has the following notation under remarks:

"Please charge the total cost to Main Line Maintenance Expense."

Work Order No. 263—$1,086.34, of which $1,074.30 was charged to expenses. The work order authorization reads:

"Strengthening La Junta Lateral at Apishapa River Crossing."

This work order was closed in July 1937. The component costs thereof as recorded were:

Labor	$ 326.66
Material—principally 51 30-ft. steel rails	334.99
Trucking	192.05
Excavator rental	162.74
Miscellaneous	69.90
Total	$1,086.34

Some of the labor tickets are marked "help repairing 10' crossing." The work performed consisted principally of placing the rails as piling and the hauling and placing of trees, brush and other backfill materials.

The work order completion notice, dated June 30, 1937, signed by J. P. McClintock, General Superintendent, has the following notation under remarks:

"Please charge to Maintenance Expenses."

Work Order No. 268—$862.04. The work order authorization reads:

"Strengthening Line at Timpas Creek with Steel Piling and Rip Rap."

The work order was closed in September 1937, and the costs accumulated thereunder charged to expenses. The component costs of the work were recorded as follows:

Labor	$222.96
Materials, principally sand and cement, $90.89, and 7 30-ft, 65# steel rails, $87.93	193.08
Trucking	195.09
Tractor & excavator charges	174.34
Miscellaneous	76.57
Total	$ 862.04

The work order completion notice dated July 31, 1937, signed by J. P. McClintock, General Superintendent, has the following notation under remarks:

"Please charge to Maintenance Expenses."

Work Order No. 298—$969.18. The work order authorization reads:

"Steel Fence breakers at a dry Arroyo, southeast of Fountain for strengthening the line."

The work authorized thereunder was performed in January 1938 and the costs accumulated under this work order were transferred to expenses in March 1938. The component costs of this work were recorded as follows:

Labor	$ 333.43
Materials, principally 150 feet of 2-inch mesh 72 inches high, chain link fence, and 25 30-foot 25# steel rails	249.91
Trucking and use of excavator and pile driver	334.02
Miscellaneous	51.82
Total	$ 969.18

The work order completion notice dated February 28, 1938, signed by J. P. McClintock, carries the following notation under remarks:

"Please charge Transmission Line Expense."

Work Order No. 334—$1,454.93. This work order covered the

"Strengthening 22 inch line at the Apishapa River Crossing."

The work authorized thereunder was accomplished during the months of September, October and November 1938, and the costs accumulated under this work order were transferred to expenses in December 1938. The component costs of this work were recorded as follows:

Labor	$ 434.37
Material, principally 61 30-foot 45# rails, 122 feet of 6-ft. fencing and 3,143 bd. feet of lumber	448.98
Trucking, use of pile driver and excavator	438.99
Automobile and employee expenses	132.59
Total	$1,454.93

The work order completion notice dated December 5, 1938, signed by Mr. McClintock, carries the notation as follows:

"Please charge to Maintenance of Transmission Line."

Work Order No. 347—$728.21. This work order authorized

"Strengthening 20 inch main line at Bayou Gulch, ¼ mile north of Gate 27."

The work authorized thereunder was accomplished in April 1939 and the costs accumulated therefor were transferred to expenses in May 1939. The component costs of this work were recorded as follows:

Labor	$ 272.06
Materials, principally steel rails, bars and bolts	201.64
Trucking, use of pile driver, etc.	186.38
Employee expenses	68.13
Total	$ 728.21

The work order completion notice dated June 6, 1939, signed by J. P. McClintock, General Superintendent, carries the following notation:

"Please charge to Maintenance Expense."

Other costs of placing rip rap and installing revetments were not accumulated under work orders; but in general covered costs similar to those incurred under work orders.

It is obvious from the notations on the work orders as quoted that the operating management of the company considered this character of work as maintenance, and that in exercising its discretion under the system of accounts then in use, consistently classified such expenditures as expense.

Capitalizing the costs incurred in building revetments and placing of rip rap, when incurred several years subsequent to the completion of initial construction, and particularly when placed on property not owned or leased by the company, would be very questionable accounting treatment for such costs. Generally such work is both corrective and preventive, in that it repairs damages caused by erosion as well as retards or prevents subsequent erosion.

The expensing of such costs, which practice was consistently followed by the company, not only conforms with good accounting procedure and is permitted under the system of accounts used by the company, but has also been subject to examination in the course of annual audits performed by members of the Auditing Department of Standard Oil Company of New Jersey. Inasmuch as such audits have caused no change in the company's policy of expensing such costs, the only possible conclusion is that this was the approved practice.

6. Roads and Culverts—$32,380.69.

Explanation of this item by Ford, Bacon & Davis, Inc., is as follows:

"Maintenance crews and line patrols require adequate road facilities to traverse the lines. When heavy machinery is necessary for making line repairs, roads for access to the [illegible]

The company's road program calls for widening, extending and graveling, carried out each year, to insure safe and adequate roads in close proximity to the pipe line. The road from Canyon to Apishapa, known as the Dolan Highway, approximately 33 miles long, was originally constructed by the pipe line crews in 1928. The widening and extending of roads often necessitates new and wider culverts."

The cost of this work charged to expense by the company from January 1, 1930 to December 31, 1939, and of which approximately 49% was accomplished during the years 1938 and 1939, according to Ford, Bacon & Davis, Inc. analysis, is composed of:

Labor	$15,227.69	47.03%
Trucking	8,753.18	27.03%
Materials	555.98	1.72%
Work Orders	7,843.84	24.22%
	$32,380.69	100.00%

Analysis of the work order costs included above and assigned to component costs, results in component costs as follows:

	Per Ford, Bacon & Davis, Inc. Analysis	Revision	Component Costs as Revised	Ratio to Total
Labor	$15,227.69	$2,250.72	$17,478.41	53.98%
Trucking	8,753.18	3,607.07	12,360.25	38.17%
Materials	555.98	1,130.82	1,686.80	5.21%
Automobile & Employe Expense		855.23	855.23	2.64%
Work Orders	7,843.84	(7,843.84)		
Total	$32,380.69		$32,380.69	100.00%

This character of work, accomplished under work orders during the year 1938, accounts for approximately 22% of the total cost of such work which is now sought to be capitalized.

The authorization for Work Order No. 328 reads:

"Repairing Pipe Line in the Apishapa District."

Work under this order commenced in August 1938, and the accumulated costs thereunder totaling $5,817.34, including $177.24 private payroll charges which are excluded in the present claim for capitalization, were transferred to expenses in November and December 1938.

A notation on the work order completion notice, dated November 5, 1938, signed by J. P. McClintock, General Superintendent, and approved by R.W.H., General Manager, reads:

"Please charge to extraordinary expense."

The authorization for Work Order No. 336 reads:

"Repairing Canon Picketwire Hill Road."

Work under this order commenced in October 1938, and the accumulated costs thereunder totaling $2,203.74 were transferred to expenses in December 1938, in accordance with notation on the work order completion notice dated January 6, 1939, signed by J. P. McClintock, General Superintendent, which read:

"Transmission Line Expense."

The maximum annual expenditure for general road work, exclusive of specific jobs covered by work orders, was in 1931, when $6,735.75 was expended for that purpose and charged to expenses. An examination of all labor charges included in the re-accounting for 1931, amounting to $4,637.76 for this character of work, indicated that a considerable part of such labor costs was incurred on the road said by Ford, Bacon & Davis, Inc. to have been constructed by the pipe line crews in 1928.

It is not indicated from any of the labor and trucking tickets covering road work, which were examined, many of which describe the work performed as "Hard gravel—main line road," that the cost of such work should be considered as capital expenditures.

It is indicated in the explanation relating to this char-

acter of work that existing culverts were replaced by new and wider culverts. No retirements were identified for such replacements if made.

7. Gravel, Rock and Shale for Main Line—$9,921.87:

This item is explained by Ford, Bacon & Davis, Inc., as follows:

> "This item includes the cost of rock, gravel and shale used in rock weighting the pipe lines and for road building."

The facts are that this item is of the identical character of items 2, Rock Weighting, and 6, Roads and Culverts.

The labor and trucking tickets covering the items now designated as additional plant costs, in general identify the work performed so vaguely that the assignment of such costs to plant accounts at any time would be very questionable. Obviously the reason these particular costs are re-accounted for in a separate caption, instead of being included in items 2 and 6, is that identification thereof as between rock weighting or road work was impossible.

Labor and trucking tickets scrutinized bore descriptions of work performed as follows:

> "Getting out rock for Main Line."
> "Hauling rock on Main Line."
> "Hauling rock to fill in along line."
> "Build up road."
> "Fill in Main Line Road with Rock."

To classify costs so described as Plant Additions appears to be entirely too liberal an interpretation of instructions contained in any system of accounts.

The cost of this work, charged to expense by the company during the years 1932 to 1940, inclusive, and of which approximately 81% was accomplished during the years 1938 and 1939, according to Ford, Bacon & Davis, Inc. analysis, is composed of:

Labor	$2,481.63	25.01%
Trucking	7,301.89	73.59%
Material	138.35	1.40%
Total	$9,921.87	100.00%

8. Cathodic Protection—$49,935.20.

Ford, Bacon & Davis, Inc. give the following explanation for this item:

> "Cathodic protection is definitely a major improvement insuring a more durable pipe line system. Subsequent to January 1, 1940, the Company will capitalize all expenditures for this class of improvement. Work Order No. 350 in 1939 covered a soil resistance survey. These tests and expenditures are a usual forerunner for cathodic protection, but nevertheless have not been included as part of the capital expenditure. This amounted to $10,040 in 1939."

The work of installing cathodic protection commenced in the year 1935 and has been carried on continuously since. Installations to December 31, 1939 were of the character known as the "Zinc Rod" type. Practically all of this work has been performed under work orders and the largest expenditures therefore made in the year 1937, when $21,416.45 was recorded for such work.

That the assignment of such costs to expenses was not due to accounting errors but definitely because of the company's policy, is evidenced by the circumstances in connection with $2,228.58 of such costs accumulated under the company's Work Order No. 282, in 1937.

Under this work order, zinc rod type of cathodic protection was installed, according to accounting data and engineering maps, on 8,800 feet of 6-inch pipe line within the section to be maintained by The Arkansas Valley Natural Gas Company. The total cost of this work was charged to Account No. 385-D, Maintenance of Transmission Line Equipment, at the suggestion of Mr. F. H. Lerch, Jr., then Vice President of the company.

The title of this specific work order indicated that the cost of the work to be performed thereunder was chargeable to The Arkansas Valley Natural Gas Company (presumably in accordance with the terms of the agreement of December 5, 1935) and the work order completion notice, dated November 10, 1937, signed by Mr. J. P. McClintock, General Superintendent, bore the following notation under remarks:

> "'Please charge to Arkansas Valley Natural Gas Company, maintenance expense on 6" line from Arkansas Valley River Crossing to Fort Lyon."

The cost of work orders is normally charged by the Respondent as recommended by Mr. McClintock. However, in this instance, Arkansas Valley Natural Gas Company objected to the charge, as evidenced by copy of a telegram dated January 28, 1938, from the Colorado Springs office to the New York office, in which the recommendation of Mr. F. H. Lerch, Jr., then Vice President of Colorado Interstate Gas Company, as to the disposition of the charge was requested. In Mr. Lerch's reply of the same date, he suggested that the charge be made to Colorado Interstate Gas Company as similar items in the past, which had been expensed.

This indicates that the company's management knew of and approved the practice of expensing such costs, and it is accordingly obvious that such expensing of the cost of installing zinc rod cathodic protection is not due to accounting errors but is in keeping wtih the management's policy.

The installation of cathodic protection since January 1, 1940, according to Mr. Lusk's testimony of November 13 and 27, per Official Stenographer's Reports, Volume IX, page 1276, commencing at line 13, and Volume XVII, page 2419, lines 24 and 25, is of a different type. The installation under Work Order No. 360 required changes in the telephone line, installation of a 2300-volt and 10-volt power lines on the telephone pole line, the installation of 1½ kva transformers, and rectifiers.

The installation of cathodic protection under Work Order No. 361 required the erection of structures to house two

Jacobs Special Natural Gas Engines which provide the electric energy necessary for protection and installation of a 10-volt distribution line and rectifiers.

Thus, the capitalization of the costs of providing this protection is not merely a change in the company's policy with respect to such costs, but concerns an entirely different type of cathodic protection from the physical property aspect.

9. Profile Maps—$2,989.53.

This item is explained by Ford, Bacon & Davis, Inc., as follows:

> "Profile maps are considered as an investment in maps, drawings, etc. Ordinarily this would be part of engineering costs if made during construction. These drawings were apparently not made and were not necessary in that period; but later were found necessary and represent costs in addition to the usual engineering costs."

This work was performed under Work Order No. 270, during the years 1938 and 1939, but utilizing spare time of various employees of the company's engineering division.

Inasmuch as profile maps appear to have been unnecessary during the period of pipe line construction, and for a long period thereafter, the present preparation thereof appears to be entirely for operating purposes; therefore, the cost of repairing such profile maps appears to be an operating cost rather than a plant cost.

10. Lowering Lines—$638.33.

The explanation given by Ford, Bacon & Davis, Inc., for this item is as follows:

> "Lowering the pipelines to prevent washout and possible break in the river, stream, and so-called 'dry' gulch crossings, is distinctly a betterment."

This charge represents the cost of Work Order No. 296, which covers "Lowering two 10-inch Lines across the St. Charles River," the accumulated costs totaling $638.33 of

which were transferred to expenses in March 1938, in accordance with notation on the Work Order completion notice signed by J. P. McClintock, General Superintendent, which read:

"Please charge Transmission Line Expense."

The component costs of this work as recorded were:

Labor	$ 56.54
Material (Explosives)	3.93
Trucking & Excavating	484.59
Automobile & Employee Expenses	93.27
Total	$ 638.33

The lowering of lines is more or less a continuous process in that the streambeds are constantly subject to erosion, and are being lowered, which necessitates the lowering of the pipe lines crossing such streams and arroyos.

The usual procedure followed by the company with respect to the lowering of lines has been to retire materials removed, capitalize new naterials installed, and expense at least an amount estimated for excavating the original trench.

In the present instance, the request to now capitalize the entire cost of the job would place in the plant account a duplicate cost of trenching and backfilling—that is, such cost thereof as was capitalized at the time of initial installation—plus the amount expended to excavate and backfill a like trench, without retirement of such initial cost, which procedure is obviously incorrect.

Under the system of accounts in use at the time of these expenditures (Pennsylvania Code), the cost of changing transmission lines was definitely classified as maintenance expense under account No. 386 (page 86).

Under the Federal Power Commission Uniform System of Accounts for Natural Gas Companies, effective January 1, 1940, the cost of "Rearranging and changing the location of property not retired" is also definitely classified as maintenance expense (page 93).

11. Spare Parts—$5,623.84.

Ford, Bacon & Davis, Inc. explanation of this item is as follows:

> "Spare parts for machinery and equipment, whether carried in the supply inventory or installed in the pipe line system, represents a cash investment. Their availability for use or actual use may represent a saving in time far in excess of the actual money value involved."

The costs now said to be capital expenditures, practically all of which are incurred for parts, were incurred as follows:

Year 1936	$ 773.80
Year 1937	136.97
Year 1939	4,713.07
Total	$5,623.84

The disbursements covering the above items, which were charged to expenses as made, were reviewed and consist primarily of repairs to or repair parts for engines and compressors. In no instance does it appear that the disbursement covers what could be termed a retirement unit. The disbursements cover a considerable quantity of gaskets, packing, springs and the like, which when installed could not possibly be considered a capital addition, and to account for same as replacements would require the retirement of the replaced parts.

The largest individual items included in this re-accounting are:

4 cylinders with piston pins and rings complete	$ 892.00
4 piston pin boxes	76.00
4 connecting rod wedges	21.00
Sundry pipe and connections, freight, etc.	101.04
	$1,090.04

These were for Bruce-MacBeth Engines at Canon.

92 steel piston rings, 8 scraper rings, 56 sets points, etc., for compressors and engines at Canon	$ 461.42

The cost of such repair or spare parts as are included in this item may be properly assigned to the supply inventory account if held for use, or to the appropriate maintenance account if immediately used. If included in the supply inventory, such costs are automatically given consideration in connection with the company's working capital requirements.

Except when retirement units, such costs are not properly capitalizable, and to capitalize same as replacements or renewals, which they obviously are, requires the retirement of the cost installed of the unit replaced. If capitalized without recording the retirement of the previously existing part, a duplication of the cost of such part appears in the plant account.

12. All Other, Miscellaneous—$72,617.88.

This item is explained by Ford, Bacon & Davis, Inc., in the following manner:

> "All other, Miscellaneous Classification includes a multitude of small charges, such as landscaping at stations, villages and camps; curbing and walks, chicken houses, screen for porches, pipe racks along the main line, gate boxes; linoleum for dwellings; trees and shrubbery, and tools. There are also charges for hauling and placing earth fill at stations, camps and villages and gravel for walks. The completion details, otherwise known as the clean up of the three compressing stations, for some reason were not included in work orders. All items, including safety guards around engines, earth fill and charges for general clean-up were expensed."

The Ford, Bacon & Davis, Inc. analysis shows the component costs accumulated for the above as follows:

Labor	$37,240.29	51.28%
Trucking	11,563.19	15.92%
Materials	9,284.61	12.79%
Work Orders	14,529.79	20.01%
Total	$72,617.88	100.00%

Ford, Bacon & Davis, Inc., statement that this item covers a multitude of small charges is not an exaggeration. Costs of materials included herein, are as small as a charge for a small piece of sheetrock at a cost of fourteen cents. Numerous items costing less than one dollar are included. Many of the items included appear to be minor replacements and renewals. The cost of repairs of equipment, such as "bushings for plow @ $0.89, welding end on grader at $0.79" appear. The cost of leak clamps and of repairing leaks along the Arkansas Valley lines are included. Material costs for grass and clover seed, fertilizer, trees and shrubbery at the several stations and camps total approximately $750.00, such purchases being included in almost every year including 1939. The labor and trucking costs for such items were not all identified.

The cost of small tools herein included amounts to approximately $450.00 and includes the cost of such items as snow shovels, screw drivers, hack saw frames, steel drills, oilers, rules, a spittoon; items which normally have a very short life. Substantially all of the tool costs are in amounts of from $1.00 to $10.00 each.

The costs of making tool boxes, workbenches, compressor repair parts and many other items too numerous to mention are likewise included in this re-accounting.

The Federal Power Commission Uniform System of Accounts for Natural Gas Companies, under Components of Construction Cost, Note A (page 40) says:

> "The cost of individual items of equipment of small value (for example $10 or less) or of short life, including small portable tools and implements, shall not be charged to gas plant accounts unless the correctness of the accounting therefor is verified by current inventories. The cost may be charged to the appro-

priate operating expense or clearing accounts, according to the use of such items, or, if such items are consumed directly in construction work, the cost shall be included as a part of the cost of the constructed unit."

The company's policy of charging the cost of minor items of property to expenses conforms with the instruction quoted above.

Costs now re-accounted for which were accumulated under work orders total $14,529.79, and by specific work orders are as follows:

Work Order No.	Year 1930	Year 1931	Year 1936	Year 1937	Year 1938
8	$ 345.77				
35	1,148.80				
40		$ 503.16			
50		485.99			
101		7,274.60		$ (552.96)	
167			$343.20		
211			113.10		
269				2,416.60	
285				1,737.42	
290				625.57	$88.53
Total	$1,494.57	$8,263.75	$456.30	$4,266.64	$88.53

Work Order No. 8 Colorado Springs Lateral—$345.77. The total cost of this work order was $524.33, and consisted principally of traveling expenses, hotel bills and entertainment. By Voucher No. L-271, November 1930, this amount was transferred to Plant Account No. 226 D—Transmission Line Equipment; then by Voucher No. L-272, November 1930 (the very next voucher) this amount was removed from the above Plant Account and charged to Gas Expenses, Account No. 381 D—Other Transmission System Supplies and Expenses.

Some of the expenditures charged to this work order were incurred during 1929. Although the work order authorization indicates that the work to be performed there-

under is in the nature of "Preliminary Surveys and Maps," the expenditures made do not appear to be for that type of work. A notation on the work order signed by J. P. McClintock reads:

> "The Colorado Natural Gas Co. have a contract to furnish Gas to the City of Colorado Springs. Expense? Transfer all material."

Construction of the Colorado Springs Lateral commenced in June 1931 under Work Order No. 119. Miscellaneous labor costs of $54.07 incurred in 1928 and originally recorded on Ford, Bacon & Davis, Inc. books were transferred to the Colorado Springs Lateral Plant Account, but none of the costs accumulated under Work Order No. 8 were then re-accounted for.

Inasmuch as it appears that expenditures made under Work Order No. 8 were in the nature of costs in connection with negotiations, rather than actual preliminary work in connection with the Lateral, the expensing of such costs upon abandonment of negotiations appears to be correct treatment thereof.

Work Order No. 35. Strengthening C. F. & I. Lateral at St. Charles River Crossing—$1,148.80. Work performed under this work order consisted of driving 22- and 30-foot Red Spruce Piling. Material costs amounted to $637.27 and labor costs $511.53. The work was performed during the period December 1929 to March 1930, and the costs thereof were transferred to expenses in September 1930.

The river crossing was constructed in 1928 as a part of the C. F. & I. Lateral.

The expensing of the costs of Work Order No. 35, as recorded by Voucher J-420, was approved by L.H.S.

Work Order No. 40. Wrecking Camp and Hauling Fixtures, Equipment and Machinery to Storage at Devine Warehouse—$503.16. Labor costs under this work order amounted to $510.88, and net salvage of miscellaneous materials was a credit of $7.72, resulting in the net amount of $503.16 as above. All of the expenditures for this work were incurred in December 1929.

Work Order No. 50. Repairing Telephone Line from Main Line to Coolrado Springs. Replacing Poles. Line known as Colorado Springs Cutoff—$485.99. The work performed under this work order was accomplished during the month of July and August 1930 at a total cost of $594.50, of which $108.51 covered private pay roll charges, which amount is excluded in the present re-accounting. Material costs were $160.10, principally for 30 20-foot, seven 30-foot and one 35-foot poles. Trucking charges were $160.00 and general pay roll charges were $111.34.

The retirement of poles replaced, as is indicated by the work order title, is not a matter of record.

Work Order No. 101. Drilling Water Wells at Canon Station, Canon Station Water Supply.

Amount expensed in 1931	$7,889.49
Transferred from Expense to Plant Account in 1937 (Field Well No. 4)	552.96
	$7,336.53
Less: Private pay roll excluded from present claim	614.89
Amount now claimed as Plant Cost	$6,721.64

Six water wells were drilled during the year 1930 in connection with the construction of the Canon Compressing Station. The cost of these wells to December 31, 1930 was $19,606.91, all of which was capitalized. The recorded cost of Wells Nos. 1, 2, 5 and 6 was retired by the company in 1939, these wells having been abandoned. Thus the cost of wells Nos. 3 and 4, both small producers, remains in the Plant Accounts on the company's books as of December 31, 1939.

Four other wells were drilled at the station site during the years 1932, 1934 and 1936, according to a letter dated July 18, 1939 to Mr. J. P. McClintock, General Superintendent, from J. W. Hopkins, Chief Engineer, Canon Compressing Station, the costs of which were not assigned to Plant Accounts, as these wells were unproductive.

Wells drilled under Work Order No. 101, except for Adam Arnett Well No. 4, were likewise found unproductive, and the costs thereof accumulated under this work order were also expensed in the year 1931. The cost of drilling the Adam Arnett Well No. 4, however, was subsequently transferred from expenses and charged to Plant Accounts in connection with additional wells drilled under Work Order No. 269 in 1937. This amount so capitalized consisted of:

208 Ft. 6 in. of 8¼" casing	$282.96
Drilling	190.00
Use of tractor for drilling	70.00
Miscellaneous expenses	10.00
Total	$552.96

It is therefore obvious that the cost of the only productive well drilled under this work order was capitalized and only the cost of unproductive prospecting expensed.

The expensing of the drilling costs of abandoned unproductive or incomplete wells appears to be not only in accordance with the policy continually followed by the company in the exercise of its choice as permitted under the system of accounts, but also the preferable treatment of this character of cost in accordance with sound accounting principles.

An alternative method would be to charge such costs to a deferred expense account, and subsequently amortize such costs by charges to appropriate expense accounts.

Although the cost of prospecting for water in advance of the construction of a compressor station could be capitalized as preliminary engineering or construction expenses, since such prospecting would be for the purpose of locating the station with consideration of the availability of an adequate supply of satisfactory water, the propriety of capitalizing the cost of unproductive prospecting for water years later is an unwarrantable interpretation of the instructions in the system of accounts, since such unproductive prospecting certainly adds nothing to the usefulness, efficiency, durability or capacity of the property.

Work Order No. 167. Curbing along sidewalk at Devine Station—$343.20. The cost of the work performed under this work order was $1,343.20 and was accomplished, apparently by utilization of the spare time of station employees, during the period February 1934 to April 1936. Of the total, $1,000.00 was capitalized and $343.20 expensed in accordance with notation of the work order completion notice dated September 28, 1936, signed by J. P. McClintock, General Superintendent, which reads,

> "Please charge $1,000.00 to investment and the balance $343.20 to Station Operating Expense. (Men also maintained lawns and trees while doing this work.)"

Work Order No. 211. Lowering 8" Line on the Portland Lateral at the Fountain Creek Crossing—$113.10. The work performed under this work order was accomplished during the months of January and February 1936 at a recorded cost of $1,239.86, of which $1,126.79 was capitalized and $113.10 was charged to expenses in accordance with notation on work order completion notice dated March 31, 1936, signed by J. P. McClintock, General Superintendent, which requested such assignment of cost.

It appears that consideration was given to the initial installation costs by expensing the amount of $113.10, since no retirement thereof was indicated in connection with the cost of lowering this line, as would be necessary if the entire cost of the lowering of the line had been capitalized.

Work Order No. 269. Prospecting for Water at Canyon Compressor Station—$2,416.61. The cost of the work performed under this work order and transferred to Plant Accounts and Expenses in 1937 was $3,823.12, of which $1,383.25 was capitalized and $2,439.87 was expensed. Private pay roll charges of $23.26 are deducted from the amount expensed to arrive at the present claim of $2,416.61 now said to be a proper capital charge.

The assignment of the above amounts to fixed capital and expenses are in accordance with notation on the work order completion notice dated December 10, 1937 signed by J. P. McClintock, General Superintendent, which reads:

> "Charge Investment: Well No. 4 $85.96; Well No.

6 $785.42; Well No. 8 $511.87. Balance of W. O. charge to expense of developing Canyon Station Water Supply. For balance of Investment see letter attached."

The letter, attached to Voucher No. M-36, December 1937, is as follows:

(Copy) Colorado Interstate Gas Company

Work Order #269—"Prospecting for Water for the Canyon Station Supply."

Colorado Springs, Colo., Dec. 9, 1937.

J. O. Shields

Work Order No. 269, cost of Prospecting for Water for the Canyon Station Supply. During the development of this water we started in with the well drilled on Work Order #101, being Adam Arnett Well Number 4, and equipped with drop pipe, rods, jack, and engine for pumping it several months, for a test. We then moved 200 feet north of this well and drilled No. 5, on W. O. 269. This well proved to be no good and was abandoned. All material salvaged. We then moved South of No. 4 well and drilled No. 6 which was a successful well, which we equipped and pumped for a considerable time.

Meantime, we moved farther South and drilled No. 7 well to a depth of approximately 190 feet, where we lost the tools, including the bit and stem. We were unable to recover the tools, therefore, skidded the drilling machines approximately 10 feet north, and drilled well No. 8 which proved to be a good well. Number 8 was equipped with 8¼" casing only. Following is the amount of expense and material in connection with this work that is charged to investment:

Well #4		Well #6	
Labor	$16.06	Labor.	$252.51
Material:		Material:	
259′ of 4″ pipe	97.64	258′ of 4″ pipe	105.50
1 working barrel	50.71	Working Barrel	50.71
Use of tractor	15.15	215′7″ 8¼″ casing	294.11
Chapman's Exp.	6.40	Tractor	72.59
	$85.96	Chapman's Exp.	10.00
			$785.42

Well #8

Labor	$150.27
Material:	
212′4″ 8½″ casing	289.18
Use of tractor	49.49
Drilling Rig	12.93
Chapman's Exp.	10.00
	$511.87

As Number 4 well was drilled in 1930, and at that time was pumped for a considerable period of time, showing it to be a good well, we did not pull the 8¼″ casing, but left it in the well with the expectation of reclaiming the well later, which was done. In addition to the above investment charges to No. 4 well, we should charge it with 208′6″ of 8½″ casing, $282.96, additional drilling by $190.00, use of tractor for drilling, $70.00, Misc. Expense, $10.00.

At the present time the well No. 4 and No. 6 are equipped with Wood Sucker Rods. These rods will be taken out and placed in stock by transfer and be replaced by new steel rods which are on order at this time. The new steel rods will be charged to W. O. #292 and the amount transferred to each well will be shown on that work order. Any other items of material and labor in connection with the investment necessary to equip and put these wells in operation will appear in Work Order 292.

Yours very truly,

JPM/wb J. P. McCLINTOCK.

From the above information it appears conclusive that the costs expensed were correctly handled.

As previously stated in connection with the costs under Work Order No. 101, the cost of prospecting for water in advance of the construction of a compressor station could be capitalized as preliminary engineering or construction expenses, since such prospecting would be for the purpose of locating the station with consideration of the availability of an adequate supply of satisfactory water; however, the capitalization of costs of unproductive prospecting for water years later appears improper, since such unproductive prospecting adds nothing to the usefulness, efficiency, durability or capacity of the property.

Work Order No. 285. Lowering 10-inch Littleton Lateral on Highway east of University Avenue—$1,737.42. The work performed under this work order was accomplished during the period July to November 1937, at a total recorded cost of $2,363.69, of which $442.04 covering the cost of pipe and fittings used to replace pipe retired, was capitalized and $8.16 for certain water station equipment was transferred to Work Order No. 281. The balance, $1,913.49, including $176.07 of Private Payroll charges, which amount is excluded from the present claim for capitalization, was expensed in November 1937.

The usual procedure of crediting the Plant Account with the cost, exclusive of installation cost, of the materials retired, the capitalization of the cost of new materials installed, and the expensing of the costs of removal together with the cost of installing the replacing equipment was adhered to. By this method, the initial installation costs remain in the Plant Accounts.

The fact, however, that the company disposed of the Littleton Lateral during the year 1939 by charging the excess of the investment recorded for this lateral as compared with the theoretical depreciation reserve applicable thereto, to expense by Voucher No. M-33, December 1939, was either overlooked or ignored.

Since the company no longer has a financial interest in this lateral, it is obvious that no consideration of the present claim is warranted.

Work Order No. 290. Drilling Water Well at Travesser Camp—$714.10. The work performed under this work order consisted of the drilling of three wells, only one of which was kept for use. The total costs accumulated therefor, which were transferred to capital and expense in 1937, amounted to $1,251.15. The costs of all materials used for the producing well and a 2-inch water line, together with an apportionment of labor and trucking costs, in all, aggregating $625.58 or one-half of the total expenditures accumulated under this work order, were capitalized. Labor costs of $88.53, incurred in 1938, were expensed.

The assignment to capital and expenses of the above costs conforms with the notation on the work order completion notice dated December 30, 1937, signed by J. P. McClintock, General Superintendent, which reads,

> "Please charge ½ to Investment and ½ to expense of developing better water. (3 wells drilled, only one kept for use.)"

The costs of the unproductive prospecting were treated in a manner similar to like costs incurred under Work Order Nos. 101 and 269, and the explanation given in connection with the costs of those work orders is also appropriate in this connection.

In general, it ordinarily has been the company's procedure to issue formal work orders under which it accumulated the costs of specific jobs of any consequence whether capital or maintenance. Upon completion of the jobs, the job costs have been closed out of Construction Work in Progress, and transferred to other accounts, generally to those specified by the General Superintendent or some other responsible official.

Of the total expenses of $284,806.36 now claimed as plant, $97,586.82 or 34% thereof was covered by work orders and was charged to expense by the company on the basis specified by company officials and approved by its accounting officers.

The balance of $187,219.54 represents the cost of work originally expensed, now claimed as capital, which was not covered by work orders, and is made up of the costs of a

multitude of items, the expensing of which when incurred was also directed by responsible company officials and approved by the chief accounting officer. These items in greater part cover the cost of work performed which appears to have been handled as routine work in connection with operations by regular employees.

From an examination of the company's records it is clear that the management consistently, through responsible officials, to the extent that any item might have originally been considered capital or expense optionally, exercised its discretion as permitted under the systems of accounts used, in assigning such costs to expense. The charging of the costs to expense was not only approved by responsible company officials including the chief accounting officer, but has also been examined and accepted in audits made by members of the Auditing Department of Standard Oil Company of New Jersey, and also accepted by the Bureau of Internal Revenue for income tax accounting.

From the foregoing recital of facts, it is clear that the expensing of the costs now claimed as plant does not represent accounting errors, which may be corrected under the provisions of the Federal Power Commission's Uniform System of Accounts, but rather, that the costs in question were properly recorded as expenses in accordance with sound accounting principles at the time. Accordingly, the Company, in my opinion, is prohibited from realizing its claim for restatement.

Undistributed Construction Costs:

Ford, Bacon & Davis, Inc. Memorandum Report of April 15, 1940 contains the following statement in connection with this item:

> "With reference to the item entitled 'Undistributed Construction Costs,' an estimate has been made of a proper percentage to cover supervisory, administrative and engineering overhead costs which were expended on account of the other capital items listed in the attached schedules. Also, this same percentage has been applied and is included in these schedules in an amount based upon all construction projects that have been

carried on by the Company and actually capitalized since the beginning of operations.

"The amounts of these general construction costs applicable to capital expenditures are summarized in Part V of the schedules and are supported by the attached statements showing the analysis of the actual book records. This analysis was made to include consideration of administrative, legal, clerical and engineering costs, including engineering fees paid to Ford, Bacon & Davis, Inc. from 1929 to 1939. The book analysis excluded consideration of interest, taxes and the usual preliminary and pre-organization expense items. As shown on the statements, certain items of expense have been transferred from the general expense to operation and maintenance. Those are amounts which are not strictly items of general expense, but comprise generally 'dumping ground' accounts such as injuries and damages, absent time due to injuries, and like accounts. The management fees paid to Ford, Bacon & Davis, Inc. in the early years of operation have been excluded from consideration in this study as these fees are regarded as applying to operating costs and not as a part of the general overhead to be applied to investment."

Item No. 9 of Statement 2, Exhibit 67, represents what is termed "Adjustment for General Construction Costs Applicable to Net Property Additions and Capital Items Expensed", $155,244.00.

This is the total amount now sought to be capitalized for:

A.	Corporate and Engineering Costs	$112,967.55
B.	Interest During Construction	$42,276.45

Corporate and Engineering Costs.

Ford, Bacon & Davis, Inc. in the Memorandum Report of April 15, 1940, say:

"In the study the corporate and engineering costs have been given combined consideration. The process generally has been to determine the percentage relationship of corporate and engineering costs to the con-

bined costs of operation and maintenance expense and the gross property additions; that is, general administrative and engineering officers exercise control over the operation and maintenance of the properties while in operation and also supervise and control the construction expenditures made during that period. The problem is to allocate a portion of the corporate and engineering costs to the primary costs of construction work which have been or should have been capitalized. These costs have been determined and are summarized herein on the second page of Part V. Based on the five-year averages as shown on that statement, the incremental cost of corporate and engineering costs to be applied to construction work performed during operation was determined to be 6.74 per cent. . . . .

"After consideration of the relationship of the five year averages in the years ended 1933 and 1938, and in other data shown on the second page of Part V, 6.5 per cent was considered a reasonable percentage to apply for corporate and engineering costs to the items of investment that have been capitalized on the books of the Company from 1929 to 1939 and also to the items that have been charged to expense on the books of the Company which should have been capitalized. . . ."

Corporate and Engineering Costs as used in Item No. 9 of Statement 2, Exhibit 67, and in Statement 10, Exhibit 76 (line 11) are $112,967.55, whereas the amount for these costs as presented in the Ford, Bacon & Davis, Inc., Memorandum Report of April 15, 1940 (page 343) was $113,687.69.

During the early years of operation, engineering and management services were provided by Ford, Bacon & Davis, Inc. under contracts, the engineering agreement being terminated as of June 2, 1933 and the management agreement terminated as of June 30, 1936.

Engineering services rendered by Ford, Bacon & Davis, Inc. during the period the engineering contract was effective, were billed by it, and the cost of such services, including construction fees assigned to appropriate work orders and/or plant accounts by the company. It has been the

company's customary procedure to charge appropriate work orders and plant accounts with the cost of engineering and supervisory services performed by members of the company's engineering personnel. Such charges were based on time reports. Expenses usually were readily identifiable with specific jobs and were charged thereto.

It has not been customary procedure, however, since 1928 (completion of initial construction) to make any allocation of general administrative expenses, such as salaries and expenses of general officers or of general office clerks. Expenses incurred when identified with specific jobs have been assigned thereto as direct charges, but no general expense allocations have been applied.

The volume of General Administrative Expenses has not fluctuated in accordance with the volume of construction work performed, nor does the trend appear to be influenced by the combined expenditures of operation, maintenance and construction. In fact, the trend of General Administrative Expenses generally has been opposite to that of either Net Property Additions or the combined total of Net Property Additions and Operation and Maintenance Expenses. This is clearly illustrated by the following tabulation:

Year	Net Property Additions, Ford, Bacon & Davis, Inc. Memorandum Report dated April 15, 1940, Page 343, Line 1	Operation and Maintenance Expense, Ford, Bacon & Davis, Inc. Memorandum Report dated April 15, 1940, Page 344, Line 1 (Note A)	Total	General Administrative Expense, Ford, Bacon & Davis, Inc. Report, Exhibit No. 76, Statement 10, Line 10	Ratio, General Administrative Expenses to Net Property Additions and Operation and Maintenance Expenses
1929	$ 550,994.72	$ 149,807.32	$ 700,802.04	$ 41,175.73	5.875%
1930	693,693.13	199,924.45	893,617.58	48,254.81	5.40 %
1931	1,111,945.19	265,481.93	1,377,427.12	44,197.95	3.209%
1932	140,025.34	251,432.72	391,458.06	36,923.18	9.43 %
1933	5,668.50	241,290.24	246,958.74	40,606.50	16.44 %
1934	62,541.73	265,434.33	327,976.06	36,120.92	11.01 %
1935	125,366.65	265,862.69	391,229.34	30,658.03	7.836%
1936	13,553.28	318,417.79	331,971.07	39,529.78	11.907%
1937	109,689.52	349,559.70	459,249.22	44,689.47	9.73 %
1938	88,884.84	341,975.23	430,860.07	47,943.11 (Note B)	10.93 %
1939	15,925.16	352,469.82	368,394.98	50,926.88 (Note C)	13.82 %
Total	$2,918,288.06	$3,001,656.22	$5,919,944.28	$461,026.36	Avg. 7.787%

Notes: (A) Adjusted to include salaries of General Superintendent and Chief Engineer, excluded in Ford, Bacon & Davis, Inc. report.
(B) Includes $2,295.00 legal fees in re rate proceeding.
(C) Includes $7,620.00 legal fees in re rate proceeding.

The facts are that General Administrative Expenses have gone on pretty much in the same volume, regardless of the volume of construction work in progress, and there is good logic to support the principle that only such part thereof as is specifically incurred for construction purposes should be capitalized.

The Company's mangement exercised its discretion as permitted under the system of accounts in not allocating General Administrative Expenses to construction work performed, and its records and accounts have been examined and audited year after year by members of the auditing department of Standard Oil Company of New Jersey.

The absence of any objections or adjustments concerning these General Administrative Expenses as a result of these periodic audits clearly indicates that the Company's policy in this regard was approved.

It also appears that the basis for the present claim to capitalize Corporate and Engineering Costs is the usual engineering rather than an accounting method, in that it is based upon the ratio of construction expenditures to total expenditures, instead of being based upon the time actually spent in connection with construction work. Such time studies cannot now be made with any reasonable degree of accuracy.

The method used in the determination of this claim very definitely results in the addition to construction costs of an arbitrary percentage to cover assumed overhead costs which is contrary to sound accounting principles in that it does not represent actual plant costs.

Under "Components of Construction Cost" the Federal Power Commission Uniform System of Accounts provides for the inclusion of "Engineering and Supervision" and various other "General Administrative" costs as construction costs, always based on the amount of such costs actually applicable to the construction costs. Under "Overhead Construction Costs" Gas Plant Instruction No. 6(B) reads as follows: "The instructions contained herein shall not be interpreted as permitting the addition to gas plant accounts of arbitrary percentages or amounts to cover assumed overhead costs, but as requiring the assign-

ment to particular jobs and accounts of actual and reasonable overhead costs." (Underscoring added)

Gas Plant Instruction No. 6(C) provides that: "The records supporting the entries for overhead construction costs shall be so kept as to show the total amount of each overhead for each year, the nature and amount of each overhead expenditure charged to each construction work order and to each gas plant account and the bases of distribution of such costs."

Instructions concerning General Officers' and Clerks' Salaries and Expenses During Construction, as contained in the Uniform Classification of Accounts for Natural Gas Companies prescribed by the Public Service Commission of the Commonwealth of Pennsylvania, effective January 1, 1920, read in part as follows:

> "Account No. 259. General Officers and Clerks' Salaries During Construction.
>
> "If the utility is already operating a natural gas system, charge to this account only that proportion of such salaries, that is based upon the time which such officers and clerks actually spend in new construction."
>
> "Account No. 260. General Officers' and Clerks' Expenses During Construction.
>
> "If the utility is already operating a natural gas system, charge to this account only those expenses that are incurred while such officers and clerks are actually engaged on construction work."

The foregoing instructions appear to have been given little, if any, consideration in arriving at the Company's re-accounting with respect to Corporate and Engineering Costs said to be applicable to its plant accounts.

Interest during Construction.

Ford, Bacon & Davis, Inc. Memorandum Report of April 15, 1940 contains the following comment:

> "The Company has capitalized no interest on its construction projects since the completion of the original project. On construction projects, such as pipe line extensions, compressor stations, etc., money is tied up in the uncompleted construction for a considerable per-

iod of time before the project can be operated. During this entire period interest should be charged to construction on all money advanced from the first expenditures on account of the project to the time the project is completed and in full operation.

"The Bureau of Valuation of the Interstate Commerce Commission uses an annual interest rate of 6 per cent, and computes interest for one half the estimated construction period plus three months.

"Having in mind the above principles, and the nature of the construction projects carried on, it is considered that a fair interest charge during construction should be 1.5 per cent of the capital expenditures. No interest has been included on the capital items in the attached schedule heretofore charged to expense."

Customary accounting procedure in connection with computation of Interest During Construction is and always has been to ignore such computations for relatively small jobs and for jobs of which the construction period is approximately 30 to 60 days. Computations are based on monthly expenditures by individual jobs and the interest costs resulting from the computations are assigned to the individual jobs.

As is true of other items in this re-accounting, the Company's management exercised its discretion as permitted under the system of accounts used in not assigning interest costs to construction work. This omission continued throughout the years of operation and, although the Company's records and accounts have been subject to audit annually, no objection to this policy has been found in the Company's records.

Some confusion existed in connection with the capitalization of interest shortly after the original construction period in 1928, as is apparent from various entries made in connection therewith. The last paragraph of the following telegram from Mr. J. B. Luse to Mr. E. G. Hill, dated March 6, 1929, attached to the Company's voucher M-258, December, 1928, states the management's policy at that time, which policy has been adhered to consistently ever since as regards its policy of expensing versus capitalizing various items.

"Tentative income tax would indicate thirty six thousand dollars Stop Last fall Messrs. Payne Von-Phul Luse agreed to make no depreciation for year assuming earnings would be small now suggest you include five percent depreciation for three months on depreciable property which would approximate one hundred thousand dollars charged to expenses Stop Also suggest we include interest on bonds to September thirtieth be charged to operations leaving only interest on borrowed funds as interest during construction Stop To eliminate bonds interest September thirtieth will mean you reduce this account and charge New York office we in turn will credit field office and charge bond interest expense Stop Think you appreciate three stockholders would prefer this saving than to show large earnings."

As one of the "Components of Construction Cost" Gas Plant Instruction No. 5 (17) of the Federal Power Commission Uniform System of Accounts permits the charging of Interest During Construction on the following basis: "'Interest during construction' includes the net cost of borrowed funds used for construction purposes and a reasonable rate upon the utility's own funds when so used. Interest during construction shall be charged to the individual job upon which the funds are expended and shall be credited to Account 536, Interest Charged to Construction—Cr. The period for which interest may be capitalized shall be limited to the period of construction. No interest charges shall be included in these accounts upon expenditures for construction projects which have been abandoned."

The method used by Ford, Bacon & Davis, Inc. for computation of Interest During Construction is definitely not in accordance with this instruction.

From the facts recited above, it is obvious that the omission of allocations of General Administrative Expenses and Interest Expenses to Construction Work in Progress was not because of accounting errors, but due to the policy of the Company's mangement. It is, therefore, not a correction of accounting errors to now re-account for such items by including a portion thereof in plant accounts.

Such re-accounting, in my opinion, is simply a means of inflating the plant accounts.

Exhibit No. 196

COLORADO INTERSTATE GAS COMPANY
STATEMENT OF FIXED CAPITAL ITEMS CHARGED TO EXPENSE
BY FUNCTIONAL GROUPS
AS SHOWN BY EXHIBIT NO. 76

Year	Compressing Stations Statement No. 4	Transmission Lines Statement No. 5	Measuring Stations Statement No. 6	Telephone Department Statement No. 7	Other General Expenses Statement No. 11	Total
1928						
1929						
1930	$ 4,158.90	$ 12,772.78		$ 46.33	$39.15	$ 17,017.16
1931	22,443.99	9,668.53	$ 38.89	485.99		32,637.40
1932	4,056.58	6,973.44	161.97	75.29		11,267.28
1933	4,804.33	10,709.16	863.27	40.50		16,417.26
1934	1,702.78	13,305.61	21.69			5,030.08
1935	1,308.25	25,752.51	23.43			27,084.19
1936	3,807.68	33,473.62	58.88	40.07		37,380.19
1937	4,138.67	40,647.14	281.27	5.19		45,072.27
1938	3,860.54	37,646.02	619.78	71.47		42,197.61
1939	9,103.68	31,442.61	101.87	54.76		40,702.92
Total	$59,385.14	$222,391.42	$2,171.05	$819.60	$39.15	$284,806.36

Docket G-124

COLORADO INTERSTATE GAS COMPANY
SUMMARY OF ITEMS CHARGED TO EXPENSES DURING THE PERIOD JANUARY 1, 1930 TO DECEMBER 31, 1939
WHICH ARE NOW SOUGHT TO BE CAPITALIZED AS ITEM NO. 8, STATEMENT E OF EXHIBIT NO. 67

	Year 1930	Year 1931	Year 1932	Year 1933	Year 1934	Year 1935	Year 1936	Year 1937
Flood and Washout Control								
Labor	$ 132.42	$ 147.10	$ 1,985.27	$ 1,855.81	$ 1,504.53	$ 1,216.66	$ 1,014.60	$ 1,852.42
Trucking	59.45	77.50	902.00	912.00	672.50	632.25	186.05	470.95
Material		25.13	79.17	60.85	40.30		174.00	269.32
Work Orders								
Total Flood and Washout Control	$ 191.57	$ 249.73	$ 2,966.44	$ 2,828.66	$ 2,217.33	$ 1,848.91	$ 1,374.65	$ 2,592.69
Rock Weighting Lines								
Labor	$ 917.02	$ 621.20	$ 721.27	$ 1,162.88	$ 1,362.85	$ 1,964.50	$ 4,049.17	$ 3,674.54
Trucking	412.66	279.54	324.57	1,647.50	1,720.25	2,961.60	3,939.72	2,931.21
Material					9.00	11.25		19.00
Work Orders								
Total Rock Weighting Lines	$ 1,329.68	$ 900.74	$ 1,045.84	$ 2,810.38	$ 3,092.10	$ 4,937.35	$ 7,988.89	$ 6,624.75
Cattle Guards								
Labor	$ 410.30	$ 212.09	$ 79.67	$ 31.93		$ 417.33	$ 1,168.45	$ 579.36
Trucking	184.64	128.52	35.85	12.00	$ 4.00	145.89	440.96	132.71
Material		73.50			37.80	30.59	106.01	68.86
Work Orders								
Total Cattle Guards	$ 594.94	$ 414.11	$ 115.52	$ 43.93	$ 41.80	$ 593.81	$ 1,715.42	$ 780.93
Bridges								
Labor	$ 170.85		$ 55.22	$ 25.14	$ 230.65	$ 321.84	$ 304.90	$ 101.74
Trucking	131.74		59.58		98.00	79.19	123.69	
Material	121.91		77.18		30.88		84.28	103.14
Work Orders	5,525.03							
Total Bridges	$ 5,949.53		$ 191.98	$ 25.14	$ 359.53	$ 401.03	$ 512.87	$ 204.88
Rip Rap and Revetments, River Crossings								
Labor	$ 254.66	$ 912.39	$ 504.22	$ 2,011.41	$ 498.67	$ 768.13	$ 545.08	$ 251.58
Trucking	114.60	410.58	226.90	1,087.00	288.00	159.53		194.23
Material								
Work Orders					4,395.26	979.29	5,699.85	1,936.84
Total Rip Rap and Revetments, River Crossings	$ 369.26	$ 1,322.97	$ 731.12	$ 3,128.41	$ 5,181.93	$ 1,906.95	$ 6,244.93	$ 2,382.65
Roads and Culverts								
Labor	$ 1,289.25	$ 4,637.76	$ 495.48	$ 613.98	$ 962.67	$ 624.78	$ 1,237.95	$ 864.96
Trucking	650.21	2,095.99	233.31	818.00	433.83	25.30	568.17	401.55
Material	155.67	20.00	22.98	18.50	79.13	173.34		
Work Orders								
Total Roads and Culverts	$ 2,095.13	$ 6,753.75	$ 751.77	$ 1,450.48	$ 1,475.63	$ 823.42	$ 1,806.12	$ 1,266.51

Exhibit No. ___
Sheet 1 of 2
Witness - Carl H. Schutte

COLORADO INTERSTATE GAS COMPANY

MARY OF ITEMS CHARGED TO EXPENSES DURING THE PERIOD JANUARY 1, 1930 TO DECEMBER 31, 1939
WHICH ARE NOW SOUGHT TO BE CAPITALIZED AS ITEM NO. 8, STATEMENT 2 OF EXHIBIT NO. 67

Year 1930	Year 1931	Year 1932	Year 1933	Year 1934	Year 1935	Year 1936	Year 1937	Year 1938	Year 1939	Total 10 Year Period to Dec. 31, 1939
$ 132.12	$ 147.10	$ 1,925.27	$ 1,855.81	$ 1,504.53	$ 1,216.66	$ 1,014.60	$ 1,852.42	$ 2,654.60	$ 3,879.07	$ 16,162.18
59.45	77.50	908.00	912.00	672.50	632.25	186.05	470.95	1,989.39	1,605.67	7,447.76
	25.13	79.17	60.25	40.30		174.00	269.32	412.66	1,966.91	3,027.74
$ 191.57	$ 249.73	$ 2,908.44	$ 2,828.06	$ 2,217.33	$ 1,848.91	$ 1,374.65	$ 2,592.69	$ 4,996.65	$ 7,451.65	$ 26,637.68
$ 917.02	$ 621.20	$ 721.87	$ 1,162.88	$ 1,368.85	$ 1,964.50	$ 4,049.17	$ 3,674.54	$ 4,061.09	$ 8,942.89	$ 27,477.41
412.66	279.54	324.57	1,647.50	1,720.85	2,961.60	3,939.72	2,931.21	2,068.72	2,849.54	19,135.31
				9.00	11.25		19.00	7.00	24.75	71.00
$ 1,329.68	$ 900.74	$ 1,045.84	$ 2,810.38	$ 3,098.10	$ 4,937.35	$ 7,988.89	$ 6,624.75	$ 6,136.81	$ 11,817.18	$ 46,683.72
$ 410.30	$ 212.09	$ 79.67	$ 31.93		$ 417.33	$ 1,168.45	$ 579.36	$ 488.60	$ 47.14	$ 3,434.87
184.64	128.52	35.85	12.00	$ 4.00	145.89	140.96	132.71	48.45		1,133.02
	73.50			37.80	30.59	106.01	68.86	39.05		355.81
$ 594.94	$ 414.11	$ 115.52	$ 43.93	$ 41.80	$ 593.81	$ 1,715.42	$ 780.93	$ 576.10	$ 47.14	$ 4,923.70
$ 170.85		$ 55.22	$ 25.14	$ 230.65	$ 324.84	$ 304.90	$ 101.74	$ 322.36	$ 14.08	$ 1,549.78
131.74		59.58		98.00	79.19	123.69		53.08		545.28
121.91		77.18		30.88		84.28	103.14	15.45		432.84
5,525.03										5,525.03
$ 5,949.53		$ 191.98	$ 25.14	$ 359.53	$ 404.03	$ 512.87	$ 204.88	$ 390.89	$ 14.08	$ 8,052.93
$ 254.66	$ 912.39	$ 504.22	$ 2,041.41	$ 498.67	$ 768.13	$ 545.08	$ 251.58			$ 5,776.14
114.60	410.58	226.90	1,087.00	288.00	159.53		194.23			2,480.84
				4,395.86	979.29	5,699.85	1,936.84	$ 2,404.56	$ 728.21	16,144.01
$ 369.26	$ 1,322.97	$ 731.12	$ 3,128.41	$ 5,181.53	$ 1,906.95	$ 6,244.93	$ 2,382.65	$ 2,404.56	$ 728.21	$ 24,400.99
$ 1,289.25	$ 4,637.76	$ 495.48	$ 613.92	$ 962.67	$ 624.78	$ 1,237.95	$ 864.96	$ 1,719.19	$ 2,781.73	$ 15,227.69
650.21	2,095.99	233.31	818.00	455.83	85.30	568.17	401.55	1,920.96	1,605.86	8,753.18
155.67	80.00	22.98	18.90	79.13	173.54			23.95	62.41	535.98
								7,843.84		7,843.84
$ 2,095.13	$ 6,753.75	$ 751.77	$ 1,450.42	$ 1,475.63	$ 883.62	$ 1,806.12	$ 1,266.51	$ 11,507.94	$ 4,450.00	$ 32,360.69

Docket G-124

COLORADO INTERSTATE GAS COMPANY

SUMMARY OF ITEMS CHARGED TO EXPENSES DURING THE PERIOD JANUARY 1, 1930 TO DECEMBER 31, 1
WHICH ARE SOUGHT TO BE CAPITALIZED AS ITEM NO. 8, STATEMENT 2 of EXHIBIT NO. 67

	Year 1930	Year 1931	Year 1932	Year 1933	Year 1934	Year 1935	Year 1936
Gravel, Rock and Shale for Main Line							
Labor				$ 249.92			
Trucking			$ 4.05	180.00	$ 205.00	$ 534.66	
Material			9.00	14.98	22.49		$ 5.11
Total Gravel, Rock and Shale for Main Line			$ 13.05	$ 444.90	$ 227.49	$ 534.66	$ 5.11
Cathodic Protection							
Material							
Work Orders						$11,698.36	$12,322.69
Total Cathodic Protection						$11,698.36	$12,322.69
Profile Maps							
Work Orders							
Lowering Lines							
Work Orders							
Spare Parts for Compressors, etc.							
Materials							$ 773.80
All Other Miscellaneous							
Labor	$ 2,803.32	$ 8,373.92	$ 2,728.27	$ 4,195.30	$ 1,602.13	$ 3,311.96	$ 2,939.57
Trucking	1,549.39	4,572.11	1,710.48	1,118.00	249.75	461.66	433.78
Materials	639.77	1,786.32	1,072.81	372.72	582.39	543.08	806.06
Work Orders	1,494.57	8,263.75					456.30
Total All Other Miscellaneous	$ 6,487.05	$22,996.10	$ 5,511.56	$ 5,686.02	$ 2,434.27	$ 4,336.70	$ 4,635.71
Total by Type of Cost							
Labor	$ 5,977.52	$14,904.46	$ 6,509.40	$10,176.31	$ 6,161.50	$ 8,628.20	$11,259.72
Trucking	3,102.69	7,564.24	3,496.74	5,774.50	3,671.33	5,020.08	5,692.37
Material	917.35	1,904.95	1,261.14	466.45	801.99	758.26	1,949.26
Work Orders	7,019.60	8,263.75			4,395.26	12,677.65	18,478.84
Total	$17,017.16	$32,637.40	$11,267.28	$16,417.26	$15,030.08	$27,084.19	$37,380.19

Exhibit No. 196
Sheet 2 of 2
Witness - Carl H. Schutte

COLORADO INTERSTATE GAS COMPANY

SUMMARY OF ITEMS CHARGED TO EXPENSES DURING THE PERIOD JANUARY 1, 1930 TO DECEMBER 31, 1939
WHICH ARE SOUGHT TO BE CAPITALIZED AS ITEM NO. 8, STATEMENT 2 of EXHIBIT NO. 67

Year 1930	Year 1931	Year 1932	Year 1933	Year 1934	Year 1935	Year 1936	Year 1937	Year 1938	Year 1939	Total 10 Year Period to Dec. 31, 1939
			$ 249.92				$ 17.56	$ 1,128.13	$ 1,086.02	$ 2,481.63
		$ 4.05	180.00	$ 205.00	$ 534.66		634.81	3,460.14	2,283.23	7,301.89
		9.00	14.98	22.49		$ 5.11			86.77	138.35
		$ 13.05	$ 444.90	$ 227.49	$ 534.66	$ 5.11	$ 652.37	$ 4,588.27	$ 3,456.02	$ 9,921.87
							$ 16.42		$ 2.49	$ 18.91
					$11,698.36	$12,322.69	21,400.03	$ 2,524.03	1,971.18	49,916.29
					$11,698.36	$12,322.69	$21,416.45	$ 2,524.03	$ 1,973.67	$ 49,935.20
								$ 1,806.21	$ 1,183.32	$ 2,989.53
								$ 638.33		$ 638.33
						$ 773.80	$ 136.97		$ 4,713.07	$ 5,623.84
$ 2,803.32	$ 8,373.92	$ 2,728.27	$ 4,195.30	$ 1,602.13	$ 3,311.96	$ 2,939.57	$ 3,352.56	$ 4,780.24	$ 3,153.02	$ 37,240.29
1,549.39	4,572.11	1,710.48	1,118.00	249.75	461.66	433.78	352.23	719.39	376.40	11,563.19
639.77	1,786.32	1,072.81	378.72	582.39	543.08	806.06	1,102.64	1,039.66	1,339.16	9,284.61
1,474.57	8,263.75					456.30	4,226.64	88.53		14,529.79
$ 6,467.05	$22,996.10	$ 5,511.56	$ 5,686.02	$ 2,434.27	$ 4,336.70	$ 4,635.71	$ 9,034.07	$ 6,627.82	$ 4,868.58	$ 72,617.88
$ 5,977.52	$14,904.46	$ 6,509.40	$10,176.31	$ 6,161.50	$ 8,628.20	$11,259.72	$10,674.72	$15,154.21	$19,903.95	$109,349.99
3,102.69	7,564.24	3,496.74	5,774.50	3,671.33	5,020.08	5,692.37	5,117.69	10,200.13	8,720.70	58,360.47
917.35	1,904.95	1,261.14	466.45	801.99	758.26	1,949.26	1,716.35	1,537.77	8,195.56	19,509.08
7,019.60	8,263.75			4,395.26	12,677.65	18,478.84	27,563.51	15,305.50	3,882.71	97,586.82
$17,017.16	$32,637.40	$11,267.28	$16,417.26	$15,030.08	$27,084.19	$37,380.19	$45,072.27	$42,197.61	$40,702.92	$284,806.36

[Testimony of CARL H. SCHUTTE, continued.]

Q. Mr. Schutte, in connection with the Exhibits 195 and 196 which are rebuttal exhibits with respect to the items which Canadian River and Colorado Interstate have changed from expense to capital items in accordance with exhibits by Mr. Lusk, Exhibit 67 I think it is, you prepared these two Exhibits 195 and 196?

A. Yes, sir.

Q. I'd like first to discuss the question of overhead costs and undistributed construction costs which is related to both exhibits. I think the same principle is involved in both.

A. That is correct.

Q. As I recall your testimony on direct examination with respect to your own Exhibit 139 in which you had made an examination and prepared the reclassification for capital accounts for the company, I take it then you stated you were proceeding from an accounting viewpoint and doing that on accounting principles?

A. Yes, sir.

Q. And is that true of the work you have done here; that is, you are applying accounting principles as the items referred to in Mr. Lusk's exhibit?

A. Yes, sir.

Q. And I think at that time you stated you didn't pretend to be a rate case expert.

A. That's right.

Q. Entirely an accounting examination you have made, and that is true of this?

A. That is correct.

Q. And I assume that if these portions of general and administrative expense and the items of interest during construction had actually been charged by these two companies to capital account as a part of the cost of the respective items of property when these items were put into use, you would make no change now?

A. You are discussing which, Mr. Dougherty? 195 or 196?

Q. Well, I assume the same principles would apply. I don't know that it makes much difference, but we can take

195 first, but I am speaking solely of that portion of 196 that relates to undistributed construction costs.

A. Oh.

Q. That subject matter seems to be the same in both exhibits.

A. That is correct. You are speaking of interest during construction and that portion of the management overhead?

Q. Yes, the two items; that is, the portion of general administrative expense which is designated in here in your exhibits, both as corporate and engineering cost, and then that portion, interest during construction.

A. In so far as those two items are concerned, it would depend entirely on what basis they are capitalized on as to whether I would have permitted them to remain or not.

Q. Well, first, you do recognize that those two items are appropriate component parts of capital cost?

A. Properly applied, yes, sir.

Q. And so that if the computation thereof is correct, then such charges should be a part of capital cost?

A. If the computations were correct.

Q. Now take with respect to interest during construction, if the computations as you think were correct had been made by the company at the time and that amount added, then you would make no change in that?

A. That would, as I say, depend on whether they are correctly computed. If they were correctly computed and the amounts appeared to be reasonable, the chances are they would have remained so.

Q. Now, where do you draw the line between discretion of the company in exercising judgment of the accounting officers about methods of computing interest and whether it is to be charged or not as distinguished from what you would call an incorrect computation of interest which would justify you in making a change, although you think that the company should make no change?

A. Well, it would primarily be dependent upon the base. Interest should be, if properly done, based on the individual job and only for the period of construction and then there shouldn't be a delayed or deferred period within that. In other words, if you were to start constructing a piece of property and for some reason or other broke the continuity

of the work, during that period of the break you wouldn't charge interest. That would be one thing. Small jobs normally have not been charged with interest during construction in any case that I know of. Usually the company sets a minimum amount for a job on which they are going to charge interest and another would be the length of time required to complete a construction job.

In other words, you might spend thousands of dollars all within a 15-day period, and in that event you normally wouldn't charge interest during construction.

Q. Well, where is it that you draw the line on one side of which you say the company has discretion to do certain things and on the other side it has not? By that I mean this: Is your line of discretion limited solely as to whether the company shall or shall not charge interest and then if it does charge it, you don't think that it is bound by the discretionary judgment it has exercised and you are not bound by it either?

A. I don't quite get that question, Mr. Dougherty.

Q. Well, you speak in your exhibits about the company having exercised its discretion about charging interest during construction and if it had, as it did, not charged interest during construction, then under your opinion it exercises discretion and now should not be permitted to set that up on its books?

A. That's right.

Q. Now, you recognize the discretion of the company with respect to that fact?

A. Oh, yes.

Q. But I take it you don't recognize that the company has any discretion as to the method of charging interest which is now binding on both the Power Commission and the company?

A. Well, their discretion would be limited to a reasonable and just amount.

Q. In respect to the size of jobs and things of that sort, would you recognize that the company might have had any discretion as to how large a job had to be before interest could be charged?

A. Well, only from the standpoint of what would be normal accounting procedure, is all I had in mind there.

Q. Well, as I get it, in your examination of any interest

during construction that was charged, you feel that you should go back and determine the correctness of the methods and of the amounts in your own judgment and that you aren't bound by any discretion the company might have exercised at the time it made the charge?

A. You say I would go back and correct it?

Q. Yes.

A. No, I don't think so. I think I would point out what they had done and what in my judgment would have been a preferable thing to do. I wouldn't say that they shouldn't do a certain thing.

Q. Well, then, with respect to interest during construction your objection here is, I take it, that because the company did not charge it at the time, it now should not be permitted to set it upon its books?

A. That is the premise, yes, sir.

Q. Now, I understand from what you say in your exhibit, too, that it is your understanding that whether or not interest during construction should be included in capital costs was a matter of discretion, is that correct?

A. You said in Exhibit 2.

Q. In both exhibits again with respect to interest during construction.

A. Will you point out about where that particular item is?

Q. On Page 3 of this statement which you read with respect to 195, you make the statement in that with respect to Canadian River Gas Company that the company's management exercised its discretion as permitted under the system of accounts in consistently omitting the allocation of corporate and engineering costs to construction work performed, and then with respect to interest during construction you again on Page 5 of that same statement say that the company's management exercised its discretion as permitted under the system of accounts in not assigning interest costs and the same thing is true in Exhibit 196 on Page 53. You make that statement with respect to interest during construction.

A. Yes, sir. Now, what was the question?

Q. The question is, is it your interpretation of the Federal Power Commission Code that the matter of adding interest during construction into the capital cost of property

is a matter that is within the discretion of the company; that is, whether it shall or shall not put it in?

A. I think so.

Q. The instruction which you referred to, Plant Instruction 5, which is headed "Components of Construction Costs," reads this way: "The cost of construction properly includible in the gas plant account shall include where applicable the direct and overhead costs as listed and defined hereunder."

Then No. 12 is General Administration Capitalized; No. 17 is Interest During Construction. Now, under your interpretation of the verbs there "shall include," is not that mandatory?

A. I take it is permissible but not compulsory.

Q. Would that be the same conclusion with respect to the other items that are components of construction cost? I am reading from Page 39 of the printed Uniform System of Accounts.

A. There would be quite a number of items coming under Components of Construction Cost and there might be a difference of opinion about whether they should be capitalized or otherwise. In other words, I think the company has the discretion of capitalizing certain items or expensing them or treating them or disposing of them in some other manner than capitalizing them.

Q. There is no language in Instruction 5 that indicates, as I see it, that any of those items—all the way from 1 to 17—may or may not be included, and as I see it, there is no distinction between the reasons you might give for these overheads and other items that are contained there, and if there are any, I wish you would point those out.

A. I think you are correct in that. The components of construction costs, No. 5, says: "The cost of construction properly includable in gas plant account shall include where applicable the direct and overhead cost."

As to overhead costs, however, they base them always on the cost applicable to the particular job. From the standpoint of labor, as I interpret it, it is presumed to mean the supervising officials—I don't mean the construction officials, but I mean the company's administrative officials—devote to the specific things, and in that particular instance I think the company has a discretion of whether it wishes to

capitalize those particular things or not. If it does capitalize them, the basis should be, of course, the time spent on the jobs.

Q. Well, there is a distinction, of course, as to whether you shall or whether you shall not capitalize them and then whether the amount you capitalize is accurately determined, isn't that correct?

A. I think so.

Q. There are two other questions there and I wonder what your interpretation was based upon in saying the company had discretion about making any charge for overhead when the language apparently is mandatory. I believe there is no language there that you know of, is there, that makes any distinction in Instruction 5 as to inclusion of those two items as against, for example, labor, materials and supplies?

A. That is right.

Q. That is one of these interpretations made outside the specific language of the Code?

A. That is correct.

Q. Now, the same sort of language is used in the Pennsylvania Code of 1920, is it not?

A. More or less similar, yes, sir.

Q. So that in order to determine that the failure to include interest during construction in general overhead was not a mistake; you have to arrive at the interpretation, namely, that it is discretionary even though the language in the instruction is mandatory?

A. (No response.)

Q. I don't know whether you thought I was making a statement or asking a question.

A. I thought you were making a statement.

Q. Do you agree with it or don't you agree with it?

A. Will you read that back to me, please?

(The question referred to was read by the reporter, as set forth above.)

The Witness: As to the corporate overheads the Pennsylvania Code on Page 59, speaking of general officers' and clerks' salaries during construction says: "To charge to this account the salaries of executives and general officers and general office clerks that accrue during construction, and if the utility is already operating a natural gas system,

charge to this account only that proportion of such salaries as based upon the time that such officers and clerks actually spend in actual construction."

It was my interpretation in connection with that that the amount of time was not possible of determination. That was one of my reasons for handling that particular item in the manner I did.

In so far as the interest during construction was concerned, the Colorado Interstate Gas Company appeared to be somewhat confused as to what they wanted to do in the beginning; in fact, they initially charged to interest a greater amount than remains there and subsequently credited that particular interest account, and *threw* that interest that was credited back to operations and that appeared to have been based upon a telegram they received from Mr. Luce which as I interpreted it was an expression of the company's policy at that particular time.

Q. Well, you are speaking now of the interest with respect to initial construction in this last statement you made?

A. Well, I think that the telegram would indicate the policy from that time on.

Q. Quite so, and as a matter of fact, the company didn't charge interest on subsequent additions.

A. That is correct.

Q. What I am trying to get divided in this question is between interest that should be charged as a part of the capital expense as distinguished from whether you computed it correctly. As I read these codes, both of them, the language is not permissive and it would seem that the company had not followed the provisions of the Pennsylvania Code, if applicable, in failing to include interest. Do you agree with that interpretation?

A. I agree they could have included interest had they chosen.

Q. So, as I asked a while ago, your interpretation of that code, the Pennsylvania Code as well as the present FPC Code, is that there is a matter of discretion there even though the language is mandatory?

A. Well, I don't entirely agree that the language is mandatory.

Q. It says "shall charge."

A. I have heard Mr. Lusk interpret "shall" wasn't mandatory.

Q. Will you accept his authority on all items?

A. No, I unfortunately wouldn't, but nevertheless, I still can't agree that the charging of interest and overheads to construction is mandatory because in a good many lines of business it isn't done at all.

Q. Well, I am speaking solely with respect to the codes.

A. I appreciate that, but I am speaking from the accounting standpoint for that particular charge.

Q. It would be your interpretation of the FPC Code in the future this company could or could not charge interest during construction as it saw fit?

A. I would think so, yes, sir.

Q. And if it decided not to do so, you would not think it had violated Instruction 5 of the Gas Plant Account?

A. That is correct.

Q. It is that interpretation which you make that forms the basis of your conclusion that it was a discretionary matter? It is your interpretation of that portion of the Code that caused you to say that the charges of these items of overhead was a discretionary matter?

A. I think that is correct.

Q. Beyond that you object to the method which Mr. Lusk used in assigning some part of the general administrative expense as corporate and engineering overhead?

A. Yes, sir.

Q. The manner or method which he used really is one that assumes that the general administrative supervision and work is expended in proportion to the dollars spent either on new construction or on operating expense?

A. That is as I understand it, yes, sir.

Q. So if in any particular year there had been an equal number of dollars spent for property additions and the same number of dollars in the operating and maintenance expense, that theory is the time spent by the general administrative officers and clerks and so forth would be equally spent on construction and on supervising of operations?

A. Based upon the way you made that statement, yes.

Q. It is using the dollar basis as the method of allocation?

A. That is right.

Q. Now, aren't you in error when you say that is assuming an arbitrary percentage?

A. I don't think so.

Q. Isn't an arbitrary percentage one that you would sit down and say, "I will take any number from 1 to 10 and decide 3 per cent might be appropriate and charge it that way"?

A. That, too, would be arbitrary.

Q. But when you use dollars as the measure you still think that is arbitrary?

A. In this instance I do, yes, because even though you might have $500 capital; $500 expense, that is no reason to assume you would have used an equal amount of time of the executive officers on each item.

Q. There is considerable opinion that is a proper basis for allocation, isn't there, Mr. Schutte?

A. It has been so stated, I believe, yes, but that doesn't necessarily mean one has to follow it.

Q. Oh, no. I suppose that might be true about your opinion of some of these things?

A. That is right.

Q. What I had in mind was this; that this isn't the first time that the method of allocating general administrative expense on the basis of dollars as between neutral construction and operating expense has been used?

A. No. It is often used and some of it as it is used is questioned.

Q. I think you told me at the beginning that accounting is not an exact science and there is a lot of difference in opinion.

A. That is correct.

Q. You do, of course, use dollars when you come to dividing overheads for initial construction?

A. Not as a general thing, Mr. Dougherty, if I understand you correctly. Your initial construction as I understand it, presumes to be prior to the start of operation.

Q. That is right.

A. In that case I would say it is all construction.

Q. But the method of allocating these overhead expenses to the various parts of the plant, that is, to production and to transportation and to so forth, is done on a dollar basis?

A. Quite often, yes, sir.

Q. And that is the way you did it in Exhibit No. 139?

A. No, I don't think I did. The thing I did—I think I accepted what the company did because it didn't particularly matter whether I used it on a dollar basis or some other basis.

Q. You remember with respect to the transmission lines the overhead had been spread by the company on a mileage basis?

A. That is right.

Q. And you said that wasn't an equitable method and it should be done on a dollar basis?

A. Because there was not any other basis that was more equitable. When computed on a mileage basis it gave the same rate on a 4-inch line as it would on a 16-inch line, so that isn't equitable.

Q. So you didn't leave it as the company accepted it and did charge it and placed it on a dollar basis?

A. In totals I made no change; in the instance of that classification, yes, I made a change.

Q. So at any rate you felt with respect to initial construction in dividing the expense between different parts of the system, the dollars in those different parts was the most equitable manner you could find or devise?

A. Yes, because I didn't have available any other method of doing it. In other words, there wasn't a time study available, which would probably be the best method of doing it.

Q. That is true here, there is no time study record available here.

A. That is right.

Q. So for that reason you indicated the use of dollars as an arbitrary method?

A. In this case it is the difference between operation and capital and in the other it was the difference between one capital account and another.

Q. With respect to the construction of the transmission line it is entirely possible that the time spent on supervising construction of these laterals of smaller size might have been disproportionate to the actual dollars invested?

A. That is possible.

Q. Because you got a certain amount of basic work when you ran a lateral, whether it was an 8-inch or 10-inch line?

A. That is correct.

Q. In the absence of any information about that, it was

your determination that miles would not reflect the most equitable method?

A. I felt that the dollar basis was more equitable than the mileage basis.

Q. Although it might be possible mileage might have a closer relationship to time to some extent than dollars?

A. Oh, it is possible but not probable.

Q. But at any rate, dollars were all right there, but you don't think they are appropriate for this division between new construction and operating expense?

A. No; because as I said before, the one was merely within fixed capital accounts and it didn't matter too much whether it was in one fixed capital account or another, but that doesn't hold true when it is a matter as to allocating certain charges to surplus or to fixed capital.

Q. Is it your interpretation of the plant instruction 6 that the only way you can arrive at an equitable distributior of these overheads between appropriate charge to operating expense and capital is on a time basis?

A. That is pretty much so, yes, sir.

Q. I assume that the importance of some of the supervision of construction would be different in some particular types of construction than others?

A. I don't think so. My interpretation of that particular instruction is after you are in operation you are going to have to operate regardless, and the construction work added is more or less incidental; that is to say, it fluctuates very much from year to year. In order to get an equitable method of allocating these overhead charges to construction, the time basis is the most equitable manner in doing it.

Q. That disregards whether or not the importance of different construction jobs vary and require a different class of supervision or attention than do others? It assumes everything is on an average basis and purely a matter of time spent?

A. If you had a more important construction job, the probability would be that you would spend more time on it.

Q. And that probably would have some relation to the dollars, that is, the more dollars spent the greater amount of time that would have to be spent on it?

A. That would be entirely likely, yes.

Q. I think Mr. Lusk on his method for Canadian River over the whole period assigned about ten per cent of the

general administrative expense to these overheads for inclusion in capital account. You state on Page 1 of this statement that the basis of Exhibit 195 was to capitalize $98,052.70 of the total general expense of $930,077, so that is just a little better than ten per cent?

A. That is right.

Q. I think you had in mind Canadian River during that period of time had expended some three or more millions of dollars in new construction?

A. I have forgotten what the figure was. I don't think I have that figure available. I wasn't so much worried about the total amount he was capitalizing, it was the method he was using and the fact that the company hadn't done it from the beginning. That fixed capital additions net seems to run about $3,100,000.

Q. Ten per cent of the time of general office clerks and accountants and supervision of manager and various assistants to the extent of ten per cent doesn't seem to be out of line for that much construction, does it?

A. You have to keep in mind at that particular time they had both engineering and management contracts and the management contract wouldn't be presumed to include supervision of construction. The engineering contract would do that, so possibly the figures we are discussing are quite on that basis.

Q. As I understand it, these figures of $930,077 do not include any of those Ford, Bacon & Davis, Inc. fees except some portion that might have been considered as a salary of Mr. Trelease?

A. Well, then, we would run a greater percentage of the clerks' salaries, wouldn't we?

Q. What I had in mind was this: As I understand it, the $930,077 is a general administrative expense of Canadian River Gas Company, during the time, excluding the amounts paid Ford, Bacon & Davis, Inc.; that is, when Mr. Lusk took his computation he took out the management fees paid Ford, Bacon & Davis, Inc. and took out the engineering fees paid them, so he was computing it purely on a basis of the general expense of the company.

A. I believe that is right.

Q. So as I say, ten per cent of the time doesn't seem like an exorbitant amount of time having in mind the capital additions?

A. Oh, I wouldn't think it would be particularly exorbitant.

Q. As I take it, you are objecting to the fact we have to estimate them and can't compute them exactly on a time schedule basis; that is, not only that but the question of the amount is your principal objection there?

A. The basis of computation and the fact that the company didn't charge them initially.

Q. Well, now, do you have in mind any basis of computation that might be made in the absence of time sheets kept by each of these men and each of the clerks that are involved?

A. You mean as of this date to make it retroactive?

Q. No, any way. How could we do it in the future? Time study is the only manner in which you can make an assignment of a portion of general administrative expense.

A. I don't know any way of doing it equitably except on a time basis.

Q. Many things are in here in connection with this code of accounts in determining costs in the past that have to be estimated. For example, the code says itself that the original cost when first devoted to public service is to be estimated if not known.

A. That is right.

Q. And that would be true even of cost on the company's books of construction by it if there had been any failure to accurately keep your accounts between different types of property?

A. I think so.

Q. You are supposed to go back and make these estimates, are you not?

A. That is correct.

Q. Why couldn't estimates be made in a case like this?

A. You mean to make them retroactive, or from now on?

Q. I am speaking now of arriving at the amount. There are two problems here, Mr. Schutte. One is your opinion they should not be added here because the company did not add them originally, and the second objection is that there is no acceptable way of computing what part of those general administrative expenses could be added. I am trying to get the thing into its component parts. Assume just for the moment for the purpose of my question that we could add them in retroactively. Why couldn't we make

a reasonable estimate of the appropriate amounts of those overheads to be charged into capital just as the companies are required to make estimates as to original cost of other physical items?

A. Well, I don't know how to answer that question because since my interpretation is they can't do it retroactively, I had never considered the basis for doing it.

Q. Let's take in the future. What method would you say could be used to estimate the appropriate amount of those overheads in the absence of all time records?

A. Well, I still think the time records would be the most equitable way.

Q. And if you didn't keep those, then there is no way of arriving at the amount that could be properly charged?

A. Well, when I say "time records" for the executives that is an estimate in the first place, because I have never seen one that would keep a time record.

Q. So essentially, even currently, you don't anticipate every time the superintendent would go out and look at a well that is being drilled he marks down in his notebook the time he arrived there and the time he left?

A. What would probably happen, as I see it, and from experience, would be he would tell his secretary at the end of the day "I spent about so many hours going out to such and such a place."

Q. So even under the most acceptable procedure of keeping some time records there is bound to be a considerable amount of estimating?

A. From the standpoint of the executive, yes.

Q. That is right. Of course, when that answer is given, then, from the standpoint of the accountant he takes it?

A. He has no choice.

Q. Is there any doubt in your mind that during this period of years in Canadian River's operation, Mr. Ford who is the Superintendent down there, and Mr. Watson, both spent considerable amounts of time looking after the drilling of wells and construction of gathering lines and those other facilities in the field?

A. No, I don't have any doubt whatever but what they spent considerable time in the field, that there would be someone spotting the wells, but as I understand it, a lot of the wells were spotted by members of the engineering division at Amarillo who charged their time to the construction cost.

Q. Well, of course what I am speaking of is the general supervision by the superintendent and assistant superintendent over those matters and observing the wells when they were being drilled by contractors.

A. They undoubtedly spent time on that, yes.

Q. So that there was actually an expenditure of money through payments of salaries and expenses that did not get into the books with respect to the cost of those wells?

A. In so far as salary, I think you are correct; in so far as expenses are concerned, a good many of those could be definitely assigned to specific jobs and I believe were charged there. Of course there was some general expense that wasn't.

Q. The result is there was an actual cost incurred to the company in drilling those wells that is not reflected in their books or in their property account now?

A. I would think so, yes.

Q. Even though it is so, it is your interpretation of the accounting rules under which the company operated and the FPC, that no change should now be made in those accounts to reflect that actual cost was not on the books?

A. You couldn't reflect the actual cost so you would have to reflect an estimated cost.

Q. I agree with you. There is a distinction, I take it, between what the FPC Code defines as book cost and what it defines as cost?

A. I believe so.

Q. I notice definition 6, which is book cost, states: "The amount at which property is recorded in those accounts without deductions for related reserves in other accounts;" definition No. 10, cost, says: "The amount of money actually paid for property or services."

Do you agree with the way I understand that, that the cost would be what was actually expended to bring the property into the property account, and the book cost would be the dollars that the plant account reflects?

A. That is right.

Q. Now, then, Mr. Schutte, if you will go to Exhibit 196, to the various detailed items.

A. All right.

Q. As I have read this over, I think you highly approve of the accounting procedure that was followed by the company with respect to every single one of these items?

A. Not necessarily.

Q. I gathered that you thought the expensing of all of these items was the appropriate thing to do.

A. I felt the company was justified in expensing them.

Q. There might be some of them which you thought would of necessity have to be expensed?

A. That is right.

Q. And some of them which might have been either capitalized or expensed if the management desired?

A. That is right.

Q. Now, with respect to the first item, "Flood and Washout Control," under which category does that come?

A. I think that was proper accounting procedure in that case.

Q. Now, I notice in the FPC Code that one of the items under Instruction 10, Page 45, Structures and Improvements, and then on Page 46 one of the items of cost was drainage and sewage systems. Isn't that, after all, what was done here, to merely construct a drainage system; instead of putting in tile drains they simply cut ditches and spillways and did other things to drain the right of way?

A. Oh, that might have been a part of it, but it wasn't all of it.

Q. Well, all of the things mentioned here in the explanation of Ford, Bacon & Davis referred to taking care of surface water?

A. That is correct, but it likewise took care of terracing, not on the right of way.

Q. Well, is it your understanding that drainage system to be properly included in capital account of the company would have to be constructed on its own right of way?

A. Not altogether. If that were done during the course of initial construction, I would look at it from one angle. If it was done eight or ten years after construction, I would look at it from an entirely different angle.

Q. Of course, none of this work could be done on adjoining land without the consent of the land owner?

A. That's true.

Q. And, therefore, the company had some rights to do the work and maintain the work there?

A. That's right.

Q. So that while it wasn't its pipe line right of way, they undoubtedly had some sort of an easement or some right?

A. They probably had a verbal right.

Q. They weren't trespassers?

A. No.

Q. What is the distinction between putting in a drainage system at the beginning of construction when the line is first built and then putting in a drainage system when later you discover that you need it? What is the difference between those two?

A. Well, I think putting in these ditches and spillways and what-not was a matter of maintenance rather than adding to the plant account.

Q. I know that is your conclusion, but you made the statement that a drainage system put in at the beginning would be a part of the plant, and if you put one in later it wouldn't. Now, I see nothing in the Federal Power Commission Code that makes distinction as to time when it is put in, and I wanted your explanation of that.

A. I don't think there is anything in the Federal Power Commission Code that would say that. The fact of the matter is, as I see, if that were being done in the initial construction you wouldn't be able to ferret it out to save your soul. When it is done afterwards—in that case it would be a part of the initial construction and you would have an undetermined cost in there that you had not been able to specifically up.

However, when you do it subsequently, and you are able to get the information as to what was done, I don't see how you can consider it anything but maintenance.

Q. Of course, it performs the same service whenever done and performs the same service as any system of drainage pipes might perform or any type of structure that would keep water off the right of way as far as its utilization is concerned?

A. It might, yes.

Q. All right, now, the next one, starting with rock weighting. Now, which category does that come in?

A. The same as the first one.

Q. That is, that could only be maintenance?

A. Yes, sir. I wouldn't say "only." I think I would say "preferably," maintenance.

Q. Well, would this be an item that, had the company capitalized, you would not have gone back and removed it from capital and put it into expense?

A. If they had capitalized the costs as they were incurred, I think I would have questioned it in any event.

Q. You would have questioned it?

A. Yes, sir. If that had been done at the time of initial construction it would have been capitalized, of course.

Q. Well, many of these things in connection with the right of way, Mr. Schutte, are done when the necessity arises, isn't that correct?

A. Well, I don't think that would necessarily be true in the case of rock weighting.

Q. What do you understand by rock weighting?

A. Well, in the first place, your line is put in and the back-fill is put in on the pipe without tamping it in any way shape or form. In other words, it wasn't flooded or tamped. It was just put in there loose. Of necessity your erosion over a 10-year period would give you a bit of a ditch there. It couldn't do anything else, so you would naturally put something on there, whether rock or dirt, and from my inspection of the tickets that appeared to be to a great extent what was done here.

Q. Well, a good deal of this was rock put on top of the right of way there where there had not been any settling of the back-fill, wasn't it?

A. You couldn't tell that from the tickets.

Q. I see. And you didn't make any check outside or inquiry?

A. I made inquiries, yes, sir.

Q. And did that disclose that it was mainly put in the holes in the back-fill?

A. I wasn't able to determine, sir.

Q. Do you know that Ford, Bacon & Davis say in their explanation that rock weighting is not to be confused with filling up of gaps and holes in the back-fill?

A. Yes, sir, and I wondered how they were able to get that explanation because I wasn't able to get it.

Q. This helps to hold the line down in case of washouts?

A. Yes, sir.

Q. And prevents the line from floating away or breaking? That is what would happen if you didn't.

A. Yes, sir.

Q. It accomplishes the same thing, does it not, Mr. Schutte, as when the line was originally constructed or now, if you poured concrete on certain portions on it to hold it

down or put heavy clamps on it just like on river crossings you put heavy clamps to hold it down?

A. Well, I am not qualified to make a statement on that.

Q. Now, had that been done, though, in the initial construction you would have thought it should have been capitalized?

A. If it had been in the initial construction, it would have been in the back-filling costs and you would never have been able to determine it.

Q. You consider that doing this is not a betterment to the line in that it makes it more efficient and useful and prevents it from breaking?

A. I don't think it has added anything to the physical value of the line, no, sir.

Q. Now, what about No. 5—cattle guards? Which category is that?

A. Well, that was a questionable item. Those cattle guards might have been put in in the beginning and had that been done they probably would have been made of new material. Very likely you wouldn't have been able to determine the cost. What actually happened here is that this is primarily the cost of labor and trucking, very little for material, and when you capitalized the cost of labor and trucking expenses without having any material costs for this type of item, it is questionable.

Q. Well, there is nothing in the Federal Power Commission Code that says you can't capitalize work done just because the material didn't cost very much, does it?

A. No, sir. That is from an accounting standpoint.

Q. You only capitalize labor if the material has some determinable value or some substantial value?

A. No, I wouldn't say that but I still think it would be questionable to capitalize it.

Q. You mention here that scrap materials have been used. If they had gone over to the Colorado Fuel & Iron and bought some brand new rails and spent considerable money for them, then you would think that it might be capitalized?

A. If the company capitalized it as the work was done, yes.

Q. If this type of thing were done, now—that is, wherever cattle guards have to be installed—would you consider them properly capital items?

A. That would depend on how they went about it. I want to be able to spot each one of them for one thing, which wasn't possible with the information I had. In other words, I would want them to put it up to record such costs on the basis that they can retire them if it were necessary.

Q. Well, what you are complaining about in many respects here is the absence of refinements in accounting methods employed by the company, isn't that true?

A. To a great extent.

Q. And, of course, during the period of years when this was done there was no regulatory body having jurisdiction over the company which had prescribed any code of accounts for them?

A. That is correct.

Q. It was a matter pretty much of running it as they decided themselves?

A. As they saw fit. In other words, it was their discretion.

Q. Yes, so that there wouldn't be possible as many refinements of accounting carried into effect under such a condition as undoubtedly will be when the company conforms to the Federal Power Commission code?

A. That is true, Mr. Dougherty, but nevertheless, from an accounting standpoint if a company were to capitalize certain items it certainly should have adequate supporting information and that is lacking in many instances here.

Q. Well, the supporting information apparently would be adequate maybe to the company but not to an auditor or some regulatory authority?

A. No, I wouldn't think it was even adequate for the company to capitalize them. I think that based on the information that was supplied the accounting department, they had very little choice but to expense the item.

Q. Well, the cattle guards aren't located so that you can go out and find them?

A. You could probably find them, but you couldn't tell when they were put in or how much they cost.

Q. The figures that Ford, Bacon & Davis have assembled here, did you check those against the company records, the job tickets, and so forth?

A. I checked the time tickets and trucking tickets—not all of them, but we made a very thorough test check.

Q. And you couldn't substantiate the figures that Ford, Bacon & Davis have assembled?

A. We could substantiate most of the figures all right, yes, sir.

Q. But you couldn't locate the property that was represented by the figures?

A. Well, I didn't make any attempt to locate the cattle guards other than note that on the time tickets and trucking tickets that the locations weren't mentioned. In other words, what I am trying to say is, I didn't go out and make a physical inspection to see where they were.

Q. But, now, with respect to No. 4, Bridges, which category is that?

A. I think the company's original accounting is correct.

Q. Now, these were bridges, some of them on the company's right of way and some of them public bridges?

A. Primarily public bridges.

Q. There you think that because the bridges weren't solely owned by the company that it would not be appropriate to include any part of that expenditure in capital account?

A. I consider that as a contribution in the aid of construction of the bridges in which the company has no equity whatever except as a tax payer in that specific area.

Q. Did you find out that the purpose of doing that was to avoid constructing bridges by the company itself along its right of way?

A. Yes, I understood that.

Q. And if the same amount of money had been spent in constructing any type of a bridge along its right of way over this same creek, then you would have included it in capital account?

A. The company probably would have capitalized it in that case and I think I would have agreed with them, yes, sir.

Q. The other portions of it to represent bridge costs on the company's right of way, do they not?

A. I don't know just what they represent. I wasn't able to locate those items.

Q. I see. Well, your difficulty there, then, is that you didn't feel that they were substantiated rather than you don't believe that bridges are a proper capital item?

A. Oh, I would believe that the bridges would be capital items based on being able to put them up in retirement units.

Q. Well, as I understand your last statement, you think

that the company's books should be kept so that the retirement units are clearly defined?

A. That's right.

Q. And that again is a refinement of accounting that probably wasn't engaged in by the company during its past years?

A. Well, let me make this statement, Mr. Dougherty, which will probably straighten us out on that: So long as you are expensing certain items you don't go into the refinement. You would if you were going to capitalize them.

Q. And you think that might have had something to do with the inadequacy of the company's books on retirement units with these various things?

A. I am sure it did.

Q. Now, with respect to Item 5, all this work done on river crossings where riprapping was done and revetments put in, in which category do you place that?

A. I think the company handled that correctly.

Q. Would that be work that could be capitalized if all of the records were kept to satisfy your requirements?

A. Some of it might; some not.

Q. Well, now, a good part of this consists of putting in a considerable amount of materials such as rails, concrete, and brush, trees, for the purpose of preventing washouts, isn't that correct?

A. For the purpose of repairing prior erosion and to prevent washouts.

Q. Well, whatever had been done was not previously in capital account; that is, I mean the land that was erroded was not a part of the capital account of the company?

A. That's right.

Q. So that these installations of piling and heavy rails and concrete was the first time that that type of construction had been made at these river crossings?

A. I think that is correct.

Q. Now, there is no question but what if that had been done in the first instance when the line was first built you would have approved its capitalization?

A. I think the biggest part of it possibly would have been, because at that time you wouldn't have had the erosion to worry about that occurred after the installation of the pipe line.

Q. Well, is it your opinion that where a river crossing

is given this treatment of building these revetments and concrete abutments for the purpose of preventing washouts, that whether it should be a capital item or not depends upon whether there has been some washing away of the banks previously?

A. Not entirely.

Q. It is a construction that can be found there, of course?

A. It has been my understanding that that type of work has, I mean when it is done after the initial installation of a pipe line, has been generally considered by the gas industry as maintenance cost.

Q. And you believe that in the future any work of that sort should likewise be expensed?

A. It would depend on the individual case. I wouldn't want to say that that would be true in all cases.

Q. Was this a matter that would have been the subject of any discretion at the time by the company? Suppose the company had capitalized particularly these portions where a considerable amount of steel was used? Pile-driving machines were necessary and a lot of concrete and heavy mesh fence. All of that material is there, isn't it?

A. You have in mind particularly Work Order No. 253, $5,764.21?

Q. That's right.

A. That particular job as I understand it was primarily above the right of way. I think the company handled it in the most approved manner from an accounting standpoint.

Q. Is that because the work was not done immediately where the pipe line was that you make that answer?

A. No, not altogether, but my understanding of that item is that there was considerable erosion at that particular point that had to be repaired, as well as to throw the current to the opposite side of the river.

Q. The erosion that was there before was merely the washing away of dirt, wasn't it?

A. Primarily, yes, sir. I suppose so.

Q. And this was putting back a lot of the dirt?

A. Well, you had to put more or less of a retaining wall there in order to hold the dirt.

Q. And it is physically there now. You can find it?

A. I have seen pictures of it, yes, sir.

Q. And if the property were inventoried, certainly that would be something included in its inventory?

A. Without a doubt.

Q. And it does constitute a betterment in the right of way; that is, it does just more than replace the erosion?

A. Well, you would have a pretty difficult time segregating the cost of repairing prior erosion from the cost of the washouts—preventing washouts.

Q. Well, as a matter of fact, Mr. Schutte, it isn't necessary to repair erosion if it doesn't occur right at your pipe line, isn't that correct?

A. That is not my understanding.

Q. What they do this for is to prevent washouts in the future. The company isn't interested in filling in a washout back up the river with dirt, are they?

A. If the dirt is cut out it is liable to take out a portion of the pipe and you will have to make a new river crossing.

Q. That is to prevent further erosion?

A. Yes.

Q. And also to keep the pipe from washing out?

A. That's right.

Q. We don't try to go back and replace the dirt that is washed out?

A. You do, though.

Q. Only in the event that it is required for this particular new construction, isn't that right?

A. Yes, but the new construction does that very thing.

Q. If you put it in the place where the erosion took place?

A. And that is normally done, yes, sir.

Q. Roads and culverts, Item 6. That amount, any discretion could have been exercised on?

A. From the information that I was able to find on the various tickets, I think the company handled that correctly.

Q. A good many of these jobs had to do with widening and improving company roads, did they not?

A. That is the explanation, yes, sir.

Q. You weren't able to get that same information?

A. In a few instances I think the work tickets did say widening of roads. They usually said "build roads" or "build up roads."

Q. Well, what is your distinction between the expensing and capitalizing of money spent on roads?

A. That would be a pretty fine distinction to draw. Most of your cases would have to stand for themselves.

Q. I mean, suppose a road is widened. Do you consider that a betterment or an addition to the road, or do you consider that an operating expense? —a maintenance expense?

A. I think if I were handling the accounting for a company and it had that particular thing come up, I would want work orders so that I could specifically spot that particular piece of road or keep my cost for it. The chances are that I would capitalize it.

Q. Well, again we are getting to a question not as to whether the actual money expended represented a capital cost but whether the company's records would give you enough information on which you could determine that it represented capital.

A. In this particular case I would say that the records were insufficient and incomplete to permit capitalization.

Q. So you wouldn't know whether it was properly a capital account or an expense item?

A. That is right, and for that reason I would expense it.

Q. Your procedure always is to expense in the absence of full information or clear information which shows that it should be capitalized.

A. It is always based on conservatism.

Q. Well, I take it you don't wish to inflate your operating and maintenance expense account any more than you would want to inflate your capital account, do you?

A. It depends entirely on the company, Mr. Dougherty. I have handled items with one company on one basis and on another basis with another company. The same type of item was capitalized in one case and expensed in another case. I was right both times. It depended upon the company's policy.

Q. I take it, though, the fact of cost; that is, whether the cost, the money expended, constituted a capital item or not would be something that could not be changed by the adequacy or inadequacy by records, isn't that true?

A. If your records weren't adequate to permit proper capitalization of an item, you couldn't capitalize it.

Q. And still it might be that the actual expenditure of money did go into a capital item?

A. That is entirely possible, yes; sir.

Q. So that on the basis of the method you are discus-

sing, everything would be expensed unless the records clearly indicated that they properly should be capitalized?

A. Unless it were clearly indicated that it were properly a capital item.

Q. And you wouldn't go outside those records and try to build up that body of information otherwise?

A. Not at this time, no, sir.

Q. What about No. 7, on Page 23 of your exhibit?

A. I don't think there is any doubt but what the company handled that properly.

Q. This is the same rock that was used for rock weighting or the cost of it, I should say?

A. Well, it is similar cost.

Q. I see. You made no other inquiry to attempt to identify this work which you say the tickets—trucking and labor tickets, did not?

A. It was impossible to identify those.

Q. You didn't go back of the information on the tickets?

A. I made verbal inquiries, yes, sir. I did that in all cases.

Q. But you were unable to get any adequate information that would satisfy you as to where it went and what happened?

A. That's right.

Q. Now, about No. 8, Cathodic Protection. Which character of item is that?

A. That is a questionable item.

Q. By that you mean that there is something that the company might properly have capitalized if it desired to do so?

A. I thought so, but I was agreeable to letting it stand in the way the company had recorded it because of the information I was able to obtain.

Q. That is as you discussed it in here, that your understanding is it was of a different type of cathodic protection than that later installed?

A. No, I didn't have that in mind so much as I did the interchange of telegrams between Mr. Hendee and Mr. Lerch.

Q. Well, that is, on that portion of it, that is represented by the Arkansas Valley laterals?

A. I discussed the matter of cathodic protection with

both engineers and accountants and they weren't all of the same mind. Some of them termed it preventive maintenance in that it extended the useful life of the property. From that angle they thought it was definitely—that is, this particular type of cathodic protection was definitely a maintenance item which need not be charged into operations in one year but which could be deferred over a several-year period. Others thought it might be a capital item.

Q. Well, that sounds like it is one of those things on which discretion might have been exercised?

A. That was my idea, yes, sir.

Q. But since the company did charge it to expense, then you feel it should be left there?

A. Yes, sir.

Q. How about Item 9, Profile Maps?

A. Normally, profile maps are necessary in advance of construction. In that case they are termed preliminary engineering expense and very seldom questioned. In fact, I don't know that I have ever heard of them being questioned, but when the profile maps are made some years after the line has been in operation, it seems to me that they are entirely for the purpose of operating and should therefore be charged to operating expenses.

Q. Of course, the maps are a part of the physical property of the company and are there along with all other original maps that were drawn?

A. That is right.

Q. How about No. 10, in what category is that?

A. I think that is properly expensed.

Q. The portion of lowering lines which is that part of the work that would consist of the deepening of the ditch and additional work because of that, would you say that should be expensed or could that be capitalized?

A. I think that should be expensed if it didn't add to the line.

Q. I see. Well, the purpose of that would be to make the line freer from possible washouts, wouldn't it?

A. That might be possible. There would be various other reasons such as changing roads and things of that sort, but the changing in the location of lines, whether lowering or moving them to another location, unless you have increased your capital investment has always been considered as maintenance expense.

Q. That is, you considered the lowering of the line the same as moving it laterally?

A. Yes, sir. In that particular instance one of the items covers a piece of line that the company has since disposed of. That doesn't seem to be in this particular section. There is another one elsewhere—

Q. Well, any new materials involved, any pipe taken out or new pipe put in, that is properly capitalized, isn't it?

A. And it has been, yes, sir.

Q. But you say the labor would not be?

A. That's right.

Q. Now, Item 11, which is referred to as spare parts which the company has accounted for through expense each year, should not those properly be a part of materials and supplies?

A. Yes, sir, until they were used.

Q. In capitalizing them this way, isn't that in substance what is being done with them?

A. No, sir.

Q. In determining the amount of materials and supplies, whichever one of the Power Commission accountants did that, did not include these items in such materials and supplies?

A. That is correct.

Q. And if they were put in there, would you consider that appropriate accounting treatment?

A. I think I said as much here: "The cost of such repair or spare parts as are included in this item may be properly assigned to the supply inventory account if held for use, or to the appropriate maintenance account if immediately used. If included in the supply inventory, such costs are automatically given consideration in connection with the company's working capital requirements."

Q. Now, you have got a lot of miscellaneous items there under 12. Now, I take it that from your comments you think all of those items were properly accounted for by the Company?

A. Preferably accounted for, I should say, yes, sir.

Q. Now, you refer there to Work Order 8, about some expense in connection with Colorado Springs lateral. Now, isn't that properly covered by gas plant instruction 3-C which includes preliminary studies and general expense and engineering and so forth?

A. I didn't so interpret it, Mr. Dougherty, from the character of the expense involved there.

Q. Well, this lateral actually was built later.

A. Yes, sir, but this particular expense from the information that I was able to secure, appeared to be more for the negotiation of the franchise at Colorado Springs than for the lateral itself. It covered primarily hotel bill and entertainment expense which wouldn't have been necessary for preliminary studies of the line.

Q. That is, it would properly go under the account that has to do with organization expense or miscellaneous—well, organization expense?

A. No, I don't think it would belong under expense, and since they didn't get the franchise, I wouldn't think it would belong to 302. However, had they secured a franchise, then I would think 302 would have been correct.

Q. The results, however, whatever they were, the particular property that they did relate to was the service at Colorado Springs which was later taken on?

A. Yes, but not on the same basis.

The Trial Examiner: We will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Dougherty:

Q. Mr. Schutte, you have a number of items having to do with drilling water wells at various stations.

A. Yes.

Q. Work Order 101 on Page 37 and Work Order 269 on Page 39 and Work Order 290, that is on Page 43 of your exhibit. Those all are about the same type of work, are they not?

A. Well, the two of them, No. 101 and 269, are both for prospecting at the Canyon compressing station site or adjacent thereto, where 290 is at Travesser Camp. They are all for prospecting, however.

Q. Now, the reason this work was done at Canyon station was because the existing water supply was either proving inadequate or inefficient?

A. Unsatisfactory, I believe is the term they gave it.

Q. Unsatisfactory?

A. Yes.

Q. So in effect they really were prospecting to determine whether the station should still be there or whether it might have to be located some place else?

A. It had not been put up on that basis. That might be the case.

Q. That is, if they had not found finally one of these wells that produced satisfactory water, it is reasonable to assume, isn't it, that they might have had to prospect some place else for another location?

A. Unless they could have made the water satisfactory.

Q. The items which you think should not be capitalized have to do with drilling wells that did not produce water?

A. And were abandoned.

Q. And were abandoned?

A. Yes.

Q. Of course, all of that expense was caused solely by the search for water?

A. I would think so, yes, sir.

Q. And it just depended on how successful they were whether they had to drill three or four or one well?

A. That is right.

Q. Does it represent the total expenditure necessary to get an adequate water supply?

A. Yes, I would think so.

Q. And if all of the wells had had water you would consider them properly capital items?

A. If they had not been abandoned, yes, sir.

Q. It is the abandonment, is that the basis of the expensing?

A. In this instance, primarily, yes, sir.

Q. I think you have stated here, had this all been done in the first instance, that is, before the company got into operation, then it properly should be included as capital?

A. That is my interpretation, yes, sir.

Q. That authorized by the Code?

A. I don't know that that is necessarily authorized by the Code, but it would be on the basis of preliminary engineering studies.

Q. Is your approach to this whole general subject about

the same as it would be if the company had filed its reclassification of its accounts as required by the Federal Power Commission Code and had submitted these various entries as proposed entries to be made and you were called in by the Commission to express your opinion on them?

A. Yes, I think so.

Q. That is, your approach to it is the same as if it were a reclassification proceeding before the Commission?

A. Well, of course, that could take several angles that haven't been given consideration here. This is based on exactly what the company has done. Now, if in the course of an examination for reclassification I were given instructions somewhat similar to those I have had in this instance, I think my approach would be pretty much the same, yes, sir.

Q. Well, I was speaking solely of your comments on entries proposed by the company rather than on any independent investigation of what other items might be reclassified or not.

A. That's right.

Q. So that if the items had been submitted, as I say, as proposed entries by the company, which they intended to capitalize, your study of them and your criticism of them would be the same as you have made here?

A. I think so, yes, sir, pretty generally.

Q. And that again is based on the principle that you follow, that having exercised discretion, then the company should not be permitted to restate its accounts as proposed?

A. That is right.

Mr. Dougherty: That is all.

Mr. Lange: I just have a few questions.

Redirect Examination.

By Mr. Lange:

Q. Mr. Schutte, with reference to your approach to this subject, particularly the items in your Exhibit 196, it specifically refers to interest during construction. As I understand it, you are not at all concerned and were not at all concerned in the preparation of that exhibit and study as to the reasonableness or unreasonableness of the amounts of dollars?

A. That is correct.

Q. In interest during construction it was the method of treatment of the items itself?

A. That's right.

Q. And I will ask you whether your approach was the same in connection with all other construction costs. You weren't interested in the reasonableness of the amounts themselves, or the percentage used by the company?

A. No, it was the principle involved rather than the amounts.

Q. Of course you aren't able to have the information essential to determine whether it was reasonable or unreasonable in amount?

A. That is correct.

Q. Nor were you able to determine in connection with the amount of time that any of the company officials or employes did or did not devote to the property that is being constructed?

A. That's right.

Q. You were asked by Mr. Dougherty whether or not it wouldn't have been reasonable to assume that Mr. Watson or Mr. Ford or both devoted some portion or a considerable portion of their time to construction work. You, of course, don't know whether they did or did not.

A. That's right.

Q. And you would have no way of ascertaining whether they did or did not devote any portion of their time or any of it at all to that?

A. That is correct.

Q. And that same approach is applicable to all overhead construction costs?

A. Yes, sir.

Mr. Lange: I believe that is all.

Mr. Dougherty: I believe that is all.

(Vol. LXXXVII, pp. 13,125-13,180.)

* * * * *

SMITH's Direct and Cross Examination.

By Mr. Lange:

Q. Will you state your name, please?

A. My name is Kenneth L. Smith.

Q. You are presently employed by the Federal Power Commission?

A. Yes, sir.

Q. And you are residing in the City of Denver, Colorado?

A. Yes, sir.

Q. Do you have a statement giving your educational qualifications in the work you are now engaged?

A. Yes, sir.

Q. Would you read that into the record?

A. This is a statement of both education and experience.

Q. These are just your qualifications that you are reading into the record at this time?

A. Yes, sir.

"My name is Kenneth L. Smith. I am employed by the Federal Power Commission in the capacity of Principal Examiner of Accounts.

"I am a member of the Illinois Society of Certified Public Accountants, the American Accounting Association, and Beta Alpha Psi, professional accounting fraternity.

"In June, 1927, I was graduated from the College of Commerce and Business Administration of the University of Illinois with the degree of Bachelor of Science, having specialized while at that school in accounting.

"I am a Certified Public Accountant of the State of Illinois, having passed the required examination in 1930, and in 1937, as the result of graduate study and upon the completion of a thesis, I had the degree of Master of Science conferred upon me by the University of Illinois.

"The major subject of my graduate study was accounting. This graduate work embraced courses having to do with the nature of basic accounting concepts, such as capital, income, revenue, expenses, losses, depreciation, profits and surplus; with the purposes, form and content of accounting reports; with the theory and problems of cost accounting; and with the problems of managing and regulating public utilities.

"Immediately after being graduated from school in 1927 I was employed by F. W. Lafrentz & Company, Certified

Public Accountants, to work in their Chicago office and I continued in their employ for seven years, until August 1934. During the latter years of that employment I served as a senior accountant, in a supervisory capacity.

"While with F. W. Lafrentz & Company I participated in a variety of accounting engagements which included not only the usual balance sheet and detailed audits but a number of special investigations as well.

"Some of these special engagements involved the preparation of income tax returns for public utility company groups and related depreciation studies, examinations made preparatory to financing operations, and examinations made preliminary to the acquisition by public utility companies, of operating properties including natural gas properties.

"My experience with F. W. Lafrentz & Company familiarized me with the practical operations of public utility operating, management, construction, and holding companies for more than half my time with that firm was spent on public utility work, both gas and electric.

"In September 1934 I accepted a position as top senior accountant in the Chicago office of Deloitte, Plender, Griffiths & Company, an international firm of public accountants. I retained that position until June 1936. During this employment I supervised the annual field audits and preparation of accounting reports thereon for several utility, holding and operating companies. This included preparation of consolidated financial statements for groups having both American and foreign subsidiaries. I also supervised the preparation of the accounting sections of registration statements and annual reports filed by utility clients with the Securities and Exchange Commission under the Securities Act and Securities Exchange Act, respectively.

"In addition to the utility work outlined in the foregoing, which occupied by far most of my time during that period of employment, I supervised the annual audits and the preparation of the annual reports of packing houses, finance companies, coal mining companies, and other industrials.

"Effective December 1, 1936 I accepted an appointment

as Principal Examiner of Accounts in the Division of Finance of the Federal Power Commission. I retained that position until September 1938. My principal duties during that period consisted of making studies and drafting reports relating to the accounting and financial aspects of applications filed with the Commission by public utilities and licensees requesting authority for sale, merger, consolidation or other disposition of facilities or issuance of securities. I was also required to attend hearings relating to such applications.

"In addition to the foregoing, I assisted the Chief of the Division of Finance in preparing reports upon statistical studies of the financial characteristics of the electric utility industry in the United States and in preparing reports and charts pertaining to the intercorporate relationships of electric utility and holding companies, and supervised the office audit of annual reports filed by electric utilities.

"From September 1937 to June 1938 I also instructed evening classes in principles of accounting at the Strayer College of Accountancy, Washington, D. C.

"In September 1938 I accepted an appointment as Assistant Professor of Accountancy in the College of Commerce and Business Administration of the University of Illinois. During the ensuing school year I instructed classes in accounting principles and auditing procedure, respectively, carried on research in French accounting literature, and completed an article entitled 'Capital Gains and Losses in Accounting,' which was published in the June 1939 issue of the 'Accounting Review.'

"In June 1939 I resigned from the faculty of the University of Illinois to accept my present position as Principal Examiner of Accounts in the Commission's Division of Accounts. I was immediately assigned to duty in connection with the investigation of Canadian River Gas Company, et al. (Docket G-124)."

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* * * * *

Q. You are the same Kenneth L. Smith that has heretofore testified in this proceedings?

A. Yes, sir.

Q. You have heretofore testified on accounting matters both with reference to exhibits as well as testimony that has been been presented in these proceedings?

A. Yes, sir.

Q. I will ask you whether in connection with accounting matters you have prepared a written statement giving analysis of the original cost principle from the standpoint of accounting theory?

A. Yes, sir, I have.

Q. Do you have that before you at this time?

A. Yes, sir.

The Trial Examiner: Are you going to have this marked as an exhibit, Mr. Lange:

Mr. Lange: No, he was going to read that into the record, and I will ask him to begin the reading of it at this time.

Mr. Spencer: Mr. Examiner, before he starts to read, I assume it is understood with counsel that I may let him read without interrupting and at the conclusion of his reading I may move to strike all or any part of it.

Mr. Lange: That is perfectly agreeable.

Mr. Spencer: All right. That's all.

The Trial Examiner: Very well, that will be the understanding, Mr. Spencer, and that is the understanding that the Examiner has when they are permitted to go ahead and read these statements without interruption.

The Witness: "The Commission's Division of Accounts, based upon its examination of the accounts and records of Canadian River Gas Company, Colorado Interstate Gas Company and Colorado-Wyoming Gas Company, respectively, has among other matters, prepared studies showing the original cost of the plant of each of such companies. The original cost studies so prepared conform generally to the principles set forth in the Commission's Uniform System of Accounts for natural gas companies.

"The approach followed in obtaining original cost has been essentially an accounting approach. That is, the dol-

lars accounted for as plant on the respondents' books have been reclassified or earmarked, as appropriate, or eliminated if the facts developed, as related to sound accounting, so warranted.

"An original cost study which disregards either wholly or in part the accounting results shown on the company's books is unacceptable. This is a fundamental maxim in the practical application of the original cost principle. In other words, original cost in order to be valid must be obtained by an accounting method. It must conform to certain coordinated and consistent principles which are inherent in accounting theory and methodology.

"During the past five or six years a significant change has taken place in public utility accounting in the United States through adoption of uniform systems of accounts which embody the original cost principles or doctrine with respect to plant assets. With reference to the electric and gas utilities, such uniform systems of accounts have been sponsored by both the Federal Power Commission and the National Association of Railroad and Utilities Commissioners. Many state commissions have adopted systems of accounts embodying the basic principle of original cost. In fact, it is now estimated that 90 per cent of the electric utility industry, measured either by assets or revenues, is using some system of accounts which embodies the original cost principle.

"The Uniform System of Accounts for natural gas companies prescribed by the Federal Power Commission became effective on January 1, 1940 and reports indicate that the Federal Power Commission system and the system with which it is nearly identical, namely, the one adopted by the National Association of Railroad and Utilities Commissioners, are also rapidly attaining wide acceptance on substantially a national basis.

"It is also significant that the system of accounts prescribed in 1935 for telephone companies by the Federal Communications Commission recognizes the original cost principle. In 1935 the Interstate Commerce Commission prescribed a system of accounts for pipe line companies which likewise recognizes the same principle although not

called by that name. In addition, the system of accounts for water companies recommended by the National Association of Railroad and Utilities Commissioners also requires that the plant accounts be reclassified and kept in accordance with the original cost basis.

"The original cost principle is highly acceptable from the standpoint of accounting theory. The doctrine in itself or its accounting application does not add to or subtract anything from the plant accounts of a utility company; it merely *analyses*, classifies, and segregates amounts which are significant to regulatory bodies, investors, and even to management. It permits achievement of one of the fundamental objectives of good financial reporting through adequate and truthful disclosure of highly pertinent data.

"To understand the historical reasons for the adoption of the original cost principle it is necessary to understand the condition of utility accounts in general at the time the systems of accounts were under compilation some six or seven years ago. Many public utility accounts were in very bad shape. The tremendous amount of inflation disclosed by the Federal Trade Commission in its investigation of public utility companies is a matter of public record and common information to the industry. Regulatory bodies recognized as a result of that study that some sort of action was necessary or at least desirable to correct the abuses which had been disclosed. I know personally of many cases in which the property accounts were almost meaningless because of large unidentified amounts resting in lump sum accounts. I know of cases in which the investment in the various utility departments, such as electric, gas, street railway, and so forth, was not known by the management and of course, under such circumstances, the cost of a particular generating station or transmission line was hopelessly concealed or buried. It was general knowledge among public utility accountants that retirements of property had been made by the utility companies without proper record, and that in many cases retirements were recorded at estimated original cost of construction although the amount carried on the books for that property might have been much greater.

"One of the principal abuses in earlier utility accounting was in connection with acquisition of going concerns, that is, mergers, consolidations, and other property acquisitions. It was probably for this reason that the systems of accounts which have been recently adopted apply the original cost doctrine technically to the acquisition of operating units or systems. The original cost system furnishes a remedy that goes to the source of the evil because it provides that the cost to the person first devoting operating units or utility systems to public service shall be recorded in the detailed plant accounts, and that any difference between such costs and the costs to the present owner shall be earmarked in specific accounts. In other words, the new systems, so far as the plant accounts are concerned, require first and fundamentally the reclassification or breaking up of the amounts appearing on the books.

"The original cost systems of accounts yield other benefits. Original cost is an element to be considered in the computation of the rate base, and the only manner in which original cost can properly be ascertained is by an accounting process. The condition of the records of many utility companies a few years ago did not permit this ascertainment within a reasonable time with a reasonable amount of effort and cost.

"Also of importance is that after the necessary information is available, through application of the original cost principle, proper regulatory steps can be taken to obtain sounder financial structures for a great many public utility companies. As soon as investors are assured of the absence, or at least the disclosure, of inflation in public utility capital accounts, money should be attracted to the industry more easily and at a lower rate. The original cost scheme is the only scheme in my opinion which can accomplish these objectives.

"The systems of accounts prescribed by the Federal Power Commission, as well as those promulgated by the National Association of Railroad and Utilities Commissioners, definitely prohibit the recomputation of the cost of the company's construction as of the effective date of the system of accounts, when such construction was accounted for

in accordance with the system of accounts in effect at the time or in accordance with the discretion of management as exercised under the broad principles of accounting.

"Gas Plant Instruction 2-B of the Federal Power Commission system of accounts for gas utilities contains the following definite language:

> "'* * * It is likewise not intended that adjustments shall be made to record in gas plant accounts amounts previously charged to operating expenses in accordance with the uniform system of accounts in effect at the time or in accordance with the discretion of management as exercised under such uniform system of accounts.'

"A similar provision is in the system of accounts for electric utilities and licensees.

"It has been the consistent interpretation of the Federal Power Commission's Bureau of Accounts, Finance and Rates, of which Mr. Chas. W. Smith is the head, that Instruction 2-B prohibits any restatement of plant costs if such costs were in accordance with generally accepted principles of accounting at the time when recorded.

"The National Association of Railroad and Utilities Commissioners has also been emphatic in its interpretation of Instruction 2-B. The following language is used at Pages 9 and 10 with reference thereto in a publication entitled 'Statement Relating to the Original Cost and Reclassification of Utility Plant Pursuant to the Provisions of Uniform Systems of Accounts for Electric, Gas and Water Utilities,' revision of September 20, 1940, prepared by the Committee on Statistics and Accounts of the National Association:

> "'Restatement of costs based upon revised allocations of joint expenses (expenses applicable to construction and operations) cannot be permitted. Two self-serving, self-impeachments must be guarded against; "our records are in such bad shape that we cannot determine the cost of our property from our books and records" and "we have not in the past properly distinguished between construction and operations and construction and maintenance."

"* * * The intent of the reclassification is to reclassify the dollars in the plant account as of the effective date of the system of accounts to the new accounts. This process is a reclassification and not a reaccounting. The utilities are required under the system of accounts to reclassify the dollars in their plant accounts as of the effective date thereof and not to compute a hypothetical original cost of property constructed by them."

"The uniform system of accounts promulgated by the Public Service Commission of New York for gas companies is even more rigid than the provisions referred to above of the Federal Power Commission and National Association systems. Gas plant instruction 2-F of the New York system provides as follows:

"'Nothing herein stated shall be taken as permitting the recording as part of the original cost of gas plant of amounts charged in previous years to operating expenses, operating taxes, or other income or surplus accounts.'

"From the foregoing language it is clear that the New York system specifically prohibits the restatement in plant accounts of any item heretofore charged to any part of the income account or to surplus, even if the charge was purely an accounting error.

"The position taken by the Federal Power Commission's accounting division and by the National Association of Railroad and Utilities Commissioners, indicated above, has positive sanction in accounting theory. They seek to prevent what would be the equivalent of writing up plant accounts and certainly the latter is one of the worst abuses in utility accounting.

"To understand completely why the interpretations of the Federal Power Commission's accounting division and the National Association represent sound accounting practice, it is necessary to understand some of the fundamentals pertaining to the basic nature of accounting.

"Accountancy as applied to a business entity, in brief, deals with proprietorship, or the assets represented by

proprietorship, and their changing amounts as measured in units of money. Of primary importance in the accounting process is the assigning or allocating of costs to or matching of costs with, revenues. This phase of accounting has been described as 'crucial' from the standpoint of periodic income measurement and admittedly it comprehends most of the difficult problems of accounting analysis. Accounting employs innumerable details in its processes and furnishes vital information to business management and proprietors but its central purpose is cost accounting, that is, determination of the cost of doing business—the cost of obtaining revenues and the resulting profit or loss, or income.

"Contrary to the belief of the uninformed layman, accountancy is not an exact science. Every qualified accountant appreciates how utterly true this statement is. Accounting principles and practices are based to a considerable extent on logic, but its philosophy is also influenced tremendously by convention and tradition.

"Although accountancy is far from being an exact science, it is nevertheless a well-developed science. Its mechanisms are unavoidably very complex for a large business organization. The mechanics of accounting as practiced are far from being uniform.

"As to its broad fundamental principles, however, the science of accounting is about the same everywhere, but even those broad fundamental principles are not inflexible in their detailed application. In fact, much choice and discretion are permitted management and accountants within the scope of those broad principles. To illustrate this point, it is fundamental in accounting that inventories of merchandise, supplies, and so forth, when existent, should be included in the balance sheet and proper effect given in the income statement. The method of pricing the inventories, however, is subject to wide variation and to much discretion or choice. Department stores, for example, use a statistical method in pricing their inventories; some businesses use a first-in, first-out method, whereas others use the last-in, first-out scheme. Some businesses state inventories on the basis of cost or market, whichever is lower,

while others use cost, and in some cases where inventory costs cannot be obtained, market value less estimated selling expense is used. The Federal income tax regulations for many years have permitted wide discretion in pricing inventories, but it is significant that no change in method of pricing may be made without obtaining special permission from the Commissioner of Internal Revenue.

"In the extractive industries it has long been accepted accounting practice to charge substantial replacements of plant to expense just the same as in many jurisdictions, and in England it is accepted law for the extractive industries to pay dividends out of capital. In fact, the extractive industries, because of the nature of their undertakings, quite generally charge items to expense which would ordinarily be charged to capital or plant accounts in other business enterprises. There is good reason for this, of course, from the standpoint of business policy, and the practice if followed consistently yields satisfactory and sound accounting results which are generally accepted.

"One of the characteristics of public utilities is their relatively large investment in plant assets. A tremendous amount of accounting, revolves around such assets. Considerable discretion has been allowed in the past and is still allowed the management of a particular utility company in accounting for its investment although obviously the natural tendency of regulation is to restrict the area of managerial choice.

"While considerable variation has existed in individual policies of accounting for plant items, accountants have been equally willing to certify to financial statements of companies which have followed different methods or policies. They have been right in doing so, because the general or accepted principles of accounting do not lay down one and only one inflexible rule. Any practice may be right if it is within the limitations of the broad scope of an accounting principle and is followed consistently.

"The reason for this condition is that accounting, to repeat and to re-emphasize, is not an exact science. With this, any qualified accountant will agree.

"As to many items which are charged to the accounts,

the question is not what treatment is absolutely right or wrong, but rather which is the preferable practice; and the treatment adopted for individual items is not nearly so important as consistency in the treatment of all such and similar items.

"This necessitates a few words relative to the importance of consistency in accounting. When a public accountant certifies to financial statements, he invariably makes a positive affirmative assertion that the statements have been prepared in conformity with genrally accepted accounting principles applied on a basis consistently followed. Any departure from consistency requires a qualification in the auditor's certificate. This reference to consistency is contained in the form of certificate approved by the American Institute of Accountants. It is in widespread use, as reference to the annual reports of almost any corporation having listed securities will disclose.

"Consistency is vital to the integrity of financial statements. It is absolutely essential that the accounts which underlie the balance sheet and income statements be kept at all times in accordance with consistently applied principles and practices, for otherwise distortion, manipulation and untruthfulness, consciously or unconsciously, would result.

"One of the more common misconceptions of accounting among the uninformed is that the two principal financial statements, the balance sheet and income statement, are not related. This misunderstanding where present is indeed unfortunate. These two statements are very closely related and this relationship is always present, consciously or unconsciously, in the minds of accountants. In fact, this is fundamental in the science of accounting.

"It is one of the first principles taught to students of accounting and represents something they are never allowed to forget either during instruction or in practice. A particular charge may be recorded in an account of either statement but not simultaneously, that is, duplicated, in the accounts of both.

"Charges are frequently made to balance sheet accounts and then subsequently prorated or allocated to income ac-

counts of different periods. This process is going on all the time as one of the essential routines of accounting. It is important that accountants, analysts, and others who use accounts do not forget the relationship of the two statements by focusing attention exclusively on one or the other even momentarily. Such a misconception may result in distortion and serious error.

"The relationship of the vital principle of consistency in accounting to any proposed reaccounting or restatement of items charged to expense in the past is very clear. It means, in my opinion, that costs which were recorded in the past in accordance with accepted principles of accounting at the time may not now be reaccounted for and the election at the earlier date annulled merely because of a change in view or purpose.

"The very nature of business transactions makes it mandatory that consistent accounting principles and practices be followed. As to many expenditures there is no sharp line of demarcation between operating costs and capital costs. It has constantly been recognized by accountants and acknowledged by the courts that it is often difficult to draw a precise line between expenditures for construction and those expenses which are incidental to operating or maintaining the plant. Hence a great deal of discretion, that is, managerial discretion, must be exercised in each determination of costs. Practical methods vary not only among industries but also within any particular industry. This in itself is not objectionable. The important thing is that some acceptable method be adopted and adhered to consistently, changes being made whenever advisable for the future and proper publicity given to any change of method.

"The problem of matching costs with revenues is not simple in practice. Many costs are joint costs in one way or another, that is to say, they consist of expenditures incurred which represent services applicable to two or more items or functions. Some of the costs of manufacturing industries are allocated to as many as hundreds of products. The cost of hauling different classes of freight is a problem of joint costs which still defies practical solution. The cost of distributing electricity is so difficult of deter-

mination that very few cost studies have ever been published in connection therewith. The reason is joint costs. The most common joint costs are overheads or indirect costs. Overhead or indirect costs are costs which are not incurred directly or solely for an individual item or function. Therefore, overheads must be allocated or prorated on some basis to the several items or functions to which they are related.

"There is not just one and only one acceptable method of allocating or prorating overhead costs. Many methods are in practical use. Great choice is allowed in the field of accounting and management. No system of accounts prescribed by any regulatory commission, to my knowledge, lays down the basis or method which must be followed in making distribution of overhead expenditures. It is important that the method of allocation be equitable and that reasonably accurate accounting results be obtained, but further than this the various uniform systems of accounts are silent.

"It is not necessary under accepted principles of accounting that overheads, such as general and administrative expenses, be classified as construction overheads at all. When an industrial or commercial concern constructs a new plant, it does not usually charge to the cost thereof any amount for regular officers' salaries, even though officers whose compensation is normally charged to the general and administrative expense accounts, spend considerable time in supervising the construction work. The classification of accounts prescribed by the Interstate Commerce Commission for steam railroads prohibits the allocation of general and administrative expenses to construction. General and administrative expenses go on generally in the same amount whether or not any construction is in progress, and there is good logic to support the principle that only such part thereof as is incurred specifically for construction purposes should be capitalized.

"For several years during the late 1920's and the earlier 1930's, while associated with public accounting practice, on numerous occasions I examined the records and the accounting practices of companies in the extractive industries, particularly coal mining companies and natural gas

companies. These engagements included comprehensive annual audits of the accounts of such companies, investigations in connection with acquisitions of such properties, and preparation of their Federal income tax returns. As previously stated, the extractive industries frequently charge many items to current expenses which other industries, particularly the utility industry, would likely charge to plant. Generally speaking, the extractive industries are and have been much more conservative in charging items to plant than other business enterprises. There is a decided tendency on their part, well supported by accounting principles and practices, to charge items to expense rather than to plant.

"One theory of accounting followed by a great many coal mining companies, representing the views of able management and accountants in that industry, involves charging directly to expense any addition of property or plant or other expenditure required to maintain the productive output of the mine. This often includes large units, such as locomotives, cars and long stretches of new track and large amounts of related development costs. This practice has been accepted by the Bureau of Internal Revenue for income tax purposes, if followed consistently, and was upheld in the courts.

"For many years it was practically the universal practice of natural gas companies, and I understand it is still the practice of some oil companies, to charge what are termed 'intangible drilling and development costs' to expense. These items are wages, fuel, repairs, hauling, supplies, and so forth, incident to and necessary for the drilling of wells, preparation of wells for production of oil and gas, and similar expenses for gathering lines. To a much less extent the cost of labor in laying transmission and distribution lines as distinguished from gathering lines was also charged to expense. I do not believe, however, that this latter practice was very widespread. In the past natural gas companies have been more reluctant than electric utilities to charge overhead costs to plant accounts.

"The so-called intangible drilling and development costs have been charged to expense under the principle that they represent cost of keeping up and maintaining the business

rather than the cost of improving it or adding thereto. The accounting practice is based upon the reasoning that the cost of drilling wells and laying gathering lines are for the purpose of maintaining a supply of gas and not adding to that supply. It has been pointed out, that the old wells were being exhausted and new wells had to be drilled in order to maintain the supply of gas for customers. The cost of materials such as pipe, casing, and so forth, could be salvaged later but the miscellaneous charges I have mentioned have no salvage value. Hence only the cost of material could be capitalized under the principle referred to above. The principle and practices applied represent sound, accepted accounting if adhered to consistently.

"In the early income tax laws, such as the Revenue Act of 1918, the problem of accounting for the so-called intangible costs arose. Article 223 of Regulations 45 relative to the 1918 Revenue Act specifically allowed natural gas companies the option of charging such items to expense or of capitalizing them. However, once the taxpayer had exercised his option, he was required from then on to follow that method consistently. It is a basic philosophy of the income tax law, that the taxpayer's accounting method should be followed for computing taxable income unless his method clearly does not result in the true income.

"Numerous authorities have sanctioned the charging of intangibles to operating expense. The Public Service Commission of West Virginia and the Public Service Commission of Indiana have allowed such items as expenses in rate proceedings. Under the present uniform system of accounts for oil companies issued by the American Petroleum Institute, it is permissible to charge the items in question to current expense by means of a reserve account. When the Public Utility Commission of Pennsylvania had under consideration in 1919 a system of accounts for natural gas companies, the accounting committee of the Natural Gas Association of America appealed to that commission to include drilling costs and the costs of laying gathering lines as current expenses.

"The foregoing indicated accounting practices of the extractive industries conform to sound accounting principles even though they differ (for good reason) from the practices followed by most other industries. These practices

are and have been very widespread and we may, therefore, characterize them as general practices in the extractive industries. They have long represented accepted principles of accounting and have been the basis of reports to investors, prospectuses, security listings and income tax returns. The only reason that some of the natural gas companies do not follow the same practices today, in my opinion, is that systems of accounts prescribed by regulatory commissions having jurisdiction require a different practice.

"The fact that the new systems of accounts do not permit continuation of some of the former practices is not any indication that they were wrong or unacceptable. Uniformity in regulation of utilities is generally considered desirable and with that in mind accounting methods deemed preferable have been written into the systems of accounts effective as of specified dates, but not made retroactive prior to such dates.

"In order to understand more clearly the significance of the foregoing discussion it is necessary to consider the relative importance of the income statement as compared with the balance sheet and particularly the plant account.

"The accounts which are reflected in the income statement, that is revenue and expense accounts, are the media through which costs are matched against revenues. Here is indeed the crux or the central problem of accounting, the pivot around which all accounting phenomena revolve. Professor Paton has recently expressed the same idea in slightly different language as follows: (See page 7 of 'Recent and Prospective Developments in Accounting Theory' by William A. Paton, published by Harvard University Graduate School of Business Administration, 1940).

> "'Costs' rather than 'assets' is the significant term in presentday accounting. Costs are incurred and are charged to cost accounts. From time to time the pool of costs is analyzed for the sake of determining the charges to be applied to current revenues on the one hand and prospective revenues on the other. After absorption of the expired costs the amount to be deferred emerges as an 'asset' balance."

"This means that the income statement is much more important in accounting than the balance sheet because the

latter is only incidental to the truly essential accounting processes which are related and expressed in the income statement. The balance sheet comes into existence mainly because of the necessity of periodic reckoning, that is matching of costs against the revenues of a particular period, and the attendant deferring and accruing of costs.

"This increasing recognition of the greater importance of the income statement has been inevitable as generally better understanding of accounting principles has gradually evolved. Qualified accountants have recognized the importance of income accounting for many years and it is believed that laymen now have attained a much better understanding of this real emphasis of accounting.

"Because of the fact that matching costs against revenues is the central focus of accounting it is more important that all expenses be included in the income statement than it is for every *conceivable* item to be charged to plant. A company which follows the practice of ascertaining all costs which under some theory may be called plant costs, while leaving out of consideration the setting of accounting transactions when they occurred and ignoring the expense side of the problem, does not follow good accounting. Its accounts are biased, not wholly truthful, and to say the least the company is guilty of false emphasis. It is more logical and much better accounting to follow the principle of making sure that all the expenses are accounted for as such and of considering the residual costs as plant rather than vice versa.

"Consistent adherence to a sound scheme of accounting can result in no duplication of costs. Once a cost is matched against revenue it disappears from the books, so to speak, because its expiration is recorded as an accomplished fact, that is as an expense. Under proper accounting this expense or expired cost cannot at some future date be reinstated as a legitimate cost and again matched against revenue as a legitimate expense. This likewise prohibits such a cost from being restated to the plant account because that treatment presumes that the cost would be subject to depreciation which would mean that the cost would ultimately be matched in segments against revenues of a succession of periods as a result of the annual depreciation charges. This too would be a clear duplication of costs.

"Departures from coordinated and consistently applied accounting concepts in making original cost studies often yield results which are inaccurate. An original cost inventory and valuation which ignores the fact that certain items were charged to expense on the company's books is not valid. One typical example will show how false a result can be obtained by improper methods. A pole which is rotten at the ground line is saved for the time being by the installation of a stub. The cost of the pole stub is a proper maintenance expense charge and is generally so considered by accountants.

"It would therefore not be a proper charge to plant. However, a valuation man in taking an inventory sees the pole stub and may assign a value thereto and include it in his original cost estimate. Obviously his method would result in duplication and falsification in the company's accounts. This is but one typical example of numerous similar possible misapplications of the original cost principle. Another way of illustrating this same possibility of error is to visualize what would happen if two men were sent out independently of each other, one to compute all the expenses which by any stretch of the imagination could be called expenses and the other to compute plant costs with instructions to include every conceivable item which could be termed plant cost. It is apparent that their results for the same company would show much overlapping and duplication. This would come about because each would place emphasis on only one side of the transaction. Each emphasis would be a false emphasis and it is probable that each result would be incorrect.

"May I repeat and re-emphasize at this point that an original cost study to be valid must conform to consistent accounting principles and if proper results are to be obtained the transactions entering into such a study must be viewed in the light of all their atmosphere and settings both individually and as an interrelated whole.

"Reproduction cost new studies which include a value for items which were charged to maintenance on the company's books also violate one of the principles of logic that dominate the science of accounting, that is, that the

same expenditure may not be considered both plant and maintenance. It may be either capital or expense but it cannot be switched from one to the other so as to best fit the particular occasion or purpose.

"Another particularly unsound practice which violates the accounting principle that costs which have been accounted for as expired may not now be reinstated as capital, is for a utility company to claim in computing its rate base observed depreciation which is less than the accrued depreciation computed on its books as a result of annual accruals to expense.

"So far as accounting is concerned this would have the same effect as adding to the plant account items which had been charged to expense during prior years. In either case it would constitute including in the rate base charges which had been made to expense in previous years, which had been already matched against revenue and had therefore expired in view of the company's accounting practices as exercised under the discretion of management."

(Vol. LVIII, pp. 8268-8294.)

* * * * *

Whereupon—

KENNETH L. SMITH recalled as a witness by and on behalf of the Federal Power Commission, having been previously duly sworn, was examined and testified further as follows:

Cross Examination.

By Mr. Dougherty:

Q. Mr. Smith, do you recall the volume that is recorded in the testimony which you gave with respect to certain accounting principles and practices?

Mr. Lange: Mr. Dougherty, that is in Volume 58, Pages 8268 to 8294.

By Mr. Dougherty:

Q. You are familiar and recall the statement which you read into that record?

A. Yes, sir.

Q. When did you prepare this statement under question, Mr. Smith?

A. I started the preparation of it, I believe either the latter part of November or the first part of December 1940 and worked on it from time to time. As I recall it, I completed it in January 1941.

Q. Have you prepared any similar statement or article that is similar to this?

A. No sir, I haven't.

Q. Did you ever write on this subject, the same subject which is discussed here for any accounting magazines?

A. You are referring to original cost principles, I take it?

Q. Yes, I think so.

A. No, sir.

Q. What authorities did you study in preparing yourself for the writing of this?

A. Well, as far as the general accounting theory is concerned, I think I can say I drew upon the studying I have been doing for a number of years. Now, as to specific research, in seeking to find out what is involved in the original cost principle, I have examined the Commission's Uniform System of Accounts for natural gas companies and also for electric companies; I referred to the publication of the National Association of Railroad and Utilities Commissioners which I believe is quoted on Page 5 of my written statement; I had occasion to refer to the system of accounts for natural gas corporations prescribed by the New York Public Service Commission; I studied very carefully an article written by Mr. Charles W. Smith on original cost which was published in the Accounting Review during 1937.

Mr. Lange: Mr. Charles W. Smith is the Chief, Bureau of Finance and Accounts, Federal Power Commission?

The Witness: Yes, sir, Bureau of Accounts, Finance and Rates.

I also had occasion to read some testimony which Mr. Charles W. Smith had given in the Northwestern Electric Company case, an original cost case. It so happened I had occasion to discuss this same problem personally with Mr. Smith in August 1940 when he was in Colorado Springs for one day.

I referred to the Uniform System of Accounts for oil companies sponsored by the American Petroleum Institute.

Mr. Dougherty: I didn't hear the last of that answer.

(The record referred to was read by the reporter as set forth above.)

The Witness: I drew upon my knowledge partly from memory of the system of accounts sponsored by the National Coal Association for coal companies and a book on the subject of coal mining accounting which was written by a man named Reed. I read those publications sometime in the 20's when I was doing considerable work on coal companies. In the latter 20's and the early 30's I had occasion to become very well versed with those two sources of material pertaining to coal companies.

I had recently examined a couple of publications on the subject of accounting theory one of which I believe I quoted in my statement. That was written by Professor William A. Payton and entitled "Recent and Prospective Developments in Accounting Theory," and the other one was written by Professor William A. Payton and Professor A. C. Littleton, entitled "An Introduction to Corporate Accounting Standards."

Those two publications do not relate specifically to the subject of original cost but they do form a part of the background and I quoted one of them at one place in my statement.

By Mr. Dougherty:

Q. With respect to the question of original cost, you have just said the articles you last mentioned did not deal with that principle. What about the recommended Code of Accounts of the National Coal Association? Did that deal in any way with the principles of original cost as you have discussed it in your statement?

A. Not directly. The reference I made to the system of accounting sponsored by the National Coal Association was merely to indicate an authority which would back up or support some of the information which I gave concerning the theory of coal mining accounting as I found it.

Q. That is the portion you refer to under the reference to extractive industries and coal companies?

A. Yes, sir.

Q. But the code as recommended by the National Coal Association does not contain within it this principle of original cost as is contained in the Natural Gas Code proposed or adopted by the Federal Power Commission?

A. No, I merely make reference to that system as a support to my contention as to what the practices were in the extractive industries at that time.

Q. Now, with respect to the code recommended by the American Petroleum Institute, what, if anything, does that deal with—the subject of original cost as you have discussed it in your statement?

A. It doesn't deal with it directly but it merely reflects the accounting of an extractive industry.

Q. There again the principles of original costs as defined in the utility code adopted by the Federal Power Commission are not embodied in that recommended code for petroleum companies?

A. Not directly certainly not as such.

Q. Well, there is no requirement in there or no recommendation that the petroleum company shall set up on its books as cost the cost to a predecessor company from which it purchased assets rather than the cost to the accounting company?

A. Of course, I don't believe your statement quite draws the distinction. What I really mean is that it doesn't require it to earmark the excess that it paid.

Q. Doesn't it provide for the setting up of capital assets purchased by a petroleum company at the price paid by the accounting company?

A. Yes, I believe essentially that is true.

Q. It is also true, Mr. Smith, that in these business enterprises that are not regulated such as the utility companies, there isn't any practice of making that distinction between the cost of property purchased by the accounting company and the cost to the selling company?

A. Not ordinarily unless that intangible, if it is an intangible, happened to be reflected in a good-will account or something of that nature.

Q. If a petroleum company, for example, bought a group of leases and wells and paid a million dollars for them in

cash, that would be the cost which would be set up on the books of that petroleum company and not whatever the amount happened to be, the cost to the selling company?

A. That is true. If I may qualify it I would state that under some circumstances even a part of this million dollars might necessarily have to be accounted for as an intangible and there you would have a comparable situation to either Account 100.5, Plant Acquisition Adjustments Account, or Account 107, Plant Adjustments Account.

Q. Where the money, however, was paid for physical property and there was no such thing as good will and trademarks or what-not involved, isn't the statement I made correct?

A. Yes, I believe it is if it is purely for physical property.

Q. So the authorities which you have mentioned in your statement that deal with this question of original cost as discussed by you are in effect the Federal Power Commission, the National Association of Railroad and Public Utilities Commissioners and the Chief of the Bureau of Accounts, Finance and Rates of the Federal Power Commission, Mr. Charles W. Smith, isn't that right?

A. I made some reference there to the Public Service Commission of the State of New York.

Q. So that in every instance the authority with respect to the question of original cost is either some State or Federal regulatory body or some official connected with such a regulatory body or the association which is composed solely of members of these regulatory bodies?

A. Yes, as far as I know, I don't know of any other authority that has written upon the subject of original cost.

Q. That was the question I wanted to ask you, with respect to accounting authorities not connected with those regulatory bodies. Have there been any documents or articles written, or books written on this question of original cost and accounting as provided for by the Federal Power Commission Code and as discussed in your statement?

A. I don't know of a single book that has been written. There have been a few sporadic comments at one time or other in a few of the journals, I believe; however, I don't know of any other article that was ever written by an accountant whom we might say had approached it from an

academic standpoint and had made it a sound unbiased treatise. I don't recall of any such article that has been written, or if it has been written it has never come to my attention, and I have made it a point to try to find out whether or not there have been such articles written.

Just in order to test this paper which I wrote here, this testimony, I sent a copy of it to Professor H. T. Scovill, head of the accounting department of the University of Illinois, where he has been for a number of years, asking him for his very frank reactions to it so as to get his impression. He was fairly complimentary on the article and said that he thought I had given a very good analysis of the original cost idea and he particularly commended that feature of it which denounced the claiming of something in the capital account, plant account, which had also once been claimed in the income account, especially for the purpose of setting rates.

Q. Does he teach public utility accounting at the University of Illinois?

A. There is no special course in public utility accounting—He was at one time consulting accountant for the Illinois Bell Telephone Company for a number of years and I understand he has handled cases before the Illinois Commerce Commission. I said there was no special course in public utility accounting and I want to modify that.

There is one graduate course that deals with all systems of accounting, including utility accounting and he does teach that course.

Q. The doctrine of method of original cost accounting as described by you has been the subject of considerable controversy between the Public Utilities who are subject to regulation by these regulatory bodies and the accounting staff of the regulatory bodies, has it not?

A. Yes, I believe that in general the public utilities have resisted the original cost idea.

Q. Isn't it a fact that a number of articles have been written by accounting officials of those companies which have expressed their disagreement with it and their reasons for that?

A. I am not familiar with any specific article now except in following the Public Utilities Fortnightly for some years I believe I can recall having seen one or two articles and possibly more in that journal written by—I am not sure whether they were accounting officers or not, but I recall having seen expressed disagreements with the original cost principle.

Q. Have you ever read any of the articles or addresses, public addresses, delivered at various meetings of the accounting groups of either the electric or gas industries in which this question has been discussed, and particularly the question of what you call reaccounting as distinguished from reclassification?

A. I don't recall any specific article upon that.

Q. Have you attempted to keep up with all of the literature on the other side of the question, as well as that on the side with which you are in agreement?

A. I can't recall of ever having refused to read an article that I found on the subject.

Q. That isn't what I asked you. I asked you if you tried to make an attempt to keep in touch with them and find out what was going on and read them so you would know fully everything that has been said on the other side as well as what has been said on your side of it.

A. Well, I believe I have, but—that is, I have tried to fully inform myself on the subject matter.

Q. You were aware that there has been a great deal of discussion on this question since the Federal Power Commission first started to put the principle into effect in its Code of Accounts for electric utilities?

A. Yes, it has been attacked in a great many places.

Q. Have you ever read articles by Professor Madden—I think he is Dean of the College of Commerce of New York University—on the subject?

A. I don't recall having read his articles.

Q. Do you know whether or not he has taken the position opposite to that expressed by you and which you say has been approved by a professor at the University of Illinois?

A. No sir, I don't know that.

Q. The idea of this original cost accounting was accepted by you first at what time, that is, when did you first become acquainted with it?

A. I first became acquainted with it in the latter part of 1936.

Q. That is when you first went to work for the Federal Power Commission?

A. Just about that time, yes, sir.

Q. That is and has been the source of this question of original cost accounting, hasn't it, the Federal Power Commission?

A. You mean they have originated the idea?

Q. Yes.

A. This same principle is in the Federal Communications Commission's system of 1935, I believe.

Q. Well, when was the electric code adopted by the Federal Power Commission?

A. It became effective January 1, 1937.

Q. The Power Commission, however, had been urging the adoption of this principle upon the National Association of Railroad Utility Commissioners long before that, hadn't it?

A. I am not so sure that is exactly the fact. In my discussions of the history of original cost with Mr. Charles W. Smith I have always gained the impression it was a joint product of the accountants for the Federal Power Commission and the National Association of Railroad and Utilities Commissioners; that is, the conditions that were disclosed by the Federal Trade Commission's reports were so far from meeting, the ideals of regulation and good utility accounting and the condition of the books of so many utilities was so chaotic that those people interested in regulation apparently seemed to be of about the same mind and at about the same time, as soon as the fact became disclosed through the Federal Trade Commission's reports, that something had to be done.

Q. The source of it was in regulatory groups rather than in some independent body of accountants or accountancy or experts in accountancy who might be teaching in the Universities?

A. I believe that might be true. It is just a case that necessity is the mother of invention.

Q. Your statement of the chaotic conditions of the books, is that based upon your examination of these books of the utility companies you speak of, or is it based entirely on the reports of the Federal Trade Commission?

A. Not entirely upon the reports of the Federal Trade Commission. When I was with the Federal Power Commission in the Washington office for a period of nearly two years I was in the Division of Finance and one of my principal duties at that time was to study the accounting and financial aspects of applications by electric utility companies for merger, consolidation, sale of property, and issuance of securities; and incidental to those applications the applicant company was invariably required to furnish the amount of writeup or whatever we could choose to call it in their plant accounts. If they didn't know what it was they were required to estimate it, and from having reviewed the accounting and financial aspects of possibly 30 or 40 applications of different companies I found that practically every one of them came in admitting those things, so I believe that is good enough experience to draw a generalization.

The Trial Examiner: We will stand in recess until 2:00 o'clock.

(Whereupon, at 12:30 o'clock, p. m., a recess was taken until 2:00 o'clock, p. m., of the same day.)

Afternoon Session, 2 P. M.

The Trial Examiner: The hearing will be in order.

Whereupon—

KENNETH L. SMITH, the witness on the stand at the time of recess, having been previously duly sworn, resumed the stand and testified further as follows:

Cross Examination (Continued.)

By Mr. Dougherty:

Q. Mr. Smith, I believe Mr. Charles W. Smith who is head of the Bureau of Accounts, has given similar testimony to this statement of yours in other proceedings before the Federal Power Commission.

A. I know of one in which he gave testimony that was very similar.

Q. And that is the testimony you studied and considered in preparing this?

A. I read that testimony.

Q. Well, as a matter of fact, some of the latter part of your statement is pretty much copied from that, isn't it?

A. No, I don't believe it is copied from it.

Q. Isn't it exactly the same as some of Mr. Charles W. Smith's testimony in the Northwestern Electric case which was an accounting reclassification case?

A. I think the meaning and import of it is very similar, yes, but as far as being copied, it wasn't copied.

Q. Well, if it turned out to be identical with a great deal of the language used by him, that would be a coincidence rather than just copying it out?

A. I'm afraid it would be. My association with Mr. Smith has been pretty close for a number of years and I have discussed these things with him many many times. I was reading over his article published in the Accounting Review on the subject of original cost and reviewed in 1937 it again after completing this article—this testimony. I found a great similarity of wording between those two articles.

Q. He has been very active in establishing this original cost theory through the National Association of Railroad and Utilities Commissioners?

A. My understanding is that he has worked very closely, in very close harmony with the association's committee on accounts and statistics.

Q. As a matter of fact, wasn't he quite a dominating influence in the deliberations of that body of the things they finally decided to adopt in the form of codes of accounts to be recommended to the various state committees?

A. I have never known him to admit that he was the dominating influence.

Q. I just asked if that wasn't so as you knew it.

A. I don't have any first-hand knowledge on which to base a conclusion like that. I know that he did work with the committee and whether he dominated the committee or not, I don't know.

Q. The electric code and also the national gas code were originally prepared under his supervision, were they not, and then submitted to the National Association of Utilities Commissioners for consideration by that body?

A. My understanding of the history of the electric code was that Mr. Charles W. Smith was appointed as a consulting accountant by the Federal Power Commission in 1935 and that his instructions were to work with and to cooperate with the Committee on Accounts and Statistics of the National Association in preparing a new code of accounts.

My understanding is that it was a joint product and it was so intended at the time of its inception.

Q. When you mentioned the fact that this original cost document has been accepted by a great many of the electric utilities and also that the natural gas code is rapidly attaining wide acceptance, do you mean that the various gas utilities are voluntarily accepting those principles or do you mean that it is being accepted by the regulatory authorities?

A. Well, I think what I really meant was that it had been adopted by the regulatory bodies and prescribed.

Whether or not the utilities are accepting it voluntarily or involuntarily, I don't know, as I haven't made that study.

Q. Of course, having the authority prescribed in the code of accounts, after it is once prescribed the utility has no alternative. You understand that, do you not?

A. Well, I suppose they always have what legal rights they have. I don't know.

Q. You mentioned that original cost in order to be valid had to be obtained by an accounting method. Now, is it your intention by that sentence to mean that in no other way can you attain what the actual cost of a piece of property is except by going to the books and finding out how the capital cost of that is recorded?

A. I think that is essentially true. Let me put it this way: The results shown on the books cannot be ignored. They have to be the central theme around which the amount of dollars set up for original cost must be determined. Sometimes a breakdown as between classifications or accounts necessarily has to be done by some other method than accounting.

Q. Then it is your understanding that original cost is purely an accounting viewpoint or an accounting term that

has no reference to anything except matters of keeping of accounts?

A. That is my interpretation, my opinion as to the original cost idea of principle as set forth in the Federal Power Commission's Uniform Systems of Accounts. In order to be a valid study it must be approached from an accounting point of view and must not ignore the results shown on the books.

Q. Well, is it your understanding that original cost has no other significance except as related to the books?

A. Under this system of accounts I believe that it must be related to the results shown on the books.

Q. With respect to a good deal of the general language that you use in here about the conditions of accounts of various utilities, was it your intention to apply that general language to either the Canadian River Gas Company or the Colorado Interstate Gas Company, particularly on Page 3 of your statement? Refer to that.

A. When I wrote that paragraph I wasn't thinking specifically of those two companies at the moment; however, it does seem to me that when the original cost principle is applied to those companies that possibly some of these things are applicable.

Q. Were the books of the companies in such hopeless condition that your Examiners were unable to ascertain the adjusted original cost satisfactorily?

A. No, I believe that as far as Colorado Interstate Gas Company is concerned, Mr. Schutte was able to spell out the original cost in a very satisfactory manner—that has been my understanding—and as far as Mr. Luttring's study was concerned of the predecessor of the Canadian River Gas Company, I believe that his testimony shows in one minor instance only was it necessary for him to resort to estimates; that is, he was able to get the information to build up his original cost from the books of the predecessors and of course from the Canadian River Gas Company books in so far as its construction was concerned.

Q. In a case where a company's books did not show the actual cost of the property, was it a practice to resort to estimates?

A. I think the estimates are confined largely to where records can not be located for predecessor companies and

that sort of thing. If there is a set of books, presumably that set of books will show what the company accounted for as its plant, and assuming that it didn't charge items to plant that were erroneous, the balance in the plant account, if it were the company which first devoted the property to public service, would probably show the original cost as contemplated.

Q. Where you have accounts in such shape that you have unidentified amounts and can't determine them very well, how are you by your reclassification process going to set up any better set of books than they have in the first instance?

A. Well, I think that applies to the statement I made just a minute ago, that when the total original cost is determined, it is also necessary coincidentally to break it down between classifications under the original cost provision of the Uniform System of Accounts and it is at that point that the total amount of dollars representing original cost can be broken down by estimates if there is no other means available.

Q. When you get through in such a case, don't you have just as unsatisfactory a record of what actually took place as you thought the original record was?

A. No, I don't believe you do. If your total dollars are correct and if you have established a breakdown which can be used for retirement accounting with reasonable accuracy, I think you have made quite a gain.

Q. In the character of books you are speaking of that are very unsatisfactory and have not been kept with the detail that is necessary, you would have just as much difficulty with your retirements, wouldn't you?

A. Yes, that is one of the objections to that kind of accounting, because retirements were often times not made on the excuse that there wasn't any information available with which to make the retirement.

Q. What do you mean exactly by an accounting method in determining original cost?

A. Well, the primary consideration is that the dollars accounted for as plant on the books of the company first devoting the property in the public service be given the primary consideration in setting up the original cost. In other words, that is a fact and circumstance that cannot be ignored.

Q. Is there no other way you can go out and determine the actual cost of a piece of property except by looking at the capital accounts on the books, plant accounts?

A. I might say that an inventory method might be used if it were subject to certain limitations and those limitations tie right back into the accounting; that is, if an inventory was taken, it would be necessary to divide the items in your inventory into at least two groups, those items which were capitalized on the books and those items which were expensed on the books.

Then in order to price that inventory, it seems to me that it would be necessary to go back to the records to find out the cost of the individual units and of course those units which had once been expensed could not be reinstated into the capital account under the original cost concept unless there was conclusive evidence that the expensing was purely an accounting error.

Q. You could, however, determine the actual cost of that inventory by going to the invoices and job tickets and finding out the exact expenditure of money that was involved in placing that property into plant?

A. If it were done with due discrimination, as I have stated before, and if the person who priced the inventory understood accounting methods, and knew how to interpret accounts and would rely basically upon accounting data as reflected upon the books, he might come to a satisfactory result by pricing out the inventory within those limitations.

Q. You are cognizant of the different definitions of book costs in the Federal Power Commission Code of Accounts for natural gas companies and the definition of cost, book costs being Definition 6 and cost being Definition 10?

A. Yes, I am familiar with those definitions.

Q. Now, I think that it is your position in your statement that having once accounted for the cost of a piece of property through the expense accounts that it should always be left there and that there could be no change by putting the actual cost of that property into plant account at a later time.

A. Assuming that the original accounting was not purely an accounting error. If there was any discretion exercised either by management in the interpretation of a system of accounts or in its broad power of discretion as management, then it is my position that any amount which was charged to expense must remain as expense. In other words, it cannot be restated at some subsequent time in order to serve a change in purpose.

Q. Well, that would result, would it not, in some instances in what you have as book costs not being the exact number of dollars as costs as defined in Definition 10 under the FPC Code.

A. Well, of course, 10 is a very broad concept that relates both to capital expenditures and to expenses and it is an accounting concept. The accounting concept of cost relates both to what we term capital expenditures and revenue expenditures or expenses. Any outlay of money is made with the idea that—with the purpose in mind eventually that outlay of money or cost will eventually be matched against revenue at some day or another, whether it is today or whether it is done in segments over a period of fifty years, for example.

The primary purpose and the fundamental accounting principle is just the same, so cost as used in Definition 10 is a very broad concept.

Q. Well, as it says, it is the money actually paid for property.

A. Or services.

Q. Now we are talking about plant, so whatever property is bought, the money actually paid for that and the services or labor involved in installing it would be what the cost was, wouldn't it?

A. Well, if the company didn't account for it as plant, though—

Q. Well, now, doesn't the cost occur before the accounting occurs?

A. You mean in this sense—as the expenditure is incurred we might say that all costs might be thought of as one common pool of costs and then your next step in the accounting process is determining when you are going to match that cost against revenue.

Q. Well, the accounting is recording what the cost is, isn't it?

A. Yes. I suppose what you have in mind is that the transaction might be consummated, the purchase and sale, before it ever gets on the books.

Q. Isn't that what your books are for, to record the transactions that have taken place?

A. I think that is a fair statement.

Q. So that you could in case of following out the concept of original cost as you have it, might have a book cost which is different than the actual cost of the property or services; that is, the book cost in the capital account?

A. It is very obvious that the total cost of a company over any period of time is going to be greater than the portion of that cost which it classifies in plant.

Q. Yes.

A. Because it is such a broad comprehensive term.

Q. Now you mention the discretion exercised by accounting officers in charging certain items of cost to expense and I assume that when you use that word "discretion," you mean that there are situations where either the charge might be made to capital or might be made to expense and that having exercised that discretion, then the decision is made and the charge is accordingly put on the books?

A. Yes. I think I can explain that in this way, that a company which is free to set up its own accounting system in accordance with the policies that it thinks are desirable, may adopt a policy and as a result of that policy it might be charging certain border-line items to expense while another company just like it that may be just across the street from it might adopt a policy a little different and I would hope that each of those companies would adhere to its policy consistently.

The similar company across the street might decide that those border-line things were capital and might choose to capitalize them instead of expensing them.

Q. Now, under the rules established by the Power Commission on making these reclassifications and under your concept of your original cost, neither company could make

changes in its plant account when it would come under the provisions of such a code as the Federal Power Commission code, and that would result, would it not, in two companies assuming that they had identical property, having different original costs shown on their books?

A. I believe that that is correct. You are assuming similar conditions all the way through.

Q. Yes. It is not—isn't that the logical consequence of the rule that you say is the underlying basis of original cost, namely, making no changes in your capital accounts at a later date because of some new code being adopted, isn't it the natural result that two companies with identical items of property who followed different concepts of putting property into capital or charging it to expense would have different original costs on their books?

A. I think that is true, assuming of course there are no compensating factors of any kind.

Q. If the charge has erroneously been made in the first instance, you recognize that the change should be made?

A. If it were an accounting error, I believe that our Code of Accounts is sufficiently broad to permit the correction of an accounting error. Of course some codes will not even permit that.

Q. Now, for example, you take the matter that you have referred to later in your statement of the practice of natural gas companies formerly, in years gone by, charging to expense all of the labor and intangible costs. I believe Canadian River capitalized all those intangible costs?

A. That is my understanding.

Q. And that was accepted as being an appropriate charge to capital account?

A. Yes.

Q. Now, if instead of doing that, Canadian River Gas Company had followed the practice as some companies have done of charging to expense all of those intangible drilling costs, labor and amounts paid to contractors, I assume it would be your interpretation now that they could not include those costs in the determination of the original cost of their wells?

A. Yes, that is my opinion as the proper interpretation of this Code of Accounts.

Q. Yet in both instances the same amount of money

would have been paid out for the well—the actual cost of the well would have been the same, wouldn't it, irrespective of how the books are kept?

A. They apparently wouldn't have so regarded it—

Q. They would have paid the contractor the same in either event?

A. Without reference to what they thought they were paying it for. You see they must have had a different frame of mind—

Q. I am talking about the dollars. They would pay the same dollars.

A. If you limit it to that statement, they would have paid the same dollars.

Q. And that is what the code says cost is, the money actually paid for property or services, so the same amount would have been actually paid for property or services irrespective of how they kept their books.

A. Yes, but I think it is significant to leave in the words "or services."

Q. Yes, because services are intangible.

A. They would apparently have regarded them as expenses or they wouldn't have expensed them at the time.

Q. Now, if they had not regarded them as expenses but had regarded them as services in connection with the installation of wells, I again say you would not suggest that that method of treating those costs be changed now?

A. Well, of course, that is just what they did. They did capitalize them and we have, I believe—and they did consistently—and we have recognized that as having been acceptable accounting under the practices of the industry at the time the accounting was done.

Q. Now, are these principles that you have discussed in your statement and about which you mentioned—is it your thought and your judgment that those principles are to be applied to determine the actual legitimate cost of the property which the Commission is directed to determine by the Natural Gas Act which in turn would be used as a rate base, say for determining rates?

A. I don't think I can answer that question. I don't believe I can say exactly what was contemplated in the Natural Gas Act by the term as to legitimate cost and I certainly don't know what the Commission will consider when it sets the rate base.

Q. I want to know what your judgment and opinion is when you make in this statement as you do on Page 4, that original cost is an element to be considered in the computation of the rate base, and the only manner in which original cost can properly be ascertained is by an accounting process.

Now, is it your opinion that the original cost as determined by your accounting process by the limitations which you have indicated is to be taken as the actual cost of property for consideration in determining the rate base?

A. Well, I believe that would be the actual original cost and as to any other factors that the Commission would consider in setting the rate base, I am not informed.

Q. Well, if it should consider that—if it wanted to consider the actual cost of the property, is it your opinion the only place that can be found is as reflected in the plant accounts of the company which cannot be changed or reclassified except with the limitations as you have stated?

A. Let's see. I'm not quite sure that I understand that question.

Q. You have stated that original cost could only be obtained by an accounting process, and that means in so doing that you can't make any recomputation of cost of construction now, which would result in changing or capitalizing items that were expensed formerly. Now, is it your intention in making this dissertation in the record that in your opinion the original cost so determined is the cost that is to be considered by the Commission in determining the rate base?

A. Well, it is the original cost which I would recommend without qualification that the Commission consider in determining the rate base.

Q. And going back to the incident of intangible costs on well drilling, then that cost which the Commission would consider would depend entirely on how the books had been kept?

A. Assuming a consistent method all the way through in accounting for plant, in accounting for depletion, with consistency throughout the whole scheme of accounting, that is right.

Q. So you would have in one instance cost that might

be greater by a sizeable amount of dollars than in the other instance and wouldn't then that logically result in higher or lower rates for gas, depending upon the opinion of your bookkeeper back some number of years ago?

A. I would not know about the rates because the weighing of this evidence and the setting of the rates is something that goes beyond the accounting.

Q. Well, there is no other cost that you think the Commission should consider except that which is shown on the books in the capital account?

A. No other original cost. I think there is where a misconception of the original cost scheme comes in. We put certain items in Account 107 and Account 100.5 which is the plant acquisition adjustments account. Now, those items are earmarked. They aren't disposed of at all in setting up an original cost. The disposition of those items depends upon the Commission and the right to dispose of those items is specifically reserved in the system of accounts.

To me the system of accounts says very specifically that "we don't want you accountants to go any further than to earmark these items," so we aren't taking dollars that were accounted for as plant and just wiping them off the books or completely off the record. They are still there. They are earmarked and whatever weight might be given those is something that I am not concerned with as an accountant at all.

Q. We weren't talking about that particular part of your original cost process, but the part of it that has to do with accepting finally at original cost the amounts that were charged to plant account and prohibiting any recomputation of costs of the property that is in existence for the purpose of finding what its actual cost was, now, there, do you not get into a situation where the rate base would be affected by the principles of bookkeeping established by the accounting officers of your company?

A. I would only go so far as to say that the original cost might be affected. As to the effect on the rate base, I wouldn't know.

Q. Then you don't intend this discussion you have had here to be accepted by the Commission as recommending that in determining the rate base that they should give

consideration to the original cost as booked rather than to a determination of the actual cost of that property from the more original records of the company such as vouchers and time tickets and so forth?

A. Well, my sole purpose as I see it is to set forth the rules that apparently should apply in finding original cost contemplated in the system of accounts and to show that the original cost principle as embodied in this system of accounts is consistent with good accounting practice and with good accounting principles but as to the weight to be given to the original cost so determined, I believe that is entirely up to the Commission.

Q. Now, these accounting principles you speak of, are they the same as would apply to industrial customers or any other type of concern that was not a regulated utility?

A. I believe that any reaccounting for items which had been charged to expense in accordance with the discretion of the management would be governed by exactly the same principle of accounting whether it was a public utility and a regulated company or a non-regulated industrial.

Q. Now, is it your position that the income accounts should be maintained with the same consistency as your plant accounts through past years?

A. If the plant accounts are maintained on a consistent basis, it naturally follows that the income accounts would be maintained on a consistent basis for the same period. The two things are so inter-related that the results in one are by virtue of the accounting method itself correlated with the results shown in the other.

Q. Now, when you have made the changes you have in these two companies' depreciation reserves, doesn't it naturally follow from that that you have changed their income accounts in past years contrary to the principles that you have expressed with respect to consistency in not making past changes?

A. No.

Q. Wherein is the difference in what you do and what the company wants to do?

A. The company when it set up its plant accounts expensed certain items which it now seeks to capitalize I presume that Mr. Schutte's testimony shows to what extent, if any, the company might have elected to have capitalized

those items, had it so exercised its discretion originally. In any event, so far as I know the company made no error when it charged them off as expense as they occurred.

Now, when you speak of a change in depreciation you come to a somewhat different phenomena. The two things aren't comparable. The companies' depreciation as viewed by the accounting staff based upon the information furnished by the Commission engineers was regarded as having been an accounting error. It had created a situation in the companies' balance sheet which I have never seen condoned by any accounting authority; that is, the creation of a secret reserve through the overstatement of a valuation reserve. As I said, I have never known of any accounting authority who ever condoned any understatement of net assets or putting it in the converse language, the overstatement of a valuation reserve, and I recall very specifically that every accounting authority that I know of who has touched upon the subject of secret reserves has always denounced it and condemned it.

Q. Well, now, that change in reserves or in the depreciation was made by you as I understand it, upon the basis of information obtained within the last year or so, and as I recall your testimony about it, the change was made on the theory that upon the basis of the information now available the amounts accrued by the company each year were too high, is that correct?

A. That is correct.

Q. Now with respect to the establishment of this code of accounts and the principles that it lays down for capital items, in some instances it is considerably more refined, isn't it, with what shall be charged to the capital items than the practices followed by the company in the past?

A. Not having made the examination of the plant account myself, I will only be able to speak as to my understanding of it and make a general statement.

The prescribing of a code of accounts almost universally does narrow the field of discretion or choice, so I think perhaps your statement is accurate, that there is greater refinement in this code.

Q. Now the following of these new principles which re-

sult in a greater refinement will result, will it not, in more items being capitalized than were in the past?

A. I am not certain as to that. You mean in relation to the Colorado Interstate Gas Company and the Canadian River Gas Company specifically?

Q. That is right.

A. I am not sure as to that.

Q. The necessity of following these rules, however, in the future will cause a difference in the relative condition of the capital accounts prior to the adoption of the code and afterwards to the extent those differences do exist, will it not?

A. What you mean there is going to be in effect a necessary change in accounting polices?

Q. That is right.

A. Probably that is inevitable in this case.

Q. So that when we do get along a few more years we will not have had that consistency in our accounts you speak of; that is, according to your idea we will be consistent up to a certain date and then consistent on a different set of principles from then on?

A. Yes, I think I have covered that in my written statement.

Q. Then the situation with the depreciation means that any changes you make now in the discretion of the company were appropriately made some several years ago?

A. That is the thing I am not sure of, as to whether it was appropriately made. I don't know to what extent the company was influenced by tax considerations and I don't know how good their information was.

Q. Wouldn't that be the same with respect to other items that were expensed instead of capitalized where you accepted the discretion as exercised?

A. Well, no, because on those items—we will assume for the purpose of illustration that many of them, or at least a part of them, maybe all of them, I am not certain as to the facts on that, might have either been expensed or capitalized—they exercised their discretion. They had a definite purpose in mind and the history of the company shows that their revenues covered those expenditures as expenses very amply and they might have even had tax considerations in mind then. I don't know what they did

have in mind. I assume Mr. Schutte's testimony will show whether or not there is any ground for the company claiming they might have capitalized them at all. There is still a question about that.

Q. Well, with respect to depreciation, the company did adopt in the early years a uniform amount, did it not; that is, from 1931 on, and consistently applied that—if not an attempt, a method of determining the amount which was uniform?

A. As I recall it had some changes again in 1937 and 1938 on Colorado Interstate but I don't believe those changes were of major importance.

Q. Those charges are always a matter of the exercise of some judgment, are they not?

A. I think that after you have the data available with which to make the computation that the exercising of judgment must be kept within pretty definite limits or you reach the point of distortion through the guise of it being an exercise of judgment.

Q. Well, those who have determined the depreciation rates for the Federal Power Commission have had to exercise judgment, have they not?

A. Yes, to the extent that judgment is necessary in arriving at an estimate. Technical judgment in that sense is a matter of determination.

Q. So as I say, the question of depreciation is one that is based upon the exercise of judgment?

A. With certain limitations, that is probably true.

Q. Having once exercised that judgment and exercised the discretion of management in charging against income a certain amount of depreciation, aren't you violating the rule you applied to the companies when you now restate that depreciation?

A. No, I believe there is enough of the element of error involved to more than offset the element of judgment there.

Q. Doesn't the rule work both ways, Mr. Smith, that whenever your boys want to make some changes that is an error of judgment and whenever we do we exercise our discretion?

A. Well, I don't belive that I can agree with that. In restating depreciation it would seem to me that we were

making an adjustment there which really operated to the advantage of the company rather than against the advantage of the company.

Q. Now when you state that a certain amount of discretion is permitted and that also the accounting isn't a matter that is agreed upon by everybody, do you mean by that that there are differences of opinion that can honestly be held by different accountants depending upon the view they take of these various matters that you have discussed?

I think you used the term "it is not an exact science."

A. That is correct, it isn't an exact science. There have for a good many years I believe been differences of opinion among the accountants. It has been my observation over recent years that those differences of opinion are coming to be narrowed down. The academic approach toward accounting has been based upon logical principles. It is a consistent science which does have a logical basis and has merit for a good many uses, but was largely unexplored until the last ten or fifteen years. As those principles in accounting have been uncovered and spelled out and treated scientifically it has narrowed down greatly—it has served to narrow down greatly the differences of opinion among well-informed accountants who are unbiased.

Q. These two particular principles which are the essence of your original cost scheme, you don't give much *leaway* for difference of opinion on those, do you?

A. What are you referring to specifically?

Q. The restatement of cost when first devoted to public service, although not first cost to the accounting company, as against stated cost in your capital accounts where you had not actually accounted for the actual cost of the property when first installed. In those you laid down a pretty hard and fast rule.

A. I think the code of accounts itself deals with the question of setting out the cost to the person first devoting it to public service. To me that is merely a classification or earmarking certain dollars in a certain way. There is no inconsistency of that principle with any accounting phenomena I know of. I think that where criticisms of the original cost principle have been made they have been made with a misunderstanding of the accounting significance of that process. I maintain that merely earmarking dollars

is as far as the accounting goes. The result of that earmarking is a regulatory process over which the accountant has no control and no responsibility. He merely sets out the dollar amounts that are useful—I believe I stated to the regulatory body, investors, and even to the management under certain conditions.

Q. Now with respect to this other theory that you can't restate the cost of the property that had formerly been expensed, you recognize no deviation from that, I take it?

A. Only where the expensing was purely an accounting error. I have tried to develop in this testimony my reasons for believing that rule was entirely consistent with good accounting principles.

Q. Do you recognize any difference of principle with respect to the application of that rule as to whether or not it results in stating the actual cost under the code of accounts as it now exists?

A. I wouldn't agree with any other interpretation of it.

Q. Well; I know that, but do you admit that there is any other viewpoint taken by any accounting authorities?

A. Well, I know that it has been disagreed with because I heard Mr. Lusk disagree with it here.

Q. You recognize that these two companies were not subject to any regulatory control over their accounts prior to the adoption of the Federal Power Commission code?

A. Yes, I had that in mind all the way through my discussion. That is the reason why I made so many references to what they would do under the broad powers of the discretion of management.

Q. Is it your thought that this accounting code should be applied retroactively to the company's business back to the beginning of it in 1928?

A. The code probably speaks for itself in that respect.

I might summarize briefly what I think about it. When the company is called upon to reclassify its plant account in accordance with certain prescribed language in the code, it seems to me that the very nature of that undertaking does make certain features at least retroactive to the conception of the property or at least when the property was first devoted to the public service.

I believe the code is broad enough to apply any necessary restatement of depreciation or depletion back to the inception but as far as restating all of the income accounts which have been closed and reclassifying expenses for previous years on the basis of this new code, obviously that isn't contemplated.

The code became effective January 1, 1940, for natural gas companies and the only sense in which it retroactive is where the feature of being retroactive is necessarily unavoidable in meeting with the conditions laid down in setting up the plant account and the depreciations reserve.

Q. Do you agree that the importance of keeping the distinction between items that are to be expensed and items charged to plant account become much more important when a code of this order is established and when regulation of rates takes place than it was when there was no such regulation?

A. On account of the necessity of uniformity in regulation I believe that it does become more important under regulation.

Q. Then the fact that your original cost as shown on your books might be used by the regulatory body in determining rate base, doesn't that fact lend more importance to careful accounting as between plant and expense?

A. As to what weight a regulatory body would want to give to that sort of thing, I don't know.

Q. Well, then, your discussion of these principles and your application of them would be limited to a statement of what you think the books shows the original cost and you are not intending by this statement that these principles are recommended by you to be applied in the rate fixing process the Commission will exercise?

A. I am recommending that the original cost is to be considered by the regulatory body in computing the rate base be arrived at in accordance with the principles that I set forth here.

Q. That is, however, without reference to whether the regulatory body might want to determine cost of property by an inventory method or in any other method that might be advised?

A. It seems to me the regulatory body is free to go in

any direction it chooses. Of course I wouldn't give my sanction to it as an accountant—

Q. I take it, then, that your final position is the only original cost or the only cost figures on capital account of this company, the plant account, there should be considered are those as found on the books as adjusted and that you should not go out and determine actual cost of the property in any other way; that is, by taking an inventory and finding out what the actual cost is?

A. I believe you stated the books as adjusted?

Q. Yes. I will put it this way: It is the accurate book cost so you don't need to quibble about whether it was kept by the company or adjusted—

A. I believe that is the only satisfactory manner of computing original cost, to compute it upon the results shown on the books with due recognition to accounting errors and I don't think the inventory is worth the paper it is written on.

Q. And you still stick to that opinion, notwithstanding the fact that we might have an original and different cost of these two companies here depending upon how the books were kept?

A. Yes, so long as either method of accounting was within acceptable principles of accounting at the time and consistently followed.

Q. That would mean in instances of two companies who had followed consistently principles that were slightly different with respect to what should be capitalized and what should be expensed, then you would have for those two companies a different original cost to be submitted to the Commission for consideration in the determination of rates?

A. Yes, there would be a difference and of course that difference would tend to be offset by the difference in the depreciation and depletion reserve at any moment of time, and the nearer you approach the expiration of the property the less would be the difference.

Q. That is because after a long period of time you might have accrued annually through depreciation what you would have charged to capital in the first instance?

A. Precisely.

(Vol. LXXXXI, pp. 13927-13971.)

[Testimony of WILLIAM A. LUSK]

Q. Now, with reference to Item 8 on Statement 2, which is headed "Adjustment for Items Charged to Expense which are Properly Capital," are those items the ones that are covered by this memorandum which is referred to on Page 3 of the exhibit, being entitled "Items Charged to Expense on the books of the Colorado Interstate Gas Company during the period 1930 to 1939, inclusive, which should have been capitalized?

A. Yes, sir.

Q. You understand that that memorandum was furnished to the staff of the Federal Power Commission?

A. That was furnished in April of this year.

Q. Will you tell us just what you did in working out these adjustments as shown opposite Item 8 on Statement 2?

A. Well, I began with all of the maintenance and operation expense of the Colorado Interstate Gas Company. I had the assistance of practically six men in the Colorado Springs office of the Colorado Interstate Gas Company, and they assisted me, working there after hours. We set a program of four hours at night—from five o'clock until nine o'clock—and we worked approximately four weeks in putting together the data that is shown in that 400-page volume submitted to the Federal Power Commission, the summaries of which is shown in Line 8 of this exhibit, Statement 2. In general they represent maintenance and operating expense items which, according to my classification, should not have been expense but should have been capitalized.

Q. I take it that your investigation resulted in your finding only this amount of $284,806 as of the end of 1939?

A. That is accumulative, that $284,806. It represents the accumulation of $17,000 first shown in 1930 with accumulative additions each year.

Q. What were those items?

A. (Pause.)

Q. I don't mean for you to describe each one in detail, but can you give a general heading of them?

A. In general it consisted of the cathodic protection of the main line and laterals up to 1939. Subsequent to 1939 the expense of that particular operation is being capitalized.

Another large item is the rock-weighting of the main line itself. In other words, it was the placing of rock rip rap over the back fill of the pipe line to insure the line remaining down. From my own limited experience I have seen lots of lines under high pressures float.

Q. Is that when washouts occur?

A. That is when washouts occur, yes, sir, principally.

Q. And when you speak of the weighting, is that the placing of material on top of the pipe line?

A. The placing of rock on top of the back of it.

The Trial Examiner: That cost, Mr. Lusk, was charged to operating expense initially?

The Witness: Yes, sir.

By Mr. Dougherty:

Q. What other headings?

A. There is another item which amounts to quite a substantial sum and that is the rip rap and reinforcement of stream crossings to prevent soil erosion and washout of lines going across the streams. That has also been charged to expenses.

Q. Upon what basis or rule do you determine about these items that you have mentioned that they should properly have been capitalized and not charged to expense?

A. My reason principally behind that is that they are preventive and not corrective measures, and therefore should not have been expensed.

Q. Did you have anything to do with the setting up of accounts of this company in the beginning in 1927 and 1928?

A. No, sir.

Q. Do you know whether or not any uniform system of accounts was used as a guide in the setting up of the books?

A. The companies, the Colorado Interstate Gas Company, used the Pennsylvania code in setting up their accounts.

Q. That is the code of accounts as in effect in the State of Pennsylvania for the public utilities for that time?

A. Not now. That was in effect in 1929.

Q. Was it in effect in 1927 and 1928?

A. I wouldn't say.

Q. Was the date 1920? Was that when it was adopted?
A. That was when the code itself became effective.

Mr. Dougherty: I am going to ask you not to answer the questions until I finish them. The reporter can't take both of us down at the same time.

The Trial Examiner: All that system of accounts, that was prescribed by the Pennsylvania Public Utilities Commission?

The Witness: Yes, sir.

By Mr. Dougherty:

Q. That is for Public Utilities in that State?
A. Companies within that state, yes.
Q. Are you able to tell whether or not under that code of accounts these various adjustments for various items which you have found and charged to expense should properly be charged to capital?
A. May I refer to the code?
Q. Yes.
A. On Page 44 of the uniform classification of accounts for natural gas companies effective January 1, 1920, and issued by the Public Service Commission of the Commonwealth of Pennsylvania, in the paragraph under "Betterment," it states:

"Betterments are physical changes in structures or equipment, the object of which is to make the structures or equipment affected more useful or of greater capacity than they were at the time of their original installation or acquisition. The utility shall charge as a betterment to the appropriate sub-account of "101. Fixed capital installed since December 31, 1919" account that portion of the cost of such changes as will, when added to the original cost of the structures or equipment bettered, give the cost of the structures or equipment in their bettered condition."

Q. Under that particular provision which you have just read, is it your opinion that these adjusted items should have been charged to capital instead of expense?
A. I think so, yes. From my experience of long transmission pipe lines I am of the opinion they should have been capitalized and not have been charged under expense.

Q. Is it your opinion that whoever had to do with that in the company was in error in so charging it to expense?

A. I do.

Q. Now, with respect to Item 9 on Statement 2, will you give us the explanation of how those adjustments were arrived at?

A. Taking the net property addition year by year, I increased, or I included in Item 10 rather, six and one-half per cent for corporate engineering and other administrative costs.

Q. Is that 10 or 9?

A. 9. It is Line 9.

I included six and a half per cent for engineering corporate and other administrative costs on all net property additions, year by year and in addition to the six and a half per cent I included one and a half per cent for interest on those net fixed capital additions. The six and a half per cent applies to the item "Expense" which should have been capitalized as shown by Line 8, but the one and a half per cent interest was not computed on the expense item.

Q. What was it computed on?

A. The interest was computed solely on the items of fixed capital added during the year.

Q. And those are the one that are shown against Items 1 to 6?

A. That is right. They are incorporated in the total amounts shown by Item 1 to 6 inclusive.

Q. Were those interest items charged on the company's books?

A. No, sir.

Q. Why did you include them in this statement?

A. The Federal Power Commission code of accounts allows a nominal or reasonable amount, as they put it, of interest to be added to fixed capital when paid out of the company's own funds.

Q. Well, is that interest during construction?

A. As interest during construction.

Q. Are the computations you made in accordance with the provision of the Federal Power Commission code?

A. That is what I followed.

Q. I am speaking now with respect to the interest.

A. Yes, sir.

The Trial Examiner: The practice of the company during these years was to add interest during construction?

The Witness: No, sir, neither company had added interest during construction since the days of the initial construction period in 1928 regardless of the amount of additions and betterments they have put in.

(Vol. IX, pp. 1275-1281.)

* * * * *

Q. When did you first discover that some of these items had been expensed which should have been capitalized?

A. I was going through the maintenance item.

Q. What day?

A. What day?

Q. Yes.

A. Well, I commenced that particular job about—it was in the latter part of last year sometime or early this year.

Q. That is the first time that Ford, Bacon & Davis, Inc. had ever looked at its accounts, is that right?

A. Yes, sir. I can safely say that that is the first time Ford, Bacon & Davis, Inc., has seen those accounts since the initial construction.

Q. In making these adjustments in regard to these expenses, you say—did you take into consideration the Federal Power Commission uniform system of accounts?

A. I think I can say I followed that.

Q. What item did you follow?

A. Do you mind if I quote it, Mr. March?

Q. I would be glad to have you quote it.

A. It is the Federal Power Communications uniform system of accounts.

The Trial Examiner: For natural gas companies?

The Witness: Yes.

By Mr. March:

Q. Will you please refer to the page number? It is Page 49, Article 12. It states:

"Additions and retirements of gas plant." It is subdivision (3) under Provision B. It states:

"When a minor item of depreciable property is replaced—"

Mr. Lange: Mr. Lusk, is that from the tentative draft or is that of the final draft?

The Witness: No, sir, it is effective January 1, 1940, entitled "Federal Power Commission—Uniform System of Accounts — Natural Gas Company — Effective January 1, 1940."

By Mr. March:

Q. That is your gospel insofar as these adjustments you have made are concerned?

A. I think so. I think I can recall the quotation from Page 49 as I just mentioned it, and the Pennsylvania code was following, and I think I am on reasonably solid ground when I replaced these items.

Q. Read it.

A. Continuing to read it—

Q. Certainly. Read it.

A. "When a minor item of depreciable property is replaced independently of the retirement unit of which it is a part, the cost of replacement shall be charged to the maintenance account appropriate for the item, except that if the replacement effects a substantial betterment (the primary aim of which is to make the property affected more useful, more efficient, of greater durability, or of greater capacity), the excess cost of the replacement over the estimated cost at current prices of replacing without betterment shall be charged to the appropriate gas plant account."

Q. Does that say maintenance, cathodic protection, washout expense, protection against erosion shall be capitalized and not expensed?

A. When you mentioned maintenance expense, that was the account to which any of those items were charged but cathodic protection is definitely a betterment of a pipe line in that it arrests corrosion.

Washout control is definitely a betterment of a pipe line because it prevents the erosion of land and the consequent washing out and floating of a particular pipe line. Rock-weighting of the line is definitely a betterment because it also tends to lessen the effect of a washout.

Q. It is also a preventive, isn't it?

A. They are all preventive measures.

Q. I thought you said they were corrective—

A. I didn't say that. I said that they are preventive measures and not corrective measures. The definition of preventive measures are capital but corrective measures are properly expense.

Q. You would say that the quotations you have just read requires you to place such expense in the capital account?

A. I should think so, yes. I wouldn't say it would place such expense items—I would say it would place such expenditures for that particular work in capital.

Q. You don't really think that says that, do you? You just construe it to read that, don't you?

A. No, it says that right here (indicating.)

Q. By the way—

A. There certainly can be no misunderstanding if the use of the words "except that if the replacement effects a substantial betterment—" is considered. It is not a replacement but something that does effect a substantial betterment—

Q. Rock-weighting of a line is frequently a replacement?

A. It is frequently a replacement.

Q. Frequently a replacement?

A. When it is washed out.

Q. You have the washout included?

A. They aren't rock-weighted when the washouts occur.

Q. Did you have washouts after the line was rock-weighted?

A. There might be washouts after that occurred.

Q. That should have been expense, shouldn't it?

A. It should have been expense, and the chances are when I looked through the maintenance items when I saw anything that had the slightest inkling of replacements I did not include it in this particular computation.

Q. Where did you include it?

A. I left it in expense.

Q. Just how is it when you went through all of these vouchers you found a great many items which were expensed that should have been capitalized and did not find any items capitalized that should have been expensed?

A. I don't know as that is very difficult to define. Items that are capitalized that should have been expensed are because the chances are 99-to-1 that the companies are using the reverse process.

Q. Why would they?

A. In expenses, instead of capitalizing?

Q. Yes, why is that?

A. In the first place, if it is a border line of expense, why it is expensed.

Q. You didn't find items which were capitalized that should have been expensed, is that right?

A. I went through the expensed items—I can anticipate what you are driving at, Mr. March—for the years 1938 and 1939—you mean the write-off of certain items of fixed capital charged to expense?

Q. I mean just exactly what I asked.

A. A few items I found, yes.

Q. Did you put them over—

A. That may be the subject of another exhibit. It has no bearing on this.

Q. Did you or did you not?

A. Yes, I found items there.

Q. Did you put them over into the capital account?

A. I took them out of the expense account.

Q. Did you find anything that you took out of the capital account and put in the expense account?

A. No.

Q. These companies naturally would put all they could in the expense account, is that right?

A. Oh, I don't know. They could use their—

Q. Wouldn't it cut down on the income tax?

A. It might if the income tax examiner didn't catch it.

Q. It would?

A. But it would only be a stop gap. The Internal Revenue man would come along and they would have to replace it; pay the deficiency plus interest.

Q. Do you think that should be done here for all of this as improper expense, some $400,000, and you should be paying income tax on—

A. If you asked me to do it I would say yes.

Q. Do you think the whole procedure was improper and that they should have been in the capital accounts to begin with?

A. I don't think the use of the word "improper" is appropriate. I would say that it was just a slight error on the part of the clerks that handle the particular—

Q. How much do you figure this slight error meant in dollars and cents as far as income tax was concerned?

A. In 1939 the income tax on $17,000 wouldn't have been very much for the tax itself.

Q. I am talking not about $17,000, but $284,000.

A. Mr. Mareh—

Q. To be exact, $255,000—

A. That is accumulative to—

Q. Yes.

A. You have to pick out the individual years if you are talking about income tax. You can't pyramid these figures for tax—

Q. But you can do it for rate purposes?

A. They are accumulative. Part of them are pyramided year by year. They are entitled to be in there for accumulative value or accumulative dollars.

Q. I presume you have read the Federal Power Commission Uniform System of Accounts in toto?

A. Oh, yes.

Q. Did you read Page 37?

A. Yes.

Q. I will read, beginning with B on Page 36. It states:

"B. The cost to the utility of its gas plant shall be ascertained by analysis of the utilities records. In ascertaining the cost it is not intended that any correction need be made for depreciation, depletion, or amortization applicable to operating units or systems previously acquired, whether or not such depreciation, depletion, or amortization was recorded in the books of the accounting utility. It is likewise not intended that adjustments shall be made to record in gas plant accounts amounts previously charged to operating expenses in accordance with the uniform system of accounts in effect at the time or in accordance with the discretion of management as exercised under such uniform system of accounts."

A. Yes, I am familiar with that.

Q. I thought you said you abided by the Uniform System of Accounts?

A. I did. They don't tell you not to do it. They express the intent.

Q. They expressly say that it is likewise not intended that the adjustment shall be made to record in gas plant accounts—

A. They don't tell you it can't be done.

Q. They tell you they don't want you to do it, don't they?

A. That is right. If I told you I wanted you to jump off of the roof you wouldn't have to do it. (Laughter.)

Furthermore, Mr. March—

Q. If you are stating here that you are abiding by the Uniform System of Accounts as Promulgated by the Federal Power Commission in changing these items of expense to capital accounts, you are making an erroneous statement, aren't you?

A. No, I am not. Page 49 specifically states "betterment." That is one support for it. The Pennsylvania code of 1929 is another support for it.

Q. Yes, but you know and I know, and we all know, that according to this language that it absolutely says that such shall not be done after the accounts have been set up for a good many years, don't you?

A. I don't look at it that way. If the Federal Power Commission wanted it that way, they would have placed much stronger language on it than saying, "intended."

Q. What would they have said?

A. They would have said, "It is definitely out."

Q. What if they had said, "It is definitely out"? What would you have done?

A. I would probably have left them out.

Q. You probably would have left them out?

A. Yes. I would have to think a long while before I would leave them out.

Q. You don't like to abide by the intention of the Federal Power Commission Uniform System of Accounts, do you? You want them to knock you over the head with it, don't you?

A. No, whatever the word "intent" is, I don't pay much attention to it.

Q. You can do as your want to?

A. Do as I want to.

Q. Do you want to modify your statement to this effect: That you did not abide by the Federal Power Commission's Uniform System of Accounts when you changed from expense to capital accounts these items in all cases where the Federal Power Commission and the uniform system of accounts said or used the term "intended"?

A. No, I think my answer will stand because I am on safe ground on Page 49.

Q. Don't you think that Page 37 has to be read with Page 49?

A. There is still a great deal of confusion as to the interpretation of Page 37 and 49.

Q. Doesn't this language on Page 37 describe just exactly what you have done?

A. That is all right, and in the continuity Page 59 contradicts it somewhat then.

The Trial Examiner: Page 59 or 49?

The Witness: Page 49. Excuse me.

By Mr. March:

Q. You don't know whether it contradicts it or not?

A. I think it does. My interpretation of the language on both pages and on both sections—

Q. Who made that determination with you?

A. Nobody did. That is my own determination.

Q. Are you familiar with the Rules and Regulations of the Federal Power Commission and decisions of the Federal Power Commission construing this Uniform System of Accounts?

A. No, sir. I have read the Natural Gas Act and have gone through this particular Uniform System of Accounts, effective January 1, 1940, and I stopped there.

Q. What is the effect—so therefore you are not familiar with these interpretations of this Uniform System of Accounts?—

A. Not unless—

Q. —of the Federal Power Commission?

A. Have you finished the question?

Q. Yes.

A. Please read that question.

(The question referred to was read by the reporter, as set forth above.)

The Witness: Not unless included in the Federal Power Commission's Uniform System of Accounts effective January 1, 1940—

(Vol. IX, pp. 1299-1310.)

* * * * *

Q. I will ask the witness if he is familiar with this when I get through.

It is on Page 9. It states:

"Instruction 2-B, Utility Plant Accounts is as follows:

"'It is likewise not intended that adjustment shall be made to record in utility plant accounts amounts previously charged to operating expenses in accordance with the uniform system of accounts in effect at the time or in accordance with the discretion of the management as exercised under such uniform system of accounts.'

"Restatement of costs based upon revised allocations of joint expenses, (expenses applicable to construction and operations) cannot be permitted. Two self-serving, self-impeachments must be guarded against: 'Our records are in such bad shape that we cannot determine the cost of our property from our books and records' and 'we have not in the past properly distinguished between construction and operations and construction and maintenance'."

It states further: "The sentence of instruction 2-B quoted above sets forth the principle underlying the accounting reclassification required of utilities by the system of accounts. The intent of the reclassification is to reclassify the dollars in the plant account as of the effective date of the system of accounts to the new accounts."

I will end the paragraph here to make it complete.

It states: "The process is a reclassification and not a reaccounting. The utilities are required under the system of accounts to reclassify the dollars in their plant accounts as of the effective date thereof, and not to compute a hypothetical original cost of property constructed by them."

I will ask you if you have read that statement?

A. No, sir, I haven't.

I might add that you say that is from the National Association of Railroad and Utility Commissioners?

(Vol. IX, pp. 1312-1313.)

* * * * *

Q. Did you take into consideration all of the State Com-

mission's procedures when you determined to put these items in the capital account?

A. I think I am perfectly justified in placing those items in the capital account based upon the Code of Accounts followed by the company, and it is further supported by Page 49 of the Federal Power Commission Code of Accounts effective January 1, 1940. I think I am perfectly sound—

Q. And on Page 37—

A. Page 37, I think, is a contradictory statement and it doesn't say it should not be done. It says that it is the intention—the intention is thus and so, but it doesn't say just what you should exclude or what you should include.

Q. If this was in an expense account, how would the company get their money back out of this expense?

A. How would the company get its money back out of this expense?

Q. Yes.

A. Well, reverting to the company, it flows to the company through the gas rate, for the sale of gas—

Q. Would this be a profit—would this be in the profit and loss?

A. That expense item is in the profit and loss now and has been—if they treated it as an expense item—

Q. They have already made their money out of it once?

A. That is right.

Q. And you want them to make the money out of it again?

A. I didn't say that.

Q. What are you going to do—

A. I wouldn't say they made money out of the particular item.

Q. You don't?

A. I don't know. No one else knows if they have received a fair return.

Q. No one knows if he has received a fair return?

A. No.

Q. You don't know whether they have enjoyed a return at all, is that right?

A. No.

Q. You haven't made sufficient examination of the books, records, and accounts of this company to ascertain it?

A. I have made sufficient examinations from that view-

point, but I am speaking now of sufficient return on the value of the property.

Q. Oh, yes.

What return would you allow them on the value of the property?

(Vol. IX, pp. 1315-1316.)

* * * * *

Q. Mr. Lusk, I refer you back to Statement 2 of Exhibit 67.

A. Yes, sir.

Q. I refer you specifically to these items which you have charged to the capital account which was formerly expense.

A. Yes, sir.

Q. Did you see the vouchers in regard to those items?

A. Yes, sir. I reviewed and inspected every voucher.

Q. The tickets?

A. No, not all the tickets.

Q. Did you try to read any of those tickets?

A. Sir?

Q. Did you try to read any of those tickets?

A. I had quite a difficult time in reading some of them.

Q. You can't tell just exactly what services were performed by reason of the tickets, could you?

A. I think we can, yes, sir.

Q. You can't read them, can you?

A. Read them?

Q. You can't read them, can you?

A. I said that I had a little difficulty in reading some of them.

Q. Could you read all of them?

A. Practically all of them except the few I had the difficulty with reading.

Q. Just how did you have difficulty in reading those few? In what respect was it?

A. In many respects the time charged was not very clear. The item of maintenance was not very clear. I believe I mentioned yesterday in my testimony where there was any doubt in regard to the words "replacement" or "repair"—where they appeared in any of those tickets I didn't consider them.

Q. In other words, you didn't consider that there was any doubt at all?

A. No, I don't believe I did.

Q. And you didn't attempt to read all those tickets yourself?

A. No, sir.

Q. It would be impossible?

A. It would be a physical impossibility for one man to read the thousands of labor tickets.

Q. What were your instructions to your subordinates in regard to that?

A. My instructions to my subordinates were to take off from the time tickets every item that read particularly cathodic protection, if any, rock-weighting the main line, hauling shale for the main line, building of bridges, and revetments, and rip rapping on the main line, and all such items that appear to make up Item 8.

Q. And if there was any doubt in their minds as to just what the ticket did say in that regard they were to ignore it?

A. No, they brought the questions to me and I made the decision.

Q. You made the decision?

A. Yes, sir.

Q. Were large sums involved in those decisions?

A. I would say there was a substantial sum—if I took every time ticket it would be substantially in excess of the amount shown here (indicating Exhibit No. 67.)

Q. What do you mean, if you had that noted?

A. If I just simply adopted the policy of taking every time ticket that had something on it that I or someone particularly — particularly myself — that should be capital and include it in this, it would be substantially in excess of that amount.

Q. How much in excess?

A. I haven't any idea.

Q. You were trying to make this figure as small as possible?

A. No, sir, I was pursuing a definite line.

Q. All right.

Now I want you to refer back to Items 1 to Item 6 on Statement 2. You distributed there, I believe, $295,000 of undistributed items to these functional groups?

A. That is right.

Q. Well, weren't some of the functional groups already retired?

A. If they were—

Q. Answer the question directly.

A. Yes, they were in small parts, yes, sir.

Q. What did you do in a case like that?

A. There was no change made in that particular item for the small portion of property retired.

Q. In other words, you are going to let the rate payers pay twice for that?

A. No, I wouldn't say that, because down in Line 9 where I make the adjustment for general construction costs applicable to net property additions and capital items expensed, that item is taken care of. The general cost is distributed on the net, not on the gross.

Q. How much does this amount to? How much in dollars and cents, these function units that have been retired?

A. I couldn't tell you offhand, Mr. March.

Q. Can you get that information for us?

A. I can look it up, yes.

(Vol. X, pp. 1342-1346.)

* * * * *

The Trial Examiner: Mr. Lusk, will you turn to Statement 2 of Exhibit No. 67 for identification?

The Witness: Yes, sir.

The Trial Examiner: On Line 9 you show certain amounts under the caption "Adjustment for General Construction Costs Applicable to Net Property Additions and Capital Items Expensed." That is an accumulative figure up to $155,244 that accumulated each year?

The Witness: Yes, sir.

The Trial Examiner: Mr. Lusk, are you referring there to administrative overhead?

The Witness: Yes, sir.

The Trial Examiner: Is there a provision in the Pennsylvania Code that you had here yesterday that provides for the charging or the allocation of proportionate amounts of administrative expense to capital?

The Witness: In the Pennsylvania Code there is a provision for general administrative expense to be capitalized. It doesn't say that under the specific accounts that portions

shall be distributed to the individual accounts but there is under the Pennsylvania Code a capital account for undistributed or general construction cost.

The Trial Examiner: I wonder if you would turn to that and read it for the record?

The Witness: Yes, sir.

On Page 48 of the Pennsylvania Code of Accounts, dated or effective January 1, 1920, and continuing on Page 49, Page 48 being under the general heading "Undistributed Fixed Capital Accounts."

Account 200 is Organization; Account 201 is Franchises; Account 202, Patent Rights and Licenses; and Account 203 is Other Undistributed Fixed Capital.

Account 203 states: "Charge to this account the cost of all other undistributed fixed capital not provided for elsewhere.

"The record supporting the entries to this account shall be so kept that the utility can furnish information as to the kind of each item of fixed capital charged to this account, the principal from whom it was acquired and the agents who represented him; also the term of the life of each item, or if it is not known an estimate thereof and the facts upon which such estimate was based."

Account 203 is an overall account. In the accounts of the Colorado Interstate Gas Company they have an account 203 Other Undistributed Fixed Capital.

The Trial Examiner: Is that the only specific provision in that system of accounts for the allocation of administrative overhead?

The Witness: No, sir. On Page 59 under "Undistributed Construction Expenditure Accounts" there are the following:

Account 258, Engineering and Superintendence during construction; Account 259, General Officers' and Clerks' Salaries during construction; Account 260, General Officers' and Clerks' Expenses during construction; Account No. 261, Office Supplies and Expenses during construction; Account 262, Law Expenditures during construction; Account 263,

Injuries and Damages during construction; Account 264, Insurance During Construction; Account 265, Taxes during construction; Account 266 Interest during construction; and Account 267, Other Expenditures during construction.

They are all provided in the capital accounts of the Pennsylvania Code of 1920.

The Trial Examiner: Are they somewhat similar to the present provisions of the Uniform System of Accounts prescribed by the Federal Power Commission?

The Witness: Yes, sir.

The Trial Examiner: Do they vary to any great extent?

The Witness: I couldn't say so. I haven't made a great comparison, but generally they are the same.

The Trial Examiner: Item 12 on Statement 1 was reached in the same identical manner, was it not, with the exception of the interest rate?

The Witness: No, sir. In the case of the Canadian River Gas Company I added three and a half per cent allowance; in the case of the Interstate Gas Company I added a six and a half per cent allowance.

The Trial Examiner: Did you add a three and a half per cent allowance for administrative expenses alone in the case of the Canadian River?

The Witness: In the case of the Canadian River.

The Trial Examiner: And what appears for Colorado Interstate?

The Witness: One per cent for interest.

The Trial Examiner: And to Colorado Interstate you used six and a half per cent which included one and a half per cent interest—

The Witness: No, exclusive of the one and a half. One and a half and six and a half.

The Trial Examiner: I am reading from Page 1280 of yesterday's record. It—did you not testify here—"I included six and a half per cent for engineering corporate and other administrative costs on all net property additions—" —I see there what you mean.

The Witness: Yes.

(Vol. X, pp. 1355-1359.)

* * * * *

Q. Mr. Lusk, there was considerable discussion yesterday of the principle followed by you and what you did in connection with the adjustments made of items that had previously been charged to expense and which in your compilation of the original costs, as shown in Exhibit No. 67, you capitalized. Reference was made to a provision of the newly adopted Uniform System of Accounts for natural gas companies by the Federal Power Commission and which became effective January 1, 1940. On Page 37, which is under Section 2, bearing the *hearing* "Classification of Gas Plant the Effective Date of System of Accounts," there is a Paragraph B that deals with the matter of setting up the accounts in accordance with this new classification. Do you understand that the accounts of the Natural Gas Companies that are subject to the Natural Gas Act are expected to be reclassified in accordance with the provisions of this adopted code of accounts?

A. Yes, sir.

Q. And the account numbers as contained herein would be assigned on the books?

A. Yes, sir.

Q. Now, in the first sentence it says: "The cost to the utility of this gas plant shall be ascertained by analysis of the utility's records," and that ends that sentence.

Did you analyze the records of both Canadian River and Colorado Interstate Gas Company in making your statement of original costs?

A. Yes, sir.

Q. Now, the second sentence deals with depreciation and amortization. Was there any question respecting any of those items dealt with in this exhibit?

A. No, sir.

Q. Now, the third sentence which attention was called to reads this way:

"It is likewise not intended that adjustments shall be made regarding gas plant accounts, amounts previously charged to operating expenses in accordance with the uniform system of accounts in effect at the time or in accord-

ance with the discretion of the management exercised under such uniform system of accounts."

That ends the quotation.

Now I want to discuss the problem with you under the assumption that that is *manitory* in the sense that it says that no adjustment will be made in making this reclassification to record in the gas plant accounts the amounts previously charged to operating expenses that are stated here. What is your understanding as to whether that would mean that under no circumstances are any adjustments to be made of interest that at one time had been put into the expense account?

A. It is my understanding that the Federal Power Commission there doesn't prohibit the replacement of items previously charged to expenses.

Q. That's what I'm getting at. It doesn't make a blanket prohibition against—

Mr. March: I object to that. It's a legal question, a legal determination and the witness construing this uniform system of accounts from a legal standpoint is improper

The Trial Examiner: Well, from the standpoint of legal construction I think perhaps that's right. The Examiner is rather interested, Mr. March, in Mr. Lusk's interpretation of the system of accounts. Mr. Lusk is an expert accountant.

By Mr. Dougherty:

Q. Now, it further reads that the adjustments that are not to be made are these:

"Those amounts previously charged to operating expenses in accordance with the uniform system of accounts in effect at the time."

Now, I'll ask you if—assuming that certain charges had been made to expense that were directly contrary to the provisions of some uniform system of accounting—it is your interpretation or understanding of this provision that no adjustments are to be made where such charges had been made directly contrary to such systems.

A. My interpretation of that provision is that where a

company operating under a code of accounts like the Colorado Interstate Gas Company and the Canadian River Gas Company under the old Pennsylvania Code, that they would be perfectly justified in reversing those expense items because under that particular Pennsylvania Code the items that were expensed in my opinion were accounting errors.

Q. Well, now, I want to get you—I am asking you these questions as to interpretation without direct reference as to what you did, as yet, Mr. Lusk, and I want to put a hypothetical question to you and—first, I'll ask you this:

Does the Pennsylvania Code of Accounts contain any accounts under their gas plant group for compressors?

A. Yes, sir.

Q. And where does that Code of Accounts provide that compressors shall be charged?

A. Fixed capital.

Q. Will you give us what account number that is?

A. I am reading from Statement 2 of Exhibit 67, "Compressing Stations: Accounts 218 — land; 219 — leaseholds; 221—Structures; 223 — Structures; 224 — Equipment; 227—Equipment."

They are the Codes of Accounts listed under the Pennsylvania Code and which the Colorado Interstate Gas Company and the Canadian followed.

Q. Now, let's assume that all of the compressor stations and property of the Colorado Interstate Gas Company had been expensed on the books; that is, charged to operating expenses rather than charged into capital in the various years in which these expenditures were made.

Would it be your opinion that entries so made were contrary to the provisions of the Pennsylvania Code?

A. They most decidedly would be.

Q. And in making a re-classification or re-statement of gas companies' accounts in accordance with the Federal Power Commission Code, would it be your understanding that you should make those adjustments and take those items out of expense and put them into the proper capital account item?

A. Yes, sir.

Q. Now, you used the term yesterday at different times of, I think, "Border Line Items," or cases?

A. I did.

Q. Are those cases in which some discretion of management could be exercised as to whether they would go on one side or the other; that is, either into expense or capital?

A. I think that is the proper term, yes, sir.

Q. Now, the items that you did actually investigate and the adjustments which you have made, state whether or not in your opinion, when made, were they or were they not contrary to the rules provided in the Pennsylvania Code of Accounts which this company was then following?

A. I think they were a direct violation of the specific following of the Pennsylvania Code of Accounts, the Code of Accounts that both companies use now and have been using since 1928.

Q. And you put those in the same general class as the illustration I mention; that is, compressor stations?

A. Yes, sir.

Mr. Dougherty: I think that is all.

Mr. March: I have a few other questions here.

The Trial Examiner: Mr. March, may I ask a question just before you get to it?

Mr. March: Yes, sir.

The Trial Examiner: Mr. Eusk, this matter of charging these large items such as your cathodic improvement or treatment of the lines, rather, and your rock-weighting and rip rapping, would you say that was a border line incidence?

The Witness: No, sir, decidedly not.

The Trial Examiner: Wherein discretion would be exercised by the accounting officers?

The Witness: No, sir.

The Trial Examiner: Wouldn't those charges conform to established policy of the company?

The Witness: No, sir. Those particular items are strictly betterment items to improve the pipe line.

The Trial Examiner: What I mean, though, the initial charges were made to operating expense?

The Witness: That's right.

The Trial Examiner: And not to capital outlay?

The Witness: That's correct.

The Trial Examiner: Well, that is an item of rather major importance, is it not, wherein it would be rather difficult to make an accounting error in the entrance of those items on the books of the company?

The Witness: Well, the way those particular accounts were handled, if the Pennsylvania Code were strictly followed, they should be capital.

The Trial Examiner: Your Pennsylvania Code lays down certain general rules, does it not, and then beyond those rules as an accounting matter you have a wide area of discretion; isn't that true?

The Witness: That's true.

The Trial Examiner: And the fact that these items were directly charged to operating expense wouldn't necessarily conflict with your Pennsylvania Code, would it?

The Witness: I think they would, yes, sir.

The Trial Examiner: Mr. March, you may proceed.

Recross Examination.

By Mr. March:

Q. So you have set up the accounts of the Canadian River Gas Company and the Colorado Interstate Gas Company in compliance with the uniform system of accounts of the Federal Power Commission?

A. No, I haven't.

Q. They have never been set up in compliance with the uniform system of accounts of the Federal Power Commission, have they?

A. That's quite right. They have not.

Q. Why haven't they?

A. Well, I couldn't answer that question. That's a legal matter.

Q. You just got busy and set up a few of them here for this rate case in this exhibit, is that right?

A. No, I wouldn't say that. In fact, I don't do anything piecemeal. I go the whole way.

Q. And your company has made no attempt to set up its accounts according to the uniform system of accounts of the Federal Power Commission?

A. They may have in some of the other exhibits that may be presented later.

Q. I'm talking about the company as a whole, the accounts of the two companies.

A. They haven't set those accounts up in accordance with the Federal Power Commission uniform system of accounts as yet.

Q. In the preparation of this exhibit you decided that it would be a nice thing if you could put this $400,000 from expenses into capital accounts under the guise of compliance with the uniform system of accounts of the Federal Power Commission, is that it?

A. No, sir. I strictly followed the Pennsylvania Code, which they are operating under now.

Q. Why do you refer here so much to the Federal Power Commission?

A. I didn't.

Mr. Dougherty: He didn't. I did.

By Mr. March:

Q. Yes, but you quote with a great deal of glee from the Code of the Federal Power Commission as requiring that and you give that as a reason for your so changing it from expense to capital structure.

A. That isn't the reason. The reason is the Pennsylvania Code.

Q. Oh, the Pennsylvania Code was changed, is that right?

A. No, sir; No, sir, but the items that are capitalized are charged to expense in the Pennsylvania Code.

Q. They have changed the Pennsylvania Code recently, haven't they?

A. Recently, yes.

Q. And it corresponds very close to the Federal Power Commission, doesn't it?

A. I understand it does.

Q. However, this wasn't in conflict with the Pennsylvania Code until the change was made?

A. That's right.

Q. Do you know when they changed the code—I mean the uniform system of accounts?

A. No, I don't recall.

Q. Have you ever seen the uniform system of accounts of the Pennsylvania Code now in effect?

A. No, I don't think I have.

Q. How do you know they changed, then?

A. I know the State of Pennsylvania and West Virginia have adopted a new code similar to the one that has been issued by the Federal Power Commission.

(Vol. X, pp. 1366-1376.)

As to the cost of necessary additions to Colorado Interstate's portion of the Denver Line, 1940 to 1947 inclusive, as estimated, the company introduced Exhibit 133 by its witness Lusk. This exhibit also included cost of additions to Canadian River's portion of the line, which is dealt with in its brief. In this Exhibit 133, the witness Lusk priced out and totaled up the cost of such necessary additional facilities based on estimates furnished him either by the engineer Rhodes, or Hendee, general manager (Vol. XXXIII, p. 4253 to 4285). The costs of the added facilities were largely based on actual cost of the Dalhart Compressor Station completed in 1940 (Vol. VIII, p. 1084), and on estimates furnished by Mr. R. W. Hendee, general manager (Vol. XXXIII, pp. 4255, 4256). Lusk stated that: "Other than for changes made necessary by the required new facilities, there were no allowances for the cost of incidental facilities, commonly provided in the development of a property." (Exhibit 133, p. 1). His exhibit sets forth the cost of the estimated necessary additional facilities by or in accordance with the estimate as to when they would be required. The total amount of such additions through 1947, he summarized as follows: Extension to Canyon Compressor Station, $73,472; extension to Devine Compressor Station, $75,000; new Colorado Springs Compressor Station, $177,590. These three items added to its original cost at December 31, 1939 of $12,081,142 would result in an original cost of the physical properties of Colorado Interstate's portion of the Denver Line at December 31, 1947 of $12,407,204. Ex. 133.

COLORADO INTERSTATE GAS COMPANY

STATEMENT OF INCOME AND SURPLUS ACCOUNTS, AS RECLASSIFIED (SEE FOOTNOTE), FOR THE NINE MONTHS ENDED SEPTEMBER 30, 1940 AND 1939 AND COMPARISON

Line No.	Particulars	Nine Months Ended September 30 1940 Amount	1940 Cents per MCF	1939 Amount	1939 Cents per MCF	Increase or (Decrease) Amount	Increase or (Decrease) Cents per MCF
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	MCF Purchased for Resale (at 16.4 lbs. per square inch absolute)	26,114,075		26,000,448		113,627	
	Utility Income:						
2	Operating Revenues	$4,209,662.02	16.12	$4,005,605.44	15.41	$204,056.58	.71
	Operating revenue deductions						
3	Gas purchased for resale	$1,385,220.72	5.30	$1,312,490.28	5.05	$ 72,730.44	.25
4	Operating expenses (Schedule No. 2)	331,252.23	1.27	313,354.19	1.21	17,898.04	.06
5	Depreciation	322,516.29	1.24	322,454.33	1.24	61.96	
6	Amortization	98,692.42	.38	98,692.42	.38		
7	Taxes	681,577.84	2.61	468,986.67	1.80	212,591.17	.81
8	Total operating revenue deductions	$2,819,219.50	10.80	$2,515,977.89	9.68	$303,241.61	1.12
9	Net utility income	$1,390,442.52	5.32	$1,489,627.55	5.73	$(99,185.03)	(.41)
	Other Income:						
10	Interest	$ 339,105.45	1.30	$ 354,587.72	1.36	$(15,482.27)	(.06)
11	Miscellaneous	996.52		513.43		483.09	
12	Total other income	$ 340,101.97	1.30	$ 355,101.15	1.36	$(14,999.18)	(.06)
13	Gross income	$1,730,544.49	6.62	$1,844,728.70	7.09	$(114,184.21)	(.47)
	Income Deductions:						
14	Interest on long-term debt	$ 218,882.09	.84	$ 250,206.24	.96	$(31,324.15)	(.12)
15	Other int. - Tenens	15,119.57	.05	1,413.05		13,706.52	.05
16	Other interest charges			1,754.02	.01	(1,754.02)	(.01)
17	Profit and loss on bonds redeemed and sold	(5,960.00)	(.02)	9,932.50	.04	(15,892.50)	(.06)
18	Miscellaneous	35.30				35.30	
19	Total income deductions	$ 228,096.96	.87	$ 263,265.79	1.01	$(35,168.83)	(.14)
20	Net income	$1,502,447.53	5.75	$1,581,502.91	6.08	$(79,055.38)	(.33)
	Earned Surplus	1940		1939			
21	Balance at beginning of period	$2,537,424.12		$2,699,890.30			
	Credits to surplus						
22	Net income, nine months ended Sept. 30, as above	1,502,447.53		1,581,502.91			
23	Net income, three months ended Dec. 31			146,689.65			
24	Miscellaneous direct items (net), nine months ended Sept. 30	473.87		8,341.86			
25	Total	$4,040,345.52		$4,536,424.72			
	Debits to surplus						
	Dividends on common stock:						
26	Nine months ended Sept. 30	957,500.00		685,000.00			
27	Three months ended Dec. 31			1,250,000.00			
28	Dividends on preferred stock	120,000.00		120,000.00			
29	Balance at end of period	$2,962,845.52		$2,481,424.72			

Note: The only reclassifications applied to the net income, per books, for the nine months ended September 30, 1940 and 1939, effect rate case expenses as explained in Entry No. 2, Schedule No. 3.

Exhibit No. 173

1397

Exhibit No. 173

Docket G-124

Schedule No. 2
Sheet 1 of 3

COLORADO INTERSTATE GAS COMPANY
STATEMENT OF OPERATING EXPENSES, AS RECLASSIFIED
FOR THE NINE MONTHS ENDED SEPTEMBER 30, 1940 AND 1939, AND COMPARISON

2

Line No.	Particulars	Nine Months Ended September 30 1940	1939	Increase or (Decrease)
	(1)	(2)	(3)	(4)
	Transmission Expenses			
	Operation			
	Transmission system			
1	Supervision	$ 8,398.90	$ 8,783.65	$ (384.75)
	Operation of transmission lines			
2	Labor	23,662.00	21,263.20	2,398.80
3	Supplies and expenses	5,143.55	4,642.03	801.52
	Other			
4	Labor	3,856.46	4,511.51	(655.05)
5	Supplies and expenses	3,411.13	4,713.97	(1,302.84)
6	Stores labor, supplies and expenses	1,218.84	2,486.44	(1,267.60)
7	Undistributed auto expenses	4,917.05	1,794.13	3,122.92
	Compressing system			
8	Supervision	9,534.89	10,651.36	(1,116.47)
	Operation of compressing stations			
9	Labor	33,565.14	36,847.33	(3,282.19)
10	Supplies and expenses	18,690.42	14,378.40	4,312.02
	Other			
11	Labor	11,589.72	11,050.25	539.47
12	Supplies and expenses	3,196.45	2,647.92	548.53
13	Undistributed auto expenses	1,407.55	2,275.49	(867.94)
14	Total operation	$128,892.10	$126,045.68	$ 2,846.42
	Maintenance			
	Transmission system			
15	Line equipment	$ 30,647.64	$ 11,851.39	$18,796.25
16	Other structures	984.71	1,078.77	(94.06)
17	Other equipment	14,997.44	39,976.56	(24,979.12)
	Compressing system			
18	Structures	1,038.69	1,100.23	(61.54)
19	Equipment	26,217.14	16,965.54	9,251.60
20	Other structures	1,499.60	1,971.21	(471.61)
21	Other equipment	2,320.91	1,669.18	651.73
22	Total maintenance	$ 77,706.13	$ 74,612.88	$ 3,093.25
23	Total transmission expenses	$206,598.23	$200,658.56	$ 5,939.67
	Distribution Expenses			
	Operation			
	Office expenses			
24	Salaries	$ 9,025.70	$ 7,962.90	$ 1,062.80
25	Stationery and printing	346.67	112.90	233.77
26	Other supplies and expenses	188.02	42.62	145.40
	Operation of field measuring stations			
27	Labor	16,321.09	19,716.70	(3,392.61)
28	Supplies and expenses	3,822.66	3,694.19	128.47
29	Undistributed auto expenses	2,776.11	2,748.85	27.26
30	Total operation	$ 32,483.25	$ 34,278.16	$(1,794.91)

Exhibit No. 173

Docket G-124

Schedule No. 2
Sheet 3 of 3

COLORADO INTERSTATE GAS COMPANY
STATEMENT OF OPERATING EXPENSES, AS RECLASSIFIED
FOR THE NINE MONTHS ENDED SEPTEMBER 30, 1940 AND 1939 AND COMPARISON

Line No.	Particulars	Nine Months Ended September 30 1940	1939	Increase or (Decrease)
	(1)	(2)	(3)	(4)
	General and Administrative Expenses (Cont'd)			
	Maintenance			
61	Telephone system	$ 512.31	$ 999.15	$ (86.84)
62	Office and other general equipment	126.38	209.27	(82.89)
63	Total maintenance	$ 638.69	$ 808.42	$ (169.73)
64	Total general and administrative expenses	$77,091.40	$ 74,355.68	$ 2,735.72
65	Total operating expenses	$331,252.23	$313,354.19	$17,898.04

Note: The entries which have been reflected in the above statement of operating expenses for the nine months ended September 30, 1940 and 1939 are shown in Schedule No. 3.

COLORADO [illegible] COMPANY
INVESTMENT [illegible] RECLASSIFYING
RATE CASE EXPENSES

Particulars (1)	1940 Debit (2)	1940 Credit (3)	1939 Debit (4)	1939 Credit (5)
No. 1				
Operating expenses			$ 3,524.30	
Operating expenses - miscellaneous general expenses (Colorado Springs office)		$ 460.05		
Surplus - 1939				$ 3,524.30

To reclassify to normal operating expenses the regular time of regular employees carried on the private pay roll which was charged to work orders 345 (valuation report) and 351 (physical inspection of pipe line). The following accounts charged by this entry are those which it appears would have been charged, based upon the time distribution of each employee, had the rate investigation not been in progress:

Account	Nine Months Ended September 30, 1940	Nine Months Ended September 30, 1939
Transmission Expenses		
Transmission system supervision		$ 330.10
Other transmission system labor		845.11
Compressing system superintendence		163.12
Distribution Expenses		
Distribution system office salaries	$ 57.28	314.96
Operation of field measuring stations	70.04	712.70
General and Administrative Expenses		
Other general office salaries	332.13	985.91
Telephone system labor		88.50
Land department labor		53.64
Totals	$460.05	$3,524.30

The charges during 1939 to work orders 346 and 351 were closed to expense in December 1939. The charges to these two work orders during 1940 were closed to expense monthly.

No. 2

Deferred debits (Deferred Rate Case Expenses)	56,316.55		58,290.20	
Operating expenses (detailed below)		56,316.55		3,286.04
Surplus - 1939				55,004.16

To reclassify the following operating expenses to deferred rate case expenses:

	Nine Months Ended September 30 1940	Nine Months Ended September 30 1939	Three Months Ended December 31, 1939
Miscellaneous general expenses			
New York Office	$ 3,161.80		
Colorado Springs Office	43,696.12		$51,797.21
Special legal services	9,377.80	$ 3,197.21	3,184.95
Rent	80.83	88.83	22.00
Totals	$56,316.55	$ 3,286.04	$55,004.16

1405
Exhibit No. 173

Docket G-[illegible]

Schedule No. 4

COLORADO INTERSTATE GAS COMPANY
BALANCE SHEET AS CLASSIFIED
September 30, 1950

Assets and Other Debits		Liabilities and Other Credits	
Utility Plant		**Capital Stock**	
Gas plant in service - (Schedule No. 6)	$[illegible]	Common stock	$ [illegible]
Construction work in progress	[illegible]	Preferred stock	[illegible]
Total utility plant	[illegible]	Total capital stock	[illegible]
Investments and Fund Accounts		**Long-Term Debt**	
Other physical property	$ [illegible]	First Mortgage and Collateral Trust Twenty-Four [illegible] Sinking Fund Gold Bonds, due June 1, 1960	$ [illegible]
Investment in and advances to associated company	[illegible]		
Total investments and fund accounts	[illegible]	**Current and Accrued Liabilities**	
Current and Accrued Assets		Accounts payable	$ [illegible]
Cash and working funds	$ 1,000,000.00	Dividends payable (on preferred stock)	[illegible]
Notes receivable	[illegible]	Accrued liabilities	
Accounts receivable		Taxes	[illegible]
Customers	[illegible]	Interest	[illegible]
Other	[illegible]	Total current and accrued liabilities	[illegible]
Receivables from associated companies		**Reserves**	
Canadian River Gas Company	[illegible]	Depreciation	$ [illegible]
Natural Gas Pipe Line Company of America	[illegible]	Amortization	[illegible]
Materials and supplies	[illegible]	Total reserves	[illegible]
Prepayments	[illegible]		
Total current and accrued assets	[illegible]		
Deferred Debits		**Surplus** (See note)	[illegible]
Unamortized debt discount and expense	$ [illegible]		
Deferred rate case expenses (Schedule No. 5) (See Note)	[illegible]		
Suspense account	[illegible]		
Total deferred debits	[illegible]		
	[illegible]		[illegible]

Note: Entry No. 2, Schedule No. 3, is the only reclassification applied to the balance sheet per books at September 30, 1950. It represents deferred rate case expenses at that date as included in Schedule No. 5 removed from operating expenses in the following periods:

Nine months ended September 30, 1949	$ [illegible]	
Three months ended December 31, 1949	[illegible]	$ [illegible]
Nine months ended September 30, 1950	[illegible]	[illegible]
Total		[illegible]

Exhibit No. 173

1407

COLORADO [illegible]
[illegible]
SEPTEMBER 30, 1940

Valuation report and physical inspection of pipe line system by Ford, Bacon & Davis, Inc.

	Valuation Report (Work Order 346)	Physical Inspection (Work Order 351)	Total
Company work			
Gross pay roll charges	$ 8,239.36	$ 8,296.18	$16,535.54
Less, amounts reclassified to operating expenses (note 1)	3,136.11	1,002.91	4,139.02
Net pay roll charges	$ 5,103.25	$ 7,293.27	$12,396.52
Employees' expenses	471.95	1,890.85	2,362.80
Auto expenses	511.00	3,011.95	3,522.95
Miscellaneous	508.37	753.39	1,261.76
Ford, Bacon & Davis, Inc. work (note 2)			
General consultation with reference to rate case	7,043.96		7,043.96
Miscellaneous reports and statements	29,682.92		29,682.92
Determination of reproduction cost new of property	32,014.97		32,014.97
Inspection of pipe transmission lines		7,407.16	7,407.16
	$75,136.42	$20,356.91	$95,493.33
Legal services and expenses (all paid to Smith, Brock, Arelt & Campbell)			
Services re case of City and County of Denver vs. Canadian River Gas Company, et al., Docket G-118 and matter of Canadian River Gas Company, Docket G-124. (1939 vouchers M4-22 and M1-48; 1940 vouchers B4-28, F4-26 and J1-40, five payments of $3,060.00 each)		$15,300.00	
Docket fee (1939 voucher M4-22)		50.00	
Expenses (printing petitions, reporting, printing briefs, etc.) in connection with above cases			
1939 voucher M4-22	$ 87.21		
1939 voucher L4-24	124.95		
1940 voucher C4-11	5.00		
1940 voucher M4-17	36.90		
1940 voucher M4-24	155.90	409.96	15,759.96
Rent			
Excess rent due to providing space for Federal Power Commission employees during rate investigation			191.66
Payments to Gas Companies Incorporated			
Traveling expenses of F. H. Lerch, Jr., to Amarillo, Texas, March 4 to 10, 1940		$ 217.93	
Proportion of services rendered in a study of money costs by Standard Statistics Company, Inc. for the period March 21 to May 31, 1940		2,943.87	3,161.80
Total deferred rate case expenses to September 30, 1940			$114,606.75

1400
Exhibit No. 173

Exhibit No. 173

Docket G-124

Schedule No. 5
Sheet 2 of 2

COLORADO INTERSTATE GAS COMPANY
DEFERRED RATE CASE EXPENSES
SEPTEMBER 30, 1940

8

Notes:

(1) The Examiner has reclassified to operating expenses the pay roll charges representing the regular time of regular employees which were charged to the rate case expense work orders. The amounts are shown below by work orders and by periods:

Period	Valuation Report (Work Order 346)	Physical Inspection (Work Order 351)	Total
Year 1939 (reclassified by Examiner's entry No. R-152, in exhibit covering 1939 income accounts)	$2,676.06	$1,002.91	$3,678.97
Nine months ending September 30, 1940 (reclassified by Examiner's entry No. 1, Schedule No. 3)	460.05		460.05
Totals	$3,136.11	$1,002.91	$4,139.02

(2) Ford, Bacon & Davis, Inc. work was billed at cost of services plus 10%, plus overheads approximating 75%, plus expenses at cost.

Docket G-1414

Schedule No. 6
Sheet 1 of 2

COLORADO INTERSTATE GAS COMPANY
GAS PLANT IN SERVICE
SEPTEMBER 30, 1960

	For Books			
	Balance	Changes		Balance
	Dec. 31, 1959	Additions	Retirements	Sept. 30, 1960
Transmission System				
218 Land	$ 2,420.30	-	-	$ 2,420.30
220 Rights of Way	110,400.05			110,400.05
226 Line Equipment	9,087,949.36	$13,829.60	$ 3,566.54	9,098,212.42
Total	$ 9,200,769.71	$13,829.60	$ 3,566.54	$ 9,211,032.77
Compressing System				
218 Land	$ 4,104.51	$ 132.31		$ 4,236.82
219 Leaseholds	623.25			623.25
221 Structures	185,654.96	216.07		185,871.03
223 Other Structures	188,815.99	560.09	$ 103.18	189,272.90
224 Equipment	1,232,104.97	37,713.77	154.62	1,269,664.12
227 Other Equipment	5,320.18			5,320.18
Total	$ 1,616,623.86	$38,622.24	$ 257.80	$ 1,654,988.30
Measuring Stations				
218 Land	$ 12,210.45			$ 12,210.45
222 Structures	51,526.76	$ 2,155.80		53,682.56
225 Equipment	90,301.56	1,001.38	$ 1,115.70	90,187.24
227 Other Equipment	3,037.29	1,090.42		4,127.71
Total	$ 157,076.06	$ 4,247.60	$ 1,115.70	$ 160,207.96
Other Structures and Equipment				
218 Land	$ 926.90			$ 926.90
219 Leaseholds	115.50			115.50
223 Structures	59,573.44	$ 1,571.82	$ 152.51	60,992.75
227 Equipment	18,792.11	748.07	783.10	18,757.08
Total	$ 79,407.95	$ 2,319.89	$ 935.61	$ 80,792.23
General Property				
249 Office Equipment	$ 29,108.82	$ 2,426.21	$ 227.14	$ 31,307.89
253 Garage Equipment	67,524.79	8,480.85	6,151.43	69,854.21
255 Telephone System	146,873.63	39.47	448.65	146,464.45
256 Tools and Implements	33,930.69	3,459.73	95.10	37,295.32
Total	$ 277,437.93	$14,406.26	$ 6,922.32	$ 284,921.87

Exhibit No. 173

1413

Docket G-184

Schedule No. 6
Sheet 2 of 2

COLORADO INTERSTATE GAS COMPANY
GAS PLANT IN SERVICE
SEPTEMBER 30, 1940

	Balance Dec. 31, 1939	For Books Changes Additions	Retirements	Balance Sept. 30, 1940
Undistributed Fixed Capital				
203 Other Undistributed Fixed Capital	$ 63,675.61			$ 63,675.61
203 Entrance Right of Way	350,000.00			350,000.00
262 Law Expenditures during Construction	50,899.41			50,899.41
266 Interest during Construction	180,866.99			180,866.99
Total	$ 645,442.01			$ 645,442.01
Franchises and Contracts	$ 2,589,607.84			$ 2,589,607.84
Total	$14,566,365.36	$73,425.59	$12,797.97	$14,626,992.98

Exhibit No. 173

1415

10

[Testimony of Witness Early]

Q. Mr. Early, I will ask you whether in connection with your accounting work on the Colorado Interstate Gas Company's books in this proceeding you have also prepared another exhibit entitled "A comparison of operations of Colorado Interstate Gas Company for the nine months ended September 30, 1940 and 1939, and balance sheet at September 30, 1940"?

A. Yes, sir, I did.

Mr. Lange: I would like to have the reporter identify this document.

The Trial Examiner: It will be marked for identification as Exhibit No. 173.

(Exhibit 173, Witness Early, marked for identification.)

By Mr. Lange:

Q. Mr. Early, did you also in the preparation of the exhibit prepare a written statement briefly outlining the contents of the exhibit?

A. Yes, sir, I did.

Q. Will you please read that into the record?

A. "The principal purposes of this exhibit are as follows:

"(1) To present a comparison of operations of Colorado Interstate Gas Company for the nine months ended September 30, 1940 and 1939.

"(2) To present the expenses incurred by Colorado Interstate Gas Company in connection with this rate case up to September 30, 1940.

"(3) To present the changes in the investment of Colorado Interstate Gas Company in gas plant in service for the nine months ended September 30, 1940.

"The schedules forming this exhibit and which present the detail supporting the purposes as explained in the previous paragraph are as follows:

"Schedule No. 1 Statement of income and surplus accounts as reclassified for the nine months ended September 30, 1940, and 1939 and comparison.

"Schedule No. 2 Statement of operating expenses, as reclassified, for the nine months ended September 30, 1940, and 1939 and comparison.

"Schedule No. 3 Examiner's Entries reclassifying rate case expenses.

"Schedule No. 4 Balance sheet, as reclassified, September 30, 1940.

"Schedule No. 5 Deferred rate case expenses September 30, 1940.

"Schedule No. 6 Gas Plant in service September 30, 1940.

"All of the figures used in this exhibit are those shown by the books at the dates stated in the schedules after giving effect to rate case expenses removed from operating expenses and reclassified as deferred rate case expenses.

"Results of Operation

"Net utility income, as shown in Schedule No. 1, decreased $99,225.03 for the nine months ended September 30, 1940, as compared with the nine months ended September 30, 1939. The decrease in the result of changes in the following operating accounts:

	Increase (Decrease) 1940 over 1939
Operating revenues	$204,056.58
Operating revenue deductions:	
Gas purchased for resale	72,730.44
Operating expenses	17,898.04
Depreciation	61.96
Amortization	.....
Taxes	212,591.17
Total	$303,281.61
Net untility income	($ 99,225.03)

"The increase in operating revenues resulted primarily from greater consumption of gas for residential and com-

mercial use, both spaceheating and regular. Also operating revenues per the company's books for 1939 are after a reduction by $73,560.57, due to the reversal made on the books in January 1939 of unbilled revenue accrued as of December 31, 1938. The company did not record a comparable accrual as of December 31, 1939.

"The increase in gas purchased for resale is due principally to the purchase and sale of a larger volume of gas. The increase of ¼¢ per Mcf. in the cost of gas purchased during 1940 is occasioned by a reduction in the sales price to Canadian River Gas Company of gasoline approximately fifty per cent. Revenues from gasoline enter into the computation of the gas rate.

"The fluctuations accounting for the net increase in operating expenses in the amount of $17,898.04 are detailed in Schedule No. 2 by functional groups. The most extraordinary fluctuations which caused this increase and the explanation therefor were found in the following accounts:

Transmission Expense

Maintenance—Transmission System Line Equipment

"The increase of $18,796.25 in this account is due principally to the soil resistivity survey work carried on in 1940. The expense in 1939 in connection with this work was recorded and carried in construction work in progress until cleared to expense in December 1939. During 1940 such charges were distributed to expense monthly.

"Transmission Expense

Maintenance—Transmission System Other Equipment

"The decrease of $24,979.12 in this account is primarily due to expenditures for flood control made during 1939.

"Transmission Expense

Maintenance—Compressing System Equipment

"The increase of $9,251.60 in this account resulted from major repair items (pistons, cylinders, etc.) required by the compressors in 1940.

"Sales Promotion Expenses

Labor and Miscellaneous

"Sales promotion expenses in 1940 consist of the following:

National Biscuit Co., Denver, Colo:		
Payroll charges for estimating requirements for new load	$ 104.47	
Contribution to Public Service Company of Colorado	1,000.00	$1,104.47
Nuckolls Packing Co., Pueblo, Colo.		
Payments to Nation Tube Company and Standard Oil Company of New Jersey for pipe and freight		8,514.12
Total		$9,618.59

"These expenses may be considered nonrecurring because no further payments in connection with either National Biscuit Company or Nuckolls Packing Company are anticipated.

"Taxes increased in the amount of $212,591.17 of which $191,000.00 represents accrued Federal income taxes.

"Financial

"Schedule No. 4, the balance sheet at September 30, 1940, reflects the balances as shown by the books with the exception that rate case expenses are reclassified in accordance with the footnote on that schedule.

"The most significant change in the balance sheet since December 31, 1939, is the collection of the loan made to Standard Oil Company of New Jersey which amounted to $600,236.98 at December 31, 1939.

"The suspense account came into use after December 31, 1939, and the balance therein at September 30, 1940, is the result of the following transactions:

"Debit

"Note of Ford, Bacon & Davis, Inc. transferred from notes receivable in May 1940. Arkansas Valley Natural Gas Company was the recipient of the funds advanced for this note		$67,500.00
"Credits		
"Note receivable from Arkansas Valley Natural Gas Company	$10,000.00	
Arkansas Valley Natural Gas Company assets acquired:		
Materials and supplies	6,760.70	
Furniture and fixtures	612.87	
Sundry	204.30	
Cash received	5,000.00	22,577.87
Balance September 30, 1940		$44,922.13

"Changes in gas plant in service for the nine months ended September 30, 1940, are summarized by accounts in Schedule No. 6 and classified between additions and retirements.

"Description of the major additions and the plant accounts to which charged are as follows:

"226 Line Equipment		
"Work orders covering cathodic protection		
No. 362 Main Line	$ 639.75	
No. 364 La Junta and Arkansas Valley	4,523.22	
No. 374 *Fitzsimmons*	2,059.38	
No. 375 North	922.74	$ 8,145.09
"Other		
No. 377 Bridge across creek	470.98	
No. 378 Repairing *Purgatorie* Bridge	1,036.54	
No. 381 Replacing joints	678.65	
No. 382 Repairing washout	2,791.73	4,977.90
		$13,122.99

"224 Compressing Equipment
"Work Order No. 359 covering 1-600 H.P. compressor installed at Canon station $36,735.72

"322 Measuring Station Structures
"Work Order No. 369 covered one-room addition to 5-room house, Denver station $ 1,770.35

"227 Measuring Station Other Equipment
"Work Order No. 366 covered flood water control work at Denver station $ 1,044.03

"256 General Property—Tool and Implements
"No. DI-35, 1940 covers the purchase of one earth drill for truck mounting $2,289.08"

Q. In connection with the preparation of this Exhibit 173 I will ask you first whether this exhibit was prepared by you and the figures were obtained from the company's books and records.

A. By me and under my supervision.

Q. By you and under your supervision?

A. Yes, sir.

Q. Where did you obtain these figures you report in your exhibit at the company's offices?

A. The figures were obtained in part from the Colorado Springs office, that is, from the books and records kept there and in part from financial statements sent to me from the New York office.

Q. The New York office of the Colorado Interstate Gas Company?

A. Yes, sir.

Q. And are these figures all as per books?

A. They are all as per books with the exception that rate case expenses have been removed from the operating accounts and set up as a deferred account on the balance sheet.

Q. Where does that appear—on what page?

A. Page 6 shows on the left-hand side near the bottom under "Deferred Debits" the deferred rate case expenses. Those are detailed on the following page.

Q. In Schedule 5, Page 5?

A. Yes, sir.

Q. And that continues over on Page 6?

A. That is correct.

Q. In all other respects were these figures as per books of the company?

A. That is correct.

Q. Now referring to Page 1 of the exhibit, have there been any computations made by you in connection with that Schedule 1 appearing on that page?

A. Yes, there have.

Q. Which columns and which items?

A. Columns 3, 5, 6, and 7 are the results of computations showing statistical data in regard to the operations of the two nine-months periods.

Q. Columns 2, 5 and 7?

A. No, Columns 3, 5, 6 and 7. They are on Page 1.

Q. Page 1?

A. Yes.

Mr. Lange: That is all for the present, Mr. Early.

Cross Examination.

By Mr. Dougherty:

Q. Mr. Early, in your written statement where you speak about sales promotion expense, labor and miscellaneous, you have down here at the bottom of the page "Payments to National Tube Company and Standard Oil Company of New Jersey for Pipe and Freight." Does that represent pipe purchased by the company in that year?

A. (Pause.)

Q. I don't quite get the tieup in between it. You have "sales promotion expenses in 1940 consist of the following:" and you start out with the National Biscuit Company, Denver, Colorado, and then you have the statement "Payments to National Tube Company." I don't tie that in with what you call sales promotion expenses.

A. It is my understanding that the pipe and freight, valued at a little over $8500, were paid for by Colorado Interstate Gas Company and the pipe is used to connect up the Nuckolls Packing Company in Pueblo, Colorado, to the distribution system of the Pueblo Gas & Fuel Company.

Q. That is probably pipe that has been given to the Pueblo Gas & Fuel Company?

A. That is correct.

Q. And the payments, then, represent the amount paid for the pipe which was so used?

A. That is correct.

Q. You mentioned about repayment of a loan made to Standard Oil Company of New Jersey in the amount of six hundred thousand and some-odd dollars. Are you familiar with the terms of the loan?

A. No, I am not.

Q. As I recall it, I thought it was your exhibit that you spoke about the deposit by Colorado Interstate Gas Company with the Standard Oil Company of New Jersey of balances from time to time as they had them available, and I thought that in that exhibit there was something said about "these were repayable upon demand." Am I correct in my recollection?

A. I believe I recall the latter portion of that, that they were payable upon demand.

Q. And this $600,000, did not that represent that advance that has been so carried with the Standard Oil Company of New Jersey under the terms we just mentioned?

A. Yes, that is the same account.

Q. And the result of this is simply that practice was changed?

A. I do not know that the practice was changed or that Colorado Interstate Gas Company merely demanded the payment of this loan. Anyway, it was converted to cash.

Q. In the sense of the term "loan," that was not any long-term or short-term loan represented by a note: it was just an open-book advance?

A. That is correct.

Q. Did you make inquiry to find out whether the practice of carrying these amounts on deposit with the Standard Oil Company of New Jersey had been discontinued at the end of 1939?

A. No, I did not make that investigation. In fact, my working papers indicate that deposits were made into this account as late as June or July 1940.

Q. There were none shown after that?

A. At the end of September the account was wiped off.

Q. You did know, I assume, for some period of time that interest was paid Colorado Interstate Gas Company on those advances?

A. Yes, I recall that a small amount of interest was paid on those advances.

Q. Referring to Statement 1, Page 1, I guess it is, your income account for 1939, as you show it, differs in what respect from your income account as shown in your Exhibit No. 140 for 1939?

A. You mean as to its form?

Q. No, as to its figures; that is, I want to know whether or not the figures which you have here for 1939 in this Exhibit 173 represent the same figures, the same adjustments which you have made and as are shown in your Exhibit 140 for the year 1939.

A. No, that is not the case. This Exhibit No. 173 shows only the nine months of operations of 1939 in order to present a comparison with the same period of 1940. Exhibit No. 140 covered the full year 1939.

Q. Have you made adjustments for the nine months of 1939 so far as you could which were made for the same year in Exhibit No. 140?

A. No, I have not. The only entries applying to the company's book figures are those necessary to remove the rate case expenses from the operating accounts and then set them up as a deferred account in the balance sheet.

Q. So that with that exception these were taken right from the books?

A. That is correct, from the books and the financial statements.

Q. And the amounts here for depreciation and amortization are as per books?

A. That is correct.

Q. If you had not removed the rate case expense that would have made a difference in the computations you made of the cents per Mcf. applied to the different items?

A. That is correct.

(Vol. XLIX, pp. 6769-6781.)

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19. Cost of Contracts of Colorado Interstate.

In addition to its physical properties, Colorado Interstate acquired and paid for its gas purchase contract with

Canadian dated January 3, 1928 (Exhibit 16), and its gas sales agreement with Public Service and Pueblo Gas and Fuel Company, also dated January 3, 1928 (Exhibits 7-I and 7-H respectively), and its gas sales agreement for sales to Colorado Springs (Exhibit 7-E). These contracts, and some of the evidence surrounding their negotiation, have been abstracted supra. The respondent, through its witness Lusk, in Exhibit 77, presented the book cost of such contracts as follows:

"(a) Gas purchase agreement dated January 3, 1928 with Canadian River Gas Company, $2,000,000.

"(b) Gas sales agreements dated January 3, 1928 with Public Service Company of Colorado and Pueblo Gas and Fuel Company, respectively; $352,941.17.

"(c) Gas sales agreement dated June 12, 1931 with City of Colorado Springs, Colorado, $236,666.67; total, $2,589,607.84.

"As a part of the consideration to be received by Canadian River Gas Company for entering into the agreement described under Item (a) above, Colorado Interstate Gas Company issued to Southwestern Development Company, as nominee of Canadian River Gas Company, 531,250 shares of its no par value common stock and 10,000 shares of its preferred stock ($100 par value).

"As a part of the consideration for the execution of the two agreements described under Item (b) above, Colorado Interstate Gas Company issued to Cities Service Company, 187,500 shares of its no par value common stock.

"The total consideration of $250,000 was paid to A. K. Lee for the contract described in Item (c) above and the natural gas franchises for the towns of Ordway and Sugar City.

"The franchises last mentioned were assigned by Colorado Interstate Gas Company to Arkansas Valley Natural Gas Company for $13,333.33 which represents the adjustment shown on the statement." (Vol. XVII, pp. 2426, 2427.)

On being cross-examined, Lusk said he did not investigate the negotiation of these contracts (Vol. XVII, p. 2427). He stated that his examination of their books disclosed no affiliation between Canadian and Colorado Interstate. Their properties were operated jointly (p. 2428). He only examined the books and the minutes. His exhibit presented the cost of contracts as shown on Colorado Interstate's books in New York. He made no investigation as to the reasonableness of the payment for the contracts. The first two contracts, Items (a) and (b), were paid for in stock only. The third contract, Item (c) was paid for in cash (p. 2429).

As to the contract with Colorado Springs, purchased from Arthur K. Lee, the total amount paid was $275,000, but by agreement with Colorado Springs prior to the purchase of the contract from Lee the city refunded the $25,000 deposit to guarantee Lee's performance, thus making the net payment $250,000. Lee had also made deposits for the same purpose of $15,000 at Ordway; $5,000 at Sugar City, $5,000 at Fountain, and, when Colorado Interstate assigned these franchises to Arkansas Valley, it was successful in recovering two-thirds of $20,000. Fountain refused to surrender $5,000 (p. 2430). These franchises were assigned as a part of the same transaction to Arkansas Valley.

Colorado Interstate began amortizing these amounts paid for the contracts over a period of twenty (20) years (p. 2431). The amount on its books as of December 31, 1939, less amortization from the beginning, was $1,118,061.69.

Q. Mr. Lusk, have you had occasion to and did you investigate the facts and circumstances surrounding each of these; for instance, the $2,000,000 item, (a) gas purchase agreement dated January 3, 1928 with Canadian River Gas Company?

A. I did not investigate any of the circumstances, no, Mr. Lange. These are exactly the amounts recorded on the books of the Colorado Interstate Gas Company.

Q. Is there any other information recorded on the books in connection with each of those items or any of them?

A. Only the extracts of the minutes which are quoted over here in the statement.

Q. Did you know in connection with your accounting work on these books as to the affiliation between the Canadian River Gas Company and the Colorado Interstate Gas Company and Southwestern?

A. Any affiliation between the two?

Q. Yes.

A. Not that I know of.

Q. Well, you know that Canadian River Gas Company and Colorado Interstate have been operating as a single business unit?

A. That is presumed to be the fact; yes, sir.

Q. And that Mr. Christy Payne's statement right at the beginning in the record of this case shows that it was one enterprise, divided into two corporate entities, is true?

A. That made the true.

Q. That was the purpose of it at the very beginning, wasn't it, one project?

A. I think it was; yes, sir.

Q. Have you had occasion to make any study of the corporate relationship existing between the several companies involved on Page 1 as recited there in your exhibit, at the time these various amounts were set up?

A. No, sir, I didn't go any further than the book records and the extract from the minutes.

Q. These are, then, in simple language, the cost of franchises, aren't they?

A. No, they are the recorded book amounts and the cost of contracts. They are listed in the New York books of the Colorado Interstate Gas Company under the terminology or nomenclature of "contracts and franchises."

Q. What investigation, if any, did you make as to the reasonableness of each of these charges?

A. Well, as far as the reasonableness is concerned, I'll say I made no investigation. The amounts shown in the top two lines in the statement, Items 1 and 2, are exactly a recording of the number of shares, 531,250 shares of common, and 10,000 shares of preferred. The preferred at a par value of $100 extended to a value of $1,000,000. The 531,250 shares of common stock extended at $1,000,000 is identical with the amounts paid by the Standard Oil Company (N. J.) for a like number of shares.

Q. What actual cash was paid by the Colorado Interstate Gas Company on this first item, $2,000,000?

A. They didn't pay any.

Q. What actual cash was paid by Colorado Interstate Gas Company on Item (b), 352,941.17?

A. They didn't pay any.

Q. What actual cash was paid by Colorado Interstate Gas Company on Item (c), $236,666.67?

A. Actual cash.

Q. Yes.

A. Yes, sir.

Q. They didn't pay any?

A. Actual cash paid, I said.

Q. That was actual cash paid?

A. Yes, sir.

Q. That is the only one?

A. Yes, sir.

Q. Now, have you got a breakdown of that last item?

A. Well, the amount paid, the total amount paid to the Guaranty Trust Company as escrow agent was $275,000. The amount recovered from the City of Colorado Springs due to a default of A. K. Lee was $25,000, making a net payment of $250,000, and Mr. Lee also had deposits of $15,000 at Ordway, $5,000 at Sugar City, and $5,000 at Fountain, and Colorado Interstate Gas Company when they took over those franchises were successful in recovering two-thirds of the $20,000. Fountain refused to surrender $5,000 of the $20,000.

(Vol. XVII, pp. 2427-2430.)

Colorado Interstate began amortizing these amounts paid for the contracts over a period of twenty (20) years (p. 2431). The amount on its books as of December 31, 1939, less amortization from the beginning, was $1,118,061.69.

The total amount, as thus shown on the books of the company as the cost of franchises and contracts, was removed from the plant account by witness Schutte in his Exhibit 139 (Entries 224 and 225, pp. 39 to 45).

Exhibit 139 and the testimony of witness Schutte has been abstracted above, except with reference to this par-

ticular adjustment. The witness on cross-examination, respecting this adjustment, testified:

Q. Now I would like to direct your attention to Account 303 which is headed "Miscellaneous Intangible Plant" and provides that it shall include the cost of patent rights, licenses, privileges and other intangible property necessary or valuable in the conduct of the utility's gas operations and not specifically chargeable to any other account.

This is under a heading in the gas plant accounts which is called "Intangible plant." I am correct in that?

A. Yes, sir.

Q. Now, gas plant instruction No. 3, which is headed "Gas Plant to be Recorded at Cost" has in Paragraph B an instruction with respect to intangible gas plant?

A. Yes, sir.

Q. And again that is to be stated at cost as set forth in Paragraph A which is the original cost incurred by the person who first devoted the property to gas service?

A. That's right.

Q. Now, what do you understand by "intangible gas plant"?

A. Well, various items could go in intangible gas plant. I should say such items as are properly a part of the capital structure and are not physical plant.

Q. Now, with respect to the contract which Colorado Interstate Gas Company has with Canadian River Gas Company for the purchase of gas and which I think is discussed in your Adjusting Entry 224, now, if that would be an item which all would agree properly should be in the capital account—the plant account—is this account 303 the appropriate place for it?

A. If we agreed that it were a proper capital charge, that would be about the only possible place to put it.

Q. And that is pretty much evidenced by the final clause in Paragraph A under 303 which says:

"• • • not specifically chargeable to any other account"?

A. That is correct.

Q. Now, to be put properly in Item 303, I take it it would have to be some item of intangible property valuable in the conduct of the utility gas operation?

A. And recorded at cost.

Q. Now, in the first place, the contract for the purchase

of gas would satisfy the first part of the agreement, wouldn't it; that is, that would be an item of intangible property?

A. An item of intangible property, but even as such it would be subject to question.

Q. Well, I'm trying to take it up step by step and find just where we get to the barrier.

A. All right, sir.

Q. It certainly is necessary or valuable in the conduct of Colorado Interstate's gas business?

A. That is correct.

Q. And it certainly is not specifically chargeable to any other account.

A. That's correct.

Q. So that what is the objectionable feature of putting whatever the—as you say, the original cost of such a contract might be, in Account 303.

A. Well, this is a rather involved transaction from my viewpoint, and it is my opinion that the contracts entered into for the purchase and sale of gas for which the stocks were issued as a part consideration, would have to be considered as advantageous for all of the participants. It would follow, then, that Southwestern Development Company who controlled the company owning the leases and wells and was desirous of marketing its product would be interested in selling its gas advantageously to itself and, likewise, Cities Service Company who controlled certain outlets for the ultimate sale of gas would be interested in purchasing gas for resale upon a basis advantageous to itself. Standard Oil Company (N. J.) had the necessary finances and was willing to make an investment would be interested in making an investment that would be advantageous to itself. The financing was handled as one enterprise, and from a standpoint of operation, it is likewise handled more or less as one enterprise, even though two companies were organized to carry on this particular business.

As a matter of fact, in the financing, Canadian River Gas Company's bonds are pledged as partial security of Colorado Interstate's bond issue.

Now, in the first place, as I interpreted that particular contract, it seemed to me that those stocks were intended to be given to Canadian River Gas Company, but according to the minutes of Colorado Interstate Gas Company the

stocks were ordered issued in the name of Southwestern Development Company. The Southwestern Development Company, of course, had caused the organization of Canadian River Gas Company and owns and has always owned all of its capital stock, for an initial investment of one dollar. Southwestern Development Company also controlled at the time of this transaction; that is, at the time of the inception of Canadian River Gas Company—owned or controlled the Amarillo Oil Company who in turn owned the leases and wells which are the production system of the enterprise.

Q. Well, that has no direct bearing on this particular—

A. I think it does.

Q. Well, whatever amount had been paid by Canadian River Gas Company to Amarillo Oil Company has no bearing on the transaction here.

A. I still think it does, Mr. Dougherty.

Q. Well, you are going back into something that might have taken place if something else had been done.

A. Well, you asked me for my reason for not wanting to put that in there.

Q. All right, go ahead.

A. Now, the facts of the matter are that Amarillo Oil Company, a wholly-owned subsidiary of Southwestern Development Company, owned leases and wells. Southwestern Development Company had them transferred or sold, if you please, to Canadian River Gas Company for five million dollars, but it did not furnish the money for that. That money came from the general financing program.

In that particular method of handling the item, Southwestern Development Company was paid in full for the initial investment in the leases and wells plus a very substantial profit. In other words, in so far as their production system was concerned, they have already been compensated for that very handsomely.

Q. Well, when you say that you mean they have been compensated with respect to original cost?

A. That's correct.

Q. You are making no statement as to whether they got more than it was worth from a market standpoint?

A. I wouldn't know whether it was worth more or whether it was worth less from a market standpoint.

Q. You do recognize in the oil and gas business that there is such a thing as discovery value? A lot of times money that is put into an oil well can produce handsome results because of the results of drilling the well.

A. That is right.

Q. I mean, that isn't anything new—leaving out utility company operations, that thing happens.

A. As I see it, they ate their cake, but they still have it.

Q. That all depends on value. I appreciate what you are talking about is cost.

A. That's right. Now, in addition to that particular participation, as to the production system, it also received 42½ per cent of the common stock of Colorado Interstate Gas Company and initially it received ten thousand shares of the preferred stock of Colorado Interstate Gas Company. Those stocks were issued to it by Canadian River Gas Company in connection—as I understand the minutes—with the issuance or the execution of this gas sales contract.

Now, when you look at it from that basis, in the first place it would be very difficult to set a value on the intercompany sales contract—sales and purchase contract, and the value that has been set up for it is not necessarily cost because you had a no par value common stock for one thing and you set a value on that, and from an inspection of the minutes of the Board of Directors' meetings, I can't find that they authorized—who authorized the price or the value at which that stock was set up.

Of course, the preferred stock would necessarily be set up at par value because it was a par value stock, but that wouldn't indicate either that the contract was correctly valued.

Q. Well, now, I take it from your general description going back clear to the profit that lies between the five million dollars and the original cost to Amarillo Oil Company and your statement that this stock was then issued for the sale of gas from that same property, you really believe that those representing Southwestern Development Company sort of out-traded those representing the Standard Oil Company?

A. I certainly do. I never have understood how Standard Oil Company representatives would permit themselves to be out-traded, but to me it seemed they were.

Q. You recognized that so far as Colorado Interstate is concerned that the money was put up by the Standard Oil Company?

A. Absolutely.

Q. In Colorado Interstate's securities?

A. That is correct.

Q. Now I want to ask you a few specific questions to see if I can maintain the trading reputation of my predecessors. In the first place, I think you know that this contract for the purchase of gas provides that the price which Colorado Interstate shall pay is in effect based upon out-of-pocket expenditures of Canadian River Gas Company over this period—over this first period of twenty years?

A. You mean the cost of gas?

Q. Yes.

A. I don't interpret the cost of gas the same way that contract does.

Q. Well, now, I didn't say—I don't mean the cost of gas, but the price which Canadian River charges is based upon all of the out-of-pocket expenditures including the amounts necessary to retire their debt and interest on whatever the reduced amount is each year.

A. When you say "expenditures," instead of "expenses," I agree with you, yes, sir.

Q. Well, I am not trying to be technical, but the way it is done is that they charge a composite sum which is made out of all of these expenditures that we have discussed. Now, that transaction also has an option so that if Colorado Interstate wants to take gas after the first twenty years, it can do so and still pay for it on the basis of Canadian River's expenses in producing the gas, drilling the wells and whatever is necessary?

A. That's right.

Q. You recognize that the bonded indebtedness of Canadian River would be paid off in the first twenty years?

A. That is correct.

Q. And that there would no longer be accruing any interest on such funded debt?

A. That is correct.

Q. So that in the second twenty years there would probably be a reduced amount of expenditures by Canadian River Gas Company, certainly at any rate by that portion formerly paid to reduce the bonded indebtedness and interest thereon?

A. That is right.

Q. Now, unless there are a great amount of additional expenditures needed by Canadian River to continue to produce gas, it would be expected, wouldn't it, that after that first 20-year period the amount which Canadian River receives from Colorado Interstate for its gas would be less than during the immediate few years of the end of the first 20-year period?

A. Well, let's see if I can get my idea across on that.

Q. You understand what I am talking about?

A. I think I do, yes, sir. You are right so far as the bonded indebtedness is concerned. I listened to Mr. Rhodes, and I think Mr. Watson, and several other gentlemen here telling what additional facilities were going to be necessary by 1947, which is before the expiration of the first twenty years. The inter-company debt other than bonded debt; that is, the serial notes, are likewise being amortized over this first 20-year period—either, as I recall it, over a 20-year period or the remaining part of the 20-year period.

Q. That's right.

A. In effect, at the end of the 20-year period, then Southwestern Development Company will in effect own all of the Canadian River Gas Company properties for a total initial investment of one dollar.

Q. But still subject to the contract that Colorado Interstate has to call on for gas?

A. And Colorado Interstate, if they require additional facilities, and according to these gentlemen I mentioned, they are going to need a lot of additional facilities, Colorado Interstate would be required to put up additional funds and those funds in turn would again be amortized to a series of company notes.

Q. Now, that, of course, would be done if the volumes of gas available would justify further expenditures after 1948?

A. That is correct.

Q. If it did not, then Colorado Interstate has the option to end its purchase of gas?

A. So I understand.

Q. And upon that occurrence is when Southwestern Development Company, through Canadian River Gas Company, would own the facilities with whatever available gas there was remaining?

A. Yes.

Q. During that period Canadian River would have received no funds with which to pay any dividends during the first twenty years?

A. Possibly it was not intended to work out that way, but they actually, under existing conditions, have accrued surplus.

Q. But no funds with which to pay any dividends out of that surplus?

A. That's right.

Q. And that surplus comes about purely by reason of an income tax base on depletion that is different from the payment that the company—Canadian River—has to make on its debt?

A. I wouldn't say an income tax base, I would say by the application of more correct accounting principles.

Q. Well, it has to do with the matter of dealing with the Internal Revenue Department of the United States.

A. It was brought about that way, yes, sir.

Q. So it is really a bookkeeping surplus rather than dollars in the bank?

A. I wouldn't say it was a bookkeeping surplus. It is right that it is not dollars in the bank. It is a surplus arising because of the difference in applying to the gas billings to Amarillo Oil Company and to Public Service Company of Colorado the expenditures made to liquidate or amortize debt as compared with what the Internal Revenue Department or Bureau advocated as proper allowances for depreciation and depletion on the primary production facilities and Canadian River Gas Company's pipe line.

Q. Did you use the term "Public Service Company" there?

A. I intended there, if I didn't—Public Service Company of Colorado. In other words, the contract here is what I am referring to.

Q. You are referring now to the contract to sell gas to Cities Service Company? I don't understand how—

A. Did I say Cities Service? I intended to say Public Service.

Q. I don't understand how that comes into it.

A. Well, that contract provides for the substitution—not just that way, but this is my interpretation of it—for the substitution of amortization of debt for depletion and depreciation.

Q. I thought that was the contract between Canadian River and Colorado Interstate rather than—

A. That is what I meant. You are right. I beg your pardon. You are correct. I just got a step ahead of myself there.

Q. Well, it is a fact and would be a fact that at the end of the first 20-year period, all of the money which Canadian River collects from Colorado Interstate would be in turn paid out by Canadian River for the things which you would agree are operating expenses, and then for the additional expenditures for the payment back of debt and interest thereon?

A. That is right.

Q. There is no accrual or accumulation of anything like a profit over and above these various expenditures in determining what Canadian River shall receive for this gas?

A. There is an accrual of surplus because of those differences.

Q. Well, I mean other than that.

A. Other than that, I don't think so.

Q. Now, from an accounting standpoint, isn't it appropriate that so far as this type of a contract is concerned, which is not the usual type of gas purchase contract, would its value be determined by the officials of the company who have to deal with it; that is the way it was determined in this instance, of course?

A. I don't know how it was determined. The record doesn't indicate that.

Q. Well, do you follow accounting principals in determining whether it has any value or not, or is that some other set of rules and regulations you have to follow?

A. I don't see how you could put an accounting interpretation on the value of that particular contract.

Q. Well, in the first place the Code provides, does it not, that if cash is issued for property—or, rather, put it this way—starting off with Definition 10, it reads:

"'Cost' means the amount of money actually paid for property or services or the cash value at the time of the transaction of any consideration other than money."

A. That's right.

Q. Now, there was issued as consideration for the execution of this contract a consideration other than money?

A. That's correct.

Q. And I take it that whether that stock has been issued to Canadian River or Southwestern Development Company has no bearing on your adjustment here.

A. Yes, I would say it has. If you were looking at the consolidated picture of the enterprise as a whole and that stock had been issued to Canadian River Gas Company, there would be a wash transaction in making your consolidation between the two, and it wouldn't have any effect.

Likewise, the earnings would be taken care of on that basis.

Q. Well, there is no basis for consolidation of the operations of Canadian River and Colorado Interstate on any accounting principles.

A. Only in so far as we are trying to determine the original cost of the properties necessary for this Denver pipe line project. To that extent—strictly from an accounting standpoint I would say no. The only point there is, of course, the ownership by Colorado Interstate Gas Company and the bonds of Canadian River Gas Company.

Q. Well, that doesn't justify consolidating your property accounts or income accounts, does it?

A. That is correct.

Q. What you are talking about when you say "consolidating them" is for rate case purposes?

A. That is right.

Q. Now, having in mind that on the books of account of this company, when this classification is made and filed with the Commission—and by "this company" I mean Colorado Interstate—that summary has to be made. The stock, whatever its determined value on the books, would be the same irrespective of who owned it.

A. Well, on that common stock which has no par value, you could put almost any stated value you wanted to on that.

Q. Well, whatever the stated value is, however, it is there, irrespective of who the stockholder is?

A. Yes, but what I am trying to say is that that is not an indication of the true value of a contract.

Q. Now, I am still talking about the consideration given for the contract rather than whether or not the contract was worth the consideration, because there is a difference—you recognize that?

A. Yes.

Q. As a matter of fact, you have previously said that what was received for this stock in effect was not worth what Colorado Interstate did give for it.

A. I said that was my idea.

Q. Yes, that's what I mean. I understand that.

Now, in determining the cash value of a consideration other than money, that requires some exercise of judgment, I assume, because the Code does say we have got to put some cash value on the consideration given.

A. That is right.

Q. Now, that same thing is referred to in gas plant instruction 3 under Paragraph D, where it says:

"When the consideration given for property is other than cash the value of such consideration shall be determined on a cash basis."

Now, as I interpret that, Mr. Schutte, that means you determine the cost or the value of the consideration, not on the basis of the value of what you got for the consideration but on the basis of the cash value or the cash basis of the thing you gave up; that is, in determining the appropriative value of the stock which was issued for this contract, and I am now speaking only of the Canadian River contract, we would determine the value of that stock on a cash basis and not on a basis of what the contract is worth.

A. In other words, you determine the value of the stock rather than the value of the contract.

Q. Exactly, and isn't that what you have to do in accordance with this instruction? It says: "When the consideration given for property is other than cash, the value of such consideration shall be determined on a cash basis." Now, doesn't that mean that you find out if you can what the cash basis is or cash value of the stock was?

A. That's right.

Q. Now, that was arrived at—I understand that you are correct, that the Board of Directors did not formally make any declaration of the declared value.

A. I couldn't find any declaration.

Q. Well, I couldn't either. It is quite apparent, how-

ever, isn't it, that the cash basis or the cash value of the stock that was issued to Southwestern Development Company was based on the actual cash paid for a similar quantity of stock by Standard Oil Company?

A. It would appear to be so, yes, sir.

Q. That's just it. There it is.

A. There it is, and you can't get away from it.

Q. So that isn't it a fair assumption to make that the cash basis or the cash value of the stock issued to Southwestern Development Company was two million dollars?

A. I think that could be said.

Q. Because somebody else had paid two million dollars for a similar quantity of stock.

A. That is right.

Q. So that on the basis of the cost to—and again, purely from an accounting standpoint, on the basis of the cost to Colorado Interstate, the cost of this contract was two million dollars, whether it was worth it or not. The actual cost, following the Code provisions, from an accounting standpoint would be two million dollars.

A. I think that is correct.

Q. Now, this is the first time that this contract ever had any value assigned to it. It wasn't on any other books of any other company at any value preceding the entry made by Colorado Interstate.

A. So far as I know there was no prior value assigned to such contract.

Q. Well, Canadian River had never assigned any value to the contract on its books to your knowledge?

A. To my knowledge.

Q. And Southwestern Development Company had never set up any value for this contract on its books?

A. That's right.

Q. So that the first time there was any entry made fixing a value on this contract was when this entry was made on Colorado Interstate's books?

A. That's right.

Q. And that has never been changed, either up or down?

A. That's right.

Q. Well, now, having those facts in mind, isn't it a little inaccurate to say, as you do, that this is a writeup of the plant account?

A. No, I don't think so. I think I am correct in making that interpretation from my ideas of it.

Q. Well, now, let's see where we differ. As I understand, a writeup means that the books of the accounting company at any particular time, containing an assigned value or a figure for some asset which is a greater figure than the same assets were set forth on either the books or at least—first on the books of that same accounting company so that if by some appraisal, for example, if the "X" company in the oil and gas business would have some leases which they later developed and were worth a lot more money, or by a re-appraisal of those leases would increase the book cost, that would be a writeup, wouldn't it?

A. That would be a writeup, yes.

Q. Now, do you consider a writeup where the "X" company sells property to "Y" company at a profit, if the "Y" company sets those assets upon the sale price rather than the cost of the selling company?

A. I didn't quite follow that.

Q. Well, what other kind of writeups do you have in mind?

A. Well, those are the primary kind. However, when securities enter into inter-company transactions, that is the sales, it has been customary to put the property into a pot, so to speak, and issue a bunch of securities against them and then later on evaluate the securities. That would be another type of writeup.

Q. That is, if any company—or the "X" corporation having its property on its books at a certain number of dollars would transfer that property to another affiliated corporation for stock?

A. That's right.

Q. And then later the property would later be put on the books of the purchasing company at a greater amount of dollars than it stood on the books of the selling company?

A. That's right.

Q. But in each instance, Mr. Schutte, don't you have to have some amount to start with so that you have got a difference between the first entry and the second entry?

A. In those instances you do, yes. In this particular instance, which is an entirely different type of item in-

asmuch as this common stock could be valued at almost anything one would wish—in other words, the Board of Directors need not have used the price paid for that stock by Standard Oil Company of New Jersey. They could have used some other value had they wished. Of course, you come back to that cash cost and you have a little different situation.

Q. As a matter of fact, in 1927, without knowing it, they were doing exactly what the Federal Power Commission later on would require them to do?

A. That's right.

Q. Isn't what took place here an evaluation or an appraisal of an asset rather than a writeup of it?

A. I really don't consider that the contract was valued. The stock was valued, but the contract was not. In other words, let me put it this way: You could have put that contract on your books at one dollar and taken the difference between that and the value recorded for the stock and you could have put that in some other account, had they so chosen.

Q. What was done, it is perfectly apparent, isn't it, was that the contract was deemed as having been received for this stock, that this stock was deemed to have a cash basis of two million dollars, and that that amount was assigned as the value of the contract?

A. That is what actually happened, yes.

Q. Now, on those facts alone, then you couldn't tell whether it had been over-valued or under-valued?

A. But I say—

Q. Isn't that so?

A. It appeared to me to be.

Q. As far as those accounting facts and as far as those transactions are concerned, that contract may be worth five million dollars instead of two million dollars. From an accounting standpoint there is nothing, is there, Mr. Schutte, that has taken place which we have discussed that indicates that there was a writeup unless you get into an appraisal on that contract and its value?

A. Well, I considered that the company did make an appraisal of that.

Q. And wasn't that on the basis of the cash value of the stock that had been issued?

A. That appears to be a fact, yes.

Q. So that clearly, so far as the stock is concerned, it had that cash value and that would represent the cost to the company of this contract, whether it paid more or less?

A. Yes, I think I would have to agree with you.

Q. Yes. Now, if, for example, there had been no affiliation of any sort between Southwestern Development Company and the Colorado Interstate Gas Company, the issuance of stock to such an affiliated company in this amount for such a contract would properly be accounted for as it was here, wouldn't it?

A. It would probably be accounted for in the same manner.

Q. And the basis that you are attacking it is really not from an accounting standpoint, but from a rate case standpoint, because of the relationships between these companies?

A. Well, I think in any accounting examination I would handle it the same way whether for a rate case or for some other purpose. I certainly would point it out.

Q. Well, you might note that because of this relationship between Southwestern Development Company and Colorado Interstate Gas Company this transaction had taken place; that is, you might point it out where affiliations exist when you wouldn't have if that—

A. I think I would point it out in any event.

Q. Do you always in accounting examinations or audits point out transactions where stock was issued for property rather than cash?

A. I always have made it a point to do so, yes, sir.

Q. Now, this transaction would essentially have been the same, wouldn't it, if the stock had first been issued to Southwestern Development Company for two million dollars in cash and then if Colorado Interstate had paid Southwestern Development Company a cash amount of two million dollars for the privilege of having this contract executed with Canadian River Gas Company?

A. I beg your pardon. Will you read that?

(The question referred to was read by the reporter as set forth above.)

The Witness: Do you mean for the privilege of negotiating a contract, or do you mean for the contract itself?

By Mr. Dougherty:

Q. Well, for the same thing that was done here, namely, for the contract which was signed by Canadian River to sell gas under its terms.

A. I think it would be essentially the same.

Q. That is, in substance, it is really no different, whether the stock was given directly or whether it took two steps?

A. I think that is correct, yes, sir.

Q. So, don't we finally get down to this, Mr. Schutte, that your questioning of this transaction is based pretty much on your opinion that the intangible value received by Colorado Interstate was not of any substance; that is, there was no value received by Colorado Interstate when it got this contract and that, therefore, the asset has no value?

A. Well, I say, the value, if any, to be placed upon these privileges is referred to the Commission for determination.

Q. And I assume that that is because you do not consider that you are qualified as an expert to place a dollar value on the contract?

A. That is correct.

Q. And the Commission in your opinion should determine whether that contract should be in the plant account at nothing or at one dollar or two million dollars or at some place between those figures?

A. That is the general idea, yes, sir, and that refers to Southwestern Development—I mean the Canadian River Gas Company contract alone.

Q. All of my questions were about that.

A. That's correct.

Q. Now, this, I suppose could properly be termed a writedown if the Commission did put some value less than two million dollars on this contract?

A. You mean if the Commission determined a hundred dollar value as between the two million dollars, that would be a writedown?

Q. Yes.

A. Yes, a writedown as to the value shown on the books.

Q. That is a writedown just the same as the reverse process is a writeup?

A. That is correct.

Q. Now, is there any specific provision in the Code of Accounts that provides for making writedowns on the property of the company, tangible or intangible?

A. Why, yes, I think so, in connection with Account 107, Page 17, under Account No. 107, which is "Gas Plant Adjustments," under Paragraph B.: "The amounts included in this account shall be classified in such manner as to show the nature of each amount included herein and shall be disposed of as the Commission may approve or direct".

Q. It doesn't provide that the accounting company shall make any change? In setting it up, its original cost, in the first instance, whatever change is made, the Commission would have to make it?

A. That's right. In other words, the procedure generally followed, as I understand it, in connection with its original cost is that the company would submit to the Commission its reclassification of accounts. If that were found or determined to be satisfactory, an order would be issued advising the company as to how to proceed with such items as they might have classified as Gas Plant Adjustments.

If that report were not satisfactory, then if the company and the Commission could not get together on it and make it satisfactory, it would be subject to an accounting examination and a report by the staff would be issued. That report would be passed on by the Commission, and if unsatisfactory to the Commission, then I understand a formal hearing would be had and that, of course, would bring out the facts necessary to make whatever adjustments as were determined to be necessary.

Q. Now, Account 107, just as Account 100-5 contemplates that matters that are placed in those accounts have two values—if that is the proper word—at any rate, you should have an original cost and book cost of the accounting company?

A. That is right.

Q. In this case we don't have any such two costs.

A. In this case you would have book costs to the accounting company.

Q. Yes, and wouldn't it be more appropriate if you aren't going to put this two million dollar value of the contract in 303, to put it in 100-6 because all we have here is original cost to the accounting company?

A. No, I don't think so, Mr. Dougherty.

Q. Well, then—

A. Under 100-6, Note B, it says: "No charges other than as provided in Paragraph A above * * *"—which is also 100-6—"* * * shall be made to this account," and I don't think that this particular thing is applicable.

Q. Well, it says there: "There shall be closed to this account the book cost of gas plant as of the effective date hereof."

Now, what this contract would be considered is an intangible item whether it has any value or not, and therefore, if you don't put it in 100-1, wouldn't it properly be in 100-6, because you don't have an original cost and a book cost to the accounting company of original amounts, which I understand is required both by Account 107 and Account 100-5?

A. Well, it is my interpretation that it belongs in Account 107. I interpret Account 100-6 a little different than you do.

Q. Now, if the stock is issued for physical property by a company, do you enter into a questioning of the value, of the physical value it received for it when you make an accounting examination?

A. Yes, sir.

Q. How do you determine what its value is?

A. The value of the stock, or the value of the property—

Q. Property?

A. By going back to the predecessor company.

Q. And you take that, of course, as the original cost?

A. If that is original cost. That may have been acquired from a predecessor, and you would have to go back further in that case.

Q. Well, now, let's close it with a property that had never been devoted to public use, but had just been constructed—I mean—put it this way: Let's assume that part of the pipe line of Colorado Interstate having been constructed by a contractor was purchased by Colorado Interstate from the contractor, or the contractor was paid in

stock instead of dollars, and that is not an uncommon thing in pipe line construction, as a matter of fact.

A. Presumably, in the case of a shoestring operator.

Q. That's right.

A. I think I would go back to that contractor's cost.

Q. Although that contractor who built the line had not yet devoted it to public service?

A. That's right. He wouldn't have devoted it to public service presumably, but you would be trying to get the original cost of that particular property if for no other purpose than to point out the profit accruing to an affiliate because he would be an affiliate in that case if he were given stock.

Q. Now, if he had been paid cash for the property, you would accept that as the original cost to the accounting company, even though the contractor had made quite a profit out of it?

A. I think I would accept that as original cost, but I might question it or I would at least point it out if I thought he had made an *exhorbitant* profit. Let me put it this way: I would compare the cost of that particular section of the line with some other comparable section, if I could, and would give those comparisons in questioning such costs.

Q. Well, then, do you consider it good accounting practice to make writedowns in the property account of companies because they have paid more than what you think they should have paid?

A. No, I wouldn't say that at all.

Q. Isn't that what you would have done?

A. I didn't say that I would have taken it out of the plant account. I said I would have questioned it.

The Trial Examiner: Would you question it, Mr. Schutte, if there was no indication to you that there was a lack of arm's length dealing between the contractor and the company?

The Witness: If there were a lack of arm's length dealing?

The Trial Examiner: Yes.

The Witness: I certainly would have questioned it in that case.

The Trial Examiner: Would you have questioned it in the reverse situation?

The Witness: If it seemed that the costs of that particular section were not comparable with some other section, I wouldn't necessarily remove it from the company's plant account. I don't mean it to that extent, but I would certainly question it and bring it to the Commision's attention, or if it weren't a rate case, to the attention of whateyer responsible party that I was to report to. In other words, I don't think I would be fulfilling my duty if I permitted something which I didn't feel was justified or I thought was out of line, if I didn't point such things out to my superiors.

By Mr. Dougherty:

Q. Well, now, what I am trying to get at is the difference between that process you feel you must do in an ordinary accounting examination and where a question of rate fixing is involved. Would you do it in both instances?

A. I think so.

Q. Well, now, does that mean, then, that when you make an ordinary audit or examination of the accounts of a company that you don't accept the books as representing the factual transactions, if you can follow them through to the vouchers, but you must go into the question of whether the company was out-traded or paid more money that it should in certain instances?

A. No, I wouldn't go so far as to say that. It would depend upon the purpose that the accounting examination were being made for. Most of my accounting examinations prior to my employment by the Federal Power Commission were in connection with the purchase of property, and in that connection it was always my job to point out anything that didn't look one hundred per cent to me, for the guidance of my superiors in making their contemplated purchases.

Q. Well, you were then assisting in the determination of value?

A. In a way, yes.

Q. Yes, and certainly that was your job to do that.

A. That's right.

Q. Now, when the Colorado Interstate Gas Company first classifies its accounts in accordance with the Federal Power Commission Code it is not doing it for the purpose

of determining value, but it is doing it, is it not, to reflect the facts of the expenditures of money on its books?

A. Well, now, we are talking about two entirely different things. I agree with you that from the standpoint of Colorado Interstate Gas Company making its original classification or its classification of original cost, I don't see any objection to their putting this particular thing in Account No. 302 because it will be definitely brought to the attention of the Commission as such and the Commission shouldn't in my opinion be satisfied with the amounts there recorded and the result would be that some adjustment—possibly not adjustment, but the matter would be given the full consideration of the Commission.

Q. And they would investigate it and we would have to satisfy the Commission that the value set up on that contract was proper?

A. Was equitable.

Q. I suppose if we convinced them that it was much less than what its real value was, they wouldn't direct us to write it up, would they?

Mr. Lange: Of course, that has no bearing on this proceeding, Mr. Examiner.

Mr. Dougherty: All right, I'll withdraw it, Mr. Lange.

Q. Now, do you recognize any element of value in a contract that is based on a principle such as this where the price paid for a commodity or service or what-not is computed by including interest, the payment of debt, and interest on the remaining debt rather than merely a contract for so many cents per thousand that might represent some profit in addition to the same item?

A. Do I recognize the value for such contract?

Q. Yes.

A. From an accounting standpoint I think it would be very difficult to determine a value. That doesn't mean that there would be no value, but I wouldn't want to make such a determination.

Q. Let me give you what I think is an analogous situation: Suppose you enter into negotiations with the owner of an office building for a lease for twenty years and this man—the owner of the property and you agreed that you

would work out a lease under the terms of which you would pay the taxes, you would pay the payments required on a mortgage that he had on the building; you would pay interest on the mortgage; you would pay all maintenance, all the operating expenses, and that is all you would pay during the twenty years, year by year, and he said, "I'll make that lease with you if you will pay me a cash down consideration of $100,000," or "X" dollars. That's more appropriate because we aren't talking about definite values.

Now, in the first instance, wouldn't such a lease have some value, namely, that you are having to pay only the things I have mentioned?

A. It might have.

Q. And whether or not that is the lump sum consideration that you might pay him, what that should be would be determined on all of the factors?

A. That's right.

Q. You know, I assume, that in many instances 99-year leases were made and then because of some change in economic conditions or rental values of property or what-not; those leases were sold for a consideration with the purchaser assuming those regular payments as the leases required?

A. That's right.

Q. Now, isn't this transaction, namely, the contract that Colorado Interstate has with Canadian River, one under which a then determined cash value, or value is placed upon the privilege of buying gas and paying for it under the terms set forth in that contract? What I have in mind, Mr. Schutte, is that in principle, isn't that the same thing, leaving out temporarily the question of whether over-value or under-value?

A. There might be some value attached to such a contract.

Q. So that at any rate the parties that were dealing on this basis apparently attached some value to it, as recorded in the books?

A. They attached a value of 42-1/2 per cent of the common stock and ten thousand shares of the preferred stock.

Q. And they measured that value by what someone else had actually paid for the stock?

A. That is what actually happened, yes.

(Vol. XLIII, pp. 5850-5885.)

Other testimony and documentary evidence is collected supra, under title "2. The Agreement between Southwestern Development Company, Cities Service Company and Standard Oil Company (N. J.) to undertake the Project of Constructing the Pipe Line from the Texas Panhandle Field to Denver."

Docket G-124
Canadian River Gas Co.

1453

Exhibit No

OFFICERS AND DIRECTORS OF
CANADIAN RIVER GAS COMPANY
FROM DATE OF ORGANIZATION THROUGH DECEMBER 31, 1939

DIRECTORS: Elected March 21, 1928	Subsequent Changes by Election				Status at Dec. 31, 1939
	Oct. 25, 1929	Jan. 9, 1932	Mar. 1, 1932	Mar. 2, 1937	
W. S. Fitzpatrick	-	-	P. C. Spencer	-	P. C. Spencer
N. K. Moody	-	-	-	-	N. K. Moody
A. R. Jones	-	-	-	-	Albert R. Jones
J. M. Parker	F. E. Jones	-	-	-	Frank E. Jones
R. W. Gallagher	-	W. E. Bryan	-	E. A. Sickels	E. A. Sickels

OFFICERS: Elected March 27, 1928		Subsequent Changes by Election						Status at Dec. 31, 1939
		Mar. 4, 1930	Jan. 7, 1931	Mar. 3, 1932	Apr. 28, 1932	Jan. 25, 1934	Mar. 1, 1938	
President	W. S. Fitzpatrick	-	-	N. K. Moody	-	-	-	N. K. Moody
Vice President	x x x	x x x	N. K. Moody	P. C. Spencer	-	-	-	P. C. Spencer
Vice President	A. R. Jones	-	-	-	-	-	-	Albert R. Jones
Vice President	x x x	x x x	x x x	x x x	x x x	x x x	R. E. Wertz	R. E. Wertz
Treasurer	W. V. Hickman	-	-	-	-	George Baird	-	George Baird
Assistant Treasurer	x x x	Victor A. Iobe	-	x x x	x x x	x x x	x x x	x x x
Assistant Treasurer	x x x	x x x	L. H. Simpson	-	-	-	J. O. Shields	J. O. Shields
Secretary	Victor A. Iobe	-	-	-	A.W. Heineman	George Baird	-	George Baird
Assistant Secretary	x x x	x x x	A.W. Heineman	-	x x x	x x x	E. A. Sickels	E. A. Sickels
Assistant Secretary	x x x	x x x	x x x	x x x	x x x	x x x	W. M. Wright	W. M. Wright

FEDERAL POWER COMMISSION. DOCKET NO.
EXHIBIT NO. 143 (FOR IDENTIFICATION)
DATE IDENTIFIED

ERAL POWER COMMISSION
t No. G-118 121 124
g Ex. No. 143

Docket G-124
Colorado Interstate Gas Co.

OFFICERS AND DIRECTORS OF COLORADO INTERSTATE GAS COMPANY FROM DATE OF ORGANIZATION THROUGH DECEMBER 31, 1939

DIRECTORS: Elected June 8, 1927	Subsequent Changes by Election					
	June 5, 1928	Sept. 27, 1928	May 16, 1929	May 3, 1932	July 12, 1933	May 1, 1934
W. S. Fitzpatrick, Chairman	-	-	-	N. K. Moody	-	-
A. R. Jones	-	-	-	-	-	-
R. W. Gallagher	-	-	-	-	-	F. H. Lerch, Jr
H. C. Cooper	N. K. Moody	-	-	P. C. Spencer	-	-
E. S. Hall	-	W. A. Jones	-	-	-	W.A. Dougherty
Christy Payne	-	-	-	-	H. C. Cooper	-
J. B. Luse	-	-	H. A. Koechling	-	-	H. O. Caster

OFFICERS: Elected June 8, 1927		Subsequent Changes by Election				
		May 16, 1929	Oct. 10, 1932	July 12, 1933	June 22, 1934	Feb. 23, 1939
President	Christy Payne	-	-	R.W. Gallagher	H.C. Cooper	F.H. Lerch, Jr.
Vice President	A. R. Jones	-	-	-	-	-
Vice President	R. W. Gallagher	-	-	H.C. Cooper	F.H. Lerch, Jr.	W.A. Dougherty
Treasurer	J. B. Luse	H.A. Koechling	-	-	F.H. Lerch, Jr.	Jas. Comerford
Assistant Treasurer	H. A. Koechling	Jas. Comerford	-	-	-	-
Assistant Treasurer	-	L. H. Simpson	J.O. Shields	-	-	-
Secretary	E. E. Duvall	-	-	-	-	-
Assistant Secretary	H. A. Koechling	Jas. Comerford	-	-	-	-

Exhibit No. 143

OFFICERS AND DIRECTORS OF
COLORADO INTERSTATE GAS COMPANY
FROM DATE OF ORGANIZATION THROUGH DECEMBER 31, 1939

Subsequent Changes by Election							Status at
Sept. 27, 1928	May 16, 1929	May 5, 1932	July 12, 1933	May 1, 1934	May 5, 1936	May 12, 1939	Dec. 31, 1939
-	-	N. K. Moody	-	-	-	-	N. K. Moody, Chairman
-	-	-	-	-	-	-	A. R. Jones
-	-	-	-	F. H. Lerch, Jr.	-	-	F. H. Lerch, Jr.
-	-	P. C. Spencer	-	-	-	-	P. C. Spencer
W. A. Jones	-	-	-	W.A. Dougherty	-	-	W. A. Dougherty
-	-	-	H. C. Cooper	-	-	E. E. Duvall	E. E. Duvall
-	H. A. Koechling	-	-	H. O. Castor	Chas. Fruesuff	-	Chas. Fruesuff

Subsequent Changes by Election					Status at
May 16, 1929	Oct. 10, 1932	July 12, 1933	June 22, 1934	Feb. 23, 1939	Dec. 31, 1939
-	-	R.W. Gallagher	H.C. Cooper	F.H. Lerch, Jr.	F. H. Lerch, Jr.
-	-	-	-	-	A. R. Jones
-	-	H.C. Cooper	F.H. Lerch, Jr.	W.A. Dougherty	W.A. Dougherty
H.A. Koechling	-	-	F.H. Lerch, Jr.	Jas. Comerford	Jas. Comerford
Jas. Comerford	-	-	-	-	-
L. H. Simpson	J.O. Shields	-	-	-	J. O. Shields
-	-	-	-	-	E. E. Duvall
Jas. Comerford	-	-	-	-	Jas. Comerford

Docket G-121

SUMMARY OF COMMON OFFICERS AND DIRECTORS DURING THE YEARS 1927 AND 1928, BETWEEN CANADIAN RIVER GAS COMPANY, COLORADO INTERSTATE GAS COMP AND CERTAIN OTHER COMPANIES SHOWN ON THE CORPORATE CHART

Name of Officers and Directors	Canadian River Gas Company	Colorado Interstate Gas Company	Colo.-Wyoming Gas Company	Amarillo Oil Company	Southwestern Development Company	Amarillo Gas Company	Clayton Gas Company	Dalhart Gas Company	Panhandle Pipe Line Company	West Texas Gas Company	The Mission Oil Company
W. S. Fitzpatrick	Pres. & Dir.	Chrm. of Bd.	-	-	Director	-	-	-	-	-	-
H. K. Moody	Director	(1) Director	-	Pres. & Dir.	Pres. & Dir.	-	-	-	-	(2) Pres. & Dir.	-
A. N. Jones	V.P. & Dir.	V.P. & Dir.	-	V.P. & Dir.	V.P. & Dir.	-	-	-	-	-	Chrm. of Bd.
J. M. Parker	Director	-	-	-	Director	Director	-	-	-	-	V.P. & Dir.
R. W. Gallagher	Director	V.P. & Dir.	-	-	-	-	-	-	-	-	-
W. V. Hickman	Treasurer	-	-	-	Asst. Off.	-	-	-	-	-	-
W. A. Jones (W. Alton Jones)	-	(3) Director	-	-	-	-	-	-	-	-	-
Christy Payne	-	Pres. & Dir.	-	-	-	-	-	-	-	-	-
H. L. Doherty	-	-	Pres. & Dir.	-	-	-	-	-	-	-	-
F. R. Coates (Frank R. Coates)	-	-	V.P. & Dir.	-	-	-	-	-	-	-	-
E. E. McWhiney	-	-	Asst. Off.	-	-	-	-	-	-	-	-
C. B. Wedum	-	-	Asst. Off.	-	-	-	-	-	-	-	-
L. F. Musil	-	-	Treasurer	-	-	-	-	-	-	-	-
T. A. Wallace (Thomas A. Wallace)	-	-	Asst. Off.	-	-	-	-	-	-	-	-
Dana H. Kelsey	-	-	-	Director	Director	-	-	-	-	-	-
E. W. Goebel	-	-	-	Director	-	-	-	-	-	-	(7) Asst.Off.Dir.
A. B. Hookins	-	-	-	Sec. & Treas.	Sec. & Treas.	-	-	-	-	(8) Sec. & Treas.	-
Frank E. Jones	-	-	-	-	Director	-	-	-	Pres. & Dir.	-	Pres. & Dir.
Barry M. Brown (H. M. Brown)	-	-	-	-	-	V.P. & Dir.	-	(9) Director	Asst. Off.	-	-
M. F. Iliff	-	-	-	-	-	(10) Director	-	-	-	-	(11) Asst. Off.
Wayne V. Jones	-	-	-	-	-	(12) Director	-	-	-	(13) Director	(14) Asst. Off.
V. A. Hays	-	-	-	-	-	-	Pres. & Dir.	Pres. & Dir.	-	(15) Director	-
E. A. Meyer	-	-	-	-	-	-	V.P. & Dir.	(16) V.P. & Dir.	V.P. & Dir.	-	-
E. A. Sickels	-	-	-	-	-	-	Sec.Treas.Dir.	(17) Treas.Sec.Dir.	-	-	-
C. W. Smith	-	-	-	-	-	-	Manager	Manager	-	-	-
R. P. Hinchey	-	-	-	-	-	-	-	(18) Director	-	(19) V.P. & Dir.	-
R. M. Jones	-	-	-	-	-	-	-	-	Director	-	(20) Sec. & Dir.
E. A. Taylor	-	-	-	-	-	-	-	-	-	(21) Director	(22) Secretary
C. T. White	-	-	-	-	-	-	-	-	-	-	-
Thomas I. Carter	-	-	-	-	-	-	-	-	-	-	-
Warren W. Foster	-	-	-	-	-	-	-	-	-	-	-
Ernest H. Johnston	-	-	-	-	-	-	-	-	-	-	-
Paul R. Jones	-	-	-	-	-	-	-	-	-	-	-
John M. McMillin	-	-	-	-	-	-	-	-	-	-	-
Chas. A. Fruseuff	-	-	-	-	-	-	-	-	-	-	-
R. W. Rollins	-	-	-	-	-	-	-	-	-	-	-
Clare N. Stagnerd	-	-	-	-	-	-	-	-	-	-	-

Note: (1) From 6/5/28
(2) " 5/28/27
(3) " 9/27/28
(4) From 6/15/27
(5) " 11/20/28
(6) " 6/1/27
(7) Asst. Off. to 3/8/27
(8) From 5/31/27
(9) To 3/9/28
(10) To 5/10/27
(11) To 3/8/27
(12) From 5/10/27
(13) From 5/31/27
(14) " 3/8/27
(15) " 5/28/27
(16) From 3/9/28
(17) " 3/9/28
(18) To 3/9/28
(19) Director from 5/28/27
(19) V.P. from 3/9/28
(20) Secretary to 3/8/27

EXHIBIT 143 (3)

D DIRECTORS DURING THE YEARS 1927 AND 1928, BETWEEN CANADIAN RIVER GAS COMPANY, COLORADO INTERSTATE GAS COMPANY, COLORADO-WYOMING GAS COMPANY AND CERTAIN OTHER COMPANIES SHOWN ON THE CORPORATE CHART

Amarillo Oil Company	Clayton Gas Company	Dalhart Gas Company	Panhandle Pipe Line Company	West Texas Gas Company	The Mission Oil Company	Standard Oil Company (New Jersey)	Standard Oil Company of New Jersey	Sinclair Consolidated Oil Corporation	Cities Service Company	Cities Service Power & Light Company	Public Service Co. of Colorado	Pueblo Gas and Fuel Company
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	(2) Pres. & Dir.	-	-	-	-	-	-	-	-
-	-	-	-	-	Chrm. of Bd.	-	-	-	-	-	-	-
Director	-	-	-	-	V.P. & Dir.	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	(4) V.P. & Dir.	V.P. & Dir.	(5) V.P. & Dir.	-
-	-	-	-	-	-	(6) Director	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	Pres. & Dir.	Pres. & Dir.	Pres. & Dir.	Pres. & Dir.
-	-	-	-	-	-	-	-	-	Director	V.P. & Dir.	-	-
-	-	-	-	-	-	-	-	-	Asst. Off.	Asst. Off.	Asst. Off.	-
-	-	-	-	-	-	-	-	-	Asst. Off.	Asst. Off.	Asst. Off.	-
-	-	-	-	-	-	-	-	-	Treas. & Dir.	V.P. & Dir.	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	Asst. Off.	Asst. Off.	Asst. Off.	-
-	-	-	-	-	(7) Asst.Off.Dir.	-	-	-	-	-	-	-
-	-	-	-	(8) Sec. & Treas.	-	-	-	-	-	-	-	-
-	-	-	Pres. & Dir.	-	Pres. & Dir.	-	-	-	-	-	-	-
V.P. & Dir.	-	(9) Director	Asst. Off.	-	-	-	-	-	-	-	-	-
(10) Director	-	-	-	-	(11) Asst. Off.	-	-	-	-	-	-	-
(12) Director	-	-	-	(13) Director	(14) Asst. Off.	-	-	-	-	-	-	-
-	Pres. & Dir.	Pres. & Dir.	-	(15) Director	-	-	-	-	-	-	-	-
-	V.P. & Dir.	(16) V.P.& Dir.	V.P. & Dir.	-	-	-	-	-	-	-	-	-
-	Sec.Treas.Dir.	(7) Treas.Sec.Dir.	-	-	-	-	-	-	-	-	-	-
-	Manager	Manager	-	-	-	-	-	-	-	-	-	-
-	-	(18) Director	-	(19) V.P. & Dir.	-	-	-	-	-	-	-	-
-	-	-	Director	-	(20) Sec. & Dir.	-	-	-	-	-	-	-
-	-	-	-	(21) Director	(22) Secretary	-	-	-	-	-	-	-
-	-	-	-	-	-	Secretary	Secretary	-	-	-	-	-
-	-	-	-	-	-	-	-	-	V.P. & Dir.	V.P. & Dir.	V.P. & Dir.	V.P. & Dir.
-	-	-	-	-	-	-	-	-	Director	Director	-	-
-	-	-	-	-	-	-	-	-	V.P. & Dir.	Treas. & Dir.	-	-
-	-	-	-	-	-	-	-	-	Sec. & Dir.	Sec. & Dir.	-	-
-	-	-	-	-	-	-	-	-	Director	V.P. & Dir.	-	-
-	-	-	-	-	-	-	-	-	Director	Director	-	-
-	-	-	-	-	-	-	-	-	Director	-	Director	-
-	-	-	-	-	-	-	-	-	-	-	V.P. & Dir.	Director

To 5/10/27
To 3/8/27
From 5/10/27

(13) From 5/31/27
(14) " 3/8/27
(15) " 5/28/27

(16) From 3/9/28
(17) " 3/9/28
(18) To 3/9/28

(19) Director from 5/28/27
(19) V.P. from 3/9/28
(20) Secretary to 3/8/27

(21) From 5/28/27
(22) " 3/8/27

20. The Equivalent Original Cost of Colorado Interstate's Portion of the Physical Properties of an Assumed Denver Line Used and Useful for the Transmission of Resale Gas Only, to December 31, 1939, and Estimated Additional Cost, 1940 to 1947, Inclusive.

A description of the Denver Line for resale gas only was given in Exhibit 98, Witness Rhodes, and in this same Exhibit is shown the additional compressor station facilities that would be required up to December 31, 1943, which has already been abstracted *supra* under the heading, "Description of the facilities of an assumed Denver Line used and useful in the transmission of resale gas only." As there shown, the method employed was to reduce the main line from Bivins Station to the Arkansas River from a 22" line to a 20" line, and eliminate all laterals and metering stations not needed for resale gas, and to reduce the number and size of certain river crossings.

Exhibit 134, Witness Lusk (Vol. XXXI, p. 4269), shows the equivalent original cost of such a line. This was accomplished by taking the original cost of the line as actually built, and making adjustments on account of the different facilities required. Deductions on account of reduced size of pipe were made to reflect the lower prices actually paid for materials of the reduced size when the system was constructed. Deductions in the contract cost of laying the lines and in the miscellaneous costs were made in proportion to the reduction in the diameter of the pipe. In the case of river crossings, with reduced number of lines or reduced diameter of pipe, reductions in the original cost were made proportionate to the reduction in the number of lines or the diameter of the pipe. Deductions for laterals and other facilities used solely for direct sale of gas where made (p. 4270) at the original cost of such facilities, as shown by the books.

The costs of the additional compressor station facilities shown in Exhibit 98 to be required for the resale line up to December 31, 1943, were determined largely by the original cost of the initial Ullhart compressor station as completed early in 1940. (p. 4271).

Q. Do you know whether or not Colorado Interstate Gas Company or Cities Service Company owned any stock in that company at that time?

A. I do not.

Q. Do you know whether or not Consolidated Oil Corporation owned any stock in Colorado Fuel & Iron at that time?

Mr. March: I object to that question because Consolidated Oil Corporation was unorganized at that time, as I understand it.

Mr. Campbell: The witness can answer yes or no, can't he?

The Trial Examiner: The objection is overruled.

The Witness: I was about to make the same statement that Mr. March did. I don't know.

(Vol. XXXVII, pp. 5035-5042.)

* * * * *

Q. Now, do you know how much stock Standard Oil (N. J.) owned in Consolidated Oil Corporation, Southwestern Development Company, Canadian River Gas Company, Public Service Company of Colorado or Cities Service Company as of either November 5th, 1927 or June 1st, 1928?

A. I do not.

Q. It has already been testified here that Standard Oil (N. J.) acquired 42½ per cent of the common stock of Colorado Interstate Gas Company as soon as the last named company was formed?

A. Yes, sir.

(Vol. XXXVII, pp. 5043-5044.)

* * * * *

Q. What stock ownership did Standard Oil (N. J.) have in Colorado Interstate Gas Company as of either of the dates November 5, 1927 or June 1, 1928?

A. As a matter of fact, they didn't actually get their stock until after June 5, 1928, but they got 42½ per cent of the common stock of Colorado Interstate Gas Company, and that was 531,250 shares, and they also acquired 10,000 shares or fifty per cent of the six per cent $100 par preferred capital stock of Colorado Interstate Gas Company.

(Vol. XXXVII, p. 5045.)

Q. Do you know how those directors of either of those two companies; namely, Canadian River Gas Company and Colorado Interstate Gas Company, voted on that agreement of—sales agreement of January 3rd, 1928?

A. No, I do not.

Q. Now, Mr. Schutte, about that same time there was a similar sales agreement for sales of gas entered into between Colorado Interstate Gas Company and Public Service Company of Colorado. Do you know who the directors of Public Service Company of Colorado were at that time?

A. W. A. Jones, H. L. Doherty, Clare N. Stannard, E. W. Rollins, Thomas I. Carter.

Q. Do you know how many other directors there might have been on that date?

A. I do not.

Q. You don't know how any of those directors voted on that agreement?

A. No, sir.

Mr. Campbell: That agreement, by the way, is described in Exhibit 7, for the purpose of the record.

The Trial Examiner: It is in the record, Mr. Campbell.

Mr. Campbell: Yes.

Q. Now, about that same time; that is, January 3rd, 1928, a sales agreement was entered into between Colorado Interstate Gas Company and the Colorado Fuel & Iron Corporation for the sale of industrial gas. That is described in Exhibit 9 in this case. Do you know who the directors of Colorado Fuel & Iron were on or about that same time?

A. No, sir.

Q. Do you know whether at that time Standard Oil (N J.) owned any stock in Colorado Fuel & Iron?

A. I don't have that information, no, sir.

Q. Do you know whether or not at that time Southwestern Development Company owned any stock in the Colorado Fuel & Iron?

A. I do not.

Q. Do you know whether or not at that time Canadian River Gas Company at that time owned any stock in Colorado Fuel & Iron?

A. I do not.

The Witness: M-u-s-i-l.

—Thomas I. Carter, Warren W. Foster, Ernest H. Jones, Paul R. Rollins, John M. McMillin, Charles A. Frueauff, E. W. Rollins.

By Mr. Campbell:

Q. Do you know how many other directors there were on that date?

A. I don't know whether there were any other directors, but these have common directorates in other companies.

Q. Very well. Now, do you know how any of those directors that you have named of Southwestern Development Company voted on this agreement of April 5th, 1927?

A. I do not.

Q. Do you know how any of the directors of Cities Service Company that you have named voted on that same agreement?

A. No, sir.

Q. Now, Mr. Schutte, there was introduced in evidence in this case as Exhibit No. 16 a gas sales agreement dated January 3rd, 1928 between Canadian River Gas Company and Colorado Interstate Gas Company. Who were the directors of Canadian River Gas Company on that date?

A. That is also shown in Exhibit 143 at Page 3. Canadian River Gas Company: W. S. Fitzpatrick was President and Director; N. K. Moody, Director; A. R. Jones, Vice President and Director; J. M. Parker, Director; R. W. Gallagher, Director.

Q. How many other directors were there on that date?

A. I couldn't tell you that at the moment because these are the only ones that—

Q. Very well, if you don't know, just say so.

All right, who were the directors of Colorado Interstate Gas Company on that same date?

A. W. S. Fitzpatrick, Chairman of the Board; N. K. Moody was Director commencing June 5th, 1928; A. R. Jones was Vice President and Director; R. W. Gallagher was Vice President and Director; Christy Payne was President and Director; and I show W. A. Jones as Director commencing in September of 1928.

Q. Do you know whether there were any other directors on that date other than those you have named?

A. I do not.

The Witness: Yes, I recall the question but I don't have the information available as to the holdings Standard Oil may have had in Southwestern Development Company or Cities Service Company as of April 5th, 1927.

By Mr. Campbell:

Q. Very well, sir. Now, what stock did Southwestern Development Company own in Standard Oil (N. J.) as of April 5th, 1927?

A. I don't have that information available either.

Q. Very well, sir. Now, what did Cities Service Company own on or about April 5th, 1927 of Standard Oil (N. J.) stock?

A. I don't have that information available.

Q. Who were the directors of the Standard Oil (N. J.) on April 5th, 1927?

A. I don't have all of them, but several of them are shown on Page 3 of Exhibit 143.

Q. Name them, please.

A. Christy Payne. That's the only one I show here as a director.

Q. That is, of Standard Oil (N. J.)?

A. Standard Oil Company, New Jersey paren, yes, sir.

Q. Do you know how many other directors there were of Standard Oil (N. J.) on that date?

A. I don't have that information available just at the moment.

Q. All right, who were the directors of Southwestern Development Company on that date?

A. W. S. Fitzpatrick, H. K. Moody, A. R. Jones, J. M. Parker, Dana Kelsey, Frank E. Jones.

Q. Very well, who were the directors of Cities Service Company on that same date—pardon me, just a minute. Did you name all of the directors of Southwestern Development Company on that date?

A. I don't know that they are all of them. These are the ones that were interested in some of the other companies also.

Q. Very well, now, who are the directors of Cities Service Company as of that date?

A. W. A. Jones, H. L. Doherty, E. E. McWhiney, L. F. Musil—

The Trial Examiner: How do you spell that?

Q. Mr. Schutte, that was introduced in evidence in this case as Exhibit 1, a memorandum of stipulations *come* times referred to as a memorandum agreement between the Standard Oil Company (N. J.) and Southwestern Development Company and Cities Service Company, and that was dated April 5th, 1927. Now, how much stock did Standard Oil (N. J.) own in either Southwestern Development Company or Cities Service Company on that date?

Mr. March: I object to that question because this exhibit, if it please the Examiner, does not purport to show anything other than the dates indicated here. Now, we probably have another exhibit which will show the relationship as of that date. This purports to show the relationship as of December 31, 1939 and the other dates as indicated here. I don't object to asking any questions involving the exhibit here itself.

The Trial Examiner: Mr. Schutte made an investigation of this matter in which these two exhibits are involved and, of course, necessarily would come across certain information. Now, if Commission's counsel is going to put that in in a later exhibit, perhaps it might—

Mr. March: I think it is already in evidence that the Rockefeller interests holdings in Standard Oil were substantial at that date.

Mr. Campbell: If it please the Examiner, Mr. March is off track. I am not inquiring at this time about the so-called Rockefeller interests. In fact, I wouldn't be able to make an intelligent inquiry about that. I haven't yet discovered what he means by the Rockefeller interests. I am talking about Standard Oil (N. J.), Southwestern Development Company and Cities Service Company, as of April 5th, 1927.

Now, if the Examiner please, if the Commission is going to supplement Exhibits 141, 142 and 143 with other exhibits, why, I would like to defer cross examination until those other related exhibits are here.

Mr. March: I have no objection to that examination in spite of the fact that that is going in. It is already in evidence.

The Trial Examiner: Do you recall the question, Mr. Schutte?

A. The pages are not numbered.

Mr. Lange: Is that George MacDonald?

The Witness: I believe that is the name. I will follow him across.

Mr. Campbell: Which page are you on?

The Witness: The next to the last page.

Mr. Lange: It is the third from the last page, Mr. Schutte.

The Witness: That is George MacDonald. You are right, Mr. Lange. It is the second from the last page—the third from the last page.

Mr. Lange: I think, Mr. Schutte, for the sake of certainty about it, why not number every one of these pages in the whole exhibit and then they can be easily referred to?

Mr. Campbell: You mean number the pages?

Mr. Lange: Yes.

Mr. March: You are numbering the pages consecutively?

The Witness: I am numbering the pages consecutively.

Mr. Brock: Starting with the first statement?

The Witness: Starting with the first statement, and not including the index. That gives me seven pages.

Page 3 is the summary of the common officers and directors during the years 1927 and '28, between Canadian River Gas Company, Colorado Interstate Gas Company, Colorado-Wyoming Gas Company, and certain other companies shown on the corporate chart.

Pages 4 and 5 cover the summary of common officers and directors during the year 1931 between Canadian River Gas Company, Colorado Interstate Gas Company, Colorado-Wyoming Gas Company, and certain other companies shown on the corporate chart; and Pages 6 and 7 cover the summary of common officers and directors during the year 1939 between Canadian River Gas Company, Colorado Interstate Gas Company, Colorado-Wyoming Gas Company, and certain other companies shown on the corporate chart.

(Vol. XXXVII, pp. 5029-5034.)

panies as shown on the corporate chart. Now, in here I have endeavored to show the parties holding common directorates in the various companies, and it likewise indicates the offices held, and that is during the years 1927 and 1928.

Q. All of those companies there are shown on the corporate chart?

A. Yes, sir, every one of them except, I believe, the Pueblo Gas & Fuel Company, which I don't think is on the chart because that—

Q. It is not on the chart?

A. No.

Q. All right. That is the only one, isn't it?

A. That is right. That is the only one.

The next page is a summary of the common officers and directors during the year 1931 between Canadian River Gas Company, Colorado Interstate Gas Company, Colorado-Wyoming Gas Company, and certain other companies as shown on the corporate chart, and that also shows Pueblo Gas & Fuel Company which is not on the chart. All the others are.

Q. I notice there you have the Sinclair Consolidated Oil Corporation. That is on one of those schedules there. That is not on the chart. That is some predecessor company, isn't it?

A. As a matter of fact, I don't have any names in there either.

Q. You don't have any names under there at all?

A. No.

Q. On any of your schedules?

A. That is right, and the last two pages covered the summary of the common officers and directors during the year—wait a minute. I will have to go back there.

For the year 1931 I do have one name under Sinclair Consolidated Oil Corporation.

Q. Is that one of the companies that were merged into Consolidated Oil Corporation?

A. Yes, sir.

Q. It is a predecessor of Consolidated Oil Corporation?

A. That is right. That page belongs with the 1931. In other words, these two pages go together.

Q. Which two pages are you referring to?

[Testimony of Witness Schutte.]

Q. Mr. Schutte, I hand you a document entitled "Officers and Directors of Canadian River Gas Company, Officers and Directors of Colorado Interstate Gas Company; Summary of Common Officers and Directors—Years 1927 and 1928; Summary of Common Officers and Directors—Year 1931; Summary of Common Officers and Directors—Year 1939."

I hand you this document and I will ask you what it is and I will ask you to go through it, going through the few schedules in the document and stating just exactly what the nature is of the schedules?

A. This is a schedule of officers and directors of the Canadian River Gas Company and the Colorado Interstate Gas Company and certain other companies for the various years shown by the index, which was prepared under my supervision.

Mr. March: I will ask that the document be marked for identification.

The Trial Examiner: It will be marked for identification as Exhibit No. 143.

(Exhibit 143, Witness Schutte, marked for identification.)

By Mr. March:

Q. I don't think your explanation was quite full enough, Mr. Schutte. Will you go through each of the schedules here, stating exactly what you have in them?

A. On the first page we show the officers and directors of Canadian River Gas Company from the date of organization through December 31st, 1939. It shows the changes in officers and directors and the dates of such changes and the status as of December 31st, 1939.

The second page is a summary of the officers and directors of the Colorado Interstate Gas Company as of the date of organization through December 31st, 1939, and it likewise shows all of the changes and the dates of the changes, and the status on December 31st, 1939.

The next page is a summary of the common officers and directors during the years 1927 and 1928, between Canadian River Gas Company, Colorado Interstate Gas Company, Colorado-Wyoming Gas Company, and certain other com-

OMMON OFFICERS AND DIRECTORS DURING THE YEAR 1950, BETWEEN CANADIAN RIVER GAS COMPANY, COLORADO INTERSTATE GAS COMPANY, COLORADO-WYOMING GAS COMPANY AND CERTAIN OTHER COMPANIES SHOWN ON THE CORPORATE CHART

Clayton Gas Company	Kansas Gas Company	Panoma Oil & Gas Company	Panhandle Pipe Line Company	Red River Gas Company	West Texas Gas Company	Natural Gas Pipeline Co. of America	Texoma Natural Gas Company	The Ohio Oil Company	Standard Oil Company (New Jersey)	Standard Oil Company of New Jersey	Gas Companies Incorporated	Consolidated Oil Corporation	Cities Service Company	Cities Service Power & Light Company	Public Service Company of Colorado
-	-	Pres. & Dir.	-	-	V.P. & Dir.	Director	Director	-	-	-	-	-	-	-	-
-	-	-	-	Pres. & Dir.	-	-	-	-	-	-	-	-	-	-	-
Director	-	V.P. & Dir.	-	-	Pres. & Dir.	-	Director	Pres. & Dir.	-	-	-	-	-	-	-
-	-	-	V.P. & Dir.	Director	-	-	-	Chrm. of Bd.	-	-	-	-	-	-	-
Asst. Off. & Dir.	Asst. Off. & Dir.	-	V.P. & Dir.	V.P. & Dir.	Asst. Off. & Dir.	-	-	-	-	-	-	-	-	-	-
Pres. & Dir.	Pres. & Dir.	-	Pres. & Dir.	-	-	-	-	-	-	-	-	-	-	-	-
Treas. & Sec.	Treas. & Sec.	-	Treas. & Sec.	Treas. & Sec.	Treas. & Sec.	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asst. Off.	Asst. Off.	-	-	Asst. Off.	Asst. Off.	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	Pres. & Dir.	-	-	-	-
-	-	-	-	-	-	V.P. & Dir.	-	-	-	-	V.P. & Dir.	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	Secretary	-	-	-	-
-	-	-	-	-	-	Director	Director	-	-	-	-	-	(1) Director	-	-
-	-	-	-	-	-	-	-	-	-	-	Treasurer	-	-	-	-
-	-	-	-	-	-	Pres. & Dir.	Pres. & Dir.	-	-	-	-	-	-	(2) V.P. & Dir.	(3) V.P. & Dir.
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Asst. Off.	Asst. Off.	-	-	-	-	-	Asst. Off.	(4) Asst. Off.	(5) Asst. Off.
-	-	-	-	-	-	Treasurer	Treasurer	-	-	-	-	-	V.P. & Dir.	(6) Treasurer	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Asst. Off.	(7) Asst. Off.	(8) Asst. Off.
-	Director	-	-	-	-	-	-	Trans. Sec. & Dir.	-	-	-	-	-	-	-
V.P.	V.P.	-	V.P. Asst. Off.	V.P.	V.P.	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	V.P. & Dir.	V.P. & Dir.	-	-	-	-	-	-	-	-
-	-	-	-	-	-	V.P. & Dir.	V.P. & Dir.	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Director	Director	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Director	Director	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Director	Director	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Secretary	Secretary	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Asst. Off.	Asst. Off.	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	(10) Asst. Off.	Asst. Off.	Asst. Off.
-	-	-	-	-	-	(9) Asst. Off.	(9) Asst. Off.	-	-	-	-	-	-	-	-
-	-	-	-	-	-	Asst. Off.	Asst. Off.	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	Treasurer	Treasurer	-	Director	Director	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	V.P. & Dir.	(11) V.P.	(12) V.P. & Dir.
-	-	-	-	-	-	-	-	-	-	-	-	-	Director	(13) Director	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Sec. & Dir.	(14) Secretary	-
-	-	-	-	-	-	-	-	-	-	-	-	-	Director	(15) V.P. & Dir.	-

SUMMARY OF COMMON OFFICERS AND DIRECTORS DURING THE YEAR 1959, BETWEEN CANADIAN RIVER GAS COMPANY, COLORADO INTERSTATE GAS COMPANY, COLORADO AND CERTAIN OTHER COMPANIES SHOWN ON THE CORPORATE CHART

Name Officers Directors	Canadian River Gas Company	Colorado Interstate Gas Company	Colo.-Wyoming Gas Company	Amarillo Oil Company	Southwestern Development Company	Amarillo Gas Company	Clayton Gas Company	Kansas Gas Company	Panoma Oil & Gas Company	Panhandle Pipe Line Company	Red River Gas Company	West Texas Gas Company	Natural Gas Pipeline Co. of America	Texoma Natural Gas Company	The Mission Oil Company
Spencer	V.P. & Dir.	Director	-	V.P.	V.P. & Dir.	-	-	-	Pres. & Dir.	-	-	V.P. & Dir.	Director	Director	-
Moody	Pres. & Dir.	Chrm. of Bd.	-	Pres. & Dir.	Pres. & Dir.	-	-	-		-	Pres. & Dir.	-	-	-	-
E. Jones	V.P. & Dir.	V.P. & Dir.	-	-	V.P. & Dir.	-	Director	-	V.P. & Dir.	-	-	Pres. & Dir.	-	Director	Pres. & Dir.
J. Jones	Director	-	-	-	Director	V.P. & Dir.	-	-	-	V.P. & Dir.	Director	-	-	-	Chrm. of Bd.
Hickey	Asst. Off. & Dir.	-	-	V.P. & Dir.	Asst. Off. & Dir.	V.P. & Dir.	Asst. Off. & Dir.	Asst. Off. & Dir.	-	V.P. & Dir.	V.P. & Dir.	Asst. Off. & Dir.	-	-	-
Werts	V.P.	-	-	V.P.	-	Pres. & Dir.	Pres. & Dir.	Pres. & Dir.	-	Pres. & Dir.	-	-	-	-	-
. Baird	Treas. & Sec.	-	-	Treas. & Sec.	Treas. & Sec.	Treas. & Sec.	Treas. & Sec.	Treas. & Sec.	-	Treas. & Sec.	Treas. & Sec.	Treas. & Sec.	-	-	-
Shields	Asst. Off.	Asst. Off.	-	-	-	-	-	-	-	-	-	-	-	-	-
Bright	Asst. Off.	-	-	Asst. Off.	-	-	Asst. Off.	Asst. Off.	-	-	Asst. Off.	Asst. Off.	-	-	-
[illegible]	-	Pres. & Dir.	-	-	-	-	-	-	-	-	-	-	-	-	-
Daugherty	-	V.P.& Dir.	-	-	-	-	-	-	-	-	-	-	V.P. & Dir.	-	-
De Vall	-	Sec. & Dir.	-	-	-	-	-	-	-	-	-	-	-	-	-
Fruendff															
. Fruendff)	-	Director	-	-	-	-	-	-	-	-	-	-	Director	Director	-
Comerford	-	Treasurer	-	-	-	-	-	-	-	-	-	-	-	-	-
Jones															
(Tom Jones)	-	-	V.P. & Dir.	-	-	-	-	-	-	-	-	-	Pres. & Dir.	Pres. & Dir.	-
Tetreller	-	-	Director	-	-	-	-	-	-	-	-	-	-	-	-
Holthusy															
r H. Hughney)	-	-	Asst. Off.	-	-	-	-	-	-	-	-	-	Asst. Off.	Asst. Off.	-
Johnston															
ert E. Johnston)	-	-	Treasurer	-	-	-	-	-	-	-	-	-	Treasurer	Treasurer	-
Wallace															
ne A. Wallace)	-	-	Asst. Off.	-	-	-	-	-	-	-	-	-	-	-	-
Trapp	-	-	-	V.P. & Dir.	Director	-	-	Director	-	-	-	-	-	-	Treas. Sec. & Dir.
Snyder	-	-	-	Asst. Off.	-	V.P.	V.P.	V.P.	-	V.P.	V.P.	V.P.	-	-	-
Budke	-	-	-	-	-	Asst. Off.	-	-	-	Asst. Off.	-	-	-	-	-
arris	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brown	-	-	-	-	-	-	-	-	-	-	-	-	V.P. & Dir.	V.P. & Dir.	-
Carr	-	-	-	-	-	-	-	-	-	-	-	-	V.P. & Dir.	V.P. & Dir.	-
F. Mitchell	-	-	-	-	-	-	-	-	-	-	-	-	Director	Director	-
Sedrick	-	-	-	-	-	-	-	-	-	-	-	-	Director	Director	-
Campbell	-	-	-	-	-	-	-	-	-	-	-	-	Director	Director	-
Flather	-	-	-	-	-	-	-	-	-	-	-	-	Secretary	Secretary	-
Wadam													Asst. Off.	Asst. Off.	
. E. Wadam)	-	-	-	-	-	-	-	-	-	-	-	-	(9) Asst. Off.	(9) Asst. Off.	-
MacDonald	-	-	-	-	-	-	-	-	-	-	-	-	Asst. Off.	Asst. Off.	-
Crump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MacDonald	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
I. Carter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forster	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mallin	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

The final result, or equivalent original cost of a Denver pipe line for resale gas alone, is shown separately as between the portion thereof owned by Canadian and Colorado Interstate. The equivalent cost of Canadian's portion is shown on Statement F, Part 1, as of December 31, 1939, as $3,933,234; and on Statement 1, Part 2, it is shown year by year, 1940 to 1947 inclusive. For 1940 and 1941 it is $3,966,644; for 1942 it is $4,095,644, and for each of the years 1943 to 1947 inclusive it is $4,307,737. For Colorado Interstate's portion this is shown year by year by accounts from 1928 to 1939 on Statement 2, Part 1, attached to Exhibit 134, and as of December 31, 1939, it is $11,412,163 and in Part 2 of Statement 2 it is shown year by year through 1947. For the years 1940 and 1941 the figure is the same as for 1939, and from 1942 to 1947 inclusive it is $11,657,163.

[Testimony of WILLIAM A. LUSK.]

Q. Now, in this Exhibit 134 you have also made certain calculations with reference to amounts applicable to the construction of a proposed 20-inch line on the items of adjustment to general construction costs applicable to net property additions on Statement 1. Of what item is that a part?

A. That is a part of the same line number in Exhibit 67, adjustment for general construction costs applicable to net property additions in Line 7 of Exhibit 134 and Line 9 in Exhibit 67.

Q. Of what statement?

A. Statement 2—pardon me. Statement 1. It is Line 7. They are corresponding lines.

Q. All of these three exhibits, 67, 133 and 134, have been lined up to match all through because they all deal with property, and the description and the headings are all the same?

A. At least I have tried to have them made that way so there would not be any confusion.

Q. I see. And these adjusted amounts under those same descriptive items constitute a part of the items that were challenged by Commission's counsel in your Exhibit 67?

A. That is right.

(Vol. XLI, pp. 4303-4304.)

Q. Mr. Lusk, this Exhibit 134 is predicated, of course, on a prior assumption made by Mr. Rhodes in Exhibit 98 in so far as the matter of projecting a proposed entire 20-inch line is concerned?

A. That is correct, yes, sir.

Q. And you have assumed at the outset that that is what would be done and then made your calculations accordingly?

A. That is correct, yes, sir.

Q. And, of course, a 20-inch line the entire distance of this line doesn't, in fact, exist at present?

A. No, sir, it does not.

(Vol. XLI, p. 4285.)

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21. Reproduction Cost New, and Less Depreciation, of Colorado Interstate's Portion of the Denver Line as of December 31, 1938, and as Estimated to June 30, 1940.

The witness Rhodes, who as chief engineer of FB&D, personally checked each item of the design and participated in the construction of the line and in its operation for a time, as the evidence already abstracted shows, gave in his Exhibit 70 his estimate of the cost of reproduction new and less depreciation as of December 31, 1938, of Colorado Interstate's portion of that line (Vol. XII, p. 1710). The line reproduced in Exhibit 70 is as it was originally designed by him and as it now exists. His summary by accounts of the cost to reproduce and less depreciation of the line is set forth as follows on page 32 of Exhibit 70:

Colorado Interstate Gas Company

Reproduction Costs New and Less Depreciation of Denver Pipe Line Properties as of December 31, 1938.

Summary by Accounts.

Acct. F.P.C. No.	Description	Reproduction Cost New	Accumulated Depreciation Per Cent	Accumulated Depreciation Amount	Condition of Properties (Per Cent)	Reproduction Cost New Less Depreciation
	Natural Gas Transmission Plant					
351-1	Land	$ 17,613	0.0		100.0	$ 17,613
351-2	Land Rights (Rights of Way	177,497	0.0		100.0	177,497
352-1	Pumping Station Structures	477,882	14.0	$ 66,903	86.0	410,979
352-2	Measuring and Regulating Station Structures	77,812	13.0	10,116	87.0	67,696
352-3	Other Transmission System Structures	209,536	13.0	27,240	87.0	182,296
353	Mains	7,891,490	5.0	394,574	95.0	7,496,916
354-1	Pumping Station Equipment	1,041,761	12.0	125,011	88.0	916,750
354-2	Measuring and Regulating Station Equipment	81,692	10.0	8,169	90.0	73,523
	Total Transmission Plant	$ 9,975,283		$632,013		$ 9,343,270

General Plant						
372	Office Furniture and Equipment	$ 28,679	20.0	$ 5,736	80.0	$ 22,943
373	Transportation Equipment	63,382	49.0	31,057	51.0	32,325
377	Tools and Work Equipment	34,686	20.0	6,937	80.0	27,749
378	Communication Equipment	152,923	16.0	24,468	84.0	128,455
	Total General Plant	$ 279,670		$ 68,198		211,472
Total of Above		$10,254,953		$700,211		$ 9,554,742
Undistributed Construction Costs		$ 1,895,320		$ 64,706		$ 1,830,614
Working Capital		120,000		.....	100.0	120,000
Total Natural Gas Transmission and General Plant (Exclusive of going concern costs or value)		$12,270,273		$764,917		$11,505,356

Records were made as to the general character, extent and severity of corrosion and of the principal conditions affecting corrosion in that location. The depth of many deepest pits were measured and recorded, generally 30 on each 24-inch section. This number was chosen as necessary to insure a dependable knowledge of the depths of the deepest pits. Special care was exercised in measuring these pits to clean them out thoroughly at the bottom thus insuring a full measure of depth.

"The depreciation suffered by the pipe lines was determined from a consideration of the field inspections above described. The records of the field work were tabulated and summarized. They were subjected to study and analysis both scientific and practical. Consideration was given to the many factors affecting depreciation through corrosion which are described in the succeeding paragraphs.

"Renewals of pipe are most commonly the result of a troublesome succession of leaks caused by corrosion. As leaks occur they are stopped by bolting band clamps around the pipe with a rubber backing over the leaks. Sometimes two or more leaks develop at widely separated dates in the same joint of pipe. The development of leaks first occurs in stretches of lines where for various reasons local conditions are favorable to corrosion. These are called 'hot spots' and range from a few joints to thousands of feet in length. When the leaks occur with troublesome frequency not only is the pipe in the 'hot spot' itself removed but also pipe for an appropriate distance on either side. In practice the worst joints of pipe may have two or more leaks. Stretches of pipe 100 feet long may contain five to ten leaks and other stretches may have no leaks at all. Some pipe is suitable for reuse with a simple cleaning operation, some pipe requires welding up the pits before it can be reused, and other pipe is reduced to junk.

"The progress of corrosion has universally been found to fall off with age. When pipe is first buried it starts to corrode rapidly. As time goes on the intensity of corrosion slows down. Not enough inspections were made of the company's lines nor was there enough range in age to permit a field determination of the extent to which this corrosion slows down. However, the United States Bureau of

Standards has investigated this characteristic of slowing down in corrosion as related to 47 soils scattered throughout the country. There were only 6 soils found in which the depth of pits increased more than 50 per cent through doubling the age and these soils are decidedly unusual in their characteristics. In soils characteristic of Colorado Interstate's territory the increased depth with doubling the age was much less than 50 per cent. Accordingly it was considered in determining the depreciation accumulated in the company's pipe lines that corrosion would slow down to such an extent that doubling the age would result in not more than a 50 per cent increase in the depth of pits.

"It is also the universal experience that the greater the lengths of pipe examined on inspection, the greater will be the average depths of the deepest pits found. A study of the relative depths of the deepest pits in the 24-inch sections was made, from which was determined by scientific analysis the average depths that could be expected in greater lengths of the company's pipe of 10, 20, 40 or 50 feet, as the case may be. This study also determined the number of pits required to be welded in reconditioning.

"Through a correlation and application to the field inspections of the rules of corrosion outlined above by the proper use of engineering methods, it was determined that Colorado Interstate's pipe lines had depreciated 5 per cent.

(Vol. XII, pp. 1726-1730.)

* * * * *

"The wear and tear and other depreciation that had developed in the compressor station equipment was determined from the detailed field inspection of all of the main units and a more general but complete inspection of the many units of auxiliary and miscellaneous equipment. Particular attention was given to the wearing parts such as power and compressor cylinder assemblies, valves and valve gear, and like parts. The condition of each important wearing part was determined and recorded in the field. The field reports were summarized, analyzed and studied and determinations made of the overall physical condition of the equipment in each compressor station. In determining the condition of this equipment, consideration was given to the fact that the greater part of the cost of the equip-

ment is in non-wearing parts which are subject to replacement only as the result of an accident.

"It was not reasonably possible to inspect in detail buried equipment such as foundations, piping, and so forth, and such equipment in each station related directly to each unit, was rated at the average condition of all of the equipment inspected in that station. The yard piping in the station, however, was inspected in the same manner as pipe lines and the condition so found was adjusted to reflect the high percentage of fittings less subject to depreciation than pipe.

"The observed depreciation accumulated in the equipment in the station was determined by a consideration of the factors outlined above. It was found that in the aggregate the Colorado Interstate's compressor station equipment had depreciated 12 per cent.

(Vol. XII, pp. 1730-1731.)

* * * * *

"The depreciation existing in the minor property accounts was in general determined by observation as in the major accounts, in detail appropriate to the importance of the respective accounts.

(Vol. XII, p. 1732.)

"The depreciation determined as having accumulated in Colorado Interstate's property is based on the system as a continuing property without important change except as to extensions. Items of equipment retired in such a property in the natural gas business are commonly replaced in kind and accordingly only a portion of the undistributed construction cost depreciates with the property itself. The replacement of that property involves little or no engineering cost, little interest and little or no cost of financing. Portions of the property, however, that are retired and replaced with property of a different type, which occasionally takes place, involve a repetition of most of the undistributed construction costs. All things considered, one-half of the total amount of undistributed construction costs is appropriately considered as depreciating with the property."

(Vol. XII, p. 1736.)

The general or undistributed construction costs shown in the statement arise principally from (a) the engineering work necessary to design, supervise and inspect the construction, and to test, check and to turn over to the management (p. 1732) an operative plant; (b) preliminary investigation and reports on the project, negotiations with the public authorities and others with respect to permits, taxes and other matters, expenses in connection with receipt and disbursement of funds and accounting therefor, payment of insurance and taxes applicable to the construction period, the assembling and advance training of an operating organization; (c) interest on the money expended for construction of the various parts of the project until they can be put into operation; and (d) cost of assembling the funds required for construction, which represents the difference between the amount of money provided by the investors and the amount of money available to the company to meet its construction requirements. (p. 1733.)

The cost of assembling funds required for the construction of the properties represents the difference between the amount of money paid by the initial investors in the securities when first issued, and the amount available to the new company to meet the requirements of its construction program. This is commonly termed cost of financing. During the years 1935 to 1938 inclusive, more than $9,000,000,000 in securities, involving much refunding of earlier issues, were registered with the Securities and Exchange Commission. The cost of assembling the funds obtained through the sale of these securities, shown by the reports of the Securities and Exchange Commission, amounted to 4.35%. (p. 1734)

The undistributed construction costs applicable to the development of the properties of Colorado Interstate were determined as follows: (p. 1735)

(a) Engineering and supervision during construction	4.5%
(b) Corporate and other company expenses prior to and during construction	4.0%
(c) Interest during construction	5.0%
(d) Cost of financing	4.0%

Interest and cost of financing are applied cumulatively, making the total amount of undistributed costs 18.482%.

One-half of the total amount of undistributed construction cost was considered as depreciating with the property (p. 1736).

All of the elements of cost described related solely to the construction of the physical property, and included no amounts whatever for the negotiation of contracts or for the costs of seasoning the property or of developing an efficient operating organization. The cost of reproducing the property of Colorado Interstate, set forth in the Exhibit, contains no allowance for the cost of establishing the property as a going concern, or what is commonly referred to as going concern value (p. 1737).

Working capital in the amount of $120,000, as determined in this exhibit (p. 1738), will be abstracted under the next title, where there is also included working capital requirements for the future.

The cost of reproduction new, with working capital in the amount of $120,000, was estimated at $12,270,273 and less depreciation at $11,505,356.

Exhibit 68 (Vol. X, p. 1383) in like manner estimated the cost of reproduction new of the transmission system of Canadian River from the intake at Bivins station to a connection with the transmission line of Colorado Interstate at Clayton Junction, in the amount of $4,217,175, including $60,000 as working capital, and reproduction cost new less depreciation in the amount of $3,772,382.

In Exhibit 71, the witness Rhodes brought this estimate of reproduction cost new, and less depreciation, down to June 30, 1940 (Vol. XIV, p. 1980), at which date the reproduction cost new was estimated at $12,328,153 and, less depreciation, at $11,551,077 (Statement 1), and for the transmission system of Canadian River, it was $4,378,603 as the cost of reproduction new, and $3,919,407 for reproduction cost new less depreciation.

Further Testimony of the Company's Witness Rhodes.

Q. What is the date of this exhibit, Mr. Rhodes?

A. As of December 31, 1938.

Q. When did you start accumulating the information contained in the exhibit?

A. In 1938.

Q. What time in 1938?

A. I beg your pardon—in the spring of 1939, we started accumulating the data.

Q. In the spring of 1939 you started accumulating the data?

A. That's right.

Q. What month?

A. I don't recall.

Q. Do you know approximately what month?

A. I think the spring is quite near enough. The work started in the early spring in a small way and it was most active in the summer. The field work was completed in the fall.

Q. How many men were working under your supervision in accumulating this information?

A. Oh, various numbers from two or three to as many as fifteen or twenty.

Q. Were they all employes of Ford, Bacon & Davis, Inc.?

A. All except the regular company employes that I mentioned in my testimony, that—where we had company men to take off certain data from the records because of their familiarity, which was important.

Q. What part of this report did they get the fundamental data for?

A. They took off from the records as to accounts of materials on the books; for instance, for the purpose of making—or getting our book figures and as to detail of materials as shown by the books, that was taken off and furnished to us. The company's men dug out their records as to maps and furnished them to us.

Q. Just what type of records did they have to consult?

A. We consulted all of the records of the company as to inventories that we could find, engineering department records during the inspection period, maps, surveys, the accounting department records, purchase orders of materials, everything that we could find that related to the inventory of the property.

Q. You would say none of this reproduction costs new has anything to do with present reproduction costs new on the property?

A. This reproduction costs new is of the inventory as it existed at December 31, 1938. I have already testified that the prices at which that inventory was priced prevailed through the year 1939, and incidentally they also prevailed up to the middle of 1940.

Q. How do you know?

A. Because I have made an investigation.

Q. You have made an investigation to ascertain that prices recorded in this inventory here are the prices which have prevailed straight through 1939 and up through the middle of 1940?

A. Substantially uniform price level as affecting this inventory.

Q. What have you got to support that?

A. Well, we made inquiries from manufacturers of the principal materials. We have been keeping up-to-date reproduction costs new on other similar properties and they all indicate that there is no—up to the middle of 1940 there was no appreciable change in the price level as affecting this type of construction.

Q. What other property are you keeping a reproduction costs new figure on?

A. Well, we have recently had occasion to determine prices as of the middle of 1940 for—reproduction costs determination of the property of the East Ohio Gas Company which is three or four times the extent of this property.

(Vol. XI, pp. 1437-1440.)

* * * * *

Q. What large purchaser of pipe did you consult?

A. I consulted—

Q. That you consulted personally in 1940. I am asking a question about 1940.

A. I am in touch by telephone quite frequently with a Mr. Kelly, who has charge of pipe purchases for Standard Oil Company of New Jersey, and I ascertained from him the trend in pipe prices, as well as the trend that we find from purchases we sometimes make ourselves. I asked him what he had been paying for pipe through this period.

Q. Through which period?

A. Well, I asked him first about through the year 1938, through the middle of 1939, and later have extended it to 1940. I found that he and the purchasing agents of other affiliates of Standard Oil Company of New Jersey are paying for some couple of hundred thousand tons of pipe a year, which is far more pipe than entered into this project, paying the prices I used in pricing my inventory. They are not in their purchases of pipe per year going into this project getting the ten per cent I was allowed in a discount. Furthermore, I have had furnished me for the purpose of a check a list of purchases for a part of that period by certain of the subsidiaries and I find that his statements are correct. Those papers were loaned to me and have been returned.

Q. I want you to produce those papers in the hearing-room because I want to ascertain just exactly what the situation really was.

A. I have stated what the situation really was. I do not have the papers and the papers are not in my possession.

Mr. Dougherty: Mr. March, I think I can get them.

(Vol. XI, pp. 1443-1444.)

* * * * *

Q. Of course, before you negotiate with the manufacturer of the pipe, naturally you have to have a contract, don't you, when you purchase the pipe?

A. When you negotiate the price of pipe you usually issue a purchase order.

Q. Don't you have a contract?

A. Usually not.

Q. You don't know whether there were any contracts involved in this pipe purchased by Standard Oil Company or not, do you?

A. I didn't inquire as to the exact machinery. I saw purchase orders they had issued. I myself have purchased pipe on a purchase order without a contract.

Q. You didn't do that in the case of the Canadian River, did you?

A. No.

Q. You didn't purchase any pipe for Canadian River, did you?

A. No, but I purchased more pipe than was required in this property.

Q. For Standard Oil Company?

A. No.

Q. Who for?

A. (Pause.)

Q. Who for, I said?

A. I think that is an affair of another client that I don't think should be dragged into this situation.

Mr. March: It isn't an affair of another client. It is an affair of this procedure. I want to know if this witness purchased this pipe for Standard Oil Company or any subsidiary of it, and I think I am entitled to know that. There seems to be a close cooperation between the Standard Oil Company and Ford, Bacon & Davis, Inc., and I want to explore the angle. They even consult Standard Oil Company before they can make a reproduction cost new estimate. They have to find out how much to put in the estimate. That is the reason I want to know.

The Trial Examiner: Please answer the question, Mr. Rhodes.

The Witness: I will state this: The purchase to which I referred was made by Ford, Bacon & Davis, Inc. for the company which was not a subsidiary of Standard Oil Company and nobody in Standard Oil Company at the time of the purchases had anything whatsoever to do with that company.

Mr. March: What is the name of the company?

The Witness: You have also made some statements—

Mr. March: I object to the witness talking that way. Let him answer the question.

The Witness: You have accused me of doing something which I haven't done.

The Trial Examiner: Just a moment, Mr. Rhodes.

Mr. March: I request that that be stricken from the record. The answer is not responsive to the question, Mr. Examiner.

The Trial Examiner: I think Mr. Rhodes answered your question.

Mr. March: He hasn't named the company and I want to check to see if it is a subsidiary of Standard Oil Company.

The Trial Examiner: I don't believe that it is necessary or essential for the record, Mr. March.

Mr. March: I take an exception to the Examiner's ruling.

The Trial Examiner: Very well.

By Mr. March:

Q. What other company have you purchased large amounts of pipe for?

A. That is the only one company in which I myself have participated in purchasing such large amounts of pipe.

Q. In your experience in purchasing pipe, has it been limited to that transaction?

A. I have been acquainted with the purchasers of pipe of course in these hundreds of millions of dollars or more of projects in which we have participated in as engineers or constructors, and at the time the purchases were made I knew the price that was paid.

Q. Do you know the price paid for the pipe in the Canadian River project?

A. I don't recall the price.

Q. You don't know, do you?

A. I knew at the time.

Q. You don't know now?

A. I haven't looked it up recently.

Q. Did you make any estimate as to the cost of the pipe before the Canadian River project was laid down?

A. The price at which pipe was to be sold was provided to me at the time the earlier estimates were made.

Q. Did you make an estimate? Did Ford, Bacon & Davis make an estimate of the cost of pipe to go into this Canadian River project prior to the time that the pipe went into the property and the pipe was purchased?

A. We were informed as to what the pipe would cost.

Q. Did you make an estimate?

A. One doesn't make an estimate of what the price will be.

Q. You didn't make an estimate?

A. Of what?

Q. Of the cost of pipe to go into this project.

A. The cost of pipe to go into this project was placed in there as furnished to us as to what the price would be.

Mr. March: Mr. Examiner, I request that the answer be stricken as not responsive to my question.

The Trial Examiner: Mr. Rhodes, just state whether or not you made an estimate.

The Witness: Of course I didn't make an estimate of the cost of pipe in that project.

By Mr. March:

Q. Ford, Bacon & Davis made an estimate?

A. No.

Q. Have you ever seen this sheet of paper?

A. I don't know whether I have or not. It looks rather familiar but it has nothing to do with the cost of pipe.

Q. I hand you this sheet of paper and ask you what it is. Do you know?

A. This is a piece of paper with the heading at the top entitled "Bids on Pipe Line Construction, Amarillo-Denver Line, Project No. 1." The list gives the names of five contractors, giving their bid prices on 86.33 miles of 22-inch pipe, and there is a note at the bottom saying, "Bids were given exclusive of paint. Williams Brothers bid for hot application was approximately 17½ cents and only a few cents for cold application. Other contractors' bids exclusive of Booth and Flynn were in the neighborhood of 15 and 17½ cents. Estimated cost was 70 cents a foot."

Q. Who made that estimated cost?

A. I think Mr. Hill did.

Q. Mr. Hill of Ford, Bacon & Davis, Inc.?

A. I think he did.

Q. How much did that pipe cost according to that tabulation?

A. This doesn't state how much the pipe cost. This is a bid for the installation of the pipe. Mr. Hill in estimating the project estimated 70 cents a foot for laying the pipe. He got the bid ranging from 52 cents a foot to 82 cents a foot and the bid was given to the 52-cents a foot bidder.

Q. In other words, Ford, Bacon & Davis estimated it would cost 70 cents per foot to construct this portion of the 22-inch line of the Canadian River Gas Company, whereas, as a matter of fact, it only cost 52 cents a foot, is that right?

A. 52 cents plus some extras.

Q. What were those extras?

A. I don't know.

The Trial Examiner: Mr. Rhodes, did you say the 70 cents a foot covered the cost of laying the line?

The Witness: Why, the 70-cent per foot estimate which I say—I saw Mr. Hill's initials were on this paper—was made for the purpose of informing the backers of this project how much money they were going to have to put up. In getting bids from the several contractors he got a bid of 52 cents per foot and I know in all the contracts that we have let there are provisions for extras such as rock-weighting the line and any of these unusual features that are not in the nature of ordinary construction.

(Vol. XI, pp. 1448-1454.)

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The Trial Examiner: Pardon me, Mr. March. Just so that I might be clear: Now, this installation of pipe, what does that include? the ditching, the laying—

The Witness: It takes the pipe from the cars from the railroad siding where it is furnished, hauls it out to the line, strings it along the line, ditches the line, puts the pipe in the ditch, and back-fills it. The 60 cents is exclusive of certain welding work which amounts to little on this particular line. That is shown near—about a third of the way from the bottom of the page, it's being $1,150, for instance, and it is also exclusive of what is shown on the following page of certain pipe coating on that line at other prices for the application of the coating, but the 60 cents a foot is what we think of generally as the laying or installation of the pipe.

The Trial Examiner: It would apply to the bare line as well as to the coated line?

The Witness: Yes, and then you pay extra for any portion that is coated, depending upon the kind of coating.

The Trial Examiner: Yes.

The Witness: You pay extra for incidental welded joints and miscellaneous items of that kind that it is not possible to definitely foresee when you ask for bids.

(Vol. XI, pp. 1461-1462.)

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You gave no consideration whatsoever in your estimate of the reproduction costs new of installation of pipe and

the original cost—you gave no consideration to the original cost in that reproduction costs new estimate, what it really did cost the company when they put the pipe down?

A. Only to this extent: We knew—were informed by the contractor who built this particular section of line that he did a little better than come out even. When it came to the rest of the Denver line, we know that the contractor made a satisfactory profit, but our figures weren't based on the original cost other than to that extent. They were based on our basic experience covering some thousands of miles of line whereby we have determined and have set down as the concensus of opinion of our men who were experienced in that work the performance of men and equipment in the several different classes of country into which we divided that through which the line is to be built. They are based not on any one line but on the experience covering a great many lines.

It is of interest, of course, to know how the results in any one particular project such as this compare with the prices actually paid ten or twelve years ago and that comparison has been made by me.

(Vol. XI, pp. 1464-1465.)

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Q. Why does it just so happen that in this particular case we are referring to here that the actual cost of construction of putting that pipe in the ground was something like 52 cents and you originally estimated it to be 70 cents and now you come along and say that the reproduction cost new would be 60 cents; is that an accident?

A. Yes.

Q. How many accidents like that have you got in here?

A. Well, any relation that might exist between the reconnaissance estimates and between the contract prices and between the prices I now estimate is an accident because I have estimated the cost of doing the work under the conditions which now exist, not the conditions which then existed.

Q. Do you mean to tell me that when Ford, Bacon & Davis, Inc. made the original estimate of the cost of installation of this pipe they didn't make a thorough survey, have thorough knowledge of the country over which this pipe would have to be put in the ground—they didn't make a

thorough analysis of the roads and vicinities of the road transportation facilities; they didn't take these other things into consideration that you now are taking into consideration?

A. No, but with qualifications.

Q. What are the qualifications?

A. Because the qualifications of these—in making reconnaissance surveys upon which people backing a project determine whether or not to put up the money, they do not require and are unwilling to pay for the cost of going into that detail. In this particular case the difference between the reconnaissance estimate and the contract price of 18 cents a foot was something of the order of three per cent of the cost per foot of the whole pipe line in place, and promoters of projects aren't willing to spend the money to go into the details to ascertain such minor differences.

Q. You call 20 per cent over estimate of costs originally a minor over-shooting of the proposition?

A. The people who put up the money speak of differences in terms of total cost, not in terms of the small part that might be under consideration.

Q. Now, who were the people who put up the money and did they refuse to make available to you enough compensation to go fairly into this project before they agreed to undertake the construction of the same?

A. Well, in answer to the first question it is a matter of record, I believe, that the Standard Oil Company furnished the money. In the second place, long experience in the engineering business leads us to the knowledge that people are unwilling to put up the money for detailed surveys in advance and we never asked to do it. It is generally acknowledged to be a waste of money to do it.

(Vol. XI, pp. 1466-1468.)

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Q. Were these men working on anything else during this period?

A. During this period men have been working for me on this reproduction cost study of this Denver line project on economic analyses of the project and Mr. Lusk testified here as to the work he had done. He was one of the men who has worked on other features for me. I haven't the slightest idea what the average number of men was. It's

a thing that is meaningless to me. I haven't paid any attention to it.

Q. I didn't ask that question to you last. Here is the question I asked you, if you recall. I asked you: Were these men working on any other projects other than this reproduction costs new study here during this period?

A. You mean on work in connection with other properties?

Q. Other properties.

A. Some of the men were, yes.

Q. Were you working on any other reproduction costs, new estimates for other properties during this period?

A. Yes.

Q. And some of these men working under your supervision were too?

A. Some of the men who worked on certain phases of this work worked on other projects.

Q. Now, what were these other projects you worked on during—and these other men were working on—during the period they worked on this particular exhibit here, or the entire reproduction costs new in this exhibit which you have prepared in this proceedings?

A. Well, without being too exact as to date, which I cannot be because my memory isn't sufficiently accurate, during the period that this work was going on I have had made under my direction reproduction cost studies of Hope Natural Gas Company, of New York State Natural Gas Corporation, as well as this particular group of properties, on all three of which properties certain men carried out the same nature of work, for instance the determination of the construction conditions affecting the cost of laying pipe lines, putting the pipe in the ground, were carried out by the same group of men on all three of these properties and the estimates were made in an identical manner. The estimates of cost of reproducing compressor stations were in charge of the same men on the Hope property and on this property in as far as they relate to the performance of men and equipment. The work of turning those performances into dollars was carried out by different men. The inspection of the property for its physical condition was made by the same group of men in all three instances except as to the

compressor station condition of New York State Natural Gas Company which was not inspected by the men who inspected this property. I know I would say in general that the rest of the men working on this particular reproduction costs estimate were working on this alone except for incidental men who have been called in from time to time to help out.

(Vol. XI, pp. 1477-1479.)

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Q. I believe that here you have assumed—you stated in your testimony that you are assuming that a newly independent and organized—a newly organized independent company would come in here and reproduce this project, you have assumed that?

A. Yes, that is the fundamental basis of the reproduction cost.

Q. You didn't assume that this project would be reproduced by the same parties that put the project in?

A. No, I assumed a separate independent corporation in order that this reproduction cost estimate would be equivalent to other estimates made where the people who developed the project were independent of these large operators.

Q. Then why did you consult Standard Oil Company as to the price of this pipe?

A. Because there has been so much question as to what the price of pipe is—as to what is the price of pipe I wanted to get the advice of a large purchaser to supplement my own information.

Q. And a company which was largely interested financially in the company in which you were making the reproduction cost estimate new for?

A. That was a minor incident. If there had been any other large purchaser of pipe I would have consulted them but I did not personally know of any other purchasing agents and I was able to get in touch with Mr. Kelly.

Q. There were no letters written between you and Mr. Kelly relative to this matter?

A. No, Mr. Kelly did not write me about it.

Q. Upon what basis do you assume that this project, if it were reproduced, would be reproduced for some independent and newly organized company?

A. Why, as a basis for setting up a reproduction cost

new comparable with other reproduction costs new that we made from time to time it is a standard method with us because these large operators always contribute something in the development of the project which never gets reflected on their books.

Q. In other words, not everybody can have John D. Rockefeller, Jr., put up all of the money like he did in this project?

Mr. Dougherty: I object to that question because that isn't the testimony of the witness.

The Trial Examiner: Objection sustained.

By Mr. March:

Q. Do you know who put up the money for the financing of this project?

A. Yes, the Standard Oil Company.

Q. Do you know how much in bonds John D. Rockefeller personally put up?

A. No, but the money was put up in the form of cash furnished to us, and the financing of the company was arranged for after it had been built. That is one of the details that are not possible with independent corporations. They have to go into the market for their money.

Q. In other words, an independent corporation would have a great deal harder time getting the money—

A. That is right.

Q. —than these parties?

A. That is correct.

Q. Why?

A. Well, they have no credit to start with, whereas I am sure Standard Oil Company have plenty of credit.

Q. It would have to first establish its credit?

A. An independent group would first have to establish the merits of the project to the satisfaction of the public.

Q. To the public.

A. Yes, to the buyers of the security; whereas, a project carried out by skilled operators can be done satisfactorily as to the merits of the project without quite so much difficulty. They are able to judge for themselves and after the merits of the project have been established the bankers have to sell the securities before there is any money to start the

building. For a great many projects of magnitude comparable with this it has been necessary to get the money from the public before the work has been started, at least in considerable part.

Q. You know, though, that if this project was reproduced it would be reproduced by these same parties?

A. No.

Q. You don't think it would be?

A. I don't know.

Q. Do you think it would be practical to reproduce this project in toto?

A. Of course nobody is going to reproduce something that exists unless it is destroyed in total. I am merely determining what it would cost to reproduce it if it were to be reproduced.

Q. You don't know whether it would be economically feasible to reproduce it or not if it were destroyed, assuming that?

A. I haven't investigated that phase of the situation.

Q. Therefore, you don't know whether these same parties would want to undertake the reproduction of these properties?

A. I have already said that I didn't know who would reproduce it.

(Vol. XI, pp. 1481-1485.)

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Q. Now we come next to the question of accumulated depreciation. I note on Page 35 of your summary opposite "main" that you state the percentage of depreciation of the pipe line has been approximately seven per cent.

A. Yes.

Q. And I believe that is on an observed depreciation basis?

A. That is right.

Q. Will you define observed depreciation?

A. The per cent of pipe that has progressed towards complete depreciation physically.

Q. As observed—

A. The observed extent to which the pipe has progressed towards complete physical depreciation.

Q. You did not in any case here use straight line depreciation, did you?

A. I have used just what I stated, that this is the extent or percentage by which the pipe has progressed towards complete depreciation.

Q. As observed?

A. As observed.

Q. I am asking you a question as of whether or not you used this report at all in straight line depreciation, employed that method?

A. The words "straight line depreciation" have been so badly misused and has so many different meanings I am afraid I cannot answer your question until you are more definite as to what you mean.

Q. I will ask you to define straight line depreciation as known in the accounting and engineering world.

A. Straight line depreciation as it is frequently used is the application of an assumed life to a piece of property and the assumption that the property depreciates uniformly year by year and is completely depreciated at the end of that assumed life. That straight line depreciation I have not used.

Q. What straight line depreciation have you used?

A. I have found that this pipe has progressed seven per cent toward complete depreciation and I have represented the money as seven per cent of the total cost. It is straight line to that extent.

Q. Based, of course, solely upon observation?

A. Based upon observation.

Q. In other words, you didn't adhere so far as your calculations were concerned as to what date the pipe went into the line?

A. No, I was concerned only with that in the same way that you would be if you knew that seven per cent of the gasoline in the tank of your automobile was gone.

Q. How long would it take this pipe line to go out, to be completely depreciated?

A. More than a hundred years; that is, on the average. The pipe line itself can be maintained as a pipe line just as long as the company cares to do so.

Q. Yes, but assuming the pipe is in the ground and will last for over a hundred years?

A. The pipe line will, but some of the pipe will be replaced before a hundred years.

Q. A small portion of the pipe?

A. I don't know how much, but it is a fair portion of the pipe.

Q. In other words, this pipe line can be operated very well with minor repairs for a period of a hundred years from this date?

A. That depends upon what you mean by "minor." I have made no attempt to determine how much replacement of the individual joints of pipe would be required in the hundred years. I have merely ascertained that on the average the joints of pipe in the line have progressed seven per cent towards complete depreciation of the joints.

Q. I believe you stated you went along the line and, every once in a while you would dig a hole over the pipe, scraping away about three feet of dirt, so that you could get all the way down to the pipe and then you made an examination of that particular portion of the line. You did that right on down the line, did you not?

A. Your statement of what I said is not quite correct. I stated that at practical uniform intervals of about two-thirds of a mile the line was exposed and inspected. That is an adequate sample for the purpose of determining the extent to which the pipe has depreciated or deteriorated.

Q. If I bring several pieces of pipe in here Monday and put them on the table here, do you think you would be competent to tell me how much those pieces of pipe have depreciated?

A. That can't be done.

Q. You can't do that?

A. No. You can take and examine a whole line and determine the average result as affecting the whole line, but I wouldn't attempt to do it with respect to any one piece of pipe or any several pieces of pipe that you might bring in here.

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Q. When you take averages you have component parts of averages. When that man, whoever looked up that pipe, looked at it he had to give some sort of estimate from his observation as to just how nearly depreciated that particular piece of pipe was when he looked down in one of these holes, didn't he?

A. No.

Q. What was the situation?

A. He just recorded to me the extent and character of the corrosion he found, as well as the various factors that affect corrosion, such as the character of dryness and moisture of soil and so forth, but the principal thing which he did and recorded, and which controls the pipe, is the depths of the 10 to 20 deepest pits he finds by a proper study and comparison of those depths and their relationships one to another and the well known fact that corrosion slows down with time and to determine the most that that line could be considered to depreciate.

Q. He wrote a report upon every one of those little holes he examined, what the condition was of the pipe at every opening? In other words, it was a report of the erosion, exactly the state of the condition of the pipe, is that correct?

A. He took two feet of pipe, measured 20 or 30 or 40 of the depths—of the depth pits he would find in that pipe and reported their depths.

Q. He didn't report the condition of the pipe, is that right?

A. Other than the depth of the pits and the general appearance of the corrosion, and where it was worse—where the worst corrosion was located, and things of that nature, but he attempted to put no percentage condition or anything of the kind on the pipe as he saw it.

Q. You wouldn't expect one of your men to be able to look at a piece of pipe and observe how much it had depreciated, would you, what percentage?

A. It couldn't be done without measurements.

Q. That was not done in this case? Your men didn't actually take the measurements?

A. Yes, they took the measurements.

Q. They didn't measure the corrosion on the pipe?

A. They measured the extent of corrosion on the pipe and expressed it in fractions of an inch.

Q. What instruments did they use?

A. Depth gauges.

Q. How does this depth gauge work? Let's get the process that is followed. Do they first clear away a portion of the pipe.

A. Yes. I explained that the hole was dug large enough so they could get under the pipe, the sides of the pipe, and that it was cleared for about three feet, and the central two feet of it was completely and thoroughly examined.

Q. And how does—how do they apply the instrument you speak of, the depth gauge to the pipe?

A. The depth gauge to the pipe is an instrument that has a little needle on it, or the equivalent of a needle, that can be moved up and down with respect to the edge of the instrument, and there is a scale on it whereby when you put the edge of the instrument flat on the pipe with the needle pointing down and touching the bottom of the hole that scale will read the depth of the hole in thousandths of an inch or hundredths of an inch or whatever you want to use.

Q. Just the depth of the hole?

A. That's all.

Q. I am interested to know how you determine how much corrosion has taken place on the pipe.

A. The corrosion on the pipe as measured by the depth of the pits is the only thing in which we are interested because that is the thing which results finally in the pipe being retired and another piece being put in its place.

Q. You mean the depth of the hole?

A. That's right. Ultimately leaks develop and when the leaks develop because these pits have gone through the pipe, when they occur with troublesome frequency in any one location, then the men go in there and replace a section of the line.

Q. Did you have any instruments to measure the depths of the pits in the pipe?

A. Yes, that's the depth gauge which I have just described.

Q. Well, I am confused here as to your measurement of the hole, the depth of the hole and the measurement of the corrosion, or the depth of the holes on the pipe.

A. Well, they are the same thing.

Mr. Dougherty: When you say "the depth of the hole" you mean the hole that is dug in the ground?

Mr. March: I merely meant the hole in the pipe. I thought the way he was describing it he was measuring the depth of the hole in the ground, but I meant the depth of the hole in the pipe.

Mr. Dougherty: I think that's what he has been talking about.

By Mr. March:

Q. So this depth measure, measured the depth of the hole in the pipe?

A. That's right.

Q. Now let's see one of your reports. While he is getting that out, these reports are all that you had before you when you made your report—I mean when you made your estimate of seven per cent?

A. No, these reports had been studied and summarized and analyzed and certain determinations made from those, from this analysis to determine the extent to which this corrosion had progressed toward the point when leaks would occur in the pipe, and I had that before me when I reached the conclusion that seven percent fairly represented the depreciation in that pipe line.

Q. But would you feel competent—are you a chemist?

A. No, but I have studied chemistry.

Q. Do you have a chemist expert on your staff who helps you make these analyses of the condition of this pipe?

A. Chemistry has nothing to do with it. It is merely an analysis of the phenomena of corrosion that results from chemical action.

Q. And you feel confident by mere description of the condition of the pipe to—samples of conditions of the pipe to tell just exactly what extent the depreciation has been?

A. The inspections are made by men who carry out their instructions I give them?

Q. Do you feel competent to do that?

A. Yes, I have been studying corrosion of pipe lines intimately for the last ten years. I have cooperated with the Bureau of Standards in the study of corrosion phenomena and participated also with my associates in their corrosion conferences at the Bureau of Standards.

Q. Have you any reports you have written or articles you have written or reports that you have helped to write upon the phenomena of corrosion of pipe lines?

A. Yes, the Bureau of Standards in their files have reports of mine that were submitted to them in confidence.

Q. In confidence?

A. Yes.

Q. You wouldn't want to let us look at those reports, would you?

A. I have none of them with me and I'm sure they would be quite meaningless to a layman because they are highly mathematical.

Q. They certainly would make it possible for us to determine how much you know about corrosion.

A. I don't think they have any place in this proceeding. I have no copies and the nature of the work and the constructive work I have done with the Bureau of Standards is such that I don't think that they should be spread on the records of this meeting. I can show your engineers how it is done but I don't believe it would be understandable to a layman.

Q. I want you to show the Examiner on this record how it is done and have it on the record.

Let's see here, I notice here that you have "Pipe Inspection Report" here—"Main Line, Class: Transmission, Block No. 1, Section 1, County and State of Texas, Detail of Location, W. M. Green."

Now, would you go through that and describe just exactly the type of information that is contained on that report and by whom it was prepared?

The Trial Examiner: Is this a report now on the one hole, Mr. Rhodes?

The Witness: Yes. This is a field report made by one of our men, Mr. S. B. Brown; and it is inspection No. T-61, the location of which appears on a map which is in the working papers, and it gives the location of it in the usual coordinates of Texas as to the block and section and so forth, and it also shows it is located at Station 229 33, and it is also shown to be 1493 feet southeast of Drip No. 22. It can be located on a map. This shows that this inspector found the *peipe* was a 22-inch pipe. He measured it. He has a circumferential tape to measure the diameter so as not to guess. He found that it was steel pipe and lap-weld, that there was no joints or fittings uncovered in the hole. He showed that the topography was level. It was 100 per cent tilled ground. He showed where the test pit was the ground was level and he marked the contour "indefi-

nite." By that he means there was no particular slope around there anywhere. He said there was no drainage along the trench but the pipe had a slight slope of about a half a degree. There was a 28-inch cover over the pipe.

Then as to the surface of the line he said it was in a side of a property line in a field, that there was no pavement, of course, being in the field, that the general type of soil was loam and sand, or sandy loam as we interpret it; that it would be easy digging, and there was no pipe coating.

Now, that was general data which he recorded.

Now, then, he recorded as to general corrosion: First, as to the extent of the corrosion, it was slight and scattered over the surface of the pipe. Again as to location we have them record where it is heaviest or least and he said, "All over," and that means there is no particular choice.

Now, then, he records as to the nature of the soil or pipe scale immediately in contact with the pipe and he said it was negligible. Then he records in the length of 24 inches the depths of 30 pits, his instructions being to find the deepest he could and measure at least 30 if he could find that many and then he recorded the description of the pits themselves. He said they were shallow to medium in depth. This is the general description and they were small to medium in size, clean-cut, numerous and scattered, and they were generally all over the pipe.

Then he also recorded something which we are recording for future study as to what is called "a pit pattern." That is not used in this case.

Now, he also shows the field—the figures also showed that the F. P. C. inspector made certain pit measurements some of which are given here, F. P. C. men being Messrs. Hashmall and Hayne. It showed there was an engineer representing Denver by the name of Gilbert and that a Mr. Ferguson of Canadian River Gas Company was also there.

Q. How does the Federal Power Commission's pit measurements differ from the pit measurements of your men?

A. Well, I haven't compared them.

Q. Can you look right there now?

A. Well, the deepest that Brown found was 60 mills deep.

Q. That's your man?

A. Yes, and there were pits here 60 mills deep. The deepest I can find from the F. P. C.—I do not know what their A. B. C.—this A. B. C. is here—

Q. I notice here the F. P. C. says here it varies from 15 to 60; is that right—the depth of the pits?

A. The pits that they measured varied from 15 to 60 in this group A and they have another group here which varies from 30 to 60, and another one in another group from 30 to 45. I do not know what the meaning of these F. P. C. figures are. We didn't use them.

Q. Yes, you didn't give those any consideration?

A. We gave them no consideration.

Now, the deepest pit was 60 mills as Mr. Brown found it. That was taken from these figures in the office, by the way.

Q. What was the shallowest pit?

A. The shallowest pit that Brown found, or the shallowest that he measured here was 30 mills, but he took off in the office the average depth of the 10 deepest ones that he found, the deepest being 60 and the average of the 10 being 53. That was work done in the office.

Q. That's just about all that is on that tabulation?

A. That's right.

Q. You went through on each inspection in the same way—in the same manner?

A. Yes. All of the inspections were made in the same manner.

Q. Now, you had this report before you—first, I will ask you this: There isn't on the face of this any estimate at all by the individuals as to the per cent of the depreciation?

A. That's right. They have recorded only facts as they saw them.

Q. And a per cent would not be facts?

A. That would be an opinion.

Q. Yes, that would be an opinion.

Now, you took these reports and looked at them and averaged out the percentage of depreciation for the whole group, did you not?

A. No.

Q. Well, what did you do?

A. My people in the office tabulated all of this informa-

tion with respect to the depth of the deepest pit and the 10 deepest pits and by sizes of pipe, calculated the progress towards different conditions of corrosion. They calculated those based on two different rates of slowing down in corrosion that are very important factors.

Q. What are they?

A. The Bureau of Standards has been carrying on corrosion tests of pipe in various soils all over the country for fifteen years or more, and they have made a very careful study of the behavior of pipe in 47 different soils throughout the country, generally the most corrosive soils. They have found as a result of their investigations which have been published in the various Bureau of Standards' publications—

Q. Have you got the Bureau of Standards' publication you used here?

A. No.

Q. Can you get hold of that or give us a reference to it?

A. There are several of them, but I'd be glad to give you the references.

Q. Yes.

A. And they reported on 47 different soils of which they had completed tests. Without exception they found that the progress of corrosion slowed down as the time went on. In other words, there was more corrosion in the first five years than there was in the second five years and more in the second than in the third, and so forth, and all but about, I think it's six of the soils which they examined showed a slowing down in corrosion, such that in the increase in depth in the second five years, for instance, would be less than half as much as it was in the first five years. There were about six soils where the second five years, for instance, showed more than a half which were distinctly abnormal soils not characteristic of this pipe line, such as peat muck for instance. There was one up in Wyoming which was essentially one of the salt flats or dry lakes, conditions that were quite abnormal.

Now, of the soils that were characteristic of this country the second five years, for instance, showed an increase in pit depths of only about a third of that which occurred in the first period. Wherever we have a pipe line system with a long history and lines covering wide territory of different ages we are able to find the rate at which corrosion slows

down. I have done it quite extensively in the Appalachian territory, for instance, and I find that a fifty per cent increase in depth with doubling the age, that means if it went twenty mills in five years it would go another ten in the next five years—represents the least slowing down that we get in that country and that corresponds to all but the six abnormal soils reported on by the Bureau of Standards; so we made these determinations in one instance on the basis of the corrosion slowing down so that in the second five years, for instance, the increased depth would be about half of that which occurred in the first five years, that representing what I have found to be my normal experience, and we made other calculations where the slowing down was such that the second five years, for instance, would only be a third as much which is characteristic of the slowing down of corrosion in the soils of this East and Rocky Mountain country that are generally dry soils without much rainfall.

Now, these calculations were made in the office, as I say, separately for each size of pipe and they showed the progress of this corrosion to the point of where there would be one penetration where the hole had just gotten through the pipe in 10 feet, 20 feet, 40 feet and 50 feet. They made studies of the possibilities of reclaiming pipe through welding, because when you take pipe out of the ground in the event of a replacement it is only a part of it that is so bad that you have to throw it away. Other parts of it, the pits are welded up and it can go back into the ground. I took that into account, and in other words, the salvage value for reclamation which is the common practice of pipe lines today and I had that all before me, the result of a great deal of analytical work in accordance with certain formula that have been published as representative of the phenomena of corrosion, by the chief of the underground corrosion division of the Bureau of Standards.

Q. You are going to produce that for us, aren't you?

A. I will give you the reference. I don't have the extra copies of that particular publication, but I can give you the reference; and we applied those mathematical relationships which have been published and incidentally which I find are borne out by my examination of thousands of samples of pipe.

Q. Why didn't you examine any of the samples of pipe in this line?

A. Examine what?

Q. Any of the samples in this line.

A. I don't need to. I have been studying the effect of these relationships for years and I don't need to make these examinations.

Q. In other words, you don't need to observe the pipe in order to observe the depreciation, do you?

A. I don't myself. If somebody will tell me the shape of the gasoline tank in my car and say the level is 25 per cent of the way down, I can tell you what portion of the gasoline is gone. Now, that's the equivalent of what I'm doing here.

Q. Even I can do that, but will you kindly tell us this: You said—the kind of soil—what kind of soil is this on here—answer my question.

A. This just shows a sandy loam soil that is dry.

Q. Now, that is all that is recorded on there?

A. Yes. I don't care—

Q. I'm asking the questions here.

That is all that is recorded on there?

A. Yes.

Q. All right.

You have all this information before you here. Will you tell us what per cent of depreciation has been brought about in this particular stretch of pipe right here?

A. You can't determine with any one piece of pipe any more than one can tell the insurance company how long I am going to live. You could do that just as well.

Q. In order for the insurance company to insure people they have to know the length of the lives of a great number of people.

A. Yes, that is right.

Q. These are your component parts, aren't they? You took these average conditions and arrived at an average answer, didn't you?

A. Each one of these is an individual and the group is the group of individuals upon which I am getting group insurance.

Q. Yes. You have said that you are an expert and I presume you are on erosion?

A. Corrosion.

Q. Corrosion, yes, not engines?

A. That is quite a different thing.

Q. I want you to tell us and to tell the Examiner here from all of your expert knowledge, assuming that this was the only piece of pipe that we are requiring you to tell the per cent of corrosion or per cent of depreciation of, to tell us exactly what the per cent—you are familiar with the soil table; you are familiar with the Bureau of Standards' figures as to the per cent of depreciation—I mean the degree of depreciation—just tell us exactly from the information here what the per cent of depreciation is.

A. You are asking me to do something which nobody can do. It can't be done.

Q. If you don't have the component parts, you can't very well have the whole?

A. I have explained to you that it can't be done any more than anybody is going to tell you and I how long we are going to live.

Q. Are those the rest of the working papers there?

A. No, no, no. All of this is the field—

Q. I want to see the next step in this process.

A. This is a field inspection and this is an identification of these locations in typewritten form.

The Trial Examiner: We will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. March:

Q. I believe that this sheet that we were speaking of a minute ago, you say Mr. Brown's name is signed to that sheet?

A. Let me get the sheets again. (Examining documents.) His initials "S. B. B." are signed to most of these sheets.

Q. Mr. Brown is now working with you?

A. No, he is not. I don't know where he is.

Q. What happened to him?

A. He left us.

Q. What do you know about his ability along the lines of measuring these holes?

A. Well, among other things, he has—had been doing

it for us for about ten years and furthermore he was given specific instructions and was generally supervised by one of my assistants, Mr. W. G. Smith who worked with me very closely in the corrosion studies.

Q. Do you know all the men personally who worked on these studies?.

A. You mean of my own staff?

Q. Yes.

A. Oh, yes.

Q. All right. Now, let's go to another point here: Look over here on your schedule on Page 36. Let's go to F. P. C. Account 372, Office Furniture and Equipment.

The Trial Examiner: Mr. March, before you get away from this corrosion business I'd like to ask Mr. Rhodes a question or two. Mr. Rhodes, do you have any known hot spots on this line?

The Witness: Yes, there are a number of them. I don't recall exactly where they are. There is one in the Arkansas River Valley on which one of my staff has installed cathodic protection during the past year. I am talking now of the Denver line as a whole.

The Trial Examiner: That's what I mean.

The Witness: And there is one other hot spot in the nature of a small salt flat on Canadian River's line that has had cathodic protection applied, but not completely worked out yet. In general the corrosion is not very great on these lines on account of the dry soil, but wherever the soil is wet, in river valleys or any of these little wet spaces where it drains out of an arroyo, there are hot spots there that are requiring attention. There have been very few places where the pits have gone through the pipe at the present time, very few, I think two or three instances have occurred in the hot spot near the Arkansas River which I was describing.

The Trial Examiner: And some pipe has been replaced there in those hot spots?

The Witness: I don't think they have replaced the pipe. Ordinarily when a leak occurs a band is clamped around the pipe with rubber packing over the hole and that practice is kept up as a rule until the leaks develop so frequently in

that particular location that it becomes an expensive nuisance and then one goes in and replaces it. At the present time cathodic protection is being installed in those places before it gets bad enough to warrant replacement.

The Trial Examiner: To your knowledge, none of that pipe has, we'll say, any material portion of that pipe has been replaced?

The Witness: I personally know of none that has been replaced on account of corrosion. Of course, there has been washouts where pipe has been replaced.

The Trial Examiner: I meant as to corrosion.

The Witness: I know of none, but I wouldn't be sure there had been none, but it is a very insignificant problem.

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A. I concerned myself primarily with the all important item of pipe lines on which I had made a special study. Other parts of the property were conditioned by other men, or at least the field work was, but the final per cent condition on everything had to be made satisfactory to me. I talked with the men who, for instance, who inspected the compressor stations, buildings, and equipment, considered his reports and from his reports and the per cent depreciation deterioration that he found I assigned a figure which I considered to be a maximum amount of depreciation that existed in that property.

Q. And who was the man who made—that you talked to about compressor stations—depreciation of compressor stations?

A. Mr. Whittlesey who has been building and repairing compressor stations for us for the last ten years.

Q. Did he work for you?

A. He did. He still does.

Q. Let's see, now—compressor stations. Let's turn to that here. Well, you can have it here and we'll go over some of these things Monday morning.

All right, let's see, compressor stations—what is the percentage of depreciation?—well, pumping station equipment, 17 per cent depreciated. Do you recall whether or not you just adopted his figure or did you change his figure?

A. No, I talked to him and found out just what he had recorded and I reached the conclusion, knowing the equipment as I do, that in order to include all of the depreciation that existed in fact it should be increased. I don't recall the exact figures by which I increased his field observations.

Q. Do you recall whether or not he looked at all the engines in the compressor stations or just certain representative ones and made the analysis?

A. He examined all of the large units of the compressors and the auxiliary units, talked with the operators in the stations as to their repair and accident records and determined the extent to which these various wearable parts had worn out in service, and he had confined his figures purely to that extent. I took that into account and also the fact that it cost something to replace these worn parts when they are replaced, and added it to the total amount of depreciation. He had found an amount to cover all of the depreciation I considered could exist in that property.

Q. Well, now, you can have that report ready—his report ready Monday morning and we'll go into it at that time.

In other words, I am just picking out some of these items here which I consider representative.

A. Well, his reports are field notes. The summary of his report I assume is what you have in mind, his final figures.

Q. I want the information you had before you when you determined that the compressor stations had depreciated to the extent to which you have reported in your reproduction costs new statement.

Now, honestly, Mr. Rhodes, is there anything in the gas business that you think that you couldn't just look at and tell—I mean anything in the operating of a pipe line you couldn't just look at and tell by looking at it how much it had depreciated?

A. Well, I think that by process of observation I can tell a great deal more about how much it has depreciated on that property than somebody else could guess how long it was going to last.

Q. You didn't see very much—you didn't attempt yourself, though, to examine and observe directly the depreciation, very much, of this property, did you?

A. No, human life is too short to make it possible for one man to do all that, but I have been in all of the stations and I have seen considerable portion of the company's pipe that has been exposed where the depreciation has been bad, when I was studying the application of cathodic protection on this property and I believe that a man familiar with the business and with years of experience in the business can tell by an examination of the property a great deal more about what has happened to that property than anybody can possibly tell in any other way.

Q. Did you examine the houses, the houses down at Bivins compressor station?

A. I didn't myself, no. I have seen them recently. I have been in several of them.

Q. Let's see, how much depreciation do you have for these structures? Where is that in your report here?—structures and improvement; is that it?

A. I think it is in 352.1.

Q. Is it Page 85; is that right, the breakdown?

A. Just a minute. The dwellings at the Bivins station are included in the general plant structures and improvements and the priced inventory of the dwellings begins on 148.

Q. Now, what is your average percentage of depreciation?

A. Well, the average percentage depreciation of all those general buildings, dwellings, the office there, the warehouse and storehouse and welding shop and the machine shop, and so forth is 19 per cent depreciated.

Q. Did you have your subordinates make individual examinations of each of the living quarters and the details of all the equipment in the living quarters?

A. They examined the houses as to the condition, the foundations, floors, frames, roof, walls, and so forth. Of course the equipment in the building in general is owned by the occupants. The furniture is usually—the buildings are provided unfurnished.

Q. The fixtures in the buildings?

A. Well, to the extent they applied and they represent a very small part of the cost, and you don't spend a lot of time trying to condition something worth five dollars, for instance.

Q. All right. Were these men who examined these houses capable of appraising the depreciation of a house engaged in

that sort of business? What sort of business were these men engaged in?

A. Well, I must check as to which particular man inspected these houses. Let's see if I can do that. I'll have to look that up for you, but my recollection is, which I'll verify, it was the same man that builds compressing stations and the houses that go with them and has been doing it for me for quite a number of years.

Q. You couldn't tell me by looking at this court room how much it was depreciated, could you?

A. No, we don't do it that way. We examine those things in a house which a skilled engineer knows are the things which cause it to depreciate. They do not examine the superficial things.

Q. Could you examine this court room carefully—do you feel competent to examine this building and tell us what percentage is depreciated?

A. That could be done but it would cost quite a bit of money to do it.

Q. I mean, do you feel competent to do it yourself?

A. Oh, I could do it, but I wouldn't want to attempt it because it would be just a fruitless job for me to do it.

Q. You don't feel competent to examine one of those structures down at Bivins station and determine how much it has depreciated, do you?

A. I could form my opinion, but it would be a waste of money to have me spend my time doing that. I own a house, and I know something about the condition of a house. I have had dozens and dozens of them built for me and I have seen houses dozens of years after I built them.

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Q. Did you—what about this engineering and supervision during construction? How does that compare with the costs of—you mean that is to be performed by some sort of firm like Ford, Bacon & Davis, Inc.?

A. Generally the independent operators of necessity have to get somebody who knows how to develop and build their project.

Q. How does that compare with your fee and the original cost of this property?

A. I haven't compared it.

Q. Did you take into consideration at all your original fee?

A. No, I based this on the experience that we have had in these independently-financed projects and arrived at these figures as fairly representing what I believe would be incurred in a similar circumstance.

Q. Now, in arriving at this engineering and supervision during construction, of course you had to consider what these engineering firms like Ford, Bacon & Davis, Inc. would charge this company, this independent company, for this service, didn't you?

A. Well, on the contrary I figured what the independent people are willing to pay a firm such as ours.

Q. Well, now, let's see, what sort of investigation did you make to determine and arrive at this 4.5 per cent?

A. Well, there were a number of projects on which I had complete information—natural gas, other utility projects, and a toll-bridge project which sometimes is considered a utility, in which I had the overhead costs analyzed to break them down as between—as nearly as could be—as between engineering and supervision during construction. On the one hand that includes inspection of work in progress in the field as well as the supervisory engineering, these miscellaneous corporate expenses, interest, and where there was any cost of financing, I did that, but in general that has to be determined separately and I also segregated from these general expenditures of those companies expenditures which we have not allowed for here, having to do with contracts and unusual expenditures in connection with licenses and so forth which some companies incur. The cost of financing was determined—

(Vol. XI, pp. 1564-1566.)

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Q. Presuming this hypothetical reproduced property was not an independent newly organized company, but the same persons, the Rockefellers and Standard Oil Company who put up the money to begin with in regard to this project, were the backers of the project, then your cost here in your reproduction cost new assessed to engineering and supervision during construction would be less than it is here actually in this statement, is that right?

A. I don't know what it would be if any Rockefeller

furnished the money, because we looked to Christy Payne for the money.

Q. Of Standard Oil?

A. Christy Payne was the man I looked to.

Q. If Christy Payne was still with Standard Oil Company and this project was to be constructed and it was to be reconstructed new according to the plans you have set out here, the estimates other than the engineering and supervisory service, would you say that the cost of engineering and supervisory service to Standard Oil Company would be less than to a newly independently organized company?

A. Yes, it would be.

Q. How much less, approximately?

A. I don't know. I think of these undistributed construction costs myself as the combined engineering and corporate overhead because they are so closely tied one to the other that it is hard to separate them, but if you take those two together I should say that it could be done for possibly 25 to 30 per cent less than when such work is carried out for an independently promoted operation.

The Trial Examiner: You mean 25 per cent of all the items or—

The Witness: In the aggregate. Take for instance the engineering and corporate overhead during construction. It amounted to about 8½ per cent. When the work is carried out under the conditions under which we have worked for Christy Payne—I mention his name because our relations have been solely through him—that from 2 to 2½ per cent could have been saved of that, making it 6 to 6½ per cent or 7 to 7½ per cent.

By Mr. March:

Q. Who has your relations been with since Christy Payne retired in 1933? Whom did you deal with in Standard Oil?

A. In connection with construction of projects such as this we have done none for them.

Q. I mean, who did you negotiate your present retainer fee agreement with?

A. This retainer fee—I didn't negotiate it and I really don't know. I think it was negotiated with Mr. Gallagher.

Q. Of Standard Oil Company?

A. Yes, sir.

Q. In arriving at this engineering and supervisory charge during construction, did you not consult anybody, any other engineering firm as to what they would do the job for? You just relied upon your own firm's past experience with fees, so-called independent projects?

A. That isn't so. We have a few in which we have specific figures but we have been in business for more than forty years and these figures are not merely figures that are solely my experience but they represent the concensus of opinion of our principal men in the organization. As I stated, in the working papers I have my own personal experience explained which shows how that experience compares with these figures.

(Vol. XI, pp. 1574-1577.)

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Q. Now we come to the cost of financing. I believe you have already testified that the cost of financing would be considerably less if Standard Oil were reproducing this property—Standard Oil and their associates?

A. I don't recall whether I have or not, but it is a fact.

Q. How much less?

A. Well, as related to this particular project, for instance, they made no specific charge for the cost of financing. Of course, when Standard Oil itself has to raise a lot of money in the market there are certain costs of financing involved, the extent of which I do not know as I haven't investigated.

Q. There wasn't any cost of financing at all assessed against this property?

A. I don't recall that there was.

Q. You don't know whether the Standard Oil Company had any trouble in getting hold of this money or not?

A. The money came as fast as required, which is more than happens on some projects.

Q. You didn't have any trouble in getting the money?

A. No, none at all.

Q. The cost of financing of this independent hypothetical company includes the financier's fee and all of that that goes along with it?

A. It includes all those things which represents the difference between the offering price of the securities as listed with the Securities and Exchange Commission and

the net amount of money the company gets. It includes the spread of the investment bankers who distribute the securities, it includes the out-of-pocket expense incurred by the company in connection with the issuance of the securities.

Q. I believe you stated here in the report that during the years 1935 to 1938 that the Securities and Exchange Commission's figures showed that the cost to the companies was on the average of 4.35 per cent to finance on the average—I mean the cost of financing?

A. That is right, 4.35 per cent of the net proceeds to the companies.

Q. You don't know what the cost has been during the last year, do you?

A. Oh, I don't recall. I haven't seen the figures during the last year.

Q. That is—

A. These costs have not been widely varied from year to year. They are dependent more on the type of business and on the type of securities than anything else. As I recall it, the cost of financing securities for the industries listed by the Securities and Exchange Commission as the extractive industries in which they list the production of oil and gas, that cost of financing is up in the neighborhood of 20 per cent or so.

Q. How much was it for gas?

A. They do not list them separately.

Q. How does it happen you made an analysis for this other far-fetched industry and didn't make an analysis for the gas industry?

A. I didn't make the analysis for these industrials. That is one of the classifications made by the Securities and Exchange Commission itself. It doesn't make a separate classification for natural gas companies. They are grouped with other gas companies and other utilities.

Q. You have just testified, as I understand it, that in considering the cost of financing it is very important to consider the type of industry that you are attempting to finance. You didn't consider the Securities and Exchange Commission's figures in regard to the cost of financing natural gas companies, did you?

A. I did not make a calculation at which I arrived at

four per cent but I did have an analysis made of the cost of financing of natural gas companies. I found tnat as related to the production end of it, which is classed as an abstractive industry, it was very much higher than the average, and as related to the natural gas companies whose securities have gone through the Securities and Exchange Commission, which are primarily transmission and distributing companies, even then the cost of financing was somewhat higher than the average, but the whole thing is complicated to such an extent by the exact class of securities issued that an exact figure cannot be assigned. It was for that reason I conservatively took a figure smaller than the average of the Securities and Exchange Commission.

Q. .355 per cent, less than one-half of one per cent?

A. It was almost ten per cent, one-tenth less than the average. You express it in dollars and the difference between four per cent and 4.35 per cent on a million dollars is a very tidy sum of money.

Q. I want to know the name of the publication of the Securities and Exchange Commission which you refer to here in order to get your average.

A. The annual reports of the Securities and Exchange Commission. It is just under that name. It will enable you to get at the average. They publish periodicals and other analytical reports giving the names of each and further details, which I don't recall. I have a list of such publications in my room at the hotel.

(Vol. XI, pp. 1582-1586.)

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Q. So you didn't give any consideration to the size of the companies in these particular cases, then, in view of the fact that one company is two or three times the size of the other and you used the same per cent?

A. Well, my sole thought in both cases was to use a figure that was lower than the average experience in financing, hoping that it would avoid a lengthy cross examination as it did in that case.

(Vol. XII, p. 1613.)

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Q. Did you leave out any definite figures in regard to

going concern value because you wanted to keep from being cross examined?

A. No, I was requested not to consider going concern value except to explain that I had omitted it.

Q. Who asked you that you were not to give any consideration at all to going concern value?

A. My clients in this case.

Q. I thought here that—you say here on Page 31 in regard to going concern value:

"All elements of cost described above relate solely to the bare bones of the physical property or plant of the new company."

What do you mean by "bare bones"?

A. Well, that is a descriptive term indicating that the properties there, there is no business connected with the property which involves the expenditure of money in the negotiation of contracts. It means that while it may have an organization there to run the property, nevertheless, the organization has not yet learned how to run the property. In other words, we have something like a new automobile that you have to take back to the service station every two hundred or every thousand miles to put in shape, where fortunately the price of the automobile includes that service, but it costs somebody a lot of money.

(Vol. XII, pp. 1614-1615.)

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Q. Well, let's see—so in the allowing of costs for training of your personnel and taking care of seasoning the line; you do allow for those two costs?

A. I have made no allowance for them in this reproduction costs new.

Q. I know, but you have in your going concern?

A. I have made no allowance for going concern. I have made no attempt to determine how much more it would cost to get this property seasoned after it was built.

(Vol. XII, p. 1622.)

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Q. But you have here all the costs for a 22-inch main included in your reproduction costs new estimate?

A. No, not all the costs. I do not have the costs of

carrying the difference between the 60,000,000 a day and the 125,000,000 a day until the growth of the territory used it up. There is nothing in there to cover that, and that is the cost—one of the costs that must be met by somebody in creating a going concern out of a property that has just been constructed.

Q. The rate payers usually have to pay for the cost of service, don't they?

A. Oh, no, the company pays for it out of its gross revenues.

Q. But they get the revenues from the rate payers?

A. In this case they get the revenues under contracts that were negotiated.

(Vol. XII, p. 1625.)

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Q. Are you going to have a corporate structure as distinguished from your operating structure, your operating organization? Are you going to have any common stock?

A. I don't know.

Q. Are you going to have any bonds?

A. I haven't made any assumption that I would have anything. I have merely assumed that a corporation would be formed, a newly-organized corporation without the benefit of the things which they get from the large operators of these properties, and that that company, whatever may be its corporate structure, whether it is bonds or whatever it may be, will have the property built for it. Whatever the bonds and notes and whatever other securities might be issued would naturally be pictured under such an event by the investment experts and the relation of bonds to preferred stock and common stock, or notes, or what-not might be different, depending upon what the investors were demanding. I made no attempt to take into account a specific financial corporate structure. It has nothing to do with these overheads that are incurred during the construction period except as it may affect the interest during construction, and in that case investors in properties demand that all of the securities be sold in advance and all of the money be put in the bank before the property is started to be constructed as has happened in my exxperience; then that item of interest naturally will be much higher than will be the case if the money is forthcoming exactly as

needed to meet obligations. To that extent the corporate structure will affect these undistributed construction costs, but otherwise I don't see that it makes any difference.

Q. What sort of a corporate structure did you consider in that extent?

A. I didn't consider it specifically. I assumed it would be a relatively ordinary structure.

Q. What is a relatively ordinary structure?

A. Well, I have heard them referred to by bankers as a company, we will say, with forty to fifty per cent bonds, or thereabouts, and twenty to thirty per cent preferred stock, and the rest common stock. I have heard that referred to as an ordinary structure.

Q. You considered this company would be that type of company and would have that type of structure?

A. Not specifically. I just assumed normal conditions and estimated a figure which I thought would fairly represent interest during construction for a ten-months' construction period.

(Vol. XII, pp. 1639-1640.)

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Q. I want you to tell me what this form letter was sent out in regard to; what prices?

A. This form letter, or a letter closely related to it, was sent out to the manufacturers of the equipment other than pipe. As to the people to whom it was sent out, I don't recall.

Q. Will you read it into the record?

A. This letter reads as follows:

"The properties of this company include items purchased from you of the kind listed on the sheets enclosed in duplicate. We will greatly appreciate having you fill in these sheets your lowest cash prices as of December 31, 1938, to a substantial and financially responsible purchaser less all discounts applicable to purchases in the quantities shown together with shipping weights and f.o.b. points. After being filled in, one set of the enclosed sheets should be signed and dated at the place provided therefor and returned to us in the enclosed self-addressed envelope. The duplicate set is for your files. It will be very helpful if you will give this matter your prompt atten-

tion. We appreciate that in answering this request it may involve some expense on your part. If there is any charge for this service, please send your bill to us and it will receive our prompt attention.

"Very truly yours,

CANADIAN RIVER GAS COMPANY,
Purchasing Agent."

Q. You did send out form letters like that to certain of the manufacturers, is that right?

A. That is the general scope of all of the requests for prices which we made.

Q. I will ask you this question: In any of these letters to these manufacturers did you tell them that you were going to use the figures for a valuation study or production costs new study?

A. In general they were told only what was disclosed in this form letter.

Q. Did you tell any of them you were going to use any of the figures for a reproduction costs new study, a valuation study?

A. I don't recall specifically that we did.

Q. I refer you to the working papers in regard to answers from some of these companies. This letter is dated July 6, 1939, from Ingersoll-Rand Company. I will ask you if that is a part of your working papers?

A. Yes.

Q. I will ask you to read the last paragraph of that letter—first I will ask you to read the heading of the letter, from whom it was written, and give the last paragraph.

A. This is a letter from Ingersoll-Rand Company dated Denver, Colorado, July 6, 1939, and it is addressed to Canadian River Gas Company. It quotes prices on certain compressor units and ends with the quotation in this paragraph:

"These figures are given for valuation figures only, which we understand is the purport of your inquiry.

"Trusting that this gives you the information which you

require and welcoming any further questions you might have, we remain

"Yours very truly,"

Q. It is from the Ingersoll-Rand Company?

A. The Ingersoll-Rand Company and signed by W. S. Grimshaw.

(Vol. XII, pp. 1661-1664.)

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Q. Mr. Rhodes, what explanation have you got with regard to that statement in that Ingersoll-Rand letter relative to these figures for valuations?

A. Well, first you will note that they said they assumed something which was a wholly gratuitous statement on their part. Second, I have had figures from manufacturers where they were unwilling to make a quotation which would be a firm quotation. They want to hold themselves free not to accept a firm order at the quoted price. It may be low. The letter of inquiry which I read into the record which was generally used was the best I knew how to tell the manufacturers that I wanted real prices and it was well known in the newspapers that this company was going to be involved in a rate case, I assume. I can't imagine their not being in a position to assume correctly that these figures were going to be used for the purpose of evaluation. I wouldn't attempt to say they didn't know, but I can't imagine their being quite so dumb, shall we call it, as to not be aware of what was going on.

Q. You think this is very exceptional, in other words?

A. It is exceptional for them to say anything about it in their replies.

Q. Because in your letters you didn't mention that it would be used for valuation purposes?

A. Well, I didn't say anything about that. I told them the kind of a price I wanted and I assumed they gave us a price of that kind, and in cases where we found that that was not the kind of price we have ignored that kind of price and used a competitive price which we knew was the price.

Q. And none of these letters which you state were to be used for valuation purposes, is that right?

A. No, we don't tell them so. That's one of the de-

vices we used to avoid getting the high figures that were once alleged to have been used on valuations.

Q. Then why did you so inform them in this letter—first I'll ask you: Who is L. B. Whitefield, purchasing agent?

A. He is the purchasing agent of the Colorado Interstate Gas Company and he sent this letter out—

Q. Just a minute—

A. Wait a minute. You're asking me about a letter.

Q. Yes, sir.

A. That was sent out—this letter was sent out before I had submitted the form letter that I wanted to be used. I don't know what's in it, but I do know that.

Q. This letter is dated March 14th, 1939.

A. That's right.

Q. And most of this information is for 1939, isn't it?

A. Most of the information is as of December 31, 1938.

Q. The letters were sent out in 1939, weren't they?

A. The letters were sent out in the late spring of 1939, yes.

Q. All right. I'll ask you to state for the record who wrote this letter and to whom it was written.

A. The letter on the face of it states that.

Q. Who?

A. The letter is written to the Dresser Manufacturing Company and signed by L. B. Whitefield, Purchasing Agent, who is the purchasing agent of the Colorado Interstate Gas Company.

Q. The date of the letter is March 14th, 1939?

A. Right.

Q. I'll ask you to read the first paragraph.

A. "Please quote us for valuation purposes and on the basis of having bolts shipped direct from factory present-day prices of Dresser steel pipe couplings, Style 38, with extra-heavy Paranite C rubbers in quantities and with specifications as follows:"

Q. All right. Here is another letter. This letter is from whom to whom?

A. This letter is a letter from S. R. Dresser Manufacturing Company to the Colorado Interstate Gas Company, attention Mr. Whitefield.

Q. Dated?

A. March 30th, 1939.

Q. Will you read the last paragraph in the letter?

A. "We trust that this will give you the information you require for valuation purposes, and remain,"

Q. All right. Here is another letter—yes, here is the letter right here. Will you state from whom this quotation is and—

A. This is a letter from the Naugle Pole & Tie Corporation; that is, an attachment to a letter from the Naugle Pole & Tie Corporation to the Colorado Interstate Gas Company, attention to the purchasing agent.

Q. What is the date of the letter?

A. The letter is dated June 2nd, 1939.

Q. All right. What about this attachment? What does it say here at the top?

A. The letter says—this attachment which they filled in, has stating at the top:

"Please quote for valuation purposes in the following poles:"

Q. In other words, this was for poles. Poles for what?

A. Telephone system. Excuse me a moment. Off the record.

(Discussion outside the record.)

By Mr. March:

Q. All right, now. Here is another letter. Will you state the date of that letter?

A. June 30, 1939.

Q. From whom to whom?

A. From Southwestern Engineering Company to the Canadian River Gas Company, attention of L. B. Whitefield.

Q. All right. Will you read the middle paragraph there?

A. "For estimating purposes we would think that you could formulate a sufficiently close approximation through the knowledge that in 1928 these units sold for $4,600 f.o.b. cars, Channing, Texas. The estimated shipping weight was 25,000 pounds each."

This paragraph in itself is somewhat misleading.

Q. Is that your statement?

A. Yes, because the first paragraph in the letter states:

"We must inform you that several years ago we discontinued the manufacture of Collins Water Tube Boilers, so that we cannot give you the information you asked for."

Q. All right. Will you state to whom and from whom this letter was written?

A. This is a letter dated December 7, 1939 from the General Paint Corporation to the Colorado Interstate Gas Company.

Q. What is the date of the letter?

A. December 7th, 1939.

Q. Read the first paragraph.

A. "From our inquiry, we assume the information requested in your letter of December 5th is for some purpose of valuation and that you are not currently interested in a purchase of such a large quantity of pipe line coating."

Q. Now, this Dresser Manufacturing Company letter, I want you to identify as to what products you were inquiring about in regard to that.

A. That was the Dresser couplings used on the main lines.

Q. Pretty large item?

A. Several hundred thousand dollars.

(Vol. XII, pp. 1665-1670.)

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The Trial Examiner: What page is that on, Mr. March?

Mr. March: That is from Page 44—begins on Page 45.

The Witness: The field inventory and the pricing of all buildings were carried out by a man in our organization by the name of J. C. Cook. He had the—in determining his unit prices, he had the assistance of a group of men working for me on the valuation of Hope Natural Gas Company, and to make sure that we were all using the labor performances that are established in our office as proper for buildings. He also had the advantage of consultation with a Mr. C. C. Whittlesey, who is one of our construction men who participated in the construction of some of this property here and who has constructed compressor stations with their housing facilities aggregating—

oh, somewhere between 70 and a hundred thousand horsepower in the past few years.

(Vol. XIII, p. 1749.)

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A. He saw each and every building, checking the inventory in the field with the book inventory and he determined the condition of a large part of the employes' houses.

Q. Yes, but he didn't determine the condition of all the employes' houses?

A. No.

Q. But on some of the houses he went in and actually made an examination of the house to determine the condition the house was in—how much it was depreciated—all of that?

A. Every house has been inspected for condition. He inspected most of them. The rest of them were inspected by another engineer who also inspected the major structures on the property.

Q. Who was that?

A. Mr. Whittlesey.

Q. Where is Mr. Cook now?

A. He is in New York so far as I know, but by this time he may have been assigned to work in any part of the country. I don't know where he is at the moment.

The Trial Examiner: Is he still in your employe, Mr. Rhodes?

The Witness: Yes, he is.

By Mr. March:

Q. Do you think you can testify here on this record that Mr. Whittlesey actually saw these houses—the greater part of them, he actually from his observation determined the depreciation of each of these houses, the condition the house was in?

A. Mr. Whittlesey only saw a small part of the houses. It was Mr. Cook that saw the most of the houses.

Q. Mr. Cook—I'll change that. Mr. Cook, did he see almost all of these houses?

A. Yes.

Q. And he did himself from his observation of the houses determine the depreciated condition of the house?

A. Yes, he made a report on each house?

(Vol. XIII, pp. 1752-1753.)

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Q. If it had a concrete foundation it was depreciated just the same as the rest of the house?

A. No. They depreciated the foundation as best could be done by an examination of the foundation near the surface of the ground. The foundations of these houses are relatively unimportant.

Q. I would like to see your breakdown here of this item of chicken coops just as an illustration as to how you depreciate these various items. I wonder if you could obtain your working papers and we could have it in the record, setting forth just exactly how much depreciation you assigned to that particular piece of property?

A. I can't show you that because I myself did not assign any per cent condition to any particular house. My men reported to me on the condition of the various parts of the various buildings as to whether they were excellent, good, fair, poor, or bad. Those various ratings were finally translated into a per cent condition by me based upon my knowledge of construction of this type of building and my general inspection of the property, and the details as they were reported to me.

(Vol. XIII, pp. 1755-1756.)

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Q. Let's see. You have your men go out and inspect these properties. They didn't assign any specific depreciation to these individual houses or anything, but they merely rated them according to the formula which you set up, is that right?

A. That is right.

Q. What is that formula which you set up?

A. Well, if they saw—inspect a building or any part of a building and could find no evidence of deterioration they rated that part of the building as excellent.

The Trial Examiner: Now you mean, Mr. Rhodes, their minute inspection of a foundation—that is, they take the house in its several component parts and rate each part of the house?

The Witness: Of the larger structures, not of chicken houses.

The Trial Examiner: I am not speaking of them.

The Witness: They examine each part; the foundations, if there are any, the walls, the roof, the framework and if they can find no evidence of deterioration there—in other words, if there is a percentage of being new or the equivalent of that, they rate it as excellent. At the other extreme they have a rating of bad which they give when they find considerable depreciation and where heavy repairs are imminent. On older properties occasionally buildings or parts of buildings are found which are rated much worse than bad—several degrees worse.

The intermediate ratings are good, which is where deterioration is just beginning to show up, but no repairs are indicated as likely to have to be made in the near future.

In fair, the deterioration is more pronounced and some repairs are required, but not too soon; and then you have poor, which is between fair and bad, where considerable depreciation is in evidence and considerable repairs are required soon but not to the extent of bad. These three intermediate degrees between showing no depreciation or deterioration and the rating of bad included the greater part of their ratings. Each one of these particular parts of buildings of importance were rated in that way. That was their field work. They received uniform instructions from me on this job and the other jobs that had been going on under my direction. The office work in connection with that was to weight these good, fair and bad, to find a fair over-all rating for the building itself and group of buildings where similarly—the condition of good, bad and fair, and so forth—was determined by weighting the conditions of the individual buildings in proportion to the cost. It could have been done as a percent condition but we were interested in getting an overall rating and it is a simple thing to do mathematically or by figures as long as these five different ratings are given five consecutive numbers. You get the weighted average and you can tell whether the average is between good and fair or good and excel-

lent, and by that means you will get an overall rating for the building or group of buildings.

Now, generally speaking, I have found that anything that shows up as being badly deteriorated and in imminent need of heavy repairs may be considered as being half depreciated. It is not possible to arrive at an exact figure but that is the intent in rating anything as being badly deteriorated. Heavy repairs are something which in the opinion of the inspector has lived half its life. As I said before, we found some very very bad structures that were in imminent need of being torn down but not in this property.

By Mr. March:

Q. Not on Colorado Interstate's property?

A. No, we haven't found any buildings ready to be torn down.

Q. Let's see, when anything is excellent, what per cent depreciated is it?

A. Very little, possibly five per cent.

Q. Five per cent?

A. On the average, yes.

Q. I see you have 5 per cent assigned to this pipe. I won't go into that, though.

When it is fair, what per cent is it depreciated?

A. On the average the ratings are excellent—will average 95 per cent. A building or part of a building rated as excellent might be new on the one hand or have been used up to 10 per cent on the other hand, and 95 per cent is a fair figure as applied to a group of properties. The fair would range between 10 per cent depreciated—no, the good would range between 10 per cent depreciated and 20 per cent depreciated and so on. The bad ranges between 60 and 50 per cent.

Q. Did you solely on your own initiative devise and invent this classification?

A. No, this clasisfication was the result of an extended conference with men, two men who have worked for me for a long time in the construction of buildings, a Mr. Whittlesey being one of them and Mr. Green another, who

have had long years of experience in construction and rehabilitation and conditioning of buildings.

Q. This Mr. Green, what is his profession?

A. Mr. Green is a Civil Engineer who has been working for us for fifteen years or more in work related to building construction, evaluation, and so forth.

Q. How many houses has he built: dwelling houses?

A. I don't know. Houses being a small part of it, I wasn't concerned. Mr. Whittlesey has built, however, the dwellings and all of these compressor stations we have built, probably two or three or four hundred of them. I don't know the exact number.

Q. Did he give any consideration to the date upon which he built the houses?

A. The date in itself is meaningless and we give no consideration to that except indirectly in old buildings which of course don't apply here. In old buildings—

Q. Where did you have old buildings?

A. On several properties that I have been making reproduction cost new studies on.

Q. Not in connection with these two companies?

A. No.

Q. Mr. Whittlesey helped you on the other two properties?

A. Yes. In fact, the methods for inspection of condition was devised by Mr. Whittlesey, Mr. Green, and myself.

Q. What is Mr. Whittlesey's profession?

A. Mr. Whittlesey is primarily a construction engineer who builds for us and is now building compressor stations with their housing facilities, pipe lines, and so forth.

I will give you his earlier training.

He graduated from Washington University in St. Louis in 1921. He worked during the summer months on various jobs while he was being educated.

Q. What degree did he get?

A. He didn't state here on this piece of paper. I don't know.

Q. He is—is he an engineer?

A. Yes. His earlier experience was with the engineering firm of McClelland & Junkersfeld in the building of

a large power station in St. Louis or East St. Louis that cost forty million dollars. He was an assistant civil engineer on that work.

After that and until 1925 he was with the Engineering Department of the Missouri Pacific Railroad, the Louisiana Division, making appraisals for the Interstate Commerce Commission work and in the investigation of wrecks, and so forth, for the Interstate Commerce Commission, and he was engaged in miscellaneous railroad construction work.

In 1925 I hired him personally to come to work with me in connection with a power station constructed in the Monroe Gas field. Since that time he has been with us primarily on construction work related to power plants, compressor stations, and pipe lines, and has done some rehabilitation work in connection with that and miscellaneous valuation work as it comes up from time to time; but he is primarily a natural gas compressor station construction man in the later years having, as I say, constructed for us a large number of compressor stations with structures almost identical with the structures on this property.

(Vol. XIII, pp. 1756-1762.)

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Q. Now, did he construct—on Page 46, I refe you to compressor house, one story and basement, steel frame, concrete foundation, walls and floors, and so forth and so on.

A. No, he didn't construct that house.

Q. Who constructed that house?

A. I don't know who constructed it.

Q. Has Ford, Bacon & Davis, Inc. ever constructed houses itself like that?

A. The Clayton station was constructed by one of the men on this property as selected by Mr. Hill and Mr. Trelease who constructed that compressor station and its various facilities. Just which buildings he constructed or which was sub-contracted I don't know. I haven't examined the records.

Q. Who was that man?

A. I don't recall his name.

Q. Did you consult him in the—

A. No.

(Vol. XIII, p. 1764.)

A. Here is the main compressor building at Clayton. The building is a type 2 building in which—which identifies the pricing of it. It has a concrete foundation, concrete floor, steel frame, corrugated *asbestus* walls, and roofing, steel sash, steel doors; it's 309,304 cubic feet. The foundation of that building was inspected and found to be poorer than excellent. In other words, he didn't want to say as much deterioration as good, but it was a little poorer than excellent. This is Mr. Whittlesey's inspection. I think he worked in the construction of that building.

Q. Are his initials on here?

A. Yes, "C. C. W." He found the columns of that building to be excellent; the siding fair; the sash excellent; the doors, good; the floor was excellent; the floor finish was only fair; the roofing was fair; and he has a note here that eight of the sheets were damaged in some way. It is not clear. The condition of the paint was poor; the lighting was excellent; the heating system was excellent; the plumbing was a little better than good, and the ventilators were good.

Q. What's this note down here at the bottom?

A. Some main compressor building wall cracks. That's the corrugated *asbestus* wall and there was some floor cracks.

Q. All right.

Now, you're an expert. You have before you this sheet here. Now, I want you to give us the benefit of your expert knowledge as to just the per cent to which this particular piece of property has been depreciated.

A. Well, I haven't presumed—

Q. Well, could you?

A. —to assign a depreciation to a single piece of property.

Q. Do you feel capable of doing it?

A. If I were going to condition this piece of property and no other piece of property I wouldn't be able to take advantage of the averages which I gave you in the ratings

as to excellent. I would have to go into it in detail, but when you're inspecting many pieces of property, the condition excellent will average out very close to the 95 per cent, but as related to this piece of property the percentage might be 91 or 99.

Q. So, it's like taking an examination in school. You fail a certain percentage of the class and give a certain percentage A and to a certain percentage B.

A. No, not like that.

Q. All right, we've got this one piece of property here. I want to test your expert knowledge. We've got this one piece of property here and I want to know from the data which you have before you here, just exactly how much that piece of property has depreciated, what is the depreciated condition of that piece of property?

A. As related to this one piece of property, as I have already stated, this information is not as much as I would want.

Q. What else would you want?

A. I would want more information as to why he called the foundation a little poorer than excellent. I would want more information as to these wall cracks and so forth. I would devise a greater number of ratings. This building, as I say, might be anything within the range of these ten per cent steps.

Q. You couldn't tell from this?

A. But when you take a group of buildings, the overs and shorts average each other out and you have—if you are familiar with the buildings and the man who inspects them is familiar with the buildings—you can have a very good rating as to the condition of that building.

Q. You mean to say this, that if you had, say, we had a hundred compressor stations instead of one compressor station here—I have a hundred sheets of paper here with the same type of information on the paper that is on this one piece of paper—

A. That's right.

Q. —then you think you could tell what the depreciated condition of the group would be?

A. If the man who inspected it inspected this building.

Q. Well, isn't it true that the parts make up the whole? If you can't tell the depreciated condition of one compres-

sor station, how can you tell the depreciated condition of many compressor stations when you don't have any more information on the group that you have on the individual parts?

A. You do have one phenomena of nature, that you can always rely on, that when you rate a great many things with a range in the rating that the average of those ratings comes very close to being the middle. That is the case in almost everything that is encountered in nature.

(Vol. XIII, pp. 1766-1769.)

* * * * *

Q. Now, let's turn to one of these wooden houses—any wooden house there—any wooden house you've got there.

A. Well, here is a group of wooden houses that were inspected by Mr. Cook and they are concrete foundations and wood frame and roof with composition shingles and wooden sash. The foundations of all of them are rated as excellent. They were all built at the same time. The frames of all of them were good; the sidings were good; the sash was good; the doors range from fair to good; the floors were poor to fair; the roofing was a little better than fair to good, and the paint was fair to good, and in the different houses the condition of the electric lighting was good to excellent; the heating system was fair in most cases, good in one case, and the plumbing was fair to good.

Q. Now, is that for an individual house or for a group of houses?

A. The ratings assigned here are the ratings obtained by inspecting each house.

Q. Well, let's see, now. You're reading from this—this reading here, that is Dwelling No. 1, you were reading in regard to Dwelling No. 1, Dwelling No. 2, Dwelling No. 3 and Dwelling No. 4.

A. I was looking at the group of dwellings from 1 to 8 and giving you the range of the conditions of the parts as he found them.

Q. All right, I'll ask you the same question I asked you in regard to the compressor stations. Now here you have a little different picture. Instead of one house you have a group of houses. Now, from your vast knowledge of houses, I want you to tell me from that information the percentage of depreciation from those houses.

A. Well, I haven't determined that. I'll be glad to tell you what I did with respect to the total—with respect to all the buildings in that group.

Q. You have all the mental faculties you had when you did that, haven't you?

A. There is a great deal of work to be done before the mental faculties are brought into place.

Q. All right, let's go through that work.

Now, you have this information before you. What else have you got to determine the amount of depreciation there of these four houses—just ~~these four houses~~?

A. Well, I haven't determined it.

Q. Well, what else would you have to do if you did?

A. Well, if you had to do that you would have to assign a rating number to excellent, good, fair, and so on, which might be 1 to 5, or 10 to 15, or any other group of consecutive numbers you wanted to. It doesn't make a darn bit of difference which—leave out the "darn." We would know from the analysis of reproducing these houses that the foundations cost a certain per cent of the total, and the frames cost a certain per cent of the total, and the sidings and the sash and these various parts inspected cost a certain per cent of the total.

Now, these rating numbers assigned to excellent, good, fair, poor and bad would be weighted in the proportion that the parts contributed to the costs of the whole building and if, when they ended up, they averaged the number that we assigned to good, that particular group of houses would be called good as a whole. If it was between good and excellent, we might call it good plus or excellent minus, and we would thus have a rating of these—of this group of houses, which we wouldn't attempt any closer than good plus or good minus, or as the case may be.

Q. In other words, you would have to know first what foundations cost, plumbing cost, and the roofing cost, and that would be the first requisite, is that right?

A. Yes, that's the first step.

Q. Now, as I understand—I want to get clearly in the record just exactly your method. As I understand it, it is sort of like the judges do when they go out and have

a prize cow contest or something like that. The judges have rating sheets and they look at the cow and say, "This is good, excellent—the grade on the hind legs and front legs and horns—and the condition of her skin," and all that, and come up to a grand total, is that right?

A. No.

Q. How long would it take you to figure out for us right here in the hearing-room about these four houses, just exactly?

A. Well, it would be a waste of time for me to do it. I could figure it out, but I have figured out here, though, everything relating to the condition of the group of buildings in that account at that compressor station and I can show you just exactly what I did with respect to the whole, but I didn't figure the condition of the houses separately and it is not a part of my method.

Q. Say you were just an ordinary person and not an expert, and you see standing out here a steel building, a steel and concrete building, and standing over beside it is a wooden house. Which would you say would last the longer?

A. I don't know. I have seen wooden houses older than any steel building that exists.

Q. You wouldn't know?

A. Well, I've just answered. It depends entirely on how the building is taken care of.

Q. In making this study, you made no attempt to study the respective durability characteristics of wood and steel?

A. Yes. We took that into account by what could be seen by observation as to whether there had been deterioration or not, and the relative durability of the different materials in these particular buildings is shown by what has happened to them in the period that they have been in existence.

Q. Now, you threw in here and assigned, I believe it is 14 per cent depreciation to the same—to chicken houses, hose sheds, steel and compressor stations, five-room dwelling houses of wood—you assigned the whole group a 14 per cent depreciation.

A. To the group, yes, but to the individual buildings, no.

Q. Well, now, how much longer do you think, from your experience, do you think that those steel and concrete com-

pressor houses are going to last than this wooden hose house?

A. That depends on whether the company keeps them up or not. The wooden buildings could be kept in shape—could be made to last as long as the steel buildings if it was so desired.

Q. Well, what do you think about the respective life of these properties—these types of properties, if they are kept up in the ordinary manner that they are being kept up now? Do you think that the steel house might have 100 per cent longer life than the wooden hose house?

A. Ordinarily when you go to the extreme of a wooden hose house and a compressor station building you are taking a rather ridiculous range.

Q. That's just what you have done here, isn't it?

A. No.

Q. Well, you have here—I notice here you have tabulated in your Account 352-1, this steel compressor house and in the same account with your wooden hose house, and the whole group you assign a 14 per cent depreciation.

A. I assigned it to the group but not to the individual—

Q. Yes, but you do have all of it stacked in here in one account.

A. Yes, they are put in the account that calls for such structures to be—that calls for the coverage for such structures.

Q. All right, now, let's move along here to the pumping station equipment, say—354-1. Is that where your engines are located?

A. Yes, that's where the compressor units are included.

Q. All right. Let's turn to that. What page is that on—the breakdown?

A. Are you referring to the priced inventory?

Q. Yes.

A. It begins on Page 108.

Q. Now, these engines here, compressor engines, I believe they are concrete foundations, are they not?

A. Yes.

Q. And they are bolted down to these concrete foundations?

A. Yes.

Q. Now, what detail did you go into personally to determine the depreciation of the engines?

A. I personally determined, in consultation with Mr. Whittlesey, the method of finding the condition of these engines.

Q. What was that method?

A. Mr. Whittlesey went out to each and every one of these compressor stations and determined the condition of the wearing parts of the engines which wear out in service. For instances, in gas engines the cylinders wear out from time to time; the pistons and the piston rods, and the crossheads; the valve gear, and like parts. That represents approximately 30 per cent or thereabouts of the cost of such equipment. Generally the main frame and the shafts and the fly-wheels don't deteriorate. If they ever are replaced they are replaced as the results of accidents. That 70 per cent is not considered as depreciated.

Mr. Whittlesey reported to me as a result of his inspections, weighting the cost of these various parts which do depreciate, and gave me an overall rating that these wearable parts had worn out to a certain percentage.

Q. Where is that? Is it handy there—Whittlesey's report?

A. These are Whittlesey's reports.

Q. Let's see one of his reports.

A. Well, here is a report on the Clayton station. This would be main unit No. 3, and the company's numbering, and it's 1,000 horsepower, 125RPM unit, of Worthington manufacture, the bore of the power cylinders is 20 inches and the stroke is 36. That is in error because the bore is 22 inches, but that point is purely an error in writing down, and there are two compressor cylinders 15¾-inch bore.

Now, he rated the—considered the power cylinders, the parts that wear out. There are four power cylinders on each of those engines, two on each side, a right-hand and a left-hand; and he rated the valves and the cylinder castings in each of those four cylinders as excellent. He found the liners in the cylinders which are replaceable liners that wear out, as good; the cylinder heads as excellent; the

piston rods as fair; and the pistons and rings fair; and the packings good. They represent the principle parts that wear out in the power cylinders. Those parts of these power cylinders which can be seen are examined and their condition determined. The records of the station as to replacements and general performance of the engine is determined by consultation with the records and with the Chief Engineer of the station.

Then he rated the exhaust valve which involves a depreciation of wear and tear that is characteristically different from other things, and he determined the conditions of the valve casings as being excellent; stems, excellent; stem guides, excellent; the springs as good; the exhaust elbows as excellent; and the pipe and fittings in the exhaust of the engine as good.

Then he examined the other valves and mechanism, like the gas mixing valves, the air starting valves, and the camshaft and the valve mechanism and the cams and the layshaft and the gears and the governor mechanism, and they were all found to be in excellent condition.

Then he examined the bearings and cross-heads—determined them by the behavior of the engine in operation and found them to be in excellent condition.

Then he similarly rated the parts of the compressor cylinders and the liner and the piston rods and the piston rings and the valves which are rated as in fair condition; the unloading mechanism as in excellent condition, and the packings as poor.

Q. Now, what are these red things on here—94 and 82—what's that—in red on there—not a part of Mr. Whittlesey's writing?

A. These figures as related to each of the engines is a weighting of these excellents, goods, and fairs, and so forth, with the non-wearing parts to find the equivalent numerical rating which corresponds to 95 per cent being excellent, and so forth.

Q. So this—

A. This is a first step in determining the condition of the equipment in that station.

Q. Does that 94 per cent mean that it is 6 per cent worn out, this particular engine—this particular portion of the engine?

A. A group of engines with that rating would mean that 6 per cent was worn out, yes.

Q. I'm talking about this engine. This engine has 94 in red letters here in somebody else's handwriting besides Mr. Whittlesey's and I want to know here exactly whether or not that means that this engine—this portion of the engine, is 6 per cent worn out.

A. Not precisely. It may be plus or minus a number of points because the rating of each individual thing; that is, averaging up, is only within a range of 10 points, and as related to this particular engine, a more complete and detailed inspection might result in a somewhat different figure, but we find that as these inspections are averaged up with a group of property, that uncertainty disappears.

Q. Yes. Now, in other words, you want to change your testimony, then, that you didn't give individual depreciation ratings to these individual units?

A. Why, not at all. I have just testified that that is not the rating except within a range of uncertainty, but it is the first step in finding the per cent condition or the per cent deterioration in all of the equipment in the station.

Q. Which first step is the rating of these individual units, and you might change the overall group when you get all of the figures and consider them together?

A. If you took all of the engines in this property, all of the 1,000-horsepower engines, which is 8, the average of these figures would be rather close to representing the extent to which the parts of the engines had worn out.

(Vol. XIII, pp. 1770-1780.)

* * * * *

Q. Where is your sheet on the concrete foundations of the engines?

A. There is no sheet. I have testified in the explanation of this reproduction cost that the engine foundations, various piping, and so forth, connected with the engines was given the same rating as the engines. The prime reason for that is that in general when an engine is retired

permanently from a station the foundation and pipe are also retired from the books of the company. They go together so we put that equipment that depreciates very very little in the same condition as the engine. If we are going to keep the foundation and the piping for the instaliation of some other engine, we would have over-depreciated it, and if anything, it is over-depreciated by adopting that method.

Q. You say the concrete foundations are over-depreciated?

A. From the purely physical standpoint, yes. They are put in the same condition as the equipment in the station, not each engine foundation but all foundations as a whole.

Q. How do you know that they are over-depreciated here since you state that you did not make any attempt to ascertain the amount of depreciation of the concrete foundations?

A. Because physically they would all be rated as excellent because that is their condition by themselves, but they are less than excellent as far as usefulness is concerned because if the engines are 15 per cent depreciated and the foundations have to go with the engines, it would be foolish to say that the foundations were in 100 per cent condition, even though they might be physically so.

Q. So you took into consideration when you placed depreciation on items as to how useful they were, is that right?

A. That is not quite the interpretation of it, no, and I wouldn't say that I did that. On the other hand, I have depreciated at the Canyon station at a very low value a certain building, the usefulness of which is rather indefinite, and that building has been marked down on that account, but that has nothing to do with the fact that when an engine is permanently retired the foundation is retired with it. The foundation is 100 per cent useful all the time it is there.

Q. As a matter of fact, the foundation may outlast the engine?

A. I have said it does; that foundations are rarely retired—engine foundations—except when the engine itself is permanently retired from service.

Q. You wouldn't have to even look at the concrete, then, to determine the amount of depreciation of the concrete?

A. In general, no. There are stations which I have seen, however, where foundations have deteriorated to such an extent through ground settlement that the inspection of those engine foundations in that particular station would have resulted in a considerable mark-down which was later corrected by the installation of suitable underpinning.

Q. In determining the depreciation of concrete, would you think it would be advisable or helpful to take into consideration how long the concrete had been laid?

A. You can tell by the looks of a concrete foundation whether it is deteriorated or not, and whether or not that deterioration is likely to result in a heavy replacement of a part. That sometimes happens. Parts of foundations fall off due to the concrete not having been good concrete and they have to be replaced. If anything like that is found which rates a foundation below the corresponding rating, in the manner I have described, that foundation is so marked down in the determination of the depreciation.

Q. Say one of these engines down there would blow up. Would you say that you would put another engine on the concrete foundation?

A. That depends upon the extent of the blow-up. Furthermore, that is an accident against which it is not possible to figure depreciation.

Q. You don't really know much about concrete yourself, do you?

A. Well, there are hundreds of thousands of yards that have been poured on jobs which I have been closely associated with, and a considerable part of it on jobs where I have been out in the field and have been responsible to see that it is carried out.

Q. So much for that.

There is just one question so the record will be entirely clear on it.

Would you depreciate the concrete 12 per cent? That is the amount of depreciation of pumping station equipment. You would depreciate concrete foundations 12 per cent because the engine showed 12 per cent depreciation?

A. I assigned that percentage to the concrete foundation as a whole because the equipment and the station was depreciated 12 per cent, yes.

Q. Now, in order—

A. A small portion of the whole station depreciates less rapidly in fact than the engines has been depreciated by me as much as the engines.

Q. In order to really do a workmanship job of determining the depreciation of the engines it would really be necessary to dissemble some of the engines, wouldn't it, one of the engines, or something like that, and examine minutely the wear and tear of that engine?

A. If you did not know anything about engines and you had no information as to their past history for repairs, it would probably be necessary to spend five or six thousand dollars to dissemble one of these engines and put it together again, but to one who is familiar with engines and knows how they act, and knows what the conditions are, knows what the cost of replacements are, he can tell the condition of an engine by inspecting the visible parts, having the engine operated for him, and investigating the replacement records as for cylinders and pistons, and so forth, in the past, and he can arrive at a very good measure of the condition of that equipment; and when that measure of his is applied to a group of equipment the uncertainty washes out.

The Trial Examiner: Do you know, Mr. Rhodes, whether consideration was given to the past operating records of the engines as to replacement of parts?

The Witness: All I know, of course, is what Mr. Whittlesey told me that he did in carrying out my instructions, and after years of experience with the man I learned to believe him.

By Mr. March:

Q. I have something in mind here. I don't know how it will work, but before I even attempt it I want to know if it will be possible for you to tell the answer.

If I have a man come in here with one of these pistons and put the piston in front of you and I ask you how much that piston has depreciated, do you think you would be capable of telling me?

A. It takes more than just looking at the thing. It

requires some records in the case of these rapidly wearing parts, as to how long they have been in use since they were replaced, which information can be obtained from the records, and what has been the experience in that station. The visible evidence is only one of the things that you take into account. For instance, a piston rod may be worn, be very rough, and look as though it were going to have to be replaced very soon. A piston rod, however can be turned down on the lathe and go through a number of those experiences but finally there is so much of it that can be cut off that it has to be replaced. It takes skill and knowledge of equipment and it take a knowledge of what has happened previously to assign any condition to that particular piston rod.

Q. So you wouldn't attempt to tell me the depreciation of the piston?

A. It takes this other information.

Q. You wouldn't attempt to observe the piston and tell what percentage of the depreciation had taken place just from observation?

A. No. One could have a piston that had been turned a number of times for putting in new piston rings so that the next time it happened it would have to be scrapped, or the piston might be a brand new piston that apparently had some cracks in it, or the piston may be one that had been subject to overheating through overload or through scale forming inside, and you could have a piston that looked perfectly good by itself but if you didn't know anything about its past history you couldn't condition it.

Q. In other words, I would have to bring the record with me as to the life of the piston and what it had been used for and how much it had been operated and all that?

A. Those things would have to be taken into consideration. You will recall my stating that the rating of any individual thing may be within quite a range of uncertainty, but the rating of the large aggregation of those things iron out those uncertainties.

Q But in examining these engines, the various parts of these engines, you have testified here as I understand it that you did not have to have before you the record of performance of the engine.

A. I have not testified to that effect.

Q. It was necessary to know when the engine was purchased and its record, wasn't it?

A. I didn't say anything about the age of the engine itself but the length of time the various parts had been used. Take, for instance, an engine may be 20 years old and used very very little. That engine is almost in the same condition that it was in when it was bought. On the other hand, an engine may be given terrifically hard use continuously for four or five years and be in very bad condition. Age itself is only one of the things. Indirectly it counts as it offers an opportunity for the engine to be used.

Q. What else did you have the record of in making this, the record of how much these houses were used?

A. Houses don't wear out except by rotting because they are static things.

Q. They wear out depending upon what type of people are in the houses, don't they?

A. It is perfectly evident what has happened to houses—you can tell what has happened to the house when you look at the house. The parts that wear out from the people being in them are quite obvious. The thing to look for in houses are the hidden parts, the under-pinning. When that rots—once in a while we have termites that cause extensive damage to a house but those are not the things that wear out—that are worn out by the occupants.

Q. Some of the engines—you just looked on the outside of some of the engines and you didn't attempt to determine the condition of the inside of the engine.

A. The engines were not dismantled for the purpose of determining their condition.

Q. You don't think any engineer could go down to one of your plants and by observation determine the depreciation of the engine unless he had before him the record of the operation of the engine, do you?

A. He should know what had happened to that engine. He should know about the policy with respect to replacements and whether the engine had a good operating record or one that was subject to frequent breakdown. He takes those things into consideration and if he is experienced and knows what he is doing he can fairly determine the extent to which a group of these engines has deteriorated as related to anyone with less prescision, but as related to the

group he can determine, I believe, quite accurately. You must bear in mind that very little equipment from the standpoint of wear and tear ever gets worn down to more than 30 per cent depreciation and he is trying to find where it is, somewhere between the 70 per cent and the 100 per cent.

The Trial Examiner: We will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. March:

Q. Mr. Rhodes, you state, I believe, that it is necessary for you to have some record of performance of the engines before you in order to determine the depreciation. That is correct, isn't it?

A. You should have it.

Q. I want to see your working papers which will show the record of performance of these engines.

A. These working papers do not show it. That is one of the things the inspector determines by questioning and these particular engines have comparatively little replacement that has been suffered. In going over the inspection reports I haven't myself noted that, but it is not customary to make a record of that in these inspection reports unless there is some unusual feature involved.

Q. You don't have that information before you?

A. No. The man who rated the parts, however, had the ability to see the engine, to see it run, to see the station logs, to talk with the operators. You don't make a specific calculation of these specific things that have occurred. The individual parts are rated within a range of tolerance.

Q. Some of the engines may not wear out at all, is that correct?

A. If they weren't operated, they wouldn't.

Q. So part of the engines are comparatively not depreciated at all?

A. That is what I have stated. The main frames and fly-wheels and so forth are never replaced except as the result of an accident. There is no depreciation assignable to them because of the fact sometimes you have an accident.

Q. In determining depreciation here, why was it you took the engine in its repaired condition? You considered the engine in its repaired condition?

A. We took the engine as we found it.

Q. A large part of the engine might have been replaced?

A. Yes. It is conceivable it may have all been replaced. I have known of engines that have been completely overhauled and everything that was more than slightly worn was replaced, and when you get through those engines would rate as being in excellent condition even though they had been given terrible abuse for several years.

Q. Did you make any check to ascertain whether any of these engines had just been repaired and put in excellent condition before you made your—attempted to make your determination as to the depreciation?

A. I didn't, no. Mr. Whittlesey took into account everything he could ascertain as having a bearing on it. I took into account something else when I adjusted his final figures.

Q. What was that?

A. That was this, that a large amount of equipment in a number of compressor stations that have been well seasoned tend to approach the point of about 15 per cent depreciation. In other words, some parts last ten years, some fifteen, some five, but as this property gets seasoned with the various replacements of these parts the tendency is to approach about a 15 per cent depreciation. A property that has been abused or that is very old may well have depreciated more than the 15 per cent and a property that is relatively new and well taken care of will have depreciated less than 15 per cent.

Q. But you didn't give any consideration as to whether the properties were relatively new or relatively old?

A. Only to this extent: If a man reported to me that all of the equipment in the compressor stations that was very old was in 90 per cent condition he would have to prove it to me.

Q. I want to see one of those reports.

A. You have just been looking at one.

Q. This report doesn't say anything about age on there.

A. No, because I know just within what a few years—it doesn't make any difference. If I had a bunch of stations with engines in them twenty-five years old or more and he reported them to be in 90 per cent condition, he would have to prove it to me.

Q. In other words, you couldn't rely just on observation as to the depreciation? You would have to take into consideration the age?

A. I would question the work he had done. I mentioned that these variations in the overall condition are merely one of the guides to a man who is experienced in the gas business that can be used to determine whether or not his field men have done what he told them to do.

Q. What did you tell them to do? Did you tell them in this case to tell you how old the engine was?

A. No, I told them to find out how much the engine had worn.

Q. Say that I bring in a piston. Are you going to want to know how old it is?

A. I have already told you it wasn't practicable to condition a piston by itself.

Q. You couldn't tell?

A. We only determine the extent to which the condition of a piston contributes to the condition of the whole engine. These things are all inter-related one to the other. The piston itself doesn't depreciate very much. It is pretty much an accident that causes them to be replaced, but we take into account a condition of a piston if we find out that pistons are cracked, if we have a series of troubles with them as we have had in some stations with pistons cracking, and if that condition was continuing in the station, and hadn't been cured, those pistons would have been put on the average in bad condition. That is a condition that has been carried pretty generally in stations.

Q. Say that this desk here is an engine. You are on the stand up there, an expert, and I will ask you to tell us what the depreciation of the engine is. You are not going to want to know how old the engine is?

A. Only within a wide range of years.

Q. How many years?

A. We would be interested in knowing whether it was 10 or 20 years old but we would be much more interested in knowing how many hours it had run, whether it had been overloaded or underloaded or low speed or high speed. If you want to be specific with reference to a specific engine you have to take all those things into consideration, but as related to the group that can be taken into consideration more generally because the individual things—

Mr. Brock: Let me interrupt you there.

You said "condition" when you meant "consideration." You have said that a number of times.

The Witness: That is right.

By Mr. March:

Q. Coming now to the concrete again, you say that you know quite a bit about concrete?

A. I think I know something about it.

Q. Do you know whether concrete depreciates or not?

A. Some does, some doesn't.

Q. Did you ever hear of any concrete that didn't depreciate?

A. Well, I have known of concrete that has lasted a good many years without any evidence of depreciation, and I have known concrete to go to pieces in one year.

Q. Would you say that some concrete really gets better with age?

A. Up to a considerable length of time, yes, and just how long that is, we don't know, but for the purpose of supporting an engine it doesn't have to get better. As long as it doesn't get into the condition where it no long supports the engine it hasn't depreciated materially.

Q. So you handled the concrete in connection with its functional performance in regard to what it is connected to?

A. That might be one interpretation of what I have done as related to the engines, yes.

Q. That is all on that angle just for the moment.

I want to direct your attention to when we were talking about pumping station equipment. On this exhibit we are talking about now under Colorado Interstate you have 12 per cent depreciation. On your Canadian River you have for the same property 17 per cent. Can you explain any reason for that?

A. Well, there are a number of reasons for that. In the first place, the Canadian River field station and any other field station has a more continuous use than the line station. The difference is roughly in the capacity of this line to handle gas and whether all of the line stations are in or all of the line stations are out is only about 2 to 1, and consequently, there is a considerable part of the year where the stations on that line are not in use and they are not

being used so much—not being used so much they don't wear so much.

Another reason is that we found on inspecting the pipe—the piping around in the yard of the Bivins station, that there was considerable deterioration in excess of that found in the yards of the other stations.

Q. Is the pipe included in this pumping station equipment?

A. Yes, all of the pipe that forms a part of the station beginning with the suction main and going on through the intricacies of the station and ending with the discharge into the main. It represents a rather large sum of money.

Q. About how much?

A. Generally speaking, from 10 to 15 per cent. I can tell you more specifically as related to these stations. In these stations the pipe valves and fittings represent almost 42,000 out of a total of $338,000. That is more than the 10 per cent figure I mentioned.

Q. Can you think of any other reasons why pumping stations of Canadian River are so much more depreciated than those of Colorado Interstate?

A. The fact that it was found on some examinations really is controlling.

Q. I want to know what proof you have, what evidence you have that the Canadian River pumping equipment is operated more than the Colorado Interstate pumping equipment.

A. Well, I haven't checked into the details but I explained to you the characteristics of pipe lines that have the varying load that this Denver line has. They certainly don't operate engines just for the fun of it. They operate them when they need them. I know from having been out here that Colorado Interstate's stations for the most part have been practically cut down cold all summer long.

They are just winter stations. The Clayton station has been running more than the others. The field station on any pipe line that puts the gas into the line has to run all the time unless the suction pressures happen to be high enough to avoid it. That has happened at times here.

Q. Did you take that into consideration when you put a greater depreciation on the station?

A. No, not specifically.

I have explained to you that the depreciation we put on this equipment is that which was found there. It wasn't theorized on how many hours it was run. That was known to be sure, but going into the stations you can very easily find the operating records of the station.

There again it is not a specific factor where you write the station down for so many per cent for each hour the engine runs. You don't do that, but I explained these conditions in answer to your inquiry "Do you know any reasons why you would expect to find Canadian River's equipment depreciates more than Colorado Interstate's equipment?"

Q. The only reason you have here is because Mr. Whittelsey said so?

A. You might put it that way. It was a man thoroughly familiar with the equipment who himself inspected it that said it was depreciated more than that of Colorado Interstate. One learns whom he can trust and can't trust when he has been in the engineering business as long as I have.

Q. On the contrary, we find that Canadian River's pumping station structures—I presume that is the structure over the station—has depreciated much less than the structures of Colorado Interstate Gas Company.

A. Well, I think I have already made a reply to that question but I will be glad to give it again if you would like to have me do so.

Q. Is that just because Mr. Whittelsey said so, is that right?

A. No.

Q. Because Mr. Cooke said so?

A. No.

Q. What else did you have to go on?

A. I had to go on this: The Canadian River's compressor station's buildings are limited to compressor station buildings proper which are steel structures with asbestus siding that does not deteriorate rapidly, whereas, Colorado Interstate's compressor station structures include also the housing of the employees which does deteriorate more rapidly than the steel buildings. That is the reason you should expect to find more deterioration. Of course, these figures of mine are not based just on the say-so of men, they are based upon the determination made by careful inspection by men who know what they are talking about.

Q. So any man with common ordinary sense would know that the concrete structures depreciate at a slower rate than the wooden structures?

A. Generally, yes.

Q. I direct your attention to Account 352-2, Land Rights, Rights of Way. It is on Page 32.

A. Yes.

Q. I notice here that you have over $177,000 as reproduction costs new of [illegible] land rights, rights of way, haven't you?

A. Yes, that is correct.

Q. However, I believe you have already testified that you took the original cost there instead of the amount of funds it would be necessary to secure that property today?

A. In a broad sense, yes.

Q. What is it?

A. I took the amount they paid for the rights of way plus damages.

Q. Plus damages?

A. Yes.

Q. Why did you do that?

A. Because I considered that the damages paid to the farmers were just as much a part of the right of way as anything else. The damages have little relation to the fact but are more concerned with the trading ability of the farmer.

Q. My question was directed to why did you take the original cost rather than the reproduction costs new?

A. Why—

Q. The same answer you gave in regard to the other?

A. Yes. I explained it two or three times.

Q. I will ask you if you made any effort to ascertain the reproduction costs new of these land rights of way?

A. No. As I explained it before, the price paid is the best evidence of the cost of reproduction.

Q. All right.

Let's have the working papers pulled out here on the land. I think it is in an envelope labeled "Land and Land Rights." What page is your breakdown here of land rights in this exhibit on?

A. Land rights or rights of way begins on Page 41.

Q. I am interested in the land account 352-2.

A. That is where it begins, on Page 41.

Q. And—2, both?

A. Yes.

Q. Do you have the working papers on that?

A. I think so. I have 351-1 here.

Q. I hand you your working papers and I will ask you to identify a letter, stating from whom it was written and to whom that letter was addressed.

A. This is a letter from the Clayton Abstract Company, Inc. to Ford, Bacon & Davis, Inc., 39 Broadway, New York City.

Q. The date of the letter is what?

A. October 17, 1939.

Q. Will you read the letter, please, Mr. Rhodes?

A. This is a letter addressed to Ford, Bacon & Davis, Inc., 39 Broadway, New York City, relative to the Colorado Interstate Gas Company's Clayton compressor station site and the Certificate of Appraisal. It reads:

"Agreeable to your assignment we have reviewed the following described real estate, viz:

> "The North half of the Northwest quarter of the Northwest quarter ($N\frac{1}{2}NW\frac{1}{4}NW\frac{1}{4}$) of Section eleven (11), and the Southwest quarter of the Southwest quarter ($SW\frac{1}{4}SW\frac{1}{4}$), of Section two (2), in Township Twenty-six (26) North, Range Thirty-six (36), East, N.M.P. Meridian, (60 acres)

and estimate the aggregate value of the same, at existing market, to be Six Hundred and Ninety ($690.00) Dollars.

"This appraisal is of the land only, as it now exists, ignoring buildings or other structures of any nature thereon, but giving consideration to existing adjacent highways, general topography and accessibility. The valuation given is our estimate thereof as of December 31, 1938, and at the present time no change in value occurring during the interim.

"In making this appraisal no survey of the premises or search of the title has been made. It is assumed that the title is good, that the description as recorded is a proper description of the legal boundary lines and that no restrictions have been violated; that the property is free and clear of liens and/or encumbrances.

"No consideration has been given to the shrubbery, landscaping, or other improvements, sewer, water system, or other installations, upon or under the surface of said lands, incident to or used in connection with, the operation of said compressor station.

"CLAYTON ABSTRACT COMPANY, Secretary."

I can't read the man's name but it is signed as "Secretary."

Q. I thought you just got through telling me you had made no effort to ascertain the reproduction costs new of this property.

A. You were asking me with respect to the rights of way. Furthermore, I stated that I considered the actual cost of this property in the aggregate to be a better measure of value than any other.

Q. So you do want to modify your answer to admit that you made some efforts to ascertain the market value of the property, what it cost you to get the property?

A. Personally I didn't. I reached the conclusion myself, being familiar with the territory, that cost was a better measure of value.

Q. This letter wasn't written pursuant to your instructions?

A. No. My recollection is that these letters were written in accordance with a common practice in our organization to find out what the prices of property are—what they are currently assigned to the property.

Q. I want you to turn to the item listed at $690 under date of December 31, 1938 and I want you to turn to the item in your breakdown and tell us what value you have assigned to the property in your report here.

A. That property was valued at $1740, its cost.

Q. Are there any more instances where your company tried to find out the appraised value of this property?

A. I don't know. You have seen the working papers and I never saw that letter before.

Q. You didn't even consider these working papers?

A. I haven't seen the working papers on this job for some time and I have paid no attention to any letters of appraisal because I considered that no appraisers, even the Clayton Abstract Company, Inc. in Clayton, could tell about

a site located ten miles from a city surrounded by open prairies.

Q. Why did your firm ask for the information?

A. I have already explained that we get those appraisals as a matter of routine.

(Vol. XIII, pp. 1781-1805.)

* * * * * *

Q. Let's see how much you have this communication equipment depreciated. You have it depreciated 16 per cent, don't you?

A. That is right.

Q. All right.

You have likewise in your other report gotten it depreciated in regard to Canadian River as 16 per cent, is that right?

A. That is right.

Q. I believe that is the only place where the depreciation on both of the properties is the same, is that right?

A. Yes.

(Vol. XIII, p. 1845.)

* * * * * *

Q. Of course, I asked you about the purchasing power of the dollar, not the price of pipe, but I will ask you to tell me the difference between the purchasing power of the dollar and the price of pipe.

A. One expressed in percentage is the reciprocal of the other.

Q. Was there any 22-inch pipe in 1910 that was used by gas companies?

A. Very little. 22-inch pipe didn't come into common use until about the mid '20s.

Q. Now, I have just a few more questions here in regard to Page 29.

The cost of assembling the funds required for construction of the properties represents the difference between the amount of money paid by the initial investors for the securities and the amount available to the new company to meet the requirements of its construction program. I will ask this question:

In making this study, did you at all consider what the cost of financing was to the Public Service Company of Colorado?

A. No.

Q. Do you know that their cost of financing instead of being 4 per cent was—the cost of refinancing was 2.92 per cent and 2.40 per cent?

A. No.

Q. Do you know that in 1939 the cost of financing the Panhandle Eastern Pipe Line Company instead of being 4 per cent as you have it here was 2.61 per cent?

A. I think you are asking me questions as to things which are not so. You are reading from one of the Securities and Exchange Commission reports to which I had referred, which gives the cost of financing of certain parts of the financial structure of the company and not the whole cost of financing for all of the money required to build the properties.

Q. In other words, these are refunding costs—cost of refunding issues and not the cost of financing a new property?

A. What I had primarily in mind is that they do not cover all of the financial structures and all of the securities of the company; only a part of them, the underlying securities, security issues that are mostly bonds. In many cases they are very much the underlying bonds.

Q. This list that was being read from was the refunding of bond issues?

A. Yes, as I say—

Q. The cost of the refinancing of the refunding of the bond issues?

A. The cost of the refinancing of the refunding of the bond issues is not the cost of financing a whole property. It is only the part of it that is the easiest to finance.

(Vol. XIV, pp. 1871-1873.)

* * * * *

Q. In order to compute the cost of financing, what information would you have to have before you?

A. The Commission's statement as to the price of offering to the public or the price at which they were sold to the public, and also the statement as to the net yield to

the company. The Securities and Exchange Commission in its report shows both of those figures and also shows the price to the underwriter.

Q. That is all the information you would have to have before you in order to compute your cost of financing?

A. With respect to any issue, yes.

Q. All right.

I direct your attention to the Securities and Exchange publication for the Public Utilities Division secured issues of electric and gas utilities, from 1935 to 1939. Now, I direct your attention here to the Public Service Company, of Colorado where it is listed.

It is first mortgage three and one-half per cent, 1964; bond issue, $40,000,000, November 28—just a minute. Let me get my tracer so that I can trace it through more accurately.

$40,000,000, November 28, 1939; price to underwriter, amount 100; per cent, 3.50. Net cost to company, 99.12 per cent. Per cent cost, 3.55 per cent. Price to public, amount 102; yield, 3.38 per cent.

Now, I understand that is all of the information you would have to have before you in order to compute the cost of financing of these bonds?

A. Of that issue, yes.

Q. All right, Let us see you do it.

A. Well, the price to the public is 102 even. The net price to the company was 99.11. The spread between the price to the public and the net price to the company is 2.89 per cent—2.89. To get that into the cost of financing you divide that by .9911 which would bring it up to a little over three per cent.

Q. 3.0 per cent?

A. I haven't calculated it.

Q. It is 3.01 per cent?

A. Now, I was making a short-cut, and an approximation there that was wrong. My approximation was wrong. It is about 2.92 per cent. That was the cost of financing of that $40,000,000 issue.

Q. Is there anything here you didn't have before you

when you were computing the cost of financing this new company in so far as bonds were concerned?

A. As I told you, I took a 4 per cent figure which is lower than the average cost of all financing. I didn't compute it specifically.

Q. Now we will take another one of these gas companies—

A. The Public Service Company of Colorado, by the way, is only in a small measure a gas company.

Q. Oh, yes.

A. It is an electric company.

Q. Yes, that is right, but in your nine billion dollars there is not only included gas companies but it includes everything from electric utilities to companies engaged in the canning business, isn't that right?

A. That is true, but you are referring to a very large issue of that group of industries which enjoys a very low cost of financing, and furthermore, you are referring to underlying bonds rather than the whole property.

Q. All right. Take one company. Would you say the Northern Natural Gas Company was engaged in a similar business to this business here of the Colorado Interstate Gas Company?

A. Yes, quite similar.

Q. All right.

I refer you—

Mr. Campbell: Mr. Examiner, I wonder if the Examiner and Mr. March would object to a question from us from time to time here to avoid a misunderstanding?

Mr. March: Feel free to do so when—just as soon as I get through with this you can ask any question you want to.

Mr. Campbell: I don't want to interrupt you, Mr. March.

Mr. March: Feel free to ask questions.

Mr. Campbell: I would like to ask, before you leave the Public Service Company of Colorado, whether you know they also have in addition to the bond issue refunded a large issue of preferred stock and a very large issue of common stock?

Mr. March: Refinanced?

Mr. Campbell: That would have to be refinanced if you refinanced the Colorado Public Service Company.

Mr. March: I haven't made any study at all of the corporate structure of the Public Service of Colorado.

Mr. Campbell: That is a fact.

Mr. March: If he wants to testify, we would be glad to put him on the stand.

Q. I refer you to Page 7 of the same report which has the Northern Natural Gas Company bond issue, first mortgage, and first lien series A, 3-½ per cent, 1954, principal amount, $16,000,000; approximate date of offering, August 15, 1939; net price to company, 98.84 per cent; cost 3.35; cost to the public, amount 100; yield, 3.25 per cent. Can you compute the cost of financing of that issue?

A. Well, the price to the public was 100; the net yield to the company was 98.84. The spread is 1.16, and the cost of financing of that issue subject to a note that we must investigate, is the apparent cost of financing, is about 1.18 per cent. There is a Note P, however, mentioned in the price to underwriters: "Private sales to insurance companies and others, market prices are indicated where same security is outstanding with the public."

That is not a public offering in the sense that they have to have the same kind of a spread that is involved in the ordinary case.

Q. Well, we'll take the Oklahoma Natural Gas Company. The Oklahoma Natural Gas Company, I referred to you, is a bond issue, first mortgage, Series B, 3-¾ per cent, 1955; principal amount, $17,000,000, August 17, 1939, approximate date of offering; price to underwriters, 101—amount, 101.50; cost per cent, 3.63 per cent; net price to company, amount 100.88.

Cost per cent, 3.68; price to public, 103.50; yield per cent, 3.46 per cent.

A. Well, the spread between the price received by the company and the price to the public was 2.62. Dividing

that by the 100.88, the figure received by the company, gives approximately 2.6 per cent as the cost of financing of that issue.

Q. Now, how much bonds would you have to float in order to finance this proposed new Colorado Interstate Gas Company?

A. I haven't figured it out.

Q. Well, when you secure funds, you usually secure most of the funds by bond issues?

A. Well, there is a very conceivable combination of bonds —preferred stock and common stock has been used in the financing of companies.

Q. Yes.

A. —and it would be necessary to go to the investment bankers to find out what should be the corporate structure of such a property to get the lowest cost of money.

Q. You wouldn't know yourself, of course, what the corporate structure would be?

A. No, that would depend on negotiations entered into at the time.

Q. What is usually the corporate structure of one of these independent companies?

A. There isn't anything usual about it. The tendency is to finance pretty generally with bonds and preferred stock and have the common stock reflect the earning power over and above the coupon rates, but what would be done today I don't know.

Q. When the Colorado Interstate Gas Company was organized, do you know how much bonds—originally organized, do you know how much bonds it was necessary for it to issue?

A. I don't recall.

Q. You didn't give that any consideration?

A. No.

Q. This hypothetical new company would construct a property very similar to the one originally constructed by the original Colorado Interstate Gas Company, wouldn't it?

A. On reproduction of the property, yes.

Q. On Page 26, is bond discount included in the per cent here?

A. No, bond discount is the difference between the price received by the company and the par value, or face value

of the bonds. It has none but an indirect relation to the cost of financing.

Q. How do you know that to be so?

A. It is a necessary result. The cost of financing is the difference between the price received by the company and the price at which the security is issued to the public. The company might receive a hundred and one for the bonds and the public pay a hundred and five and there would be a premium on the bonds, or the public might receive—I mean the company might receive a hundred and it would be offered at one hundred five and there wouldn't be any bond discount, but on the other hand the company might get ninety and be sold to the public for ninety-five; then there would be a bond discount of ten points, whereas the cost of financing was only five points.

Q. You gave no consideration to that probability in regard to bond discounts?

A. That doesn't enter into the cost of financing except as the bankers may find the best combination of coupon rate and offering price to the public to result in the lowest cost of money.

(Vol. XIV, pp. 1876-1884.)

* * * * *

You have this office furniture and equipment in your Canadian River exhibit depreciated approximately 29 per cent and in your Colorado Interstate Gas Company exhibit you have it depreciated 20 per cent. Can you give me any reason why that difference?

A. None, except the opinion of the furniture expert who determined it for us.

Q. You had different furniture experts determine the Canadian River than Colorado Interstate, is that right?

A. Yes, and in each case it was a local man.

Q. You have made no check on these?

A. No, I haven't checked that.

Q. You don't know—you didn't know anything about the record of the use of this furniture in either properties?

A. No.

Q. Yet you did change the percentage, did you not?

A. If I recall correctly, I increased the percentage that was given by these men to make sure that it covered things they might have overlooked.

Q. Let's check and see if you did. Get his working papers out on that. Let's check on your Colorado Interstate first here.

A. Now, in Account 372, Office Furniture and Equipment, the percentage reported to me was 17 per cent depreciation.

Q. Colorado Interstate Gas Company?

A. That's right.

Q. Your sole reason for increasing it to 20 per cent was because you wanted it to be liberal?

A. I tried to make my depreciation allowances liberal, yes.

Q. Are there any other cases where you increase the percentage in any of the items here?

A. Which item?

Q. Depreciation items, account items.

A. Why, I followed that practice generally.

Q. You recall yesterday we found one case where you had decreased the percentage.

A. No, as I explained, I had misinterpreted my notes and I was comparing poles with poles, plus some of the fixtures where some of the fixtures weren't as much depreciated. I explained that already, but I know it was in the final overall figure for the account I did adjust upwards in depreciation.

Q. Did you increase the pipe, too, on this?

A. Yes, the figure found for the pipe by usual methods was 3 per cent depreciated which was what the field observations clearly indicated. I increased it to 5 per cent.

Q. Do you recall whether you did the same thing with regard to the Canadian River or not?

A. Yes, that was increased from 5 to 7.

Q. So all of the men who actually examined the property were wrong to approximately, on an average, of 2 per cent?

A. No, I won't say they are wrong. All I say is that I wanted to include in this reproduction costs new less depreciation an ample allowance for all of the depreciation that existed in the property.

Q. Well, in other words, if the men who gave you the report that the pipe was only depreciated approximately 3 per cent and you said it was depreciated 5 per cent—2

percent more—then, who do you think is right, you or the men who actually observed it?

A. Well, we're both right. I tried to give an outside figure. They reported on what they found. You don't see everything when you inspect a property. There are things that are hidden that you can't see without an undue amount of expense, and I have made it a practice to increase the observed amount of depreciation to reflect those things which escape the men in the field.

Q. So you would say, then, that on the average you would increase—if you had used the figures reported to you, you would have increased each accumulated depreciation item approximately 2 per cent?

A. Why, I don't know. I haven't thought of it that way. I have taken item by item and considered the nature of the inspections and made an adjustment to reflect those things which I think may well have escaped the men making the observation.

Q. What could have escaped them that you gave consideration to?

A. Well, if I knew specifically, why it would have been reported by them.

Q. What did you know about the depreciation of the pipe which the men actually making the examination didn't know.

A. The men that made the examination did nothing but measure the depth of the pits and record facts. Those facts were analyzed with the indication that the amount of depreciation was 3 per cent. If they—

Q. You—

A. Now, let me finish.

Q. Yes. Pardon me.

A. —instead of measuring the number of sections of pipe they did measure, they spent twice as much money and examined twice as many places, the figures as to pit depths that they obtained would be somewhat more dependable. There would be less chance for their having missed some depreciation. That's one of the things, but my prime consideration in determining the percentage of depreciation in here was to have it big enough—in other words, to show the most that I thought could be found in the property.

Q. How long would you say this pipe line would last if it has been running since 1928 and has only depreciated 5 per cent?

A. I couldn't quite hear you because you had your hand over your mouth. Did the reporter get it?

Mr. March: Read it.

(The question referred to was read by the reporter, as set forth above.)

The Witness: Why, the pipe line will last just as long as the company wants to keep it up.

By Mr. March:

Q. At the rate the company is keeping it up now, how many years would you say it would last?

A. Well, now, that depends on what you mean by the rate at which the company is keeping it up now. The company is keeping it up, replacing everything that needs to be replaced as fast as it needs to be replaced and if they continue in that policy which is the rate of maintenance or repair, or what you want to call it, the pipe line will last just as long as they keep up that practice.

Q. Did you give any consideration in determining the depreciation of this pipe to the replacements which the company has been forced to make since 1928?

A. They are relatively negligible.

Q. Did you give any consideration to them?

A. No. Anything that they may have done would be reflected in this overall result, however, subject to—as I pointed out before, the effect of the number of points of inspection.

Q. You didn't consider whether or not certain portions of the line had to be replaced or the actual replacements?

A. This figure takes into account what is there now, but it also takes into account the fact that some parts of the pipe will unquestionably have to be replaced before other parts of the pipe and that some parts of the pipe may last a very very long period of years.

Q. How long would this pipe line have to operate before it would be necessary to have replaced—would have been necessary to have replaced all of the pipe?

A. Why, I don't know, but several hundred years, probably.

Mr. March: That's all for the present.

Mr. Campbell: I have some redirect, if the Examiner please.

Redirect Examination.

By Mr. Campbell:

Q. Mr. Rhodes, Commission's counsel on cross examination handed you a publication of the Utilities Division of the Securities and Exchange Commission entitled "Security Issues of Electric and Gas Utilities, 1935, '36, '37, '38 and '39." Is that correct?

A. Yes.

Q. He asked you certain questions about the following companies listed in that document: "Public Service Company of Colorado;" is that correct?

A. That's correct.

Q. He had reference particularly to a $40,000,000 bond issue that was refinanced, is that correct?

A. Yes.

Q. Do you know whether that company has in addition to that capital security, common stock?

A. Yes, but how much I don't know.

Q. Do you know whether they have preferred stock?

A. I so understand, but I do not know how much.

Q. Do you know whether they have other bonds than that issue?

A. I do not know.

Q. Then you wouldn't be prepared to state that that $40,000,000 bond issue represented all of their capitalization?

A. I'm sure that it would not.

Q. He also asked you about the Panhandle Eastern Pipe Line Company, and particularly to a 4 percent bond issue. Do you know whether that 4 per cent bond issue represents all their capitalization?

A. What is the size? I have forgotten—$24,000,000 couldn't possibly represent all of the financing of that property.

Q. Will you examine this same document that we are

talking about, under the description here, and state for the record the nature of those bonds?

A. Panhandle Eastern Pipe Line Company, first mortgage and first lien, 1952.

Q. You are not prepared to say then, whether that bond issue represents all of their capitalization?

A. I'm sure it does not because $24,000,000 couldn't possibly finance the whole of the cost.

Q. Didn't he ask you about Northern Natural Gas Company bond issue—and I ask you to—pardon me. I will ask you to refer to that same document and read the description of that particular issue.

A. Northern Natural Gas Company, Notes 2-⅛ per cent, 1940 to 1946.

Q. The amount of them?

A. $6,000,000.

Q. Do you know whether that $6,000,000 represents all of their capitalization?

A. It does not.

Q. He also referred to Oklahoma Natural Gas Company bonds of a certain description. Now, I refer you to this same document and ask you to read from that document a description of 22,200 shares of 6 per cent prior preferred stock.

A. Well, that was prior preferred stock convertible, 6. per cent, $100 par.

Q. What was the price of that stock to the underwriters, as it is listed in this document?

A. The price to the underwriters was 96 even.

Q. And the cost in percentage to the underwriters?

A. 6.25.

Q. Now, what is shown in this document under the column "Net Price to Company"?

A. Note—

Q. Will you read that note?

A. "Offered for the account of others."

Q. And price to the public in that document is shown to be what?

A. 100.

Q. And the yield to the public?

A. 6 per cent.

Q. I want you to make a similar calculation as to the cost of financing that issue.

A. Well, the cost of financing that issue in the sense of the cost to the company is not determinable. These notes—I mean this stock offered to the public was not sold for the account of the company but for the account of some other owner and the price received by the owner of the stock is not disclosed but the bankers' spread from 96 to 100 is four points, making that rather over four per cent in terms of the price paid by the underwriters. That, however, is not all of the cost of financing.

Q. Now, referring to this same document, I refer you to another issue of Oklahoma Natural Gas Company, 5-1/2 preferred stock. Will you read the descriptive text on that particular issue from that document?

A. This is Oklahoma Natural Gas Company, cumulative prior preferred stock, convertible, $5.50, no par.

Q. Will you continue reading the other descriptive matter as to the price to the underwriters and the net price?

A. The price to the underwriters was 101 even. The net price to the company was 100.48 and the price to the public was 104. The cost of financing was the difference between 100.48 and 104, a little over three and a half—about three and a half per cent is the cost of financing that particular issue of 2,200 shares—no, 58,000 shares.

Q. I hand you this same document and I will ask you to read a description of the New Mexico Gas Company 5 per cent bonds as therein reported.

A. This is the New Mexico Gas Company, first mortgage convertible, Series A, 5 per cent, due 1951—there is a note which I will refer to later—the par value of it being $1,500,000. The price to the underwriters was 94. There is a Note L that indicates that they were offered not for the account of the company but for the account of others, so we don't know what the company received.

The offering price to the public was 99, the bankers' spread being 5 points. The whole cost of financing is not determinable.

Mr. March: You say that is not determinable?

The Witness: Not in that because it was not offered for the account of the company.

By Mr. Campbell:

Q. But you did state the bankers' spread?

A. That is right.

Q. I will ask you to refer to that same document and read the description with respect to this same company; that is, the New Mexico Gas Company issue of 6 per cent preferred stock.

A. The New Mexico Gas Company cumulative preferred stock, convertible 6 per cent, $50 par, 8,000 shares. The price to the underwriters was 40.

Q. State the par value of it.

A. $50.

Q. Is that shown in that document?

A. That is shown in that document.

Q. Proceed.

A. The price to the underwriter was $50—no, $40, and the net price to the company was the same.

Q. For the record, convert the par and offering price to one hundredths or percentage thereof.

A. On the basis of 100 points, the price to the underwriter was 80 and the net price to the company was 80.

Q. Proceed.

A. The price paid to the public in terms of the $50 par was 45 and in terms of 100 points was 90, the cost of financing in that case being the difference between 80 and 90 or 10 points. The cost of financing is 10 points divided by the 80 received by the company which makes it 12-½ per cent for the cost of financing.

Q. You stated there, I believe inadvertently, that the cost paid to the public—

A. The price to the public, offered to the public.

(Vol. XIV, pp. 1889-1896.)

* * * * * *

Q. I refer you to that same document we have been discussing and I will ask you to read the description of an issue of the company, the Kansas Pipe Line & Gas Company, 5 per cent bonds due in 1952.

A. This issue of the Kansas Pipe Line & Gas Company, first mortgage sinking funds, 5's due in 1952, is in the amount of $1,000,000. The approximate offering date was March 19, 1937. The price to the underwriter was 95; net price to the company, 93.86; the price to the public was 100.

Q. Approximately what would be the cost of financing there calculated according to the rule or principle that you have already here described?

A. About 6 6/10 per cent.

Mr. March: Just a minute. Will you state the date here?

The Witness: I did read it.

Mr. March: I didn't hear it. Please read it again.

The Witness: March 19, 1937.

By Mr. Campbell:

Q. Referring to that same document, I will ask you to describe the issue of the Kansas Pipe Line and Gas Company common stock.

A. The Kansas Pipe Line & Gas Company common stock, $5 par value, number of shares, 110,000; approximate offering date, August 27, 1936; the price to the underwriters, 4.82 as compared with the $5 par. The price to the company was 4.73 and the offering price to the public was $5.

Q. Now will you compute the cost of financing that issue in accordance with the principle that you have described here?

A. That was 5 8/10 per cent.

(Vol. XIV, pp. 1899-1900.)

* * * * *

Q. Will you refer to that same document and describe the El Paso Natural Gas Company's issue of 4½ per cent bonds?

A. The El Paso Natural Gas Company, first mortgage 4½ due 1951, seven and a half million dollars, approximate date of offering June 4, 1936; price to underwriters, 95.50; the net price to the company, 94.14, and the price to the public, 98.50.

Q. Tell us what the cost of financing that issue was in accordance with the rule that you have described here.

A. Well, the total spread between the net price to the company and the price to the public is the difference between 94.14 and 98.50 which is 4.36. That, based on the net price to the company, shows a cost of financing of about 4.63 per cent.

Q. Referring to that same document, will you read the description as to the El Paso Natural Gas Company 4¾ bonds?

A. These are El Paso Natural Gas Company convertible debentures, 4¾ per cent, due 1946, and in the sum of $3,750,000; approximate date of offering, June 4, 1936; price to the underwriters, 96.5; net price to the company, 95.16; price to the public, 100.

Q. Will you calculate the cost of financing that issue in accordance with the rule you have here stated?

A. The spread between the price to the public and the net price to the company is 4.84 per cent. This divided by the percentage yield to the company of 95.16 shows a cost of financing of 5.08.

Q. And referring to that same document I will ask you to read the similar description with respect to the El Paso Natural Gas Company's common stock.

A. The El Paso Natural Gas Company's common stock is at a $3 par. There was 60,000 shares offered on approximately September 10, 1936. The price to the underwriters was 19. The stock was offered for the account of somebody else other than the company and the price to the public was 20. We do not know there the cost of financing. All we know is the bankers' spread.

Q. Now, I believe you have already testified on your direct testimony that you and your subordinates accumulated all of the available data from the Securities and Exchange Commission and that that data included not only the gas companies but electric companies, and in fact, all types of industry, is that correct?

A. I accumulated all the data I could find up to and including 1938.

Q. And you arrived at your figure of 4.35 per cent on the basis of all of the issues so reported by the Securities and Exchange Commission?

A. That is true.

Q. Now, from your examination of those documents, did you discover whether or not those issues included not only bonds but preferred and common stock?

A. They did.

Q. In determining your reproduction costs new you assumed a new and independent company, is that correct?

A. That is right.

Q. I will ask you from your experience in the natural

gas business which you have already testified to here at great length about, as to whether or not it would be reasonable to expect that such a company could go and borrow from the public 100 per cent of the cost of the project?

A. I don't think it could.

Q. Could you borrow 100 per cent of the cost of building a house for yourself?

A. No.

Q. Do you, therefore, assume that a company would have to finance part of the cost of the project with a common stock issue?

A. I am sure it would.

(Vol. XIV, pp. 1901-1903.)

* * * * *

Q. Then I will ask you this question: Your reproduction costs new are not based on any assumption as to who would be the contractor if there was a contractor?

A. That is correct. I made no assumption as to who would do it except that the company owning it would be an independent operation.

Mr. March: Just one question here.

Recross Examination.

By Mr. March:

Q. Mr. Rhodes, I hand you a document that I examined as a part of your working papers. I will ask you if that is correct?

A. I believe this is some of the prices requests and applies to the Hope Natural Gas Company work which was shown to you at your request.

Q. Which you utilized for some of those quotations of this reproduction costs new exhibit?

A. We used them for the purpose of checking those we used in the exhibits.

Q. You didn't use any of these?

A. Well, they are identical. I wouldn't be willing to say whether I used these or those. We calculated it from the list price discounts. They were identical anyway.

Q. As to the work considered, I refer you to this letter in your working papers. Will you state to whom and from whom this is addressed?

A. This is a letter from the Jones & Laughlin Steel Corporation to the Hope Natural Gas Company.

Q. The date of the letter is what?

A. May 3, 1939.

Q. Will you read the last sentence in the second paragraph?

A. It states: "Our sales are made only at delivered prices; therefore, these basing point prices are to be construed as submitted only for estimating purposes."

Q. Whose handwriting is on that letter?

A. One of my men's handwriting. I don't know which one it is. I don't recognize it specifically, but the note says "Jones & Laughlin prices reflect ten per cent discount on large quantities but do not reflect ten per cent on small quantities, but do not reflect two per cent cash discount."

Q. The quotations of Republic Steel and Jones & Laughlin Steel Corporation, did they differ very much?

A. It just depends upon if you apply all of the discounts. Some of the people give you all of the discounts, including the ten per cent for bulk purchases, and some of them don't. Until you find out what they include and compare them, they mean nothing. Spang Chalfant gave the ten per cent bulk discount to the large items but not the small—I mean Jones & Laughlin Steel Corporation.

Mr. Brock: Instead of Spang?

The Witness: Yes.

Commonly in getting the prices they do not apply the ten per cent bulk discount.

(Vol. XV, pp. 2098-2100.)

* * * * *

A. Well, we have an estimate here for Colorado. If I recall correctly, five per cent covers all those delays.

Q. Now, I believe originally Mr. Hill, when he estimated cost of constructing this line to Denver, over estimated the cost of the line because he had been used to constructing lines down in the rainy parts of Louisiana, is that correct?

A. That is an assumption on your part that that was the cause of it. I asked him what was the cause of it and he said, "Well, I just went over the line and I put a figure down to have in mind when I was comparing the bids."

He made no detailed estimate.

(Vol. XV, pp. 2070-2071.)

A. COMPARISON O
SHOWN IN RES
DURING THE

Line Number	Description (1)	Outside Diameter Of Pipe (Inches) (2)
1.	Main line from Bivins Compressor Station to Texas-New Mexico state line	22
2.	Main line from Bivins Compressor Station to Texas-New Mexico state line	22
3.	Main line from Texas-New Mexico state line to Clayton Compressor Station	22
4.	From main line to Dalhart, Texas	6-5/
5.	From main line to Texline, Texas	2-3/
6.	From main line to Clayton, New Mexico	4-1/
7.	From main line to Clayton, New Mexico	3-1/
8.	Total of above	
9.	Allowance due to large volume purchases	
10.	Net cost of pipe delivered(b)	

Notes: (a) Data in columns 1, 2, 3, 4, 6, 8a, 12, and 13, are from Exhibit (S) and its suppo

(b) Total cost of pipe delivered (columns 11 and 13) excludes New Mexico sales taxes

B. COMPARISON O
IN RESPONDEN
LENGTH PIPE

Line Number	Description (1)	Outside Diameter Of Pipe (Inches) (2)
11.	Main line from Bivins Station to Texas-New Mexico state line	22
12.	Main line from Bivins Station to Texas-New Mexico state line	22
13.	Main line from Texas-New Mexico state line to Clayton Station	22
14.	Total cost of couplings delivered(a)	

Note: (a) Total cost of Style 38 Dresser couplings (columns 8 and 9) excludes New Mexico sa

Canadian River Gas Company

F REPRODUCTION COST OF LINE PIPE, AS OF DECEMBER 31, 1936,
POMDENT'S EXHIBIT 68, WITH ACTUAL LINE PIPE COSTS PREVAILING
ERIOD AREA DECEMBER 1930 TO SEPTEMBER 1936

Summary of Pipe Cost by Federal Power Commission(a)

r)	Weight Per Foot (Pounds) (3)	Quantity (Feet) (4)	Weighted Average Price Per Ton F.O.B. Mill ($) (5)	Weighted Average Freight Rate Per Ton ($) (6)	Cost per Ton Delivered ($) (7)	Miscellaneous Costs ($/Ton) (8a)	($) (8b)	Net Cost Per Ton Delivered ($) (9)	Net C Per F Deliv ($) (10
	86.6	272,536	[illegible]	18.40	[illegible]	2	1.25	63.90	2.76
	79.5	171,734	[illegible]	18.40	[illegible]	2	1.25	63.90	2.52
	79.5	12,263	[illegible]	18.40	[illegible]	2	1.25	63.90	2.52
/3	12.89	5,041	[illegible]	18.40	[illegible]	3-1/2	2.37	70.01	0.49
8	3.65	20,759	[illegible]	18.40	[illegible]	3-1/2	2.37	70.01	0.26
/2	10.79	8,149	[illegible]	18.40	[illegible]	3-1/2	2.37	70.01	0.37
/2	7.47	28,268	[illegible]	18.40	[illegible]	3-1/2	2.37	70.01	0.24

rting working papers.

and "undistributed construction costs".

Canadian River Gas Company

F REPRODUCTION COSTS OF STYLE 38 DRESSER COUPLINGS, BASED
T'S EXHIBIT 68, WITH COSTS BASED ON USE OF DOUBLE RANDOM

Summary of Dresser Coupling Cost per exhibit 68

r)	Length of Line (Feet) (3)	Average Joint (Single Random) (Feet) (4)	Number of Style 38 Dresser Couplings (5)	Middle Ring (Inches) (6)	Unit Cost of Couplings Delivered ($) (7)	Total Delivered Cost of Couplings Using Single Random Pipe ($) (8)	Total Deliv Cost of Coup Using Doub Random Pip ($) (9)
	272,536	18.9	14,417	3/8	10.83	156,657	79,42
	171,734	18.9	9,081	11/32	10.21	92,717	46,39
.	12,263	18.9	649	11/32	10.21	6,629	3,31
						256,300	128,100

les taxes and "undistributed construction costs".

Canadian River Gas Company

Statement No. 1

A. COMPARISON OF REPRODUCTION COST OF LINE PIPE, AS OF DECEMBER 31, 1938, SHOWN IN RESPONDENT'S EXHIBIT 68, WITH ACTUAL LINE PIPE COSTS PREVAILING DURING THE PERIOD FROM DECEMBER 1938 TO SEPTEMBER 1940

	Outside Diameter Of Pipe (Inches) (2)	Weight Per Foot (Pounds) (3)	Quantity (Feet) (4)	Summary of Pipe Cost by Federal Power Commission(a): Weighted Average Price Per Ton F.O.B. Mill ($) (5)	Weighted Average Freight Rate Per Ton ($) (6)	Cost per Ton, Delivered ($) (7)	Miscellaneous Costs ($) (8a)	Miscellaneous Costs $/Ton (8b)	Net Cost per Ton Delivered ($) (9)	Net Cost Per Foot Delivered ($) (10)	Total Cost of Pipe Delivered ($) (11)	Respondent's Exhibit 68: Net Cost Per Foot Delivered ($) (12)	Respondent's Exhibit 68: Total Cost of Pipe Delivered ($) (13)
ne	22	86.6	272,536	41.25	18.40	62.65	2	1.25	63.90	2.767	754,107	3.734	1,017,2[illegible]
ne	22	79.5	171,734	41.25	18.40	62.65	2	1.25	63.90	2.540	436,204	3.[illegible]	590,70[illegible]
ion	22	79.5	12,263	41.25	18.40	62.65	2	1.25	63.90	2.540	31,148	3.[illegible]	42,[illegible]
	6-5/8	12.89	5,041	39.21	18.40	57.61	3-1/2	2.37	70.01	0.451	2,277	0.[illegible]	3,[illegible]
	2-3/8	3.65	20,739	39.21	18.40	57.61	3-1/2	2.37	70.01	0.128	2,654	0.1[illegible]	3,[illegible]
	4-1/2	10.79	8,439	39.21	18.40	57.61	3-1/2	2.37	70.01	0.378	3,190	0.411	3,[illegible]
	3-1/2	7.37	28,208	39.21	18.40	57.61	3-1/2	2.37	70.01	0.245	7,[illegible]	0.31	8,[illegible]
											1,237,[illegible]		1,[illegible]
											[illegible]		[illegible]
											1,237,052		1,[illegible]

(a) and its supporting working papers.

(b) exico sales taxes and "undistributed construction costs".

Canadian River Gas Company

B. COMPARISON OF REPRODUCTION COSTS OF STYLE 38 DRESSER COUPLINGS, SHOWN IN RESPONDENT'S EXHIBIT 68, WITH COSTS BASED ON USE OF DOUBLE RANDOM LENGTH PIPE

	Outside Diameter Of Pipe (Inches) (2)	Length of Line (Feet) (3)	Summary of Dresser Coupling Cost per exhibit 68: Average Joint (Single Random) (Feet) (4)	Number of Style 38 Dresser Couplings (5)	Middle Ring (Inches) (6)	Unit Cost of Couplings Delivered ($) (7)	Total Delivered Cost of Couplings Using Single Random Pipe ($) (8)	Total Delivered Cost of Couplings Using Double Random Pipe ($) (9)
	22	272,536	18.9	28,417	3/[illegible]	10.[illegible]	156,657	79,42[illegible]
	22	171,734	18.9	9,081	11/32	10.21	92,717	46,35[illegible]
	22	12,263	18.9	649	11/32	10.21	[illegible]	3,51[illegible]
							256,200	128,100

(a) as New Mexico sales taxes and "undistributed construction costs".

Colorado Interstate Gas Company

Statement No. 2
Sheet 1 of 2

Exhibit No. 231

A. COMPARISON OF REPRODUCTION COST OF LINE PIPE, AS OF DECEMBER 31, 1938, SHOWN IN RESPONDENT'S EXHIBIT 70, WITH ACTUAL LINE PIPE COSTS PREVAILING DURING THE PERIOD FROM DECEMBER 1938 TO SEPTEMBER 1940.

Line Number	Description	Summary of Pipe Cost by Federal Power Commission(a)											Respondent's Exhibit 70	
		Outside Diameter of Pipe (Inches)	Weight Per Foot (Pounds)	Quantity (Feet)	Weighted Average Price Per Ton f.o.b. Mill ($)	Weighted Average Freight Rate Per Ton ($)	Cost Per Ton Delivered ($)	Miscellaneous Costs %	Miscellaneous Costs $/Ton	Net Cost Per Ton Delivered ($)	Net Cost Per Foot Delivered ($)	Total Cost of Pipe Delivered ($)	Net Cost Per Foot Delivered ($)	Total Cost of Pipe Delivered ($)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8a)	(8b)	(9)	(10)	(11)	(12)	(13)
1.	Main line from Clayton Compressor Station to Devine Compressor Station	22	86.5	543,421	44.25	21.00	65.25	2	1.31	66.56	2.882	1,566,173	3.349	2,091,628
2.	" " " " " " " "	22	79.5	237,894	44.25	21.00	65.25	2	1.31	66.56	2.646	629,668	3.324	840,717
3.	Main line from Devine Compressor Station to Denver Meter Station	20	72.16	350,739	44.25	21.00	65.25	2	1.31	66.56	2.402	842,475	3.173	1,112,895
4.	" " " " " " " "	20	69.70	202,534	44.25	21.00	65.25	2	1.31	66.56	2.187	442,986	2.941	595,584
5.	Main line loop across Apishapa River and Buffalo Arroyo	12 3/4	41.51	16,507	44.25	21.00	65.25	2	1.31	66.56	1.381	22,796	1.714	28,293
6.	Sand Creek Loop	10 3/4	31.2	13,178	44.25	21.00	65.25	2	1.31	66.56	1.038	13,679	1.27	16,736
7.	Arkansas River Crossing	10 Sc.DBX	54.	15,244	49.24	21.00	70.24	2	1.40	71.64	1.934	29,443	2.345	35,700
8.	Huerfano River Crossing	10 Sc.DBX	54.	9,058	49.24	21.00	70.24	2	1.40	71.64	1.934	17,518	2.345	21,241
9.	" " " "	10 3/4	33.49	1,446	44.25	21.00	65.25	2	1.31	66.56	1.114	1,611	1.35	1,952
10.	Jimmie Camp Creek Crossing	10 3/4	45.68	2,727	44.25	21.00	65.25	2	1.31	66.56	1.454	3,965	1.762	4,805
11.	From main line to Colorado Fuel & Iron Corporation	16	52.35	54,627	44.25	21.00	65.25	2	1.31	66.56	(1.742	(107,875	(2.279	(141,067
12.	From Colorado Fuel & Iron Corporation lateral to Pueblo	16	52.35	7,259	44.25	21.00	65.25	2	1.31	66.56	(	(	(	(
13.	From main line to Arapahoe Meter Station	10 3/4	31.20	31,102	44.25	21.00	65.25	2	1.31	66.56	1.038	32,284	1.27	39,500
14.	" " " " " "	10 3/4	28.03	7,990	44.25	21.00	65.25	2	1.31	66.56	0.935	7,455	1.207	9,644
15.	From main line to La Junta	8 5/8	18.25	160,031	49.24	21.00	70.24	2	1.40	71.64	0.654	104,641	0.777	124,321
16.	From La Junta lateral to Rocky Ford	8 5/8	18.25	22,336	49.24	21.00	70.24	2	1.40	71.64	0.654	14,603	0.777	17,355
17.	From La Junta lateral to Las Animas	8 5/8	18.25	2,052	49.24	21.00	70.24	2	1.40	71.64	0.654	1,342	0.777	1,594
18.	From main line to Portland	8 5/8	18.25	146,375	49.24	21.00	70.24	2	1.40	71.64	0.654	95,702	0.777	113,745
19.	" " " " "	8 5/8	34.04	2,287	49.24	21.00	70.24	2	1.40	71.64	1.184	2,611	1.319	2,908
20.	From main line to Colorado Springs	8 5/8	18.25	32,755	49.24	21.00	70.24	2	1.40	71.64	0.654	21,422	0.777	25,451
21.	From main line to Aurora	8 5/8	18.25	25,570	49.24	21.00	70.24	2	1.40	71.64	0.654	16,722	0.777	19,870
22.	" " " "	8 5/8	27.74	707	49.24	21.00	70.24	2	1.40	71.64	0.994	703	1.107	783
23.	From main line to La Junta	6 5/8	12.89	82,189	49.24	21.00	70.24	3½	2.46	72.70	0.469	10,607	0.543	12,069
24.	From Rocky Ford to American Crystal Sugar Company	6 5/8	12.89	9,634	49.24	21.00	70.24	3½	2.46	72.70	0.469	4,518	0.543	5,231
25.	From La Junta lateral to Las Animas	6 5/8	12.89	105,349	49.24	21.00	70.24	3½	2.46	72.70	0.469	49,390	0.543	57,183
26.	" " " " " "	6 5/8	21.00	536	44.24	21.00	70.24	3½	2.46	72.70	0.766	456	0.843	496
27.	From Las Animas lateral to Fort Lyon	6 5/8	12.89	25,255	49.24	21.00	70.24	3½	2.46	72.70	0.469	11,845	0.543	13,713
28.	" " " " " "	6 5/8	25.65	2,000	49.24	21.00	70.24	3½	2.46	72.70	0.932	1,864	1.015	2,030
29.	From main line to Aurora	6 5/8	12.89	15,983	49.24	21.00	70.24	3½	2.46	72.70	0.469	7,496	0.543	8,679
30.	" " " " "	6 5/8	21.00	203	49.24	21.00	70.24	3½	2.46	72.70	0.766	155	0.833	169
31.	From Rocky Ford lateral to American Crystal Sugar Company	4 1/2	8.63	9,620	49.24	21.00	70.24	3½	2.46	72.70		(	(	(
32.	From Rocky Ford lateral to Manzanola and Fowler	4 1/2	8.63	14,471	49.24	21.00	70.24	3½	2.46	72.70		(	(	(
33.	From La Junta lateral to Santa Fe Shops	4 1/2	8.63	7,227	49.24	21.00	70.24	3½	2.46	72.70	(0.314	(20,589	(0.349	(22,884
34.	From La Junta lateral to Las Animas	4 1/2	8.63	159	49.24	21.00	70.24	3½	2.46	72.70		(	(	(
35.	From Arapahoe lateral to Littleton	4 1/2	8.63	1,168	49.24	21.00	70.24	3½	2.46	72.70		(	(	(
36.	From Arapahoe lateral to Englewood	4 1/2	8.63	55	49.24	21.00	70.24	3½	2.46	72.70		(	(	(
37.	From Manzanola-Fowler lateral to Ordway	3 1/2	7.57	55,155	49.24	21.00	70.24	3½	2.46	72.70		(	(	(
38.	From Ordway lateral to Sugar City	3 1/2	7.57	90	49.24	21.00	70.24	3½	2.46	72.70	(0.275	(27,619	(0.36	(32,139
39.	From Rocky Ford lateral to Manzanola and Fowler	3 1/2	7.57	45,401	49.24	21.00	70.24	3½	2.46	72.70	(	(	(	(
40.	" " " " " " " "	2 3/8	3.65	21	49.24	21.00	70.24	3½	2.46	72.70	(	(	(	(
41.	From Ordway lateral to Sugar City	2 3/8	3.65	25,386	49.24	21.00	70.24	3½	2.46	72.70	(	(	(	(
42.	From Santa Fe lateral to Harvey House	2 3/8	3.65	2,787	49.24	21.00	70.24	3½	2.46	72.70	(0.133	(5,646	(0.165	(6,479
43.	From main line to Fountain Valley School	2 3/8	3.65	13,068	49.24	21.00	70.24	3½	2.46	72.70	(	(	(	(
44.	From Aurora lateral to Aurora Meter	2 3/8	3.65	1,006	49.24	21.00	70.24	3½	2.46	72.70	(	(	(	(
45.	St. Charles River Crossing on Colorado Fuel & Iron Corp. lateral	10	54.	3,001	49.24	21.00	70.24	2	1.41	71.64	1.934	5,804	2.345	7,037
46.	Total of Above											4,120,934		5,403,998
47.	Allowance due to large volume purchases											-		417,454
48.	Net Cost of Pipe Delivered(b)											4,120,934		4,986,544

Notes: (a) Data in columns 1, 2, 3, 4, 6, 8a, 12 and 13 are from Exhibit 70 and its supporting working papers.
(b) Total cost of pipe delivered (columns 11 and 13) excludes Colorado and New Mexico sales taxes and "undistributed construction costs".

Exhibit No. 231

Colorado Interstate Gas Company

Statement No. 2
Sheet 2 of 2

A. COMPARISON OF REPRODUCTION COSTS OF STYLE 38 DRESSER COUPLINGS SHOWN IN RESPONDENT'S EXHIBIT 70, WITH COSTS BASED ON USE OF DOUBLE RANDOM LENGTH PIPE.

Description	Summary of Dresser Coupling Cost Per Exhibit 70							
	Outside Diameter of Pipe (Inches)	Length of Line (Feet)	Average Joint (Single Random) (Feet)	Number of Style 38 Dresser Couplings	Middle Ring (Inches)	Unit Cost of Couplings Delivered (a)	Total Delivered Cost of Couplings Using Single Random Pipe (a)	Total Delivered Cost of Couplings Using Double Random Pipe (a)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Main line from Clayton Station to Colorado-New Mexico state line	22	257,412	18.9	13,618	3/8	10.89	148,300	74,150
Main line from Colorado-New Mexico state line to Devine station	22	286,009	18.9	15,115	3/8	10.89	164,602	82,301
" " " " " " " " " "	22	237,894	18.9	12,552	11/32	10.22	128,281	64,141
Main line from Devine Station to Denver Meter Station	20	350,739	18.9	18,519	11/32	9.56	177,043	88,522
" " " " " " " " " "	20	207,554	18.9	10,973	5/16	9.28	101,846	50,923
Colorado Fue. & Iron Corporation-Pueblo lateral	16	61,926	20.0	3,072	5/16	6.93	21,290	10,645
North lateral	10 3/4	39,092	19.2	1,856	5/16	4.80	8,909	4,454
Total Cost of Couplings Delivered(a)							717,448	358,724

(a) Total cost of Style 38 Dresser couplings (columns 8 and 9) excludes Colorado and New Mexico sales taxes and "undistributed construction costs".

Federal Power Commission
Bureau of Engineering
Division of Gas Engineering

WITNESS:

DATE:

Dockets G-118, G-121 & G-124

23/a

Exhibit No. 231A

231.8
231a

Canadian River Gas Company
Colorado Interstate Gas Company

ADDITIONAL ADJUSTMENT OF PIPE COSTS SHOWN IN EXHIBIT 231 RESULTING FROM USE OF GRADE "B" SEAMLESS AND ELECTRIC WELD PIPE IN MAIN TRANSMISSION LINE FROM RIVERS STATION TO DENVER

Line Number	Outside Diameter Of Pipe (Inches)	Quantity (Feet)	Using Lapweld Pipe: Weight Per Foot (Pounds)	Working Pressure (Lbs. Per Sq. In.)	Total Tonnage Of Pipe	Total Cost Of Pipe Delivered (Dollars)	Using Grade "B" Seamless and Electric Weld Pipe: Weight Per Foot (Pounds)	Working Pressure (Lbs. Per Sq. In.)	Total Tonnage Of Pipe	Total Cost Of Pipe Delivered (Dollars)	Difference Between Columns 6 and 10 (Dollars)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Canadian River Gas Company											
1	22	272,536	86.60	426	11,801	754,107	72.38	426	9,863	630,246	123,861
2	22	171,734	79.50	391	6,826	436,204	72.38	426	6,215	397,138	39,066
3	22	12,263	79.50	391	487	31,148	72.38	426	444	28,372	2,776
4	Total	456,533			19,114	1,221,459			16,522	1,055,756	165,703
Colorado Interstate Gas Company											
5	22	543,421	86.60	426	23,530	1,566,139	72.38	426	19,666	1,308,969	257,170
6	22	237,894	79.50	391	9,456	629,668	72.38	426	8,609	573,015	56,453
7	20	350,739	72.16	430	12,655	842,475	59.23	421	10,387	691,359	151,116
8	20	202,554	65.70	391	6,654	442,986	59.23	421	5,999	399,293	43,693
9	Total	1,334,608			52,295	3,481,068			42,156 44,661	2,972,636	508,432
Both Companies Combined											
10	Total of costs shown on lines 4 and 9					4,702,527				4,028,392	674,135

NOTES:

Columns 1, 2 and 3 are from Exhibit 231 (and are taken from Respondents' Exhibits 68 and 70).

Column 4 is from National Tube Company General Catalogue, 1938 edition, page 189. (Same data are given in Youngstown Sheet and Tube Company Booklet No. 51, 1937, page 55.)

Column 5 is product of columns 2 and 3.

Column 6 is from Exhibit 231.

Columns 7 and 8 are from same source as column 4. Column 7 is weight per foot of regularly manufactured Grade "B" Seamless and Electric Weld pipe with working pressure equal to that of lapweld pipe installed in Denver Main Line, or in excess of 400 pounds per square inch.

Column 9 is product of columns 2 and 7.

Column 10 is product of column 9 and average cost of pipe delivered as shown in Exhibit 231. (Delivered price of pipe in Exhibit 231 is as follows: To Canadian River Gas Company, 22" pipe, $63.90 per ton; to Colorado Interstate Gas Company, 20" and 22" pipe, $66.56 per ton.)

Total cost of pipe delivered, shown in columns 6 and 10, excludes state sales taxes and "undistributed construction costs".

1579

Exhibit No. 231B

DOCKET G-124
Exh. 231-B

Weighted Average Price of Steel Line Pipe for Gas Lines
Purchased by Eastern Pipe Line Companies during Years 1936 and October thru 1940

Line	Purchased	Vendor	Date of Purchase	Outside Diameter of Pipe Inches	Weight Per Foot Pounds	Quantity in Feet	Total Weight in Tons	Percentage Price Paid Per Ton FOB Mill	Price Paid Per Ton
1	Pankhandle Eastern Pipe Line Co.	A.O. Smith Corporation	12-4-39	24	71.246	41795	1488917	47.50	70983.56
2		National Tube Co	2-26-40	24	71.246	434900	15488883	44.71	692507.92
3	United Gas Pipe Line Co.	National Tube Co	9-19-39	22	52.73	5050	133142	47.50	6321.22
4		National Tube Co.	9-18-39	20	72.39	650	23512	47.50	1116.82
5	Canadian River Gas Co.	National Tube Co.	9-17-40	22	86.0	430	18527	59.5	1102.51
6	Colorado Interstate Gas Co.	National Tube Co	2-2-39	22	86.0	265	11392	65.5	746.04
7		National Tube Co.	12-8-39	20	72.6	312	11325	65.5	741.52
8	United Gas Pipe Line Co	National Tube Co.	9-19-39	20	60.72	94500	2733.22	47.50	1298.40
9		National Tube Co	9-18-39	18	47.33	44000	1040359	47.50	494.17
10		National Tube Co	9-18-39	16	40.15	37000	742.85	47.50	352.79
11	Northern Natural Gas Co.	Republic Steel Corporation	8-12-39	16	40.55	29300	593.79	47.50	282.05
12		National Tube Co	8-14-39	16	42.05	346360	7275.32	47.50	3455.27
13		Youngstown Sheet & Tube Co	9-12-39	16	42.05	187440	3936.33	47.50	1869.57
14	Colorado Interstate Gas Co.	National Tube Co.	8-24-40	16	52.35	4220	110.5	65.5	72.33
15			12-2-39	16	52.35	212	5.539	65.5	3.63
16	El Paso Natural Gas Co.	A.O. Smith Corporation	7-23-40	16	40.053	6300	133.106	47.50	63.23.22
17			8-10-39	16	40.053	324400	6855.444	47.50	3256.06.08
18	United Gas Pipe Line Co.	National Tube Co	9-18-39	14	54.50	6200	169.55	47.50	80.52
19	Canadian River Gas Co	National Tube Co	9-17-40	14	40.05	252	5.057	65.5	2.80.3
20	United Gas Pipe Line Co.	National Tube Co	9-18-39	12 3/4	43.56	24523	534.3	47.50	253.70
21	El Paso Natural Gas Co	Phoenix Bridge Co	8-30-40	12 3/4	33.37	1142018	19031.81	47.50	9039.21
22			7-17-39	12 3/4	33.0	3414422	56270.81	47.50	26728.63
23	United Gas Pipe Line Co	National Tube Co	9-18-39	10 3/4	40.48	8752	177.10	47.50	84.15
24	Total Pipe Purchased in 6 1/2 & 10 3/4" to 24" incl					3,191,747	80,178.45		3807.46.97
25	Weighted Average Price per Ton								47.35
26	El Paso Natural Gas Co	Youngstown Sheet & Tube Co Newark-Bridgeport-Ryan Co.	9-6-39	8 5/8	28.55	352442	5018.578	47.50	1695.53.67
27	Louisiana Natural Gas Co	Republic Steel Corporation		8 5/8	28.55	404277	5760.847	50.00	1840.00
28	Canadian River Gas Co.	Continental Supply Co	6-2-39	8 5/8	24.36	40123	488.45	58.53	285.81
29	Colorado Interstate Gas Co	National Tube Co	8-24-40	8 5/8	33.04	6217	102.93	58.47	59.99
30			9-17-40	6 5/8	18.97	31665	300.73	56.58	521.36
31	Canadian River Gas Co.		9-9-40	6 5/8	18.97	60117	570.74	48.50	276.93
32	Louisiana Natural Gas Co	Republic Steel Corporation		6 5/8	11.52	59034	340.525	50.00	170.25
33				4 1/2	8.438	24957	100.391	50.00	50.20
34	Canadian River Gas Co	National Tube Co.	9-6-40	4 1/2	10.79	6007	32.525	49.00	16.23.92
35		Continental Supply Co	6-2-39	4 1/2	10.79	5507	29.708	55.13	16.44.27
36			11-13-39	4	10.79	434	2.341	64.43	1.509
37			11-13-39	4 1/2	10.79	1.741	9.398	64.43	6.05.73
38	Colorado Interstate Gas Co.	National Tube Co	9-17-40	4 1/2	10.73	2402	12.900	59.74	7.6.99
39	Canadian River Gas Co	National Tube Co	9-9-40	3 1/2	8.9	1611	6.451	49.50	2.3.75
40	El Paso Natural Gas Co	The Youngstown Sheet & Tube Co	8-15-40	6 5/8	9.96	76392	378.133	50.55	190.23.67
41		National Tube Co.	10-8-39	6 5/8	11.45	633600	3690.72	48.55	1802.31.67
42			9-18-40	6	9.95	168878	781.44	50.50	394.72
43	Total Pipe Purchased in 4 1/2 & 6 5/8"					1790835	12811.09		6398.85
44	Weighted Average Price per Ton								49.94

45 Data [illegible] pipe used in welded or [illegible] lines

[Testimony of Witness Hill.]

Q. Mr. Hill, I will ask you whether or not you have had occasion to examine Exhibit Nos. 68, 70 and 71 that have heretofore been presented in these proceedings?

A. Yes, sir.

Q. Have you also had occasion to make a study of the pipe prices and Dresser couplings?

A. Yes, sir.

Q. Have you made a comparison of pipe prices and Dresser couplings as you found them in—strike "In"—with those as presented in those exhibits, Exhibits Nos. 68, 70 and 71?

A. Yes.

Q. Is this the exhibit and written statement that you prepared in connection with that study?

A. Yes, sir.

The Trial Examiner: It will be marked for identification as Exhibit No. 231.

(Exhibit 231, Witness Hill, marked for identification.)

By Mr. Lange:

Q. Will you please read that written statement, Mr. Hill?

A. "Rebuttal Testimony re Exhibits 68, 70 and 71.

"Respondents' exhibits 68 and 70 present estimates of the reproduction cost new of the Denver pipe line properties of Canadian River Gas Company and Colorado Interstate Gas Company as of December 31, 1938.

"Pipe Costs

"Testimony concerning Account 353, Mains, and an examination of supporting working papers show that the prices of line pipe used in these exhibits are based on published prices and discounts as of December 31, 1938, with an additional deduction of ten per cent of the net discounted price as an allowance obtainable on large volume purchases.

"The records of Canadian River Gas Company and Colorado Interstate Gas Company (which are substantially in agreement with pipe quantities given in Exhibits 68 and 70) indicate that approximately 81,000 tons of line pipe were used in the construction of the Denver pipe line from Bivins Station to Denver including branch lines to intervening points.

"During 1938, 1939, and 1940, major pipe line projects were constructed by a number of companies. Some of these companies have submitted to the Commission, upon request, complete data concerning the amount of pipe purchased and prices paid therefor. Copies of purchase orders and invoices for steel line pipe purchased for major construction during the period from December 1938 to September 1940 were furnished by Panhandle Eastern Pipe Line Company, Northern Natural Gas Company, United Gas Pipe Line Company, and El Paso Natural Gas Company; and a sworn statement of transmission line costs was filed by Louisiana Nevada Transit Company. In addition, a statement of pipe purchased by Canadian River Gas Company and Colorado Interstate Gas Company during this same period was prepared from their records.

"The information furnished by the seven companies covered the purchase of over 900 miles of gas line pipe, ranging in diameter from 3½ inches to 24 inches, with a total weight of over 90,000 tons, at a cost in excess of $4,000,000. Practically all of this was double random length pipe, averaging 38 to 43 feet per joint. A considerable part of this pipe was 'Grade B seamless,' for which published prices are higher than for the 'Grade A lapweld' pipe used in the construction of practically all of the Denver line.

"The information submitted by the seven companies has been analyzed, the pipe purchases have been grouped into two classifications:

"1. Pipe with a diameter of 10¾" O.D. to 24" O.D.

"2. Pipe with a diameter of 8⅝" O.D. and under.

"This classification is based on the fact that United Gas Pipe Line Company purchased approximately 19,000 tons of pipe, in sizes varying from 10¾" O.D. to 22" O.D., at a single price of $43 per ton f.o.b. mill, at the time it built its Monroe-Jackson line; and that Louisiana Nevada Transit Company purchased all of the pipe used in the construction of its line from the Cotton Valley field in Louisiana to Okay, Arkansas (amounting to approximately 4,000 tons of 4½", 6⅝" and 8⅝" pipe) at a price of $50 per ton f.o.b. mill.

"The weighted average price of approximately 80,000 tons of line pipe of the first classification (10¾" O.D. to 24"

O.D.) purchased by the seven companies is $44.25 per ton f.o.b. mill. The weighted average price of approximately 13,000 tons of line pipe of the second classification (8⅝" O.D. and under) purchased by the same companies is $49.24 per ton f.o.b. mill. The prices paid on individual purchases vary from a minimum of $42.23 per ton f.o.b. mill paid by Northern Natural Gas Company, in the purchase of 315,836 feet of 16" O.D. pipe, to a maximum of $65.78 per ton f.o.b. mill paid by Colorado Interstate Gas Company, in the purchase of 265 feet of 22" O.D. pipe. The maximum price relates to a small purchase where published prices prevail, and the minimum to a large volume purchase based on negotiation. The weighted average prices reflect purchases in both small and large amounts, but are influenced primarily by the large volume purchases.

"Exhibit No. 231 compares the cost of the line pipe in Account 353, Mains, as of December 31, 1938, as shown in Exhibits 68 and 70, and the cost of line pipe based on the weighted average prices determined from actual purchase orders of the seven companies previously mentioned. For the purpose of comparison, the basic *cata* employed in the preparation of Exhibits 68 and 70, except as to the price of pipe, have been used in caculating the pipe cost shown in Exhibit No. 231. In this exhibit, state sales taxes have been omitted from the costs of pipe based on actual prices paid by the seven companies, and also from the costs taken from Exhibits 68 and 70.

"Dresser Coupling Costs

"The 22" and 20" transmission line from Bivins station to Denver, the 16" C.F.&I.-Pueblo lateral, and the 10¾" lateral to Arapahoe measuring station are Dresser coupled lines, which are built with single random length pipe averaging 19 feet per joint. Practically all of the pipe purchased between December 1938 and September 1940 by the seven companies whose pipe purchases were analyzed was double randon lengths, averaging between 38 feet and 43 feet per joint. If the Denver line were reconstructed, double random lengths would be used in accordance with present day practice, and the number of Style 38 Dresser couplings would be but 45 to 50 per cent of the number actually installed. In this exhibit, the higher percentage

has been used, and applied to the cost of Style 38 Dresser couplings shown in Exhibits 68 and 70; this results in a reproduction cost equal to half that shown in respondents' exhibits.

"Summary of Costs

"The reproduction costs of line pipe and Style 38 Dresser couplings required for the Denver line as of December 31, 1938 (excluding state sales taxes and 'undistributed construction costs'), as shown by Exhibits 68 and 70 and Exhibit No. 231, are as follows:

"Canadian River Gas Company

Line	Description	Line Pipe	Dresser Couplings	Total
	(1)	(2)	(3)	(4)
1.	Respondent's Exhibit No. 68	$1,535,978	$256,200	$1,792,178
2.	F.P.C. Exhibit 231	1,237,052	128,100	1,365,152
3.	Difference	298,926	128,100	427,026
4.	Percent difference	24.2	50.0	31.3"

Q. And for explanatory purposes you may state that the dollar figures in Line 2 are taken from Statement 1 of this Exhibit, isn't that correct?

A. Yes.

"Colorado Interstate Gas Company

Line	Description	Line Pipe	Dresser Couplings	Total
	(1)	(2)	(3)	(4)
5.	Respondent's Exhibit 70	$4,986,544	$717,448	$5,703,992
6.	F.P.C. Exhibit 231	4,120,934	358,724	4,479,658
7.	Difference	865,610	358,724	1,224,334
8.	Percent difference	21.0	50.0	27.3"

Q. And the dollar figures appearing in Line 6, I take it, are taken from Statement 2 of this exhibit?

A. That is correct.

Q. Proceed reading, please.

"Both Companies Combined

Line	Description	Line Pipe	Dresser Couplings	Total
	(1)	(2)	(3)	(4)
9.	Respondent's Exhibits 68 & 70	$6,522,522	$973,648	$7,496,170
10.	F.P.C. Exhibit 231	5,357,986	486,824	5,844,810
11.	Difference	1,164,536	486,824	1,651,360
12.	Percent difference	21.7	50.0	28.3"

Q. And the figures presented in Lines 9 and 10 are mere additions of those appearing under the two previous headings of the Canadian River Gas Company and the Colorado Interstate Gas Company on that same page?

A. That is correct.

"Exhibit 71, sponsored by respondents, presents estimates of reproduction cost new of the Denver pipe line properties of Canadian River Gas Company and Colorado Interstate Gas Company as of June 30, 1940. The unit costs used in Exhibits 68 and 70 in the preparation of reproduction cost estimates as of December 31, 1938 were also used in Exhibit 71 in the preparation of reproduction cost estimates as of June 30, 1940. Property in service on December 31, 1938 and on June 30, 1940, has been assigned the same reproduction costs in Exhibits 68, 70 and 71.

"Exhibit 71 shows that the changes in Account 353, Mains, between December 31, 1938 and June 30, 1940 were negligible. For Canadian River Gas Company the net change in the account was an increase of $356, or 0.02 per cent; for Colorado Interstate Gas Company the net change in Account 353 was a decrease of $6,320, or 0.08 per cent. It is evident that, for all practical purposes, differences shown in the preceding tabulation apply also to the reproduction cost of these properties, as of June 30, 1940, as shown in Exhibit 71."

(Vol. LXXVI, pp. 11249-11256.)

* * * * *

Q. Mr. Hill, referring to Exhibit No. 231-A that has just been identified, I will ask you whether this exhibit was prepared by you or under your direction and supervision.

A. It was, yes, sir.

Q. Will you give a brief explanation of it at this time?

A. Well, this is a substitution of seamless Grade B pipe for Grade A lapweld pipe used in Exhibits Nos. 68 and 70. It shows the footage taken from Exhibits Nos. 68 and 70 and the weights, the working pressure of lapweld pipe, and also shows the tonnage; also shows substitute weight of seamless pipe its working pressure, total tonnage and total cost of pipe delivered, and also the difference between the cost of the lapweld pipe and the seamless Grade B pipe.

Q. Does this exhibit reflect the difference in cost of lapweld pipe as computed by you?

A. Yes; that is, as compared with the seamless pipe.

Q. Is there any other matter in connection with that exhibit you desire to explain at this time?

A. I think the note at the bottom of this exhibit explains the way it was worked up and it also shows the difference between lapweld and Grade B seamless or electric weld pipe for both companies combined, Colorado Interstate Gas Company and Canadian River Gas Company.

Q. Now, referring to Exhibit No. 231, I will ask you whether or not the pipe prices that you had before you as a basis for that exhibit had reference to seamless and electric weld pipe?

A. Yes sir.

Q. As I understand it, this Exhibit 231-A relates only to the pipe in the main line.

A. That is correct.

Q. It doesn't relate to any pipe in the laterals?

A. That is correct,

Mr. Lange: I believe that is all for the present.

Cross Examination.

By Mr. Spencer:

Q. Mr. Hill, have you in your experience ever been in charge of the purchase of substantial quantities of pipe for a natural gas company?

A. I have bought a good deal of pipe. I have reviewed

quotations and purchases of pipe for large quantities of pipe.

Q. When was that, Mr. Hill?

A. Well, I bought a good deal of pipe when I was with the Sloss-Sheffield Steel & Iron Company.

Q. When was that?

A. From 1924 to 1929. I was with the Southern Natural Gas Company—

Q. Before we leave that, Mr. Hill, for what purpose was that pipe bought?

A. At that time we built about 12 miles of water lines, semi-mine properties, large-sized properties—

Q. What size of pipe was used?

A. If I remember right, offhand, it was about 14-inch pipe.

Q. What kind of pipe?

A. Steel pipe lapweld. Of course we use to buy lots of pipe for use around furnaces and byproduct plants.

Q. That covers the experience you have had in the purchase of pipe—

Mr. Lange: I think Mr. Hill was just about to add another matter when you asked him to include the other.

Mr. Spencer: I have that in mind, but there are a few questions about this particular experience that I want to ask him before he goes to the next one.

Q. That covers the experience in the purchase of pipe for about five years?

A. From 1924 to 1929, approximately five years.

Q. During that period, what was the largest single project for which you purchased pipe?

A. I think that 12 miles of water line was, the 12 or 14 miles of water line. I have forgotten exactly, but I think it was approximately that.

Q. All right, the next experience you had in the purchase of pipe was what?

A. In 1930 I reviewed a number of quotations for pipe purchased by the Southern Natural Gas Company, however, offhand I don't recall how much it was. It was a line from Benton Junction, Mississippi to Pensacola, Florida; and a line from Atlanta, Georgia to Milledgeville, Georgia.

Most of that pipe—I didn't actually purchase the pipe. I was just reviewing the quotations for the pipe. The purchasing agent purchased all of that pipe. Most of that pipe was 18 and 16 and 14 inch pipe and I think there was some 12-inch pipe from Mobile, into Pensacola. They purchased a line from the Southern Natural Gas Company main pipe line for Columbus, Georgia. It was 10 and 12-inch pipe.

I think it was 10, 12 and 8 on the Macon line.

Q. What period does that cover?

A. That was during 1930.

Q. 1930?

A. Yes, sir.

Q. You did not conduct the actual negotiations for the purchase of pipe for Southern Natural Gas Company?

A. I did not. I only made the tabulation on the pipe.

Q. The quotations were handed to you by the purchasing department?

A. Yes, we wrote the specifications and handed it to him and it was the uniform manner in which he got quotations.

Q. Do you know who actually did purchase the pipe at that time for Southern Natural Gas Company?

A. Bob Strickland was then purchasing agent. I am not sure whether he actually negotiated the pipe or Ingram actually negotiated the purchase of it. I am not sure about it as I don't know.

Q. Do you know what Ford, Bacon & Davis had to do with the purchase of that particular pipe?

A. Well, I don't know offhand. I know at that time Ford, Bacon & Davis had an operating contract over there and Mr. E. G. Hill was on the job at that time, but I don't know the particulars because I wasn't in on the negotiating of the pipe, that is, the actual purchasing of the pipe, and I don't recall the exact circumstances surrounding it, although Ford, Bacon & Davis did not do the construction work at that time.

Q. Did you actually purchase this pipe for the 12-mile water line that you testified about?

A. I was in the negotiations with the Chief Engineer, yes, sir.

Q. Who was actually responsible for the purchase of that pipe?

A. The purchasing agent, I imagine, if you want to know who actually purchased the pipe. The negotiations were carried on in our office and turned over to him. He always purchased everything under specifications from us.

Q. What other experience have you had in the purchase of pipe?

A. Well, I have purchased quantities of pipe for compressor stations for Southern. I have actually purchased the pipe myself—

Mr. Lange: You mean the Southern Natural Gas Company?

The Witness: Southern Natural Gas Company.

By Mr. Spencer:

Q. Small quantities of pipe?

A. Small quantities of pipe and fabricated pipe. It may have been a carload or something like that, including fabricated pipe.

Q. Now, referring to your written statement in Exhibit No. 231, you have made an examination in respect to Exhibits Nos. 68 and 70 presented by Mr. Rhodes?

A. Yes, sir.

Q. And from your statement here I conclude that Mr. Rhodes' prices of line pipe were based upon published prices and discounts as of December 31, 1938?

A. Yes, sir.

Q. In this Exhibit No. 231 you have a different approach to the matter of prices, is that correct?

Mr. Lange: You mean Exhibit 231-A?

Mr. Spencer. Exhibit No. 231.

The Witness: I don't understand that, Mr. Spencer.

Mr. Spencer: I will restate the question.

Q. In your Exhibit No. 231 you have not based prices on published prices and discounts?

A. No, sir, I have not. It has been based upon actual purchases of pipe bought over the period 1938 to 1940 by major pipe line companies.

Q. Now, where did you get your data and information on these purchases of pipe by what you term major pipe line companies during that period?

A. We received it from the pipe line companies themselves.

Q. I mean, where did you personally get it?

A. Well, it was sent to me from Washington.

Q. By whom?

Mr. Lange: The Federal Power Commission?

The Witness: To the Federal Power Commission, yes.

By Mr. Spencer:

Q. It was sent to you by the Federal Power Commission at Washington?

A. Yes.

Q. When did you receive it?

A. Well, I can give you pretty close to it.

Q. Approximately, Mr. Hill, is all that is necessary.

A. Well, I would say it was some time in either October or November. I am not certain.

Q. Of 1940?

A. Yes, 1940. I think it was sometime in October.

Q. Was it sent personally to you?

A. No, sir, it was not.

Q. It was sent to the engineering department of the regional office in Denver?

A. All of the mail goes through the regional director. It is a matter of form that is followed.

Q. Now, what instructions did you receive from the Washington office with respect to this particular data and information that they transmitted?

A. I didn't receive any information.

Q. Instructions?

A. No sir.

Q. None?

A. No, sir. My instructions are received out of this regional office, not out of Washington.

Q. Then for the purposes of this exhibit you have accepted information and data on pipe purchases which has been forwarded to you from the Washington office?

A. Yes.

Q. Now, in what form is that information and data set up with respect to these purchases that you use?

A. Well, they actually had a copy of the purchase orders and sample copies of invoices from the pipe line companies attached to the purchase orders. There might have been out of one case of the whole thing—there are also specifications of the pipe attached to the purchase orders and I think in one case they did not send sample copies of the invoice from the pipe company. The rest of them were accompanied by sample invoices from the pipe company.

Q. Do you know how this information and data regarding pipe purchases came into the possession of the Federal Power Commission in Washington?

A. No, sir, I do not.

Q. Do you know that the information and data forwarded to you regarding pipe purchases is all of the information and data that the Washington office of the Federal Power Commission in Washington has on this subject?

A. I don't know.

Q. Do you know why the Federal Power Commission office in Washington selected these particular pipe purchases to transmit to you for the purposes of this Exhibit No. 231?

A. Well I understand it is pretty generally—

Q. If you know, Mr. Hill.

A. No, I don't know.

Q. Now, aside from miscellaneous purchases that were made by the Canadian River Gas Company and Colorado Interstate Gas Company during this period, you have only five companies involved which you have used as a basis for your Exhibit No. 231, is that right?

A. Yes, sir, that is correct, with the exception of the Colorado Interstate Gas Company and the Canadian River Gas Company.

Q. And those are, as you state in your written statement, Panhandle Eastern Pipeline Company, Northern Natural Gas Company, United Gas Pipe Line Company and the El Paso Natural Gas Company?

A. And the Louisiana-Nevada Transit Company.

Q. That's right, pardon me. That makes the five of them.

A. Yes, sir.

Q. Your total purchases during this period which you have used expressed in tonnage amounts to about how much?

A. Well, there is about 90,000 tons, approximately.

Q. And the amount of pipe in tonnage required to reproduce the transmission lines of Canadian River Gas Company and Colorado Interstate Gas Company from Bivins station to Denver, together with the laterals, amounts to about how much, expressed in tonnage?

A. If I remember right, it was about 81,000 tons.

Q. Now, the purchases by the Canadian River Gas Company and Colorado Interstate Gas Company during this period amount to how much in tonnage?

A. I will have to figure it for you, Mr. Spencer. I don't have it right off.

Q. Just before you start figuring, Mr. Hill, maybe I can help you.

A. It was a very small amount of pipe.

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* * * * *

Q. Mr. Hill, you take the pipe purchases of these companies during this period and you arrive at a weighted average price in your Exhibit No. 231. Tell me just briefly how you arrive at your weighted average price.

A. Well, we took the pipe purchases that we analyzed and put the actual purchase price in that this pipe was bought for, all f.o.b. mill prices and then we added the total tonnage, and divided into the total price of pipe and came out with a weighted average price per ton.

Q. The weighting, then, is all on tonnage?

A. Yes, this is all on a tonnage basis. This pipe was averaged in sizes from 10-¾ inches to 24 inches, inclusive, and from 8-⅝ down. It was averaged in arriving at an average price per ton.

Q. Now, will you turn to your working papers relating to pipe purchases of the United Gas Pipe Line Company?

Now, as I understand it, the invoices which you have covering these purchases state the delivered price per foot, f.o.b. destination; is that correct?

A. The pipe invoice itself?

Q. Yes.

A. Yes, sir, all pipe is billed that way, for the purpose of being able to check this pipe in the field, although the basic price of pipe is figured on the ton basis.

Q. Yes. Now, you took those prices f.o.b. destination and adjusted them to f.o.b. mill, did you not?

A. Not on the United Gas Company I did not, because they stated that all the pipe that they bought was at $43 a ton, f.o.b. the mill, and the $43 is what I used on the United Gas Pipe Line Company.

Q. What mill did it come from?

A. Well, most of it came from National Tube. In fact, I believe all of it was from National Tube.

Q. The location of it, I mean.

A. Well, the usual thing—most of this pipe was shipped out of Lorain.

Q. What state?

A. I believe it is Lorain, Indiana.

Q. Ohio?

A. I mean Ohio. Practically all this pipe was shipped out of Lorain.

Q. So that in that instance you accepted the pipe at the mill as given to you by the company, meeting the United Gas?

A. Yes, that is the way the purchase orders read.

Q. Take one of these cases where you didn't have that information on the mill price. How about Panhandle Eastern Pipeline Company?

A. The Panhandle Eastern Pipeline Company specifically states that their price is based at $48 per ton, f.o.b. mill.

Q. That is the purchase order?

A. Yes, sir, this is the purchase order for the pipe.

Q. What does the invoice say?

A. The invoice on the Panhandle Eastern is billed like all other pipe is billed, on a foot basis, all based back on $48 per ton f.o.b. the mill.

Q. Well, just tell me what the invoice says as to price, please.

A. This invoice states: "$188.13, 100 feet net."

Q. F.o.b. where?

A. This is the delivered price in Illinois. It was shipped from Lorain, Ohio.

Q. Well, in other words—

A. Mt. Auburn, Illinois.

Q. In other words, that invoice is based upon an f.o.b. price at destination and also on a footage basis rather than on a tonnage basis, is that correct?

A. That's right. Also on a footage basis. It is also subject to 2 per cent cash discount.

Q. All right, now, did you take that invoice and compute backwards to see what price you came out with at the mill per ton?

A. Well, I checked—I don't seem to have the work sheet on that, but where the ton price was stated I made a check back to the actual pipe invoice to see that it corresponded to the ton commitment and—

Q. Now, the invoice you are talking about I assume is the National Tube Company invoice, June 26, 1940, covering 434,800 feet of pipe weighing 15,488.88 tons, is that correct?

A. Just a minute, Mr. Spencer, I'll have to check it.

The National Tube invoice—I mean the purchase order to National Tube Company—

Q. I don't want the purchase order. I want the invoice, Mr. Hill.

A. Well, the invoice doesn't state the total footage, Mr. Spencer. If you want the total footage I will have to take that from the purchase order. These invoices are billed for so many pieces of 24-inch pipe. They do state it on the purchase order, that is, the quantity and feet ordered. These same purchase orders do not cover the entire purchase and they only show the footage shipped in this car.

Q. You are talking about the invoices rather than the purchase orders?

A. This is the invoice from the National Tube Company, yes.

Q. What price per ton did you use f.o.b. the mill for that particular purchase?

A. I used $45.50.

Q. $45.50?

A. $45.50—I will have to check that, Mr. Spencer.

Q. Also check to see whether that was before or after the deductions of the 2 per cent discount.

A. That was before it. I will tell you, Mr. Spencer, there was an additional 12 cents added onto the cost of that pipe for priming. I included that 12 cents, which made $45.62 less the 2 per cent discount which made the net $44.71.

Q. What I am getting at, Mr. Hill, is this: Did you make the computations to arrive at that price per ton or did you just accept some figures that were furnished to you by the Panhandle Eastern?

A. All of those prices—the purchase orders on this pipe have stated on the purchase invoice price $45.50 per ton f.o.b. mill. I checked this $45.50 back against the actual invoice to see that that was approximate. Of course, it never ran out on the exact $45.50 but it would check close enough so that you would know the basic price this pipe was bought at was $45.50 f.o.b. mill; that is, per ton.

Q. You testified a moment ago with reference to the United Gas purchase of pipe. You accepted the United's statements as to the price per ton, did you not? What I am getting at, Mr. Hill, is this: Didn't you treat the United Gas Pipe Line Company's purchase in the same manner you describe here?

A. I used the $43 per ton.

Q. That is the figure you got off of the purchase order, is it not?

A. That figure is shown on a number of purchase orders and it was relating back to the original purchase order.

Q. Did you also in that case check the invoices against the purchase orders to see that the price the company received was $43 per ton f.o.b. mill?

A. Yes, I did on the 18-inch ¼-inch wall which was the majority of the pipe they purchased.

Q. You have done all this checking yourself, Mr. Hill?

A. Yes, sir, these are all my figures. Of course, there are some corrections on this United Gas Pipe Line. If I remember correctly there was about 8,000 feet of heavy wall pipe that might have been computed at a different price but there was also a correction invoice checking it back.

Q. This Exhibit No. 231 has been prepared entirely by you, Mr. Hill?

A. Yes, sir. I made all of the calculations on this pipe and took all of the footages and what-not from exhibits 68 and 70.

Q. Statements 1 and 2 were also prepared by you?

A. Yes, sir.

Q. Do you recall how many steel mills you have involved for purchases made by these five companies?

A. The National Tube Company, the Youngstown—

Q. I am talking about plants.

A. I don't understand the question, Mr. Spencer.

Q. Well, you have had to make a calculation here to determine a f.o.b. mill price and I want to know how many different steel mills you used for the purpose of determining f.o.b. mill prices.

A. Well, I think I have that information here. I used Lorain, Ohio; Youngstown, Ohio, and McKeesport, Pennsylvania.

Q. Lorain, Ohio, and McKeesport, Pennsylvania?

A. Yes, sir.

Q. Just these two?

A. And Youngstown, Ohio.

Q. Youngstown, Ohio?

A. Yes.

Q. You did not use Milwaukee, Wisconsin? Wasn't there a lot of pipe received from A. O. Smith Corporation?

A. Well, we did purchase pipe from A. O. Smith in Milwaukee.

Q. Now, in obtaining your average freight rate I guess you show that on your Statement No. 2, Sheet 1, Column 5—no, wait a minute, it is Column 6. Can you find that?

A. Yes.

Q. Tell me how you figured that average freight rate.

A. I checked this freight rate and the freight rate used in Exhibits 68 and 70. The freight rate used in those exhibits was pretty close to what I had checked so I used the freight rate in Exhibits 68 and 70.

Q. Did you tie in your purchases of pipe from these various mills to the quantities shown in Exhibits 68 and 70?

A. Did I tie in the purchases of pipe?

Q. That's right.

A. I don't understand what you mean by "tie in," Mr. Spencer.

Q. Exhibit No. 68 and Exhibit No. 70 allocate the total quantity of pipe needed for certain mills, do they not?

A. If I am right on the thing, the freight on the pipe bought from National Tube Company on the large quantity purchases is usually equalized from Lorain, whether shipped from McKeesport or Lorain, and I think that is what is used in Exhibits Nos. 68 and 70.

Q. You divided your pipe into two classes, 10-3/4 and 24-inch, and the second type into four and one-half inch to 8-5/8 inches

A. That is correct.

Q. You state in your written statement that the purchases cover the period from December 1938. to September 1940. is that correct?

A. Yes, sir.

Q. How much of the first class of pipe purchases used were made in 1938?

A. There was very little of it purchased in 1938.

Q. Approximately 28,000 tons?

A. Well, it was a very small amount that was purchased in 1938.

Q. I should have said approximately 28 tons.

A. It is something like that. That is approximately right.

Q. Approximately 28 tons?

A. That is approximately right. I haven't added the whole thing up yet, but there was a very small amount purchased in 1938.

Q. You find no purchases of your second class of pipe during 1938, do you?

A. No, sir, I do not.

Q. Who made the purchases of the 28 tons of pipe used in 1938?

A. The 1938 purchases are shown here for the Colorado Interstate Gas Company.

Q. The Colorado Interstate Gas Company?

A. Yes, sir.

Q. And the Canadian River Gas Company?

A. Just a minute, Mr. Spencer, I will have to check this.

Q. I beg your pardon.

A. The only purchase I showed in 1938 was the Colorado Interstate Gas Company.

Q. In other words, none of your five principal companies purchased any pipe you used during the year 1938?

A. No, sir, there was not. There was a very small amount of pipe purchased in 1938.

Q. All right. I want to know approximately how many tons of both classes of pipe were purchased during the year 1939.

A. Well, the Panhandle Eastern Pipeline Company, they purchased—

Mr. Spencer: Off the record.

(Discussion outside the record.)

By Mr. Spencer:

Q. You do not have that figure readily available in your working papers, Mr. Hill?

A. The amount purchased in 1939?

Q. Yes.

A. I will have to read it.

Q. To save time, Mr. Hill, suppose I give you my figures which have been computed in answer to this question and you can accept them or reject them subject to check if agreeable with counsel.

Mr. Lange: Very well.

By Mr. Spencer:

Q. Now, Mr. Hill, my computation shows with respect to your first classification of pipe 10-3/4-inch to 24-inch in 1938 approximately 28 tons were purchased; in 1939, 60,556 tons—

A. That is the same classification now?

Q. Yes. And in 1940, 19,594 tons, making a total of 80,178 tons.

As to the second classification which is 4-1/2-inch to 8-5/8 inches, it is indicated as follows: 1938, no purchases; 1939, 11,442 tons; 1940, 1369 tons; total 12,811 tons.

A. Those were taken off my sheet, I imagine they are approximately right, Mr. Spencer, but I wouldn't say until I had time to check them. I would be glad to do that.

Q. Will you accept them as being correct, subject to check?

A. Yes, sir, I will.

Mr. Lange: Subject to Mr. Hill's check?

Mr. Spencer: Yes, or Mr. O'Connor's check, for that matter.

Let it be understood, Mr. Examiner, if this is not a correct computation counsel can put in a corrected one at any time, whether Mr. Hill is here or not.

Mr. Lange: That is all right.

The Trial Examiner: Very well, Mr. Spencer.

Mr. Spencer: I assume Mr. Hill will not take his working papers with him in any event?

Mr. Lange: No, they will be available here.

Mr. Spencer, do you have a copy of that computation so that Mr. Hill may have the information for the purpose of checking it?

Mr. Spencer: I will have a copy of it made.

Q. If these figures are correct, Mr. Hill, you have substantially no purchases in 1938, is that correct?

A. That is correct, a very small amount.

Q. The bulk of your purchases were made in 1939, were they not?

A. Yes, sir, and in the first part of 1940. The majority of the pipe was purchased in 1938 and some of the pipe was delivered in 1940.

Q. That might be so—

A. I mean purchased in 1939.

Q. You are not prepared to say, then, Mr. Hill, are you, that the average weighted pressure of pipe which you used in your Exhibit No. 231 is indicative of pipe prices existing as of December 31, 1938?

A. Well, most of the pipe was purchased in 1939 and 1940. I think the average price would be more during that period of time, 1939 and 1940.

Q. The prices of the pipe which you do use—the few purchases you did make in December 1938—were higher than those used in Exhibits 68 and 70, is that correct?

A. Yes, sir, but they were all purchased in small quantities. They were less than carload.

Q. Do you know how many miles of pipe line were constructed by natural gas companies during the period December 1938 to September 1940?

A. No, I don't

Q. Would you care to express an opinion on the amount of mileage that might have been constructed during that period?

A. I wouldn't know offhand. There were so many small lines and lateral lines built in that time and small quantities of pipe purchased, I think you would be making a guess on that if you did give a figure.

Q. How many miles of pipe is represented in the purchases you have made?

A. Approximately 900.

Q. You have small pipe in there, too?

A. Yes, sir, I have small pipe in there, too, but it was all bought on the same purchase order. I haven't made any attempt to determine the exact number of miles of pipe installed in the last two or three years.

Q. I take it that it follows, Mr. Hill, you do not know how many pipe line projects or how many major purchases of pipe during this period have been eliminated by you in arriving at your conclusions, is that right?

A. All I had to go on was the five companies I have used. It seems reasonable to me to believe that if they purchased pipe during this period at that price that other companies could purchase it at somewhat the same prices.

Q. You do know of pipe line projects that were constructed during this period which you have not included, do you not?

A. Not in any long pipe lines offhand with the exception of the line that was built to Milwuakee. That is about the only line I know of of any size or consequence built during this period. There was one line that was built from Panama City or Pass Christian during this period but I didn't have anything on it.

Q. You have no data on that?

A. No. It was just a small pipe, an 8-inch pipe, I believe, and as I understand it, I don't think the line has been completed yet.

[Testimony of WITNESS HILL (continued.)]

Q. I believe you testified before that you did not know whether the Federal Power Commission office in Washington furnished you with all the information and data they have on this subject?

A. No, sir, I don't have access to those files in Washington.

Q. Now, I will read you a list of companies here that are engaged in the natural gas business and I will ask you if you consider them major companies with respect to that business: Oklahoma Natural Gas Company, Lone Star Gas Company, Hope Natural Gas Company, East Ohio Gas Company, Arkansas Natural Gas Company, Cities Service Gas Company, Columbia Gas & Electric Company, Memphis Natural Gas Company and Southern Natural Gas Company.

Do you consider those companies major companies in the business?

A. Yes, sir. Since you mentioned those names, I can tell you more pipe that has been put in if you would like to have it. I couldn't recall it at the time.

Q. Well, I think it will suffice for my purpose to ask you just one more question.

You have not taken into consideration any purchases of pipe for any of those companies during the periods you have used?

A. No, sir, I had nothing on the purchases of the pipe by those companies.

Q. You do know they bought pipe?

A. Yes, sir, I know they bought pipe.

Q. And in substantial quantities?

A. I think the Memphis Natural Gas Company bought a good deal. They looped some lines. I know Southern Natural Gas Company looped some line in the last year, however, I don't know how much pipe was used but it was a good deal. I know they are looping some line over there now.

Mr. Spencer: Off the record.

(Discussion outside the record.)

By Mr. Spencer:

Q. In connection with this study, Mr. Hill, you have not made any inquiry of pipe manufacturers for pipe prices, I take it?

A. No, sir, I have not.

Q. Do you have any knowledge, Mr. Hill, of current quotations of pipe manufacturers for line pipe such as you have studied here?

A. Nothing more than what I have used in this exhibit.

Q. What would you say as to the general level of the prices on large diameter pipe during the year 1939?

Mr. Lange: What do you mean by "large level," Mr. Spencer? You might indicate what sizes you have in mind.

Mr. Spencer: Let's use his first classification.

The Witness: Will you read the question, please?

(The question referred to was read by the reporter as set forth above.)

The Witness: I would say it would be what pipe had actually been purchased for during the year 1935—I mean 1939.

By Mr. Spencer:

Q. Perhaps my question was not very clear. I mean the level of prices for such pipe during the year 1939 in relation to prices for such pipe during previous years.

A. I don't have any large quantities purchased in 1938 so I don't actually know what the large quantity purchases were in 1938. I have just a few l.c.l. prices for 1938 in comparison—

Q. Pardon me.

A. In comparison with 1939 and 1940 when the prices were practically the same. There wasn't a great deal of difference in them.

Q. What do you say about 1937?

A. I imagine pipe prices were lower in 1937 than they are in the present day market.

Q. What do you say about the relationship with reference to present prices?

A. With 1937?

Q. No, I am comparing 1939 prices, the 1939 level of prices with the present level of prices.

A. I would say—I really don't know, Mr. Spencer. I don't know what the first quarter prices of 1941 are as I have made no analysis of it.

Q. I don't want you to answer the question unless you do have some knowledge of it, Mr. Hill.

Taking all of the pipe that you have used here in your computations, do you know which of the pipe was rolled on order and which was delivered on what you might term "on mill run"?

A. I imagine all of the larger purchases were rolled on order. That is the way pipe is usually manufactured. The pipe companies very seldom carry a large stock of pipe. I imagine all of the larger orders of pipe were rolled on order.

Q. That is your opinion, is it?

A. Well, I think it is reasonable to believe there is no pipe company in the country that would carry as much pipe as some of these orders called for. I don't think they would do that.

Q. Well, look at your working papers on the El Paso Natural Gas Company. Do you find purchases made there from the Phelps-Dodge Mercantile Company?

A. Yes, sir, I am sure they purchased pipe through them.

Q. Well, does it seem reasonable to believe that pipe was rolled on order?

A. I have no reason to believe it wasn't, Mr. Spencer. It was shipped directly from the mill. If the mill had a stock of this pipe in the yard they might have shipped it off the yard, but they usually don't carry large stocks of pipe.

Q. But the seller here was Phelps-Dodge Mercantile Company, was it not?

A. Yes, sir, as agent for National Tube Company.

Q. Do you know whether or not Phelps-Dodge Mercantile Company hadn't acquired that pipe previously for a different purpose than what it was used for here?

A. I couldn't say that. I know this pipe was shipped.

directly from the mill, it wasn't shipped from Phelps-Dodge Mercantile Company. Whether they had previously placed an order for the pipe, I couldn't say.

Q. You don't know the details of that?

A. No, sir, I don't.

Q. Do you know the terms and conditions of payment for this pipe? By that I mean whether or not payment was made in cash or securities or in some other form of consideration?

A. I notice they took a 2 per cent cash discount on it, so I imagine the pipe was paid for in the limited time for the 2 per cent discount, which I believe was ten days. It may be a longer time for this outfit. Sometimes it is longer than that. I would say it was on direct sale.

Q. I am asking you generally about all these purchases you have involved. Do you know of your own knowledge what the terms and conditions of payment were for that pipe?

A. I don't know, Mr. Spencer, other than the majority of them took 2 per cent cash discount which would lead me to believe it was a cash transaction.

Q That doesn't necessarily follow, does it?

A. Well,—

Q. If payment is made in some other form of consideration than cash, the purchaser might still be entitled to the discount?

A. It might have been. I wouldn't say because I didn't see the money actually change hands.

Q. I asked you a question a moment ago about the general level of pipe prices in 1939 in relation to other years and I believe you answered that you hadn't made a study of that. I wish you would turn to your working papers on United Gas Pipe Line Company and read into the record the notation appearing at the bottom of the last page of the report or statement made by United Gas Pipe Line Company.

A. This notation is at the bottom of the page. It states: "Attention is directed to the fact that this pipe was purchased at abnormally low prices and in no wise is representative of prices paid by this company for other pipe in its system. The cost of pipe as shown herein is subject to minor adjustments for additional freight charges on cer-

tain of the pipe which was reconsigned enroute for which charges the vendor has not rendered invoices."

Mr. Lange: A copy of that invoice was made available to the company staff to examine, wasn't it?

The Witness: Yes, sir, that is right, it was made available.

Mr. Spencer: It is not only on the invoice but the whole thing was made available, Mr. Lange.

The Witness: This was not an invoice and it was not on the purchase order. This is a summary of purchases on purchase order 75131, dated September 18, 1939, and filed with the Federal Power Commission.

Mr. Lange: By the company?

The Witness: By the company, yes, sir.

By Mr. Spencer:

Q. Now will you turn to Statement No. 2 of your Exhibit 231?

A. Yes.

Q. Do you show the same cost per foot for all sizes of pipe from 10¾ inches in diameter to 24-inch diameter?

A. Yes, sir.

Q. Is that the usual practice of the industry?

A. Well, I wouldn't say it was the usual practice, Mr. Spencer. We found in analyzing the actual purchase orders for pipe that we had pipe from 10¾ inches to 24 inches that had been bought at the same purchase price per ton.

Q. Isn't it a fact that the pipe manufacturers charge less per ton for sizes from 4 inches to 6⅝ inches in diameter out of this whole group that you have used?

A. You say the least price per ton?

Q. Yes, the lowest price.

A. No, sir, I wouldn't say so.

Q. Would you say that they charged more per ton—

A. Yes, sir, I think they do.

Q. —for pipe in the bracket from 4 to 6⅝ inches?

A. We are speaking on a tonnage basis.

Q. Yes.

A. Yes, sir.

Q. That is not your experience?

A. No, sir, I think the smaller the size of the pipe the more the cost would be of fabricating that. I couldn't expect to buy a 1-inch pipe for the same tonnage price as I would a 4½-inch pipe.

Q. I didn't go down as low as one inch, but that is all right for illustrative purposes. When you make that answer to me, are you taking into account the different discounts that are granted upon different sizes of pipe?

A. Well, they vary all over the place as far as discounts of pipe are concerned. One person may get this discount and the other person over here may get something else. I know that if I buy a certain amount of 4½-inch pipe, over and above that amount I would get a special discount, or on any other size where you would order a quantity of it.

Q. Well, let me put it this way: Taking into consideration the whole scale of pipe sizes and quotations made under the same conditions to the same party, would it not be true that you get a greater discount for certain smaller sizes of pipe here which give you a much lower price?

A. If you would take it on quantity purchases and—I have seen the time when we could buy 4½-inch pipe on account of the quantity discount practically as cheap as we could buy 3½ inch pipe, but we bought enough 4½-inch pipe to give us that additional discount.

Q. Do you know what the current rates of discounts are on pipe purchases?

A. No, sir, I do not.

Q. Let's get at the problem this way: How do you justify using a flat price per ton for all classes of pipe?

A. Well, I have all classes of pipe from 10¾-inch to 24 inch at the same price per ton.

Q. Is that your answer, then, because it has been done in certain transactions?

A. It was bought in 1939 and 1940 at the same price. I merely grouped this pipe, that is, from 10¾ inches up to get an average price.

Q. It wasn't done in all the cases you have used, however?

A. I don't understand that question.

Q. It wasn't done in all the cases that you have used, however, was it?

A. You mean the grouping?

Q. In all the purchases you have used.

A. I don't understand what you mean, Mr. Spencer.

Q. You answered my question this way: You said that you had used flat prices for all sizes of pipe because you found the sales had been made on that basis during the period you have used, is that correct?

A. That is correct, from 10¾-inch pipe to 24-inch pipe.

Q. But it is not true as to all of the purchases you had utilized here in arriving at your computation?

A. Well, no, the majority of this small pipe was bought by the United Gas Pipe Line Company on one purchase order. The other pipe was in somewhat larger size and some of it was in somewhat smaller size.

Q. But not at a uniform price?

A. No, sir.

Q. Take one of those purchases where you say that the manufacturer sold all sizes of pipe at one price. How do you know what weighting the manufacturer did in order to arrive at that kind of a flat price?

A. I know that all steel is based upon a ton price. It makes no difference whether you are buying pipe or structural steel, the basic charge for that is on a ton basis and the United Gas Pipe Line Company, as I have stated before, bought all sizes and weights of pipe from 10¾-inch to 22-inch at the same price of $43 per ton, f.o.b. the mill.

Q. Do you know of any pipe manufacturer's quotations where they give a flat rate for all sizes of pipe?

A. I don't know of any quotations. It is according to the amount of pipe you are going to buy. If I am going to buy two or three miles of 22-inch pipe and I want a small amount of 10-, 8-, or 4-inch pipe, I can usually buy that small amount, having it thrown in for the same price at which I buy the other pipe.

Q. It is a matter of negotiating at the time of purchase, isn't it?

A. Yes, sir, it is.

Q. Isn't it possible that in applying this situation to Colorado Interstate Gas Company and Canadian River Gas Company that the flat price they came out with, assuming they were conducting these negotiations, would be different from the flat price United or somebody else came out with

because of sizes and quantities they had involved were also different?

A. If they stay by the larger quantities and larger sized pipe, it seems to me they should be able to get—

Q. I am only talking about differences.

A. They would differ—will you read the question, please, Mr. Reporter?

(The question referred to was read by the reporter, as set forth above.)

The Witness: They could be either higher or lower at negotiated prices.

Mr. Spencer: Mr. Examiner, I think we ought to take a short recess at this time.

The Trial Examiner: Very well, we will take a 5-minute recess.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Spencer:

Q. Would you say, Mr. Hill, that the pipe manufacturers' quotations covering prices and discounts as to various sizes of pipe was an indication of the manufacturers' idea or conception of the relative cost and value of the different sizes of pipe?

A. That would be all based on the quantity of pipe that you were purchasing, it seems to me.

Q. Well, assume the same quantities for the purpose of answering the question.

A. There would be some difference on the ton price for different sizes of pipe.

Q. Assuming the same quantities of pipe, that would be true, would it not?

A. There would be some difference.

Q. Now, you have made your working papers available to us, Mr. Hill, and we have computed the tons of pipe involved in the various sizes from 10¾-inch to 24-inch.

A. Yes.

Q. Which I will read into the record:

24	Inch	30,378	Tons	37.89	Per Cent
22	"	187	"	.23	"
20	"	2,180	"	3.50	"
18	"	15,260	"	19.03	"
16	"	23,344	"	29.12	"
14	"	185	"	0.23	"
12¾	"	7,838	"	9.78	"
10¾	"	177	"	0.22	"
		80,178	"	100.00	"

Now, subject to check by you or Mr. O'Connor and subsequent correction of the record, does that seem approximately correct to you, Mr. Hill?

A. I think it does.

Q. Now, as we figure it, the various sizes and tons of pipe which will be required by Colorado Interstate Gas Company in a reproduction of its present line would be as follows:

22	Inch	32,986	Tons	59.03	Per Cent
20	"	19,309	"	34.55	"
16	"	1,621	"	2.90	"
12¾	"	343	"	.61	"
10¾	"	887	"	1.59	"
10	"	737	"	1.32	"
		55,883	"	100.00	"

Do you think if your purchases of pipe which you have used here had had these sizes and this tonnage which would be required by Colorado Interstate Gas Company, that your average weighted price would have been different?

A. I think that since the majority of the pipe used—

May I take the two companies combined, or do you just want the Colorado Interstate? I have used them combined.

Q. For the purpose of answering the question you may take into consideration our computation as to the sizes and tonnage of pipe required by Canadian River Gas Company to reproduce its portion of the present main line, which is as follows:

.22	Inch	19,115	Tons	98.85	Per Cent
6⅝	"	32	"	.16	"
4½	"	46	"	.24	"
3½	"	107	"	.55	"
2⅜	"	38	"	.20	"
		19,338	"	100.00	"

Now you can answer them both together, Mr. Hill.

A. Well, I would say that if the Canadian River Gas Company and the Colorado Interstate Gas Company bought all this pipe at the same time that this amount of pipe involved—that they would undoubtedly get the same price for the whole lot; that is, as far as the tonnage basis goes.

Q. That isn't quite the question I had in mind. I asked you if you think your average weighted price would have been different.

A. Well, there might have been some small discrepancies there. As I say, all of these prices are negotiated. The majority of the pipe in the system being 20- and 22-inch pipe would have a greater bearing on it than the smaller sizes of pipe from a tonnage standpoint.

Q. That is to say, the average price that you come out with is influenced or predominated by the size of the pipe that you want the greatest quantity of, is that correct?

A. From the 10¾-inch to the larger size, 22-inch, which is the majority of the Canadian River and Colorado Interstate pipe. I have used a different price from 8⅝ inches down, based on the information that I had that the cost of 8⅝ inches down at that time is a different average price and somewhat higher than 10¾-inch to 24-inch.

Q. Well, is it true, assuming those figures are correct, that 22-inch pipe which you have used in your calculations constitute less than one per cent of the total tonnage of pipe used?

A. Yes, and the 8-inch pipe and the 24-inch pipe that I have used for my calculations constitutes a good sized portion of this pipe. I would think it would be reasonable to believe that the price of 22-inch pipe would be somewheres between the 18-inch and the 24-inch, although I didn't have that in here.

Q. Well, if you combined all of your prices between 18 inches and 24 inches, inclusive, what is the approximate

total percentage as shown by my figures? Just roughly, Mr. Hill.

A. Well, I figure something over 60 per cent of it.

Q. I think that's right. Now, what percentage of the 22-inch pipe is shown in my calculation for Canadian River Gas Company?

A. 22-inch pipe.

Q. Yes.

A. 98.85 per cent according to your calculations.

Q. That is to say, less than 2 per cent of the total tonnage of pipe required is represented by smaller sizes of pipe, is that correct?

A. Yes.

Q. Now, assuming that you and I are experienced pipeliners, and I make the assumption to cover myself rather than you, and we wanted to reproduce the present main line of Canadian River Gas Company and Colorado Interstate Gas Company from Bivins to Denver and assuming that we had construction contracts and we wanted to get the job done in the shortest possible time and it was up to you and me to buy the pipe for the line, to have it on the job at the proper time so as not to delay construction. How would we go about it?

A. I don't agree with the way we go about it, because if I was going to purchase this amount of pipe and going to build it I would never put the construction through in the field until my pipe prices had been negotiated and I knew that I had pipe coming out of the mill that I could put in the ground.

Q. Well, you line it up to suit yourself. We have got to build a pipe line here and we have got to get the pipe for it; so you line it up to suit yourself.

A. All right, sir. Then we would go into the open market, I assume, to buy this pipe and take quotations on it and we would buy it at the cheapest price we could possibly buy it for.

Q. What is the first thing you do about the purchase of pipe?

A. Well, the first thing that I would do about the purchase of pipe would write the specifications on it—the type of pipe I wanted.

Q. Would your specifications include designations of time and place for deliveries and matters of that character?

A. Well, that is usually taken care of at the time that you actually start shipping your pipe or at the time you make your negotiations for the price of pipe. Your order has to be placed, of course, before those shipping instructions can go out.

Q. Do you agree with me that the time element on the delivery of pipe is an essential element of our negotiation?

A. Yes, sir, it is, Mr. Spencer. Sometimes the agreement is usually made at the time of purchase—at the time of placing the purchase order the amount of pipe you want delivered, whether a mile or two miles or two and a half miles a day, after that pipe gets under way, you usually get the pipe pretty promptly.

The mills seem to be able to turn it out pretty well; however, I have allowed cost in Exhibit 231 for tracing shipments of pipe and making pipe available promptly so it won't hold up construction work.

Q. Well, let's eliminate the tracing for a moment. We are going to be very efficient for a moment and not do that. Let's assume that we have figured out our specifications and we know when and where we want the pipe delivered.

Now, I think you said you get quotations next, is that right?

A. You negotiate the price of the pipe; yes.

Q. We get the quotation before we start negotiating, do we not?

A. Well, that is usually the way.

Q. We get it from several companies, I assume?

A. Yes, sir.

Q. Do we take into consideration the location of these plants and mills from the standpoint of freight?

A. They do sometimes. A lot of times you purchase pipe of National Tube Company and if the purchase orders—I mean the quotations, are anywhere near close, why, whether the pipe be shipped from Youngstown or McKeesport or from Lorain, they will usually equalize that freight on such and such a point on a large part of the purchase.

Q. Now, we know what we want and we have these quotations. Now what do we do?

A. Well, take your quotations on pipe and make a sum-

mary of them and if you think the prices are too high, why, you can call the men in and do a little more negotiating. If you think the prices are right, if you have got a low bid in there, I think it would be proper to place that low bid with the pipe manufacturers that put that low bid in there.

Q. Is it fair to say, then, that we keep shopping around on these quotations until we get a proposition that seems most economical to us?

A. That is usually the way it is done. You aren't going out and pay an excessive price for pipe if you can get it cut down a little.

Q. Would you say that the amount of pipe and other factors involved in a transaction such as we are assuming would be a very large order for any steel mill?

A. Yes, it would be a pretty good sized order; yes, sir—81,000 tons of it. They wouldn't accept such an order a few years back.

Q. You could probably count the number of mills in the United States pretty easily that could handle an order of that size in the time limits that would be placed upon it, is that not true?

A. Pipe is usually split between mills on that account but they usually get the same price on it.

Q. Now, can you tell me, or can you say fairly that you have any purchase of pipe which you have used in your Exhibit No. 231 that is comparable to the transaction we have just discussed?

A. You mean according to the size—20 and 22 inch?

Q. Size and necessity and everything else.

A. I think all of these pipe purchases that were made by these different companies were negotiated just like we talked about them being negotiated. It is true that we don't have a great deal of 22-inch pipe.

Q. Well, what do you have in the way of tonnage as compared to the tonnage involved here, Mr. Hill? As I recall the figure we discussed this morning was approximately 30,000 tons for Panhandle Eastern as the highest.

A. That's about right, yes, sir. That's 30,000 tons to Panhandle Eastern and the United was the next largest purchaser that we have. Do you want to refer back to your pipe?

Q. Yes.

A. I think that the reason that I have averaged these

prices in here is to get an average price for the simple reason I didn't have a lot of 22-inch pipe in there, but it seems reasonable for me to believe that the largest purchase that I have was 18-inch and 24-inch pipe, but that price of 22-inch pipe would be some place between those prices; that is, between $43 a ton paid to National Tube Company by United Gas Pipe Line Company for 18-inch pipe and $47.04 per ton paid to A. O. Smith Corporation by Panhandle Eastern for 24-inch pipe.

Q. Well, I will ask you this question: Is there any way for you and I to tell at the moment what price might result from our negotiations in this assumed transaction?

A. I couldn't say, Mr. Spencer. I couldn't answer that because I don't know what price. We might go up there and get it for a much cheaper price than this I have used. That's the reason I have used an average price.

Q. And also it might be higher?

A. Also might be higher, yes.

Q. I think that's right. Now, in addition to pipe prices, you have also made some treatment in your Exhibit No. 231 of Dresser couplings, is that correct?

A. Yes.

Q. In that connection, I believe you stated that the Denver line was constructed with pipe, Grade A lapweld pipe with average length of 19 feet?

A. Yes, sir. That was taken from Exhibits 68 and 70.

Q. And in that way one Dresser coupling would be required every 19 feet?

A. Well, on the average. I say, it wouldn't be every 19 feet, because pipe doesn't run that way.

Q. Approximately that?

A. Yes.

Q. Now, I believe for the purposes of your computations in Exhibit No. 231, you are substituting Grade B, seamless. You are basing your computations upon pipe of a different grade.

A. Are we talking about couplings or pipe? I understood it was couplings.

Q. I am trying to get down to the point where you eliminate about half of the Dresser couplings. I may be going about it in a poor manner, but with that explanation you might explain what you have done here.

A. I have used double random length pipe instead of single random length pipe, which is a common practice.

Q. In other words, you have substituted double random pipe for the average 19-foot lengths?

A. Yes, taking into account that the price was approximately the same.

Q. And by doing that—I finally arrive—you eliminate about half of the Dresser couplings?

A. Yes, sir.

Q. This double random length pipe represents an improvement of pipe construction since the main line of Colorado Interstate and Canadian River Gas Company was constructed?

A. Yes, sir, it does. That is for large-sized pipe.

Q. You do not question the fact that the present line is constructed of lapweld pipe with an average of 19 feet per joint?

A. No, sir, that is the way it was constructed.

Q. Are you questioning the design of the engineers in constructing a pipe line with that type of pipe at that time?

A. No, sir, I am not.

Q. You also are not questioning the fact that the company bought, paid for and installed all of the Dresser couplings that are indicated in Exhibits Nos. 68 and 70?

A. No, sir, I am not.

Q. Have you taken into consideration any additional cost in installing your double random length of pipe rather than what was used?

A. I have not figured any construction cost whatever.

Q. Do you have any ideas on that subject?

A. Well, it would run approximately the same I think. It may cost you a little more to handle double length pipe, but you would have a saving there on cutting out one coupling. I really couldn't say about the construction cost, as I haven't gone into it, Mr. Spencer.

Q. Would you use double random length pipe throughout the whole line—I mean over the mountains and through the valleys and under the rivers?

A. Well, I have been over that line, Mr. Spencer, and there is approximately—this is offhand now—just offhand I would say there would be approximately 80 per cent of that line that you could use double random length pipe on.

In places like the Purgatoire River crossing there I would say that maybe some single random length pipe would go in there. It doesn't amount to a great deal.

Q. You think that at least 80 per cent could be constructed with double random length pipe?

A. That's just offhand. I wouldn't want to say without going back into my papers on it. This is just on the pipe price is all.

Q. Have you taken into consideration—well, if you can't use double random pipe throughout the length of the line, there would be no occasion to buy that much double random pipe, would there?

A. All but the exception of a small amount of it, you could use double length. On the other side of the Purgatoire River I might have a few joints in there going down one side of the canyon and up the other where I might choose to use single random length pipe, although I could put the double random in there, I think.

Q. You made no adjustment for that is these calculations?

A. No, sir, I have not.

Q. Now, would you consider the fact that this line as now installed consists of single random length pipe evidence of obsolescence in the existing line?

A. No, sir. All I have done is take advantage of the development in the art of making pipe, that's all. I didn't take into consideration obsolescence.

Q. Well, do you consider that an improvement in the art of pipe line construction results in obsolescence?

A. Well, I wouldn't say that. I don't think you would have any obsolescence in the pipe, that it would become so that the gas couldn't pass through it. I think it will stay there.

Q. What I am trying to find out here, Mr. Hill, is, if you have given us enough credit in your depreciation studies here of this pipe line in view of what you think about single random length pipes.

A. It wouldn't have any effect on the lives that I have set on this pipe.

Q. It wouldn't?

A. No.

Q. The pipe is all right, is it, what we have?

A. Yes, sir, it is in good condition. It's all right.

Q. You have no criticism of that?

A. No criticism on the pipe.

Q. I take it your answer is, then, that you don't recognize any obsolescence in the existing pipe line?

A. No, sir.

Q. Now turn to your Exhibit No. 231-A, Mr. Hill.

A. Yes, sir.

Q. Start me off on this cross examination. Can I impose upon you to give just a brief explanation of what the intent and purpose is of this particular schedule?

A. You want me to explain it?

Q. Yes, please.

A. All that I have done here is—the majority of pipe that I analyzed was seamless Grade B pipe and most of it in double random lengths. All that I have done here is to substitute a seamless Grade B pipe for the lapweld pipe that is now in place in the line.

Q. Which results in what?

A. Which results in a saving of some $674,135.

Q. Because we have less tonnage?

A. Yes, sir.

Q. Now, I don't want to duplicate my questions, but I will have to ask you a few. There isn't any question but what the present line as it now exists is a Grade A lapweld pipe?

A. According to Exhibits 68 and 70, yes, sir.

Q. And the pipe that you are proposing to substitute here is a different grade and a different type of pipe?

A. It is a double random length pipe, Grade B, yes, sir.

Q. Now, how do you get less tonnage by the use of your substitute pipe?

A. You have a little less wall thickness for the same operating pressures.

Q. I thought so. Now what does wall thickness have to do with the life of the pipe, Mr. Hill?

A. Well, wall thickness and the life of the pipe depend on the soil conditions that the pipe is placed in.

Q. Would you say generally that a thick pipe has longer life than a thinner pipe under identical conditions?

A. I think it would, yes, sir.

Q. Now, what other differences are there in the two

types of pipe other than wall thickness—I mean important differences, Mr. Hill?

A. Oh, nothing except the working pressures of the two.

Q. What would you say about the metallurgical composition of the pipe itself?

A. Grade B is much higher than Grade A.

Q. Higher what?

A. Well, the tensile strength in it is much higher.

Q. It would have to be that or it couldn't stand the pressure.

A. That's right.

Q. Well, do you know whether there is any difference in composition which might lead one to deteriorate more rapidly than the other, leaving out the question of wall thickness?

A. Well, years ago they used to claim that maybe wrought iron or open hearth iron might last a little longer than steel but that is not prevalent in the practice of making steel today. Steel pipe today will last just as long as open hearth or wrought iron pipe, according to the steel companies' specifications on it.

Q. You make your substitution here of pipe only for the reason that it results in a lower cost?

A. Yes, sir.

Q. No other consideration?

A. It is a lower cost and if you are buying that pipe today or building this line today, you undoubtedly wouldn't use the single random length pipe. You would use a double random length pipe.

Q. And here again you are not questioning the design or construction of the pipe line in the first instance by its engineers?

A. No, sir. At the time that line was built that was good construction.

Q Well, I want to ask you to explain for the record the source of your formula for converting one type of pipe to the other type of pipe.

A. Well, all we did was to use the working pressures of Grade B seamless and the working pressures of the Grade A lapweld and took corresponding pressures in the seamless pipe equal to the working pressures on the lapweld.

Q. What tensile strength did you use for Grade A lapweld pipe?

A. Tensile strength in Grade A lapweld pipe is about 45,000 pounds per square inch.

Q. 45,000 pounds per square inch?

A. Yes, sir.

Q. Give me the same figures for the other.

A. For the Grade B?

Q. Yes.

A. 70,000 pounds.

Q. What is your source of information for those figures?

A. The National Tube catalogue.

Q. What date?

A. It was copyrighted in 1939.

Mr. Spencer: Mr. Examiner, I have completed my cross examination on Exhibit No. 231 and Exhibit No. 231-A in so far as I can go at this time. I think Mr. Hill may be released and if any additional questions need to be answered I understand from Mr. Lange that undoubtedly Mr. O'Connor can be made available to answer them and that will be satisfactory to me.

Mr. Lange: Of course, it would depend upon whether the additional information that you may seek at that time applies only to the matters of computations, because Mr. Hill is the one that has made this study, that is, the one who has computed the figures from the information he received that was furnished by the company.

Mr. Spencer: I am sure I will not want anything that Mr. O'Connor will not be able to testify to.

Mr. Lange: I see.

Mr. Spencer: And I may need nothing more.

The Trial Examiner: Do you have any redirect, Mr. Lange?

Mr. Lange: Yes.

Redirect Examination.

By Mr. Lange:

Q. Mr. Hill, Mr. Spencer referred to the matter of a number of companies, giving their names, who he says are

in the industry and they have had construction of considerable mileage of pipe lines. Now, as far as you know, that is just hearsay? You have made no investigation yourself?

A. No, sir, I have made no investigation myself.

Q. As to whether any of those companies had any construction or the mileage of any such construction?

A. No, sir, I haven't made a study. It is just a common practice in the gas business to grapevine those matters.

Q. That is the only way you heard of that?

A. Yes, sir, and from reading technical magazines.

Q. You have no knowledge as to what extent this line that you call the Milwaukee line has been built or what portion of that mileage or anything in connection with it? It is just hearsay?

A. It is just hearsay with me and what I have read in technical magazines.

Q. You haven't heard any line has been constructed into Milwaukee?

A. No, sir.

Q. You don't know whether any line labeled the Milwaukee Pipe Line has been in fact constructed?

A. I couldn't tell you.

Q. Reference was made as to the basic material you utilized in preparing Exhibit 231 which consists of, first of all of the invoices or copies of the invoices of pipe purchases, isn't that true?

A. Yes, sir, I have those invoices of pipe purchases.

Q. Those are actual?

A. Yes, sir, they are actual invoices from the pipe line companies.

Q. The invoices represent actual purchases, that is, they are photostatic copies of actual purchase orders?

A. Yes, sir, that is what they are.

Q. Reference was also made to what was termed sample invoices. Explain exactly what you mean by the use of the word "sample" in connection with those invoices.

A. I meant by that that I didn't have all of the invoices covering the purchase orders. It was just a portion of the invoices that were sent along with the purchase orders.

Q. But in the actual mechanics the purchase order was actually made?

A. Yes, sir.

Q. In following that certain deliveries were made under those purchase orders?

A. Yes, sir.

Q. Those certain deliveries were covered by what you would term sample invoices?

A. Yes, sir, that is correct.

Q. The word "sample" was utilized because there may have been some subsequent shipments under those purchase orders that had not been completed?

A. Yes, sir, there was. I don't have all of the invoices to back these purchase orders up.

Q. The reason I wanted to bring that out was the word "sample" might have been somewhat misleading, it being hypothetical. It is just the other way around, isn't it?

A. Yes, sir.

Q. It is the concrete performance of the purchase order, that is, one purchase of it?

A. Yes, sir.

Q. So that these purchase orders, when followed by sample invoices, show that the purchase orders were actually being put into effect and being carried out?

A. Yes, sir.

Q. And that obtains with reference to all of the sample invoices that you have in your working papers?

A. Yes, sir.

Q. They followed through on the original purchase orders?

A. Yes, sir.

Q. You were requested by Mr. Spencer to make some computations. I think the figures are reflected on one of those sheets given to you, the conversion of the 16 to 24-inches of the total. Have you calculated that?

A. No, sir, I have not.

Q. What I want to know is what the 16 to the 24 inches are to the total per cent.

A. I haven't figured that out. I will have to go through these working papers.

Q. You had it figured from 18 to 24. I wanted it figured from 16 to 24.

A. All right. That amounts, according to Mr. Spencer's calculations, to 88.77 per cent.

Q. Now, you have had occasion to carefully examine

Exhibits Nos. 68 and 70 in connection with the preparation of your Exhibit No. 231, have you not?

A. Yes, sir.

Q. I think in order to get into the record the tonnage figures—we have calculated those as to each of the companies, as well as to the total companies—I will ask you to check these figures to see whether you find them correct, and also the percentage of the main line to the total

A. Yes, sir, these figures check with my work sheets.

Q. Will you read those figures into the record, Mr. Hill, if they are correct as you found them from your examination? Are they correct as you found them?

A. According to my working papers, the tonnage that is shown on this sheet is correct.

Q. Are the percentages there calculated correctly?

A. Yes, sir.

Q. Very well, if you will read them into the record.

A. Canadian River Gas Company—

Q. That is, subject to any check Mr. Spencer may desire to make.

The Trial Examiner: Why not have them copied into the record by the reporter?

Mr. Lange: That is satisfactory.

(At the direction of the Trial Examiner, the following figures were copied into the record.

Canadian River Gas Company

Total Tonnage (Exhibit 68)	19,345 Tons
Main Line (Exhibit 231-A)	19,114 Tons
Main Line Per Cent	99 Per Cent

Colorado Interstate Gas Company

Total Tonnage (Exhibit 70)	61,392 Tons
Main Line (Exhibit 231-A)	52,295 Tons
Main Line Per Cent	85 Per Cent

Both Companies

Total Tonnage (Exhibits 68 & 70)	80,737 Tons
Main Line	71,409 Tons
Main Line Per Cent	88 Per Cent

By Mr. Lange:

Q. Mr. Hill, these copies of actual purchase orders of the companies, each one of them bears the date of the execution of it?

A. Yes, sir.

Q. I wonder if you could read those into the record with each company name. How many of them do you have?

A. There would be five major purchase orders.

Q. All right.

A. This is the purchase order issued to the National Tube Company by the United Gas Pipe Line Company, dated September 18, 1939. It covers shipments of pipe on into the year 1940.

This is a purchase order issued to the National Tube Company by the Northern Natural Gas Company, dated August 10, 1939.

This is a purchase order issued to the Youngstown Sheet & Tube Company by Northern Natural Gas Company, dated August 12, 1939.

This is a purchase order issued to Republic Steel Corporation by Northern Natural Gas Company, dated August 12, 1939.

Q. How many have you altogether in that list, Mr. Hill?

A. There are several purchase orders scattered through here and the same company may have issued two or three of them.

Q. They are?

A. Yes.

Mr. Lange: I think we may save time by having that list made up by Mr. Hill. Then we can put it in the record rather than have him read it into the record.

The Trial Examiner: You want to strike that portion he has read?

Mr. Lange: Yes.

The Trial Examiner: All right.

By Mr. Lange:

Q. Mr. Hill, will you prepare a list of the purchase orders and the names and the dates?

Mr Spencer: Off the record.

(Discussion outside the record.)

Mr. Spencer: I would suggest that he might add to it the outside diameter of the pipe, the weight per foot pounds, quantity, feet, total weight in tons, total price per ton, f.o.b. mill, total purchase price f.o.b. mill, that information. We have made up such a computation which we would be glad to hand to Mr. Hill for checking.

Mr. Lange: That would be fine, Mr. Spencer. That would give a complete picture of it and if you have that prepared—

Mr. Spencer: As a matter of fact, I have just found out we copied something that the witness had.

The Witness: It was taken from my working papers.

Mr. Lange: Mr. Spencer has it all compiled. If that checks out with Mr. Hill's figures we can use it.

The Witness: I think it is the same as shown on my working sheet that I let Mr. Roberts have.

The Trial Examiner: All that would be required would be to make copies of your working sheet?

The Witness: Yes.

Mr. Lange: That will give the actual picture.

The Trial Examiner: Very well.

By Mr. Lange:

Q. Now, on Exhibit 231-A, Mr. Hill, I just want to ask whether the Grade B seamless and electric weld pipe that you have set forth in that exhibit as compared with the lap-weld pipe represents an improvement in the art of pipe construction.

A. Yes, sir, it does.

Q. And manufacture, too?

A. Yes, sir.

Q. And the Grade B seamless pipe is largely used in

the industry at present as distinguished from the lapweld pipe?

A. The majority of pipe we analyzed from these pipe companies was Grade B seamless pipe.

Q. In these purchase invoices?

A. Yes, sir.

Q. And this computation that you made that is designated as Exhibit 231-A was made in connection with Exhibit 231?

A. I didn't understand you.

Q. This computation you made of Exhibit 211-A was made in connection with your Exhibit No. 231?

A. Yes, sir.

Q. The main distinction to be borne in mind, however, with reference to Exhibit 231-A is that it covers only pipe on the main line?

A. Yes, sir.

Q. And no laterals are included?

A. No, sir, just the main pipe line.

Mr. Lange: I believe that is all, Mr. Examiner, excepting that Mr. Hill is to check these various computations and if he finds any corrections or changes to be made either he or Mr. O'Connor will testify with reference to them.

The Trial Examiner: Do you have any further questions, Mr. Spencer?

Mr. Spencer: I have just two or three questions here.

The Trial Examiner: All right.

Recross Examination.

By Mr. Spencer:

Q. As a matter of fact, Mr. Hill, you have not utilized any quotations on Grade A lapweld pipe in your Exhibit No. 231?

A. No, sir, I haven't. It has all been electric weld and Grade B pipe.

Q. Why do you restrict Exhibit 231-A to the main line and eliminate laterals?

A. Well, the majority of the pipe was in the main line

and that is the only reason I didn't take into account the lateral lines.

Q. Is that the only reason?

A. I could have taken in the lateral lines. That is the only reason, though, the majority of the pipe is in the main line. A very small amount is in the lateral lines.

Q. You said that if you included 16-inch pipe in your pipe sizes you would have in excess of 88 per cent of your pipe purchases representing sizes between 16-inch and 24-inch pipe, is that correct?

A. Yes, sir according to our figures.

Q. According to the figures you have?

A. Yes sir.

Q. However, those figures and that percentage is restricted to your first class pipe, that is, it is limited to the classification you have between 10¾-inch pipe and 24-inch pipe?

A. Yes, sir, that is right.

Q. If you include all sizes of pipe in both classifications you would have a smaller percentage, would you not?

A. I think you would, yes, sir.

Q. Isn't it obvious you would?

A. Yes, sir, it is.

Q. Now, the percentage given for Canadian River Gas Company of 98.85 per cent is based upon all sizes of pipe without any split between the two classifications?

A. Yes, sir.

Mr. Spencer: That is all.

Mr. Lange: That is all.

The Trial Examiner: I wonder if we might not reserve Exhibit No. 231-B for the work sheet of Mr. Hill when it is presented?

Mr. Lange: I think that would be in line, Mr. Examiner, because we could then have them all together.

The Trial Examiner: Very well. As I understand it, Mr. Hill will be excused from the hearing?

Mr. Spencer: Yes, sir, that is agreed between counsel.

Mr. Lange: Yes, sir.

Before that, I would like to offer these two exhibits, being Exhibits 231 and 231-A.

Mr. Spencer: I have no objection to the Examiner passing upon the exhibits at this time, but I wish to object to the exhibits themselves as being irrelevant, immaterial and incompetent, particularly because the exhibits purport to reproduce and show the cost of reproducing an existing plant with a substitute plant which I feel has no bearing or foundation in law or any rate procedure regulations that I know of.

The Trial Examiner: The objection will be overruled and Exhibits Nos. 231 and 231-A will be received in evidence.

(Exhibits 231 and 231-A, Witness Hill, received in evidence.)

The Trial Examiner: I think perhaps, Mr. Spencer, if it is satisfactory, we might take up Exhibit 231-B. Could you have that available sometime this afternoon, Mr. Lange?

Mr. Lange: Yes, I think so.

The Trial Examiner: Off the record.

(Discussion outside the record.)

The Trial Examiner: On the record.

Mr. Lange: I will offer this exhibit at this time, Exhibit No. 231-B.

Mr. Spencer: I will make the same objections to the offer I made to Exhibits Nos. 231 and 231-A, Mr. Examiner.

(Vol. LXXX, pp. 11766-11823.)

The complainant, the City and County of Denver, did not offer evidence as to the cost of reproducing new the entire properties of the respondent as they now exist, but did offer, through its witness Tamblyn in his Exhibit 232 (Vol. LXXVII, p. 11260), estimates of the cost to reproduce certain buildings of the respondents by way of rebuttal to the estimates of the engineer Rhodes. This evidence of the City was the only evidence of the City, except copies of the annual reports filed by Colorado Interstate with the Sec-

retary of State of Colorado, abstracted supra, offered by it in support of its complaint. From 1914 to 1937, the witness was in business for himself as a general contractor constructing buildings of all types and sizes. He listed six large buildings including Colburn Hotel, ten stories; Cosmopolitan Hotel, twelve stories; and Continental Oil Building, ten stories, all in Denver, which he had constructed. At one time he conducted an evening school to give instruction in plan reading and estimating and in 1922 he published a book entitled "The Building Labor Calculator" (pp. 11263, 11264). In 1937 he was employed as an appraiser in the office of the Assessor of the City and County of Denver and was at the time chief appraiser in the city assessor's office (p. 11267).

He was instructed by the City on November 25, 1940, to check valuations placed on certain buildings of respondent as presented in Exhibits 68 and 70. He visited and inspected the buildings at Sullivan, Denver, Devine in Colorado and Bivins in Texas (p. 11268). He accepted Mr. Rhodes' material costs and labor scales as being correct. He assumed a contractor's profit of 10% (p. 11269). In his exhibit he shows for the Devine Station building $82,543 as against $110,643 in Exhibit 70. His figure for the Denver Meter Station was $11,912 against $20,910 in Exhibit 70. For the Sullivan Station he showed $26 as compared with $371 in Exhibit 70. Upon being questioned as to the breakdown of his several unit costs he answered: "It's all judgment." (Vol. CI, p. 15695). He visited the Dalhart Station but did not go to the Canyon Station. The general range of costs was fairly close throughout the period from 1927 to the present time (p. 15716). If the costs were greater from 1937 to date than they were in 1928, it would be due in part to less efficiency of labor and some raises in wages in some branches of work (p. 15715). He noticed construction work going on at the company's Devine Station but made no inquiry as to buildings of Canadian or Colorado Interstate recently built, although he knew another compressor station was being built at the time of his investigation (p. 15719). He did not make any inquiry as to the cost of such structures being erected at Dalhart during 1939 and 1940 (p. 15719). It would not mean anything to him if the Dalhart main compressor building was constructed in 1939 and

1940 at 23c per cubic foot, as compared with 12½c per cubic foot, arrived at by taking his cost and the cubic content of the Devine main compressor station. It would all depend upon how the cubing was done (p. 15720).

For dwelling No. 11, built in 1937 at Devine at a cost of $4,477, as shown on page 68, Exhibit 139, his valuation was $3009.

"Q. Now, then, the Devine five-room dwelling No. 11, built in 1937 at a cost of $4,477 as shown on Page 68, Exhibit No. 139, is next. The valuation you have placed upon that building is $3,009. In view of what you have said about the comparative cost of building construction between 1927 and 1928 on the one hand and 1937 on the other hand, does that mean anything to you, your $1400 under the actual cost?

"A. If your costs that you are talking about are based upon the kind of figures I find in this exhibit, it doesn't mean a thing to me.

"Q. The same thing would be true of Dwelling No. 12, which is a five-room house built in 1937 at Devine, cost $6576, shown on Page 68, Exhibit No. 139. With your cost of $4221, that still doesn't mean anything to you?

"A. It depends upon what you are including in cost. If you are paying a fancy salary and a lot of things I haven't considered as a part of the cost, it still doesn't mean anything to me. They are very cheap buildings, very cheap.

• • • • •

"Q. Just one other thing along that line is the Denver metering station. Your valuation is $11,912 and the book cost according to Exhibit 139 page 77, was $19-008.

"A. I am not figuring book cost." (pp. 15721, 15722.)

In the last five years he had only built two residences (p. 15724).

He never had any experience with gas pipe lines, and had never built a compressor station or any structure in connection with any compressor station (p. 15728).

His construction of the Cosmopolitan Hotel had not been profitable because it had been badly financed (p. 15730). He denied that he had underestimated that job or the Continental Oil Building job. He denied that he had overlooked a $25,000 item in estimating the Continental Oil Building job. "No, I didn't overlook it, but in adding up the figures, one sheet got out of the estimate and was not included in the total." (p. 15731).

"Q. How did it happen the surety company brought a suit against you and got a judgment against you in connection with that bond on the Continental Oil Building?

"A. They never brought a suit against me or a judgment or never asked me for a dime. They wrote me complimenting me upon the manner in which I had handled the job.

"Q. What was the name of the surety company?

"A. The American Surety Company of New York."

There was then marked for identification as Exhibit 310 a certified copy of witness' voluntary petition in bankruptcy. On objection the respondents withdrew the offer after the witness' attention was called to it and he then answered the questions as follows:

"Q. Mr. Tamblyn, I show you a document here marked for identification as Exhibit No. 310 and ask you if you have not listed there a judgment obtained against you by the American Surety Company in connection with the Continental Oil Building.

"A. Yes, it's coming back to me now." (p. 15734).

GEORGE M. TAMBLYN called as a witness by and on behalf of the City and County of Denver, being first duly sworn, was examined and testified as follows:

Direct Examination.

By Mr. Gibson:

Q. State your name.

A. George M. Tamblyn.

Q. Have you had occasion, Mr. Tamblyn, to examine respondent's Exhibits Nos. 68 and 70 in this case?

A. Yes, sir.

Q. Have you been assigned by the City and County of Denver to go over the items shown on those exhibits?

A. I have.

Q. And you have made an estimate?

A. Yes, sir.

Q. What is your profession or trade?

A. Building contractor, appraiser and estimater.

Q. Have you prepared a statement showing your qualifications and experience?

A. I have.

Q. In connection with that statement, have you also included a written statement of the items shown in your exhibit?

A. I have.

Mr. Gibson: I would like to have this marked for identification as an exhibit.

The Trial Examiner: It will be marked for identification as Exhibit 232.

(Exhibit 232, Witness Tamblyn, marked for identification.)

By Mr. Gibson:

Q. Will you just read your statement, Mr. Tamblyn, into the record?

A. "Statement of Qualifications and Experience of Gordon M. Tamblyn.

"1. Name and Address: Gordon M. Tamblyn, 1108 South Steele Street, Denver, Colorado.

"2. Age and Place of Birth: Born in England, April 24, 1885; age 55 years.

"3. Education: 1888-1892: I received instruction at a private day school.

"1892-1900: I attended public school and passed the eighth standard (equal to twelfth grade in the United States).

"1900-1902: I was employed by a brick and stone con-

tractor assisting in various ways, and attended evening school.

"1902-1905: I was indentured as carpenter's apprentice for a four-year apprenticeship to David Tamblyn, contractor a cousin of my then deceased father. After serving three years my employer died and the business was dissolved. During this period I also attended evening classes in architectural drafting and other subjects which would advance me in the building and construction trade. During the period of 1900-1905 I was assisted in my studies by an elder brother who chose teaching as a profession.

"4. Employment: 1905-1906: I was employed as a carpenter and cabinet maker, at full journeyman's pay.

"1906-July 1907: I was a carpenter foreman in England; I came to the United States and located in Denver, Colorado, August 15, 1907, and have maintained residence here since that time.

"September 1907-1910: I was employed as cabinet maker and layout man in woodworking mill, and as detailed draftsman and estimator. During approximately two years of this period I was employed by McPhee and McGinnity Lumber Company, Denver's largest lumber dealers at that time.

"1910-1914: I was employed as chief estimator for Mr. Frank Kirchof now President of The American National Bank of Denver, who at that time carried on an extensive general contracting business. My duties consisted of making estimates on specially designed millwork and estimates on all types of buildings for bidding in competition. From the day I commenced work with this firm, I had full charge of all estimating, and contracts for complete buildings were secured and executed on the basis of my calculations.

"1914-1937: In 1914 I left this firm to enter business for myself, and continued in private business as a general contractor until 1937. My first contract was for the construction of a brick residence in the Country Club District in Denver. For some years I designed and built residences and other types of buildings of moderate size and importance, gradually increasing my business and executing con-

tracts for the erection of larger buildings. Some of the contracts I have executed and for which I furnished surety bond include the following:

	Approximate Cost
Boys' and Girls' Dormitory, Julesburg, Colorado	$80,000.00
Hearst Mercantile Building, Lead, South Dakota	$150,000.00
Colburn Hotel (10 stories) Denver, Colorado	$325,000.00
Cosmopolitan Hotel (12 stories) Denver, Colorado	$1,200,000.00
Norman Apartments (6 stories) Denver, Colorado	$370,000.00
Continental Oil Office Building (10 stories) Denver, Colorado	$1,000,000.00

"I have estimated the cost (and in some cases supervised the construction) of the following buildings for other contractors and architects:

Buckingham and Belmont Apartments
Country Club Apartments
Oxford Hotel
Albany Hotel
Erhard Hotel
Argonaut Hotel
Security Building
Midland Savings Building
Federal Office Building
Denver Post Office
State Office Building
Blayney Murphy Packing House
Ford Motor Company Factory
Children's Hospital
Presbyterian Hospital
St. Joseph's Hospital
Numerous Denver Public Schools
Fairmont Mausoleum
Great Western Sugar Company Warehouse.
All in Denver, Colorado;

Union Pacific Depot, Omaha, Nebraska;
Court House, Prescott, Arizona;
Oklahoma State Capitol (Plain and ornamental plastering);
Storage Warehouse and Apartment House, Billings, Montana;
Eleven Mile Dam (made models and estimated cost);
Other buildings of all types, too numerous to mention.

"I have also interested myself in improving and in teaching methods of estimating costs. In 1916 I opened an evening school to give instruction in plan reading and estimating. During the fall and winter of that year approximately eighty men, mostly building tradesmen, lumber men, contractors' sons, and others interested in the subjects, attended these classes.

"About the time the armistice was signed in the first World War, the United States Bureau of Vocational Training investigated the instruction I was giving in evening classes and, at its request I opened a day school and entered into contracts to instruct disabled soldiers in Estimating and Plan Reading. These men were sent to my school, 'The Western School of Estimating and Plan Reading,' from all parts of the United States and their tuition paid by the Government. These contracts were renewed for several years, and until such time as the number eligible for this training had dwindled to a point where it was uneconomical to continue the instruction.

"In 1922 I published a book entitled 'The Building Labor Calculator,' a system for estimating building costs. I have revised this book from time to time. Several thousand contractors, architects, engineers and others have purchased this book; and it has been sold in all parts of the United States, Canada, South America and in several foreign countries. Over forty universities and colleges have subscribed for this hand book.

"In 1923 I wrote a series of articles for 'The Contractor,' a trade journal published by the 'Association of Canadian Building and Construction Industries.' As a result of these articles and the widespread sale of my book 'The Building Labor Calculator' among Canadian contractors, I was in-

vited to address the Sixth Annual Convention of this Association, and spoke on two programs during the sessions January 23, 24, and 25, 1924, at Windsor, Ontario.

"At the conclusion of this convention a committee previously appointed to investigate methods of estimating building costs reported that the 'Tamblyn System' was the best they had discovered.

"In 1916 the Mountain States Telephone and Telegraph Company was compiling data for a rate hearing and had appointed a committee of four contractors to make a detailed appraisal of all its buildings in Colorado. This committee engaged my services and I made a detailed list of materials and labor for these structures. The pricing was done by the committee.

"Some few years ago I was engaged to make an appraisal of the Daniels and Fisher Stores Building, in Denver, in a case involving inheritance tax. This building was constructed in sections at different periods. The costs were estimated as of the years the various sections were constructed.

"Present Employment:

"In February 1937 I was employed as appraiser in the office of the Assessor of the City and County of Denver. At the present time I hold the position of Chief Appraiser. My duties require me to appraise real estate improvements for tax purposes. The work in this department involves the appraisal of almost every type of building construction. When disputes arise in valuations involving recently built structures, it often becomes necessary for me to check actual construction costs. It is obvious, therefore, that the work in which I am now employed affords me an unusual opportunity to keep posted on current construction costs over a wide field. I have recently prepared a manual of building costs for the use of my department.

"To summarize: My thirty-eight years of experience covers work as apprentice, journeyman, foreman, superintendent, contractor, estimator, appraiser, and instructor in connection with almost all types of building construction.

"Written Statement of Gordon M. Tamblyn.

"On November 25, 1940, I was assigned by the City and County of Denver the task of checking the valuations placed on various structures of Canadian River Gas Company and Colorado Interstate Gas Company by the engineering firm of Ford, Bacon and Davis, Inc., as presented by Mr. George I. Rhodes, in exhibits 68 and 70 in this case. Since that date I have visited the major stations of these companies and made careful inspections of the buildings and structures found at the following locations:

"Regulator Station at Sullivan, Colorado;

"Metering Station at Denver, Colorado;

"Pumping Station at Clayton, New Mexico;

"Pumping Station at Dalhart, Texas; and

"Pumping Station and Gasoline Plant at Bivins, Texas. It was determined from these inspections that buildings used for the same function were generally of similar construction and type at each location. Therefore, an analysis of the cost of a structure of a certain type, if properly used, will serve as a yardstick for determining the cost of other similar structures at that and other locations. I have prepared cost estimates on selected structures erected at the following locations:

Sullivan, Colorado; Denver, Colorado; Devine, Colorado; and Bivins, Texas.

"In my investigation and compilation of costs I have had access to and have made use of the following information:

"(a) Rhodes' material and labor rates.

"(b) Rhodes' unit costs, including materials and labor.

"(c) Rhodes' reproduction costs shown in Exhibits 68 and 70.

"(d) Inspection of structures as erected on the sites.

"(e) Plans of certain structures.

For the purpose of comparison I have accepted Mr. Rhodes' material costs and labor scales as being correct;

however, my application of these costs and rates to the inventoried quantities in the structures under consideration, varies widely from those of Mr. Rhodes.

"In order to simplify comparison with Mr. Rhodes' costs, I have followed the Rhodes' theory of reproduction and method of presentation. For example, I have assumed that the work is to be done by contractors who are to be allowed liberal funds to cover the cost of doing high-class work and a contingency fund to safeguard against any possibility of loss, plus a ten per cent profit. Wherever, due to lack of plans, or the use of plans which were incomplete, or whenever there was insufficient data for any other reason to determine quantities, I have accepted the Rhodes' inventory. In many instances I have omitted from analysis entire structures because of lack of information on which to base an accurate estimate.

"The estimates of costs and comparisons referred to in the foregoing statement are hereto attached and designated as follows:

"Bivins Station—Texas.

"Devine Pumping Stations—Colorado.

"Denver Metering Station—Colorado.

"Sullivan Regulator Station—Colorado.

GORDON M. TAMBLYN,
Chief Appraiser, Assessors's Office, City and County of Denver, Colorado."

Q. Mr. Tamblyn, I notice in the statement on Page 7 of this exhibit you state:

"For the purpose of comparison I have accepted Mr. Rhodes' material costs and labor scales as being correct; however, my application of these costs and rates to the inventoried quantities in the structures under consideration, varies widely from those of Mr. Rhodes.

"In order to simplify comparison with Mr. Rhodes' costs, I have followed the Rhodes' theory of reproduction and method of presentation."

Mr. Tamblyn, that being the case, to what do you attribute the differences shown in your estimates and those of Mr. Rhodes?

A. I stated in this exhibit I have accepted the market price of Mr. Rhodes for materials and the labor scale, or the rate per hour for labor employed in this work. The difference results from the number of hours applied to the various parts of the work and the amount of materials necessary to do that work by Mr. Rhodes, making a difference in the inventory quantities that I get and those of Mr. Rhodes multiplied by the same scale of wage and the rate of materials, or the cost of materials, results in the differences appearing in the exhibit attached.

Q. When you speak of the number of hours, what kind of hours were you—

A. That is one difference in instances where the Rhodes' breakdown on their unit costs show only hand labor. I have used either mechanical or team power.

Q. What about the materials?

A. The materials—speaking from memory, not referring to my itemized breakdown—as a comparison occurs in the amount of lumber required to build forms for the class of walls and foundations found in these structures. I think I can quote from memory that in instances where Mr. Rhodes shows three board feet per square foot, I consider two board feet ample for the work. In other instances where three and a quarter feet per square foot of forms are used, I vary again and use about two-thirds of that material and have always done so in my practice.

There is another item in form work where I think Mr. Rhodes uses 15 pounds of wire per square foot of wall, I consider 3-½ pounds ample of wire and nails, I should say —ample to do the work. That is merely an illustration of differences which occur. That is in temporary work which is necessary to pour the concrete walls.

Another instance I remember without referring to my detailed estimates drawn across Mr. Rhodes' breakdown, in the Bivins station I find 13-inch walls, a wainscot of 13-inch walls from the concrete foundation to the bottom of the window sills in which Mr. Rhodes has applied his unit cost of press brick, or face brick to the entire wall,

whereas only two-thirds of the wall is a press brick and the other two-thirds is of common brick. Some difference occurs there.

In one item the putting on of 26-gauge corrugated iron—and I am quoting from memory, and I believe it is correct—Mr. Rhodes uses two hours—just a minute. Make this clear. To lay 100 square feet or apply 100 square feet of corrugated iron, 26 gauge, Mr. Rhodes, uses two mechanics—skilled mechanics—one hour each, two semi-skilled, one hour each, and two helpers one hour each. I differ very widely from any such use of labor doing this kind of work.

Q. These differences seem to prevail to the whole number of items shown on Exhibits 68 and 70, do they not?

A. That is right. I should like to make one more reference and then if I am going to be examined on the details, I would like to go back to my files and get the detailed figures. I didn't know I was to be called this morning. I thought it would be tomorrow or the next day and I wasn't prepared; however, I want to quote one other difference.

In the excavations for the compressor buildings that are large excavations varying from approximately 80 feet to 137-some odd feet long and possibly 8 to 9 feet in depth, large areas in the breakdown of the cost applied to these structures where only common labor is used with a hand shovel and the unit cost is excessive, naturally. No such methods have been used in my time that I know of to do such work.

Q. Mr. Tamblyn, on December 19, 1940, Mr. Rhodes made a statement on the witness-stand in this case that his breakdown on this pipe line was not as accurate as his breakdown on the buildings. Assuming that statement to be correct, what in your opinion would be the minimum excess resulting from his breakdown on the pipeline?

A. Well, if the pipe line is figured less accurately than this, naturally the difference would be greater than the differences shown in my exhibit in the same direction.

(Vol. LXXVII, pp. 11260-11273.)

* * * * *

Table I

Canadian River Gas Company

Exhibit No. 252

IRVING STATION - TEXAS

Item	Data from Exhibit 68				Cost Estimated by Tamblyn	Difference Between Columns 4 and 5	Percent Overvaluation in Exhibit 68
	Page (1)	Item (2)	Account (3)	Cost (4)	(5)	(6)	(7)
Boiler House	40	1	331-3	$11,089	$9,324	$1,765	18.9
Pump House	40	2	331-3	6,464	5,240	1,224	23.4
Recompressor House	40	3	331-3	16,449	14,321	2,128	14.9
Rag Washing House	40	4	331-3	2,557	2,301	256	11.1
Regulator House	41	1	331-3	953	695	258	37.1
Valve House	41	2	331-3	623	448	175	39.1
Gasoline Treating House	41	3	331-3	1,731	1,328	403	30.3
Storage Tank House	42	1	331-3	1,019	666	353	53.0
Stabiliser Pump House	42	2	331-3	2,293	1,909	384	20.1
Laboratory Building	42	3	331-3	3,723	2,841	882	30.1
Compressor House	85	1	352-1	57,683	44,586	13,097	29.4
Auxiliary Building	85	2	352-1	11,422	9,170	2,252	24.6
Water Treating House	85	3	352-1	1,645	985	720	77.8
Regulator House	86	1	352-1	1,156	878	278	31.7
Well House No. 1	86	2	352-1	207	138	69	50.0
Well House No. 2	86	3	352-1	987	878	109	12.4
Well House No. 3	86	4	352-1	987	878	109	12.4
Well House No. 4	86	5	352-1	1,851	1,434	417	29.1
Office	147	1	371	2,951	1,737	1,214	69.9
Warehouse and Platform No. 1	147	2	371	9,052	6,879	2,173	31.6
Storehouse No. 2	147	3	371	1,683	927	756	81.5
Garage and Welding Shop No. 4	147	4	371	14,082	12,425	1,657	13.3
Machine Shop	147	5	371	8,001	6,662	1,339	20.1
Dwelling No. 1	148	1	371	5,230	4,272	958	22.4
Dwelling No. 2	148	2	371	4,691	3,804	887	23.3
Dwelling No. 3	148	3	371	4,691	3,804	887	23.3
Dwelling No. 4	148	4	371	4,691	3,804	887	23.3
Fire House	148	5	371	816	441	375	85.0
Dwelling No. 5	149	1	371	4,691	3,804	887	23.3
Dwelling No. 6	149	2	371	4,691	3,804	887	23.3
Dwelling No. 7	149	3	371	5,230	4,272	958	22.4
Dwelling No. 8	149	4	371	4,691	3,804	887	23.3
Dwelling No. 9	149	5	371	4,691	3,804	887	23.3
Dwelling No. 10	149	6	371	4,691	3,804	887	23.3
Dwelling No. 11	150	1	371	5,230	4,272	958	22.4
Dwelling No. 12	150	2	371	4,691	3,804	887	23.3
Dwelling No. 13	150	3	371	4,691	3,804	887	23.3
Dwelling No. 14	150	4	371	4,691	3,804	887	23.3
Dwelling No. 15	150	5	371	5,230	4,272	958	22.4
Hotel No. 16	151	1	371	17,129	15,735	1,394	8.8
Garage No. 17	151	2	371	5,249	3,019	2,230	73.9
Dwelling No. 18	151	3	371	2,846	2,493	353	14.1
Paint House No. 19	151	4	371	790	622	168	27.0
Dwelling No. 20	151	5	371	2,874	2,493	381	15.3
Dwelling No. 21	152	1	371	2,874	2,493	381	15.3
Dwelling No. 22	152	2	371	2,874	2,493	381	15.3
Dwelling No. 25	152	3	371	2,874	2,493	381	15.3
Dwelling No. 26	152	4	371	2,874	2,493	381	15.3
Garage No. 27	152	5	371	1,788	815	973	119.4
Dwelling No. 28	152	6	371	3,604	2,904	700	24.1
Dwelling No. 29	153	1	371	3,604	2,904	700	24.1
Recreation Building No. 30	153	2	371	3,833	2,703	1,130	41.8
Dwelling No. 31	153	3	371	3,845	2,904	941	32.4
Dwelling No. 32	153	4	371	3,604	2,904	700	24.1
Garage No. 33	153	5	371	4,176	1,867	2,309	123.7
Dwelling No. 34	153	6	371	3,792	3,202	590	18.4
Dwelling No. 35	154	1	371	3,792	3,202	590	18.4
Dwelling No. 36	154	2	371	3,792	3,202	590	18.4
Dwelling No. 37	154	3	371	3,792	3,202	590	18.4
Dwelling No. 38	154	4	371	3,792	3,202	590	18.4
Dwelling No. 39	154	5	371	3,792	3,202	590	18.4
Concrete Sidewalks	156	1	371	7,546	2,983	4,563	153.0
Concrete Curb	156	2	371	661	352	309	87.8
4 Main Units (Concrete) Mats	127	2 and 4	354-1	13,931	9,293	4,638	49.9
4 Main Units (Concrete)	127	1 and 3	354-1	13,788	9,566	4,162	43.5
TOTALS				$355,405	$278,806	$76,597	27.5

Table II

Colorado Interstate Gas Company

Exhibit No. 232

Item	Data from Exhibit 70 Page	Item	Account	Cost	Cost Estimated by Tomblyn	Difference Between Columns 4 and 5	Percent Overvaluation in Exhibit 70
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
DEVERS PUMPING STATION - COLORADO							
Compressor House	64	1	352-1	$35,092	$28,713	$6,379	22.2
Auxiliary Building	64	2	352-1	8,780	7,340	1,440	19.6
Set Well	64	3	352-1	1,545	747	798	106.8
Regulator House Substructure only	64	4	352-1	284	187	97	51.9
Water Softening Building Substructure only	65	1	352-1	399	211	188	89.1
Boarding House No. 1	65	2	352-1	6,901	5,555	1,346	24.2
Dwelling No. 2	65	3	352-1	4,211	3,318	893	26.9
Dwelling No. 3	65	4	352-1	4,885	3,611	1,274	35.3
Dwelling No. 4	65	5	352-1	4,211	3,318	893	26.9
Garage No. 5 (Foundation only)	66	1	352-1	1,057	388	669	172.4
Heater Pit	66	3	352-1	276	153	123	80.4
Garage No. 7	66	4	352-1	556	296	260	87.8
Dwelling No. 9	66	5	352-1	4,107	3,009	1,098	36.5
Warehouse and Platform No. 10	66	6	352-1	8,539	6,384	2,155	33.8
Dwelling No. 11	67	1	352-1	3,909	3,009	900	29.9
Dwelling No. 12	67	2	352-1	5,161	4,221	940	22.3
Garage No. 13 (Foundation only)	67	3	352-1	235	62	173	279.0
Chicken House	67	4	352-1	183	93	90	96.8
Chicken House	67	5	352-1	183	93	90	96.8
Chicken House	67	6	352-1	183	93	90	96.8
Chicken House	68	1	352-1	256	132	124	93.9
Chicken House	68	2	352-1	256	132	124	93.9
Concrete Curb	70	2	352-1	111	89	22	24.7
Concrete Curb	70	3	352-1	301	156	145	93.0
Concrete Sidewalk	70	4	352-1	2,161	982	1,179	120.1
Trench for Sewer Pipe	71	2	352-1	920	575	345	60.0
Manif Banks	138	7	352-3	207	86	121	140.7
Maintenance Garage	139	1	352-3	2,567	826	1,741	210.8
Generator House	139	2	352-3	491	233	258	110.7
2 Main Units	245	1	354-1	6,916	4,794	2,122	44.3
2 Main Units (Mats)	245	2	354-1	5,760	3,737	2,023	54.2
TOTALS				$110,643	$82,543	$28,100	34.0
DENVER METERING STATION - COLORADO							
Macadam Paving	83	1	352-2	$2,108	$762	$1,346	176.6
Concrete Curb	83	2	352-2	2,344	534	1,810	339.0
Concrete Sidewalk	83	3	352-2	409	164	245	149.4
Well Pit	83	9	352-2	290	118	172	145.8
Meter Building	85	5	352-2	3,535	2,180	1,355	62.2
Regulator House	85	6	352-2	2,815	1,708	1,107	64.8
Upstream Header House	86	1	352-2	1,308	941	367	39.0
Downstream Header House	86	2	352-2	1,223	846	377	44.6
Garage (2 car frame)	86	3	352-2	706	378	328	86.8
Storeroom and Shop	86	4	352-2	873	460	413	89.8
Dwelling (Frame)	87	1	352-2	5,299	3,821	1,478	38.7
TOTALS				$20,910	$11,912	$8,998	75.5
SULLIVAN REGULATOR STATION - COLORADO							
Regular Pit	115	1	352-2	$226	$94	$132	140.4
Heater Pit	115	2	352-2	197	98	99	101.0
Valve Pit	115	3	352-2	340	149	191	128.2
Cyclone Fence	115	4	352-2	571	21	345	1328.9
Note: This was found to be a 3 wire barbed wire fence							
TOTALS				$1,134	$367	$767	209.0

22. **Working Capital of Colorado Interstate.**

The witness Rhodes, who participated in the management of the respondent's business for some years after his firm (FB&D) had constructed the line, and whose firm has managed many other natural gas pipe lines, estimated in his Exhibit 70 (Vol. XII, p. 1710) the minimum working capital requirements of Colorado Interstate. He determined that $120,000 was the minimum requirement for this purpose at this time. The formula adopted by him was stated as follows:

> "Working capital for Colorado Interstate's property included in this exhibit has been determined in accordance with a commonly accepted formula as the sum of (a) the average book cost of materials and supplies on hand, (b) one-eighth of the annual cash expenses for operation and maintenance of the property and (c) a cash working fund equivalent to the minimum cash balances carried with local depositories. In the actual operation of Colorado Interstate directed from Colorado Springs only small working cash balances are maintained with local depositories. Cash not needed for current operations is transferred to the New York office in the form of a demand account subject to withdrawal by the Colorado Springs office when needed. The net current position shown by Colorado Interstate's field balance sheet, as reported from Colorado Springs, is thus indicative of the actual working capital required. The average net current position reflected in Colorado Springs balance sheets for the 3-year period 1936 to 1938, inclusive, was greater than the working capital indicated as needed by the formulae. The amount so determined, of $120,000, is a minimum requirement and less than the working capital actually required by Colorado Interstate." (p. 1738).

Applying this same formula and using "the five year moving average of supplies and expenses, cash in local banks and one-eighth of the annual operating costs exclusive of purchased gas" (Exhibit 170, p. 1), the witness Lusk extended the necessary working capital of Colorado Interstate for the Denver Line as it exists and for a resale line only, as follows:

Year	Denver Line All Gas	Denver Line Resale Gas Only
1940	$127,000	$129,000
1941	134,000	133,000
1942	142,000	140,000
1943	150,000	147,000
1944	151,000	148,000
1945	153,000	149,000
1946	154,000	150,000
1947	155,000	151,000

(Exhibits 170, Statement 2; 172, Statement 2; 285, Statement 4; and 286, Statement 4; Lusk, Vol. XLVIII, p. 6611.)

Cross-examination of the Company's Witness, RHODES.

Q. You don't remember specifically what you told him to do about any of the details, do you?

A. No, I don't recall anything except the broad instructions to determine the working capital on this formula which he well knows and which we have used repeatedly in the past.

Q. What is the average lag in days between the date of delivering gas to the customers and the date the customers are required to pay for such gas?

A. I don't know.

Q. Did you take that into consideration when you attempted to determine what amount of working capital this company would have to have on hand?

A. No.

Q. Doesn't that make some difference?

A. I took all of the factors into consideration when I found the net current assets of the company were in excess of the working capital which was determined by this formula, which as I say, gives the minimum working capital.

Q. Did you know that some of these customers' bills accrued in advance—I will withdraw that question.

Mr. Campbell: I would.

Mr. March: Strike that question, Mr. Reporter.

Q. You don't know anything about the accrual of the bills of these companies?

A. No, I am not interested in that. I don't think that you can make any practical determinations of the amount of working capital by any such estimate of time lag and so forth. The actual experience in the operations of properties shows that you require more capital than indicated by any such study.

Q. Oh, so you are—I thought you weren't relying upon the actual experience of the company.

A. As related to this working capital it is perfectly obvious that I am basing it upon what this company has found by experience as being required to operate this property.

Q. Not the experience which had been secured at the time of the beginning of the operation?

A. There is no direct relation between the working capital that would have been required in 1928 and that which is required now for the properties that now exist.

Q. Do you know when royalty payments are due and payable?

A. I don't know. I would have to look at the leases.

Q. Did you take that into consideration in making provisions for working capital here?

A. No, I merely took into consideration that they are paid and how much is paid.

Q. You don't know anything about that?

A. Well, I wouldn't put it quite that bad, but I don't know when they are due on the calendar.

(Vol. XIV, pp. 1962-1964.)

• • • • •

Q. Do you know, Mr. Rhodes, the amount of time which has elapsed between the accrual of tax expense on the books and when they are actually paid in cash?

A. What taxes are you referring to?

Q. Advalorem and income taxes.

A. What?

Q. Advalorem and income taxes.

A. The only separate item of taxes that appears here are the severance taxes and the like which are paid monthly.

(Vol. XIV, p. 1966.)

• • • • •

Redirect Examination.

By Mr. Campbell:

Q. Mr. Rhodes, did I understand you to say on cross-examination that your formula for obtaining working capital in reproduction costs new was that such working capital was equivalent to one-eighth of the ordinary average expense plus average cost of materials on hand plus average cash on hand, is that substantially correct?

A. No. It is the minimum cash balance required rather than average cash.

Q. Now, on cross examination there has been developed that your assistant, Mr. Lusk, in figuring up the expenses of Colorado Interstate Gas Company and Canadian River Gas Company for the last five years, I believe, has eliminated certain extraordinary expenses. Is that correct?

A. Yes, that is so.

Q. I believe on cross examination it was developed that there has been eliminated all of the expense of the Colorado Interstate Gas Company that it has been put to in this rate case, for example. Is that correct?

A. That is correct.

Q. That is also true with respect to the Canadian River Gas Company?

A. Yes.

Q. I believe it was also developed on such cross examination that Mr. Lusk, your assistant, eliminated all lease facility expense?

A. That is right.

Q. Now, under your formula, does not the elimination of such expenses directly reduce the working capital?

A. Well, this leased property expense was in no way related to the Denver line.

Q. I will put it another way:

If these items which have been eliminated were included, would not that increase the working capital requirement?

A. The working capital requirement calculated on this formula, if they were included, would give a higher figure, yes.

Q. Is it not so that the working capital goes up one dollar for every twelve dollars of expense that you have included in the formula?

A. No, every eight dollars.
Q. Every eight dollars?
A. Yes.
Q. I beg your pardon.

Then your working capital has in effect been reduced by reason of these eliminations which have been testified to?

A. Yes, and in effect it excludes those expenses not related to the Denver line.

Q. If, for example, the expenses of this rate case and these attorneys' fees about which so much objection was made here were included, it would be included in the working capital?

A. That is right. It would result in a higher figure

(Vol. XIV, pp. 1967-1969.)

The Commission offered evidence through its accountant, Kenneth L. Smith, in his Exhibit 145 (Vol. XXXVII, p. 5110), of his estimates as to the necessary working capital required for the line as operated for the sale of all gas as shown for the year 1939, in the sum of $109,065 (pp. 5112, 5113).

Docket G-127

Schedule 1
Sheet 1 of 3

COLORADO INTERSTATE GAS COMPANY
WORKING CAPITAL REQUIREMENTS
BASED ON OPERATIONS DURING THE YEAR 1939

Line No.	Particulars (1)	Note (2)	Total	Transmission: Other Transmission System (4)	Transmission: Compressing System	Distribution (5)
1	Materials and supplies (average monthly balance during the year 1939)		$ 57,000.00	$37,994.73	$17,342.10	$ 1,963.17
	Operating revenue deductions, as adjusted by Examiner of Accounts:					
2	Gas purchased (Note 1)					
	Operating expenses	$425,013.63				
3	Less gas used in operations (Note 1)	13,374.21				
4	Balance	$411,639.42				
5	12½% of above, representing 45 days' operations (Note 2)		51,454.93	21,910.84	21,202.64	8,342.05
	Depreciation (Note 3)					
	Taxes (Note 4)	$45.19				
6	Nonrecurring expenses					
7	12½% of above, representing 45 days' operations (Note 2)		5.65			5.65
	Other items (Notes 5 and 6)					
8	Total working capital requirements		$108,064.24	$59,905.57	$38,754.74	$10,305.87

Notes:

(1) No allowance is made for gas purchased because revenue from the sale of that gas is, on the average, received before the gas is paid for by Colorado Interstate Gas Company.

Payments for gas purchased are due Canadian River Gas Company from Colorado Interstate Gas Company monthly, on the twenty-fifth day of the month succeeding the month in which the gas was delivered to Colorado Interstate Gas Company. Accordingly, on the assumption that customers of Colorado Interstate take gas in equal daily quantities, thus making the equated date for the delivery of the month's supply of gas to them the fifteenth of each month, payments are due Canadian River Gas Company, on the average, forty days after that company makes delivery to Colorado Interstate

Revenue - See Schedule No. 2 for computation of lag in payment of bills by customers — 11.4a.s

after delivery of gas to them

Number of days, on the average, that cash is due from gas sales before payment is due for gas purchased — 51.8a.f

(2) An amount equal to 1/8 of the company's operating expenses for 1939, or forty-five days' expenses is, in the Examiner's opinion, a liberal allowance to cover operating expenses which must be paid in the interval between the time of initial rendition of service and the time when revenue is received. The amount of operating expenses, $425,013.63, is taken from Exhibit No. [illegible] of a report on this company entitled "Income Accounts and Supplemental Data"

(3) No allowance is made for depreciation since this expense does not necessitate the disbursement of cash or the use of working capital.

COLORADO INTERSTATE GAS COMPANY
WORKING CAPITAL REQUIREMENTS
BASED ON OPERATIONS DURING THE YEAR 1939

2

Notes (Cont'd):

(4) No allowance is made for taxes in working capital, as revenues are realized in cash considerably in advance of the payments of taxes, as shown in the following tabulation relating to 1939 taxes:

Date Paid		Amount
March	1939	$ 15.00
April	"	2,678.61
May	"	21.30
July	"	2,677.48
August	"	4,495.00
October	"	2,827.56
November	"	12,281.28
December	"	2.00
Subsequent year (1940)		589,949.54
Total taxes for 1939, as adjusted		$614,947.77

(5) No allowance is made herein for the average value of gas in the transmission lines, for the reason that the Respondent has capitalized in its plant account the amount of $7,212.75, representing the value placed upon 81,043.4 MCF used in testing, blowing and/or packing the lines, as follows:

Year	MCF	Rate per MCF	Amount Capitalized	Pressure Base
1928	66,043.4	$ .0865	$5,712.75	16.4 pounds per square inch, absolute
1929	15,000.0	.10	1,500.00	Not indicated
	81,043.4		$7,212.75	

According to information received from the Bureau of Engineering the average line pack during the year 1939 was 55,362 MCF, at a pressure base of 16.4 pounds per square inch absolute.

(6) No allowance is proposed for minimum bank balances for the following reasons:

(a) A substantial average balance is provided by reason of the lag in payment of gas purchased for resale and taxes after the average date of receipt of revenues.

(6) (b) An examination of the company's records indicates that the majority of its customers actually pay several days in advance of the due date, thus providing in fact an additional source of funds for bank balances.

(c) A small duplication in the proposed allowances for material and supplies stock and operating expenses exists, to the extent of 12½% of the charges to operating expenses from the material and supplies accounts.

Docket G-124

Schedule 2
Sheet 1 of 1

COLORADO INTERSTATE GAS COMPANY
CALCULATION OF WEIGHTED AVERAGE LAG, IN DAYS, BETWEEN THE DATE OF DELIVERY OF GAS TO CUSTOMERS AND THE DATE WHEN PAYMENT FOR THAT GAS IS DUE
BASED ON 1939 REVENUES

Line No.	Customer (1)	Last Day of Billing Period (2)	Date Due in Following Month (3)	Lag in Number of Days Between the Time of Delivery of Gas to Customers, as Equated, and Date when Payment for that Gas is Due (a) (4)	Revenue for 1939 (5)	Dollar Days (6)
1	American Crystal Sugar Company	30th	20th	35	$ 40,432.06	1,415,122
2	Arkansas Valley Natural Gas Company	30th	20th	35	20,380.64	713,322
3	Atchison, Topeka and Santa Fe Railway Company	30th	20th	35	56,891.16	1,991,190
4	Citizens Utilities Company	15th	20th	50	50,470.68	2,523,534
5	City of Colorado Springs	30th	15th	30	212,957.45	6,388,723
6	Colorado Fuel and Iron Corporation	30th	10th	25	986,636.44	24,665,911
7	Colorado Portland Cement Company	30th	20th	35	193,109.10	6,758,818
8	Colorado-Wyoming Gas Company	25th	20th	40	495,450.81	19,818,032
9	Natural Gas Pipe Line Company of America	30th	27th	42	1,376,259.49	57,802,898
10	Public Service Company of Colorado	25th	20th	40	2,124,745.69	84,989,828
11	Pueblo Gas and Fuel Company	25th	20th	40	157,572.31	6,302,892
12	U. S. Department of Interior - Bureau of Mines	30th	20th	35	440.40	15,414
13	Veterans Administration	25th	20th	40	48,876.94	1,955,065
14	Totals				$5,764,222.47	215,340,749
15	Weighted Average Lag, in Days			37.		

(a) This lag consists in the number of days between the last day of billing period (Column 2) and date due in following month (Column 3), plus fifteen days as determined on the basis of the assumption stated in Note 1 of Schedule 1.

EXHIBIT No. 115

1653

[Testimony of Witness, Kenneth L. Smith.]

Q. Mr. Smith, in connection with the preparation of that exhibit I will ask you whether you prepared a written statement which sets forth in a summarized form the principal points in that exhibit?

A. Yes, I have.

Q. Will you please read that statement into the record, Mr. Smith?

A. "This study was made for the purpose of determining working capital requirements of Colorado Interstate Gas Company and is based upon operating figures for the year 1939 because they are believed to be indicative of present conditions. It consists of two schedules.

"Schedule No. 1, which develops a working capital requirement of $109,064.98, allocable to the company's transmission and distribution operations, is with its notes self-explanatory.

"Schedule No. 2, which is a computation of the number of days lag between the time of delivery of gas to customers and the date when payment for that gas is due, helps support the conclusion stated in Schedule No. 1, that revenue from the sale of gas is received before that gas is paid for. It, too, is self-explanatory."

Q. Now, in connection with the preparation of this Exhibit No. 145, Mr. Smith, as I understand it, the basic figures utilized were taken by you from the company's books and records?

A. That is correct. I might add to that and say that the adjustments employed by Mr. Early in his Exhibit No. 140 were, of course, taken into consideration by me in arriving at these results in this exhibit.

Q. And the results arrived at by you in this exhibit reflect in your judgment the correct result—strike out "result"—the correct amount that should be set forth for working capital of Colorado Interstate Gas Company in connection with this investigation?

A. Yes, in my opinion it is a liberal allowance for working capital requirements based upon operations for the year 1939.

Q. I note in the title sheet of this exhibit that it bears the approval of Mr. Harold Tomlin, Examiner in charge of regional office, and W. E. Baker, Chief accountant.

Both of these men are occupying those positions on the staff of the Federal Power Commission?

A. Yes, that is right.

Mr. Lange: That is all.

Cross Examination.

By Mr. Brock:

Q. Mr. Smith, in your statement you refer in the second paragraph to the company's transmission and distribution operation—just a minute. I am confused here.

The copy of the written statement which you read has Canadian River Gas Company up at the top of it. Was that merely to identify the document?

A. Yes, "Canadian River Gas Company" is there and "et al" is also there if you will notice it.

Q. Oh, yes. So this is intended for the Colorado Interstate Gas Company?

A. Yes.

Q. Now, then, what do you mean by the term "Distribution Operation" in connection with the Colorado Interstate Gas Company?

A. Well, I adhere to the same principles that Mr. Early explained in connection with the expenses that he classified as distribution. They relate to the company's measuring system.

Mr. Lange: Right there I wish to ask you this: They are classified in conformity with the Uniform System of Accounts for natural gas companies?

The Witness: Yes.

By Mr. Brock:

Q. In his exhibit and testimony he applied that term in connection with the expenses for the metering stations and you have the same thing there?

A. Yes, the metering stations, and in some of those contributions that were made for property on customers' premises which discussed in detail with him. Inasmuch as I have used his expenses as a basis—any of the explanations he made with respect to distribution expenses follows through in my exhibit.

Q. When you refer to "customers' premises," you have in mind just what he explained in connection with his exhibit?

A. Yes, sir, those are identical matters.

Q. Is this $109,064.98 an amount you arrived at as proper working capital for the company?

A. Yes. I described it as a liberal allowance for working capital based on the 1939 operations.

Q. Do you think that is more than you would need if you were operating the company?

A. I believe that is all that anyone would need.

Q. How did you arrive at that amount?

A. Well, it is shown on Schedule 1, which is Page 1, that is the summary. You might follow in Column 2 there. I show the amount of $57,604.40 as being the amount which the company requires for its stock of material and supplies—

Q. May I interrupt you right there?

A. Yes, sir.

Q. You refer to the average monthly balance. What does that mean? Does that take the end of each month or the beginning of each month, or how did you figure that?

A. Well, the company strikes monthly balances at the end of each month and this figure represents a summation of all of the monthly balances at the end of each month in the year 1939 and then it is divided by 12, giving the average monthly balance.

Q. So aside from your average it is a matter of the company's own books?

A. This is based upon the company's book figures, as I recall, without any adjustments. I do not believe—I am sure Mr. Early did not make any adjustments, and in applying this figure I didn't make any adjustments, so it is based exactly upon the company's experience.

Q. This amount that you have classified under Columns 3, 4, and 5, is that correct as between other transmission systems, compressing stations, and distribution?

A. Yes, sir, that total is broken down and those three columns are to identify the components of the total with the function of the company with which those materials and supplies are identifyable.

Q. Are those three items which make up the total under column 2; $57,604.40 on the books of the company, too, or, did you make the allocation some other way?

A. I am not sure that I understand your question exactly. Of course the items are on the books of the company and they have been described on the books of the company, and information which was available enabled me to put them in those three columns.

Q. Well, I was just wondering whether you found information on the books as to the three exact amounts under Columns 3, 4 and 5, or whether you made some sort of an allocation of your own as between the three branches of the business?

A. Well, I took the stock account, that is, the underlying accounts for the $57,604.40, and I put them in the three pockets in accordance with according to what I could find out as to the amounts which were represented in the warehouse or stock accounts on the company's books.

If you mean whether or not they are labeled within the three pockets on the company's books, why, that is not exactly the way the figures appear there, but there was information on the company's books which enabled me to put the amount in these three pockets.

Q. In other words $17,552.10 shown under Column 4 was the proportion of the total amount of $57,604.40 which you considered to be the materials and supplies properly applicable to the compressing system?

A. Yes, sir.

Q. And, likewise, with those other two items under Columns 3 and 5?

A. Yes, sir.

Q. But those three figures under Columns 3, 4 and 5, as I understand it now, didn't appear on the books of the company and the headings which you have used here?

A. No. For instance, you wouldn't find an account, or a sub-account, for compressing system materials and supplies that had that amount of $17,552.10 in it. I had to group certain accounts to get that.

Q. What was the purpose of making this separation as between two branches of the business in your effort to work out working capital?

A. Well, I felt as though it gave anyone who might use this schedule a better idea of how this working capital actually applied to the functions of the company. The plant account is naturally broken down by functions and so it follows logically, it seems to me, that the working capital should also be broken down by functions.

Q. Is this $57,604.40 the same figure used by Mr. Rhodes, or do you recall his testimony on that?

A. I couldn't answer whether or not it is the exact figure, but I do recall, having reviewed Mr. Rhodes' exhibit and his testimony, that there isn't any substantial difference in the results so far as that figure is concerned.

Q. Now, the next item under Column 1, will you explain to us what is involved there?

A. Well, I was in the process of showing how I arrived at the total of $109,000 and explained the $57,604.40, and I find that the next item in Column 2 is on Line 5, the amount of $51,454.93 representing approximately 45 days operating expenses. That is the next item making up my total, and then there is only one other item, a very small one, in the amount of $5.65 which represents 12-½ per cent of the very small item of non-recurring expenses for the year 1939.

Q. Now, will you go back and explain the use or significance of the other figures appearing to the left of Column 2?

A. What line is that?

Q. Line 2.

A. All right, on Line 2 I show the operating expenses for the year 1939 were $425,018.63.

Q. Now, is that per books or does that involve some adjustment which you or someone else has made?

A. That involves an adjustment. My Note 2 is an explanation of that. I think the last sentence in Note 2 on that page answers your question. It says, "The amount of operating expenses, $425,018.63, is taken from Schedule B-1—" that should be Statement B-1— "— of a report on this company.

Q. Just a moment.

Mr. Lange: Will the Examiner instruct the reporter to make that correction?

The Trial Examiner: Yes, Mr. Reporter, will you make that correction, please? That is on Page 1 of Exhibit No. 145.

By Mr. Brock:

Q. All right, read on.

A. "— of a report on this company entitled 'Income Accounts and Supplemental Data'."

Q. What exhibit is that?

A. That is Exhibit No. 140 which was sponsored by Mr. Early.

Q. And you took his adjusted figure for the purposes of this exhibit of yours?

A. Yes, sir. I might say, referring back to Exhibit No. 140, on the front title page, that you will notice my signature appears under Mr. Early's on that title page, and that indicates that I was supervising Mr. Early's work at the time his Exhibit No. 140 was prepared and completed; and that I, of course, knew all of the adjustments that he made and that I approved of them, as well as the approval that was given by Mr. Tomlin and Mr. Baker.

Q. All right. From that figure showing the operating expenses as adjusted, you subtract $13,379.21 representing gas used in operations and you get $411,639.42. What do you do with that in working out the amount for working capital?

A. That amount of $411,639.42 is divided by 8, or it is multiplied by 12-½ per cent, whichever way you want to do it, to arrive at the figure in Column 2, Line 5, which is $51,454.93.

In other words, in Column 2, there is a sum of $51,454.93 that represents approximately 45 days operations rather than the full year.

Q. You took the eight months?

A. No, sir, 45 days. I took one-eighth, or approximately 45 days. I am saying in effect that what the company needs in its working capital requirements with respect to its operating expenses is enough money to provide for a 45-day operation which is a liberal allowance, before that company receives its revenue that it earns.

Q. That is, 12-½ per cent?

A. Yes, sir.

Q. Of the operating expenses?

A. 12-½ per cent, or one-eighth of the operating expenses for the entire year, or that means in effect approximately 45 days operation.

Q. What is the significance of the 45 days which you used? Why did you use 45 days rather than some other number of days?

A. Well, we can look at Note 2 again, the first sentence, and you will find it sums up the situation. I might read that. It states: "An amount equal to 12-½ per cent of the company's operating expenses for 1939, or 45 days expenses of operation, is, in the Examiner's opinion, a liberal allowance to cover operating expenses which must be paid in the interim between the time of initial rendition of service and the time when revenue is received."

Now, I think to clarify that note it might be well to go back to Note 1. The import of Note No. 1 is that—

Mr. Lange: It might be well, Mr. Smith, to explain the allowance, or, rather, the absence of any allowance in working capital for any gas purchase amounts—

The Witness: That is clarified in Note 1 and too Note 1 covers that point as well as showing why 45 days allowance for operating expenses is a liberal allowance.

Mr. Brock: Mr. Examiner, if that is a convenient place to take the afternoon recess, I will read this note.

The Trial Examiner: Very well, we will stand in recess for five minutes.

(Whereupon, a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Brock:

Q. Now, Mr. Smith, in your Note 1 on Page 1 of your exhibit you indulge in the assumption that customers of Colorado Interstate Gas Company take gas in equal daily quantities. What is the significance of that and what do you mean by that?

A. Well, that means as to any particular month's de-

livery the assumption is made that the average day for the month would be one-thirtieth of the total for the month. That's in effect what it means, I believe. That is, the average daily consumption by the customers would be equal to one-thirtieth of the total consumption for the month. In other words, it is an assumption that is necessary in order to arrive at an equated delivery for the month's supply of gas sold.

Now, that doesn't mean any particular month, that means an average month for the year.

Q. What difference does it make whether a particular customer takes all of its gas in the first half of the month or whether it is spread out throughout the month?

A. Well, I think maybe a better way to understand that is to turn over to Page 4 of the Exhibit.

Q. All right.

A. Because on that Page 4 which is designated Schedule 2, I have made a calculation of weighted average lag in days between the date of delivery of gas to customers and the date when payment for that gas is due, based on 1939 revenues.

Now, my columns in that schedule are headed up so as to show in Column No. 1 the customer, Column No. 2 the last day of the billing period and in Column 3 the date due in the following month. In other words, that is the date which the customer's bill is due and should be paid to Colorado Interstate, and then in Column 4 it is headed "Lag in number of days between the time of delivery of gas to customers, as equated, and date when payment for that gas is due." That column has a foot-note which is at the bottom of the page which reads as follows: "This lag consists in the number of days between the last day of billing period (Column 2) and date due in following month (Column 3), plus fifteen days as determined on the basis of the assumption stated in Note 1 of Schedule 1," and I might take one of those figures in Column 4, for instance, Line 1, and show just how that is arrived at.

From the last day of the billing period, which is the 30th of the month, Column 2, to date when the payment is due in the following month Column 3, which is the 20th of the following month, which, of course, is 20 days—

Q. Ten days?

A. Twenty days. And then we add to that, 15 days which is the difference between the last day of the billing period and the middle of the billing period—the middle of the month. Fifteen days added to the twenty days gives you 35 days, shown in Column 4. Now, it is necessary at that point to have some knowledge of the average equated date when the gas is actually delivered to the customers. In other words, going back to Column 2, here is the 30th day of the month and that is the last day of the billing period. The customer has been taking gas for thirty days. He didn't take all of that gas on the first day or the last day, but he took it in a series of days.

Now, there is some day in there that is the average date on which he took that gas. The most logical assumption I could make was that his average date of take was the middle of the month—the middle of the period—but to arrive at that result you have to assume that on the average for the period of the year, the customer would take his gas in equal daily amounts. Of course, it would average out into the total amount.

Q. This equated business that you refer to there under Column 4, that is the fifteen days in each case added?

A. Yes, it would be fifteen days from the last day of the billing period because every customer is billed once a month and it would, therefore, be fifteen days from the end of the billing period—fifteen days prior to the last day of the billing period.

Q. In other words, you have added fifteen days to the several dates set out under Column 3?

A. Well, I have added fifteen days to the difference between—I have added fifteen days to the number of days from the date in Column 2 to the date in Column 3.

Q. Oh, yes. That's what I intended to find out. That is true in each case here?

A. Yes, sir, that is correct.

Q. That is what you mean by equated, is adding fifteen days to the number of days between the end of the billing period and the date when the bill is due?

A. Yes. In other words, the equated date is the middle of the billing period.

Q. Is that your own formula, or—or did you get it from some other source?

A. Well, I believe that this method has been used by a good many regulatory bodies in this sort of study.

Q. Have you ever used it before?

A. I have never used this method before myself.

Q. Do you know of any cases? Could you cite us any cases where that formula has been adopted or approved by regulatory authority?

A. Not right at the moment, but I do know that I am familiar, in having studied this subject, that such a method or one that yields the same result has been used.

Q. Under Column 5 you set out the revenue, I assume it is, from the several customers of the Colorado Interstate Gas Company listed under Column 1?

A. Yes, that is the annual revenue for 1939. I think that that figure also will tie in with Mr. Early's exhibit.

Q. In other words, there is included in the figures under Column 5 some adjustments in connection with the revenue?

A. I don't believe Mr. Early had any adjustments. He applied some reclassification entries, but I don't believe he had any adjustments.

Q. And under Column 6, how do you arrive at the dollar days?

A. The dollar days in Column 6 is the result of multiplying Column 4 by Column 5; that is, with respect to each individual item, of course, in Lines 1 to 13, inclusive.

Q. How did you determine under Line 15 the weighted average lag? In other words, how did you arrive at the figure 37 under Column 4?

A. Well, it is arrived at—not by the use of the figures in Column 4, but by striking the average, using the figures, the totals in Columns 5 and 6 on Line 14. In other words, the average lag for all of the revenue is related to the total dollar day, an average of 37 days.

Q. In other words, you took the several days listed under Column 4, weighted it by the dollars shown in Column 5 and 6?

A. Yes, that is the purpose. Column 6 actually weights the revenue. The dollars of revenue and the days, involved in the lag, that waiting is automatic in the product arrived at in Column 6.

Q. Coming back to Page 1 for a moment, under Note 2 you say it is the Examiner's opinion that an amount equal to 12-1/2 per cent of the company's operating expenses for 1939 are 45 days' expenses of operation, is a liberal allowance.

A. Are you ready for me to answer?

Q. No, I was going to ask you what you based that on.

A. Well, if I had wanted to be unliberal I could have said 37 days and by using 45 which is 8 days more than the weighted average lag in revenues, giving the company the benefit, it seemed to me to be a reasonable and liberal margin.

Q. In other words, the allowance of the additional 8 days over and above the weighted average lag in days as shown under Column 4, Page 4, is the liberality to which you refer?

A. Yes, I believe that is correct. As I said, if I had not wanted to have been—if liberal I could have been I wanted to be very meticulous about it, I could say that the bare statistics here of 37 days ought to do it. Now, I have not only given you eight days margin but I have not taken into consideration that those bills were for expenses which are often times not paid on the date which they accrue. You might pay them within ten days to get the discount. On the other hand, something might be actually accrued on the 10th of the month and be billed at the end of the month and I have tried to consider all those possibilities and I don't see any possible way in which the company is getting the worst end of this computation. It seems to me that there is always a possibility of delay in payment rather than working to the reverse.

Q. If you had used 37 days instead of 45 days, you wouldn't have considered that there was any element of liberality in the calculation, would you?

A. No, I wouldn't have been liberal if I had said 37 instead of 45.

Q. So the basis for your statement of your own liberality is due to the fact that you used 45 days instead of 37 days?

A. Essentially I think that is true. As I said just a minute ago, even those expenses incurred in that 37-day period might be, a great many of them, not paid until after

the end of the period, but I have gone on the assumption that expenses had to be paid cash on the line, right now, and still allowed eight days over and above that; whereas, in actual practice we know that most bills are delayed a few days before they are actually paid.

Q. Your opinion merely assumes the propriety of the formula which you employ on Page 4?

A. Well, I don't think there is any assumption as to the propriety of that formula. I think that formula is very proper.

Q. Well, my question was, wasn't your opinion as expressed in Note 2 on Page 1 based upon the assumption of the propriety of the formula set forth on Page 4?

A. Well, I'll answer that yes if it doesn't imply that there is any impropriety in the formula on Page 4.

Q. In other words, then, in testing your opinion as stated in Note 2, Page 1, we turn over to Page 4 and find what it is based on?

A. My opinion that 45 days allowance for operating expenses is liberal that opinion is based upon the fact that it exceeds by eight days the 37-day lag shown on Page 4.

Q. And that is the only basis of your statement with respect to your opinion in that regard; that is, eight days or more than 37?

A. Well, I might add this, if it is not getting off the subject, that in having made some investigation as to what regulatory bodies have done, I believe that 45 days is used very frequently and it has been considered that 45 days is a proper allowance under circumstances where the facts don't yield a contradictory result. In other words, I might put it this way: In reviewing what regulatory bodies have done, I believe I have seen that 45 days have been allowed more than any other one figure.

Q. Now, this opinion of yours is not arrived at as the result of any actual experience on your part in acting as treasurer for a company of this kind and taking care of the operating expenses and taxes and other expenses as they come along from time to time?

A. No, sir, it is arrived at by the experience of Colorado Interstate Gas Company. If you had a different set of facts you could come to an entirely different result and the date on which customers' bills are due, for example, is

a determining factor and no two companies would necessarily be the same. You have to confine your study basicly to the company's practice and, of course, essentially that is what I have done.

Q. Did you consult any financial officer of the Colorado Interstate Gas Company as to his working capital requirements?

A. No, sir, I didn't do that, but I did have the benefit of checking this result against Mr. Rhodes' estimate as compared with my $109,000 and he arrived at $120,000 so we were $11,000 apart, or less than ten per cent.

Mr. Campbell: Mr. Examiner, may I ask Mr. Smith a question?

The Trial Examiner: Yes.

By Mr. Campbell:

Q. You just stated, Mr. Smith, that this figure of yours was the experience of Colorado Interstate Gas Company and yet I see that you disallowed all minimum bank balances. Now, didn't Colorado Interstate Gas Company during this time have in existence minimum bank balances?

A. I think your assumption is incorrect that I disallowed the minimum bank balances.

Q. Then I misunderstood your statement. You say on Page 2: "No allowance is proposed for minimum bank balances for the following reasons," and then you give three reasons.

A. Yes, sir. I point out the conditions and experience of this company which gives them minimum bank balances and I don't propose a minimum bank balance in addition to the $109,064.98 that I have allowed, but I do show that the company's experience and the company's operation does yield for it and actually gives them a substantial minimum bank balance.

Q. Well, did you make a study of their actual bank balances over the year to see what that might average?

A. I did not because I considered it immaterial and irrelevant to this study.

Q. Yes. Well, now, do you believe that in the actual management of the company it is possible for them to so operate it that they can draw down their bank balances

to say $109,000 and hit your theoretical minimum or maximum, whichever you want to call it?

A. Well, this statement doesn't imply that. With the conditions stated there are minimum bank balances that are provided by reason of the facts clearly set forth in my foot-note here. The minimum bank balances are actually provided over and above this $109,000, if you want to put it that way.

Q. I don't think you have answered my question, Mr. Smith. I will ask you this. Perhaps you didn't understand the purport of my question: Can you yourself, receiving your income and paying your household expenses, can you yourself so conduct your affairs so that you can draw your bank account down to zero each month and put everything else to work for you either in the form of savings account, or invested funds?

A. Will you read the question again?

(The question referred to was read by the reporter, as set forth above.)

The Witness: Well, I have never tried to do that.

By Mr. Campbell:

Q. Do you think that a company actually faced with the necessities of business can do the same thing?

A. Yes, if they have a bank balance provided as I have shown in my Foot-note 4; that is, provided they can pay their expenses on this—working on the basis of this working capital allowance that I have recommended, they are going to have money in the bank all the time.

Q. And never have more than $109,000?

A. No, my statement doesn't mean that. It means that they will have quite a substantial fund. Let's look at Foot-note 4 and analyze that a little bit and show you just what I mean.

Q. You haven't answered my question. I don't care to have a lecture, I just want to have you answer my question.

A. Maybe I had better have the question I haven't answered.

The Trial Examiner: Well, you go ahead, Mr. Smith. What foot-note did you have reference to?

The Witness: Well, I think Foot-note 4.

The Trial Examiner: Page 2?

The Witness: Page 2, will develop the most basic reason why an additional allowance for minimum bank balances over and above the $109,000 is not necessary and that is due to the lag in the payment of taxes. You will find that the company in the year 1939 charged to expense on its books a total of $614,947.77 for taxes. Those taxes were charged against its revenue and, of course, at the time when the customers paid their bills they paid revenue to cover all of the charges against that revenue plus a profit to the company. Included in the charges against that revenue were the taxes. Now, the taxes that were accrued during 1939 amounting to $614,947.77 were almost all of them paid in 1940, or the next to the last line of that tabulation shows that $589,949.54 were paid in 1940. Now, approximately $25,000 were paid in 1939 and even those that were paid in 1939 were paid in the latter part of the year in 1939. Now, that experience shows that the company had received that revenue starting, we will say, in the latter part of February, to cover these taxes, and yet wasn't called upon to pay any substantial amount of those taxes until very late in 1939 and most of it in 1940, and, of course, a great part of that which was paid in 1940 represents the Federal income taxes which were paid in four quarterly instalments in 1940—March 15th, June 15th, September 15th and December 15th; so if I were to compute the lag in the payment of taxes and throw that in as a credit, why, it would reduce that $109,000 very materially and then of course, I would be called upon to put some sort of a judgment figure in for minimum bank balances but there again I have given the company the benefit of the doubt and feel that I have been very liberal in saying in effect that I won't throw in this credit for the deferment of tax payment, but, rather, will substitute that and let you get out of it whatever you may for minimum bank balances, and it should yield substantial minimum bank balances. It might even yield a figure as great as $109,000 in addition to the $109,000 which has been recommended for allowance. That's what I mean by saying that my method does yield a substantial allowance for minimum bank balances.

By Mr. Brock:

Q. Well, now, Mr. Smith, referring again to your Note 4 on Page 2 and taking the year 1939 as you have set up the taxes and compared them with the small amounts from March 1939 up until the end of the year, then showing a very large take in 1940, that doesn't present a very good picture on the basis of the actual performance of the company, does it? In other words, let me ask you another question:

Taking it year by year, the real situation is about as follows: A fourth of the income taxes are paid March 15th, a fourth of the income tax is paid June 15th and a fourth of it is paid September 15th, and a fourth is paid December 15th and half of the advalorem taxes paid by the end of February and the other half paid by the end of July. Now, that is what happens year in and year out and doesn't that present a very different picture from the figures which you have set up here in your Note 4? They are paying taxes right along. If you take the full year and then figure the actual dates when these several amounts of taxes are paid, isn't that so?

A. No, sir, that is not correct, because the first year they operated they didn't pay those taxes. They start paying them the second year and every year after that there is a lag of a whole year.

Q. But during the year—during each year these payments that I have mentioned have to be paid, do they not, for some period of time?

A. After the first year of operation you are always paying a year's taxes within a year but you are paying the preceding year's taxes essentially.

Q. But they are being paid every year except the first year, as you say?

A. That's right.

Q. Regardless of the fact that none are paid the first year, the cash has to be available each subsequent year on the several dates when the instalments come due, isn't that right? The cash has to be there?

A. That is correct and the cash that I have applied to that payment of taxes is related to revenues which are collected a year early.

Q. Does it make any difference as to the amount of cash which the company has to have available for the year 1939 to pay the several instalments of taxes which I have mentioned that it didn't pay any taxes in 1928?

A. I think it does.

Q. You think it does?

A. Yes, sir, because the company has always had the benefit of that year of lag and they still have it and they will always have it as long as there is a year's lag.

Q. You are considering this matter of benefit, not the matter of cash on the barrelhead when it is needed?

A. Well, you have got to consider my statement as a whole. It is predicated on a relationship of expenses to the collection of revenues and if you overlook that point and try to make some other point without coordinating it with that, why, then you are not considering all of the facts that I have presented here.

Q. Let me ask you another question: Does it make any difference when you are considering the amount of cash which the company must have on hand to meet these several tax payments for the year 1939, whether those taxes are being paid on the basis of something which has accrued that year rather than on the basis of something which has accrued in some prior year?

A. Yes, sir, from the viewpoint that I approach this it makes all the difference in the world. Now, if those taxes for 1939 had to be paid in 1939 why, I would have to have made a different computation.

(Vol. XXXVII, pp. 5110-5136.)

[Testimony of WILLIAM LUSK.]

Q. Mr. Lusk, this exhibit represents an estimate, doesn't it? The final figure of $190,000 is an estimate that doesn't appear on the company's books?

A. No, sir, it does not. That is a judgment figure taking the $200,674 for the three-year period and $195,000 for the five-year period, and it is rounded down to $190,000.

(Vol. LXV, p. 9269.)

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23. **Annual Operating Expenses and Taxes, Exclusive of Cost of Gas, Income and Capital Stock Taxes, of Colorado Interstate for the Denver Line, 1928 to 1939, Inclusive, and as Estimated, 1940 to 1947, Inclusive.**

Respondent's witness Lusk in his Exhibit 76 (Vol. XVII, p. 2402) shows the adjusted operating and maintenance expenses and operating taxes of this company for each of the years 1928 to 1939 inclusive. He does not include as expense items those items originally charged as expense but which he has heretofore in his Exhibit 67, abstracted hereinabove, transferred to the capital account. Evidence as to cost of gas, depreciation, amortization, income taxes and capital stock taxes is abstracted hereinafter under titles referring to those subjects.

The respondent's witness Rhodes, who designed and participated for a time in the operation of the line, estimated the annual operating expenses and taxes for each of the years 1940 to 1947 inclusive in his Exhibit 135 (Vol. XXXI, p. 4307). He likewise excluded, at this point, cost of gas, depreciation, amortization, income and capital stock taxes; and the evidence as to the future requirements on account of these matters is hereafter abstracted under titles referring to those subjects.

The expenses on account of operation, maintenance and operating taxes, past and future, developed in these exhibits are best summarized on the attached statement taken from Exhibit 135 entitled "Operating Expenses and Taxes of Colorado Interstate Gas Company, 1928 to 1947, Inclusive:"

"Operating Expenses and Taxes of Colorado Interstate Gas Company, 1928 to 1947, Inclusive."

	Calendar Year	Compressor Stations: 1939 Capacity	Compressor Stations: Added Capacity	Transmission Lines	Meters and Metering	Telephone System	General Expenses Etcetera	Operating Taxes	Rate Case Expense	Unallocated Profit and Loss Items	Total Annual Expenses
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ex. 76	1928	.....	.....	$ 59,042	$ 10,046	$ 3,257	$ 60,240	$ 15,704	.....	$ 45	$148,334
Ex. 76	1929	$ 1,298	.....	91,240	31,292	10,835	89,382	76,228	.....	—6,827	293,448
Ex. 76	1930	39,073	.....	76,603	40,133	9,727	101,482	163,883	.....	—5,632	425,269
Ex. 76	1931	90,827	.....	71,172	38,124	11,204	113,898	147,232	.....	28	472,485
Ex. 76	1932	80,733	.....	79,199	39,280	9,787	122,315	153,934	.....	1,284	486,532
Ex. 76	1933	74,566	.....	79,566	41,040	10,492	96,634	154,697	.....	—106	456,889
Ex. 76	1934	77,171	.....	97,286	40,829	8,954	86,584	144,282	.....	329	455,435
Ex. 76	1935	87,957	.....	82,728	42,553	12,079	67,172	150,469	.....	64	443,022
Ex. 76	1936	113,812	.....	87,884	49,036	10,536	76,619	155,864	.....	1,932	495,683
Ex. 76	1937	126,172	.....	86,080	47,814	18,467	68,739	185,847	.....	.....	533,119
Ex. 76	1938	121,249	.....	100,057	50,734	11,487	66,687	182,731	.....	.....	532,945
Ex. 76	1939	115,646	.....	109,138	49,236	10,225	88,623	192,101	43,000	.....	607,969
Ex. 135	1940	129,200	.....	100,600	51,600	12,500	92,900	191,300	43,000	.....	621,100
Ex. 135	1941	135,100	7,200	103,100	53,200	12,700	94,300	194,900	43,000	.....	643,500
Ex. 135	1942	137,800	7,200	105,600	54,800	12,900	95,800	198,500	43,000	.....	655,600
Ex. 135	1943	140,100	25,800	108,100	56,400	13,100	97,300	205,100	43,000	.....	688,900
Ex. 135	1944	142,900	25,800	110,600	58,000	13,300	98,700	208,700	.....	.....	658,000
Ex. 135	1945	145,800	25,800	113,000	59,600	13,500	100,200	212,400	.....	.....	670,300
Ex. 135	1946	147,700	25,800	115,500	61,200	13,700	101,700	217,400	.....	.....	683,000
Ex. 135	1947	149,600	25,800	118,000	62,800	13,900	103,100	221,100	.....	.....	694,300

Rhodes took past expenses, as shown by Exhibit 76, grouped them and analyzed them for the purpose of extending them through 1947, and the extensions he made in Exhibit 135 reflected the trends in costs actually experienced by the company (Vol. XXXI, pp. 4307, 4308). The added costs involved in the added peak load compressor station facilities required after 1939 were estimated with due regard to the character of the operation. The compressor station maintenance expense and other expenses charged to compressor stations were separately studied. The operating expense and maintenance expense of compressor stations increases rapidly with any increase in volume of gas handled. The normal rate of such increase as experienced by the company in the past was determined and then projected into the future for the estimated future volumes. Since operations from 1932 to 1935 were sub normal on account of the slow development of the load, this fact was taken into account. In 1931, however, stations had been fully manned in anticipation of heavy growth, which did not materialize. Accordingly the trend in cost from 1931 to the average experienced in 1937 to 1939 inclusive was extended into the future as their normal operating cost (p. 4308). Additional facilities acquired subsequent to 1939 are peak load or booster facilities normally operated only during the winter and for which only skeleton crews were required. The estimated annual cost of these stations at a mere fraction of the average cost per horse-power of the existing stations, give due regard to such method of operation.

The normal trends in other expenses were determined from their average costs in 1935 to 1939 inclusive, as compared with their average costs in 1930 to 1934 inclusive. These trends show a relatively nominal increase in cost over the period which was extended into the future as the normal for those years. Prescribed future increases in social security taxes were separately allowed for. In 1939 the company instituted the plan of employees' welfare, involving the payment of premiums on retirement annuity policies. These were separately allowed for in the projected future expenses. Regulatory Commission expenses have been eliminated and the estimated cost of the pres-

ent rate case in the amount of $215,000 has been spread uniformly over the five years beginning with 1939.

The statement attached shows the annual expenses as actually incurred through 1939 and as projected through 1947. They are grouped in these several classes of expenses which were separately studied. The added expense of additional compressor station facilities are separately shown (p. 4309).

In further explanation of his method of estimating future expenses, Rhodes stated that the general method was this: Let us suppose that there is some item of expense that ran for the first five years of this decade at an average of $10,000 a year and in the last five years of this decade at $12,000 a year. This means that in the five years; that is, from the middle of the first five-year period to the middle of the second five-year period, there has been a $2,000 increase, or a $400 per annum increase. In trending into the future, he would take as normal $400 per year, taking the $12,000 as of the middle of the last five-year period. That is the general method followed except as to compressor station expense, which is a little more complicated (pp. 4310, 4311).

As to compressor stations, Column 1 on the statement shows the operating and maintenance costs as they existed in 1939. The cost of operating these stations are conveniently divided into two classes: first, the maintenance of the station proper, which varies with the amount of operation, and the remainder of the costs, which are not much affected by the operation of the station. As to the first, he made a study as to the relation between the annual expenditures for maintenance and the relation for the average volume of gas handled, with three systems running, and found that up to about an average load of 25% capacity there was practically no maintenance of the engines, but that beginning with loads larger than that, maintenance increased very rapidly. He projected that maintenance ahead to higher loads, such as would be had in the future, and assigned to each future year a normal maintenance corresponding to its load ratio, the ratio of its load to the capacity of the system with these stations

running. In handling other station expenses from 1932 to 1935, the stations were running only with skeleton crews, at least a part of them, so he made his trend there from 1931 to the past three years (p. 4312), both of which periods the stations were fully manned for regular operation, and he projected that trend at so many dollars per year into the future.

In addition to the base load equipment, there is the equipment already being installed in Canyon and Devine and the booster station to be constructed near Colorado Springs. The operation and maintenance cost of these stations have been priced at something less than half the average cost of running the stations in regular operation, because just one man at a time throughout the greater part of the year would be required (p. 4313).

In column 1 the increase in gas handled accounts for most of the difference between $115,000 in 1939 to roughly $149,000 in 1947. It is true that more maintenance is required as the compressors get older, but he did not allow for that condition. In general, each group of expenses was plotted in a rough manner to indicate the trend (p. 4314).

In 1941 and 1942 there will be the 1200-horse-power extension to the Devine station and the 600 horse-power unit in Canyon station, for which the operating and maintenance cost is estimated at $7,200 a year, or $4 a horse-power.

Beginning in 1943 there is a 600 horse-power addition in the Canyon station, and an 1800 horse-power booster station near Colorado Springs, which add $16,800, making a total of $25,800 for the additional 4200 horse-power, which is about $6 per horse-power per year.

The figures in column 1 running around $140,000 to $150,000 are for a total of 8,000 horse-power, approaching $20 per horse-power a year (p. 4315).

There is a difference in the cost where an additional unit is added, as distinguished from an entire new station.

In the existing stations there is already a full complement of men, and additional men will be required for only a part of the year to take care of the compressors that

are operated only during the winter; but when a new station is built there is nothing to start with, and a skeleton crew has to be provided, for which he made an allowance of $9,000 a year. It takes five men on the payroll to maintain one man continuously on duty, and their wages with incidental expenses would aggregate just about $9,000.

In the transmission lines, the trend was found by taking the years 1935 to 1939 and determining the average cost, which was approximately $93,000 a year, as the late measure of costs, and the average from 1930 to 1934 as the early measure of cost, which was about $81,000 a year. The normal cost for future years, taken as an increase above the 1937 cost at an average trend, showed that the average increase per year was approximately $2480. He started from the five year average as of 1937, and increased at that rate for the future years after 1937 (p. 4316).

For the year 1939 the amount shown is $109,138, and starting with 1940 the estimate was less, until he reached the year 1944. The significance of that is, that there have been in the last two years some increases in wages, which would account for part of it, but the expenses vary from year to year, depending upon storms and the like.

As to meters and metering, he combined the cost of operating meters in the field and the meter department in the office, and the trend was determined by comparing 1935 to 1939 inclusive, with 1930 to 1934 inclusive, which trend was found to be $1600 a year. In this case there had been a rather steady expenditure from 1936 to 1939 inclusive, so, instead of trending from 1937 he trended at that rate from 1938 and 1939, taking in round figures, $50,000 a year; that is, he started with $50,000 a year as normal for 1939, and added $1600 to each succeeding year, as representing the normal trend (p. 4317).

The art of measuring gas has been gradually changing, involving the application of more factors, and it is the duty of the department to analyze and study changes in growth, all of which becomes more and more complicated as the property becomes larger and there is a tendency to increase wages.

As to the telephone system, 1937 showed an abnormally large expense, and if he had followed the method of trending described for the transmission system, it would have led to an increased cost far above normal, so they eliminated 1937 and determined the trend from 1935 to 1939 on the one hand, and 1930 to 1934 on the other hand, finding an increase in cost of $210 per year (p. 4318).

The general expenses were trended as a whole. There was first taken out the management fees in the early days and the annuity payments which began in 1939. There were two distinctly abnormal years, 1932 very high, and 1935 very low, which he could not explain.

After these eliminations, the trends between the first five years and the second five years of the decade was found to be $1470 a year (p. 4319).

For the future, the $21,870 per year, employees' welfare payments made in 1939, were deemed to continue at the same amount year by year, although they may be increased, and they were added separately to the trended amounts.

The management fees remain in column 6, but were taken out for trending purposes, and also the expenses in 1939 for regulatory Commission purposes. These expenses had to do with the pending case (p. 4320).

As to operating expenses, there was first taken out the social security taxes, leaving ad valorem and miscellaneous taxes. These taxes seemed to group themselves into a six year period for the first part of the decade, and a four year period for the latter part. They were so averaged for the purpose of determining the trend. The trend upward was trended to average $3646 per year.

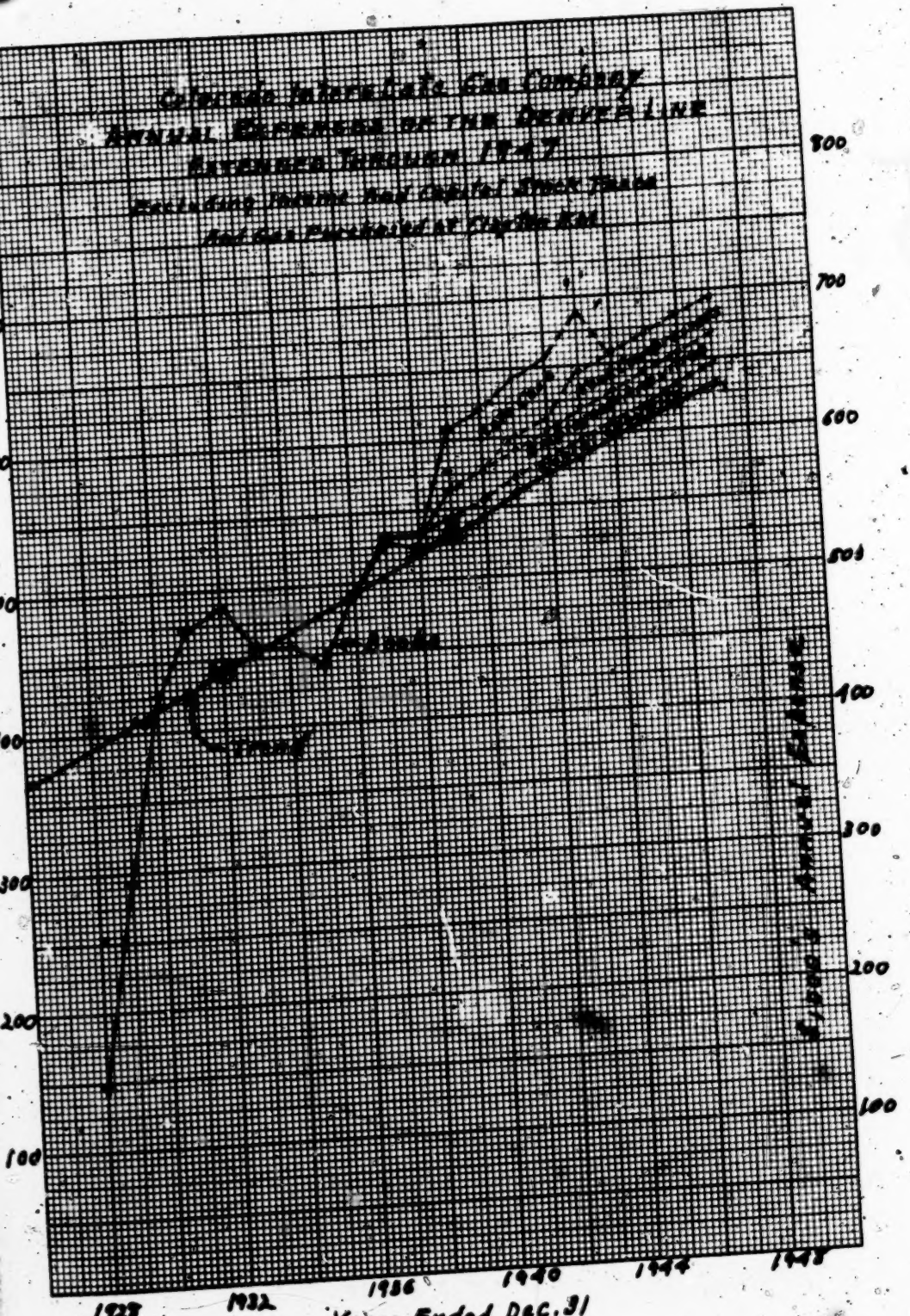
The social security taxes were restored starting with 1939 and keeping at that amount, but adjusting it upwards at the higher rates provided.

As to the rate case expense, it was spread over the five years from 1939. The amount was determined in discussing the matter among ourselves, and knowing that up to the latter part of (p. 4321) this year something over $100,000 had been spent. He merely estimated that $215,-

000 might cover the cost of the proceeding. In estimating this amount he had in mind three or four other rate cases in which he had participated.

> "Q. And after studying the past operating expenses and the future anticipated business of the company, is it your judgment that that is a fair estimate of the change in operating expenses that might be anticipated on the Colorado Interstate line as a whole during those years?
>
> "A. It is." (Vol. XXXI, p. 4322.)

In his Exhibit 135-A, Rhodes presented a graph showing the trending line of the expenses through the year 1940 (Vol. XXXII, p. 4502).


Colorado Interstate Gas Company
Annual Earnings of the Senior Line
Exclusive Thereof in 1947
Excluding income but Capital Stock Taxes
And Gas Purchased at Cig-Thru Rate
800
700
600
500
400
300
200
100
Thousands of Dollars
1928
1932
1936
1940
1944
1948
Years Ended Dec. 31

For the Commission, its Accountant, Early, in his testimony, and in his Exhibit 140 (Schedule B-21, Sheet 3, page 105 of said exhibit) reduced the operating expenses for the year 1939, as shown by the books of the company, in the amount of $507,913.23, down to $425,018.63. He also suspended for further consideration of the Commission $125,587.98. The Commission in its findings and opinion, however, allowed these items so adjusted and suspended.

COLORADO INTERSTATE GAS CO.
EXPENSES SUSPENDED FOR FURTHER CONSIDERATION BY THE COMMISSION
FOR THE YEARS 1937, 1938 AND 1939

Line No.	Income Statement Suspension No. (1)	Particulars (2)	Year Ended December 31, 1939 (3)	1938 (4)	1937 (5)
	C (Cont'd)	In view of the statements made by Mr. Lorch and the relative smallness of the amounts involved, it is recommended that the charges identified by the suspension be allowed as necessary and legitimate expenses and therefore included in the cost of conducting gas operations. Suspension has been made by the Examiner primarily in order that the Commission might have before it in this suspension and in Suspension B a summarization of service charges made by associated companies to the Respondent and included in its operating expenses.			
			$ 391,526.13	$ 309,837.61	$ 222,[illegible].21
9	D	Federal income tax Income taxes for the years 1937, 1938 and 1939, as adjusted, have been suspended for further study and consideration by the Commission and its staff for the reason that the income received by the Respondent, and which constituted the basis for the assessment of its income taxes, may, as a result of this proceeding, be found to have been in excess of a fair return. The Examiner recommends that expenses chargeable to the ratepayers include, with respect to income taxes, only such an amount as would represent the necessary taxes required to be paid based upon the income which the Commission determines it is proper for the Company to earn.			
			$ 27,[illegible]14.12	$ 18,262.11	$ 8,407.57
10	E	Colorado income tax The comments above under Suspension D also pertain to Suspension E.			
11	F	Items charged to expense claimed as cost of gas plant in report of Ford, Bacon & Davis, Inc., dated April 15, 1940 Certain expenses for the years 1937, 1938 and 1939, now claimed by the Respondent as gas plant capital expenditures, have been suspended in order that the expenses so claimed may be identified for the attention of the Commission and its staff. The report of Ford, Bacon & Davis, Inc. covering the claim for restatement of plant has been filed with the Commission by the Respondent. A reconciliation of the amounts shown in the report of Ford, Bacon & Davis, Inc. for the years 1937, 1938 and 1939 with the amounts of this suspension is as follows:			
			$ [illegible],383.75	$ 50,[illegible]58.76	$ 55,[illegible]91.00

	1939	1938	1937
Per Ford, Bacon & Davis, Inc. report	$14,[illegible]22.63	$52,051.24	$56,777.13
Portion of work order 270 (making profile map) claimed as gas plant, expended in the year 1937, and closed to expense in the year 1938 (The entire amount charged to this work order in the year 1937 is transferred to 1937 operating expenses in Examiner's entry R-151)		(559.21)	559.21
Less, interest during construction claimed as gas plant, not included in this suspension	(838.88)	(1,333.27)	(1,645.34)
Per this suspension	$14,383.75	$50,158.76	$55,691.00

EXHIBIT NO. 110

11

Docket G-121

COLORADO INTERSTATE GAS COMPANY
SUMMARY OF CONDENSED INCOME AND SURPLUS ACCOUNTS, AS ADJUSTED
BY PERIODS - JUNE 19, 1926 TO DECEMBER 31, 1939

Line No.	Particulars	Year Ended December 31 1939	1938	1937	1936	1935	1934	1933
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Utility Income							
1	Operating revenues	$5,773,009.87	$5,201,372.59	$5,569,883.92	$5,265,787.40	$4,321,137.07	$3,813,356.47	$3,522,149.18
	Operating revenue deductions							
2	Gas purchased for resale	$2,112,950.70	$2,006,525.25	$1,982,268.90	$1,910,294.08	$1,880,162.96	$2,283,518.16	$1,959,977.11
3	Operating expenses	425,018.63	394,920.21	394,353.76	381,049.06	308,225.67	313,327.26	328,117.13
4	Depreciation	266,384.97	261,037.57	261,156.72	259,836.97	254,454.43	254,689.94	255,803.22
5	Taxes	614,947.77	514,999.69	533,746.26	485,348.99	348,073.48	220,935.22	193,166.63
6	Nonrecurring expenses	45.19	1,810.79	4,516.49	19,055.53	30,178.44	25,496.58	-
7	Total operating revenue deductions	$3,419,347.26	$3,179,293.51	$3,176,042.13	$3,055,584.63	$2,821,094.98	$3,097,969.16	$2,737,064.09
8	Net utility income	$2,353,662.61	$2,022,079.08	$2,393,841.79	$2,210,202.77	$1,500,042.09	$ 715,387.31	$ 785,085.09
	Other Income							
9	Interest	$ 440,384.31	$ 477,731.16	$ 517,372.95	$ 552,865.74	$ 591,197.39	$ 642,368.40	$ 767,141.60
	Profit on Canadian River Gas Company							
10	bonds redeemed	11,900.00	14,790.00	17,820.00	17,850.00	17,850.00	17,820.00	17,850.00
11	Miscellaneous	542.37	474.63	458.65	383.62	205.28	300.93	6,956.38
12	Total other income	$ 452,826.68	$ 492,995.79	$ 535,651.60	$ 571,099.36	$ 609,252.67	$ 660,489.33	$ 791,947.98
13	Gross income	$2,806,489.29	$2,515,074.87	$2,929,493.39	$2,781,302.13	$2,109,294.76	$1,375,876.64	$1,577,033.07
	Income Deductions							
14	Interest on long-term debt	$ 329,233.33	$ 589,595.83	$ 682,425.00	$ 723,920.00	$ 819,900.00	$ 882,180.00	$ 914,460.00
	Amortization of debt discount and							
15	expense	40,178.95	7,632.19	701.76	701.76	701.76	701.76	701.76
16	Other interest charges	1,754.02	6,627.70	-	-	-	2,404.51	14,922.01
17	Interest charged to construction - credit	-	-	-	-	-	-	-
	Premium on Colorado Interstate Gas Com-							
18	pany bonds redeemed	-	25,800.00	15,570.00	46,680.00	31,140.00	31,140.00	31,140.00
19	Miscellaneous	32,538.31	35,146.05	33,691.80	10,091.75	6,811.85	2,131.19	2,080.50
20	Total income deductions	$ 403,704.61	$ 664,801.77	$ 732,388.56	$ 781,393.51	$ 858,553.61	$ 918,557.46	$ 993,304.27
21	Net income ~~or (loss)~~	$2,402,784.68	$1,850,273.10	$2,197,104.83	$1,999,908.62	$1,250,741.15	$ 457,319.18	$ 583,728.80
	Earned Surplus							
22	Balance at beginning of period	$5,705,849.17	$5,225,576.07	$5,085,971.24	$4,768,562.62	$4,417,821.47	$3,960,502.29	$3,376,773.49
23	Add net income as above	2,402,784.68	1,850,273.10	2,197,104.83	1,999,908.62	1,250,741.15	457,319.18	583,728.80
	Deduct dividends declared and paid							
24	On common stock	(1,875,000.00)	(1,250,000.00)	(1,937,500.00)	(1,562,500.00)	-	-	-
25	On preferred stock	(120,000.00)	(120,000.00)	(120,000.00)	(120,000.00)	(900,000.00)	-	-
26	Balance at end of period	$6,113,633.85	$5,705,849.17	$5,225,576.07	$5,085,971.24	$4,768,562.62	$4,417,821.47	$3,960,502.29

Exhibit No. 140

Statement B-6
Sheet 1 of 1

14

COLORADO INTERSTATE GAS COMPANY
SUMMARY OF CONDENSED INCOME AND SURPLUS ACCOUNTS, AS ADJUSTED
BY PERIODS - JUNE 19, 1928 TO DECEMBER 31, 1939

Year Ended December 31											June 19, 1928 to December 31, 1928
1939 (2)	1938 (3)	1937 (4)	1936 (5)	1935 (6)	1934 (7)	1933 (8)	1932 (9)	1931 (10)	1930 (11)	1929 (12)	(13)
$5,773,009.87	$5,201,372.59	$5,569,883.92	$5,265,787.40	$4,321,137.07	$3,813,356.47	$3,522,149.18	$3,881,240.16	$3,532,035.67	$3,279,464.28	$2,638,951.07	$830,013.05
$2,112,950.79	$2,006,525.25	$1,982,268.90	$1,910,294.08	$1,880,162.96	$2,283,518.16	$1,959,977.11	$2,104,468.98	$1,740,935.11	$1,564,705.58	$ 602,613.53	$259,392.84
425,018.63	394,920.21	394,353.76	381,049.06	308,225.67	313,327.26	328,117.13	360,184.02	381,172.27	308,748.46	248,504.98	143,618.19
266,384.97	261,037.57	261,156.72	259,836.97	254,454.43	254,689.94	255,803.22	253,055.67	244,612.77	223,914.91	196,934.03	91,579.09
614,947.77	514,999.69	533,746.26	485,348.99	348,073.48	220,935.22	193,166.63	188,869.62	179,518.87	184,345.70	278,844.29	31,184.07
45.19	1,810.79	4,516.49	12,055.53	30,178.44	25,498.58	-	-	-	-	-	-
$3,419,347.26	$3,179,293.51	$3,176,042.13	$3,055,584.63	$2,821,094.98	$3,097,969.16	$2,737,064.09	$2,906,578.29	$2,546,239.02	$2,281,714.65	$1,326,896.83	$525,774.19
$2,353,662.61	$2,022,079.08	$2,393,841.79	$2,210,202.77	$1,500,042.09	$ 715,387.31	$ 785,085.09	$ 974,661.87	$ 985,796.65	$ 997,749.63	$1,312,054.24	$304,238.86
$ 440,384.31	$ 477,731.16	$ 517,372.95	$ 552,865.74	$ 591,197.39	$ 642,368.40	$ 767,141.60	$ 739,757.38	$ 757,753.78	$ 761,531.49	$ 766,322.71	$299,924.39
11,900.00	14,790.00	17,820.00	17,350.00	17,850.00	17,820.00	17,850.00	23,760.00	23,800.00	23,760.00	-	-
542.37	474.63	458.65	383.62	209.28	300.93	6,956.38	493.07	1,826.34	1,965.82	784,074.49	1,141.71
$ 452,826.68	$ 492,995.79	$ 535,651.60	$ 571,099.36	$ 609,252.67	$ 660,489.33	$ 791,947.98	$ 764,010.45	$ 783,380.12	$ 787,257.31	$1,550,397.20	$301,066.10
$2,806,489.29	$2,515,074.87	$2,989,493.39	$2,781,302.13	$2,109,294.76	$1,375,876.64	$1,577,033.07	$1,738,672.32	$1,769,176.77	$1,785,006.94	$2,862,451.44	$605,304.96
$ 329,233.33	$ 589,595.83	$ 682,425.00	$ 723,920.00	$ 819,900.00	$ 882,180.00	$ 944,460.00	$1,006,740.00	$1,069,020.00	$1,131,275.00	$1,013,904.67	$496,807.50
40,178.95	7,632.19	701.76	701.76	701.76	701.76	701.76	701.76	698.25	698.25	698.25	349.13
1,754.02	6,627.70	-	-	-	2,404.51	14,922.01	36,048.34	46,694.45	14,716.57	61,022.27	208,866.84
-	-	-	-	-	-	-	-	-	-	-	(191,901.80)
-	25,800.00	15,570.00	46,680.00	31,140.00	31,140.00	31,140.00	41,520.00	41,520.00	41,480.00	-	-
32,538.31	35,146.05	33,691.80	10,091.75	6,811.85	2,131.19	2,080.50	1,931.65	2,985.86	7,142.26	701.82	350,217.87
$ 403,704.61	$ 664,801.77	$ 732,388.56	$ 781,393.51	$ 858,553.61	$ 918,557.46	$ 993,304.27	$1,086,941.75	$1,160,918.56	$1,195,312.08	$1,076,327.01	$864,339.54
$2,402,784.68	$1,850,273.10	$2,197,104.83	$1,999,908.62	$1,250,741.15	$ 457,319.18	$ 583,728.80	$ 651,730.57	$ 608,258.21	$ 589,694.86	$1,786,124.43	($259,034.58)
$5,705,849.17	$5,225,576.07	$5,085,971.24	$4,768,562.62	$4,417,821.47	$3,960,502.29	$3,376,773.49	$2,725,042.92	$2,116,784.71	$1,527,089.85	$ (259,034.58)	
2,402,784.68	1,850,273.10	2,197,104.83	1,999,908.62	1,250,741.15	457,319.18	583,728.80	651,730.57	608,258.21	589,694.86	1,786,124.43	($259,034.58)
(1,875,000.00)	(1,250,000.00)	(1,937,500.00)	(1,562,500.00)	-	-	-	-	-	-	-	-
(120,000.00)	(120,000.00)	(120,000.00)	(120,000.00)	(900,000.00)	-	-	-	-	-	-	-
$6,113,633.85	$5,705,849.17	$5,225,576.07	$5,085,971.24	$4,768,562.62	$4,417,821.47	$3,960,502.29	$3,376,773.49	$2,725,042.92	$2,116,784.71	$1,527,089.85	($259,034.58)

Docket G-124

Schedule B-16
Sheet 12 of 50

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO THE INCOME ACCOUNT

32

Particulars	Year to Which Applicable	Debit	Credit
No. B-119			
Operating expenses - general and administrative expenses - stores expenses	1939	$ 121.17	
Prepayments	12/31/39		$ 121.17

To reclassify 1939 inventory adjustments which were carried by Respondent in the balance sheet under prepayments caption as of December 31, 1939.

No. B-120			
Operating expenses - maintenance of transmission line equipment	1938	$ 7,993.82	
do.	1937	8,835.52	
do.	1936	8,630.30	
Operating revenues	1938		$ 7,993.82
do.	1937		8,835.52
do.	1936		8,630.30

To reclassify as operating expenses the allowances to Arkansas Valley Natural Gas Company which were recorded on the Respondent's books as a reduction of operating revenue. See explanation of entry R-106 for further details regarding the nature of these allowances. See also entry 141 for further adjustment of items in question.

Docket G-124

Schedule B-16
Sheet 22 of 50

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO THE INCOME ACCOUNT. 42

Particulars	Year to Which Applicable	Debit	Credit
No. R-132			
Accrued utility revenues	12/31/39	$ 78,685.11	
Operating revenues	1939	5,592.12	
Operating revenues	1939		$ 84,277.23

To set up the estimated accrued utility revenues unbilled at December 31, 1939, based on actual meter readings at that date. Prior to 1939 the Respondent's practice was to set up this accrual at the end of each year and to reverse the entry in the following January. However, this procedure was discontinued as of Dec. 31, 1939. In order that the schedule of operating revenues for the year 1939 may be presented on a basis comparable with the preceding years, the estimated accrued utility revenues are taken into account by this entry. The distribution of the volume of gas as between residential and commercial gas and industrial gas is based on the ratio of each type of service to the total in the previous monthly billing period. The allowances for space-heating gas are based on allowance in the previous monthly billing period. Following is the detail of the accrued revenues by customers and by types of service:

Description	Revenue	M.C.F. Contract Metering Base	M.C.F. Uniform Base 14.65 lbs. per sq.in.
Gross revenues accrued			
Citizens Utilities Company (Dec. 16 - Dec. 31)			
La Junta			
Residential and commercial gas			
At 40 cents per MCF	$ 555.20	1,388	1,250
At 36 cents per MCF	1,374.48	3,818	3,440
Industrial gas	362.84	1,506	1,357
Gas lost	221.94	932	840
Total La Junta	$2,514.46	7,644	6,887

Exhibit No. 1

Docket G-124

Schedule B-16
Sheet 54 of 50

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO THE INCOME ACCOUNT

54

Particulars	Year to Which Applicable	Debit	Credit
No. 141			
Miscellaneous income deductions	1939	$ 7,359.84	
Do.	1938	7,993.82	
do.	1937	8,835.52	
do.	1936	8,630.30	
do.	1935	4,692.83	
Operating expenses - maintenance of transmission line equipment	1939		$ 7,359.84
do.	1938		7,993.82
do.	1937		8,835.52
do.	1936		8,630.30
do.	1935		4,692.83

To relieve operating expenses of the allowances by the Respondent to Arkansas Valley Natural Gas Company representing 15% of the Respondent's revenue from the U.S. Veterans Administration at Fort Lyon, Colorado. According to the terms of an amendatory agreement between the Respondent and Arkansas Valley Natural Gas Company dated December 5, 1935, retroactive to May 1, 1935, these allowances were in consideration for the maintenance by Arkansas Valley Natural Gas Company of the Respondent's pipe line which serves the Veterans Administration. This pipe line is approximately 2.9 miles in length.

On November 17, 1939 and again on January 18, 1940 the Examiner requested the Respondent in writing to furnish: (1) The book cost of the above pipe line, (2) the basis for arriving at 15% of gross revenue from the Veterans Administration as payment for maintenance of said pipe line, and (3) a statement of the actual amounts expended by Arkansas Valley Natural Gas Company for maintenance of the pipe line. To date no response has been received by the Examiner to the above-mentioned letters. The amounts are, therefore, entirely unsupported.

Two instances were noted in which the Respondent bore actual expenses of certain maintenance on the line in question which, according to the terms

No. 141 (cont'd)

of the contract dated December 5, 1935, apparently should have been borne by Arkansas Valley Natural Gas Company.

On work order No. 222, zinc rod cathodic protection was installed, according to company drawings, on approximately 54,632 feet of pipe line in 1936, including 2,164 feet of pipe line in the section agreed to be maintained by Arkansas Valley Natural Gas Company. The total charges to this work order were $14,208.99, and the entire amount was charged on voucher K-35, dated October 31, 1936, to account 385-D, Maintenance of Transmission Line Equipment. An allocation of the total charges to this work order on a per-foot basis shows that approximately $550.00 would be properly chargeable to the section of line agreed to be maintained by Arkansas Valley Natural Gas Company, but no part of the cost of the work was charged to that company.

On work order No. 282, zinc rod cathodic protection was installed, according to company drawings, on 8,800 feet of six inch line in 1937, all within the section to be maintained by Arkansas Valley Natural Gas Company. The total charges to this work order amounted to $2,228.58, all of which was charged on voucher M-41, dated December 31, 1937, to account 385-D, Maintenance of Transmission Line Equipment. The title of this work order indicated that the work was chargeable to Arkansas Valley Natural Gas Company, and the completion notice signed by Mr. J. P. McClintock, General Superintendent, dated November 10, 1937, had the following statement under "Remarks":

> "Please charge to Arkansas Valley Natural Gas Company, maintenance expense on 6" line from Arkansas River Crossing to Fort Lyon."

Work orders are ordinarily charged by the Respondent as recommended by the General Superintendent. However, in this instance, Arkansas Valley Natural Gas Company objected to the charge, as evidenced by a telegram dated January 28, 1938 from the Respondent's Colorado Springs office to the New York office, in which the opinion of Mr. F. H. Lerch, Jr., then Vice President of Colorado Interstate Gas Company as to the disposition of the charge was requested. In Mr. Lerch's reply of the same date, he suggested that the charge be made to Colorado Interstate Gas Company as similar items in the past.

Effective April 1, 1940, Arkansas Valley Natural Gas Company sold most of its properties to Citizens Utilities Company, including its properties in the vicinity of the Veterans Administration. Beginning April 1, 1940, no further allowances of 15% of the Respondent's revenue from the Veterans Administration were made by the Respondent, either to Arkansas Valley Natural Gas Company or to Citizens Utilities Company. The expenses in question are therefore nonrecurring as well as unsupported.

Exhibit No. 140

Docket G-124

Schedule B-16
Sheet 49 of 50

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO THE INCOME ACCOUNT

69

Particulars	Year to Which Applicable	Debit	Credit
No. R-153			
Other deferred debits	12/31/39	$58,290.20	
Operating expenses (detailed below)	1939		$58,290.20

To reclassify, pending decision of the Commission as to proper disposition thereof, expenses incurred by Respondent to December 31, 1939 as a result of the rate investigation by the Commission:

Account Credited Herein	Amount
Miscellaneous general expenses (Colorado Springs office)	$51,797.21
Special legal services	6,382.16
Rent	110.83
Total	$58,290.20

Analytical details of the above amount are presented on Subschedule 1 of Schedule A-13 which supports the deferred amount appearing in the balance sheet as of December 31, 1939.

Reclassification as a deferred debit has the effect of placing the charges in suspense pending the Commission's decision regarding ultimate disposition thereof.

COLORADO INTERSTATE GAS COMPANY
OPERATING EXPENSES
FOR THE YEAR ENDED DECEMBER 31, 1939

Line No.	Particulars	Per Books	Reclassifications Debit	Reclassifications Credit	As Reclassified	Adjustments Debit	Adjustments Credit	Adjusted	Suspended for Further Consideration of the Commission	Income Statement Suspension No.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	General and Administrative Expenses (Cont'd)									
	Operation (Cont'd)									
56	Rent	$ 1,670.83		(R-134) $ 110.83	$ 1,560.00			$ 1,560.00	$ 110.83	9
57	Stores expenses		(R-119) $ 171.17		3,085.76			3,085.76	49.26	9
58			(R-124) 2,768.69							
59			(R-127) 195.90							
60	Management and supervision fees and expenses (Gas Companies Incorporated)		(R-116) 15,388.03		15,388.03			15,388.03	15,388.03	8
61	Nonoperating expenses	740.46		(R-125) 740.46						
	Miscellaneous general expenses									
62	New York office	5,719.53		(R-118) 3,525.00	49.64			49.64		
63				(R-131) 1,155.86						
64				(R-116) 988.03						
65	Colorado Springs office	71,675.06	(R-125) 200.00	(R-138) 15,537.34	861.54			861.54	51,797.21	6
66				(R-152) 3,678.97						
67				(R-153) 52,797.21						
	Under-distributed auto expenses									
68	General	218.60			@218.60			218.60		
69	Telephone system	1,844.05			1,844.05			1,844.05		
70	Land department	426.71			426.71			426.71		
71	Total operation	$179,066.43	$23,537.16	$ 98,999.14	$103,604.45		$ 886.71	$102,717.74		
	Maintenance									
72	Telephone system	$ 568.87			$ 568.87			$ 568.87	54.76	9
73	Office and other general equipment	230.91			230.91			230.91		
74	Total maintenance	$ 799.78			$ 799.78			$ 799.78		
75	Total general and administrative expenses	$179,866.21	$23,537.16	$ 98,999.14	$104,403.93		$ 886.71	$103,517.22	3,680.82	9
76	Total operating expenses	$507,913.23	$26,549.94	$101,820.59	$432,642.58	$ 667.79	$8,291.74	$425,018.63	$121,287.98	

Notes:

(1) Amount per books and as adjusted includes $10,040.27 for expense of soil resistivity survey on main line from Clayton to Denver. The Bureau of Engineering recommends that this item be considered extraordinary expense.

(2) Employees' welfare expenses for the year 1939 include $21,869.47 representing payments by the company as a result of a retirement plan agreement effective January 1, 1939 with The Prudential Insurance Company of America. The plan consists, in effect, of two parts: (1) It provides that the employee make certain contributions, within maximum and minimum limits, based upon current salary, to purchase annuities and that the company match such contributions, and (2) it further provides that the company pay for the entire annual cost for 1939 and subsequent years of purchasing additional annuities based upon services rendered prior to January 1, 1939, such payments being governed by the length of the employee's service with the company prior to January 1, 1939 and the salary rate in effect as of January 1, 1939. The amount which the company paid for the year 1939 as a result of the latter provision was $10,552.13.

Exhibit No. 110

105

This witness also prepared and submitted in evidence Exhibit 144, described by him as follows:

A. "This report consists of a balance sheet of Colorado Interstate Gas Company as at December 31, 1939, and eight accompanying schedules, Statement A-1 shows the balance sheet per the company's books, adjustments and reclassifications of items contained in it, which were made by the Examiner, and, finally, the balance sheet as adjusted. The eight schedules comprise one that summarizes the Examiner's adjustment and reclassification entries and seven that support and explain balance sheet items, namely, Investment in and Advances to Associated Companies, Unamortized Debt Discount and Expense, Other Deferred Debits, including Rate Case Expenses, Capital Stock, Long-Term Debt, and Surplus.

"Schedule A-10, which is the first schedule, gives the Examiner's Adjustments and Reclassifications in summary form; it does not show the reclassification and adjusting entries themselves. The entries are to be found in other accounting studies which were prepared by members of the Federal Power Commission staff and which will also be offered in evidence in this case.

"Entries Nos. 100 to 154, inclusive, are shown in Schedule B-16 of the study entitled 'Income Accounts and Supplemental Data, including Examiner's Reclassifications and Adjustments;' Entries Nos. 200 to 227, inclusive, are given in the study entitled 'Gas Plant Accounts and Examiner's Adjustments;' and Entries Nos. 400 to 407, inclusive, are part of the study on 'Annual and Accrued Depreciation of Gas Plant, and Examiner's Adjustments.'

"The adjustment and reclassification debits and credits shown against balance sheet accounts on Statement A-1 are the footings of the columns in Schedule A-10, each of which columns represents a balance sheet account and contains all the entries affecting the account that it represents.

"Schedule A-11 presents the particulars of the company's investment in and advances to Canadian River Gas Company.

"Schedule A-12 shows the expenses relating to the issu-

ance of the company's bonds, the annual amortization on those bonds from 1928 to 1939, inclusive, and their unamortized balance as at December 31, 1939. It also shows payments made in connection with the reduction in 1938 of bond interest, from 6 per cent to 3½ per cent per annum, together with the amortization thereof as adjusted for the years 1938 and 1939, and the unamortized balance as adjusted as of December 31, 1939.

"Schedule A-13, which is made up entirely of Examiner's reclassification and adjustment items, is a summary of Other Deferred Debits. It is supported by Schedule A-13-1 which is an analysis of rate case expenses incurred by the respondent during 1939.

"These rate case expenses have been reclassified as deferred debits (Entry R-153) pending the decision of the Commission as to their disposition. The total amount of Schedule A-13-1, $58,290.20, represents Suspension G of Expenses Suspended for Further Consideration of the Commission, in Statement B-4 of the study on income accounts. Approximately $52,000 of the total is the cost of a valuation and physical inspection made of the company's properties by Ford, Bacon & Davis, Inc. This firm billed for its work at cost of services, plus 10 per cent, plus overheads of approximately 75 per cent, and plus expenses at cost.

"Schedule A-14 shows the number of shares of capital stock outstanding, both common and preferred, their book value, the consideration for which issued, the names of their holders at December 31, 1939, and the terms upon which the preferred stock is callable. At the balance sheet date there were three shareholders of the 1,250,000 shares of common stock outstanding; Standard Oil Company (New Jersey) with 531,250 shares issued for $1,000,000 in cash; Southwestern Development Company with 531,250 shares valued at $1,000,000, issued as part consideration for Canadian River Gas Company (one of its subsidiaries) entering into a contract to sell natural gas to this company; and Public Service Company of Colorado with 187,500 shares valued at $352,941.17 which were initially issued to Cities Service Company in consideration for Public Serv-

ice Company of Colorado and Pueblo Gas & Fuel Company (two subsidiaries of Cities Service Company) entering into contracts to purchase natural gas from this company. At December 31, 1939, there were two shareholders of the 20,000 shares of preferred stock outstanding: Standard Oil Company (New Jersey) with 10,000 shares issued for $1,000,000 in cash; and Consolidated Oil Corporation with 10,000 shares which were originally issued to Southwestern Development Company as part consideration for Canadian River Gas Company entering into a contract to sell natural gas to this company.

"Schedule A-15 shows the total amount of company's twenty-year bonds, dated June 1, 1928, that have been issued, the amount of them that have been redeemed, and the balance of them outstanding on December 31, 1939. They comprise the company's entire long-term debt. These bonds were issued in 1928 and 1929 at 100 in the principal amount of $19,200,000. From June 1, 1930, to December 31, 1939, $10,335,000 of them, in principal amount, had been redeemed leaving outstanding as of December 31, 1939, bonds in the principal amount of $8,865,000. Redemptions were made in accordance with the provisions of the Bond Indenture, at prices ranging from 102 to 104, except that since November 1, 1938, redemptions have been made at 100. From their date of issuance until November 1, 1938, the bonds bore interest at the rate of 6 per cent per annum; since November, 1938, they have paid interest at the rate of 3½ per cent per annum. The change in the redemption price and the interest rate of the bonds was made in connection with the purchase of the bonds by Guaranty Trust Company of New York and The Mutual Life Insurance Company of New York from their former owners.

"Schedule A-16 shows twenty-four Examiner's adjustments and reclassifications of the Surplus Account that increase the balance of that account as of December 31, 1939, from $2,479,133.92 to $6,113,633.83. These entries are the same as those shown in Column 16 of Schedule A-10. They are reproduced in Schedule A-16 so that they may be more conveniently referred to and to provide a reconciliation of the amount of the balance in the Surplus Account per books and as adjusted by the Examiner."

Q. Mr. Early, in the preparation of this Exhibit 144, you, of course, had available to you the books, accounts and records of the Colorado Interstate Gas Company?

A. Yes, I did.

Q. And from those you prepared this exhibit?

A. That is correct.

Q. And I also note that on the title page that subsequent to your preparation of the formal exhibit and before it was reproduced it received the approval of Kenneth L. Smith in charge of field assignment; Harold Tomlin, Examiner in charge of the regional office, and W. E. Baker, chief accountant, all of whom are on the accounting staff of the Federal Power Commission.

A. That is correct.

(Vol. XXXVII, pp. 5080-5085.)

Docket G-1709

Statement A-1
Sheet 1 of 2

COLORADO INTERSTATE GAS COMPANY
BALANCE SHEET
DECEMBER 31, 1959

Line No.	Assets and Other Debits (1)	Per Books (2)	Examiner's Adjustments and Reclassifications Debit (3)	Credit (4)	As Adjusted (5)	Schedule Reference (6)
	Utility Plant					
1	Gas plant in service	$14,566,365.56	$ 202,370.16	$3,241,989.17	$11,526,746.55	
2	Construction work in progress	29,677.89			29,677.89	
3	Gas plant held for future use	-	19,994.71		19,994.71	
4	Gas plant adjustments	-	2,352,941.17		2,352,941.17	
5	Total utility plant	$14,596,043.21	$2,575,306.04	$3,241,989.17	$13,929,360.08	
	Investment and Fund Accounts					
6	Other physical property (excess land purchased in connection with right-of-way acquisitions)	$ 14,334.51	$ 2,389.40		$ 16,723.91	
7	Investment in and advances to associated company	6,405,254.14			6,405,254.14	A-11
8	Total investment and fund accounts	$ 6,419,588.65	$ 2,389.40		$ 6,421,978.05	
	Current and Accrued Assets					
9	Cash and working funds	$ 14,196.18			$ 14,196.18	
10	Special deposit (for sinking fund purposes)	48,000.00			48,000.00	
11	Notes receivable	67,961.25			67,961.25	
	Accounts receivable					
12	Customers	492,693.51			492,693.51	
13	Other	3,314.65			3,314.65	
	Receivables from associated companies					
14	Standard Oil Company of New Jersey (advances subject to repayment upon call)	600,236.98			600,236.98	
15	Canadian River Gas Company	215,082.76	$ 56,318.18		271,400.94	
16	Natural Gas Pipe Line Company of America	126,907.32			126,907.32	
17	Accrued interest receivable	174.38			174.38	
18	Accrued utility revenues	-	78,685.11		78,685.11	
19	Materials and supplies	60,185.60			60,185.60	
20	Prepayments	14,597.02	1,158.39	$ 121.17	15,634.24	
21	Total current and accrued assets	$ 1,673,391.65	$ 136,161.68	$ 121.17	$ 1,809,332.16	
	Deferred Debits					
22	Unamortized debt discount and expense	$ 193,043.04		$ 25,297.62	$ 167,745.42	A-12
23	Other deferred debits	-	$ 375,213.05	795.81	374,417.24	A-13
24	Total deferred debits	$ 193,043.04	$ 375,213.05	$ 26,093.43	$ 542,162.66	
25	Total Assets and Other Debits	$22,881,966.55	$3,089,070.17	$3,268,203.77	$22,702,832.95	

Exhibit No. 11

1709

1

Docket G-124

Statement A-1
Sheet 2 of 2

COLORADO INTERSTATE GAS COMPANY
BALANCE SHEET
DECEMBER 31, 1959

Line No.	Liabilities and Other Credits (1)	Per Books (2)	Examiner's Adjustments and Reclassifications Debit (3)	Examiner's Adjustments and Reclassifications Credit (4)	As Adjusted (5)	Schedule Reference (6)
26	Capital Stock Common stock	$ 2,352,941.17			$ 2,352,941.17	A-14
27	Preferred stock	2,000,000.00			2,000,000.00	A-14
28	Total capital stock	$ 4,352,941.17			$ 4,352,941.17	
	Long-Term Debt First Mortgage and Collateral Trust Twenty-year 3¼% Sinking Fund Gold Bonds, due					
29	June 1, 1968	$ 8,865,000.00			$ 8,865,000.00	A-15
	Current and Accrued Liabilities					
30	Accounts payable	$ 69,994.85			$ 69,994.85	
31	Payable to associated company (Gas Companies Incorporated)	4,000.00			4,000.00	
32	Accrued liabilities Taxes	619,801.86	$ 473.87	$ 14.12	618,742.11	
33	Interest	85,856.25			85,856.25	
34	Total current and accrued liabilities	$ 718,992.96	$ 473.87	$ 14.12	$ 718,533.21	
	Reserves					
35	Reserve for depreciation of gas plant in service	$ 4,994,392.35	$5,168,680.65	$2,821,618.88	$ 2,650,380.58	
36	Reserve for depreciation of gas plant held for future use	-	1,319.04	3,665.18	2,346.14	
37	Reserve for amortization	-1,471,546.15	1,471,546.15	-	-	
38	Total reserves	$ 6,465,938.50	$6,641,685.84	$2,825,312.06	$ 2,652,726.72	
	Contingent Liability The company has guaranteed the payment of principal and interest of a demand note of Ford, Bacon & Davis, Inc. in the amount of $58,000.00					
39	Surplus	$ 2,479,133.98	$3,400,764.27	$7,035,264.20	$ 6,113,633.85	A-16
40	Total Liabilities and Other Credits	$22,881,966.55	$10,042,723.98	$9,860,590.36	$22,704,098.95	

Exhibit No. 114

1711

2

Docket G-124

COLORADO INTERSTATE GAS COMPANY
SUMMARY OF EXAMINER'S RECLASSIFICATIONS AND ADJUSTMENTS APPLIED TO THE BALANCE SHEET
AT DECEMBER 31, 1959

Line No.	Ref. No.	Particulars	Utility Plants: Gas Plant Held for Future Use	Utility Plants: Gas Plant Acquisition	Utility Plants: Other Physical Property	Current and Accrued Assets: Cheyenne River Gas Company	Current and Accrued Assets: Utility Receivables	Current and Accrued Assets: Prepayments	Deferred Debits: Unamortized Debt Discount and Expense	Deferred Debits: Other Deferred Debits	Current Liabilities: Accrued Taxes	Reserves: Reserve for Depreciation of Gas Plant in Service	Reserves: Reserve for Depreciation of Gas Plant Held for Future Use	Reserves: Reserve for Amortization	Income Account (Debit)	Income Account (Credit)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	A-100	To correct overstatement of Federal income taxes														(473.87)
2	A-105	To set up accrued interest receivable from Cheyenne River Gas Company														14.12
3	A-115	To set up prepaid insurance, Gas Company deferred debit														(55,805.79)
4	A-116	To set up prepaid insurance														(1,356.59)
5	A-117	To establish above deferred debit														(8,695.77)
6	A-118	To write off inventory adjustments account														795.81
7	A-119	To set up accrued utility revenues, less allowance for uncollectibles														121.17
8	A-120	To record prepaid gas expense on a deliver-or-pay basis (A-1 Statement) and expense on a deliver-or-pay basis														(78,695.33)
9	A-140	To charge Cheyenne River Gas Company with rental of certain items applicable to it				855,805.79										85,897.48
10	A-160	To record as current assets amounts applicable to other deferred debits				518.58										(518.58)
11	A-165	To transfer rate case expenses to other deferred debits														(59,950.80)
12	B-101	To eliminate intercompany items in connection with purchase of Cheyenne River Gas Company														(235.00)
13	B-105	To correct posting errors in right-of-way accounts	839.40	88,389.60												14,787.33
14	B-106	To charge off depreciation reserve applicable to land and land rights sold to Cheyenne River Gas Company	(1,674.93)													(10,835.96)
15	B-107	To charge off general construction costs applicable to mains and not retired	10,835.96													
16	B-108	To transfer mains, line and river pipe lowered to Cheyenne River Gas Company	(8,910.95)													
17	B-109	To charge off cost of drilling well subsequently abandoned	(155,964.71)	155,964.71												
18	B-110	To charge off cost of reconditioning, excavating and plugging wells in connection with gas piping	(866.74)													866.74
19	B-111	To charge cost of reconditioning, excavating and plugging wells in connection with gas piping	(1,800.48)													
20	B-112	To charge off cost of abandoned gathering lines to expense	(667.72)													667.72
21	B-113	To charge off cost of abandoned gathering lines to expense	(386,700.00)													386,700.00
22	B-114	To transfer certain rights of way to Cheyenne River Gas Company								50,950.81						
23	B-115	To transfer certain deferred debits to Cheyenne River Gas Company								84,750.00						
24	B-116	To reverse interest during construction on re-ended wells	(50,950.81)													
25	B-117	To reverse interest during construction on re-ended wells	(84,750.00)													
26	B-118	To reverse interest during construction on re-ended wells	(180,866.99)													180,866.99

Exhibit No. 114

1713

3

Schedule A-10
Sheet 1 of 2

Exhibit No. 11

Docket G-128

Schedule A-10
Sheet 2 of 2

COLORADO INTERSTATE GAS COMPANY
SUMMARY OF EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES APPLIED TO THE BALANCE SHEET
AT DECEMBER 31, 1939

4

Line No.	Entry No.	Particulars	Utility Plant: Gas Plant in Service	Utility Plant: Gas Plant Held for Future Use	Utility Plant: Gas Plant Adjustments	Utility Plant: Other Physical Property	Current and Accrued Assets: Canadian River Gas Company	Current and Accrued Assets: Accrued Utility Revenues	Current and Accrued Assets: Prepayments	Deferred Debits: Unamortized Debt Discount and Expense	Deferred Debits: Other Deferred Debits	Current Liabilities: Accrued Taxes	Reserves: Reserve for Depreciation of Gas Plant in Service	Reserves: Reserve for Depreciation of Gas Plant Held for Future Use	Reserves: Reserve for Amortization	Income Account (Surplus)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
26	223	To set up interest during construction as computed by Examiner	$ 191,901.80													($ 191,901.80)
27	224	To transfer franchises and contracts account to gas plant adjustments	(2,352,911.17)		$2,352,911.17											
28	225	To transfer net cost of Colorado Springs contract to other deferred debits	(236,666.67)								$236,666.67					
29	405	To charge reserve for depreciation of gas plant in service with net loss on retirements (as reclassified) from inception to December 31, 1939											$ 31,729.53			(31,729.53)
30	403	To reverse the Respondent's provisions for depreciation (as reclassified)											5,182,039.84			(5,182,039.84)
31	404	To reverse the Respondent's provisions for amortization (as reclassified)													$1,471,546.15	(1,471,546.15)
32	402	To correct the retirement of the Clayton properties sold to Canadian River Gas Company											(3,532.73)			3,532.73
33	407	To transfer to the reserve for depreciation of gas plant held for future use the net charge for retirements of this property											(1,319.04)	$1,319.04		
34	406	To record the adjusted annual depreciation											(2,819,797.11)	(3,663.18)		2,823,460.29
35		Total debits $13,131,794.15	$ 202,370.16	$19,994.71	$2,352,911.17	$2,389.40	$56,318.18	$78,685.11	$1,158.39	($25,297.62)	$374,213.05	$473.87	$5,168,620.65	$1,319.04	$1,471,546.15	$3,400,764.27
36		Total credits (13,131,794.15)	(3,241,989.17)						(121.17)		(795.81)	(14.12)	(2,824,648.88)	(3,663.18)		(7,035,264.20)

Exhibit No. 114

Docket G-124

Schedule A-11
Sheet 1 of 1

COLORADO INTERSTATE GAS COMPANY
INVESTMENT IN AND ADVANCES TO ASSOCIATED COMPANY
DECEMBER 31, 1939

5

Line No.	Particulars (1)	Cost (2)
1	Canadian River Gas Company First Mortgage and Collateral Trust Twenty-year Six Per Cent Sinking Fund Gold Bonds, due June 1, 1948	$5,057,000.00
	Colorado Interstate Gas Company has owned all of Canadian River Gas Company's bonds outstanding from the inception of that company in 1928 to December 31, 1939. Such bonds have been pledged by Colorado Interstate Gas Company as collateral for its own bonds.	
2	Canadian River Gas Company Promissory Notes	1,348,254.14
	These notes have been issued from time to time by Canadian River Gas Company to finance its current construction after the exhaustion of the funds obtained from the sale of its bonds. The notes are redeemable in equal monthly installments over a period of 120 months from date of issuance or by May 31, 1948, whichever is the shorter period. The notes bear interest at the rate of 6% per annum, payable semiannually on January 1 and July 1.	
3	Total investment in and advances to associated company	$6,405,254.14

* Cost is equivalent to the principal amount of debt owned.

Docket G-124

Schedule A-12
Sheet 1 of 1

COLORADO INTERSTATE GAS COMPANY
UNAMORTIZED DEBT DISCOUNT AND EXPENSE
DECEMBER 31, 1939

Line No.	Particulars	Total	Original Expense of Issuance of Bonds	Payments in connection with Reduction of Interest Rate from 6% to 3½% per Annum
	(1)	(2)	(3)	(4)
	Expenses relating to First Mortgage and Collateral Trust Twenty-year Sinking Fund Gold Bonds, dated June 1, 1928, due June 1, 1948			
1	Cost of printing bonds	$ 10,170.00	$10,170.00	
2	Service for authentication of bonds	3,120.00	3,120.00	
3	Legal fees and expenses	7,675.00	675.00	$ 7,000.00
4	2% premium on $9,865,000.00 principal outstanding	197,300.00		197,300.00
5	Transfer taxes	3,946.00		3,946.00
6	Totals	$222,211.00	$13,965.00	$208,246.00
	Amortization, as adjusted (Note 1):			
7	Year 1928	$ 349.13	$ 349.13	
8	" 1929	698.25	698.25	
9	" 1930	698.25	698.25	
10	" 1931	698.25	698.25	
11	" 1932	701.75	701.76	
12	" 1933	701.75	701.76	
13	" 1934	701.76	701.76	
14	" 1935	701.76	701.76	
15	" 1936	701.76	701.76	
16	" 1937	701.76	701.76	
17	" 1938	7,632.19	701.76	$ 6,930.43
18	" 1939	40,178.95	701.76	39,477.19
19	Total amortization to December 31, 1939	$ 54,465.58	$ 8,057.96	$ 46,407.62
20	Balance, December 31, 1939	$167,745.42	$ 5,907.04	$161,838.38

Note:

(1) Amortization has been recorded on the books on a straight-line basis, over the life of the bonds. Amortization of the payments in connection with the reduction of the interest rate from 6% to 3½% per annum has been adjusted by the Examiner to a dollar-year basis, instead of a straight-line basis (see Examiner's entry No. 140).

Exhibit No. 111

1719

9

Exhibit No. 14

Docket G-124

Schedule A-14
Sheet 1 of 1

COLORADO INTERSTATE GAS COMPANY
CAPITAL STOCK
DECEMBER 31, 1939

9

	Common Stock	Preferred Stock (Note 1)
Recorded value per books	$2,352,941.17	$2,000,000.00
Shares authorized and issued	1,250,000	20,000
Par value per share	No par	$100.00
Details of recorded value:		
Cash consideration received	$1,000,000.00	$1,000,000.00
Capitalization of contract with Canadian River Gas Company for purchase of gas	1,000,000.00	1,000,000.00
Capitalization of contracts with Public Service Company of Colorado and Pueblo Gas & Fuel Company for sale of gas	352,941.17	
Total recorded value per books (Note 2)	$2,352,941.17	$2,000,000.00
Stockholders as of December 31, 1939:		
Standard Oil Company (New Jersey)	531,250 shares	10,000 shares
Southwestern Development Company	531,250 "	
Public Service Company of Colorado	187,500 "	
Consolidated Oil Corporation		10,000 "
Total shares issued and outstanding	1,250,000 "	20,000 "

Notes:

(1) The preferred stock is callable on any quarterly dividend payment date after five years from date of issuance (June 5, 1928) at $105.00 per share plus accrued dividends thereon. Dividends on preferred stock at the rate of 6% per annum are cumulative and payable before any dividends on the common stock may be paid or declared.

(2) The Examiner has not adjusted capital stock accounts for credits thereto resulting from capitalization of contracts for purchase and sale of gas. The amounts charged to plant by Respondent for capitalization of such contracts were transferred to Gas Plant Adjustments account by adjusting entry number 224. The Gas Plant Adjustments account is subject to such disposition as the Commission may approve or direct.

Exhibit No. 144

Docket G-124

Schedule A-15
Sheet 1 of 1

COLORADO INTERSTATE GAS COMPANY
LONG-TERM DEBT
DECEMBER 31, 1939

10

First Mortgage and Collateral Trust Twenty-year 3½% Sinking Fund Gold Bonds, dated June 1, 1928, due June 1, 1948:	
Issued June 14, 1928, at 100	$ 7,021,000.00
Issued June 27, 1928, at 100	8,470,000.00
Issued December 3, 1928, at 100	1,401,000.00
Issued December 30, 1929, at 100	2,308,000.00
Total issued	$19,200,000.00
Principal amount redeemed from June 1, 1930 to December 31, 1939	10,335,000.00
Balance outstanding, December 31, 1939	$ 8,865,000.00

Notes:

(1) The bonds as originally issued bore interest at the rate of 6% per annum. On October 28, 1938 the Board of Directors approved a Third Supplemental Indenture, dated November 1, 1938, to the existing mortgage, under the terms of which the interest rate was reduced from 6% to 3½% per annum, in connection with the purchase of the bonds by the Guaranty Trust Company of New York and The Mutual Life Insurance Company of New York from the previous owners of the bonds.

(2) According to the terms of the Third Supplemental Indenture, the bonds outstanding on December 31, 1939 are to be redeemed through quarterly sinking fund contributions, on March 1, June 1, September 1, and December 1 of each year, in the following total annual amounts:

Year 1940	$1,000,000.00
" 1941	1,000,000.00
" 1942	1,000,000.00
" 1943	1,000,000.00
" 1944	1,080,000.00
" 1945	1,080,000.00
" 1946	1,080,000.00
" 1947	1,080,000.00
" 1948	545,000.00
Total	$8,865,000.00

EXHIBIT NO. 293.
Dockets G-118, G-121 and G-124.

Written Statement of James V. O'Connor.

Exhibit No. 293 presents estimated volume of gas sales, estimated volume of gas purchased, and estimated operating expenses (excluding purchased gas expense, regulatory commission expense, depreciation expense, Colorado income tax, Federal capital stock tax, and Federal taxes on income) of Colorado Interstate Gas Company for the year 1941. The exhibit is composed of four schedules as follows:

Schedule No. 1: Estimated Volume of Gas Sales, 1941.

Schedule No. 2: Estimated Volume of Gas Purchased, 1941.

Schedule No. 3: Estimated Operating Expenses, 1941 (Excluding purchased gas expense, regulatory commission expense, and depreciation expense).

Schedule No. 4: Estimated Taxes, 1941 (Excluding Colorado income tax, Federal capital stock tax, and Federal taxes on income).

Operating expenses shown in Schedule No. 3 are detailed in the following schedules:

Schedule No. 3-A: Transmission Expenses, 1941.

Schedule No. 3-B: Distribution Expenses, 1941.

Schedule No. 3-C: General and Administrative Expenses, 1941.

The volume of gas sales to each customer, as shown in Schedule No. 1, is based on a study of the records of Colorado Interstate Gas Company, data received from its customers, and an analysis of 1941 market conditions. No increase has been estimated for possible sales to new industrial customers, nor do the estimates reflect possible increases in sales to present customers which would result from reductions in rates.

Schedule No. 2 shows estimated volumes of gas to be purchased in 1941 from Canadian River Gas Company to supply Colorado Interstate Gas Company's requirements

for its Denver Line and the Chicago Line of Natural Gas Pipeline Company of America.

Transmission, distribution, sales promotion, and general and administrative expenses, as shown in Schedules No. 3, 3-A, 3-B and 3-C, are based on an analysis of the experience of the company in recent years, and consideration of factors which affect these expenses. No estimates have been made of purchased gas expense, regulatory commission expense, and depreciation expense. Sales promotion expense in past years has related to new industrial business; and since no new industrial customers are included in the 1941 sales estimates in Schedule No. 1, no amount has been included for sales promotion expense in Schedule No. 3. The account description shown in Schedules No. 3, 3-A, 3-B and 3-C correspond to those in Exhibit No. 140.

Taxes, shown in Schedule No. 4, have been estimated on the basis of present tax rates. No estimates have been made of Colorado income tax, and the following Federal taxes; capital stock, declared value-excess profits, income, excess profits, and defense taxes.

Schedule No. 1.

Colorado Interstate Gas Company.

Estimated Volume of Gas Sales for the Year 1941

Line	Description	Gas Sales MCF*
	(1)	(2)
	Direct Industrial Sales	
1	American Crystal Sugar Company	370,000
2	Atchison, Topeka & Santa Fe Railway Co.	410,000
3	Colorado Portland Cement Company	2,060,000
	Colorado Fuel & Iron Corporation	
4	Boiler Fuel Gas	4,250,000
5	Metallurgical Gas	4,250,000
6	Total	8,500,000
7	Total Direct Industrial Sales	11,340,000

*All MCF figures are on a uniform pressure base of 14.65 pounds per square inch absolute.

Line	Description	Gas Sales MCF*
	(1)	(2)
	Sales to Public Authorities	
8	Department of the Interior	700
9	Veterans Administration	200,000
10	Total Sales to Public Authorities	200,700
11	Total Direct Sales to Ultimate Consumers	11,540,700
	Sales to Gas Utilities	
12	Arkansas Valley Natural Gas Company	16,000
	Citizens Utilities Company	
13	Domestic Gas—First Block	44,000
14	Domestic Gas—Second Block	123,000
15	Total Domestic Gas	167,000
16	Industrial Gas	34,000
17	Gas Lost	22,000
18	Total	223,000
	City of Colorado Springs	
19	Domestic Gas	404,000
20	Space-heating Allowance	255,000
21	Municipal Power Plant Gas	470,000
22	Industrial Gas	177,000
23	Total	1,051,000
	Colorado-Wyoming Gas Company	
24	Domestic Gas	1,398,000
25	Industrial Gas	1,647,700
26	Total	3,045,700
	Public Service Company of Colorado	
27	Domestic Gas	5,120,000
28	Space-heating Allowance	3,330,000
29	Industrial Gas	2,600,000
30	Total	7,720,000

*All MCF figures are on a uniform pressure base of 14.65 pounds per square inch absolute.

Line	Description	Gas Sales MCF*
	(1)	(2)
	Pueblo Gas and Fuel Company	
31	Domestic Gas	390,000
32	Space-heating Allowance	163,000
33	Industrial Gas	280,000
34	Total	670,000
	Natural Gas Pipeline Company of America	
35	Interruptible Gas	7,100,000
36	Other Gas	13,200,000
37	Total	20,300,000
38	Total Sales to Gas Utilities	33,025,700
39	Total Gas Sales	44,566,400

Schedule No. 3.

Estimated Operating Expenses for the Year 1941 (1)

Line	Description	Amount
	Transmission expenses	
1	Operation	$179,000
2	Maintenance	84,900
3	Total	$263,900
	Distribution expenses	
4	Operation	$ 47,900
5	Maintenance	6,800
6	Total	$ 54,700
7	Sales promotion expenses	—

*All MCF figures are on a uniform pressure base of 14.65 pounds per square inch absolute.

Line	Description	Amount
	General and administrative expenses	
8	Operation	$107,800
9	Maintenance	1,200
10	Total	$109,000
11	Total operating expenses	$427,600

(1) No estimate included for purchased gas expense, regulatory commission expense, and depreciation expense.

Schedule No. 3-A

Colorado Interstate Gas Company

Estimated Operating Expenses for the Year 1941.
Transmission Expenses.

Line	Description	Amount
	Operation	
	Transmission system	
1	Supervision	$ 11,500
	Operation of transmission lines	
2	Labor	33,000
3	Supplies and expenses	9,000
	Other	
4	Labor	5,300
5	Supplies and expenses	4,800
	Compressing system	
6	Supervision	13,900
	Operation of compressing stations	
7	Labor	50,100
8	Supplies and expenses	30,100
	Other	
9	Labor	14,300
10	Supplies and expenses	7,000
11	Total operation	$179,000
	Maintenance	
	Transmission system	
12	Line equipment	$ 18,500
13	Other structures	1,900
14	Other equipment	25,400

Line	Description	Amount
	Compressing system	
15	Structures	1,300
16	Equipment	32,100
17	Other structures	3,000
18	Other equipment	2,700
19	Total maintenance	$84,900
20	Total transmission expenses	$263,900

Schedule No. 3-B.

Colorado Interstate Gas Company.

Estimated Operating Expenses for the Year 1941.

Distribution Expenses.

Line	Description	Amount
	Operation	
	Office expenses	
1	Salaries	$12,900
2	Stationery and printing	400
3	Other supplies and expenses	200
	Operation at measuring stations	
4	Labor	24,500
5	Supplies and expenses	9,300
6	Miscellaneous	600
7	Total operation	$47,900
	Maintenance	
8	Measuring station equipment	$ 6,500
9	Office equipment	300
10	Total maintenance	$ 6,800
11	Total distribution expenses	$54,700

Schedule No. 3-C.
Colorado Interstate Gas Company.
Estimated Operating Expenses for the Year 1941.
General and Administrative Expenses (1)

Line	Description	Amount
	Operation	
	Field office salaries	
1	General officers and executives	$ 9,500
2	Other general office salaries	15,600
	Field office expenses	
3	General officers and executives	1,300
4	General office clerks	400
	Field office supplies and expenses	
5	Stationery and printing	1,400
6	Other supplies and expenses	1,300
	Telephone system	
7	Labor	6,700
8	Supplies and expenses	3,600
	Land department	
9	Labor	2,800
10	Supplies and expenses	700
11	Special services	3,600
12	Special legal services	3,000
13	Insurance	7,900
14	Injuries and damages	700
15	Absent time due to illness	2,400
16	Employees' welfare	22,800
17	Rent	1,600
18	Stores expenses	2,500
19	Management and supervision fees	19,000
20	Miscellaneous general expenses	1,000
21	Total operation	$107,800
	Maintenance	
22	Telephone system	$ 900
23	Office and other general equipment	300
24	Total maintenance	$ 1,200
25	Total general and administrative expenses (1)	$109,000

(1) No estimate included for purchased gas expense and regulatory commission expense.

Q. Mr. O'Connor, the description you gave of the inquiry by customers, both of the Colorado Interstate Gas Company and some of the utility distributing companies, which you said were contained on three pages, those apply to the estimates made in Exhibit 293 as well as in Exhibit 292?

A. Yes, sir.

Q. Have you made any comparison of your estimates with those made by Mr. Beardsley, which are contained in his Exhibits 56 and 59?

A. I think I did.

Q. You show on a whole as we figure it, about 6.5 per cent increase over the figures in the company's exhibits, 56 and 59.

A. 6.5 per cent—I know I have about 1,700,000 Mcf., approximately, on the Denver line and I know I am higher on the Chicago line because I believe Mr. Beardsley used the estimates supplied by the Natural Gas Pipeline Company of America, which seemed to be too low.

Q. Some instances you have increases in your estimates over his, and in others there are some decreases. Did you observe that fact?

A. That is correct.

Q. You have some considerable increase for the Colorado Portland Cement Company. Does that increase involve any recent addition in their capacity or additional business development within the past few months?

A. No, that is based upon information they supplied to us some time ago, but I think we have—well, it may have been as late as January 18, 1941.

Q. You have had more recent information for the purpose of making your estimates than was available when Mr. Beardsley made his?

A. As I recollect Mr. Beardsley said that he wasn't able to contact anybody there so he had to be guided by the recent experience of the company. We found from talking to them that they had additional orders for cement on the Caddoa Dam on the Arkansas River which would involve a substantial increase in production for 1941, 1942, and 1943, so we took that into account.

Then we found that their shipments were running much higher when compared to what they were running a year

ago, so we added 10 per cent more above their normal—we took their four-year average production and added about ten per cent due to increased business activity and then we added the Caddoa Dam order.

They told us they were probably going to get something on the Big Thompson project and this Remington Arms munition factory but they didn't know just how much.

Q. In determining your operating expenses for 1941, did you use 1934 and 1939 as a guide?

A. Well, I used all the data I could get from the analysis prepared by the accounting staff which went back over a period of years, but it was in some detail from 1934 on. It was completely adjusted to their basis for 1937, 1938, 1939, and partially adjusted for major items in 1934, 1935, and 1936.

Then in addition we took off account totals from some of the expenses of the company as a further guide.

Q. You carried forward adjustments that had been made by Mr. Early in Exhibit No. 140?

A. There is one that I can think of specifically and that is an item I have for miscellaneous under distribution system expense. That represents spreading over five years a payment which Colorado Interstate made to Colorado-Wyoming Gas Company in the middle of 1938. They charged it off in the year in which they paid it and he spread it over five years, so to be consistent I had to include the same amount in my estimates.

Q. With respect to this gas purchase expense which you referred to in Schedule No. 3, you have not brought that into the operating expenses of the Colorado Interstate Gas Company as you did in Canadian River?

A. Gas purchased expense?

Q. Yes. You have a note at the bottom of Schedule 3 where you say: "No estimate included for gas purchased expense."

A. I haven't made any estimates of the total gas purchased expense, but I necessarily had to make estimates regarding the amount used in operations.

Q. The statement at the bottom of Schedule 3 does not include that for gas used in operations?

A. That is right.

Q. You have that over in your operating expenses elsewhere?

A. Yes. For instance, on Schedule 3-A under "Compressing System, Supplies and Expenses," are listed at $30,100. There is around $18,000 in there for gas used at the compressing stations.

Redirect Examination.

By Mr. Lange:

Q. Mr. O'Connor in the preparation of Exhibit 293, as well as in the preparation of Exhibit 292, I take it you had available the information you have just described as to the company's past history, its records, as well as the information you were able to get from purchasers as to past requirements of gas?

A. That is right. I had all of these records that the accounting staff had made, and we made some analyses of our own, in addition, for some of these expenses where they jumped around, and we wanted to know why.

Q. In other words, then, based upon your analysis of operating expenses of the companies as well as the information that you had as to past sales records of the companies, you then projected these estimates for the year 1941?

A. That is correct.

(Vol. C, pp. 15560-15564.)

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24. Annual Operating Expenses and Taxes, Exclusive of Cost of Gas, Income and Capital Stock Taxes, of Colorado Interstate for an Assumed Denver Line for Resale Gas Only, as Estimated, 1928 to 1947, Inclusive.

Exhibit 136 (witness Rhodes, Vol. XXXII, p. 4431) sets forth the annual expenses estimated to be required from 1928 to 1947 inclusive in the operation of Colorado Interstate's portion of the assumed Denver Line for resale gas alone, which line he describes in Exhibit 98. The annual expenses shown are exclusive of income and capital stock taxes and cost of gas at Clayton. Such expenses were determined from the expenses actually incurred by the company from 1928 to 1939 inclusive, set forth in Exhibit 76. Adjustments were made in these expenses to reflect the

difference in annual expenses required by the different facilities involved in the resale line. All adjustments, except for new facilities, were based on the costs actually incurred. The costs for 1928 to 1939 inclusive, were extended through 1947, reflecting the trends in costs actually experienced by the company. The added costs involved in the added peak load compressor station facilities acquired after 1939 were estimated with regard to the character of operation. Savings in the cost in the year 1939 on account of the reduced facilities for the resale line alone are summarized as follows: (p. 4432.)

(a) Reduction in cost of maintaining the compressor stations due to lesser operation of the equipment made possible through the poorer load factor of resale gas as compared with all gas sold	$ 9,225
(b) Reduction in cost of operating and maintaining the transmission lines through the elimination of laterals used solely for direct sale gas	5,701
(c) Reduction in cost of operating and maintaining the telephone system due to the elimination of the Pueblo branch line	440
(d) Reduction in the cost of maintaining and operating measuring stations and the Meter Department through the elimination of the meters used solely for direct sale gas	19,694
(e) Reduction in Land Department, General Administrative, Other General and New York Office Expenses pro rata with the above reductions	10,927
(f) Reduction in operating taxes pro rata with reduction in equivalent original cost of a resale pipe line shown in Exhibit No. 134 as compared with the present line shown in Exhibit No. 67	10,642
(g) Elimination of Regulatory Commission expense for adjustment, spreading the estimated total rate case expense over five years	63,096

(h) Total gross deductions from 1939 expenses as incurred $119,725

(i) Restoration of one fifth of estimated total rate case expense 43,000

(j) Net deductions from 1939 expenses shown by Exhibit No. 76 ..... $ 76,725
(p. 4433)

These allowances reflect the upper limit of possible savings. Adjustments were made in earlier years reflecting the actual expenses incurred. The expenses of the system as it existed in 1939 were extended through 1947 to reflect the inherently increasing normal costs experienced by the company in past years, and to reflect in future years the annuity and retirement expenditures instituted in 1939 and increases in social security taxes.

In addition to the expenses estimated to be required in the operation of the facilities as they existed in 1939, provision was made for the operation and maintenance of all the additional peak load and booster compressor station facilities described in Exhibit No. 98 which come into operation by 1943. Such additional expenses are as follows:

(a) Annual operation and maintenance of new 1,800-hp. booster stations at Cimarron, Apishapa and Colorado Springs beginning with 1940 ..... $48,600

(b) Annual operation and maintenance of 1,200 hp. peak load addition to Devine Station beginning with 1940 (p. 4434) 4,800

(c) Annual operation and maintenance of 1,200 hp. peak load additions to Clayton, Cimarron and Apishapa Stations beginning with 1943 14,400

(d) Total expenses of operating all additional booster and peak load compressor station facilities $67,800

In determining costs of operating the additional facilities, consideration was given to the fact that such stations and equipment are operated only during the winter months, but a skeleton crew would be required throughout the rest of the year. The cost of such operation is much less than

the cost of regular operation. This is shown by the fact that the average annual cost of operating and maintaining the additional 10,200 horse-power peak load and booster equipment as set forth above is only $6.65 per horse-power, whereas in 1939 the actual cost of operating and maintaining the 8,000 horse-power in Clayton, Canyon and Devine stations was $115,646, or $14.46 per horse-power.

No increase in general expenses was made on account of the additional cost of operating these additional compressor station facilities.

There is attached to the statement showing year by year the estimated annual expenses of a Denver Line for resale gas alone, grouped into the several classes of expense which were separately studied and in which the annual expenses of the added compressor facilities are separately shown. This (p. 4435) statement is reconciled with Exhibit No. 76 as follows:

(a) Total operating and maintenance expenses and operating taxes of Colorado Interstate Gas Company's part of the present system in 1939 per Line 12, Statement No. 1, Exhibit No. 76	$628,065
(b) Deductions from such expenses made in this exhibit as summarized above	76,725
(c) Annual expenses of Colorado Interstate Gas Company's part of a Denver line for resale gas alone in 1939 as shown by Column 10 of the attached statement	$551,340

The estimated total annual expenses of Colorado Interstate for resale gas only, 1928 to 1947 inclusive, are shown in the statement attached to Exhibit 136 and are as follows, together with columns showing compressor station capacity as of 1939 with added capacity 1940 to 1947 inclusive. The statement also shows a separation of expenses to the various departments of the system:

Calendar Year	Compressor Stations		Total Annual Expense
	1939 Capacity	Added Capacity	
	(1)	(2)	(10)
1928			$139,037
1929	$ 1,298		261,914
1930	36,731		376,154
1931	88,064		421,073
1932	76,660		430,319
1933	70,714		402,426
1934	72,505		402,110
1935	81,454		389,156
1936	100,534		428,943
1937	115,229		468,188
1938	113,878		471,407
1939	106,421		551,340
1940	119,200	$53,400	614,400
1941	123,800	53,400	626,600
1942	126,600	53,400	638,200
1943	129,400	67,800	666,300
1944	132,300	67,800	634,600
1945	135,200	67,800	645,800
1946	137,100	67,800	657,200
1947	139,000	67,800	667,300

The witness testified that in compiling the figures in Exhibit 136 he used the figures shown in Exhibit 135 for the years 1928 to 1939, inclusive (p. 4436). The only changes he made were to make deductions on account of less use or lesser expense of the facilities, but without trending it.

With respect to 1940 to 1947 inclusive, he took the figures in Exhibit 135 as trended, and adjusted them to arrive at the new figures. The same results would have been obtained had he trended the new figures for 1928 to 1939 inclusive (p. 4437).

25. Cost at Contract Price of All Gas Delivered to Colorado Interstate at Clayton Junction for the Denver Line.

These costs are shown in Exhibit 164. This exhibit and the testimony relating thereto is abstracted in Canadian's record and is adopted by Colorado Interstate. The costs there shown for the years 1928 to 1939 inclusive and as estimated, 1940 to 1947, inclusive, are as follows:

Year	Production	Gathering	Transmission	Total
	(1)	(2)	(3)	(4)
1928 (A)	$ 133,948	$ 16,560	$ 50,017	$ 200,525
1929	528,703	99,648	181,232	809,583
1930	916,517	160,621	471,492	1,548,630
1931	1,046,496	131,764	466,992	1,645,252
1932	957,947	120,349	466,901	1,545,197
1933	872,017	117,383	436,962	1,426,362
1934	701,603	93,258	432,420	1,227,283
1935	638,320	79,649	372,108	1,090,077
1936	665,645	95,587	372,600	1,133,832
1937	678,541	101,623	376,483	1,156,647
1938	650,537	105,309	435,038	1,190,884
1939	699,942	112,878	408,188	1,221,008
1940	699,884	113,468	510,142	1,323,494
1941	672,062	121,223	499,803	1,293,088
1942	645,475	114,692	508,103	1,238,270
1943	590,005	112,213	542,541	1,244,759
1944	576,933	109,152	521,686	1,207,771
1945	566,117	108,000	501,758	1,175,875
1946	625,352	120,927	486,372	1,232,651
1947	1,014,218	248,180	471,447	1,733,845

Note (A) 7 Months.

[Testimony of WILLIAM A. LUSK.]

Q. Mr. Lusk, you testified on direct examination last week with reference to the preparation of your Exhibit No. 164, did you not?

A. That is correct, yes sir.

Q. And I notice the title of that, the exhibit, appearing

on the cover of it was "Canadian River Gas Company Computed Costs under Basic Contract Terms; all gas delivered at Clayton Junction, New Mexico, to Colorado Interstate Gas Company, 1928 to 1947, inclusive."

Of course, the exhibit will speak for itself, but what was your purpose for the preparation of it?

A. To establish the cost of gas at Clayton Junction.

Q. Now, the computation of the figures of the cost set forth is limited, of course, in its scope to the provisions of the contract between the two companies as of January 3, 1928, I take it?

A. That is correct, yes, sir.

(Vol. XLV, pp. 6167-6168.)

* * * * *

Now, if an accountant were preparing a cost exhibit and was not limited to the terms of the contract of January 3rd, 1928, he would, of course, not be accordingly limited either in the elements that would be included in such cost would he?

A. That is right. He wouldn't be limited in the scope of his examination. I think we can clear that up by saying that if I were not limited or any accountant limited to the terms of a specific contract, in building this up I would eliminate the amortization and substitute depletion and depreciation.

Q. Yes, sir, and those would be proper elements to go into such costs?

A. That is right.

Q. And in your statement, Exhibit 91, in effect it so stated in the first page of your written statement; that is, you have amplified it now?

A. That is right.

Q. And Exhibit 164, therefore, has no reference to and is not concerned with either depreciation or depletion?

A. No, sir, only in so far as it affects Federal taxes.

Q. Only in so far as it affects Federal taxes.

A. That is right.

Q. Now, then, since it is not concerned with depletion, it—strike that.

I will ask you whether the exhibit or the scope of it is in any manner concerned as to the life of the gas field serving these properties?

A. None whatsoever. It is the life of the bond issues and notes up to 1948.

Q. It is limited entirely to the bond issues and notes up to 1948?

A. It is limited to the terms of the contract.

Q. Regardless of what the reserves of gas in the acreage owned by Canadian River Gas Company may be?

A. That is correct, yes, sir.

Q. Or regardless of what the life of that acreage in so far as producing gas may be?

A. That is correct.

(Vol. XLV, pp. 6169-6171.)

26. Cost at Contract Price of Gas Delivered to Colorado Interstate at Clayton Junction for an Assumed Denver Line for Resale Gas Only.

These costs are shown in Exhibit 167. This exhibit and the testimony relating thereto is abstracted in Canadian's record and is adopted by Colorado Interstate. The costs there shown for the years 1928 to 1939 inclusive and as estimated, 1940 to 1947 inclusive, are as follows:

Year	Production	Gathering	Transmission	Total
	(1)	(2)	(3)	(4)
1928 (A)	$ 58,443	$ 14,425	$ 62,224	$ 135,092
1929	289,616	95,091	259,202	643,909
1930	646,133	156,831	464,746	1,267,710
1931	805,787	116,457	446,370	1,368,614
1932	738,179	97,793	447,600	1,283,572
1933	618,066	88,856	424,984	1,131,906
1934	452,911	64,254	421,666	938,831
1935	419,484	56,160	373,431	849,075
1936	401,147	62,574	402,180	865,901
1937	430,365	70,080	406,003	906,448
1938	431,795	74,469	424,728	930,992
1939	435,047	74,732	445,095	954,874
1940	448,837	79,683	524,606	1,053,126
1941	431,753	86,236	498,882	1,016,871
1942	389,910	79,645	490,305	959,860
1943	377,127	77,883	545,324	1,000,334
1944	369,123	75,356	557,147	1,001,626
1945	363,761	74,608	538,442	976,811
1946	411,150	86,344	523,319	1,020,813
1947	806,314	241,083	508,518	1,555,915

Note (A) 7 Months.

[Testimony of WILLIAM A. LUSK.]

Q. I take it that these calculations that appear in Statement 9 of Exhibit 167 were reached on the same basis of the calculations on Statement 9, Exhibit 164?

A. Yes, sir, the same principle was followed throughout both exhibits.

Q. Of course, Mr. Lusk, the company is not in fact oper-

ating on the basis as indicated in this cost exhibit. They are not so segregating the items on their books are they?

A. They are segregated into certain proportions of the operating expenses divided between the systems; they segregate taxes by systems; they segregate bonds between two systems; they segregate notes and other evidences of debt between the two systems.

Q. The company is not in fact presently limiting its sale to resale customers?

A. The Canadian River Gas Company?

Q. Yes.

A. The Canadian River Gas Company doesn't make any distinction between resale customers and direct sale customers.

Q. And it doesn't make any sales at all to direct industrials?

A. Not Canadian River Gas Company, no.

Q. It makes all of its sales to—let's see. It is the Colorado Interstate Gas Company, the Amarillo Oil Company—

A. Yes.

Q. And who are the others?

A. Well, the Amarillo Oil Company is divided into several contracts and the Colorado Interstate, and the Clayton Gas Company.

Q. That is right.

A. The Canadian River Gas Company wholesale gas.

Q. Their contracts are in evidence in this proceeding. The main one, of course, we are concerned with is the contract in Exhibit 16.

A. Yes, sir.

Q. Under the terms of which, particularly Paragraph or Section 10, you have arrived at these cost figures that appear in Exhibit 164 and you have related them to resale only in Exhibit 167?

A. That is correct.

Q. But in so far as the Canadian River Gas Company is concerned, it doesn't now nor has it in the past endeavored to limit its sales to resale gas only, has it?

A. No, sir, there is no distinction of gas sales in the Canadian River Gas Company and has not been any since the company commenced operation.

Q. Nor is there any contemplated as far as you know?

A. As far as I know, no.
(Vol. XLVI, pp. 6369-6371.)

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27. **Amortization and Depreciation.**

The company's witness Lusk testified that both companies set out to recover their investment or liquidate the indebtedness, incurred in making the investment, within the twenty-year project term. First testifying in respect to Canadian's situation and in connection with his Exhibit 91 entitled "Canadian River Gas Company, Operating Costs as Adjusted, 1928 to 1939 Inclusive" (Vol. XIX, p. 2612), he referred to the contract between the two companies (Exhibit 16) whereby Canadian was to sell gas to Colorado Interstate at "cost" and the provision that Canadian's "cost" was to include the amortization within the project term of all of its investment or the liquidation of all of its debt incurred in making investment in property used in the project. He stated that Canadian opened up its books and kept them so as to show these contract "costs" and added, "Accordingly, such system of accounts does not conform and does not purport to conform to any classification of costs in a strict accounting sense." (Vol. XIX, p. 2613). He then went on to explain that neither company in his opinion being subject to regulation, they set up depreciation and amortization accounts on their books only for the purpose of recovering their investment or liquidating their debt, incurred in making their investment, within the project term and in order to get income tax deductions. Both companies employed a rate of 5% based on a twenty-year project life for all long-lived items of property in the beginning, but because of controversy with the Federal Income Tax Department they had revised their rates (Vol. XIX, pp. 2618, 2641). As a result of this controversy with the Internal Revenue Department, the company compromised by accepting for tax purposes a twenty-five year life basis on long-lived items and made it effective January 1, 1931 (p. 2640). On cross examination he was asked:

"Q. And what had the company set up on its books before that time?

"A. The company originally started out to depreci-

ate all of its depletable property on a 20-year life basis, five per cent.

"Q. And what was the company's reason for setting them up on a 20-year life basis?

"A. It was the life of the contract." (p. 2640.)

Following that the company set up depreciation on its books on the new basis so that its books would reflect "income properly for tax purposes." (pp. 2641-42.) On direct examination, his attention was called to the terms of the contract between Canadian River and Colorado Interstate under which the sale of gas was to be made at cost, and he was asked:

"Q. I notice an item of income taxes in this statement. Will you explain how the company might have income subject to income tax under this character of contract?

"A. Well, it all came about with the rulings of The Internal Revenue Department that certain depreciation was not allowable. Therefore, the company was assessed amounts of income taxes from approximately 1931 right down to 1939.

"Q. That is to say that there is a difference between the amortizations under the contract and the amortizations, broadly speaking, that are allowed by the Bureau of Internal Revenue for income tax purposes?

"A. Well, the Bureau of Internal Revenue wouldn't allow amortization of debt to be included in amortization under any other form, under any circumstances." (pp. 2618, 2619.)

Lusk's testimony with respect to each company's original charge-off of long-lived items at a rate of 5% per annum on a twenty-year project basis, in order to recover the investment or liquidate the debt and for tax purposes, and the subsequent modifications made by the companies as a result of income tax controversies, can be better understood by including at this point a statement of these several rates used by each company, as taken off the books of the companies by the Commission's witness Kenneth L. Smith in his Exhibits 174 and 176, more fully abstracted hereafter. From page 6 of Smith's Exhibit 174, "Annual and Accrued Depreciation of Gas Plant Accounts—Colorado Interstate Gas Company," the following is taken:

Description	Bases of Accruals				
	10/1/28 to 6/30/31	7/1/31 to 4/30/36	5/1/36 to 12/31/37	Year 1938	Year 1939
Transmission rights of way	5%	0%	2.5%	2.5%	3.5%
Transmission line equipment	5	4	4	3.5	3.5
Compressing system structures	5	7.5	7.5	3.5	3.5
Compressing system equipment	5	4	4	3.5	3.5
Other compressing system structures	5	7.5	7.5	3.5	3.5
Other compressing system equipment		4	4	3.5	3.5
Other transmission system structures	5	7.5	7.5	3.5	3.5
Other transmission system equipment	5	4	4	3.5	3.5
Telephone system	5	4	4	3.5	3.5
Measuring system structures	5	7.5	7.5	3.5	3.5
Measuring system equipment	5	4	4	3.5	3.5
Other measuring system equipment		4	4	3.5	3.5
Measuring system—meters	4				
Other general structures	5	7.5			
Office furniture and equipment	5 & 20	10	10	10	10
Stores equipment	5	10			
Shop equipment	5	10			
Garage equipment	33 1/3	25	25	25	Estimated
Tools and equipment	5	10	10	10	10
Other general equipment	5	4			
Entrance rights of way	5	4	4	3.5	3.5
Other undistributed fixed capital	5	4	4	3.5	3.5
Law expenditures during construction	5	4	4	3.5	3.5
Interest during construction	5	4	4	3.5	3.5
Depreciation and adjustments	5	4			

For Canadian River, a similar statement is taken from page 11 of Exhibit 176.

Canadian River Gas Company.

Schedule of Company Depreciation and Amortization Rates from Inception to December 31, 1939.

Particulars	Periods and Effective Rates		
	1928 1929 & 1930	1931 through 1935	1931 through 1939
Production System			
Tangible Gas Well Equipment	10.00%	10.00%	25 Years
Drilling and Cleaning Equipment	25.00	25.00	25.00%
Field Lines			
Right of Way	5.00	5.00	25 Years
Construction	5.00	5.00	25 Years
Equipment	5.00	5.00	25 Years
Other Field Facilities			
Field Measuring Station Structures	5.00	5.00	25 Years
Field Measuring Station Equipment	5.00	5.00	25 Years
Field Compressor Station Structures	.....	5.00	25 Years
Field Compressor Station Equipment	.....	5.00	25 Years
Gasoline Investment			
Rights of Way	5.00	5.00	25 Years
Structures	5.00	5.00	25 Years
Equipment	8.33	8.33	8.33%
Delivery Line	5.00	5.00	25 Years
Loading Rack	8.33	8.33	8.33%
Transmission System			
Mains and Laterals			
Rights of Way	5.00	5.00	25 Years
Equipment	5.00	5.00	25 Years
Dehydration Plant			
Structures	.....	.....	25 Years
Equipment	.....	.....	25 Years
Main Compressor Station			
Structures	5.00	5.00	25 Years
Equipment	5.00	5.00	25 Years
Measuring Stations			
Structures	5.00	5.00	25 Years
Equipment	5.00	5.00	25 Years

Particulars (continued)	Periods and Effective Rates 1928 1929 & 1930	1931 through 1935	1931 through 1939
Bivins Camp Investment			
Structures	5.00	5.00	25 Years
Equipment	5.00	5.00	25 Years
Undistributed Fixed Capital	5.00	5.00	25 Years
General Property			
Office Structures	5.00	5.00	25 Years
Other Structures	5.00	5.00	25 Years
General Office Equipment	10.00	10.00	10.00%
General Store Equipment	5.00	5.00	25 Years
Telephone System	5.00	5.00	25 Years
General Tools and Implements	10.00	10.00	12.50%
Other General Equipment	5.00	5.00	25 Years
General Garage Equipment (Autos and Trucks)	33.33	33.33	33.33%

Lusk, on being cross-examined with respect to his Exhibit 170, as hereinafter abstracted, again explained that the changes in Colorado Interstate's rates and the conformation of its books to those compromise rates, as agreed upon with the Bureau of Internal Revenue, was made for such tax purposes in the same manner as was done by Canadian (Vol. XLVIII, pp. 6635-37). And the reserves now shown on Colorado Interstate's books for depreciation of physical property ($4,994,352.35 balance as of December 31, 1939; Exhibit 174, p. 21) was the result of accruals at these compromise tax rates (Vol. XIX, pp. 2640-42 and Vol. XLVIII, pp. 6634-35). Lusk also testified that its gas purchase and sales contracts had been amortized by Colorado Interstate so as to recover the investment therein within the project term. The reserves shown on the books for such amortization have been summarized by the Commission's witness Kenneth L. Smith on page 8 of his Exhibit 174, as follows:

Particulars	Total	Contracts for Purchase and Sale of Gas	City of Colorado Springs, Colo.
Balance included in plant account at December 31, 1939, per books	$2,589,607.84	$2,352,941.17	$236,666.67
Amortization rate (Note 1)		5%	5.869%
Annual amortization as reclassified; (Note 2)			
Year 1939	$ 131,536.56	$ 117,647.04	$ 13,889.52
Year 1938	131,536.56	117,647.04	13,889.52
Year 1937	131,536.56	117,647.04	13,889.52
Year 1936	131,536.56	117,647.04	13,889.52
Year 1935	131,536.56	117,647.04	13,889.52
Year 1934	131,536.56	117,647.04	13,889.52
Year 1933	131,536.56	117,647.04	13,889.52
Year 1932	131,672.62	117,647.04	14,025.58
Year 1931	124,999.98	117,647.04	7,352.94
Year 1930	117,647.04	117,647.04	
Year 1929	117,647.06	117,647.06	
Six months ended December 31, 1928	58,823.53	58,823.53	
Totals	$1,471,546.15	$1,352,940.99	$118,605.16

To this statement the witness Smith appended the following notes found on page 9 of his Exhibit 174:

"Notes:

(1) The amortization rates used by the Respondent have been designed to write off the recorded costs of, or the values placed upon, the contracts over their respective lives. The contracts for the purchase and sale of gas are being amortized on the books over the 20-year period from July 1, 1928 to June 30, 1948, the expiration date of the contracts. The recorded cost of the City of Colorado Springs, Colorado, contract is being amortized on the books from July 1, 1931 to June 19, 1948.

(2) Amortization for the six months ended December 31, 1928 and for the year 1929 was charged to surplus on the Respondent's books in the years 1931 and 1930, respectively. These charges were transferred to the income accounts of the years to which applicable on Examiner's entry No. R-137, which is included in the exhibit relating to the income account."

As to the "actual" or "observed" depreciation existing in the physical property in distinction to the book reserves just mentioned, the witness Rhodes testified that a field inspection of the Denver Line properties of Colorado Interstate showed as of December 31, 1938 the per cent accumulated depreciation and condition of the properties as follows: (Exhibit 70, p. 32.)

F.P.C. Acct. No.	Description	Accumulated Depreciation % Per Cent	Condition of Properties Per Cent
Natural Gas Transmission Plant			
351-1	Land	0.0%	100.0%
351-2	Land Rights (Rights of Way)	00.0	100.0
352-1	Pumping Station Structures	14.0	86.0
352-2	Measuring and Regulating Station Structures	13.0	87.0
352-3	Other Transmission System Structures	13.0	87.0
353	Mains	5.0	95.0
354-1	Pumping Station Equipment	12.0	88.0
354-2	Measuring and Regulating Station Equipment	10.0	90.0
General Plant			
372	Office Furniture & Equipment	20.0	80.0
373	Transportation Equipment	49.0	51.0
377	Tools and Work Equipment	20.0	80.0
378	Communication Equipment	16.0	84.0
Working Capital			100.0

On page 12 of his Exhibit 70, Rhodes stated:

> "The depreciation accumulated in the property was determined from observations of physical conditions that ultimately lead to the retirement of items of property. Depreciation as determined is separate and distinct from accruals for amortization that may be considered necessary on account of the possible termination of or major changes in Colorado Interstate's business."

The respondent's witness, H. E. Roberts, an engineer of the firm of FB&D "specializing in the valuation of industrial and public utility properties" (Vol. XCIV, p. 14413) and whose qualifications as such engineer are set forth (pp. 14413, et seq.) applied the foregoing percentages of accumulated depreciation to the original cost of the Denver Line properties of Colorado Interstate as shown in his Exhibit 283 and to the equivalent original cost of a Denver pipe line for resale gas alone in his Exhibit 284. He worked with Mr. Rhodes in making the estimate of reproduction cost, and less depreciation, of the properties of Colorado Interstate and those of Canadian River. He began that work in March 1939 and continued with it until the hearing in this case began (Vol. XCIV, pp. 14415-16; Vol. XCVII, pp. 15023-29). He worked on the problem of depreciation and the condition of the property (Vol. XCIV, p. 14416).

In his Exhibit 283, he took the original cost of Colorado Interstate's property as shown in Exhibit 67 by Mr. Lusk and rearranged the items only for the purpose of having them conform to the classification of the several items of property and their per cent condition of depreciation as shown in Mr. Rhodes' Exhibit 70. This was done in order to have an exact comparison or identity of the property but did not affect the total original cost as shown in Mr. Lusk's Exhibit 67 (Vol. XCVII, pp. 15004-05). Applying the percentages of accumulated depreciation, he arrived at the following: (Exhibit 283, Statement 1.)

Colorado Interstate Gas Company.
Accumulated Depreciation of Original Cost of Physical Properties of the Denver Line as of December 31, 1938.
Summary by Accounts.

Item No.	Account No. (Exch. No. 70)	Account No. (Company)	Description	Original Cost (A)	Accumulated Depreciation	
					Per Cent	Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Transmission System					
1	351-1	218	Land	$ 19,949	.....	.....
2	351-2	220; 219	Rights of Way and Leasehold	174,391	.....	.....
3	352-1	221; 223 224; 227	Compressing Station Structures	495,235	14.0%	$ 69,333
4	354-1	224; 227	Compressing Station Equipment	1,102,031	12.0	132,244
5	353	226	Transmission Line Equipment	8,636,798	5.0	431.840
6	352-2	222; 227	Measuring Station Structures	54,627	13.0	7,102
7	354-2	225	Measuring Station Equipment	88,412	10.0	8,841
8	352-3	223; 227	Other Transmission System Structures and Equipment	68,408	13.0	8,893
9			Total Transmission System	$10,639,851		$658,253
	General Property					
10	378	255	Telephone System	147,106	16.0	23,537
11	372	249	Office Equipment	30,012	20.0	6,002
12	373	253	Garage Equipment	62,521	49.0	30,635
13	377	256	Tools and Implements	36,956	20.0	7,391
14	Total Direct Cost			$10,916,446		$725,818
15	General Construction Costs			1,136,200		37,773
16	Total Original Cost			$12,052,646		$763,591

Note: (A) As shown on Exhibit No. 67.
Adjusted as shown on Statement No. 3 herein.

Following the same method in his Exhibit 284 he arrived at the following for a Denver pipe line for resale gas alone: (Exhibit 284, Statement 1.)

Colorado Interstate Gas Company.

Accumulated Depreciation of the Equivalent Original Cost of a Denver Pipe Line for Resale Gas Alone, as of December 31, 1938.

Summary by Accounts.

Item No.	Account No. (Exch. No. 70)	Account No. (Company)	Description	Original Cost (A)	Accumulated Depreciation	
					Per Cent	Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Transmission System					
1	351-1	218	Land	$ 19,873	.....	.....
2	351-2	220; 219	Rights of Way and Leaseholds	164,195	.....	.....
3	352-1	221; 223 224; 227	Compressing Station Structures	495,235	14.0%	$ 69,333
4	354-1	224; 227	Compressing Station Equipment	1,102,032	12.0	132,244
5	353	226	Transmission Line Equipment	7,469,294	5.0	373,465
6	352-2	222; 227	Measuring Station Structures	48,240	13.0	6,271
7	354-2	225	Measuring Station Equipment	61,126	10.0	6,113
8	352-3	223; 227	Other Transmission System Structures and Equipment	68,408	13.0	8,893
9			Total Transmission System	$ 9,428,403		$596,319
	General Property					
10	378	255	Telephone System	141,092	16.0	22,575
11	372	249	Office Equipment	30,006	20.0	6,001
12	373	253	Garage Equipment	62,521	49.0	30,635
13	377	256	Tools and Implements	36,956	20.0	7,391
14	Total Direct Cost			$ 9,698,978		$662,921
15	General Construction Cost			1,038,595		35,494
16	Total Original Cost			$10,737,573		$698,415

Note: (A) As shown on Exhibit No. 134.
Adjusted as shown on Statement No. 2 herein.

On being cross-examined with respect to these two exhibits as well as with respect to analogous Exhibits 272, 273, 274 and 275 of Canadian, he testified as follows: In his Exhibits 283 and 284, he is relating the percentages arrived at to the very property that he and Mr. Rhodes inspected (Vol. XCVII, p. 15036). He and Mr. Rhodes had a crew that worked under their supervision. He and Mr. Rhodes gave instructions as to the method of inspection and set up an organization with Mr. Smith in charge and their instructions were carried out, although neither he nor Mr. Rhodes personally inspected each item (p. 15039). In determining the "actual or existing depreciation", they did not take into consideration the life of the property or how long it had been in the ground or in place, but determined its per cent condition as disclosed by field inspection (p. 15045).

> "The per cent condition as we have employed it, represents the extent to which the property has depreciated as compared with the total depreciation that would cause that property to be retired." (p. 15048.)

And his determination was made from observation of the physical condition of the property. The figures arrived at make no allowance for amortization of the property in any way for any cause (p. 15052). He and Mr. Rhodes approached the problem primarily as an engineering problem and both determined per cent condition or accumulated depreciation from physical inspections of the property (p. 15059). The per cent conditions of depreciation arrived at do not take into account or give effect to amortization of any kind (p. 15066). As to the percent condition of depreciation, he stated:

> "We found it based upon what maintenance had been done, had taken place." (p. 15075.)

No depreciation was taken with respect to lands and right of ways, because land does not depreciate. If the property is abandoned or ceases as an operating property, the right of way has no value (p. 15109). Determination of per cent condition of actual or observed depreciation did not require, and he did not make, any determination of service lives (p. 15110). Actual depreciation can't be determined on the basis of service lives.

"I think the proper method is to go out in the field and inspect it as we have. I feel we have the amount of depreciation that exists in this property.

* * * * *

"Q. Regardless of what the company may record on its books?

"A. That is right." (pp. 15144-45.)

As to retirements, he said:

"We didn't estimate what the retirements would be in the future as we were inspecting the property that existed at that date." (p. 15117.)

As to the possible salvage value of any of Colorado Interstate's properties, when its business ceased for any cause, the Commission offered the statement of its engineer Hill, who stated that at the end of the service lives of the several items of such property determined by him (Exhibit 178, p. 2, abstracted more fully hereinafter), such salvage would be "negligible." The respondent company presented evidence on salvage in its Exhibit 282, prepared jointly by the witnesses H. P. Taubman, W. D. Smith and E. M. Solow (Vol. XCVI, p. 14913). These same witnesses testified with respect to salvage in the case before the Commission involving Natural Gas Pipe Line Company of America and Texoma Natural Gas Company (Docket No. G-112). They fixed their salvage value as to such items as could be salvaged primarily as of January 1, 1956, but their testimony was to the effect that a great part of the property, and particularly the transmission line could never have any salvage value. Testifying, Mr. Solow said:

"There are certain items like pipe in the main lines that will cost so much more to be salvaged than to leave in place that they are abandoned in place. The figures that are included in circles represent the loss which would be incurred if they were taken up and scrapped. They were just left in place because there would be no sense in that operation." (p. 14912.)

Taking into consideration all factors, such property as could be salvaged was determined to have a value not in excess of $131,019.95 for all of Colorado Interstate's property and investment.

The Commission did not offer any evidence as to salvage except the statement referred to above of its engineer Hill to the effect that after the fifty-year life assigned to the transmission line, and shorter lives assigned to other items of property by him, the salvage would be negligible.

The Commission's accountant Kenneth L. Smith, in his Exhibit 174 (Vol. XLIX, p. 6783) took the book accounts of the company both for depreciation and amortization and changed and recast them retroactively back to the beginning of the project in 1928.

As to the company's accounts for amortization of its contracts, which Smith called "amortization of franchises and contracts," he eliminated all such accounts from further consideration because it was his opinion that such contracts ought not to be part of the "original cost" or investment of the company for regulatory purposes (See his Entry 404, Exhibit 174). Following this elimination of amortization by Smith, the Commission's accountant Early in his Exhibit 140, abstracted supra, eliminated from the company's annual expense all annual requirements for amortization. On this account, Early eliminated $131,536.56 for each of the years 1937, 1938 and 1939 and his "net utility income" was correspondingly increased for each of said years (Exhibit 140, pp. 18, 19 and 20).

As to depreciation Smith said:

> "This report sets forth the annual and accrued depreciation of the gas plant accounts of Colorado Interstate Gas Company for the years 1928 to 1939, inclusive." (p. 6783.)

And again:

> "The chief purpose of the entries is to adjust the annual provisions for depreciation and amortization expense and, concurrently, to adjust the reserve for depreciation so that it will properly reflect the depreciation legitimately accrued on gas plant." (p. 6786.)

And again:

> "Schedule No. 6 is an analysis of the reserve for depreciation for gas plant in service, as adjusted, for the period beginning with the inception of the company in 1928, and ended December 31, 1939." (pp. 6790-91.)

Smith in this Exhibit 174 took the reserve for depreciation as shown by the books in the amount of $4,994,352.35, balance as of December 31, 1939, and eliminated therefrom the amount of $2,343,971.77, leaving an adjusted balance of $2,650,380.58. The difference, he said, "consists chiefly of the variation in the provision for depreciation charged on the books and the amount of the provision as computed by the Examiner, based on the service life estimates of the Bureau of Engineering."

(Vol. XLIX, p. 6785.)

By Entry 402, he adjusted the reserve by a credit thereto of $10,233.36 "to correct the respondent's accounting in the depreciation reserve for the retirement of the Clayton lateral line, measuring station and equipment sold to Canadian River Gas Company as of June 1, 1933."

Entry 403 reverses respondent's annual provision for depreciation. Following that action of Smith, the Commission's witness Early in his Exhibit 140 (pp. 18, 19, 20) abstracted supra, reduced the respondent's expenses for annual depreciation requirements to conform to Smith's action by the amount of $236,021.37 in 1937; $160,161.53 in 1938; and $162,993.65 in 1939. These reductions in annual depreciation charges increased Early's "net utility income" for those years in corresponding amounts.

By Entry 405, Exhibit 174, Smith eliminates from the depreciation reserve account $31,729.53. "The net amount of profit and loss on retirements which have been shown in the reclassified income statements as charges or credits to income."

By his Entry 406, Exhibit 174, he sets up a reserve for depreciation of gas plant in service as of December 31, 1939 in the amount of $2,819,797.11, and in addition a reserve of $3,663.18 of gas plant held for future use. This was done "to record the annual depreciation for gas plant in service based on the service lives estimated by the Bureau of Engineering."

By Entry 407, Exhibit 174, Smith removes from the reserve for depreciation of gas plant in service and charges to reserve for depreciation of gas plant held for future use $1,319.04.

On cross-examination, he testified that he used the service lives furnished by the Commission's Bureau of Engineering and that they had fixed a fifty-year life for the transmission line (Vol. L, p. 6869). If the life of the field is fifty years, then he does not believe that the fifty-year life will provide an adequate reserve so far as the main transmission line is concerned except for one qualification, and that is, that any underestimate in one class might tend to be set offset by an overestimate in another group or class of property (p. 6877).

> "Q. What I have in mind is this: The principle that seems to underlie this question as it relates certainly to the natural gas property, is that your service lives are the number of years over which you accrue depreciation of physical property must be a lesser number of years than the number of years in which the supply of gas will be exhausted?
>
> "A. I believe that is exactly right and I have taken great pains to find out and ascertain basically, relying upon the engineers on our staff that that was the situation; that we were not getting ourselves into a very embarrassing situation in that respect." (pp. 6878-79.)

He satisfied himself that the life of the field was longer than the service lives of fifty years fixed by the Commission's engineers (p. 6883). He did not mean to imply that the company's books were improperly kept (p. 6891). The assumption has been made by the Commission engineers that the project would continue as long as there was a supply of gas available without regard to the contracts with the customers of Colorado Interstate such as the Public Service contract which ends in 1948 (p. 6904).

The service lives of the physical properties of respondent are determined by the Commission's Bureau of Engineering as set forth in Exhibit 177 (witness Hill, Vol. L, p. 6960). The service lives were based primarily on the physical life but consideration was given to retirements because of inadequacies, obsolescence or requirements of public authorities. The probable life of the natural gas supply was taken into consideration and it was assumed that the company would be in business as long as a supply of natural gas was available, and that it would be in business beyond the

service lives of the properties. The net salvage value of the physical property on retirement for any cause was considered to be negligible. There is attached to the exhibit a statement of the service lives, which is fifty years for most of the transmission system; thirty to forty-eight years for structures; twenty to thirty-six years for various items of equipment; and four years for garage equipment; and twelve and one-half years for office equipment.

On cross-examination the witness Hill testified (Vol. LI, p. 7008) that the company kept its property in good repair and that the retirements did not amount to a great deal. The life of the field, he thought, would be longer than the service lives set (p. 7023). He realized that the life of the property for the purpose of accruing depreciation should be less than the number of years that the gas supply would be available, but he thought that somewhere from six to ten years beyond the fifty-year assumed physical life of the pipe line would be adequate to balance off any replacements that had been made prior to the expiration of fifty years (p. 7024). Thirty-six years had been assigned as the service life of compressors. The installation of compressors in the latter part of his sixty-year assumed life of the field would present a different problem for the purpose of accruing depreciation.

"Q. That is, you recognize that limitation of field life is a very positive and determining factor in your service lives?

"A. I think it is, yes, sir, although I think those compressor engines will last much longer than the composite life of each.

* * * * *

"Q. If in the future that field life basis were changed, then the service lives which you have given here might be revised either up or down depending upon what the change of conditions was, I take it?

"A. I think so." (Vol. LI, pp. 7025-26.)

Further Testimony of the Commission's WITNESS, SMITH.

Q. Mr. Smith, in connection with the preparation of this Exhibit 174 did you also prepare a written statement setting forth the main items briefly?

A. Yes, I have.

Q. Will you please read that statement into the record?

A. "This report sets forth the annual and accrued depreciation of the gas plant accounts of Colorado Interstate Gas Company for the years 1928 to 1939, inclusive. By account classification, it shows annual accruals of depreciation based on service life estimates furnished by the Bureau of Engineering of the Federal Power Commission, and also original cost of property retired, salvage on retirements, and other credits as adjusted by this and other Examiners.

"A comparison of the Reserve for Depreciation of Gas Plant in Service per books and that Reserve as adjusted by the Examiner is as follows:"

Mr. Lange: May that table be copied into the record, Mr. Examiner?

The Trial Examiner: Yes.

(As directed by the Trial Examiner, the following table was copied into the record:)

Components of Reserve for Depreciation
1928-1939.

	As Adjusted By Examiner (Schedule No. 1) Column 3	Per Books (Schedule No. 5)	Difference
Provision for Depreciation Charged to Expense	$2,819,797.11	$5,350,774.06	$2,530,976.95
Charged to Plant Account	13,675.74	13,675.74	
Retirements Original Costs Retired	(281,705.03)	(280,934.47)	770.56
Salvage	98,039.24	127,282.88	29,243.64
Adjustments of prior Years' Depreciation through Surplus	....	(219,404.79)	(219,404.79)
Profit and loss on Retirements (net)	....	2,387.17	2,387.17
Miscellaneous	573.52	571.76	(1.76)
Balance in the Reserve, December 31, 1939	$2,650,380.58	$4,994,352.35	$2,343,971.77

The Witness: "The great difference between the balance shown on the books as of December 31, 1939 ($4,994,352.35) and the accrued depreciation as of that date as computed by the Examiner ($2,650,380.58) consists chiefly of the variation in the Provision for Depreciation charged on the books and the amount of the Provision as computed by the Examiner, based on the service life estimates of the Bureau of Engineering. This the tabulation above clearly indicates.

"The Examiner's adjustments were effected through the medium of eleven journal entries, eight of which, Entries Nos. 400 to 407, inclusive, were made by this Examiner and three of which, Entries Nos. 204, 213, and 215, were made by another Examiner."

By Mr. Lange:

Q. Right there, who was the other Examiner, Mr. Smith?

A. That would be Examiner Schutte in his report on the gas plant account of Colorado Interstate Gas Company. I believe that was Exhibit 139.

Q. 139, yes. All right, go ahead.

A. "The entries made by this Examiner are contained in this report and the entries by another Examiner in a report entitled 'Gas Plant Accounts and Examiner's Adjustments.' The entries are principally of two kinds: those that affect only the reserve for depreciation and serve to adjust the amounts of the several elements of the reserve, which entries are denoted by the letter 'R' prefixed to the numeral, and those entries that involve not only the reserve for depreciation, but one or more other accounts as well.

"In addition, there is one adjusting entry (No. 404) which reverses the company's amortization of franchises and contracts. The chief purpose of the entries is to adjust the annu provisions for depreciation and amortization expense and, concurrently, to adjust the reserve for depreciation so that it will properly reflect the depreciation legitimately accrued on gas plant.

"The company's reserve for depreciation and depreciation expense accounts are incorrect and require adjustment for several reasons:

"(a) the annual depreciation rates used by the company have varied (cf. Summary attached to Adjusting Entry No. 403), (b) accrued depreciation has been restated by the company by entries made directly to surplus, (c) the revised annual depreciation rates made effective by the company as of January 1, 1938, were adopted by it without its bringing accrued depreciation into conformity with them, and (d) during certain periods retirement losses were charged to the reserve for depreciation and in other periods such items were charged to an income account.

"Besides this the fact that plant account balances as shown on the company's books have been adjusted by an Examiner of Accounts, and that service life estimates different than the company's have been developed by the Bureau of Engineering also had to be considered. On the assumption that these adjustments to plant account and

these estimates of service life were correct, the company's reserve for depreciation and depreciation expense accounts needed adjustment on this score. The explanation given as a part of each entry states the specific reason and the basis for each adjustment.

"Following the journal entries, on Page 14, appears Schedule No. 1. This tabulation contains the information described in the first paragraph of this text except that it gives this information by major functional groups of plant rather than by accounts. It shows gas plant in service divided into three classifications, i. e., transmission system, distribution system, and general and undistributed fixed capital; it also shows gas plant held for future use. Each of the three classifications of gas plant in service shown in Schedule No. 1 is supported by a schedule which gives information of the kind shown on Schedule No. 1, by subclassification.

"Schedules Nos. 2 and 3 each show four subclassifications of transmission system and distribution system plant, respectively, and Schedule No. 4 shows general and undistributed fixed capital broken down into four subclassifications. In turn, Schedule No. 2 is supported by Schedules Nos. 2A, 2B and 2C, which respectively classify main lines and laterals into one main line and sixteen laterals, and compressing stations and other structures and equipment into structures, equipment, and several other subclassifications.

"The information given on the first five lines of Schedules Nos. 1 to 4, inclusive, and their subschedules are explainable as follows:

"Line No. 1, original charges per books, represents the cost of the company's initial construction plus subsequent gross additions, exclusive of construction work in progress and gas plant adjustments. In most instances, therefore, the amounts on Line No. 1 may be arrived at by adding to the December 31, 1939 balance per books all retirements from the inception of the company to December 31, 1939, exclusive of construction work in progress and gas plant adjustments.

"Line No. 2, Examiner's Adjustments, represents the net adjustments to these plant accounts made by the Examiner

who prepared the report entitled 'Gas Plant Accounts and Examiner's Adjustments.'

"Line No. 3 is the sum of Lines Nos. 1 and 2 and represents the adjusted total cost subject to depreciation.

"Line No. 4 represents total retirements from the inception of the company to December 31, 1939, as adjusted.

"Line No. 5 is the difference between Lines Nos. 3 and 4 and represents the adjusted balance in the plant accounts as at December 31, 1939. The amounts on Line No. 5 agree with the adjusted totals shown in Column 7 of Schedule No. 1 of the report entitled 'Gas Plant Accounts and Examiner's Adjustments.'

"The depreciation was computed annually based on the adjusted balances in each plant account. In a majority of instances the appropriate annual depreciation rate was applied to the adjusted plant account balance at the beginning of the year. If a substantial item of plant was added during the year, six months' depreciation was as a rule computed on that item in the year acquired. In the case of compressing stations, however, each station was depreciated from the approximate date placed in operation. All minor plant additions and retirements were, for the purposes of this study, ignored for the year in which they occurred. They were, of course, taken into account in succeeding years.

"The depreciation rates used in these computations are, in general, based on service life estimates furnished to the Division of Accounts by the Bureau of Engineering.

"With respect to two lateral lines and measuring stations which were disposed of in 1939, costs adjusted for salvage were written off or depreciated on the basis of the actual periods of service while owned by Colorado Interstate Gas Company, rather than on the basis of any estimate of the total service life of the property.

"The computation of depreciation on garage equipment, which is included in Schedule No. 4, was handled in a slightly but not essentially different manner than other depreciation computations. The total cost of the autos and trucks purchased in any one year was considered as a group, and after that group cost had been fully depreci-

ated, which was usually about four years after the year of purchase, no further depreciation was accrued on that group.

"It will be noted that there were no charges to the reserve for depreciation for costs of removal. The company consistently charged these costs to expense. We have made no adjustment for them because they could not be determined without an unjustifiable amount of detailed analyses of payrolls, trucking tickets, and other records. Approximately 75 per cent of retirements were of such a nature that they involved no removal costs.

"Schedule No. 5 is an analysis of the reserve for depreciation for gas plant in service, per books, for the period begun with the inception of the company in 1928, and ended December 31, 1939, and shows the debits and credits to the reserve classified by years in the manner set forth in the tabulation in this text, above.

"Schedule No. 6 is an analysis of the reserve for depreciation for gas plant in service, as adjusted, for the period beginning with the inception of the company in 1928, and ended December 31, 1939. The classifications given in this schedule are the same as the major classifications shown in Schedule No. 1 and show the debits and credits to the reserve classified by years in the manner set forth in the tabulation in this text, above.

"The minor difference in the amounts as classified, as shown by the tabulation in the text and by Schedule No. 6, is caused by a variation in the classification of $2,344.14. In Schedule No. 6 this amount is classified as a miscellaneous credit, but in the tabulation in the text it is eliminated as gas plant held for future use (cf. Schedule No. 1).

"Schedule No. 7 gives the retirements of plant costs charged to reserve for depreciation, per books and as adjusted, providing a recapitulation of the Examiner's Adjusting entries that affect retirements. It shows the retirements as adjusted by years by plant accounts; it supports Line 4 of Schedule No. 1.

"Schedule No. 8 sets forth the salvage credited to the reserve for depreciation in the same manner and in the

same detail that retirement data is tabulated in Schedule No. 7. It supports Line 21 of Schedule No. 1."

(Vol. XLIX, pp. 6783-6791.)

* * * * *

Cross Examination.

By Mr. Dougherty:

Q. Mr. Smith, I take it that you assume no responsibility for the service life estimates which were furnished by the Bureau of Engineering.

A. As to supporting them, no I do not.

Q. You just accepted them as they gave them to you?

A. I have accepted them and I have no reason to consider them unreasonable to the best of my knowledge.

Q. Well, a matter of determining service life is primarily an engineering matter rather than an accounting matter.

A. That is true.

(Vol. XLIX, pp. 6792-6793.)

* * * * *

Q. Do you have when you get your service life the element included in there of depreciation which I think is referred to as "functional"?

A. It is my understanding that the engineers have carefully considered and have arrived at conclusions in arriving at functional depreciation. It is not a part of my study.

Q. Well, do you recognize that in a business dealing with an exhausting resource or asset, such as a coal mine or gold mine or oil well, or natural gas company, that you have a problem of the ending of that operation for reasons other than the mere ending of service life for physical units of property?

A. One in accounting frequently comes into contact with the fact that that probably exists. For example, a coal mining company often pays dividends out of its depletion reserves and I understand that it is legal for it to do that, and you see evidence of those things, but as far as taking those factors into consideration and setting a rate of depreciation that is to be accrued, of course, that is purely an engineering problem.

Q. Assuming that you were the accounting officer for a coal mine and you had the various physical facilities, the tracks, the tipples, and whatever other machinery they use around a coal mine, and the engineer came in and said to you that the service life of that property was fifty years, would you consider it any part of your duty to inquire of him whether or not the economic life of the coal mine would be fifty years, that is, whether the coal mine would last that long?

A. You mean, in other words, if its reserves would be exhausted before that time?

Q. Yes, wouldn't it be a part of the responsibility of the accounting officer to find out whether the reserves would be exhausted before fifty years' time?

A. Of course, he couldn't make that determination up on his own account. You mean he would have to rely upon his expert—

Q. All right, but isn't it part of his duties to make inquiry and consider it, and if not, to have it considered?

A. Of course, as an accounting officer I think his responsibilities would end with the authority and responsibility that had been delegated to him by the management of the company or by the directors in any particular instance.

If the management of the company had instructed the accounting officer to have used the service lives and delegated the responsibility of setting proper service lives forth to the engineers for the coal mining company, I am not so certain but what the accounting officer would have discharged his real responsibility.

Now, if he had any reason to doubt the competency of the engineers who gave the estimates or felt that it was necessary to inquire into their procedure, I think it would be a responsibility for him to do that because he would want to see some support, some sort of a statement from the engineers as to their methods, but he couldn't pass upon whether that method was technically sound.

Maybe I have gone all around your question and haven't wound up at the exact point you wanted me to, but if this accounting officer had knowledge of the fact and knew it either through reliable information that he had obtained, or otherwise, information upon which he could rely, and

he knew the exhaustion of those resources would take place before the service lives set for the physical property, then obviously he would not be using good accounting practice not to go into it further.

Q. My question is this, that the accounting officer is the principal and responsible accounting officer of the company; that he has been told by the president that he can use all of the engineering figures made by the engineers but that he was going to hold you responsible. The next step was that you called in your engineers who gave you a service life. Don't you feel that it is the responsibility of that officer to find out whether the engineers have considered the exhaustion of the coal and what consideration they have given to it even though you don't know a thing about it?

A. Yes, I believe that would certainly be a higher class practice than to ignore or overlook it.

Q. Isn't the first thing an accounting officer would do would be to check with the engineer as to the relationship of his service life to your estimates of the exhaustion of this coal mine? Isn't that one of the first questions you would ask?

A. I think that he would have to recognize that relationship and he ought to be satisfied on that point but he couldn't make the determination.

Q. No, but I say this: Wouldn't he have to say it had been made and given consideration?

A. I believe in order to follow out his resposibility as chief accounting officer on a high plane from a professional and ethical standpoint, he would have to make some investigation that he would have to rely upon in forming his opinion as to the estimate by technical experts in that field.

Q. Now, do you recognize in such a case as a coal mine that by the time that the exhaustions of the coal had taken place there should have been accrued a depreciation reserve sufficient to retire all of the physical property used in connection with that coal mine less salvage?

A. That is correct.

Let me restate it to you to make sure that we are on the right track.

A. By the time the exhaustion of the mineral deposit is made there must also be enough money in the depreciation reserve to retire the equipment less salvage, less net salvage?

Q. That is right. That is my problem.

A. Yes, that is exactly right and that is in accordance with sound and accepted accounting practices.

Q. That would be true even if the physical service life of the equipment were a greater number of years than the period of life of the mineral deposits, that is, to put it specifically, let's assume that the physical service life of the equipment was fifty years for each piece of equipment and that the exhaustion of the resources would take place in forty years; you would have to base your depreciation on forty years rather than on fifty years?

A. Yes, that is correct.

Q. Now, in connection with that problem, do you know whether in this case—that is, the current case at hand—the engineers based their 50-year life of transmission line pipe of Colorado Interstate Gas Company on the physical factors or did they give any consideration to the exhaustion of the source of supply of gas which goes through that line?

A. They, as I understand it, did give consideration to the exhaustion of the source of supply of the gas which moves through that line. I don't know the particulars of that but I do know that it was considered and that the source of supply and the availability studies do have detail from an engineering standpoint in such a way there was no flaw in the service lives they adopted.

That is my understanding of the situation, that is, the understanding upon which I have proceeded.

Q. You say there is no flaw in it; is that your own judgment?

A. No, that is my understanding, that there is no flaw in it.

Q. That would apply with respect to that part of the Canadian River Gas Company's property from Bivins north, the same 50-year life as assigned, because you have used two per cent in the exhibit on transmission line?

A. It seems to me that the situation there is entirely comparable to the main line of the Colorado Interstate Gas Company.

Q. Do you know whether or not the fifty years is the life of the field or is the physical life of the pipe, or is it a composite figure that has been arrived at after giving consideration to both the physical and functional factors as involved in this matter?

A. It is my understanding the physical and functional factors have all been given proper consideration from an engineering standpoint.

Q. I assume that the period of exhaustion of the gas reserves would not be less than fifty years, which is the service life used; that is, isn't that a fair assumption to make?

A. I believe from everything I have said here and the evidence that is in my exhibit, you could fairly conclude that.

Q. Now, in the method you used, Mr. Smith, where you have a fixed service life which we estimate as—which we might say is conterminous with the period of life, isn't there this problem that will arise:

Let's assume that—withdraw that.

I notice in connection with that—I think it is on Page 16 regarding—

Mr. Lange: What exhibit?

Mr. Dougherty: Exhibit No. 174.

Q. (Continuing) —of the La Junta lateral, which is Column 13. That happens to be 2-½ per cent, for which reasons I assume it is a shorter service life, but the principle I have in mind will be illustrated irrespective of the service life if the service life is the same number of years as the period of exhaustion in the field.

I notice that you show retirement down in Line 20 in the amount of $4,000. That, as I understand it, represents five or six thousand feet of pipe, is that your understanding?

A. Well, I would have to get the working papers out to refresh my recollection upon that.

Q. Let's assume it is, and if it turns out later it is wrong, you can correct me.

That pipe, as I understand it, was removed.

Where would the schedule show when it was retired, Mr. Smith? on what page?

A. I don't know whether I can find it or not.

Q. I thought there was one schedule that showed retirements by the years.

A. Yes, I think it is there.

Q. Is that Page 23?

A. I don't believe that item will show up on Page 23.

Q. It doesn't show up?

A. No, sir. I don't think you can identify that particular item; that is, as to the exact year in this exhibit.

Q. Well, it took place some period ago; it doesn't make much difference as to the exact year, but that pipe was retired. Do you know that replacements were installed?

A. If that is a retirement of pipe, why, I think it follows that there would have been a replacement.

Q. Let's assume for the point I want to discuss with you—

A. It is just a theoretical question, anyhow?

Q. No, this actually happened, because I think, as I understand it, at the end of the period of service life here, to the extent that we have made replacements, you will never be able to depreciate them one hundred per cent as you have computed them, and that is what I want to discuss with you.

If that replacement is made, say, at the end of ten years, there would have been accrued against that particular cost of property twenty-five per cent, two and one-half per cent per year, ten years, being twenty-five per cent, isn't that correct?

A. If you want to make an allocation, that is what you would have to assume in your allocation.

Q. To the extent of whether you allocate it or not, to the extent that number of dollars went into the plant account and accrued at 2-½ per cent per year against the whole plant account, there would have been 25 per cent against the original cost of that property which is now being retired and accrued into the reserve?

A. Of course, this is group retirement—

Q. I understand that, but I think it will work out the same when we get to the end.

A. I think so, too, but I just want to point out that under that method of depreciation accounting, you were not assuming that any particular piece of pipe had so many dollars accrued against it specifically. Do you see what I mean?

Q. Yes.

A. It is a process of allocation but probably that won't make any difference to the discussion we want to pursue.

Q. Now, that pipe having been retired, the original cost of it would be taken out of the plant account?

A. That is correct.

Q. Then the cost of replacement would be added to the plant account?

A. That is correct.

Q. And you would charge against the reserves the original cost of the pipe retired?

A. Less salvage.

Q. Now, as you go along year by year and have made replacements and have made retirements, suppose you come to the end of your service life period. Instances such as I have mentioned result, do they not, in your not having accrued at the end of your service life period enough depreciation to completely restore or repay the cost of all the property, including replacements which has been put into that line?

A. You are thinking of the Colorado Interstate Gas Company, we will say, as of June 30, 1978?

Q. Right.

A. And what you are saying is that under this method we followed here the depreciation reserve on that date can't possibly be equal—be as great as the original cost of the property on the books as of that date?

Q. It can't possibly be so if there have been any retirements or replacements?

A. In order for what I said to be true, we would have to assume there is a 50-year life on all of the property.

Q. Let's take main transmission line because I think we are in agreement on that, the main transmission line with fifty years' life. Isn't it correct that at the end of the 50-year period you couldn't possibly have accrued the complete original cost of that pipe line if during the 50-year period you made retirements and replacements and the reserve on

June 30, or June 1, whichever it would be, in 1978 could not possibly be the number of dollars that the original costs show?

A. I take it that you are assuming that there would have been no extraordinary losses written off through a special way or anything like that?

Q. That is right, just as I understand the Code of Accounts, in that two sections of pipe or more constitute a retirement unit, is that correct?

A. That is my understanding of the retirement units that are laid down in Appendix 1 of the Uniform System of Accounts for natural gas companies.

Q. As I understand it, every time Colorado Interstate Gas Company takes up or has to replace two or more continuous lengths of pipe, the retirement must be charged against the reserve and the new lengths of pipe must be put into capital?

A. That is my understanding.

Q. That is, we couldn't expense it; we couldn't charge it as maintenance?

A. Not two lengths or more.

Q. I assume from your treatment at the end of your 50-year period—maybe there is only $1,000 of retirements during the whole fifty years—we couldn't possibly have accrued a reserve that would equal the original cost?

A. Yes, I think we are in agreement on that. I think that is correct.

Q. Doesn't that mean this, Mr. Smith, that when you talk about service lives, having particularly in mind the physical service life, that will give way before the service life you have assumed will to some extent be balanced off by the pieces of pipe that extend for a longer period than your service life; isn't that essential in order to make this method of accounting adequate in producing a reserve?

A. You are assuming that you want one hundred per cent reserve at the end of fifty years?

Q. I certainly am. It is exactly that. As I understand it, this figure represents the functional factor in depreciation and I am assuming, since I have not yet been told, that fifty years is the life of the field.

A. That is the point I was wanting to get to. I think the answer to your question depends entirely upon the supply of gas.

Q. So let's assume—I think we are right together on it—that fifty years is the length of supply of the gas; then wouldn't you have to use less than a 50-year service life in accruing your depreciation annually unless fifty years was the minimum service life of every piece of property and every unit of property in that pipe line?

A. I don't think your last statement that follows is applied to the plant as a whole.

Q. I am limiting it to the pipe line.

A. You are just talking about the pipe line?

Q. The main transmission pipe line. If the life of the field is fifty years, then isn't it erroneous as an accounting matter to take fifty years of the service life for the purpose of determining your annual accruals?

A. I think I can answer that this way: —I am answering it from an accounting viewpoint.

Q. That is what I want.

A. If the supply of gas is exhausted and no other gas is available—I mean, if the supply of gas—if the present supply of gas is exhausted and there is no other supply available—

Q. That is right.

A. — then I don't believe that the 50-year life will provide an adequate reserve so far as main transmission lines alone are concerned—

Q. That is what I am talking about.

A. —but, of course—may I go ahead?

Q. Yes. I can take up the other matter later.

A. I just wanted to add a slight qualification there. I don't know whether it is significant or not, but it might be; that is, that any underestimate in one class of property might tend to be offset by an overestimate in another group of property, looking at the property as a whole.

Q. That is, of course, a matter of practical judgment and not accounting principles, isn't it: that is, from the accounting standpoint, and don't we want to make each classification of property as close to being accurate as we can and not depend upon the chances of this being off?

A. Of course, that would be the most desirable, naturally, but I just want to point out that in the final analysis we are interested in retiring the property as a whole.

Q. Mr. Spencer points out that you have to depend upon

an error made in some other classification to correct the errors made here.

A. I wouldn't say there would be errors, because these estimates are a matter of judgment, I presume, in the final analysis, and I wouldn't want to say they were errors.

Q. What I have in mind is this: The principle that seems to underlie this question as it relates certainly to the natural gas property, is that your service lives are the number of years over which you accrue depreciation of physical property must be a lesser number of years than the number of years in which the supply of gas will be exhausted?

A. I believe that is exactly right and I have taken great pains to find out and ascertain basically, relying upon the engineers on our staff that that was the situation; that we were not getting ourselves into a very embarrassing situation in that respect.

Q. So you would have to have, as far as main lines are concerned, a life of the field greater than fifty years for a sufficient period to balance off these early retirements against the property that lasts more than fifty years?

A. I think that is correct and that has been recognized, of course, and I believe that we dealt with it properly.

Q. Now, then, the other pieces of pipe here upon which you have two and one-half per cent for laterals at that time, that represents a 40-year service life?

A. That is right.

Q. I notice now in respect to two of these properties that were disposed of you in studying up your depreciation have fully depreciated the original cost over the number of years in which the pipe was in service, is that correct?

A. That is over the period that this property was in service and it belonged to Colorado Interstate Gas Company.

Q. Yes, that is what I mean.

Of course, you were able to do that because that transaction had taken place before you took up this job?

A. Yes, we took some advantage of hindsight because we wanted our accounting to be just as accurate as we could make it.

Q. But it is based on hindsight and doesn't reflect any-

thing that the company knew at the time they constructed the line?

A. I said that it was based on hindsight; it was based more upon an accomplished fact.

Q. When the company first started to accrue depreciation, for example, on this Littleton lateral, of course, if we assume it [illegible]n didn't know in 1939 it was going to transfer that to the Public Service Company of Colorado, it would have no reason to accrue 9.52 per cent per year from the beginning?

A. No, they couldn't have used that figure even if they knew they were going to transfer it, because they couldn't have predicted they were going to do it and they couldn't have used that figure.

Q. So that, using whatever the percentage they could use, is there any provision made in your method of accruing depreciation to recover that difference through some charge to expense that gets it out at the time the property goes out of service?

A. You mean where a company had gone along and had depreciated this property the same as its other laterals, we will say, and then disposed of the property and then found it didn't have sufficient reserves?

Q. Yes.

A. You might take a look at Account 141, Page 23. That may offer some solution to the situation.

Q. Well, how will you ever get that loss out of the operating expenses if you use this account?

A. As I understand the use of this account it would cover the situation at hand because the retirement of the property through a cause which could not have been reasonably foreseen and provided for at the time of the original service life estimates and apparently would not be provided for by that means; therefore, I believe that we are correct in assuming that the loss would be chargeable to this account under the conditions specified in the account which requires authorization from the Commission to use the account.

If this extraordinary loss ever got into operating expenses; that is, under the conditions we are talking about, it would have to be through approval of the Commission for the company to amortize this loss through operations.

That doesn't mean I am stating that the Commission would be bound to do that; I am saying that if they approved it and authorized it, the company would by that means, as I see it, be permitted to charge that loss to operating expenses.

Q. In any pipe that is consumed in service, such as I understand is so in the Arkansas Valley, which represents a loss that was unpredictable because the pipe is pitted and can't be used, long before the end of the service life, would the loss between the original cost and the percentage that has been accrued against that as depreciation less salvage properly be handled in that way so that it might be charged through operating expenses, the service life that would be consumed in service?

A. I don't think I can answer that question without—I doubt if it could even if all of the facts were known, because I believe a situation like that would require engineering judgment in addition to the accounting information and I believe in the final analysis that is one of the things that is determined by the Commission rather than by the opinion of any member on its staff.

Q. It is probably more of a proper charge to the reserve on the theory you have that the service life will eventually run long enough to average them all up?

A. I don't think an accountant would be proper in getting too much concerned about occasional or sporadic situations of that kind. If they have set their service life up at the beginning of a property and if the experience develops the judgment isn't as good as they thought it was going to be; then if the experience of the property is not proving that their estimates are reasonable, the situation you talked about there might call for a revision of service life estimates. I am just suggesting that; I am not making any definite answer to you at all.

Q. I understand that in connection with the necessity of having the exhaustion of the field in a greater number of service lives you did make inquiry of the engineers and satisfied yourself that there was an ample margin?

A. Yes, that is true.

Q. What is the process that you can go through in determining how far beyond 1978 there should be a gas supply for this line so that at its final exhaustion you will have one hundred per cent of the original cost?

A. That is not an exact science—

Q. I would agree with you on that.

A. —because there is too much unknown. There are too many factors unknown. I believe the correlating of those factors, that is, a final decision as to whether or not you might say the margin was sufficient, was a part of the engineering study; I know it has been considered. I think I have fulfilled my duties and responsibilities as an accountant, but we do not know what the future requirements are going to be at this time except as the engineers have made their estimates of it, and wo do not know as to an absolute certainty except as the engineers have estimated it, as I see it, as to what the property addition is going to be from now until 1978 or any other time. Those are both factors that probably enter into that.

Q. It would require a study, no doubt, of the past experience; do you know what retirements have been made in the past of the particular property?

A. The past retirements and prospective retirements. You see the engineers examined this property and inspected it and of course I had no part in that.

Q. You did see to it or were satisfied in your own mind that they would be given consideration to the period beyond the end of the 50-years service life for which gas would still be available through this line?

A. That is my understanding.

(Vol. L, pp. 6864-6884.)

* * * * *

Q. Mr. Smith, will you turn to Page 17, Exhibit 174, which deals with compressing system?

A. Yes.

Q. Will you point out to me the column in which compressors themselves are contained?

A. That is Column 6 as I understand it.

Q. According to the note that is 2.78 per cent; that would be roughly about a 35-year service life?

A. Yes, approximately.

Q. That service life, I take it, is one based entirely upon the physical life of the unit?

A. I believe when the engineers take the stand they can give you a little bit better detail on that than I can. I am not sure but what that is a composite rate than can be

broken down a little further than that. That is my recollection of it now.

Q. Do you know whether in arriving at that service life there was any consideration given to the possible obsolescence or change in the art in any of those functional factors?

A. I understand the functional factors have been considered all the way through.

Q. If you have your mimeographed statement that you read into the record, please turn to it. I notice on the bottom of Page 2 it is stated: "The Company's reserve for depreciation and depreciation expense accounts are incorrect and require adjustments for several reasons: (a) the annual depreciation rates used by the company have varied."

Of course, you are making this conclusion after having had all of the facts before you and as you say using hindsight to the extent that it was available?

A. Yes, in arriving at these determinations, both the engineers and accountants' determinations, it seems to me that we are predicating our present findings to a great extent upon the company's experience to date. Of course, that couldn't be the sole factor but it has been an influential factor.

Q. Now these various rates that this company used, I think they are shown in your exhibit. I guess that is at Page 6, Exhibit 174, isn't it?

A. Page 6 attached to Journal Entry 403 shows the company's rates and their accruals.

Q. And that discloses that at the beginning the company used five per cent as the annual rate of accrual for depreciation on their main pipe line system?

A. Yes, they used five per cent, in fact, on almost every class of property with a few exceptions.

Q. Now, the accounting officers or other officials of the company who were responsible for that determination back in 1928 did not have available to them the information that you had when you made this exhibit?

A. No, they certainly didn't have twelve years of the company's experience available.

Q. And I assume that the way an accounting officer

would proceed in the beginning would be to assemble all of the information he could, which of course wouldn't be very much, and then make a determination of a percentage rate, isn't that correct?

A. I think that the actual determination of a percentage rate, should probably be left up to an engineer, if he had one.

Q. Then somebody in the company would have to furnish the facts and make the decision?

A. That would be true. I think that sometimes the accounting officer of a company in any particular situation might be influenced on his depreciation a great deal by income tax considerations.

Q. Well, your statements that the accruals in that year of five per cent were incorrect and was based, as I take it, upon a consideration of the facts available to you after twelve years' experience and not because you believed that the decision made in 1928 on the facts then at hand was an incorrect decision?

A. I don't mean to reflect upon the judgment of the accounting officer at that time. I merely mean to point out that experience has shown a better determination can be made now.

Q. Then you don't mean to imply that the fact that a company may have over a period of a number of years used different rates of depreciation that there was anything wrong or incorrect about it merely because there were different rates?

A. Well, regardless of how good the intentions of the accountant were and how good his judgment may have been in the light of those conditions, if present conditions and the experience of the company shows that his estimates were incorrect or unreasonable, the fact remains that they were incorrect and unreasonable.

Q. That is, what you are speaking of here is that it now turns out on the basis of experience and present knowledge that those previous rates were incorrect?

A. Yes, it seems to me that that is the only interpretation you could make.

Q. That could be true with your present rate as well. Suppose ten or fifteen years from now new facts developed that indicated that the rates you set up were not correct at that time. We could again make the statement that the depreciation rates were wrong because they had varied?

A. You mean the rates I have used instead of your rates?

Q. The rates you have used, yes.

A. Oh, I think that follows. Depreciation is an estimate and we all recognize that the service life is an estimate, and if it is good accounting to make a restatement of depreciation today, twelve or fifteen years after the company was formed, it follows that it might be good accounting practice to make one thirteen years in the future, but not having the facts, I don't know.

Q. The thing I had in mind was this; that the determination of the annual rates can be made only in light of presen. known knowledge and that if subsequent developments show a different set of facts, then the appropriate thing to do is to find out what those facts justify and then change your depreciation accordingly?

A. That is probably true. That is one of those bridges you cross when you come to it.

Q. In the language you used where you speak of the fact that annual depreciation rates vary, you are not indicating that wherever conditions have required a change in rates from time to time there is anything more than just a mistake of judgment and maybe not, on the basis of then known facts?

A. I think that is the implication of Section (a). Section (a), which points out the flaws, we might say, is not nearly so significant as Section (c).

Q. Let's take Section (b). You say: "Accrued depreciation has been restated by the company by entries made directly to surplus."

Whenever a new set of facts appear that indicates there should be some restatement of depreciation, is there any other way that it can be handled than through adjustment to surplus?

A. You mean so far as recording the transactions on the books at the particular time?

Q. Right.

A. That is a matter of bookkeeping procedure and is probably entirely correct; as a matter of financial reporting, the company, of course, is obligated I think to go further than to merely make the restatement on its books and charge it directly to surplus. When it puts out reports or if it made a statement of income, comparative

statements by years, whether it was three, five, or ten years, I think that the surplus adjustments of that nature which have their inception only because they are a restatement of income for prior years, should be reflected in any restatement of income for a series of prior years.

Q. That is, you would want to put back in the year in which it should have taken place the accrual of depreciation that was not actually put on the books until the subsequent year?

A. Yes. Any accrual or any revision should be related back to the proper year.

Q. But as far as the books are concerned, it is not your intention that they should be rewritten every time you make some revision of your depreciation situation?

A. No. I feel as though any major revisions or restatements of depreciation should be reflected directly to the surplus account on the books. Now, if it was just a minor restatement or revision it might be absorbed in an income account of a particular year.

Q. So you don't mean to imply that the company's books were incorrectly kept by reason of the matter that you state here in Paragraph (b)? The reason I mention that is because the beginning of that sentence reads: "Reserves for depreciation and depletion expense accounts are incorrect,"

A. Yes.

Q. I say again, the implication is that they are incorrect because they don't reflect exactly the facts as later developed with respect to depreciation?

A. That is the income account of a particular year; picking it out may not reflect the correct fact to the depreciation expense for that year?

Q. Yes, but the bookkeeping the company did in handling it that way, as far as the books were concerned, was a correct way in doing it?

A. I think as a matter of bookkeeping procedure they follow what any bookkeeper would normally do.

(Vol. pp. 6885-6892.)

* * * * *

Q. Well, now, let me ask you to apply the principles you have just stated to this rate case. Let's assume that the Commission finds that your proposed annual rates of accrual

are correct and bases its rates on them and suppose ten years from now on a reappraisal of the situation in another rate case which it brings because they don't think our rates are high enough, it then appears without question, without dispute, that despite your best efforts today, that it then turns out that your rates were too low.

Now, if we go back and restate our books and show that we depreciated too little, how are we going to get that from the rate payers?

A. Well, that is a problem of rate study. I think that is entirely out of my field.

Q. All right, now, of course let's assume that we can't do it. That seems to be an axiom.

A. You couldn't—

Q. That you cannot collect it from the rate payers over the past ten years. I think that is a normal assumption.

A. You mean ten years in the future, from now?

Q. No, I mean we couldn't go back to the past ten years when the depreciation should have been higher and get a higher rate from our customers because of that additional expense item.

A. Yes, but this future period you are talking about is ten years from now. It isn't—

Q. Oh, no, ten years from now is when we find that you are too low, see.

A. I wanted to get the periods straight.

Q. Yes. Now, when we find you are too low, if we go back and restate our books it will show a lesser net utility income than it had shown, yet the company would not be able to collect any greater gross revenue because of that, and, therefore, isn't it so that in a case where a company is subject to public regulations that you have got to apply a little different rule to that situation than you do to the ordinary business concern that does not have its prices subject to regulation?

A. Well, your question, though, goes right to the matter of setting rates. It doesn't go to the matter of accounting.

Q. Well, we have to keep our books, of course, under the jurisdiction of the same authority that fixes the rates, and I assume that there ought to be some conformity between what is done in one function of the Commission and what is done in another.

A. Well, of course, I presume that the Commission would deal with that situation in a manner that it thought was proper and legal, but that couldn't possibly change my finding as an accountant today, as I see it.

Q. Not today, but it changes it ten years from now; then we would have to go all the way back—

A. All the accountants—if that situation did materialize—all the accountants could do would be to reflect the proper entries in the accounts at that time.

Q. But what I am trying to get at, do you think that under those circumstances we ought to go back to the beginning and restate on our books the depreciation and reserves and the annual accruals?

A. You mean to restate your annual accruals—

Q. Yes.

A. —year by year—

Q. Yes.

A. —open up your books—

Q. Yes.

A. —or rewrite your books, or something like that?

Q. Yes.

A. I think as a matter of bookkeeping procedure it would be adequate to make that adjustment through surplus, if you were required to do it and if it were approved by the Commission, and I am speaking now not from the standpoint of making a ruling that the Division of Accounts is going to be bound by. I am just speaking from the standpoint of an accountant.

Q. The result would be, would it not, that since we have not collected a sufficient depreciation in the past that your plan would be, or your method would be that we would not be permitted in the future to boost the then correct rate up a little to take care of the past deficiencies; that we would go right ahead if it then developed instead of a 50-year life it was 33-year life; we would go right ahead on three per cent from then on without attempting to average the thing off so that the company should recover what it should have recovered?

A. Well, I am making no findings here or making no statements whatsoever about rate setting. The central theme of my business as an accountant is to determine income and I have laid down the principles that I think are absolutely

correct from an accounting standpoint and I believe are concurred in by more than a substantial majority of qualified accountants. The matter of determining what is the cost of gas operations is one thing. The setting of rates is something else.

Q. And so that is clearly understood, that you have not considered the effect on rates in making this depreciation study, that you haven't given that consideration?

A. I—oh—well—

Q. Well, what I want to get at is this: I want to be in position to say to this Commission whether you have or not, and argue the thing. To me it seems it should be given consideration by somebody. If you haven't, then I want to know that and I can go somewhere else.

A. Well, my study has been confined, speaking broadly of the depreciation study and all of the income account study—it has been confined to setting forth year by year the correct cost as nearly as we could determine it from an accounting point of view, the cost of conducting gas operations.

Now, as to setting a rate based on those facts, I hope that we have done them well enough that they do form an intelligent basis for rate setting. I have every confidence that they do because I think they are good accounting. I don't know an accounting job that I have ever done that I felt as good about when it was over with, that we had gone into everything that should be gone into and had all of the expert assistance to back us up on matters that weren't accounting, and that sort of thing. I feel as though it is about as good a piece of accounting work as it is humanly possible to do but it has been purely an accounting piece of work and it is hoped that it furnishes the basis for intelligent rate study, but the rate study is somebody else's responsibility.

Q. In consideration of such questions that I made, it would be something that you would defer to the Commission, that is, pass over to them; that is, let them answer?

A. I believe that that is correct.

Q. Mr. Smith, in arriving at these annual rates, I think you said that you got the service lives from the engineers after realizing that they had given consideration to the estimated life of the field. Now, in making your estimates of the annual rates I take it, then, you gave no consideration

to the fact that the contract between Canadian River Gas Company and Colorado Interstate Gas Company runs for twenty years. You didn't take that 20-year factor into consideration?

A. The existence of that contract, of course, was known. You are speaking now of the contract for sale of gas by Colorado Interstate to Public Service?

Q. We can include that, too, yes. I first mentioned the contract for the purchase of gas by Colorado Interstate from Canadian River, but it has an initial period of twenty years and that would apply both to the pipe line factors of Canadian River as well as the pipe line of Colorado Interstate.

A. Well, I think I can sum it up this way: I believe that the assumption has been made by the engineers that this project—meaning the Canadian River and Colorado Interstate—both as one project; has been treated as an enterprise which would continue to operate so long as a supply of gas is available.

Q. Without regard to any contracts with its customers that have expiration dates in them before that time, such as the Public Service Company contract which ends in 1948?

A. That is correct. I don't know of any precedent in accounting practice where the—going back to a manufacturing concern—the fact that it may have contracts or commitments only for twelve months in advance, that does not modify our accounting. We try to find out the cost of doing business for that 12-months period and we have to assume that it is a going, continuing enterprise because in any other determination it seems to me it would be more legal than in the accounting field.

Q. You considered it was a going enterprise until the field became exhausted?

A. So long as the supply of gas is available.

Q. You are not limiting that to the immediate property of the Canadian River?

A. I am not prepared to answer that completely. Now, I think that will show up clearly in our engineering testimony as to exactly what they have done on that.

Q. At any rate, you have limited it solely to that particular set of circumstances you say, namely, that Colorado Interstate will be a going concern in business so long as the gas supply is available, which number of years or availability will be covered by later witnesses?

A. That is my understanding that it will be supported.

Q. Did you make any examination or study of the papers and other documents that were filed with the Internal Revenue Bureau and used by it in connection with the revision of rates that was made in 1936 or 1938, but which resulted in the revision of the then currently charged annual rate for depreciation?

A. I didn't make a detailed examination of those papers or documents.

Q. Did you give any consideration in arriving at your annual accrual rate to the decision of the Internal Revenue Bureau, then, with respect to the life of Canadian River's gas supply which as I recall it is twenty-five years from 1931 which the Internal Revenue Bureau accepted?

A. The only consideration to it that I have given in this study would be what you might call an indirect one, as that being a factor that affects my computation, and I say "indirect" in the sense that whatever consideration I reflected here is the consideration that has been given it by the engineering staff in arriving at their judgment.

Q. You were cognizant of that life of the field that was stated in the Internal Revenue papers, were you?

A. It has been my general understanding that the assumption was followed out by the company in its accounting that the supply of gas might be exhausted in about 1956 and that was in conformity with something that the Bureau of Internal Revenue—finding it had made, but that was only general information—general knowledge. I am not familiar with the documents. I don't know anything about them and the responsibility of giving that the proper weight is not a part of my study.

Q. And you did not attempt to give it any weight in considering that along with the service lives that the engineers gave them?

A. I did not see any way that I could give it any weight without just arbitrarily refusing to accept the findings of our engineers.

Q. I was only *interest* in the facts. I am not trying to criticise you for it. As a matter of fact, however, you did not give any consideration to it in weighting it in with the opinion which the engineers gave you?

A. No, I did not weight that along with the engineers'

estimates. I accepted the engineers' estimates of service lives which they have determined.

Q. So that any consideration that was given to that would have been given by the engineers?

A. That is my understanding.

Q. Would you turn to Exhibit 176 which is the Canadian River Exhibit, and it might be appropriate at this time to ask you, Mr. Smith, whether or not the questions and answers which you and I have been engaging in would have application to the Canadian River—at least that part of it that is the transmission line from Bivins north, or do you wish to wait until you have read the record and answer the question? Would that be preferable to you, to read the record today?

A. Well, I think I can say at this time that any statement I have made relative to the general theory of depreciation accounting and as to the dovetailing of my exhibit here with the work of our Bureau of Engineers would apply equally to the transmission facilities of Canadian River and Colorado Interstate Gas Company.

By Mr. Spencer:

Q. Well, would that also be true in speaking of the general principles you have discussed with respect to your work in regard to production and gathering facilities of Canadian River Gas Company included in your Exhibit No. 176, confining ourselves only to general principles of accounting and general treatment here?

A. You mean confining it to the depreciation study rather than what we have determined in our depletion study.

Q. Yes, eliminating the depletion study.

A. I believe that is true.

By Mr. Dougherty:

Q. Now, Mr. Smith, if you will turn to Page 20 of Exhibit 176, under the heading of "Field Lines" which is Column 6, I note you have an annual rate of two and a half per cent during the period through 1939 which you have accrued to $287,158.56 and the original cost of retirements without giving any consideration to salvage of $191,095.58. Now, that indicates, does it not, that a good deal of rearranging of field lines has taken place in the Canadian River gathering

system if out of a total of roughly $287,000 you have retired $191,000.

A. Well, of course, your retirements—I think that a better comparison is on Lines 3 and 4.

Q. There you have got in Line 4 more retirements than the original cost even.

A. The comparison of Lines 3 and 4.

Q. Oh, you mean up above it. I thought you meant Columns 3 and 4.

A. No.

Q. That is the same figure?

A. It is true that original cost of $191,095.58 has been retired throughout the company's existence in comparison with total original cost charges as shown on Line 3, of $1,442,269.53.

Q. That's right, but I am talking about the annual rate of depreciation now. They have got a lot more lines there, but you have accrued on the basis of two and a half per cent a year, not a great deal more than the gross retirements. Do you know whether those retirements were made by reason of termination of lines or for relocation and resetting?

A. To make it certain as to that I would probably have to refer to the working papers, but I can point this out and it may serve to answer your question. The high salvage on that, shown on Line 20—

Q. Yes.

A. —would indicate that probably considerable relocation took place there rather than complete retirement out of operation forever, so to speak.

Q. That probably went through the warehouse and then out of second-hand pipe into the new location or something of that sort?

A. That is my recollection, now, of the accounting practice on those things.

Q. Now, where you have a situation such as that is in gathering lines, of course, the intangible costs, the labor, and so on, and the cost of putting the line down, that is all gone isn't it when you make a relocation?

A. The only salvage would be on materials.

Q. So that there is a complete loss of construction costs?

A. Of course, you have got other factors to consider there. It depends upon what they do with their reinstallation costs.

Q. Well, you have got to spend more money to move the line.

A. Well, whether it is charged against the reserve has to be considered.

Q. It is appropriate accounting practice, isn't it, that those construction costs are capitalized and upon retirement should be charged against reserve, shouldn't they?

A. I believe that that is an acceptable accounting practice to capitalize the original installation costs and then to retire those costs against the reserve.

Q. Well, isn't that the way they will have to be accounted for under the Federal Power Commission Code?

A. That is my understanding. I believe that is right.

Q. So not only is it acceptable but there it is. That's the rule as far as natural gas companies are concerned.

A. Under the code.

Q. Under the code?

A. Yes.

Q. You don't have that same factor where a lateral line is concerned that runs to a customer, say, for Colorado Interstate? You have reflected those in that exhibit which, as I recall, shows two and a half per cent annual rate for a number of those lateral lines. Is that your recollection?

A. I recall that that rate was used.

Q. Now, having in mind the different factors involved in field lines, mainly that of frequent relocation and the loss of all construction charges, shouldn't there be a greater annual rate per annum for field lines than for a lateral line or a main line?

A. Of course, I think that that would be leading to an engineering conclusion it seems to me. In studying these service life estimates, I believe that the engineering testimony will support exactly what they had in mind by that service life estimate.

Q. However, from the books and from an accounting standpoint, it is quite apparent that there is a problem of loss of construction costs in field lines which is not involved in lateral lines, is that not correct?

A. It seems to me, now that I have thought it over again, that what the code says is that—there is a provision in there that would permit any relocation to be charged to expense.

(Vol. L, pp. 6898-6912.)

* * * * *

Q. Mr. Smith, this morning in connection with your cross examination on Exhibit 174, Colorado Interstate Gas Company, some reference was made by you concerning a figure that you understood the Internal Revenue Bureau had used as to the life of the field or the reserves of Canadian River Gas Company and what is your information about that? What support, if any, did you have for it?

A. Well, the information that I had was just general knowledge, the general understanding of the situation that was disclosed in the accounting examination. I did not see any documents to support that theory and I got the information that the company—

Mr. Spencer: Now, wait a minute, Mr. Smith. If he knows—any figures he knows, he can put in, but if he is going to put geological figures in here that he knows something about—

Mr. Lange: That is the very thing I want to ask him, whether that was based on any kind of an estimate or whether it was an agreed figure or whether he knows any of the facts about it at all.

The Witness: No, I really don't know what the understanding was, if any, between the Bureau and the company and I don't know any documents on which it was based. So far as I am concerned, it is hearsay that I gained from talking to our Examiners who had been down there and who had questioned—it was a natural question to want to know what the company had based its depreciation accounting policy on and that was the understanding that I gained, that it has to do with income tax purposes, and I don't know what, if anything, there was to back that up on the part of the company.

(Vol. L, pp. 6935-6936.)

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO ANNUAL AND ACCRUED DEPRECIATION

Particulars	Debit	Credit
No. 402		
Surplus - Miscellaneous other income - 1933	$3,532.73	
Reserve for depreciation (salvage) - 1933	6,700.63	
Reserve for depreciation (cost) - 1933		$10,233.36

To correct the Respondent's accounting in the depreciation reserve for the retirement of the Clayton lateral line, measuring station and equipment, sold to Canadian River Gas Company as of June 1, 1933. The following tabulation shows a comparison of the Respondent's accounting per books for the transaction and the basis as adjusted by Commission accountants:

Account	Per Books	As Adjusted	Difference
Plant accounts at May 31, 1933:			
Transmission line and right of way	$40,039.50	$29,826.34	$10,213.16
Measuring system land	100.00	100.00	
Measuring system structures	342.28	345.47	(3.19)
Measuring system equipment	1,265.10	1,241.71	23.39
Total plant accounts	$41,746.88	$31,513.52	$10,233.36
Reserve for depreciation at May 31, 1933:			
Transmission line and right of way	$ 6,312.39	$ 2,873.00	$ 3,439.39
Measuring system structures	114.33	42.74	71.59
Measuring system equipment	226.89	205.14	21.75
Total reserve	$ 6,653.61	$ 3,120.88	$ 3,532.73
Net investment, representing sales price:			
Transmission line and right of way	$33,727.11	$26,953.34	$ 6,773.77
Measuring system land	100.00	100.00	
Measuring system structures	227.95	302.73	(74.78)
Measuring system equipment	1,038.21	1,036.57	1.64
Total sales price	$35,093.27	$28,392.64	$ 6,700.63

The plant investment of Colorado Interstate Gas Company in the Clayton properties sold was adjusted in Examiner's entry No. 209 which is included in the exhibit entitled "Gas Plant Accounts and Examiner's Adjustments." Entry No. 209 resulted in a credit of $10,223.36 to miscellaneous other income for 1933 representing the excess of the plant account per books for the properties sold as of May 31, 1933 over the adjusted cost thereof. This entry (No. 402) reduces the profit on the sale by $3,532.73 representing the excess of accrued depreciation on the properties sold per books over accrued depreciation thereon as adjusted and also corrects the entries to the depreciation reserve for salvage and cost retired, respectively.

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO ANNUAL AND ACCRUED DEPRECIATION

Particulars	Debit	Credit
No. 403		
Reserve for depreciation	$5,132,039.84	
Surplus - Operating expenses - 1930	1.76	
Surplus - Depreciation		$5,132,041.60

Year	1928	$ 92,270.49
"	1929	382,934.29
"	1930	415,387.38
"	1931	476,365.13
"	1932	478,493.51
"	1933	478,273.78
"	1934	478,901.95
"	1935	487,735.93
"	1936	493,923.41
"	1937	497,178.09
"	1938	421,199.10
"	1939	429,378.62
		$5,132,041.60

To reverse the Respondent's annual provisions for depreciation and to clear the reserve for depreciation of the debit of $1.76 in 1930 which was credited to work order No. 47. See details attached for summary of Respondent's annual provisions for depreciation by accounts, and a reconciliation of the annual provisions per books and as reclassified after giving effect to reclassifying entries made by Commission accountants.

Notes:

(1) The change in depreciation rates as of July 1, 1931 was made retroactive to October 1, 1928, and the depreciation reserve per books restated accordingly by a direct surplus entry. The change as of May 1, 1936, affecting transmission line rights of way, was made retroactive to January 1, 1935, and the reserve for depreciation adjusted through surplus accordingly. The changes in rates during 1938 were effective from January 1, 1938. The change in the method of computing the depreciation on garage equipment in the year 1939 was made retroactive to 1928, and the depreciation reserve adjusted accordingly. The change in rate applicable to transmission rights of way during 1939 was effective January 1, 1939.

(2) Depreciation was provided by the Respondent on autos and trucks only until cost was entirely depreciated.

(3) Examiner's entry No. R-135 included in the exhibit relating to the income account, reclassifies surplus adjustments involving depreciation to income account of year affected.

No. 403 (Cont'd)

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO ANNUAL AND ACCRUED DEPRECIATION

ANNUAL DEPRECIATION BY ACCOUNTS AND RECONCILIATION OF DEPRECIATION, PER BOOKS AND AS RECLASSIFIED

No.	Description	Bases of Accruals (Note 1) Oct. 1, 1928 to June 30,1931	July 1, 1931 to Apr. 30,1936	May 1, 1936 to Dec. 31,1937	Year 1938	Year 1939	1939	1938	1937	1936	1935	1934	1933	1932
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Transmission rights of way	5%	0%	2.5%	2.5%	3.5%	$ 3,869.69	$ 3,657.07	$ 4,547.71	$ 4,542.25				
	Transmission line equipment	5	4	4	3.5	3.5	318,248.82	317,112.20	360,154.12	360,515.09	$357,533.77	$354,807.38	$354,692.22	$355,030.44
	Compressing system structures	5	7.5	7.5	3.5	3.5	6,497.86	6,476.00	13,753.86	13,677.04	13,676.90	13,670.84	13,668.89	13,572.90
	Compressing system equipment	5	4	4	3.5	3.5	43,488.10	42,923.61	47,644.64	47,313.45	47,147.05	46,894.39	46,766.31	45,937.93
	Other compressing system structures	5	7.5	7.5	3.5	3.5	6,459.45	6,105.48	10,747.57	10,421.63	9,499.37	9,481.76	9,438.00	8,328.44
	Other compressing system equipment		4	4	3.5	3.5	182.65	180.12	186.41	174.10	170.90	170.00	167.17	144.64
	Other transmission system structures	5	7.5	7.5	3.5	3.5	1,975.62	1,707.13	2,149.57	1,890.26	1,837.88	1,807.19	1,763.60	2,213.69
	Other transmission system equipment	5	4	4	3.5	3.5	641.17	578.58	473.40	380.18	355.23	344.62	327.55	336.75
	Telephone system	5	4	4	3.5	3.5	5,140.86	5,140.18	5,829.88	5,754.19	5,726.57	5,691.85	5,675.86	5,663.58
	Measuring system structures	5	7.5	7.5	3.5	3.5	1,842.27	1,878.55	4,007.46	4,019.64	4,011.98	3,980.82	3,976.32	3,377.48
	Measuring system equipment	5	4	4	3.5	3.5	3,211.93	3,271.44	3,647.07	3,534.51	3,490.75	3,483.07	3,473.55	3,436.45
	Other measuring system equipment		4	4	3.5	3.5	105.76	105.21	76.24	72.24	72.24	72.24	74.25	71.84
	Measuring system - meters	4												
	Other general structures	5	7.5											795.20
	Office furniture and equipment	5 and 20	10	10	10	10	2,955.76	2,994.37	2,927.41	2,758.56	2,577.83	2,576.14	2,566.21	2,549.02
	Stores equipment	5	10											224.00
	Shop equipment	5	10											77.30
	Garage equipment (Note 2)	33-1/3	25	25	25	Estimated	8,902.40	12,962.14	12,728.42	10,937.07	9,351.69	8,521.90	7,995.22	9,855.08
	Tools and equipment	5	10	10	10	10	3,265.61	2,695.42	2,186.69	2,115.56	2,007.51	1,604.98	1,221.77	1,018.47
	Other general equipment	5	4											52.19
	Entrance rights of way	5	4	4	3.5	3.5	2,228.65	2,228.65)	16,547.04	16,547.04	16,547.04	16,546.98	16,546.82	16,546.46
	Other undistributed fixed capital	5	4	4	3.5	3.5	12,250.00	12,250.00)						
	Law expenditures during construction	5	4	4	3.5	3.5	1,781.48	1,781.48	2,035.92	2,035.92	2,035.92	2,035.92	2,035.92	2,035.89
	Interest during construction	5	4	4	3.5	3.5	6,330.34	6,330.34	7,234.68	7,234.68	7,234.68	7,234.65	7,234.57	7,234.42
	Depreciation and adjustments	5	4											
	Total annual depreciation charged to income per books						$29,378.62	$30,377.97	$37,178.09	$33,923.41	$33,277.31	$28,924.73	$27,624.23	$28,502.17
	Depreciation adjustments made through surplus account on books: (Note 3)													
	Year Property													
	1939 Garage equipment							(9,178.87)						
	1936 Transmission rights of way										4,481.40			
	1936 Office furniture and fixtures										(22.78)	(22.78)	(22.78)	(22.78)
	1933 Clayton lateral line and measuring station and equipment												672.33	
	1932 Garage equipment													14.12
	1932 All property													
	1931 Garage equipment													
	1931 All property													
	1929 Garage equipment													
	Total annual depreciation as reclassified						$29,378.62	$21,199.10	$37,178.09	$33,923.41	$37,735.93	$28,901.95	$28,273.78	$28,493.51

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO ANNUAL AND ACCRUED DEPRECIATION

ANNUAL DEPRECIATION BY ACCOUNTS AND RECONCILIATION OF DEPRECIATION, PER BOOKS AND AS RECLASSIFIED

Bases of Accruals (Note 1)															
July 1, 1931 to Apr. 30, 1936	May 1, 1936 to Dec. 31, 1937	Year 1938	Year 1939	1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928
(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
0%	2.5%	2.5%	3.5%	$ 3,869.69	$ 3,657.07	$ 4,547.71	$ 4,542.25						$ 7,958.53	$ 7,362.96	$ 1,806.95
4	4	3.5	3.5	318,248.82	317,112.20	360,654.12	360,515.09	$357,533.77	$354,807.38	$354,692.22	$355,030.14	$350,629.48	425,453.35	402,787.43	100,064.69
7.5	7.5	3.5	3.5	6,497.86	6,476.00	13,753.86	13,677.04	13,676.90	13,670.84	13,668.89	13,572.30	13,558.20	2,554.15		
4	4	3.5	3.5	43,488.10	42,923.61	47,644.64	47,313.46	47,147.05	46,894.39	46,766.31	45,937.93	45,801.98	14,536.23	48.60	12.12
7.5	7.5	3.5	3.5	6,459.46	6,105.48	10,747.57	10,421.63	9,699.37	9,681.76	9,438.00	8,328.64	7,868.13	1,516.96	550.94	
4	4	3.5	3.5	182.65	180.12	186.41	174.10	170.90	170.00	167.17	144.64	98.61			
7.5	7.5	3.5	3.5	1,975.62	1,707.13	2,149.57	1,890.26	1,837.88	1,807.19	1,763.60	2,213.69	2,143.51	1,406.01	1,107.02	438.11
4	4	3.5	3.5	641.17	578.58	473.40	380.18	355.23	344.62	327.55	336.75	323.90	187.11	99.87	15.49
4	4	3.5	3.5	5,140.86	5,140.18	5,389.88	5,754.19	5,726.57	5,691.85	5,675.86	5,663.58	5,657.48	7,021.65	7,010.37	1,754.34
7.5	7.5	3.5	3.5	1,842.27	1,878.55	4,007.46	4,019.64	4,011.98	3,980.82	3,976.32	3,377.48	2,813.29	1,350.53	689.52	155.89
4	4	3.5	3.5	3,211.93	3,271.14	3,647.07	3,534.51	3,490.75	3,483.07	3,473.55	3,436.45	3,036.39	3,626.48	3,130.57	746.14
4	4	3.5	3.5	105.76	105.21	76.24	72.24	72.24	72.24	74.25	71.84	71.43			
7.5												62.02	59.17	21.03	
10	10	10	10	2,955.76	2,994.37	2,927.41	2,758.56	2,577.83	2,576.14	2,566.21	795.20	763.28	218.33	160.86	39.95
10											2,549.02	2,514.95	2,040.33	1,403.87	305.49
10											224.00	268.83	130.87	123.96	30.99
25	25	25	Estimated	8,902.40	12,962.14	12,728.42	10,937.07	9,351.69	8,521.90	7,995.22	77.30	92.80	27.27	3.96	1.00
10	10	10	10	3,265.81	2,695.42	2,186.69	2,115.56	2,007.51	1,604.98	1,221.77	9,855.08	10,863.96	17,399.67	14,904.19	3,366.98
4											1,018.47	1,000.66	288.06	197.22	39.18
4	4	3.5	3.5	2,228.65	2,228.65	16,547.04	16,547.04	16,547.04	16,546.98	16,546.82	52.19	62.57	59.60	4.68	1.26
4	4	3.5	3.5	12,250.00	12,250.00						16,546.46	16,546.95	21,784.12	28,699.34	5,170.93
4	4	3.5	3.5	1,781.48	1,781.48	2,035.92	2,035.92	2,035.92	2,035.92	2,035.92	2,035.89	2,035.95	2,514.96	2,514.96	636.24
4	4	3.5	3.5	6,330.34	6,330.34	7,234.68	7,234.68	7,234.68	7,234.65	7,234.57	7,234.42	7,234.64	9,043.20	9,133.93	2,288.04
4													72.77		
				$129,378.62	$130,377.97	$167,178.09	$163,923.41	$163,277.31	$170,984.73	$177,624.23	$178,502.17	$173,149.01	$519,279.35	$171,985.28	$116,873.89
on books: (Note 3)															
					(9,178.87)										
								4,481.40							
								(22.78)	(22.78)	(22.78)	(22.78)	(3.78)			
tion and equipment										672.33					
											14.12	2,919.90	1,714.09	749.54	(365.50)
													(105,051.94)		
													(584.20)		
														(89,800.53)	(24,315.94)
															78.04
				$129,378.62	$121,199.10	$167,178.09	$163,923.41	$167,735.93	$170,961.95	$178,273.78	$178,493.51	$176,365.13	$415,387.30	$382,934.29	$ 92,270.69

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO ANNUAL AND ACCRUED DEPRECIATION

Particulars	Debit	Credit
No. 104		
Reserve for amortization of franchises and contracts	$1,471,546.15	
Surplus - Amortization		$1,471,546.15

Year 1928	$ 58,823.53
" 1929	117,647.06
" 1930	117,647.04
" 1931	124,999.98
" 1932	131,672.62
" 1933	131,536.56
" 1934	131,536.56
" 1935	131,536.56
" 1936	131,536.56
" 1937	131,536.56
" 1938	131,536.56
" 1939	131,536.56
	$1,471,546.15

To reverse the annual provisions made on Respondent's books for amortization. See the following tabulation for details.

Particulars	Total	Contracts for Purchase and Sale of Gas	City of Colorado Springs, Colo.
Balance included in plant account at December 31, 1939, per books	$2,589,607.84	$2,352,941.17	$236,666.67
Amortization rate (Note 1)		5%	5.869%
Annual amortization, as reclassified: (Note 2)			
Year 1939	$ 131,536.56	$ 117,647.04	$ 13,889.52
" 1938	131,536.56	117,647.04	13,889.52
" 1937	131,536.56	117,647.04	13,889.52
" 1936	131,536.56	117,647.04	13,889.52
" 1935	131,536.56	117,647.04	13,889.52
" 1934	131,536.56	117,647.04	13,889.52
" 1933	131,536.56	117,647.04	13,889.52
" 1932	131,672.62	117,647.04	14,025.58
" 1931	124,999.98	117,647.04	7,352.94
" 1930	117,647.04	117,647.04	
" 1929	117,647.06	117,647.06	
Six months ended December 31, 1928	58,823.53	58,823.53	
Totals	$1,471,546.15	$1,352,940.99	$118,605.16

Exhibit No. 174

Docket G-124

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO ANNUAL AND ACCRUED DEPRECIATION

No. 404 (Cont'd)

Notes:

(1) The amortization rates used by the Respondent have been designed to write off the recorded costs of, or the values placed upon, the contracts over their respective lives. The contracts for the purchase and sale of gas are being amortized on the books over the 20-year period from July 1, 1926 to June 30, 1948, the expiration date of the contracts. The recorded cost of the City of Colorado Springs, Colorado, contract is being amortized on the books from July 1, 1931 to June 19, 1948.

(2) Amortization for the six months ended December 31, 1928 and for the year 1929 was charged to surplus on the Respondent's books in the years 1931 and 1930, respectively. These charges were transferred to the income accounts of the years to which applicable on Examiner's entry No. R-137, which is included in the exhibit relating to the income account.

Exhibit No. 174

Docket G-124

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COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO ANNUAL AND ACCRUED DEPRECIATION

Particulars	Debit	Credit
No. 405		
Reserve for depreciation (cost)	$ 5,367.96	
Reserve for depreciation (salvage)	26,361.57	
Surplus - Profit and loss on retirements		$31,729.53

Year 1928	$ 235.00
" 1929	(114.92)
" 1930	(239.83)
" 1931	3,370.65
" 1932	408.28
" 1933	2,612.92
" 1934	224.78
" 1935	84.45
" 1936	8,687.62
" 1937	4,370.61
" 1938	(3,447.37)
" 1939	15,537.34
	$31,729.53

To charge reserve for depreciation with net amount of profit and loss on retirements which have been shown in the reclassified income statements as charges or credits to income. (Entries Nos. R-136 and R-138 in the exhibit relating to the income account result in showing all profits and losses on retirements as a separate caption in the income statements, as reclassified.) The charge to the reserve of $5,367.96 for cost retired represents various items of property charged off to expense and to surplus in 1931, and reclassified by the Examiner to profit and loss on retirements. See details attached for reconciliation of profit and loss on retirements reflected in the reserve for depreciation per books with the amounts used in this entry.

Docket #-184

No. 185 (Cont'd)

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFIED AND ADJUSTED ENTRIES
RELATING TO ANNUAL AND ACCRUED DEPRECIATION

Line No.	Number References (1)	Particulars (2)	1959 (3)	1958 (4)	1957 (5)	1956 (6)	1955 (7)	1954 (8)	1953 (9)	1952 (10)	1951 (11)	1950 (12)	1949 (13)	1948 (14)
1		(Profit) and loss on retirements reflected in reserve for depreciation, per books	$	$(3,460.57)	$2,595.60	$8,413.08	$ (40.86)	$ 25.80	$(3,507.68)	$ 408.28	$(1,785.32)	$ (116.76)	$ (160.60)	$ 205.88
		Add or (Deduct): Profit and loss on retirements not reflected in reserve for depreciation, per books:												
2	1959 H-55	Loss on Littleton lateral line transferred to Public Service Company of Colorado	$ 3,496.46											
3	1959 H-56	Loss on Santa Fe properties transferred to Atchison, Topeka & Santa Fe Railway Company	12,060.89											
4	1958 F-19	Salvage from truck body No. 242		(25.00)										
5	1957, H-54	Six regulators in warehouse charged off as obsolete			$1,595.88									
6	Various	Materials and supplies charged off to depreciation realized and loss on property retired accounts			379.53	$ 274.54	$ 215.31	$ 195.57	$ 139.52					
7	1955 A-55	Additional insurance recovery on wrecked car (No. 187)					(90.00)							
8	1954 C-88	Car rental for one month (charged on Respondent's books to profit and loss on sale of cars)						85.00						
9	1954 H-50	Additional insurance recovery on car No. 204						(21.59)			$5,621.07			
10	1951 H-50	Portion of depreciation and adjustment accounts closed to surplus									49.48			
11	1951 A-257	One gate valve charged off									(37.06)			
12	" "	Salvage on above									75.60			
13	1951 H-171	One General Electric motor retired									(56.70)			
14	" "	Salvage on above												
	Various	Portion of depreciation and adjustment accounts closed to expense (depreciation realized and loss on property retired):												
15		Original costs									1,621.87			
16		Salvage									(120.25)			
17	1950 J-411	Float discount applicable to cars retired										$ (94.07)		
18	1949 D-7	Proceeds from sale of tires from car No. 65											$ (50.00)	
19	1949 F-108	Correction of sale of cars Nos. 46 and 46 to Canadian River Gas Co.											(69.52)	
20	1949 G-116	Correction of salvage received from sale of car No. 77											116.00	
21	1948 L-85	Net profit on five cars sold, credited to miscellaneous revenue												$ (70.00)
22	1948 H-196	Loss on sale of car No. 58												120.00
		Add or (Deduct): Corrections of profit and loss on retirements reflected in the reserve for depreciation, per books:												
23	1953 F-12	Recorded profit on sale of Clayton properties to Canadian River Gas Company (reversed by Examiner's entry No. R-1369)							6,693.61					
24	1953 F-12	Reversal of depreciation on Clayton properties for first five months of 1953 (reversed by Examiner's entry No. R-135)							(672.33)					
25		Subtotals:									$5,367.96			
26		Corrections of plant costs retired	$15,557.34	$ (25.00)	$1,975.21	$ 274.54	$ 125.31	$ 198.98	$6,792.95		(215.99)	$ (94.07)	$ 45.48	$ 50.00
27		Corrections of salvage							(672.33)					
		Reversal of depreciation (reversed by Examiner's entry No. R-135)												
		(Profit) and loss on retirements per income statements, as reclassified (Entries Nos. R-136 and R-138 in the exhibit relating to the income account result in showing all profits and losses on retirements as a separate caption in the income statements, as reclassified)	$15,557.34	$(3,447.57)	$4,570.81	$8,687.62	$ 84.45	$ 224.78	$2,612.92	$ 408.28	$3,370.65	$ (209.83)	$ (114.92)	$ 255.88

Exhibit No. 174
11

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO ANNUAL AND ACCRUED DEPRECIATION

Particulars		Debit	Credit
	No. 406		
Surplus - Depreciation		$2,823,460.29	
Year 1928	$ 91,579.09		
" 1929	196,934.03		
" 1930	223,914.91		
" 1931	244,612.77		
" 1932	253,055.67		
" 1933	255,803.22		
" 1934	254,689.94		
" 1935	254,454.43		
" 1936	259,836.97		
" 1937	261,156.72		
" 1938	261,037.57		
" 1939	266,384.97		
	$2,823,460.29		
Reserve for depreciation of gas plant in service			$2,819,797.11
Reserve for depreciation of gas plant held for future use			3,663.18

To record the annual depreciation of gas plant in service, based on service lives estimated by Bureau of Engineering. The gas plant held for future use is segregated by Examiner's entry No. 214, as of December 31, 1937. Depreciation computed on this property to December 31, 1937 is charged to depreciation expense. See Schedule No. 1 for details of adjusted annual depreciation.

No. 407

Reserve for depreciation of gas plant held for future use - 1937	$1,319.04	
Reserve for depreciation of gas plant in service - 1937		$1,319.04

To transfer to the former account the net charge resulting from retirements of gas plant held for future use, as per details in following tabulation:

Year	Original Costs Retired	Less Salvage	Net Retirement
1933	$2,041.41	$738.24	$1,303.17
1934	71.58	56.29	15.29
1936	2.33	1.75	.58
Totals	$2,115.32	$796.28	$1,319.04

Line No.	Particulars	Total	Total	Transmission System	Distribution System	General and Undistributed Fixed Capital	Gas Plants Held for Future Use
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Costs subject to depreciation:						
1	Original charges per books (•)	$12,260,577.87	$12,258,462.55	$11,168,478.75	$176,002.65	$914,041.15	$ 2,115.32
2	Examiner's adjustments	(430,016.46)	(450,011.17)	(33,239.25)	(203.32)	(416,568.60)	19,994.71
3	Adjusted total cost subject to depreciation	$11,830,561.41	$11,808,451.38	$11,135,179.50	$175,799.33	$497,472.55	$22,110.03
4	Less retirements	283,820.35	281,705.03	124,743.60	18,926.59	138,034.84	2,115.32
5	Adjusted cost at December 31, 1939 (•)	$11,546,741.06	$11,526,746.35	$11,010,435.90	$156,872.74	$359,437.71	$19,994.71
	Depreciation, computed annually, based on service life estimates furnished by Bureau of Engineering:						
6	Annual rates			Various	Various	Various	3.03%
7	Six months ended December 31, 1928	$ 91,579.09	$ 91,579.09	$ 84,509.94	$ 1,230.28	$ 5,838.87	
8	Year 1929	196,934.03	196,934.03	175,368.17	2,510.14	19,055.72	
9	" 1930	223,914.91	223,707.65	199,256.69	3,903.12	20,547.84	$ 207.26
10	" 1931	244,612.77	244,405.51	226,100.39	4,262.11	14,043.01	207.26
11	" 1932	253,055.67	252,848.41	231,022.81	4,834.76	16,990.84	207.26
12	" 1933	255,803.22	255,161.87	232,618.26	5,205.55	17,334.06	641.35
13	" 1934	254,689.94	254,104.65	232,492.06	5,206.82	16,405.77	585.29
14	" 1935	254,454.43	253,849.96	233,141.96	5,216.25	15,191.75	604.47
15	" 1936	259,836.97	259,232.50	235,870.77	5,229.92	18,131.81	604.47
16	" 1937	261,156.72	260,550.90	235,555.79	5,255.48	19,739.63	605.82
17	" 1938	261,037.57	261,037.57	237,818.66	5,485.09	17,733.82	
18	" 1939	266,384.97	266,384.97	240,152.54	5,573.00	20,659.43	
19	Total accruals to December 31, 1939	$ 2,823,160.29	$ 2,819,797.11	$ 2,594,208.04	$ 53,916.52	$201,672.55	$ 3,663.18
	Less retirement losses to December 31, 1939:						
20	Original costs retired (Schedule No. 7)	$ 283,820.35	$ 281,705.03	$ 124,743.60	$ 18,926.59	$138,034.84	$ 2,115.32
21	Less salvage (Schedule No. 8)	98,835.52	98,039.24	49,904.16	4,898.27	43,236.81	796.28
22	Net charges to reserve	$ 184,984.83	$ 183,665.79	$ 74,839.44	$ 14,028.32	$ 94,798.03	$ 1,319.04
	Other credits to reserve:						
23	Depreciation during original construction period capitalized	$ 13,675.74	$ 13,675.74			$ 13,675.74	
24	Reserve acquired on autos and trucks purchased from Canadian River Gas Company	573.52	573.52			573.52	
25	**Reserve for depreciation at December 31, 1939, as adjusted**	$ 2,652,724.72	$ 2,650,380.58	$ 2,489,368.60	$ 39,888.20	$121,123.78	$ 2,344.14

For further details see Schedule No. 2 3 4

(•) Land costs included above are eliminated from the bases used in computations of annual depreciation.

COLORADO INTERSTATE GAS COMPANY
ANNUAL AND ACCRUED DEPRECIATION OF TRANSMISSION SYSTEM

Line No.	Particulars	Total Transmission Line	Main Line and Laterals	Compressing System	Other (Transmission) Structures and Equipment	Telephone System
	(1)	(2)	(3)	(4)	(5)	(6)
	Costs subject to depreciation:					
1	Original charges per books	$11,168,416.75	$9,286,441.53	$1,651,522.23	$ 82,522.67	$147,932.32
2	Examiner's adjustments	(33,239.25)	(16,806.88)	(25,256.21)	29.87	8,793.37
3	Adjusted total cost subject to depreciation	$11,135,179.50	$9,269,634.65	$1,626,266.02	$ 82,552.54	$156,726.29
4	Less retirements	124,743.60	85,671.82	34,898.37	3,114.72	1,058.69
5	Adjusted cost at December 31, 1939	$11,010,435.90	$9,183,962.83	$1,591,367.65	$ 79,437.82	$155,667.60
	Depreciation, computed annually, based on service life estimates furnished by Bureau of Engineering:					
6	Annual rates		Various	Various	Various	3.33%
7	Six months ended December 31, 1928	$ 84,509.94	$ 81,315.07	$ 79.86	$ 623.29	$ 2,491.72
8	Year 1929	175,368.17	168,978.45	159.72	1,246.56	4,983.44
9	" 1930	199,256.69	176,853.36	16,293.20	1,142.98	4,961.15
10	" 1931	226,100.39	181,160.78	39,009.81	948.18	4,981.62
11	" 1932	231,022.81	184,800.53	39,737.75	1,476.80	5,007.73
12	" 1933	232,618.26	185,737.02	40,696.99	1,161.04	5,023.21
13	" 1934	232,492.06	185,461.05	40,777.43	1,225.97	5,027.61
14	" 1935	233,441.96	186,312.03	40,821.69	1,253.78	5,054.46
15	" 1936	235,870.77	188,504.15	41,017.53	1,272.59	5,076.50
16	" 1937	235,555.79	188,338.58	40,682.57	1,408.54	5,126.10
17	" 1938	237,818.66	188,765.53	41,629.74	2,235.76	5,187.63
18	" 1939	240,152.54	188,814.64	43,477.29	2,671.16	5,189.45
19	Total depreciation accruals to December 31, 1939	$ 2,564,208.04	$2,105,041.19	$ 384,389.58	$ 16,666.65	$ 58,110.62
	Less retirement losses to December 31, 1939:					
20	Original costs retired (Schedule No. 7)	$ 124,743.60	$ 85,671.82	$ 34,898.37	$ 3,114.72	$ 1,058.69
21	Less salvage (Schedule No. 8)	49,904.16	45,938.15	3,286.11	207.39	472.51
22	Net charges to reserve	$ 74,839.44	$ 39,733.67	$ 31,612.26	$ 2,907.33	$ 586.18
23	Reserve for depreciation at December 31, 1939, as adjusted	$ 2,489,368.60	$2,065,307.52	$ 352,777.32	$ 13,758.32	$ 57,524.44

For further details see Schedule No. 2-A 2-B 2-C

Exhibit No. 1

Docket G-124

COLORADO INTERSTATE GAS COMPANY
ANNUAL AND ACCRUED DEPRECIATION OF MAIN LINE AND LATERALS

Line No.	Particulars	Total Main Line and Laterals	Main Line (Including Loops and River Crossings)	Laterals: Total Laterals	American Crystal Sugar Co. and Loop	Arkansas Valley	Aurora and Extension	Clayton	Colo. Fuel & Iron Co. and St.Charles River Crossing	Colorado Springs	Fountain Valley School	Fort Lyon	La Junta
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Costs subject to depreciation:												
1	Original charges per books	$9,286,141.53	$8,060,799.20	$1,225,642.33	$18,706.81	$89,323.38	$52,076.43	$29,939.86	$237,564.61	$141,848.83	$ 3,505.11	$28,870.72	$242,383.25
2	Examiner's adjustments	(16,806.88)	(11,407.32)	(5,399.56)					(4,826.77)				
3	Adjusted total cost subject to depreciation	$9,269,634.65	$8,049,391.88	$1,220,242.77	$18,706.81	$89,323.38	$52,076.43	$29,939.86	$232,737.84	$141,848.83	$ 3,505.11	$28,870.72	$242,383.25
4	Less retirements	85,671.82	29,630.27	56,041.55	147.06	52.58	281.22	29,939.86		242.82		10.14	4,117.28
5	Adjusted cost at Dec. 31, 1939	$9,183,962.83	$8,019,761.61	$1,164,201.22	$18,559.75	$89,270.80	$51,795.21		$232,737.84	$141,606.01	$ 3,505.11	$28,860.58	$238,265.97
	Depreciation, computed annually, based on service life estimates furnished by Bureau of Engineering:												
6	Annual rates		2%		2½%	2½%	2½%	2½%	2%	2%	2½%	2½%	2½%
7	Six months ended Dec.31, 1928	$ 81,315.07	$ 78,421.27	$ 2,893.80				$ 233.09	$ 2,332.18				
8	Year 1929	168,978.45	156,842.54	12,135.91	$ 97.18			466.18	4,664.36			$ 347.31	$ 2,901.73
9	" 1930	176,853.36	156,987.83	19,865.53	194.37		$ 609.94	477.01	4,665.15			694.61	5,803.45
10	" 1931	181,160.78	157,017.46	24,143.32	328.30		1,227.39	741.19	4,663.71	$ 372.73		713.47	5,834.17
11	" 1932	184,800.53	157,018.55	27,781.98	464.93	$ 1,114.18	1,288.40	750.76	4,663.71	745.46		713.47	5,834.17
12	" 1933	185,737.02	157,293.08	28,443.94	460.91	2,228.37	1,288.40	310.80	4,652.91	749.35		719.06	5,840.42
13	" 1934	185,461.05	157,302.04	28,159.01	460.91	2,228.37	1,288.40		4,653.28	759.19		719.12	5,843.54
14	" 1935	186,312.03	158,136.01	28,176.02	461.87	2,229.04	1,290.90		4,653.28	759.43		721.51	5,851.48
15	" 1936	188,504.15	160,260.83	28,243.32	459.79	2,231.45	1,290.90		4,653.28	827.81		721.51	5,858.79
16	" 1937	188,338.58	160,030.29	28,308.29	459.87	2,231.46	1,291.85		4,653.94	831.68		721.51	5,864.19
17	" 1938	188,765.53	160,330.75	28,434.78	460.15	2,231.46	1,291.33		4,653.91	832.15	$ 43.81	721.51	5,919.05
18	" 1939	188,814.64	160,335.66	28,478.98	460.15	2,231.46	1,294.88		4,654.76	832.15	87.63	721.51	5,917.41
19	Total depreciation accruals to Dec. 31, 1939	$2,105,041.19	$1,819,976.31	$ 285,064.88	$ 4,308.43	$16,725.79	$12,162.39	$ 2,979.03	$ 53,564.50	$ 6,709.95	$ 131.44	$ 7,514.59	$ 61,468.40
	Less retirement losses to Dec. 31, 1939:												
20	Original costs retired	$ 85,671.82	$ 29,630.27	$ 56,041.55	$ 147.06	$ 52.58	$ 281.22	$29,939.86		$ 242.82		$ 10.14	$ 4,117.28
21	Less salvage	45,938.15	15,916.85	30,021.30	74.20	25.97	86.98	26,960.83		100.03			1,412.31
22	Net charges to reserve	$ 39,733.67	$ 13,713.42	$ 26,020.25	$ 72.86	$ 26.61	$ 194.24	$ 2,979.03		$ 142.79		$ 10.14	$ 2,704.97
23	**Reserve for depreciation at Dec. 31, 1939, as adjusted**	$2,065,307.52	$1,806,262.89	$ 259,044.63	$ 4,235.57	$16,699.18	$11,968.15		$ 53,564.50	$ 6,567.16	$ 131.44	$ 7,504.45	$ 58,763.43

Note: (1) Expiration of service value of property disposed of in 1939 has been charged off over its actual service life, at rate of 10.53% per annum. Balance in account depreciated at 2½% per annum, based on service life estimates furnished by Bureau of Engineering.

Exhibit No. 17

Schedule No. 2-A
Sheet 1 of 1

16

COLORADO INTERSTATE GAS COMPANY
ANNUAL AND ACCRUED DEPRECIATION OF MAIN LINE AND LATERALS

							Laterals								
American Crystal Sugar Co. and Loop	Arkansas Valley	Aurora and Extension	Clayton	Colo. Fuel & Iron Co. and St.Charles River Crossing	Colorado Springs	Fountain Valley School	Fort Lyon	La Junta	Las Animas	Littleton	North	Portland	Pueblo	Rocky Ford	Santa Fe & Santa Fe Prefiring System
(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
$18,706.81	$89,323.38	$52,076.43	$29,939.86	$237,564.61 (4,826.77)	$41,848.83	$ 3,505.11	$28,870.72	$242,383.25	$115,446.99 50.44	$ 5,363.06	$84,063.64	$197,571.55	$31,734.17 (623.23)	$30,491.27	$16,733.65
$18,706.81	$89,323.38	$52,076.43	$29,939.86	$232,737.84	$41,848.83	$ 3,505.11	$28,870.72	$242,383.25	$115,496.43	$ 5,363.06	$84,063.64	$197,571.55	$31,110.94	$30,491.27	$16,733.65
147.06	52.58	281.22	29,939.86		242.82		10.14	4,117.28	613.01	5,363.06	160.82	453.05		154.99	14,505.66
$18,559.75	$89,270.80	$51,795.21		$232,737.84	$41,606.01	$ 3,505.11	$28,860.58	$238,265.97	$114,883.42		$83,902.82	$197,118.50	$31,110.94	$30,336.28	$ 2,247.99
2½%	2½%	2½%	2½%	2%	2%	2½%	2½%	2½%	2½%	9.52%	2½%	2%	2%	2½%	(Note 1)
			$ 233.09	$ 2,332.18					$ 20.14				$ 308.39		
$ 97.18			166.18	4,664.36			$ 347.31	$ 2,901.73	1,398.55	$ 215.80	$ 1,026.79		616.77	$ 371.24	
194.37		$ 609.94	477.01	4,665.15			694.61	5,803.45	2,756.80	491.61	2,053.58		617.22	742.49	$ 759.30
328.30		1,227.39	741.19	4,663.71	$ 372.73		713.47	5,834.17	2,866.97	491.61	2,066.78	$ 1,944.54	622.22	751.63	1,518.61
464.93	$ 1,114.18	1,288.40	750.76	4,663.71	715.46		713.47	5,834.17	2,866.97	491.61	2,066.78	3,889.08	622.22	751.63	1,518.61
460.91	2,228.37	1,288.40	310.80	4,652.91	749.35		719.06	5,840.42	2,861.38	491.61	2,058.47	3,889.14	622.88	751.63	1,518.61
460.91	2,228.37	1,288.40		4,653.28	759.19		719.12	5,843.54	2,864.65	491.61	2,058.47	3,898.32	622.88	751.66	1,518.61
461.87	2,229.04	1,290.90		4,653.28	759.43		721.51	5,851.48	2,865.04	491.61	2,058.47	3,098.40	622.88	756.50	1,518.61
459.79	2,231.45	1,290.90		4,653.28	827.81		721.51	5,858.79	2,853.97	491.61	2,058.47	3,899.48	622.88	754.77	1,518.61
459.87	2,231.46	1,291.85		4,653.94	831.68		721.51	5,864.19	2,854.24	491.61	2,074.43	3,937.91	622.22	754.77	1,518.61
460.15	2,231.46	1,291.33		4,653.94	832.15	$ 43.81	721.51	5,919.05	2,854.24	491.61	2,098.81	3,941.12	622.22	754.77	1,518.61
460.15	2,231.46	1,294.88		4,654.76	832.15	87.63	721.51	5,917.41	2,854.38	491.60	2,094.39	3,942.12	622.22	755.71	1,518.61
$ 4,308.43	$16,785.79	$12,162.39	$ 2,979.03	$ 53,564.50	$ 6,709.95	$ 131.44	$ 7,514.59	$ 61,468.40	$ 29,917.33	$ 5,161.89	$21,715.44	$ 33,240.11	$ 7,145.00	$ 7,893.80	$14,426.79
$ 147.06	$ 52.58	$ 281.22	$29,939.86		$ 242.82		$ 10.14	$ 4,117.28	$ 613.01	$ 5,363.06	$ 160.82	$ 453.05		$ 154.99	$14,505.66
74.20	25.97	86.98	26,960.83		100.03			1,412.31	266.15	201.17	103.35	98.94		78.60	612.71
$ 72.86	$ 26.61	$ 194.24	$ 2,979.03		$ 142.79		$ 10.14	$ 2,704.97	$ 346.86	$ 5,161.89	$ 57.47	$ 354.11		$ 76.39	$13,892.89
$ 4,235.57	$16,699.18	$11,968.15		$ 53,564.50	$ 6,567.16	$ 131.44	$ 7,504.45	$ 58,763.43	$ 29,570.47		$21,657.97	$ 32,886.00	$ 7,145.00	$ 7,817.41	$ 533.90

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Docket G-124

Schedule No. 5
Sheet 1 of 1

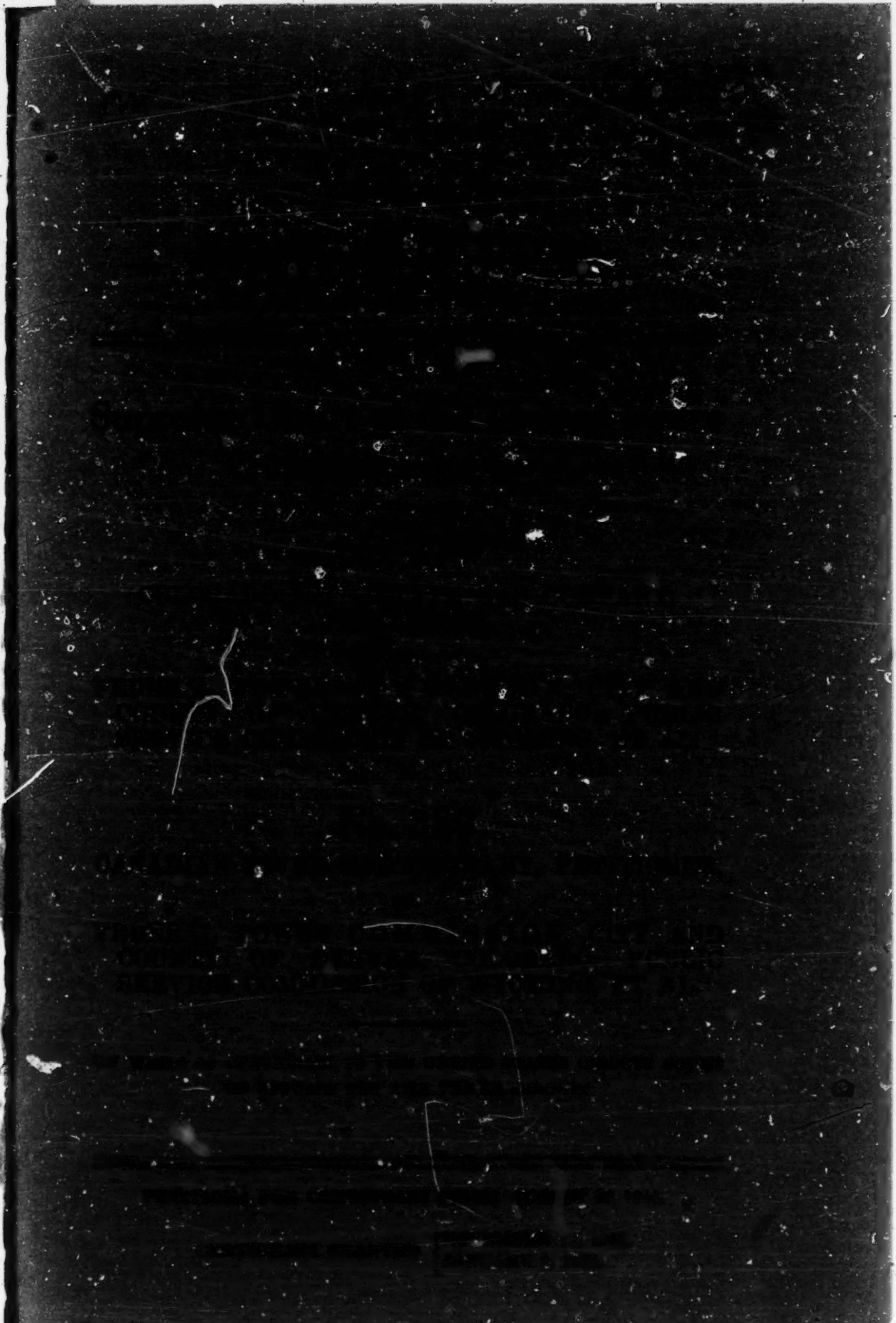
COLORADO INTERSTATE GAS COMPANY
ANALYSIS OF RESERVE FOR DEPRECIATION, PER BOOKS
FROM INCEPTION TO DECEMBER 31, 1939

Line No.	Year	Balance at Beginning of Period	Provision for Depreciation Charged to		Retirements		Adjustments of Prior Years' Depreciation (Through Surplus)	(Profit) or Loss on Retirements	Miscellaneous	Balance at End of Period
			Expense	Plant Investment	Plant Cost	Salvage				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1928		$116,873.89	$14,054.83	$ (205.00)			$ 205.00		$ 130,928.72
2	1929	$ 130,928.72	471,985.28	(379.09)	(15,262.61)	$ 5,604.35	$ 78.04	(160.40)	$ 573.52	593,367.81
3	1930	593,367.81	519,279.35		(12,106.16)	4,769.17		(146.76)	(1.76)	1,105,162.36
4	1931	1,105,162.36	473,449.01		(15,196.98)	4,374.00	(114,700.67)	(1,783.32)		1,451,304.40
5	1932	1,451,304.40	478,502.17		(11,864.37)	3,401.13	(99,989.79)	408.28		1,821,761.82
6	1933	1,821,761.82	477,624.23		(56,085.14)	46,470.16		(3,507.68)		2,286,263.39
7	1934	2,286,263.39	478,924.73		(22,352.74)	11,489.32		25.80		2,754,350.50
8	1935	2,754,350.50	483,277.31		(13,160.97)	4,471.56		(40.86)		3,228,897.54
9	1936	3,228,897.54	493,923.41		(42,075.64)	13,848.95	4,386.50	8,413.08		3,707,393.84
10	1937	3,707,393.84	497,178.09		(17,905.54)	5,824.57		2,395.10		4,194,886.36
11	1938	4,194,886.36	430,377.97		(24,901.28)	8,111.98		(3,422.37)		4,605,052.66
12	1939	4,605,052.66	429,378.62		(49,817.75)	18,917.69	(9,178.87)			4,994,352.35
		$5,350,774.06	$13,675.74		($280,934.47)	$127,282.68	($219,404.79)	$2,347.17	$571.76	

Exhibit No. 174

21

1819



United States Circuit Court of Appeals

TENTH CIRCUIT.

No. 2550.

COLORADO INTERSTATE GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

No. 2551.

CANADIAN RIVER GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; PUBLIC SERVICE COMPANY OF COLORADO; and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

ON PETITION TO REVIEW AND SET ASIDE ORDERS OF THE FEDERAL POWER COMMISSION.

FILED SEPTEMBER 9, 1942.

VOLUME 4—Pages 1821-2400

Further Testimony of the Company's WITNESS, LUSK.

Q. Mr. Lusk, have you prepared a statement at my request relating to Colorado Interstate Gas Company entitled "Past and Future Net Operating Earnings from Denver Line Sales of All Gas Applicable to Depreciation, Amortization and Return, 1928 to 1947, inclusive"?

A. Yes, sir.

(Vol XLVIII, p. 6598.)

* * * * *

Q. Now, turning back to your Statement 1 of the exhibit, the figures under Column 4, where do you get them? How do you arive at those figures?

A. The difference between Column 2 and Column 3—in other words, it is Column 3 subtracted from Column 2.

Q. That give you the total net earnings?

A. That is correct.

Q. You projected those beyond 1940, didn't you?

A. They are projected—

Q. They are just mere calculations?

A. Yes, sir.

Q. Now, this total net earning figure, when you get to that point on Statement 1—strike that.

In what manner do you treat depreciation? Isn't that a cost of operation?

A. Not for this purpose.

Q. What purpose do you mean?

A. For this purpose here I am trying to find the amount which is available for depreciation and amortization.

Q. You don't consider depreciation as an operating expense?

A. No sir.

Q. And you can leave it out of the computation of your net earnings?

A. Well, the computation of the net earnings doesn't include the depreciation. If I put the computed depreciation amount that is arrived at here back in a deduction in the net earnings column I would still come out in Column 5, that is, at the eight per cent return.

Q. But you left out the consideration of depreciation in

the computation of your net earnings in Column 4, Statement 1?

A. That is correct, I have.

Q. Have you taken into consideration in doing that what the Uniform System of Accounts provides for with reference to depreciation?

A. I haven't considered the Uniform System of Accounts in any portion of this exhibit?

Q. At all?

A. At all.

Q. So you arrived at your net earnings and then only in Column 6 as a matter of pure calculation where you set up the amounts that you say will at that point be available for depreciation and amortization?

A. That is correct.

Q. How did you say you arrived at the amounts under Column 6, Statement 1, Exhibit 170?

A. It is the difference between Columns 4 and 5. It is Column 5 subtracted from Column 4.

Q. Now, then, you didn't give any consideration to depreciation in this Column 4 of Statement 1. With reference to your Column 1 where you use original cost, did you apply against that the accrued depreciation as per company books?

A. No, these are undepreciated original cost rate base at January 1 each year, undepreciated.

Q. What is the accrued depreciation of the company's books? Do you have that available for each of those years?

A. I can tell you what was there as of December 31st, 1939, but I don't have it for each year. The accrued reserve then was $4,494,325.

Q. Does that include the amortization reserve also in the contract?

A. No, sir, that is only on property.

Q. What is that amortization reserve on contract per books?

A. I believe that question came up once before during the testimony on the exhibit that covered the amortization of the contracts and franchises—covered the cost of the contracts and franchises. I think it was acceptable to either you or Mr. March that I read the amortized cost into the record instead of looking for the amount as amortized each

year. That figure less the amortization reserve in 1939 was $1,180,616.69.

Mr. Dougherty: If you wanted to get the reserve, Mr. Lusk, you would deduct that from $2,589,608, which is the cost of gas contracts as shown on Statement 2 of this exhibit?

The Witness: That is correct. The company is amortizing it on a uniform basis at approximately $153,000 a year.

By Mr. Lange:

Q. What is the purpose of setting up this depreciation reserve on its books? The figures, for instance, that you gave for the year 1939, what is the purpose of the company setting it up on its books?

A. They are setting up an accrual for reserve for depreciation.

Q. For what purpose?

A. For the retirement of property when the time for replacing retired property rolls around. Then they will have a sufficient reserve to take care of it.

Q. They have been accruing that since 1928?

A. Yes.

Q. In your Table 6, Statement 1 of the exhibit where you say "net operating earnings for return, depreciation and amortization, available for depreciation and amortization," have you since these figures have been computed—I mean since they have been determined in Column 6—made a study of what the company claims is necessary for proper depreciation reserve and amortization requirements?

A. Have I made a study of it?

Q. Yes.

A. No sir.

Mr. Dougherty: You mean actually what has been accrued on the books through 1939?

Mr. Lange: Yes.

The Witness: I have given you that figure.

Mr. Lange: I mean beyond 1939, from 1940 on.

The Witness: Is that in the form of a question? Did I make any study?

By Mr. Lange:

Q. Did you make any study as to what the company's requirements will be for depreciation and proper amortization from 1940 on through 1947?

A. No, sir.

Q. You have not?

A. I did not.

Q. Well, in connection with the studies on income tax paid you have made some assumptions on that, haven't you?

A. Oh, yes, I have made some assumptions but that is purely an arithmetical calculation or computation. That doesn't involve any study as to what the requirements will be.

Q. In what paragraph did you arrive at that arithmetical computation?

A. It works out exactly at the same rate the company is using for depreciation reserve purposes on all of its property with the exception of automobiles, tools, implements, and office furniture, and it is exactly 3½ per cent per annum.

Q. Is that the rate the company has employed heretofore?

A. Yes, sir, beginning with about 1931.

Q. What determined the rate to be applied at that time?

A. The Bureau of Internal Revenue wouldn't accept the company's rate.

Q. What was the company's rate prior to that time?

A. About 4½ percent.

Q. About 4½ per cent?

A. Yes.

Q. Since 1931 the company has employed a 3½ per cent rate?

A. That is correct.

Q. And going back to Statement 1 of your exhibit, Column 5, I see you have "Amount Required for 8 per cent return." How did you arrive at that 8 per cent?

A. The eight per cent was the percentage given by Mr. Coffman; by the four rate of return witnesses; that is, Coffman, Bosworth, Sands and Gilman.

Q. Are you sure Mr. Coffman estimated any percentage in his rate of return?

A. It is my recollection he said not less than eight per cent.

Q. Anyway, you didn't arrive at that eight per cent on your own estimate but you took their estimated figures?

A. That is quite right.

Q. And as I see from this Statement 1 of the exhibit all of these computations throughout the exhibit end with the year 1940, do they not?

A. 1947.

Q. 1947?

A. Yes.

Q. They are projected beyond 1939 and through 1947?

A. Yes, sir.

Q. And why have you projected them on through 1947? Is it the same reason you have heretofore given?

A. It is the same reason I have heretofore given, and in 1947 it is the last full year.

Q. In fact, the contract of January 3, 1928, as you stated, expires in June 1948?

A. June 1, 1948 the contract between Canadian River Gas Company and Colorado Interstate Gas Company expires.

Q. And you pursued that method of stopping at 1947 all the way through?

A. Yes, sir.

(Vol. XLVIII, pp. 6632-6639.)

* * * * *

Q. As I understand it, then, you have made no estimate as to what the company's requirements are for depreciation in the future?

A. None whatever, no sir.

(Vol. XLVIII, p. 6654.)

* * * * *

Mr. Dougherty: I did want to ask this, Mr Lusk: Depreciation is not a cash item in expenses?

The Witness: Ordinarily it is not.

Mr. Dougherty: It is purely a bookkeeping entry.

The Witness: It is purely a book method of transferring it from one account into another, setting up expenses and applying a reserve against it.

Mr. Lange: Is that the definition the Uniform System of Accounts give for that?

The Witness: Well, the Uniform System of Accounts allows any utility to charge it up against depreciation expense and set up a corresponding reserve.

Mr. Lange: You haven't attempted to follow the Uniform System of Accounts provision with reference to the setting up of the depreciation reserve?

The Witness: No, sir.

(Vol. XLVIII, p. 6655.)

Further Testimony of the Company's Witness, Roberts.

Q. Mr. Roberts, you were sworn the other day when you testified, I believe?

A. I was.

Q. Have you prepared for the Colorado Interstate Gas Company a statement showing accumulated depreciation and its application to the original cost of the Denver line properties as of December 31, 1938?

A. I have.

(Vol. XCVII, p. 15002.)

* * * * *

Q. But in this particular proceeding here you are taking, or you are estimating the per cent condition and then relating that to what Mr. Lusk has termed the original cost of the property?

A. I am relating it to the same property that we inspected.

Q. The same property that you inspected?

A. Yes.

Q. But you haven't got any reproduction costs new estimate of that property in this proceeding?

A. Not in this proceeding.

Q. So in that respect it differs from the other valuations proceedings in which you have participated?

A. We went about it in exactly the same way as we did for the other exhibits.

Q. Yes, but as I say, in these other valuation matters in which you participated, you usually had a reproduction cost new estimate and then there was a per cent condition arrived at by inspection—by a physical property inspection?

A. Well, it doesn't make any difference whether it is reproduction or actual cost. It might have been reproduced the day before and both be the same thing.

Q. Well, but I want to know whether or not in all of these other assignments in which you participated and that you cite in your qualification statement, you didn't have a reproduction cost new estimate to which you related the per cent condition after you determined that?

A. Which ones? I didn't understand to which ones you are referring.

Q. You named a number of instances where you prepared valuations.

A. I understood you to say that you didn't have reproduction figures on those.

Q. I said, you did in those cases.

A. I misunderstood you. I thought you said you did not.

Q. In all those instances where you stated you had something to do with valuations of property you had a reproduction costs new estimate, didn't you?

A. In most of them, I would say.

Q. In which ones didn't you?

A. I will have to look at this list.

Well, the only one on that list—of course, I have worked on some other companies too—on the Sinclair Consolidated Oil Company at one time I think we did make some estimates of depreciation to be set up on the books. I participated a little bit in that but to such a small extent that it's not worth mentioning; so the rest of these would be on reproduction basis.

Q. Yes, that's what I meant. They were all related—in other words, the per cent condition that you arrived at was related, then, to the reproduction costs new estimate?

A. As I recall it—some of these jobs are quite a long way back and I might be a little bit mixed up on them.

Q. Now going back again to your Exhibit 272, in arriving at this, what you term accumulated depreciation, did you make actual field inspections of what units of property of Canadian River?

A. The men who determined this accumulated depreciation in the field inspected the major buildings, the pipe lines, the measuring station structures on which I had made a list, chronologically and they inspected every fourth one of them in the order in which they were constructed.

Q. Now, this so-called accumulated depreciation, the figure that you give in your Exhibit 272, that is the converted per cent condition as Mr. Rhodes uses it in his reproduction costs new estimate, isn't it? In other words, where you have, say, a 93 per cent condition related to reproduction costs new, you have a 7 per cent accumulated depreciation figure?

A. That's right.

Q. So you do, in fact, have a per cent condition that you are relating to what is termed as original cost adjusted?

A. That's right.

(Vol. XCVII, pp. 15036-15038.)

* * * * *

Q. I want particularly to confine myself at this time to the method that you pursued in relating those inspection figures to your so-called accumulated depreciation.

A. This was done in exactly the same way as it was done on the estimates of reproduction of the Canadian River transmission, and the Colorado transmission—exactly the same as Mr. Rhodes testified.

Q. You followed the same theory that he had with reference to the deceleration of the corrosion that takes place in the field lines?

A. That's correct.

Q. In other words, your inspection made in 1939, related the per cent condition as of December 31, 1938?

A. That is correct. At least, we used it for that.

Q. You used it for that. Well, now, these determinations as to corrosion, as I recall Mr. Rhodes' version of that, you determined that after a certain period of time corrosion would decelerate, is that right?

A. No, not exactly that, not after a certain period of time.

Q. Well, when?

A. As soon as the pit is started it forms a little protection there and the penetration from that time on slows up.

Q. It decelerates, then, as he put it?

A. That's right.

Q. How long will that continue before the deceleration begins; or, once you have a pit, how long will it be before there will be deceleration?

A. As soon as the pit starts, there is sort of a scale

that usually forms over that and there are other factors that enter into it, it decelerates at that time—it doesn't decelerate at that time, from that time on it decelerates.

Q. From what time on?

A. From the time there is some pit starting and some material in that pit.

Q. In other words, prior to that time there is acceleration of the pit, or what takes place?

A. It is not acceleration. When the pipe is put in the ground—

Q. All right.

A. —the depreciation starts—

Q. What do you mean by the depreciation starts?

A. I mean depreciation. The principal thing being pitting, one of the principal things—

Q. When you say "depreciation," you mean the pitting starts?

A. The pitting would start, and when that starts, usually in a pit there is some scale and other matter which tends to decelerate that.

Q. All right, now, at the time you made this inspection of the field lines in 1939, how could you determine how long any of those pits had been—or, how long prior to that time the pits had formed?

A. I didn't need to know.

Q. You didn't need to know that?

A. No.

Q. Why?

A. Because I know from that time on it was going to decelerate and by doubling the age the pit would only go half again as far it had gone.

Q. Yes, but if you didn't know when that pit had actually started on its course on that pipe, how do you know when it will stop?

A. I don't need to know that. I don't need to know when it is going to stop.

Q. Well, then, how can you determine your per cent condition of that pipe, or the depth of the pit, or how far that pit will eventually go?

A. I know because there is a certain depth at that particular time, and we used a formula which is a very conservative formula of doubling the age that the pit would only penetrate fifty per cent further.

Q. Although you don't know how long that pit had been in the actual process of either forming or how long it had been on the pipe at the time you made your inspection?

A. There is a period covered there. It could be from zero to a hundred and it might be from 1 to 50, but the relation between those things is what we got.

Q. You pay no attention or give no consideration whatsoever in making that determination as to that pit inspection as to how long the pit had been on the pipe at the time of the inspection?

A. No, sir.

Q. It is not necessary to do that to arrive at your per cent condition in utilizing your formula?

A. No.

Q. And the time element doesn't enter into that at all?

A. Time is expressed as the speed of the penetration. As I stated, it decelerates. Of course, the deceleration, the time element is considered in that, but that is the extent, the rate is something having to do with time—speed.

Q. Some of these pits you inspected in 1939 were still in the process of decelerating at that time?

A. In 1939?

Q. Yes.

A. Yes.

Q. Well, how much further, then, in the future will that deceleration continue?

A. How much?

Q. Yes, how long?

A. It would continue to decelerate until the time it becomes necessary to remove the pipe, when the pit has gone through the wall, and at such time as it is advisable to remove the pipe. Of course, then the pipe is out.

Q. That is true, but this inspection made in 1939 where you found certain pits that were at that time decelerating, that deceleration would continue for some period in the future?

A. Yes.

Q. Do you know how long?

A. I didn't need to know how long.

Q. You didn't need to know how long?

A. No, all I was interested in was when it would get through the pipe.

Q. You didn't need to know in determining your per

A. No.

Q. And in determining that per cent condition you arrived at it from that particular physical inspection?

A. From the inspections and correlated data.

Q. And you didn't take into consideration the age of the pipe; how long it had been in the ground?

A. No.

Q. You limited your determination of per cent condition to that physical inspection?

A. And other correlated facts.

Q. That is, applying your formula to those readings that were made of the inspection?

A. Yes. Mr. Rhodes and I together made it.

Q. What other correlated factors are you talking about?

A. Well, we considered the cost of reconditioning the pipe.

Q. You mean the cost of reconditioning the pipe?

A. Yes.

Q. How would you arrive at the—or, rather, how would that be a factor in determining present per cent condition?

A. Well, you could either let the pipe depreciate and not try to recondition it before it got to the point where you wanted it removed or you could take the pipe and weld up the pits and put it back in shape again.

Q. Oh, you were taking into consideration what maintenance you would have to apply to that pipe?

A. Not maintenance, reconditioning of it.

Q. What is your distinction between maintenance and reconditioning?

A. I didn't have to make that distinction for this exhibit here.

Q. You are stating, though, some other correlated factors that you took into consideration besides this physical inspection to determine that per cent condition.

A. I said we did make an estimate as to what it would cost to weld up those pits.

Q. Well, how would that assist you in determining the present per cent condition of that pipe? That's something that you are going to do in the future, or the day after you made the inspection. At least not at the time of the inspection.

A. You aren't going to remove your pipe at the time of the inspection, either.

Q. All right, what did the fact that you are either going to repair that pipe or clean it or what-not have to do with determining presently your per cent condition?

A. Well, we wanted to find out how much it would cost to put that pipe back in shape.

Q. For what purpose did you want to find that out?

A. In figuring our estimate of the reconditioning.

Q. You utilize that to determine present per cent condition?

A. We wanted to find out how much it would cost to weld up the pits, where we think it would be necessary to put that pipe in shape.

Q. That was to be done in some time subsequent to your inspection, wasn't it?

A. It might not have been done. It might have been one joint of pipe at that particular time.

Q. At that particular time?

A. It might have been.

Q. When was that ever done?

A. When was that done?

Q. Yes.

A. I don't know if it has been done on this property or not.

Q. So in determining your per cent condition it wasn't essential, or rather, it couldn't have been a part of the factors that went into the figures that finally were put down, could it?

A. Yes, it could. If we found that the cost of reconditioning that pipe was very high, and that method could be disregarded entirely, then the other factors that entered into it would be given more weight than that.

Q. Maybe I can clear it up in this way: What do you define by the term "per cent condition" as you employ it and Mr. Rhodes employed it?

A. The per cent condition as we have employed it, represents the extent to which the property has depreciated as compared with the total depreciation that would cause that property to be retired.

Q. And you relate that to some particular date or time, don't you?

A. No.

Q. It is limited to physical factors, then, isn't it?

A. What do you mean by physical?

Q. Well, something that you can see and determine from looking at the pipe.

A. Well, we studied all factors.

Q. What other factors?

A. Obsolescence, inadequacy, such things as that.

Q. In connection with the determination of that per cent condition?

A. Yes.

Q. Well, didn't you in your Exhibit 273, when you referred to the statement made by Mr. Rhodes in his Exhibit 68, have this to say at Page 1 of the written statement:

"The depreciation accumulated in the property was determined from observations of physical conditions."

Is that the way Mr. Rhodes proceeded and you proceeded?

A. What page was that, you say?

Q. Page 1 of the written statement, Exhibit 273.

A. 273?

Q. Yes.

A. Yes, he didn't mention anything else in the physical—

Q. That was what he predicated his determination of depreciation, or per cent condition on, of those properties, wasn't it?

A. He considered obsolescence, but there is no obsolescence in this property.

Q. There is no obsolescence in this property?

A. No.

Q. So these determinations that he made and that you made were from observations of physical conditions of units of the property as described by Mr. Rhodes?

A. Yes.

Q. Now, then, those readings that were made after the various test holes had been inspected, they were then taken and the formula applied by you?

A. I didn't do it personally. Mr. Smith directed that work and I worked along with him.

Q. Mr. Smith?

A. Yes, sir.

Q. Was it under your direction?

A. Under my direction and Mr. Rhodes'—mostly under Mr. Rhodes' direction in that case.

Q. You then determined from those figures what the per cent condition of that particular unit is?

A. Mr. Smith, Mr. Rhodes and I worked on that. Mr. Rhodes set the final figure on that.

Q. So when you used the term "accumulated depreciation," it is really a conversion of that per cent condition as utilized by Mr. Rhodes in his two exhibits?

A. Yes, sir.

Q. In other words, where you have a 93 per cent condition you say that there is a 7 per cent accumulated depreciation applicable to the particular unit?

A. That is correct.

Q. And it is in that fashion you apply the term "depreciation" in your exhibit?

A. Yes.

Q. Accumulated depreciation?

A. Yes.

Q. In connection with those—there is one other thing I want to get back to. The determinations of per cent condition in any particular unit of property, you didn't determine the life of the particular unit or section of pipe in the ground?

A. Do you mean by "life" how long it had been in there?

Q. Yes.

A. No, I did not.

Q. And in determining the per cent condition of the—strike that.

Going back to your definitions again, you utilized the term "depreciation" as distinguished from "depletion" in your Exhibit 272, didn't you?

A. That is correct.

Q. Exactly what do you have in mind, or how to you define the word "depreciation" as employed by you in this exhibit?

A. Depreciation?

Q. Yes.

A. Depreciation is a figure determined by applying to the original cost the per cent that the property had advanced towards a total depreciation, such depreciation as would cause that property to be retired.

Q. Have you ever had occasion to see for yourself as to the definition of depreciation in the Federal Power Commission's Uniform System of Accounts for natural gas companies?

A. I think I read something that had to do with the way depreciation should be set up on the books.

Q. I mean the definition that is given, the term as it is applied.

A. You mean as applied to the depreciation on the books?

Q. Well, it doesn't limit itself to that particular use.

A. That book is for that purpose, is it not?

Q. I will ask you whether or not this is your understanding of the term "depreciation" as applied to gas plants: "Depreciation as applied to depreciable gas plant means the loss in service value not restored by current maintenance and incurred in connection with the consumption of prospective retirement of gas plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance"?

A. That isn't the way I set this up.

Q. It isn't?

A. No.

Q. In what respect do you define the term differently from that?

A. I have made no allowance for amortization of property in any way for any cause.

Q. What do you have to say with respect to that restrictive clause in this definition, that it does not apply to property that is restored by current maintenance or loss in service value of that property?

A. It is not restored by current maintenance?

Q. Yes.

A. I believe that holds to my definition.

Q. That holds to your definition?

A. Yes.

Q. Well, then, supposing one of these units of pipe, say several hundred feet of it is situated in one of your hot spots you referred to in Exhibit 272, and which unit of pipe has been given a 93 per cent condition or a 7 per cent accumulated depreciation has been applied? Supposing one of those lengths of pipe of several hundred feet is found to be necessary to be removed or retired within a few months after you made that inspection, how would you treat that?

A. How would I treat it?

Q. How would you apply your formula of depreciation?

A. You mean if I were operating a gas company?

Q. Yes.

A. I haven't considered that at all.

Q. You haven't considered that at all?

A. No.

Q. Have you given any consideration in the determination of your per cent condition to actual retirements of units of property out of the production or gathering system of the Canadian River Gas Company during 1939?

A. Where they retired items of property?

Q. Yes.

A. No.

Q. Would it have made any difference in your treatment of accumulated depreciation how soon—strike that.

Even if the unit of property were retired shortly after you had given it a 93 per cent condition, that wouldn't have made any difference in connection with your computation?

A. You mean if it blew up or something like that?

Q. No, if it were retired for any reason at all found necessary.

A. For what reason?

Q. It may have been some of these deep pits that you hadn't discovered in your inspection.

A. Well, our average figure would have discovered enough so that case wouldn't happen.

Q. Oh, it wouldn't have happened?

A. No.

Q. Your method of inspection at those various intervals would have precluded anything happening?

A. It would have precluded 200 feet of pipe being taken up the next day on account of pits going through.

Q. You say you didn't know of any of the retirements that were made by Canadian River Gas Company during the year 1939?

A. Yes.

Q. Well, now, I notice in June 1939—strike that.

When did you complete your inspection of those various units of property? About what month in 1939 was it?

A. Most of it was completed in August.

Q. August?

A. Most of it.

Q. Most of it was completed in August?

A. Yes.

Q. And when did you begin the work that year? Do you know about what month it was?

A. I came out here in March myself and some of the others came out here at various times.

Q. Well, now, I notice in June 1939, under Voucher F-19-25 that 1205 feet 9 inches of 4½-inch pipe of Canadian River was retired. That had been given a 93 per cent condition in your reproduction costs new estimate as of December 31, 1938.

A. Not that particular piece.

Q. Not that particular piece?

A. No.

Q. Why wasn't that particular piece given that per cent condition?

A. It was an average for the whole property.

Q. Then if the day after you gave a particular unit of property a 93 per cent condition, or a month after that unit of property is retired, it wouldn't affect your estimate at all?

A. It is after the date of my estimate.

Q. Supposing it is retired the day after?

A. It still would be after the date of my estimate.

Q. You think you would retire a unit in 93 per cent condition?

A. Do I think I would retire it?

Q. Yes, would you retire it as an operating matter?

A. If a pipe blew up, I would certainly have to replace it with another piece of pipe.

Q. I am not talking about one that blew up but I am talking about one that didn't blow up, one that had a pit you didn't see, or some other condition whereby you found it necessary to retire the unit.

A. There might be an occasion in city work where they might have dumped a lot of salt water outside a soda fountain. If it got down to the joint it would cause the joint to go out faster but it would be some special occasion and it would be such a small percentage that we would ignore it entirely.

Q. That wouldn't be the case of 1205 feet of pipe, would it?

A. I don't know why—it is a very small part of the system, but I don't know what caused it.

Q. That is true, it is a very small part of the system, but it was an instance where a unit of property that had been determined to be in 93 per cent condition was retired, was it not?

A. I didn't say 93 per cent. I said the property in the average would be 93 per cent. There would be part of that found in a lower condition than that.

Q. All right. Supposing, then, there was some portion of your compressing unit that had been given a 93 per cent condition and the very next week that had to be replaced?

A. Well, generally that would be due to an accident.

Q. Due to an accident?

A. Yes.

Q. It couldn't be possible that just from physical observation you weren't able to see some defect there or some part of the machinery that had worn out—

A. It is very remote and it would be an accident in that case.

Q. —or some part of the equipment—

A. It would be defective material—

Q. —that had been worn to the point you didn't see it at the time of the inspection?

A. They go over the engines ever so often and micrometer them and put them in good operating condition, so that is pretty far-fetched to think of.

Q. It couldn't happen?

A. I don't think it could.

Q. In other words, just a physical inspection of a compressor unit can very definitely tell you just how long it is going to stay in there?

A. I didn't say that.

Q. Or a physical inspection of a compressor very definitely determines its per cent condition?

A. If all of the facts are correlated and somebody who is competent to know the operation of engines inspects them, he can tell what the condition is—determine what the condition is.

Q. In applying your method of computing per cent condition, or, as you term it, accumulative depreciation, even if part of that unit goes out right after that determination, that still satisfies that theory as being correct?

A. We have considered all of the parts that wear and if something blew up and destroyed that engine it would have

no effect upon the engine as we had considered it. If there were some minor thing such as a spring or a valve breaking, that is conceivable, but that is such a minute cost as compared to the total cost, that wouldn't enter into the calculation at all.

Q. In other words, you approached this matter of depreciation definitely as an engineering problem? You and Mr. Rhodes both determined the per cent condition or accumulated depreciation from your physical inspections made of the property?

A. That's right.

Q. You contemplated it as an egineering problem?

A. It is primarily an engineering problem.

Q. You approached it in the same fashion as Mr. Rhodes stated he approached it where he states the method he pursued?

A. Yes.

Q. That is where he in turn relates to what he did in the preparation of Exhibit 68?

A. Yes.

Q. You proceeded in the same fashion?

A. That is correct. In fact, Mr. Rhodes proceeded with me, understand that.

Q. Yes, and you proceeded in that fashion in the determination of these percentages of accumulated depreciation in your Exhibit 272?

A. That is correct.

Q. You stated something a while ago with reference to determining at the time you made these inspections whether the pipe could be reconditioned and the pits welded, and so forth, didn't you?

A. Yes, sir, and we supplied the Federal Power Commission engineers with all of that data showing how we made our calculations and it was gone over by Mr. Rhodes. The field lines at the same time were taken off by the Federal Power Commission engineers because they happened to be in the same book.

Q. When you made these inspections and found there should be some work done with reference to either reconditioning the pipe or repairing it, what notation did you make there on your schedule?

A. We didn't make notations as to whether pipe should be repaired, as we recorded the depths of the pits and we just followed that outline Mr. Rhodes presented.

Q. Just exactly as he proceeded in his computation of the per cent condition in those two exhibits?

A. That is correct.

Q. I don't believe you gave any definition of what you understand by the term "depletion" as applied in your exhibit.

A. Well, depletion, when applied against wells, for instance, was based upon the reserves that you had at the time the well was drilled, compared with the reserves at the time you considered it.

Q. What reserves?

A. The recoverable reserves.

Q. Where did you get those figures?

A. I got those figures from an exhibit—

Q. If you know the number of the exhibit, state it.

A. Exhibit 207. That is the exhibit concerning reserves, and the gas withdrawn is covered in Exhibit 206.

Q. Then you applied depletion as you termed it, to the remaining life of the leaseholds? In what way do you relate the depletion to the Canadian River leaseholds?

A. I found out how much gas was withdrawn in a year as compared with the gas at the start of that year and applied that factor against the investment of leaseholds at that particular year.

Q. In that fashion you distinguish your interpretation of the term "depletion" from "depreciation"?

A. You could have depreciated pipe and have put in some new pipe in the place of the line that was there, but when a well goes out you have to drill another well in another location.

Q. Now, then, in determining your so-called cumulated depreciation which you did as of December 31, 1938, from inspections made in 1939, you arrived at what you determined a per cent condition or accumulated depreciation as of December 31, 1938?

A. That is right.

Q. Now, then, with that inspection you made in 1939 which aided you in determining the per cent condition as of December 31, 1938, did it enable you to determine the per cent condition or accumlated depreciation as of January 1 1938?

A. January 1, 1938?

Q. Yes.

A. We could probably make a guess but it wouldn't be very far different from that.

Q. It would be just a pure judgment figure, wouldn't it?

A. To work it backwards, you say?

Q. In your opinion, would a unit of property in 93 per cent condition, December 31, 1938, be in that condition on January 1, 1938?

A. That would depend upon the piece of property and to what use it had been put.

Q. If you had not made any other inspection, how would you arrive at the accumulated depreciation if you wanted to know it as of January 1, 1938?

A. Previous to the date of our's?

Q. Yes.

A. I haven't had occasion to do that.

Q. There would be no way to do that, would there?

A. If your property was in pretty good condition and the operation had been the same and everything had been the same, you could make a pretty good guess at the time.

Q. Of course, if there had been the usual maintenance of the unit—

A. There would be a lot of factors that would have to be considered.

Q. Of course, you would want to know whether the usual maintenance has been applied or had taken place during the year?

A. You would want to know if there was anything unusual.

Q. You would want to know there was good maintenance during that year, wouldn't you?

A. If the buildings were rusting and there was no paint put on them, you would want to know that fact. Are you trying to determine how I got back to an early date?

Q. Yes, I wanted to know if there would be a way of determining that.

A. There would be so many factors you would have to consider, it would become quite an involved problem.

Q. But if the proper maintenance had been kept up during any period earlier, that would have kept up your per cent condition, wouldn't it?

A. You have to have proper maintenance to keep your property up.

Q. To keep it in that higher per cent condition?

A. To keep it in—what higher per cent condition?

Q. Where you had a 93 per cent condition at December 31, 1938 and a high maintenance prior to that time, that 93 per cent you had—

A. You say if I had 93 per cent I would have high maintenance cost or a good policy of maintenance?

Q. If you had known that high maintenance had prevailed for the 12 months earlier than December 31, 1938—

A. What do you mean by high maintenance?

Q. I would say proper maintenance.

A. Proper maintenance?

Q. Yes, a high degree of maintenance.

A. A high degree of maintenance has been exercised prior to that time?

Q. Yes.

A. And then what?

Q. What would you relate then as to the per cent condition for the 12 months prior to December 31, 1938?

A. I haven't gone into that calculation, calculations like that.

Q. You haven't attempted to do that?

A. No, sir.

Q. You haven't attempted to determine what the per cent condition of your unit would be at January 1, 1938?

A. No.

Q. You couldn't do that, could you?

A. Knowing what condition it is in now and knowing what the company's policy has been, I could make a pretty good estimate. I wouldn't be far off.

Q. Why would you be able to make a good estimate?

A. Because this isn't a very fast depreciating property.

Q. You know the company's policy as to maintenance, too, don't you?

A. I know they haven't had to have as much maintenance as some companies.

Q. It has been their policy to keep up maintenance at a proper level, hasn't it?

A. I would say so, as everything was found in good shape.

Q. As an operating problem, that is the most efficient manner to operate the line, isn't it?

A. To keep your maintenance at a proper level, yes.

Q. That would have some bearing on your estimate that

the per cent condition would probably be pretty nearly the year ahead, wouldn't it, being January 1, 1938?

A. A year prior, you mean?

Q. Yes.

A. If you were trying to make an estimate of what it was, then that would be one of the factors you would consider.

Q. You make the further statement in Exhibit 272 in determining this accumulated depreciation, that is, aside from amortization?

A. That is correct.

Q. What do you contemplate the term "amortization" meaning as you applied it here?

A. As I applied it where?

Q. In your exhibit.

A. Well, if you want to amortize the money you have invested in your property over a certain number of years, that would be amortization.

Q. This determination you made in this exhibit is exclusive of whatever amortization may have to be set up?

A. That is correct.

Q. You have made no determination of that amortization?

A. No, sir, I haven't.

Q. What is that intended to provide for?

A. What?

Q. The amortization you have included.

A. I haven't done that.

Q. You haven't?

A. No.

Q. You haven't concerned yourself with that?

A. No.

Q. You have concerned yourself with the time you say the field will be depleted, haven't you?

A. I have, yes, in the depletion of the wells.

Q. You predicate your depletion on the company's estimate as to when the Panhandle field will be depleted?

A. I have based it upon the figures presented by the company witnesses in that respect.

Q. By the company's geologists?

A. Based upon the figures as stated in my exhibit here of original gas reserves estimated recoverable at 50 pounds gauge by Mr. J. D. Thompson in his Exhibit 207 and gas withdrawn through 1927 as shown by Mr. C. J. Peterson

in his Exhibit 206. The figures in those two exhibits are what I used.

Q. Of course if the life of Canadian River acreage is longer than what those engineers estimated, it will have a bearing upon your depletion schedule, won't it?

A. That, and the amount of gas to be taken out, if the rate was changed—

Q. The rate of withdrawal was changed?

A. Yes.

Q. Those factors would have a bearing upon changing your depletion schedule?

A. They would in the future, not up to date. These have already been withdrawn.

Q. In that respect you compute depletion in a fashion entirely different from the way you approached your depreciation problem?

A. Depletion and depreciation here are different things.

Q. You relate your depreciation back to the year 1928 or 1927, don't you?

Mr. Dougherty: You mean depletion.

Mr. Lange: Depletion.

The Witness: Yes. I start with 1928 and I find the amount of depletion arrived at by the method I have outlined for each year and I get the accumulated amount.

By Mr. Lange:

Q. But in determining your accumulated depreciation in the property, you start as of December 31, 1938?

A. No, the property was there in 1928 and I found what condition it was in when I inspected it.

Q. I am referring you now to the determination of the per cent condition. You are relating that to December 31, 1938?

A. Yes, the per cent condition.

Q. In connection with that determination you are proceeding in an entirely different fashion than you proceeded in the determination of your depletion?

A. I have figured depletion and depreciation differently.

Q. In other words, you are proceeding in setting up your accumulated depreciation, as you term it, beginning as of December 31, 1938 against what you say is the original cost of the property?

A. That is the amount accumulated depreciation at that time, regardless of when that piece of property was put in.

Q. At the same time and in the same breath you are determining the original cost of the property?

A. That is right.

Q. And that original cost of property was incurred before December 31, 1938?

A. Yes, but the depreciation I determined was accrued during those years.

Q. During all those years, is that the way you arrived at it?

A. It accrued during that period because when the property was new there was no depreciation, and when we went out and inspected it we found that amount.

Q. During the period from 1928 through 1939 on a unit of property that you say has 93 per cent condition, that is the entire depreciation that accrued over the entire period?

A. That is on the average.

Q. On the average?

A. Yes, on the average for that particular account.

Q. What do you mean by average?

A. Undoubtedly you would find a piece of pipe here and there that had deeper pits than another piece of pipe, and if it had deeper pits that pitting would go through it sooner than it would in the other piece of pipe under the same sort of conditions.

Q. And from a physical inspection you determined the whole accumulated depreciation in that unit as 7 per cent?

A. Yes.

Q. You wouldn't think of attempting to set up or determine depletion of your leaseholds in that fashion, would you?

A. I would say that as the leases depleted you should go out and buy new leases.

Q. I mean you are not even attempting to set up your depletion in this exhibit in that fashion, in the fashion you did your depreciation?

A. No, I figured depletion and depreciation differently.

Q. Do you set up your depletion in your income tax returns for the company on the same basis you set it up in Exhibit 272?

A. I didn't investigate that.

Q. You don't know what the company did in that respect?

A. It seems to me that they based it upon comparable figures, but I couldn't swear as to that.

Q. You are setting up your depreciation here on a sinking fund basis, aren't you?

A. I am not setting it up on a sinking fund basis.

Q. You determined your depreciation in this exhibit as of December 31, 1938?

A. Determined the condition as of that date?

Q. That is right.

A. Yes.

Q. Now, then, if you had another proceeding in 1944, say, or five years after 1938, being in 1943 or 1944, you would go out and make physical inspections of these units of property, wouldn't you?

A. It would depend upon the circumstances.

Q. Well, conceding that your proceeding here is the one you adopted; you would have another similar proceeding five years from now, would you go out and make physical inspections of those units?

A. Making these inspections is an expensive job and I think if competent engineers got together they might be able to determine conditions suitable for rate-making purposes without going to that expense.

Q. How would they do it?

A. They would find out what the conditions were as of the date the inspection was made and in their judgment determine what they thought it was as of that other date, considering any changes in the property, and considering the way units have been run and other factors.

Q. They would go back to your 1938 figures; for instance, to that unit you found to be in 93 per cent condition?

A. As a compromise they might do that. To be determined most accurately it would be deemed advisable to inspect the property again.

Q. It would?

A. Yes.

Q. And if there had been a good maintenance program followed by that company during the five-year period, you would be apt to find that line in 93 per cent condition again, wouldn't you?

A. There would probably be other things taking place in that line, added other lines and other factors that might enter into it which might affect the overall picture some way.

Q. How would you know that had taken place under your method of determining per cent condition?

A. If I went out and inspected it, I could find what depreciation had taken place.

Q. You would go out and make a new inspection of the line?

A. That would be the most satisfactory way.

Q. You might arrive at a 93 per cent condition again?

A. That is entirely possible.

Q. And you would start out all over again, starting your depreciation all over again?

A. There might have been new property added during that period.

Q. You would relate that per cent condition you found then in 1944 or 1945 to your original cost?

A. I would apply it if I wanted to find out what the depreciation of original cost was.

Q. I believe Mr. Rhodes stated this property, if properly maintained, is apt to last a hundred years or more. Do you remember him making such a statement?

A. I sort of recall a statement on the pipe line itself.

Q. If at five- or ten-year intervals you would have additional proceedings similar to this and every time you would go through the mechanics in order to thoroughly satisfy yourself, you would make physical inspections of those units, wouldn't you?

A. That would depend upon the circumstances. Usually there are additions to property and retirements to property. Retirements affect the overall conditions as well as the overall costs.

Q. The most satisfactory manner to proceed in would be to make those inspections at that time?

A. In my opinion it would be.

Q. Now, in arriving at this per cent condition of property that you do in making these inspections, it is not your opinion that that per cent condition has any relation to the value, is it?

A. What do you mean by value?

Q. The value of the particular unit of property.

A. The value expressed in what terms?

Q. What is your definition of value?

A. You were asking me the question.

Q. The value of that particular unit of property expressed in terms of dollars.

A. I have expressed it in terms of dollars.

Q. Do you relate that per cent condition expressed in terms of dollars for that unit of property?

A. I do. Dollars of the original cost as compared to depreciated cost.

Q. You say there is a direct relationship between the two, between the per cent condition of that unit?

A. The per cent condition—that is how we found the depreciated value, we took the per cent condition against the original cost.

Q. That in your opinion would be the case regardless of what the maintenance may have been on that particular unit?

A. We found it based upon what maintenance had been done, had taken place. We inspected that property as of a certain date and found it in a certain condition. We didn't investigate whether there had been—we didn't investigate whether they had spent so much money for maintenance each year, skipped a year, and so much for another year, but we found out what the depreciation was at that specific date and didn't make a study back to see what the maintenance had been, because we found what the condition was at that particular time.

Q. Then you very definitely didn't follow the definition the Uniform System of Accounts gives of depreciation when it specifically says that depreciation as applied to depreciate gas plant means the loss in service value not restored by current maintenance?

A. We found out what it was at the time, the condition it was in.

Q. Yes, but the fact it had been restored by current maintenance definitely was in the picture, wasn't it?

A. We found out what the condition of the property was at that particular time and didn't make a study of maintenance—at least, I didn't make one myself.

Q. You didn't make one yourself?

A. No.

Q. Then there would be no way to determine what the per cent condition of that property would be a year after that time unless you took into consideration the fact that current maintenance was maintained?

A. I could make a pretty good guess at it.

Q. You could make a pretty good guess at it?

A. Yes.

Q. Taking into consideration the company's maintenance program?

A. The amount of maintenance in that time would hardly affect the picture.

Q. Well, if it were over a period beyond one year, say three years from the time you had made this per cent condition estimate, how would it work out?

A. Well, if I were called upon to do something, I would consider all of the factors and try to determine to the best of my knowledge—

Q. Maintenance would be definitely in the picture, wouldn't it?

A. If they hadn't maintained their structures and they had started to rust, they would naturally be in lower condition that if they had maintained them.

Q. In making your estimate you would certainly want to know what the company's maintenance program was, wouldn't you?

A. I would want to know. Of course, as I said before, I think the best thing to do is to go out in the field and look at it.

Q. If you had known there was no maintenance program being maintained or carried out at all, what bearing would that have upon your estimate as to what the per cent condition would be two or three years after you had made an inspection?

A. I don't think gas companies go that long without keeping their properties in shape.

Q. It is good operating practice to keep up your maintenance?

A. Surely, to a proper level.

Q. If you were considering the unit of property of a company that did that, that would have a pretty strong bearing upon whether the per cent condition of that unit would be maintained, wouldn't it?

A. As I said before, I would have to consider all of the factors entering into that.

Q. That would be one of them?

A. I would consider that.

Q. What portion of the field lines were you actually able to inspect; that is, how many test holes were there on that entire production—or, rather, in the field gathering property?

A. On the field lines there were 125.

Q. 125 test holes?

A. Yes, that we considered in our calculation.

Q. How many miles of lineal feet or miles of line did that cover?

A. I don't recall. We made these inspections at about every $10,000 worth of original cost.

Q. You related it to value and didn't have any figures on the lineal feet of pipe involved?

A. Yes, to get the mileage amount of value you—like we had so much value at 2-inch and that would call for—

Q. Let's take the 2-inch pipe. How many inspections were made on the 2-inch line?

A. There were three.

Q. Three inspections?

A. Yes.

Q. How many lineal feet or miles of 2-inch line are there in the gathering system?

A. I don't know. I can look it up.

Q. Do you have it classified as between the various diameters of pipe in the field line?

A. The number of inspections?

Q. Yes.

A. Yes.

Q. And what did you say the total number was?

A. 125.

Q. 125?

A. Yes.

Q. How many inspections did you make of that unit on your field measuring structures?

A. As I recall it, there were around 23. We had a chronological list of the measuring stations and we inspected every fourth one, at the same time inspecting the equipment, and the buildings. I believe there were 21 of them.

Q. What other inspections did you make?

A. On what unit of property?

Q. Yes.

A. We inspected the Fritch compressor station structure and equipment and we inspected the Fritch camp. Do you mean all the others Mr. Rhodes had testified about?

Q. Limit it to the production and gathering system property.

A. You have covered the field lines and I covered the

field compressor structures and equipment; you covered the field measuring station and equipment, and we inspected the drilling and cleaning equipment plus the general property that has been allocated here.

Q. I notice in Statement 1 of your exhibit you haven't any accumulated depreciation applied to the drilling and cleaning equipment.

A. That is correct.

Q. Why?

A. That is a depreciated figure. We did have a reproduction cost estimate made on that drilling and cleaning equipment by an oil well supply representative and had one of our own men inspect it to determine the condition. The depreciated figure as determined by him was higher than this figure, so I assumed that enough depreciation had been taken from the books to cover the accrued depreciation as applied to that account.

Q. Why did you treat that in that fashion differently? Why didn't you just set up the original cost, as you term it, adjusted and apply your per cent?

A. I could have gone through and found out what the original cost there was undepreciated, but it was such a small amount it wasn't worth while.

Q. But why treat that in a fashion different from all the others?

A. I explained that. There is depreciation on that and not on the other items.

Q. But you didn't set up your adjusted cost on that.

A. No. To go through that and get the original cost on that would be an endless job and so little is involved I didn't think it worth while.

Mr. Dougherty: I think if you would explain just how that is done, it would clear it up. That is, they charge off a certain amount after they bring it back from the wells, and so forth.

The Witness: Well, they had varying methods and that is why it would be pretty hard to determine. It is charged out to a well and comes back at depreciated cost.

Mr. Dougherty: If drilling and cleaning equipment goes out to do a job in some instances they would charge the book cost of that at that time against that well?

The Witness: That's right.

Mr. Dougherty: And then when that would be returned they would put it back on the books at some lesser amount?

The Witness: Yes.

Mr. Dougherty: So as a result of that there would be a lesser amount put on the books for this drilling and cleaning equipment?

The Witness: Yes.

Mr. Dougherty: And this $24,000 is a result that has taken place after a number of these calculations were made after the property was used back and forth?

The Witness: That's right.

Mr. Dougherty: So to get the original cost you would have to go back through the accounts for some time, at the beginning?

The Witness: It would be an endless job, almost.

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* * * * *

Q. Mr. Roberts, in connection with the determination of your accumulated depreciation in Exhibit 272, I want to ask you first whether it isn't a fact that you did not in making that determination take into consideration the life of the gas supply, the company's gas supply?

A. I have told you that I depleted leaseholds and gas well construction.

Q. That's on depletion. I am now referring to your accumulated depreciation as computed against these several units of property.

A. I didn't amortize the property over the life of the field.

Q. In other words, in determining that accumulated per cent in depreciation you did not take into consideration the life of the gas supply?

A. No, I found the condition as I found in the field.

Q. From a physical inspection?

A. From a physical inspection.

Q. And in making that determination you did not take

into consideration any possible retirement of any unit of property for the future?

A. Retirement of the property?

Q. Of any unit of that property—any one of those

A. I found the condition as it was right at that particular date.

Q. That's right, and any retirement due to physical cause at any time in the future is not a necessary factor in determining your present per cent condition?

A. Well, some of this pipe had pits in it that were deeper than others and that piece of pipe might have been retired sooner than another piece, so that that is taken into consideration in that respect.

Q. You mean in determining your present per cent condition you determined what piece of property woud be retired at some future time?

A. I didn't figure just what piece of property would be retired, but I said that there would be items of property that would be retired before other items.

Q. Oh, there would be some items of property retired before others?

A. Yes.

Q. But the fact that some items would be retired before others is not necessary in determining your per cent condition as to the present physical condition of the property at the time of the inspection?

A. We inspected the property—the pipe line as a whole and we found certain of those joints where the pits were farther through than other joints in other sections. Some of that pipe would be retired before the other part, but that was considered in figuring our overall condition.

Q. But in your setting up formula, in determining, for instance, the depth of those pits and the number of those pits, their location and everything, those readings were then computed into your per cent condition, weren't they?

A. That's right. We gave consideration to the fact that certain pits would be deeper than others.

Q. And those that were deeper than others determined whether you had a higher or lower per cent condition?

A. When weighted into the average they would affect the average?

Q. When weighted into the average of the other pit readings?

A. Yes.

Q. And that is the fashion that Mr. Rhodes proceeded in determining per cent condition of the other two Exhibits 68 and 70?

A. Yes, for the pipe line as a whole.

Q. And it was related to the physical inspections that were made at that time?

A. Yes, it was related to that.

Q. Now, turning to your Exhibit 272 again, Page 4 of the written statement—no, let's go back to Page 3, Account 211, "Gas Well Construction." I note there that you depleted that unit of property, didn't you? What depletion figure did you apply there in relation to that unit of property?

A. I determined how much gas was withdrawn from the field during the year compared to the gas—the recoverable gas at the start of the year, and determined the factor and applied it against the investment during that period.

Q. Well, but you have depleted the company's leaseholds—rather, you have determined the accumulated depletion at this time at 36 per cent, but you determined only 31 per cent depletion of gas well construction equipment.

A. That is correct. If the amount of investment of the leaseholds and the gas well construction had, at each period had been the same, they would have all been the same amount of depletion—the same amount of depletion taken place, but the fact that relationship each year of the investment between leaseholds and gas well construction varied, caused this difference in depletion.

Q. That caused the difference between the two?

A. That is correct.

Q. Between the 31 and 36 per cent?

A. On your leases acquired earlier, there would be more depletion on those. Some of those drilled later wouldn't be quite as much depleted on those.

Q. Is that the way the company had it set up on its books?

A. Which?

Q. Gas well construction. Did they deplete that item on its books?

A. You mean, do they figure depletion on gas well construction?

Q. Yes, Account 211.

A. Yes, it is my understanding they do.

Q. Deplete it in the same fashion that you did?

A. I think on comparable figures. They wouldn't be these figures but they would be comparable figures.

Q. What do you mean, comparable?

A. Well, I would have to check up on this, but I believe they are based on the original reserves against the reserves withdrawn, but I will have to check into that to be sure. That didn't enter into my calculation as to how the company may have computed that item?

A. No.

Q. Now, going on Page 4, the Account 212, "Gas Well Equipment," that is the third item on Statement 1, isn't it?

A. Yes.

Q. You have Column 4, "Original Cost Adjusted," $931,900, and I see you have depleted that. You have depleted that 31 per cent, haven't you?

A. I couldn't get in the well to find out what condition the casing was in, and I therefore used this same depletion that I found for the gas well construction.

Q. In other words, you didn't apply your per cent of depreciation against that unit of property, did you?

A. No, I couldn't get down into the well to find out what shape the casing was in.

Q. Why didn't you apply some formula or percentage like you did in your inspection of the field lines?

A. That formula on the field lines had to do with the facts that we could measure on the field lines.

Q. There is no way of ever measuring any of the depreciation on this well equipment?

A. Not very well. The casing is in the well and you can't get in and see it. You might take a photograph of the inside, but not the outside.

Q. How did the company carry their depreciation on this item?

A. I don't recall at this time.

Q. You don't know how it was treated on the books of the companies?

A. No.

Q. Isn't it a fact that they had depreciated this item rather than depleted it?

A. It seems to me that that is a fact, but I am not sure about that.

Q. You aren't sure?

A. No.

Q. Well, isn't—well, you made no investigation of that?

A. No, I didn't investigate that.

Q. You gave it no consideration when you determined to deplete it rather than to depreciate it?

A. No. I know they didn't have any better method than I would have of observing it.

Q. And if as a matter of fact the company did depreciate this unit of property rather than deplete it, what would you have to say about that?

A. Well, I don't know. What they do and what I do here are two distinctly different things. I think that I have been pretty conservative in doing it this way.

Q. In other words, your whole method of approach in setting up accumulated depreciation as well as accumulated depletion on any of the units of property in this Exhibit 272, there is no relation whatsoever to the treatment recorded those items on the company's books?

A. They may have some relation but I didn't figure it the same way, because the company did it a certain way on its books.

Q. In other words, even if the company had treated this item "Gas Well Equipment" as a depreciable item, that would be of no concern to you when you prepared this exhibit, and you on the contrary, or on the other hand, treated it as a depletable item.

A. I used a substitute method. I felt sure that they had no way of determining what condition that casing was in.

Q. Why do you suppose they depreciated it rather than depleted it?

A. Well, if you could find out what condition it was in—the casing was in—it would have a certain physical condition.

Q. They didn't make any inspection of it or attempt to get a per cent condition of it when they set up their depreciation of that item on the books, did they?

A. I don't know what they did, but I felt sure that they

couldn't look at the outside of the casing any more than I could and, therefore, I wasn't interested in what they did.

Q. Well, wouldn't that be a significant item right there for criticism to be leveled at the method of determining accumulated depreciation merely from inspection?

A. Merely from inspection?

Q. Yes.

A. I don't see why there should be any criticism. I feel it is the best way to determine the condition of the property.

Q. Then why didn't you depreciate this unit of property on a formula just like you depreciated the field lines under the ground?

A. This is a particular item of property that is pretty hard to determine by physical condition—observation of physical condition, but that is an exceptional item.

Q. It is a considerable item of property, isn't it, according to your Statement 1, $931,000 some odd dollars original cost adjusted?

A. It is less than 10 per cent of the total.

Q. How's that?

A. It is less than 10 per cent of the total.

Q. That is true, but it is a sizeable item of property in the company's total $10,000,000 as set up on Statement 1, isn't it?

A. I have seen casing pulled from wells, and it has been my experience that the condition of casing would be higher than the amount of depreciation that I have shown, so I believe that I have used a conservative figure in applying that 31 per cent.

Q. Yes, but what I want to know, you were so definite in saying that you can get the closest estimate of a per cent condition, or accumulated depreciation, as you call it, from actual inspections of the property—in fact, you stated that if it were done again that would be the most satisfactory way of doing it, didn't you?

A. Yes, and if one item amounts to maybe less than five per cent of the two properties, was an item I couldn't satisfactorily observe, I wouldn't throw out all of the remaining 95 per cent that I can observe properly.

Q. Now we are just on this one plant of Canadian River.

A. Well, in that case it would be 90 per cent against ten per cent.

Q. And that unit of property, although it comprises more than ten per cent of the total property, you would be satisfied in not having the opportunity of inspecting any portion of it and relating such inspection to a per cent condition?

A. If somebody could tell me a better way of finding the condition and I was satisfied with it, I might use an alternative method, but I figure I have been pretty conservative in doing it this way.

Q. In other words, you would sacrifice the method of determining per cent condition because you couldn't determine that on this item of property?

A. I didn't say that. Referring to that particular one, I used a substitute method.

Q. Although in using that method you can't actually relate the present physical condition of that unit of property to whatever depletion you find?

A. No. If I could have, I would have used the condition I found by the other method.

Q. So on that unit of property the method of determining accumulated depreciation by observation just falls by the wayside?

A. This is a kind of special case here.

Q. You didn't attempt to ascertain how the company was able to satisfy itself in applying depreciation to that unit rather than depletion?

A. Satisfy itself as to what?

Q. As to the correctness of the method of depreciating this unit rather than depleting it.

A. I believe it is a depreciation item but I don't know how they can depreciate it without getting in there to see the casing and that can't be done, so I made no further investigation of why they did it.

Q. So you just determined that because you weren't able to get into the well to actually see the physical condition of the casing that your method of determining the per cent condition wouldn't operate?

A. No.

Q. And you would have to take a substitute method and deplete the unit?

A. I have used a substitute method which I feel is quite conservative.

Q. And you don't think that situation would be applicable to other units of property that you are able to see?

A. No, we have sampled enough of the property to determine what the overall condition is.

Q. Although you have seen only a very small portion of the pipe that is underground?

A. We sampled it at uniform intervals, using the best engineering knowledge that we know of to determine the condition of the pipe in the field and to determine the condition of the pipe without going to the absurd expense of uncovering the whole line.

Q. And you definitely are convinced by making those inspections you can acurately relate the accumulated depreciation in those particular units of property by using your formula of inspecting just certain portions of the pipe?

A. More accurate than what?

Q. Than taking into consideration the life of the unit and other factors that are contemplated.

A. I don't know how you would determine it. I don't know what its life is or will be until it is retired.

Q. You haven't taken into consideration at all the life that unit will function in your field line, have you?

A. We haven't found out this piece of pipe is going to be pulled out of the line in 1941, and that piece is going to be pulled out of the line in 1961, or that piece in the year 2000; no, we haven't done that.

Q. You don't know how long that particular unit will be in service?

A. No, and nobody else does, either.

Q. You haven't attempted to estimate it?

A. No, we haven't.

Q. You haven't related the life of the gas supply to the time that unit will be in service, have you?

A. The length of time, you mean?

Q. Yes.

A. No, not in the case of depreciable property.

Q. You haven't for that reason given any effect to the provisions of the definition that appear in the Uniform System of Accounts?

A. Well, if it says that you should depreciate or amortize it over the life of the field, I haven't followed that.

Q. I will go to your Statement 1, Exhibit 272 again.

These items 213 and 214 under the gathering system, Columns 2 and 3, field line construction and field line equipment, original cost adjusted, $282,334 and $864,459, what do those items consist of?

A. Field construction?

Q. Yes.

A. That is the cost of installation of the pipe and fittings and valves included in the 214 account, field line equipment.

Q. That is all a part of the gathering system in connection with the lines underground?

A. That is right.

Q. How are those inspections made?

A. I have explained how those inspections were made.

Q. The same way as all field line inspections?

A. Yes.

Q. Well, you would have to make these at particular locations in order to be able to at least observe certain numbers of those units, wouldn't you?

A. Let me be sure as to just what you are referring to here.

Q. Let's take 214, field line equipment. Do you know at what locations you would make inspections of that unit?

A. We made the inspections uniformly spaced and the number was determined by the spacing of approximately $2,000 worth of original cost—I beg your pardon. I mean $10,000 of original cost.

Q. In other words, these inspections were spaced the same as the field line inspections and locations?

A. Yes, sir.

Mr. Dougherty: Mr. Lange, that is what they are, the field line equipment—that is, the pipe in the gathering system.

Mr. Lange: Account 214?

Mr. Dougherty: Account 214, pipe and fittings.

By Mr. Lange:

Q. 213, is that part of the same unit?

A. That is the same as the transmission line. They don't separate installation from the pipe. When it is field lines, however, they separate the installation from the pipe.

Q. What I am getting at is this: The same inspection location applied to both of those units? You made one inspection for both of them?

A. We inspected the pipe at that particular point where that particular amount of construction went in but we didn't observe the construction.

Q. I notice that you have given a 7 per cent accumulative depreciation in your Statement 1.

A. That is correct.

Q. That is the same per cent Mr. Rhodes applied to the main line unit?

A. As I recall it, it was.

Q. The main line pipe?

A. Main line pipe and installation.

Q. How do you arrive at that conclusion?

A. I explained that we did this exactly the same as we did the transmission lines of the Canadian River Gas Company and the Colorado Interstate Gas Company in Mr. Rhodes' testimony and his outlined sample he gave the engineers for the Federal Power Commission.

Q. Aren't these units of property subject to be moved as distinguished from permanent locations occupied by main transmission lines?

A. There is more likelihood of it, but in looking over the books I didn't seem to see much indication of it.

Q. Not any of the smaller lines were moved, either?

A. What size lines do you mean?

Q. 2-inch.

A. I don't know whether the 2-inch lines were moved or not, but it is a small per cent of the total.

Q. Were there any 4-inch lines moved?

A. I don't recall just what percentage, but I believe that it is such a small percentage that it would not represent much of the value that is set out here in Account No. 213.

Q. These lines were laid at the same depths as these main transmission lines were laid?

A. I think the 22-inch line is the same.

Q. I am not referring to F-1 now, but I am referring to the other field line.

A. I don't think there was very much difference, but I would have to investigate.

Q. When you made your inspection, weren't you able to tell at what depth those lines were laid?

A. I did know but I don't remember how deep this 4-inch line was as compared with the main transmission line.

Q. Ordinarily the field lines are not buried at the depth the main transmission lines are?

A. Not the main transmission lines, no.

Q. You say you didn't find any of those lines had been moved, or very few of them had been moved?

A. I didn't make a complete study of that, but in preparing the inventory I was able to note to a certain extent that it appeared to me as not being a big factor when compared to the total.

Q. So you just took the same percentage that applied to the main transmission line?

A. No, we observed the conditions of the field lines independently of the main line.

Q. Without applying the weighted average to both the main line and the field line?

A. No, the field lines were figured separately.

Q. Did you arrive at the same percentage?

A. That is correct.

Q. Now, these items 221 and 224, the compressor station units, they were inspected in the same fashion Mr. Rhodes inspected the ones listed in Exhibit 68 and Exhibit 70?

A. They were inspected by the same men as the items covered in those exhibits were inspected in the same way.

Q. You referred to this Statement 1 as setting forth adjustments to original cost, Page 8, Exhibit 272.

A. What page?

Q. Page 8.

A. Yes.

Q. You say: "To apply the determined extent of depreciation and depletion to original cost, it was necessary to segregate therein certain general construction costs which had been distributed • • • "

A. Wait a minute.

Q. • • • which had been distributed to the several accounts, which adjustment is shown on the attached Statement No. 2."

Referring first to Statement 1, where do those adjustments appear?

A. The amounts up above do not include the general construction cost set down below.

Q. But you didn't apply adjusted figures there as you reclassified those items, did you not?

A. I considered an adjustment and a reclassification as the same thing. That is what I meant by that.

Q. What was the purpose in taking them out of your original cost and setting them forth separately under Item 20?

A. The amount of depreciation applied to these general construction costs is not the same as the amount applied to the property. That is explained on Page 7 toward the bottom there.

Q. Yes, but they are applicable to each unit of property, aren't they?

A. That is true, but if a piece of pipe depreciated so you had to replace it, you wouldn't have to go and design that line to replace it.

Q. You just took it upon yourself to take that out of original cost as per books and set it out separately under Item 20?

A. That is correct.

Q. You applied a different per cent of depreciation to that item than would have been applied if it had been permitted to remain as it had been on the books?

A. That is correct.

Q. How do you justify that?

A. I just explained that if you had a piece of pipe in a pipe line or a section of the line that had to be replaced you wouldn't have to redesign the line to replace that pipe, and if you had a building where the roof needed to be replaced you wouldn't have to redesign the building to replace the roof.

Q. On that particular item you decided not to follow the company's accounting practice but instead you took them out of the original cost figures and set them up separately?

A. That is correct.

Q. Did you have in mind the provision of the Uniform System of Accounts on that character of treatment of the item referring particularly to Instruction 6, Page 42?

A. I determined what I thought was the depreciation applying to the property.

Q. And you didn't follow the company's treatment of the item at all?

A. I believe not.

Q. I believe you stated that you didn't hold yourself out as an accountant?

A. I didn't claim I had.

Q. You wouldn't be able to say that was good accounting practice or not, your method?

A. Good accounting practice not to depreciate overheads?

Q. To treat them as you have, contrary as to what the company has treated them.

A. I wasn't treating this depreciation as an accounting item, as I was trying to determine what the actual depreciated cost of the property was and that didn't enter into it.

Q. You related it entirely to an engineering approach?

A. Principally, yes.

Q. I just want to be certain that what you say in Exhibit 273 is exactly how you proceeded. You quoted Mr. Rhodes on that, that it was determined from observations of the physical conditions of the property.

A. That's right.

Q. So you didn't attempt to serve any accounting problems in connection with the treatment?

A. No, I didn't.

Q. Or you didn't give any consideration to what violations of accounting method that may follow, if any?

A. I didn't make any violations in accounting because I wasn't interested in the accounting.

Q. Well, if you weren't interested in the accounting of it and didn't attempt to hold yourself out as an accountant, how did you know that you hadn't violated any principles of accounting?

A. Because I wasn't setting forth an accounting exhibit.

Q. You didn't in any fashion intend to relate your treatment of depreciation and depletion to any accounting method at all?

A. No. I didn't try to tie this into the amount of depreciation that they should set up on their books for a year.

Q. Or as to any method that accounting practice would sanction for the treatment of depreciation or depletion?

A. Oh, I think that they would sanction what I have done as part of their determination of what they should set up.

Q. But you don't claim that you have any knowledge of proper accounting procedure at all?

A. I am not claiming that I am an expert accountant.

Q. And further in connection with that very item of general construction costs, Item 20 of Statement 1, again, I see in addition to your treatment of that item separately from the way it has been treated by the company, you determined the amount of depreciation just as a judgment figure, didn't you? You determined the amount of accumulated depreciation as—

A. I believe I made a statement in here that "All things considered one-half of the total amount of undistributed construction costs is appropriately considered as depreciating with the depreciable property."

Q. Now, when you get down to this line: "All things considered one-half of the total amount * * *"

A. That's just what I read.

Q. That is purely a judgment figure, isn't it?

A. It is based upon our experience as engineers and judgment of the firm for properties like these properties.

Q. Do you mean a judgment as engineers without giving any consideration to the actual history of this particular unit of property?

A. Well, comparable properties. We have been constructing gas lines.

Q. Well, did you give any consideration to the fact that those general construction costs are overhead, as you may call them—are still in 100 per cent condition as the property goes out?

A. I didn't say that.

Q. What?

A. We took one-half of the depreciation.

Q. One-half?

A. One-half.

Q. Well, then, how do you assume that one-half would be the proper figure applicable?

A. I have told you it is based upon our experience as engineers, knowing what kind of work has to be done and what would have to be done if you replaced part of this property.

Q. Well, that one-half, though, that you arrived at in the life of your experience would represent 100 per cent condition of the overhead item, wouldn't it?

A. One-half of what?

Q. The one-half that you took would be in 100 per cent condition, wouldn't it?

A. One-half would be in 100 per cent condition and the other half would be depreciated according to the rest of the property, is that what you mean?

Q. Yes.

A. That would be one way of figuring it. We took one-half of the depreciation overall.

Q. And applied that as a judgment figure in the light of your experience?

A. Yes.

Q. Then under that method of treatment, that one-half, if you filled them out, it would be in 100 per cent condition at the time the property was ready for abandonment?

A. Half of the overhead?

Q. Yes.

A. Yes, if you worked it that way it would be.

Q. And the company never took that position in treating these overheads in that fashion on the books, did they?

A. No, and they didn't depreciate land, either.

Q. How did you treat rights of way, Item 206, Statement 1?

A. We didn't depreciate that.

Q. No. Now, then, where do you explain your treatment of land, rights of way?

A. It is Item 3.

Q. Oh, yes. No depreciation was taken on Account No. 206, rights of way, was there?

A. No.

Q. Now, what were you just about to say as to the company's treatment of that item?

A. I say, in the case of land they don't depreciate land, either, and we didn't depreciate land.

Q. Well, you mean land held in fee?

A. Land held in fee, yes.

Q. How about rights of way?

A. I am not sure what the company does about that.

Q. You gave no consideration to the treatment the company gave that item?

A. No.

Q. Well, these rights of way are distinguished from land held in fee, aren't they?

A. Yes.

Q. Well, if the line is abandoned or not used, what is the value of those rights of way?

A. If the pipe lines are retired on account of depreciation they would put another one in there just as good as it was before.

Q. Well, who would put another one in there? We are talking about this particular line right now.

A. Well, if the property is abandoned it is no longer an operating property.

Q. Well, what value would rights of way have?

A. The rights of way would have no value if you weren't operating the property.

Q. Where do you show any land held in fee in your Statement 1?

A. Statement 1, Account 218, "Field Measuring Stations and Land."

Q. Is that the only land the company has in fee in?

A. In the production and gathering systems themselves, but there is part of the land in the general system that we have allocated to these properties.

Q. Where does that appear?

A. That is on Statement 3, Account 218, "Land Bivins Camp."

Q. Item No. 1?

A. Yes.

Q. Where else?

A. I believe those are the only items of land held in fee.

Q. So you have treated land held in fee and rights of way in the same fashion?

A. That is correct.

Q. Now, I believe you stated that the only time that you ever had anything to do with the computation of service lives was working under someone else in connection with the valuation of this steam plant?

A. I believe that those are the only ones that I recall right now.

Q. You haven't made any attempt to estimate the service

lives on any of these units of production and gathering properties in this Exhibit 272, have you?

A. No, I haven't.

Q. You didn't think that was of any necessity in determining your accumulated depreciation?

A. No.

Q. It would not?

A. No.

Q. Regardless of the service life of any one of those units that you have depreciated, that wasn't essential to the determination of your accumulated depreciation figure?

A. Well, I don't know just what you mean by service life, but we found out actually how much depreciation had actually taken place. Of course, that might enter into service life.

Q. Well, in your treatment of the gas well equipment account, 212, where you found that you weren't able to apply your method of inspection for the determination of depreciation, you depleted that unit, didn't you?

A. I said as an alternate method I used the same figure as I found for the depletion of gas well construction.

Q. Well, doesn't that have some relation to the determination of the service life of the unit?

A. I was determining the depletion of the gas well construction.

Q. Well, in determining service lives, relating it to the experience you had in connection with that steam plant, you found it helpful in setting up your accumulated depreciation there, didn't you?

A. I found it helpful for what?

Q. You found it necessary, didn't you?

A. Necessary to do what?

Q. To determine the service lives.

A. I didn't determine it myself. I said I worked on that job.

Q. They were determined, weren't they?

A. I don't know whether they determined service lives or determined the amount that should be set up on the books for depreciation.

Q. Well, as I understood you to say, a service life study was made in connection with the determination of setting up depreciation on the company's books.

A. The service life might be interpreted two ways, and I want to explain that I didn't get into very much detail on that job. I just mentioned that job where work of that nature was done, but I didn't have very much to do with it.

Q. In all of your experience in connection with valuation work, haven't you ever made any study of the use or usefulness of service life estimates?

A. We have made some estimates of the rates that should be set up on the books for depreciation annually, but I haven't had so much to do with those things. I have come off of one job and maybe I would help out some.

Q. And you haven't had occasion to make a study of the use of service lives in determining your depreciation of any units of property?

A. Determining depreciation?

Q. Yes.

A. You mean to be set up on the books.

Q. Yes.

A. Well, I said we have made field observations for the accountants and what figures they should set up for depreciation.

Q. Well, so in that particular instance you don't recall at all how they proceeded?

A. I am not sure of the final figures.

Q. Well—rather, the mechanics involved?

A. No, as I say, I never have been in charge of one of those jobs. The work I had to do on that was just incidental.

Q. Well, don't you think as a matter of determining accurately the accumulated depreciation in any unit of property that if you first determined service life that you would have a more dependable basis to work with, rather than just periodic inspection alone?

A. I would like to know how you would find a service life first.

Q. How you find the service life?

A. Yes.

Q. You have never made a study as to the method or manner of making those determinations?

A. I have seen lots of it done where they sit in the office and say the service life is so much.

Q. Is that what you did in connection with that steam plant?

A. No, it isn't.

Q. How did they go about it?

A. I said that I am not sure of the details on that.

Q. They found it necessary, didn't they?

A. To set up a service life?

Q. Yes.

A. They determined how much depreciation should be set up on the books each year, as I understand it, and I have stated I didn't have much to do with that job.

Q. You don't mean to say that isn't a proper way of proceeding?

A. It is not the proper way to make a guess as to what service life is.

Q. Is this inspection one of just a certain number of units of property without relating it to the other factors that are set up in the Uniform System of Accounts definition of depreciation to correctly determine the accumulated depreciation in a unit of property?

A. I think the proper method is to go out in the field and inspect it as we have. I feel we have the amount of depreciation that exists in this property.

Q. Whenever that has to be done again at some time in the future, you are going to go about it in the same fashion, doing it all over again?

A. If you did it all over again you would go about it in the same fashion.

Q. You would think that to be the most practical way of setting it up on the company's books over a period of years?

A. I wouldn't expect the company to have us coming down here each year to find out how much depreciation had taken place for the current year, no. I am not setting up something on this exhibit to be used on their books as the rate of depreciation.

Q. You are not?

A. No.

Q. What are you setting it up for?

A. I wanted to determine how much depreciation has taken place in this property.

Q. Why are you computing it on this basis if you don't expect the company to pay any deference to it?

A. I don't know whether they will or not. That wasn't

my job. My job was to go out and find out how much depreciation and depletion had taken place in the property.

Q. Regardless of what the company may accord on its books?

A. That is right.

Q. Without relating it to anything the company had heretofore done in the treatment of the items on its books?

A. No, I didn't relate these figures to their figures as far as the depreciation goes.

Q. As far as you know, you don't know what character of entry is contemplated to be made on the company's books as to depreciation?

A. I don't know.

Q. You didn't in any manner take into consideration the company's past experience or requirements or its past history in determining your per cent depreciation or accumulated depreciation?

A. Experience as to what? What do you mean?

Q. As to the unit of property treated by you, the history of those units.

A. You mean the property that was retired?

Q. The units of property that you treat in Exhibit 272, all of them.

A. You mean items that have been retired prior to then? I don't know what you mean.

Q. Those that are to be retired as well as those that were still in service when you made those inspections.

A. Those retired weren't inspected as they weren't there.

Q. You gave no consideration to those retirements at all?

A. They weren't there and we didn't inspect them.

Q. You don't know and didn't attempt to relate your inspections in 1939 to the company's past history or experience with reference to retirements?

A. There is no retirement in here.

Q. You don't take cognizance of any retirements but you didn't take cognizance of what happened prior to the time of your inspection or as to what retirements might take place in the future?

A. We didn't estimate what the retirements would be in the future as we were inspecting the property that existed at that date.

Q. Mr. Roberts, on your Statement 2 of the exhibit, I call your attention to the general construction costs that are set out there under Items 20 and 21, the allocations that you made. Can you identify these items of $47,668 in Column 2 and $6,402 in Column 6? I notice you have a notation at the bottom of the statement that the A figure affixed to each one of them means plus.

A. That simply means we took them out from above and added them to the general construction cost below. The heading over all of those items is "Deduct General Construction Cost:" therefore, if we had followed that, we would have deducted this item under "General Construction Cost" which would not have transferred it, so we indicated that was a plus item rather than a minus item and it simply transfers it from the direct cost above to the general construction cost below.

Q. In other words, those items in Column 5 and 6, the construction costs, would be distributed by the company and you redistributed them, did you not?

A. That is right.

Q. And you set them apart on Line 24 as separate items?

A. That is right.

Q. Mr. Roberts, I want to ask you this: Have you ever heretofore set up any comparable depreciation and depletion figures for any other plant than the Canadian River and the Colorado Interstate?

A. We have made estimates of the amount of depreciation of almost all these valuations I worked upon.

Q. The depreciation?

A. Yes.

Q In which of those did you determine any depletion figures?

A. Depletion?

Q. Yes.

A. Let me see. I worked on various jobs where the depletion was involved, but as far as any—

Q. In any extractive industries?

A. Most of it has been in the gas industry, the natural gas industry. We usually had somebody else that did that and maybe I would help along.

Q. You haven't heretofore set up any depletion schedule in connection with any natural-gas company, have you?

A. No, but it is a very simple matter. You have so much gas to take out; so much gas, and there will be a certain amount left. It is a simple mathematical formula and if you have so much investment there it gets that rate, so anybody can do a thing like that.

Q. It is just a matter of simple arithmetic?

A. The geologists can tell me the figures and withdrawals and I can figure it or anybody else can figure it.

Q. This determination of accrued depreciation is an entirely different problem?

A. That involves more detailed inspections. You can't go to a lease and look at the gas below the ground. You can go to a pipe line and move the earth off of it and look at it but you can't do that in a lease.

Q. You get into the realm of estimating when you start determining your per cent condition, don't you?

A. No, I think depletion is more in the realm—

Q. You just stated you got actual figures there from somebody and—

A. I said if they supplied the correct figures—

Q. You presume they are correct?

A. That is a mathematical calculation.

Q. You don't go beyond the presumption as to whether the figures they supplied are correct or incorrect?

A. I believe they are as accurate as could be determined. Not being a geologist, I didn't go over his work and make an independent study of it myself.

Q. You wouldn't care to get into that province of it, would you?

A. It might be an interesting one to take on.

Q. These calculations of the geologists would be more accurate than anyone else's calculations?

A. Be more accurate?

Q. Yes.

A. From their experience and great knowledge of the field, they know what is taking place. Some of them may differ but I think the ones that are the most qualified know pretty well.

Q. That is it. In other words, you begin with definite figures that they give you in determining depletion and there aren't any estimates you make at all?

A. I don't make any estimates at all. It is strictly a mathematical problem.

Q. The mechanics of the determining of depletion, as far as your province is concerned in constructing an exhibit like this is very simple when you are treating depletion alone?

A. It is.

Q. But where you have to determine per cent conditions with the use of your formula, you get into the realm of making estimates?

A. We correlate the facts as we find them ourselves. In the other case the geologists correlated the facts and we used them.

Q. That's right, and you took the figures as they gave them to you and you didn't apply any estimate?

A. No, that was just mathematical from that point on.

Q. But you do necessarily have to apply estimates in determining your per cent condition in arriving at these depreciation percentages as computed by you?

A. We make an estimate based on the best engineering knowledge of how properties should depreciate.

Q. You think that delving into the realm of estimates is much more practical than to apply figures as you do in determining your depletion?

A. I think it is a lot more practical to look at the pitting on pipe than to make an estimate on something underground that you don't know the conditions of as well as you do about the pitting of the pipe.

Q. Yes, these pipe pittings that you see are just certain portions of your pipe, nothing else?

A. By sampling method we can determine quite accurately what the condition of the pipe is as a whole.

Q. Yes, but after all it is an estimate.

A. Yes, it is an estimate.

Q. And it differs in that respect very basically from the determination of depletion as you have made it?

A. No. They first had to make an estimate of the gas that was in there and the gas that was taken out.

Q. Well, as far as you are concerned, though, you didn't have to make any estimate at all in applying your depletion figures?

A. No, I said it was just mathematical as far as I was concerned. As far as the way I figured it, it was just mathematical, but they were based on estimates by others.

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* * * * *

Q. When you put a depreciation of seven per cent on the field line equipment, Account No. 214, is that an overall percentage for the whole field pipe line system as represented by that account?

A. It is.

Q. And in arriving at that, do you weight in an average or take into consideration the specific condition of all of the pipe as found in the inspection made?

A. Yes.

Q. Would it be correct to say that you might have some pipe there that was only in 70 per cent condition and in others it might be in 98 per cent condition?

A. It is entirely possible.

Q. This percentage figure you give is not with reference to any particular section or any particular line?

A. No, it applies to the account as a whole.

Q. And to the property as a whole of that character?

A. Of that character, yes.

Q. A number of questions were asked you in connection with the determining of the condition of pipe by the number of years the pipe was in the ground. Is it at all necessary for you to know the number of years the pipe was in the ground in order to determine the physical condition by observation?

A. No, it is not.

Q. Do you find at times pipe that has been in the ground 30 years might be in better physical condition than pipe that has been in other places ten years?

A. I have often seen that in inspecting pipe.

Q. Your method, as I understand it, is to find out where between zero and 100 lies either the depreciation or the condition of the property?

A. That is correct.

Q. What you did in this case was by observation to determine that relationship between zero and 100 was seven per cent for depreciation overall?

A. That is correct.

Q. In connection with the matter of measuring pits and considering pits, does the method Mr. Rhodes employs and you employ involve an estimation of what the deepest pits in a joint of pipe 40 feet long would be, making that estimation by some means of considering those which are actually observed?

A. Yes, by observation and the use of the formula we could determine what the deepest pit would be in a 10-foot section, a 20-foot section, or a 40-foot section.

Q. I believe Mr. Rhodes explained that, did he not?

A. I think he went into some detail on that.

Q. Do you, however, make that estimation and consider the depths of pits so determined by your formula as well as those you actually observe?

A. We do.

Q. When these inspections of Canadian River pipe were made, do you know whether any of the Federal Power Commission's engineers were present and made observations of their own?

A. Yes, they did at the same time.

Q. A number of questions were asked you with respect to previous determinations of depreciation as having been made in connection with reproduction cost estimates of property. Are these percentages which you have found as being accumulated depreciation related to the physical property itself?

A. Yes, they had to do with how much of the total depreciation had taken place and it was determined in the form of percentage.

Q. Could that properly be said to be a physical factor with reference to the condition of the line as distinguished from any monetary factor?

A. Yes.

Q. If you want to find out the per cent depreciation in all the property, you could by weighting these various percentages get some overall percentage?

A. Yes, that is generally the way we do.

Q. But in order to know what that would be in dollars, is it necessary to relate that percentage or those percentages to some dollar figure?

A. Yes.

Q. Now, whether you relate that to a dollar figure that was the actual cost of the property when installed or whether you relate that to what it now would cost to replace that property, does that have any effect upon the actual percentage of depreciation physically that has occurred?

A. Not for those specific items, but if you are averaging in different things with a different weighting, naturally the percentage might vary slightly.

Q. That would be because of the different dollars that are reflected in the different property accounts?

A. That is correct.

Q. Questions were asked you about rights of way, something about the fact that upon abandonment of the pipe line or any pipe line that right of way then would expire. As far as the physical condition of the right which the land owner grants for the pipe line company, is there any difference in that the day before the pipe line is retired and the day immediately after the pipe line is put into operation?

A. Not as far as I can see.

Q. In using that term "right of way," I am referring to the grant which the land owner gives and not the physical condition of it. When abandonment does occur, there would be a hundred per cent retirement immediately, would there not?

A. There would.

Q. With respect to the overheads which you say do not depreciate, would that same thing hold true; namely, that there is no depreciation but upon abandonment they are expired or are retired at once?

A. That is right.

Q. Do those overheads serve their purpose and serve the various things that were done as the result of their expenditure in the same way immediately before abandonment just as after they are expended?

A. Yes.

Q. What you are talking about here is not an amortization of either rights of way or of overhead but physical condition?

A. That is correct.

Q. With respect to depletion, do you know of any way to determine what depletion has taken place in a gas property, a natural gas leasehold, except by having knowledge of the gas that has been taken out of it with reference to what was there?

A. No, I do not.

Q. Isn't that what depletion means? Isn't it the depleting of what ever the resource is or whatever the product is?

A. That is my general understanding and the way I have seen it used.

Q. If one-half of the gas has been taken out, then you would say there had been 50 per cent depletion of that reserve?

A. That is correct.

Q. And if you wanted to get that in dollars you would apply it to whatever your dollar base was?

A. Yes.

Q. In arriving at depletion, as I understand your explanation, you would figure it in dollars for each year?

A. That is what I did.

Q. That is, you would take the ratio between the gas withdrawn during the year to the quantity that was in there at the beginning of the year?

A. That is right.

Q. If that happened to be 10 per cent, you would compute depletion for that year as 10 per cent of the gas whether it is cost or otherwise?

A. That is correct.

Q. You did that for each year?

A. That is correct.

Q. When you got to the years through 1938 you added up those yearly or annual dollars of depletion and that gave you the total depletion for the whole period?

A. Yes.

Q. Then, as I understand it, you eliminated any retirements that had taken place at leaseholds or wells prior to December 31, 1938?

A. That is correct. We made that adjustment first.

Q. What you were doing was figuring depletion on the property which was in the possession of the company on December 31, 1938?

A. That is right.

Q. Then after having added up the annual dollars of depletion, did I understand you related that to the original cost as represented here and that gave you the percentage of 36 per cent?

A. That is the way it was done.

Q. 36 per cent is the result of the computations we have discussed?

A. Yes, dividing one figure by the other.

Q. That same thing was done with gas well construction?

A. Yes.

Q. I assume you would have the same percentage of depletion to apply against whatever the cost of either gas well construction or equipment was at the beginning of the year?

A. That is right.

Q. That is, if you found 10 per cent of the gas had been taken out that year, that 10 per cent would be applied both against the cost of leaseholds and also against the well construction and equipment?

A. That is right.

Q. And in doing that you arrived at the dollar amount of depletion for each year?

A. Yes.

Q. Adding those up you then related that to the original cost and that is how you got the 31 per cent?

A. That is correct.

Q. What I wanted to bring out was the 31 per cent was the result of the dollar computation each year rather than a direct result from percentage computations.

A. It is determined as an overall and divided back.

Mr. Dougherty: That is all.

Recross Examination.

By Mr. Lange:

Q. Mr. Roberts, you just stated your per cent depreciation or your per cent condition had no relation to dollars or value at all, is that right?

A. I said we first determined what per cent it had depreciated and then applied it against the dollars. If you take the overall percentage that was determined it would reflect the dollar weighting.

Q Let's see how your method works out. Just for the sake of argument, let's take your final suspension of operations. I think according to your salvage value exhibit it was in January 1956, wasn't it?

A. According to that exhibit it was.

Q. And the plant has been in operation since sometime in the year 1928, hasn't it?

A. Yes.

Q. Now, at the end of the year 1938 you made this inspection of the property units and applied to each of them a per cent condition, didn't you?

A. Yes.

Q. You took the per cent condition and related it to what you determined accrued depreciation and then arrived at the per cent of accumulated depreciation which you in turn converted into dollars, didn't you?

A. Yes.

Q. And you applied that against what you determined the original cost adjusted for every unit of property?

A. Yes.

Q. Well, let's take one unit, the main line pipe, say, that was given a percentage. It was given a 93 per cent condition as well as your field line pipe, wasn't it?

A. Main line pipe on the Canadian River was the same as that.

Q. Your field line pipe in Exhibit 272 was given a 93 per cent condition, wasn't it?

A. It was.

Q. That, related to accumulated depreciation, gave you a seven per cent accumulated depreciation which you in turn converted to dollars?

A. That is correct.

Q. And you subtracted it from your term "Original Cost Adjusted"?

A. It is not substracted on the statement there as it just shows the amount of accumulation depreciation there.

Q. It just shows the amount of accumulated depreciation.

A. Yes.

Q. Now, then, supposing that you were to have another appraisal which included inspection of these units of property in the year 1954, let us say, and you would find that the main lines or field lines were in 93 per cent condition. You would then relate the seven per cent accumulated percentage to that unit, wouldn't you?

A. If we found it had depreciated that much, we would.

Q. If you found it depreciated only that amount, you would have a 93 per cent condition at that time?

A. Yes, sir.

Q. With a related seven per cent accumulated depreciation against that unit?

A. Yes, sir.

Q. Well, then, the next year you would come to what you might term the end of the road, the operations would

cease and the plant would be salvaged, what would you do then?

A. It would be salvaged for what you could get out of it.

Q. When does that difference in value take place between your 93 per cent condition you have in 1954 and the zero condition which you have in 1956?

A. When it ceases operation.

Q. Does that all take place in one year or in six months?

A. The difference between the 93 and zero.

Q. The difference between 93 and zero?

A. If we inspected and found that property was in that condition at that time, when it was no longer operated it would no longer be of use.

Q. Under your method of computing depreciation, that entire difference in value or decline in value takes place in one year, doesn't it, from 93 per cent to zero?

A. You are taking quite an extreme case there.

Q. Let's assume that the line was properly maintained as it is now and you would have a 93 per cent condition or a 90 per cent condition.

A. If you went out of operation, of course then you wouldn't have that pipe as being useful.

Q. That is right. In other words, if you had a 90 per cent condition in 1954 from your inspection and the next year the operations ceased and you salvaged the plant, you would have a zero there. When does that decline in value take place?

A. If we inspected it at a certain date and it went out of operation at another date, it would take place between the two dates.

Q. It would take place in the interim?

A. If a year's difference, it would take place at the date of ceasing operation.

Q. So it could take place within one month if your inspections were one month before you ceased operation in 1956?

A. An explosion could take place in an engine and destroy the engine in the same way.

Q. We will just assume normal operation and normal maintenance. As I say, you would by inspection find that the main line pipe in the middle of the year 1954 had a 90

per cent normal condition. That isn't unusual, is it, to assume that?

A. That you had 94 per cent condition?

Q. A 90 per cent condition.

A. Of your pipe line?

Q. Of your pipe line in the year 1954, the middle of the year, say.

A. A pipe line could be in that condition on that date.

Q. Then on January 1, 1955 the line is abandoned and salvaged and there is no salvage there, and then the decline in value would be taking place during that six months, wouldn't it?

A. Yes.

Q. Oh, yes, one more question: What in your opinion would have been the per cent condition of, well, say a unit of main line equipment in 1938 if the company had never expended any funds for maintenance of that main line from the time of its installation?

A. Maintenance of the pipe line doesn't affect the pits on the pipe line. You can't maintain the pits.

Q. Oh, you replace those units that are badly pitted, don't you?

A. When it becomes necessary, you do.

Q. And if they aren't badly pitted—you either have to scrape the pipe or do whatever maintaining that is necessary when it is not required to replace a unit, don't you?

A. You don't scrape the pipe.

Q. Well, what do you do — whatever is necessary to maintain it in proper condition, don't you?

A. Well, you don't do anything to it unless there are leaks indicated.

Q. Haven't you taken out any units of pipe and scraped them and painted them?

A. Not unless there are leaks indicated, or that pipe happened to be exposed and you saw that it was pitting pretty badly and made a further inspection.

Q. What character of main line maintenance has your company carried on?

A. It's not my company.

Q. I mean the Canadian River Gas Company and the Colorado Interstate Gas Company.

A. What kind of maintenance?

Q. Let's confine it to Canadian River Gas Company right now.

A. I haven't made an investigation of what their maintenance has been on these main lines and what they have charged in there.

Q. What character of maintenance is ordinarily carried on in connection with your field lines, for instance?

A. If they did find a leak and it was advisable to put a band clamp on it, they would.

Q. All right, what other item of maintenance is ordinarily carried on?

A. If the top soil over that line washed away, they would replace it.

Q. All right, what else?

A. If the packing in a valve leaked, they would repack it.

Q. Don't you ever recondition any units of that field line?

A. You say, have they?

Q. Yes.

A. I am not sure whether they have or not.

Q. Well, in your experience in connection with that kind of valuation work, you would be familiar with the ordinary maintenance operations that would be carried on in the field, wouldn't you?

A. Every company doesn't carry on the same maintenance policy.

Q. Haven't you familiarized yourself to know what the character of maintenance is that the Canadian River Gas Company carries on in its field operations?

A. We know that our inspections didn't show any badly leaking pipes, and we know that as far as the condition of the pipe is concerned, there was no pipe that was in very bad condition.

Q. Well, then, let's relate this question that I just asked entirely to field lines: if there had been no maintenance carried on whatsoever by the company since the time of the installation of those units, would you still have found them to be in 93 per cent condition in 1938?

A. Probably not. The lack of maintenance is liable to cause fast deterioration but the application of maintenance does not increase the condition. Take, for instance, an engine. If there was a leak in the cooling system, it might be repaired at a small expense, but if that were neglected it might cause the ruining of the cylinders and the pistons.

Q. Well, that's right. That's what I was just getting at.

An ounce of prevention is worth a pound of cure in that instance.

A. That is true.

Q. So an ounce of maintenance at the proper time is very necessary.

A. Absolutely.

Q. I don't believe that you have answered that first question that I asked you: what your opinion would be as to what per cent the condition of this main line—or whether you would have found a 93 per cent condition of this field line of Canadian River Gas Company in December 31, 1938 if there had been no maintenance of any character at all, since the time of the line's installation.

A. I didn't make an investigation of exactly what the company had done in the way of maintenance since the start or what they charged in there. I observed what condition that line was in and if the pipe, if there had been a washout and the pipe had been left exposed to moisture, there probably would have been more pitting there, but that wasn't indicated from our observation, but we didn't need to know just what the company had done to determine what that pipe condition was.

Q. In the light of your experience in connection with the examination and inspection of field lines of similar character, your opinion would be, wouldn't it, that the per cent condition that you would have found in December 1938 would have been lower if there had been no maintenance whatsoever on the line from the time of its installation?

A. You mean the way the books would set a certain charge at a certain amount of maintenance?

Q. No. You found a 93 per cent condition in December 31, 1938.

A. Yes.

Q. Now, if there had been no maintenance whatsoever on that unit of property from the time of its installation in 1928, or thereabouts, up to December 31, 1938, in your opinion, wouldn't the per cent condition of that unit of property have been less than 93 per cent in December 1938?

A. It could have been less or it could have been the same. It might not have been necessary to do any work on the line.

Q. It might not have been necessary would that have been probable?

A. It depends on the length of the period and the type of the soil.

Q. That was about twelve years.

A. Well, there are other factors that enter into that.

Q. Well, just assume that there were some conditions that arose that made maintenance necessary and no maintenance had been performed.

A. No maintenance had been performed?

Q. Yes.

A. Well, for instance, if the soil was washed away from the top of the pipe, as I said before, and the pipe was subject to alternate the dry and wet and maybe some other elements that would deteriorate the pipe, we would have found that that pipe would have been pitted more than it was if the soil had been put back over the pipe and the line kept with a covering over it.

Q. So if that instance had occurred and there had been that lack of maintenance, you would have found a lower per cent condition?

A. With those other circumstances taking place as I have indicated.

Mr. Lange: I believe that is all on this exhibit.

Redirect Examination.

By Mr. Dougherty:

Q. Mr. Roberts, Mr. Lange asked you about the decrease in value of pipe as a result of abandonment, relating that to inspection which you might make say six months before or a month before abandonment in which you find the condition of the pipe 93 per cent.

Let's assume that you were asked a month after abandonment to go out and determine the physical condition of the property. Might it not still be 93 per cent?

A. Yes.

Q. And whether or not the property is in use, has no connection with its physicial condition as you find it on inspection?

A. That is correct.

Q. Is what he is referring to a question of amor-

tizing the investment because of the economic end of the business rather than any depreciation physically that takes place in the property?

A. That's the way I feel about it.

Q. And that pipe, some of it, you have taken up and in good physical condition would still be whatever per cent condition you would find it in?

A. Yes, sir. It would still be in the same condition.

Q. Your figures here are related solely to the physical condition as related to the dollars?

A. Yes.

Q. And have no consideration of how long the property is going to be used?

A. No, we didn't give that consideration in the case of the main line pipe.

Q. Let's assume that having in mind what Mr. Lange talked about service lives, that before the end of the abandonment according to that method of figuring depreciation you would have only a 20 per cent condition; namely 80 per cent depreciation.

In your experience could such pipe be utilized in the operation of a pipe line if its physical condition were only 20 per cent and had actually depreciated 80 per cent.

A. No, because in that condition there, on the average, there would have to be a lot of joints of pipe that were leaking badly and the loss and danger involved would make it not feasible to operate the property.

Q. Isn't it a fact that right up to the last day of abandonment the property has to be in good enough condition to operate to take the gas through?

A. Yes.

Mr. Dougherty: That's all.

Recross Examination.

By Mr. Lange:

Q. What, in your opinion, as an operating problem, is the lowest per cent condition that a main transmission line should be kept in to function properly?

A. I have not tried to determine what the lowest per cent would be.

Q. Well, approximately—to function properly?

A. Well, to be functioning properly you naturally wouldn't want any leakage in the line. You would have to keep the leakage down to a minimum.

Q. What in your judgment would be the lowest per cent that should be permitted?

A. I wouldn't operate a company that way. I would try to go out and find where the leaks were and if I found them I would put clamps over them and if they were bad enough I would recondition the pipe.

Q. That is true. That is proper to keep proper maintenance on the line.

A. Yes.

Q. But I am just asking you hypothetically what in your opinion would be the lowest condition that a line could function properly—main line.

A. I wouldn't operate a line that way so I wouldn't want to state a figure.

Q. Couldn't it be stated by you?

A. Could it be stated by me?

Q. Yes.

A. I have never given it much thought and I wouldn't want to give a figure.

Q. Well, could it ever go as low as 60 per cent?

A. I have seen lines in the ground that were in 60 per cent.

The Trial Examiner: Were those lines operating, Mr. Roberts?

The Witness: Yes, sir.

Mr. Dougherty: Is that gas lines or oil lines?

The Witness: That was a gas line. It was soon repaired after I saw it, though.

By Mr. Lange:

Q. Just as a practical matter, Mr. Roberts, do you believe, for instance, if you had—say you had a 20-year ground lease on some property and at the time that about 15 years of that had expired you were making an appraisal of what that ground lease would be worth. Do you think that a prudent business man would wait until that time to spread the cost of the declining value of that lease, to the 15-year period, or start at the beginning?

A. He would probably amortize that property.

Q. And start at the beginning?

A. Yes.

Q. He wouldn't start at the 15-year period and try to take care of that decline during the remaining five years?

A. Not if it was a piece of land that he wanted to get his money back on. He would probably want to take it at uniform intervals.

Q. Over the 20 years?

A. Yes.

(Vol. XCVIII, pp. 15218-15240.)

Further Testimony of the Commission's WITNESS, HILL:

Q. State your name, please?

A. Lee M. Hill.

Q. Where do you reside, Mr. Hill?

A. Denver, Colorado.

Q. Where and by whom are you presently employed?

A. The Federal Power Commission.

Q. At the regional office in Denver?

A. Yes.

Q. And what is the nature of your occupation?

A. Associate Engineer.

Q. And how long have you been so employed by the Commission?

A. Since April 10th, 1939.

Q. April 10th, 1939?

A. Yes.

Q. Did you during the time of your employment with the Commission have any assignment in connection with the present—any portion of the present proceedings?

A. Yes, sir.

Q. That is, engineering work in connection with it, particularly the Canadian River Gas Company and the Colorado Interstate Gas Company?

A. Yes, sir.

Q. Now, before going to that, though, I will ask you whether you have before you and can read in the record your qualifications in connection with the work that you are doing with the Federal Power Commission?

A. Yes, sir.

Q. Will you do that now, Mr. Hill?

A. "My name is Lee M. Hill. I reside at Denver, Colorado. I am an engineer by profession. I have been employed by the Federal Power Commission at Denver, Colorado since April 1939. I have performed engineering duties for the Commission and am now engaged in such duties in the capacity of associate engineer.

"I entered the Alabama Polytechnic Institute in September 1921 and there studied mechanical engineering for three and one-half years. I have passed the required State examination for engineers and am licensed to practice professional engineering in the State of Alabama.

"Upon leaving the Alabama Polytechnic Institute in 1924 I was employed by W. E. Brown Engineering Company at Miami Beach, Florida as a draftsman and instrument man. My experience with this company was mostly in design and layout of water drainage and distribution systems and sanitary sewers.

"In 1925 I went to Birmingham, Alabama as a draftsman for the Sloss-Sheffield Steel and Iron Company and remained in that capacity until the early part of 1927 when I was made construction engineer. My engineering experience with this company consisted of design, construction and general maintenance of blast furnaces, by-product plants, steam power plants, power transmission systems, water transmission and distribution systems, water filtration plants, coal and ore washers, mine tipples and electrification of mine properties.

"In February 1929 I was employed by the Southern Natural Gas Corporation and later by the Southern Natural Gas Company as a mechanical draftsman and worked on plans of their natural gas pine line system, extending from the Monroe, Louisiana gas fields across t. e states of Louisiana, Mississippi, Alabama and into the state of Georgia.

"In 1930 I was made chief draftsman in charge of plans for a number of major pipe line extensions, compressing stations, measuring and regulating stations, and medium and low pressure distribution systems. In the early part of 1931 I was transferred to the operating department and there designed pipe line and compressor station extensions,

measuring and regulating stations, industrial installations, distribution systems, and all other engineering work pertaining to maintenance and operation of natural gas transmission and distribution systems.

"In 1938 I was made construction engineer and designed and constructed two additional compressing stations. I left the employment of the Southern Natural Gas Company in April 1939 and since that time have been employed by the Federal Power Commission at Denver, Colorado."

Q. Mr. Hill, I will ask you whether or not in connection with your work with the Commission you have prepared an exhibit covering the determination of composite service lives of physical properties of Canadian River—of Colorado Interstate Gas Company?

A. Yes, sir, I did.

Q. Is this the exhibit that I show you?

A. Yes, sir.

Mr. Lange: Will the stenographer please identify that?

The Trial Examiner: It will be marked for identification as Exhibit No. 177.

(Exhibit 177, Witness Hill, marked for identification.)

By Mr. Lange:

Q Mr. Hill, during what period of time since you have been employed with the Federal Power Commission have you worked on this assignment?

A. Ever since I have been with them.

Q. And that was what month and year?

A. April 1939.

Q. April 1939?

A. Yes.

Q. In connection with this work did you actually go over the property?

A. Yes, sir, I did.

Q. And personally saw the items of property that you would describe and those portions of the pipe that are underground and that you inspected at certain points along the line?

A. Well, some of the inspections I made, not all of them.

Q. Not all of them?

A. No. I did inspect all the property.

Q. You inspected the compressor stations, too?

A. Yes, sir.

Q. Now, did you in connection with this exhibit prepare—or, rather, turning to Page 1 of this exhibit, will you read that statement which was prepared by you?

(Vol. L, pp. 6957-6961.)

"This exhibit was prepared by me and under my direct supervision, and shows composite service lives, by accounts, applicable to the operative gas plant property of Colorado Interstate Gas Company as of December 31, 1939. The annual straight-line depreciation rates shown in this exhibit have been determined from the composite service lives shown therein.

"In July and August 1939 an inspection of the physical plant of the company was made by Federal Power Commission engineers. Compressing, measuring transmission, and general property was inspected. The location, type of construction, operating conditions, degree of maintenance, exposure to weather, and other factors causing deterioration, and the extent of accrued physical depreciation and of accrued obsolescence were noted for all property inspected. The age of most of the units of property was determined from dates of installation as recorded on the books of the company. Operating and maintenance methods were observed, and operating experience was discussed with company officials and supervisory employes.

"Service lives and composite service lives have been based primarily on the physical lives of the various units of property; however, consideration was given to other causes of property retirement whenever such factors were determinative. Company records, from the inception of operation, were analyzed to determine the causes of all major property retirements. These included physical deterioration, caused by wear, tear, rot, rust, decay and the action of the elements; inadequacy; obsolescence, requirements of public authorities; and other causes. Probable future conditions of operation compared with past service conditions were considered. The probable life of the natural gas supply and other factors which have a bearing on the probable service life of the property in each account

were taken into consideration. The system was considered a continuing enterprise which will operate so long as a supply of natural gas is available. The net salvage value of the physical plant of the company at retirement is considered negligible, and no salvage value has been assigned.

"In this exhibit 'adjusted book cost' represents the legitimate original cost of gas plant as shown in reports presented in this proceeding by accounting examiners of the Federal Power Commission. 'Service life,' as used in connection with this exhibit, means the period during which a particular unit of property is used or performs a useful function in the rendering of service. 'Composite service life' means the weighted average service life of all units of property within a primary account classification, determined by dividing the total capital in each primary account by the sum of the annuities applicable to the individual units.

"The general plan of presentation and methods that have been followed in this exhibit are as follows:

"Transmission Lines. The property carried under this heading includes Transmission Line Rights of way (Account 220-D), and Transmission Line Equipment (Account 226-D). Account 226-D includes cost incident to construction of the transmission lines, including labor, teaming, supervision and engineering, overheads, and other expenses, in addition to the cost of pipe, couplings, fittings, valves, and other accessory equipment.

"A total of 368 inspections was made on the main transmission line, which extends from Clayton Junction, New Mexico to Denver, Colorado, and 75 inspections were made on the various lateral or branch lines, an average of one inspection per $20,000, approximately, of investment in transmission property. These inspection locations were selected by the company, with the exception of a few additional locations which were requested by engineers for the Commission.

"Inspections were made in July and August 1939. At each location selected for inspection, a section of pipe approximately 40 inches long was cleaned. The procedure followed by the Commission's engineers at each inspection was to divide a 36-inch section of clean pipe into three

12-inch sections and take 10 or more pit measurements on each section. These pit depths and the general condition of the pipe were recorded. In addition, if the pipe was coated, the kind and condition of coating in the adjacent uncleaned sections of the pipe were recorded; notes were also made regarding type of soil, soil hydration, drainage, and description of adjacent property.

"The pipe inspection data, together with calculations relating to them, an analysis of the major retirements as shown on the company's records, an analysis of the company's records of pipe line leaks and their causes, consideration of the natural gas supply, and other pertinent information were used as guides in arriving at a service life for transmission lines.

"These data indicated that 50 years is a reasonable composite service life for all transmission lines. Corrosion has been severe, and pipe replacements relatively high on the lateral lines in the Arkansas Valley and near Denver, and the company has found it necessary to install an extensive system of cathodic protection in these areas to reduce the rate of deterioration.

"For these lines, 40 years is a reasonable service life. The same life (40 years) also was considered reasonable for the 2-inch lateral line to the Fountain Valley School, although no serious corrosion difficulty has been experienced to date on this lateral; however, it is a small-diameter line, built to supply the domestic and space-heating requirements of a single customer. However, giving consideration to the various relavant factors, the weighted average lige of both main line and laterals is nearly 50 years; therefore, this composite service life has been assigned to Transmission Line Equipment (Account 226-D), as reasonable.

"The same service life has been assigned to rights of way (Account 220-D).

"Other Transmission Structures and Equipment. Property carried under this heading includes:

"1. Land (Account 218-D) which is non-depreciable.

"2. Leaseholds (Account 219-D) has been assigned to service life of 50 years.

"3. Structures (Account 223-D), which consists of Apishapa, Delhi and Travesser Maintenance Camps, Devine Welding Shop, and a number of other structures located on the transmission system. The principal items of property were inspected. A composite service life of 30 years has been determined for this account.

"4. Equipment (Account 227-D), consists of miscellaneous materials and equipment of many descriptions. The majority of the investment represents materials and equipment with a physical life of 20 years, and this life has been adopted as reasonable for the entire account.

"Compressing *Syste*. Colorado Interstate Gas Company has three compressing stations: Clayton Station, located near Clayton, New Mexico; Canyon Station, located approximately 35 miles northeast of Trinidad, Colorado; and Devine Station, located near Pueblo, Colorado. Since all three of these stations are constructed on the same general design, have similar structures and equipment, and are operated under similar conditions, composite service lives have been determined, by accounts, applicable to all stations, these lives are as follows:

"1. Land (Account 218-C), is non-depreciable.

"2. Leaseholds (Account 219-C), has been assigned a service life of 50 years.

"3. Structures (Account 221-C) consists of main compressor buildings and auxiliary buildings. The principal items of property were inspected in the field. Type of construction, condition of property, and the degree of care used in maintaining it were observed. After giving consideration to the observed condition of this property, the company's past experience, and probable life of the company's gas supply, a composite service life of 48 years was determined for this account.

"4. Other Structures (Account 223-C) consists mostly of frame dwellings at the three compressing stations, used to house the station personnel. After giving consideration to the observed condition of this property and the company's past experience, a composite service life of 34 years was determined as reasonable for this account.

"5. Equipment (Account 224-C) consists of the main compressor units and auxiliary and appurtenant equipment and structures. The principal items of property were inspected and identified in the field. This inspection was made during the period in which main units and auxiliaries were being overhauled, so that it was possible to observe the condition of many parts which it is impossible to examine while the equipment is in operation.

"An analysis of station logs indicates that the main compressor units were operated very little during the period 1929 to 1935, inclusive, but that they have been operated more frequently during recent years. Investigation revealed that, with the exception of some dust trouble at the Clayton station and cooling water trouble at the Canyon station, little difficulty has been encountered with this equipment.

"The facts relating to compressor operation in the past, probable future operations, the probability of refirement due to obsolescence, together with the company's experience in connection with retirements for physical and functional reasons, and other pertinent information, were taken into consideration in establishing service lives.

"A composite service life of 36 years has been determined to be reasonable for this account.

"6. Other Equipment (Account 227-C), consists of miscellaneous furniture and equipment. The probable physical life of approximately half of the property carried in this account is 20 years. The weighted average service life for all property in the account was estimated to be 17 years.

"Measuring System. The property carried under this heading includes: Land (Account 218-M), which is nondepreciable; Structures (Account 222-M); Equipment (Account 225-M); and Other Equipment (Account 227-M).

"The principal items of property were identified and inspected in the field. Type of construction, condition of the property, and the degree of care used in maintaining the property were observed. All but two of these measuring station structures are similar, being Butler steel Buildings. The Denver and Pueblo measuring stations are

constructed of brick. After giving consideration to the observed condition of this property, the company's past retirements for physical and functional reasons, and the prospective future use, a composite service life of 37 years has been determined for structures (Account 222-M), and 28 years for Equipment (Account 225-M).

"Other Equipment (Account 227-M) consists of miscellaneous materials and equipment located at the Denver measuring station, the cost of a water well on the Denver measuring station site, and the payment for a one-half interest in a 3-inch water main to supply domestic water at the Denver station. A composite service life of 32 years has been determined for this account.

"General Property. The property carried under this heading is comprised of:

"1. Office Furniture and Equipment (Account 249-E) consists of furniture, office machines, and similar property. After giving consideration to the kind of property, its use, and to the company's past experience, 12½ years was determined as a reasonable composite service life of equipment in this account.

"2. Garage Equipment (Account 253-E) consists of passenger cars, pickups, trucks of various capacities, trailers, and tractors. Some of this property is more in the nature of work equipment than automotive equipment. The service lives of the different types of equipment included in this account vary with the nature of the equipment and with the character and amount of its use.

"The fairest method for determining accruals for loss in the service value of this equipment is on the basis of use. However, an accurate record of use has not been maintained. In the absence of such information, loss in service value must be based on age.

"From an analysis of the experience of the company, a composite service life of four years is determined as the reasonable composite service life for this account.

"3. Telephone System (Account 225-E) consists of telephone rights of way and telephone equipment. Telephone rights of way have been given a service life of 50 years. Telephone equipment consists of copper, copperweld, and

iron wire, together with poles, brackets, crossarms, pins, insulators, guys, and miscellaneous hardware. The entire telephone system from Clayton Junction to Denver was inspected. One pole in each mile of line was carefully inspected for checks, condition of butt, and condition of treatment. A general inspection of the condition and type of construction of the entire line was also noted. Based on the information obtained from this inspection and the company's past experience, a composite service life of 30 years was adopted for telephone equipment.

"4. Tools and Equipment (Account 256-E) consists of miscellaneous tools, and construction and maintenance equipment. The physical life of much of this equipment is affected by deterioration with time as well as with use. A composite service life of 20 years is considered reasonable for the property in this account.

"Undistributed Fixed Capital. The investment carried under this heading includes:

"1. Other Expenses During Construction (Account 203). The analysis of this account by the Commission's accounting examiners indicates that all amounts therein represent pre-construction expenditures, which are primarily expenditures for engineering service and for reports on the feasibility of the project. A period of 50 years for amortization of these costs as determined as reasonable.

"2. Law Expense During Construction (Account 262). The analysis of this account by the Commission's accounting examiners reveals that all charges included in the account represent fees incident to procuring authority to transact business in Colorado, or expenditures which may reasonably be amortized over a period of 50 years from the beginning of operations.

"3. Interest During Construction (Account 266). Taking into consideration the service life of the property to which interest during construction was applied by the company, a reasonable period of amortization for this account is 50 years.

"Property Held for Future Use. Property carried under this heading includes:

"1. Leaseholds (Account 219-C) consists of a leasehold

on which the Purgatoire River pump house is located, and a right of way for the water line from the Purgatoire River to Canyon compressing station.

"2. Structures (Account 221-F) consists of one Butler steel pump house, located on the bank of the Purgatoire River.

"3. Equipment (Account 224-28) consists of water pumping equipment in the pump house, and a 4½-inch O. D. steel water line from the Purgatoire River to the Canyon compressing station.

"All the above property was not being used at the time of inspection and was classed a property held for future use. A composite service life of 33 years was determined as reasonable for this property."

Q. Now, Mr. Hill, the succeeding sheets beginning with "Statement of Composite Service Lives Determined for Property of Colorado Interstate Gas Company," the column headed "Adjusted Book Cost, December 31, 1939," I will ask you whether those figures under that column were taken from Exhibit 139 that has been introduced in this proceeding?

A. Yes, sir, they were. They are adjusted book costs received from the Federal Power Commission Examiners.

Q. The plant account of Colorado Interstate Gas Company and these figures appear in that Exhibit 139 at Pages 49 and 50?

A. I don't have that exhibit, Mr. Lange.

Q. I show you Exhibit 139.

A. Those are the same figures shown in "Adjusted Total"—

Q. Page 49?

A. Under Column 7, yes, sir.

Q. Now, the second column headed "Service Life (Years)", are those the service life figures that were arrived at by you as explained in the written statement of this exhibit?

A. That is correct.

Q. And the third column headed "Annual Straight Line, Rate—per cent"—in other words, you then after computing the service life in years computed the percentage from that?

A. Yes, sir.

Q. In other words, where there is a 50-year service life it is computed at two per cent?

A. Yes, sir.

Q. And in like fashion right down through that third column?

A. Yes, sir.

Q. And the same on Sheet 2 of 2?

A. Yes, sir.

Q. You proceed in the same fashion?

A. Yes, sir.

Q. Now, the figures under Column 1 "Adjusted Book Cost, December 31, 1939" on Sheet 2 of 2, they were taken from Page 50 of Exhibit 139, the gas plant account of Colorado Interstate Gas Company, were they not?

A. I don't know. I don't have a copy of that exhibit.

Q. I will show you Exhibit 139.

A. Yes, sir, they are the same figures.

Q. And I believe you stated this exhibit was prepared by you or under your supervision and direction?

A. That is correct.

Q. In connection with your work on this assignment?

A. That is correct.

(Vol. I, pp. 6963-6976.)

EXHIBIT No. 177.

Statement of Composite Service Lives Determined for Property of Colorado Interstate Gas Company.

Account Number and Name	Adjusted Book Cost 12-31-39	Service Life (Years)	Annual Straight Line Rate— %
Transmission Lines.			
218-D Land	$ —	—	—
220-D Rights-of-Way	273,167.20	50	2.00
226-D Equipment	8,910,795.63	50	2.00
Total Transmission Lines	$ 9,183,962.83		
Other Transmission Structures and Equipment.			
218-D Land	$ 926.90	Non-depreciable	
219-D Leaseholds	115.50	50	2.00
223-D Structures	59,603.31	30	3.33
227-D Equipment	18,792.11	20	5.00
Total Other Structures & Equip.	$ 79,437.82		
Compressing System.			
218-C Land	$ 3,904.51	Non-depreciable	
219-C Leaseholds	523.25	50	2.00
221-C Structures	195,153.67	48	2.08
224-C Equipment	1,198,313.44	36	2.78
223-C Other Structures	188,152.60	34	2.94
227-C Other Equipment	5,320.18	17	5.88
Total Compressing System	$ 1,591,367.65		
Measuring System.			
218-M Land	$ 12,210.45	Non-depreciable	
222-M Structures	53,085.76	37	2.70
225-M Equipment	88,539.24	28	3.57
227-M Other Equipment	3,037.29	32	3.12
Total Measuring System	$ 156,872.74		

Account	Number and Name	Adjusted Book Cost 12-31-39	Service Life (Years)	Annual Straight Line Rate
	General Property.			
249-E	Office Furniture and Equipment	$ 29,108.82	12½	8.00
253-E	Garage Equipment	67,524.79	4	25.00
255	Telephone System, Rights-of-Way	1,099.11	50	2.00
255-E	Telephone System, Equipment	154,568.49	30	3.33
256-E	Tools and Equipment	33,930.69	20	5.00
	Total General Property	$ 286,231.90		
	Undistributed Fixed Capital.			
203	Entrance Rights-of-way	$ —	—	—
203	Other Expenses During Construction	36,925.61	50	2.00
262	Law Expenditures During Construction	46.00	50	2.00
266	Interest During Construction	191,901.80	50	2.00
	Total Undistributed Capital	$ 228,873.41		
	Total Investment in Gas Plant	$11,526,746.35		
	Gas Plant Held for Future Use	19,994.71	33	3.03
	Construction Work in Progress	29,677.85	—	—
	Gas Plant Adjustments	2,352,941.17		
	Total	$13,929,360.08		

[Further Testimony of WITNESS HILL.]

Q. Hardly any there. Now, what other operating or past service conditions with respect to other parts of the property were considered by you?

A. I think the equipment, the auxiliary equipment is about all. I don't think past service conditions of a pipe line can have any effect on the life of the pipe.

Q. Did you consider anything else in the inspections made at the test holes of the exposed pipe?

A. Yes, sir.

Q. What else did you consider?

A. We took into consideration the life of the field, took into consideration pipe experience of other pipe line companies and my own experience in the installation and maintenance of the steel pipe in the past.

Q. Have you finished your answer, Mr. Hill?

A. Yes, sir.

Q. Now, with respect to the life of the field, what consideration did you give to that.

A. Well, we received a figure of recoverable gas which is the same as shown in Mr. Luttring's exhibit, and I forget the number of it.

Q. It is about three and a half trillion cubic feet?

A. Something like that, at a 25-pound abandonment pressure, and we made some calculations on the bases of that figure. Do you want me to read these into the record, or do you want to look at them?

Q. Yes, go right ahead.

A. This is headed "Estimate of Remaining Life of Canadian River Gas Company reserves in Connection with Service Life Studies (all figures to nearest million Mcf.)" I didn't try to break it down. Approximate annual requirements: Mcf., at 16.4 pounds. We made estimates of the amount of withdrawals from the Canadian River acreage. These are all in Mcf.

Colorado Interstate Gas Company, Denver Line, 22,000,000; Chicago Line—that is the present Chicago line—22,000,000. We took into consideration the second Chicago line at the time we determined these service lives. It looked possible that that line might be built and so we took it into consideration and then estimated that the Canadian River would furnish half of the present gas that they were furnishing to the Chicago line, which would be 11,000,000.

Q. That's 50 per cent increase?

A. Yes, that's right—which totaled 55,000,000. Understand all these figures are Mcf.

Q. Yes.

A. The Amarillo Oil Company and Clayton Gas Company, 7,000,000; Company use, 1,000,000, which is somewhat high; a total at 16.4 pounds base pressure of 63,000,000.

Mr. Spencer: Annual figures, you are talking about?

The Witness: These are all annual figures.

Total of 14.65—we converted to 14.65—71,000,000. Reserves at end of 1939 (25 pounds abandonment) was 3,636,000,000 Mcf. at 14.65 pound base pressure. Now, that figure was the same figure as used by Mr. Luttring and furnished to us by the Federal Power Commission geologists. The remaining life of the field from 1939, figured on that basis, amounted to 51 years. The expired life from 1928 to 1939, eleven years, or a total life from 1928 of 62 years. Now, that was all figured on a 25-pound abandonment pressure and another increase we made on this thing, and this increase was made of 15 per cent to allow for stimulation, and this allowance was made for stimulation due to rate reductions, voluntary or otherwise.

Percentage increase (15 per cent) is a judgment figure, based on results obtained on Denver line after reduction in space heating rates in 1934, and giving consideration to saturation of the load.

By Mr. Dougherty:

Q. That's sales you are talking about, the 15 per cent?

A. That's right. We have added 15 per cent on the figures which are as follows: Denver line, 25,000,000; Chicago line, present line, 25,000,000; Chicago line, second one, half of the present load, 13,000,000—63,000,000; Amarillo Oil Company and Clayton Gas Company, 8,000,000; company use, 1,000,000; total at 16.4 pounds base pressure, 72,000,000; total at 14.65, 81,000,000.

Taking this 81,000,000 into the previous figure that was furnished to us by the geologists gives a life of that field of 56 years. We came to the conclusion that the life of that field would be approximately 56 to 62 years.

Q. That is from the initial operation of the company? That is the date you are taking the number of years from—1928?

A. That is right, from 1928.

Denver-Chicago—two lines—and Amarillo, would be 56 to 62 years.

Q. What consideration, if any, did you give to drainage that might be taking place in that field, whereby the field life would be depleted because of other withdrawals from the field earlier than would be indicated from your figures—

A. I think you are getting outside of my field a little bit, Mr. Dougherty. I am not a geologist.

Q. What I want to do is to get the limitations within which you did take these—I take it you assumed that the volume of gas which Canadian River was estimated to have by the geological department would all be produced by Canadian River and available for sale down to the 25-pound rock pressure?

A. Well, if you want my opinion. This is my opinion on the thing.

Q. First I am asking you if that is what you did. I am trying to find exactly what you did.

A. Read the question.

(The question referred to was read by the reporter, as set forth above.)

By Mr. Dougherty:

Q. That was the assumption on which you proceeded?

A. Yes, sir, that was the assumption I made and it is my opinion that the Canadian River will, if there is any gas drainage away from the Canadian River, they will drain from other leases. That is the only thing that I can see.

Q. Well, now, are you familiar with the location of their acreage so that you know from what leases that drainage might take place to Canadian River?

A. Well, you are still getting off my line.

Q. Well, you started on the line here giving your voluntary opinion which first you said you weren't qualified to give, so I wanted to ask you the basis of it.

A. I am familiar with the location of Canadian River

Q. The gas won't drain both ways at the same time in the same strata?

A. I don't think so.

Q. No more than water will run two ways in the same pipe; so drainage takes place from the high pressure area to the low pressure areas?

A. Yes, sir. It is logical to assume that.

Q. And you know that the extreme western part of the field is the high pressure area where Canadian River's leases are located?

A. Well, I have been told that. I don't know.

Q. Well, then, your expression of opinion that what Canadian River will lose by drainage they will gain by drainage some place else was pretty much of a guess, wasn't it?

A. That's all, on my part, yes. As I say, I have made no study of that field.

Q. Of course, if drainage takes place it couldn't be true that all leases will get as much as they lose, otherwise everybody would be coming out even?

A. I couldn't say that. I don't know.

Q. Well, on the assumption that there would be drainage from Canadian River to other leases which would not be compensated for by drainage from other areas to Canadian River, would not that change your computation as to the amount of recoverable gas which is available from those leases?

A. Well, I have made no computation on the amount of gas. I have taken this figure from the geologists. I have made no computation of the amount of gas.

Q. You made a computation of the amount of gas that could be taken out of the wells and sold; that is, you have got your figures there.

A. Not for the reserves under Canadian River acreage.

Q. Your figures are production figures which you said—

A. I estimated what I thought the Colorado Interstate Gas Company—or the Canadian River Gas Company, their requirements would be, taking these things into consideration. That's all I have done. It is merely an estimate on my part.

Q. Your figures, then, that you have given, is that in a period of 56 to 62 years from 1928 Canadian River and Colo-

rado Interstate would have to have available the quantities of gas which is the total that you arrive at?

A. That is right. That is true.

Q. If they stay in business that long.

A. According to my calculations, yes, sir. As far as the life of the field goes, the supply of gas, I don't know anything about that.

Q. Well, now, any change in the character of operation or anything that takes place in the future, that would serve to revise the figure which was given as the amount of gas reserves there, that would, of course, then, have affect on your computations?

A. Yes, sir, and there are other things that would have affect on my computations—the possibility of the second Chicago line not being built would have a tendency to increase the life of that field. The Denver line deliveries take precedence over Chicago. The possible reduction in the Chicago line to take care of the Denver line would increase the life of the field. The possibility of the Chicago line taking gas from the Hugoton field would have a tendency to prolong the life of the Panhandle field and also prolong the life of Canadian River property.

Q. Well, now, when your speak of the Canadian River acreage, you are just talking about that in the Panhandle field?

A. Yes, sir.

Q. You think these possibilities are things which may not take place in the future?

A. These things I speak of are things that have been taken into consideration in determining service lives on this property.

Q. To what extent did you take into consideration the Hugoton field in determining the service lives of this pipe of—

A. If the life of the field had been the determining factor in the service lives that I set on this line it would have been taken into consideration. That's the whole thing. I think the life of the field will be longer than the service life that I have set on this property.

Q. I take it, then, that your figures of service lives here are purely service lives based on physical factors?

A. Primarily. I have written in this written statement that it is primarily based on physical life.

Q. Your have neither increased the service lives nor decreased them because of any consideration of availability of gas?

A. Yes.

Q. Which did you do?

A. I decreased them.

Q. You recognize, I take it, that service life for the purpose of accruing depreciation should be less than the number of years the gas supply will be available?

A. Yes, sir, that is the reason I made these calculations.

Q. Now, you apparently, therefore, considered that anywhere from six to ten years of additional life beyond the 50 years for the main line pipe, for example, would be adequate period of time to balance off any replacements that had to be made prior to the expiration of the 50 years?

A. Yes, sir. There is some of that pipe line this I have no doubt that it would live a hundred years. Some may be less than a hundred years. Fifty years is what I have set on it as the average life.

Q. Of course, Mr. Hill, one hundred years will do no good in accruing depreciation reserves?

A. That is true.

Q. If the economic life of the property is sixty?

A. That is right. That is the reason these lives have been cut back.

Q. So I say, you recognize that it is necessary to recover the original cost by the end of sixty years if that is the economic life of the project?

A. Yes, sir.

Q. In doing that you have taken 50 years for the pipe on the assumption that such number of years as the property operates beyond that will adequately provide full depreciation reserve?

A. Yes, sir.

Q. Now, any installation of compressors, for example, which you have given—I think 36 years, haven't you?

A. Yes, sir.

Q. Any installation of compressors in the latter part of this 60 years would present a different problem of service lives for the purpose of accruing depreciation?

A. I think it would, yes, sir.

Q. That is, you recognize that limitation of field life is a very positive and determining factor in your service lives?

A. I think it is, yes, sir, although I think those compressor engines will last much longer than the composite life I have used—

Q. Well, we will know that when the 36 years is over.

When you use the phrase, then, in your text that the system was considered a continuing enterprise which will operate so long as the supply of natural gas is available, that statement refers to the answers you have just given of the life from 56 to 62 years?

A. Yes, sir.

Q. If in the future that field life basis were changed, then the service lives which you have given here might be revised either up or down depending upon what the change of conditions was, I take it?

A. I think so.

Q. Now, when you made your inspection of your pipe lines, your main pipe lines, you took down notations on pit depths and general conditions, and so on, and the other information that you relate on Page 3 of Exhibit 177. How did you translate that into your final answer of fifty years? What did you do?

A. I didn't translate that into the final answer of fifty years.

(Vol. LI, pp. 7015-7026.)

* * * * *

Q. Mr. Hill, if I recall, during the course of my cross examination of you, you testified that the life of the main pipe lines and transmission lines was based upon the life of the field, or the life of the natural resources, rather than the physical life of the pipe, isn't that correct?

A. Yes, sir.

Q. That was my understanding.

A. Yes, sir.

Q. Now, you got the figure upon which you calculate the life of the field from Mr. Hammer?

A. Yes, sir.

Q. I don't recall just where that is in your written statement. Do you have it in there?

A. I think I have it in here some place, Mr. Spencer.
Q. Will you please identify it if it is there?
A. I used 3,636,000,000 Mcf., that is at 14.65.

Mr. Lange: 14.65 pounds?

The Witness: Yes, sir.

Mr. Lange: At what time?

The Witness: That was as of the end of 1939.

By Mr. Spencer:

Q. Is it in here any place? I can't find it.
A. No, it is not.
Q. You just testified to it?
A. Yes. I had this tabulation here.
Q. That's all right, and that is the same figure that appears in Mr. Hammer's exhibit number—

Mr. Lange: I think it is 180.

Mr. Spencer: 180?

The Witness: Well, I don't know. I haven't looked at Mr. Hammer's exhibit.

By Mr. Spencer:

Q. All right. The record will show. I believe you also testified that the life of Canadian River Gas Company's reserves as computed by you was based upon the assumption that Canadian River would recover all of the gas included in the figure which you obtained from Mr. Hammer.

Mr. March: I object to that question. He has not made a computation of the reserves of the Panhandle field.

Mr. Spencer: It doesn't make any difference.

Mr. March: The exhibit does not—I believe you mistook yourself there, Mr. Spencer.

The Trial Examiner: Read the question.

(The question referred to was read by the reporter as set forth above.)

Mr. March: The question is thoroughly improper. He has not made any computation of gas reserves at all.

Mr. Spencer: No, the life of the reserves.

Mr. March: He has made no computation of the life of the reserves in this exhibit at all. He hasn't had a thing to do with the life of the reserves. He is talking about the life of the pipe line.

By Mr. Spencer:

Q. Haven't you computed the life of the natural resources that are available to Canadian River Gas Company, Mr. Hill?

A. I have used these figures that have been furnished to me as far as determining service life of this property.

Q. And you went at length to show me how you computed it on different bases?

A. Yes, sir.

Q. Now, those calculations and computations which you made are based upon the assumption, then, that Canadian River Gas Company would recover every foot of gas indicated in the reserve figure that was handed to you by Mr. Hammer?

A. Yes, sir, that is the way I have used it.

Mr. Spencer: All right, that is all.

The Trial Examiner: Is that all, Mr. Spencer?

Mr. Spencer: Yes, sir.

Redirect Examination.

By Mr. Langé:

Q. In other words, you utilized the reserve figures that were given to you by Mr. Hammer?

A. Yes, sir, in determining service lives.

Q. You didn't attempt to compute any reserves yourself?

A. No, sir, I have not.

(Vol. LXIV, pp. 9258-9261.)

Further Testimony of the Company's Witness, Solo.

Q. There is a letter addressed to one of the employes. Did you write that letter?

A. Yes, sir.

Q. Yourself?

A. I dictated it. In fact, Mr. Smith and I dictated it jointly. All we did—this exhibit was prepared, as I have testified, under our direction. When it came to the value of these fee lands we used the appraisals that the company had already secured on those lands made by real estate agents and other independent appraisers at different times near where these lands were located. In instructing them how to set up the exhibits we told them to use the appraisals they already had and that is what the letter says.

Q. I notice here at the end of that letter, Page 17 of it, there is the calculation: "Five per cent in 1947 and 1955;" then you have up here figures that refer to 1947. What is the significance of that?

A. When we originally planned to make this study the officials of the gas company asked us to make a study of the salvage value at two years instead of at one and after we started, but before we had really done very much work on the joint study, after further discussion with them we decided not to make an appraisal of the two years and finally made an appraisal as of January 1, 1956.

(Vol. XCVII, pp. 14941-14942.)

* * * * *

Q. Now, I notice down here in about the middle of the page on Page 4 you strike out "As of December 31, 1947."

A. Well, you see when this statement was originally prepared it was going to be a double statement showing salvage values; first, as of December 31, 1947 and then December 31, 1956. When we finally determined to make only one study, I went through the preliminary papers and changed them all to read just for the one period.

Q. Who told you to make only one study?

A. Who told me?

Q. Yes.

A. The attorneys of the Colorado Interstate Gas Company and the Canadian River Gas Company.

Q. Who? Mr. Brock?

A. Mr. Brock was one of them.

Q. Who else?

A. Well, I believe Mr. Hendee was present at that conference and possibly Mr. Dougherty.

Q. All right. I notice here on Page 5 you strike out:

"Ranging in age from 17 years." Why did you strike out 17 years?

A. For the same reason, because in 1947 material would be 17 years old and in 1956 it would be 25 years old. In dictating this statement in contemplating the double statement, we said "ranging from 17 to 25 years," but when we found it was only to be a final statement, we took the ranging out and had an absolute period and had the 25 years.

Q. In the sentence: "* * * no responsible organization would undertake the initiation of a new project with materials ranging in age from 17 to 25 years," you struck out "ranging in age from 17."

A. I think either statement is correct. I think it would be just as difficult for a company starting a new project to buy material 18 years old as 25 years old. It just wasn't necessary to say it under the circumstances.

(Vol. XCVII, pp. 14946-14947.)

* * * * *

Q. Who employed you specifically?

A. As to my employment in this case, Mr. Taubman called me about eight or ten months ago and told me that Mr. Moody, one of the officials, I believe, of one of these companies, asked him as a courtesy if we would again testify in this case as we testified in the Texoma case, and that most of the material was in a similar area; so at Mr. Taubman's request I went with him to Amarillo about last May, I believe, and at that time we met a number of attorneys and officials of the company, including Mr. Hendee, I believe, was there, and they asked us to testify in this case and we said we would.

Q. Are you getting some of your money from Canadian River Gas Company and some of it from Colorado Interstate Gas Company, do you understand?

A. I don't know. I haven't discussed money with these people at all in any shape, form or manner.

Q. How many days were you on the stand in the Texoma case?

A. I think I was on the stand about three-quarters of a day during the original trial and I went back then to Washington some weeks later and was on the stand for an additional thirty minutes, something like that.

Mr. March: I request that that information be furnished the record as to how much he is being paid.

Mr. Dougherty: All right.

Mr. March: You won't be on the stand quite that long this time. That's all.

The Trial Examiner: May I ask Mr. Solow a question, Mr. Dougherty?

The Witness: Yes.

The Trial Examiner: Mr. Solow, why did you fix the date of 1950 as the determination of the salvage date?

The Witness: That figure is purely an arbitrary date that was given to me by the attorneys of the company. That is the date they said they wanted this study to cover.

The Trial Examiner: I think that's all.

(Vol. XCVII, pp. 14949-14951.)

Further Testimony of the Company's Witness, W. D. Smith.

Q. What is your understanding as to why they cut out all reference to 1947?

A. When we first went to Colorado Springs we were told to make two salvage estimates, one as of 1947 and one at a later time, being in 1955, I think it was, as shown here. Before we got very far into the work we decided to talk to Mr. Brock and see whether or not that was what he wanted. We came up to Denver and Mr. Solow and myself talked to Mr. Brock and Mr. Hendee. They fixed the dates wherein these exhibits were prepared.

Q. The original plan was to have the figures for 1947?

A. Yes, that was the way we started it.

Q. You haven't seen any of the subsequent instructions which are revisions of the first instructions?

A. Yes, I have a book here of my own with the instructions in it.

Q. This book of yours contains letters, as I notice here, prior to—it looks to me like those letters were in connection with the Texoma case. I see one here dated June 10, 1939.

A. Some were used in the Texoma case.

Q. June 17, 1939, also?

A. Yes.

Q. You testified in the Texoma case, did you not?

A. Yes.

Q. What was the period of salvage? What was the time of salvaging that property?

A. January 1, 1954 as I recall it. That is to the best of my memory.

(Vol. XCVII, pp. 14986-14987.)

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28. Necessary Rate of Return.

Paul B. Coffman, a witness for the respondent, testified on rate of return (Exhibit 73, Vol. XV, p. 2103).

He graduated from the Ohio State University in 1923 with the degree of B. S., and from Harvard University Graduate School of Business Administration in 1926 with the degree of M. B. A. He is now Vice President of Standard Statistics Company, Inc.

From 1926 to 1927 he was Professor of Economics at William and Mary College, and from 1927 to 1936 Professor of Accounting and Business Policy at the Graduate School of Business Administration at Harvard University, and at the same time was Consulting Economist for a number of industrial corporations and financial advisory institutions.

During 1931 and 1932 he was Executive Vice President and General Manager of Poor's Publishing Company engaged among other things in publishing Poor's Manual.

From 1935 to 1939 he was Departmental Manager of Standard Statistics, having charge of statistical and research investigation and valuations, since which time he has been Vice President of Standard Statistics directly in charge of statistical and economic research and valuations for individuals, institutional and (p. 2104) corporate clients. In connection with his duties he has been constantly engaged in the examination and analysis of securities and corporations, with the view of determining hazards involved, and the intrinsic worth of securities, and the presentation of such findings to the many clients of Standard Statistics.

In October, 1940, his company was retained by the Colorado Interstate to make a statistical study for the years 1937, 1938 and 1939, and for the interim period of 1940, January-October, of the investors' appraisal of the risks of capital invested in the natural gas business as compared with the risks of capital invested in other utilities. His analysis covered the following utility classifications: (1) electric utility operating companies; (2) water companies; (3) manufactured and mixed gas companies, and (4) natural gas companies.

The telephone industry was excluded, because it was so largely dominated by the American Telephone and Telegraph (p. 2105) company. In most cases complete data, particularly with respect to market prices on the quoted securities of the operating subsidiaries, were not obtainable.

His method of procedure as to each group, and also as to each utility in the several groups for each of the periods 1937 to 1939 inclusive, and the interim period of 1940, January-October inclusive was:

His first step was to ascertain the total market value of all securities of each company at the end of each year by the average of its high and low market quotations in the year (p. 2106).

The second step was to determine for each company the total earnings available for distribution to the security holders after taxes, depreciation and other miscellaneous charges, as reported by the particular company to its stockholders (p. 2107). For the years 1937, 1938 and 1939 the earnings were taken as shown in the published reports. For the interim period in 1940 the latest reported earnings, covering a twelve months' period, were used.

The third step was to divide the earnings by the indicated market value, which gave the rate for the period in question (p. 2108).

The fourth step was to make the necessary calculation to show the market value of all of the securities in the group, and likewise to show the total earnings available for distribution to the securities of all companies in the group. The latter figure was then divided by the former in order

to obtain the investors' overall appraisal of the risk of all capital in the group (p. 2109).

As to electric utility operating companies, he first listed all such companies upon which Standard Statistics currently publishes data in Standard Earnings Bulletin. The list included fourteen companies, which were the more important operating utility companies in which there was any investment interest. From this list there were excluded all corporations whose operations were not predominantly in the electric field. The resulting list included the following companies:

Boston Edison Company.

Commonwealth Edison Company.

Consolidated Edison Company of New York.

Consolidated Gas Electric Light & Power Company of Baltimore (p. 2111)

Detroit Edison Company.

Pacific Gas & Electric Company.

Southern California Edison Company, Ltd. (p. 2112)

He took the list of all operating companies engaged solely in the water business which he could find from Standard Corporation Records. From this list certain companies were eliminated for the following reasons:

1. Companies whose common stocks were held by one of the larger holding companies, and which had no obtainable market evaluation.

2. Companies whose stocks were closely held by relatively few individuals and had no available market evaluation.

3. Companies whose 1939 gross operating revenues were (p. 2113) less than $500,000.

The following companies remained on the list:

Bridgeport Hydraulic Company

Elizabethtown Water Company Cons.

Hackensack Water Company

Middlesex Water Company

New Haven Water Company

Plainfield-Union Water Company

Stamford Water Company (p. 2114)

As to manufactured and mixed gas companies, a list was prepared of all operating companies distributing manufactured or mixed gas, and listed in Standard Corporation Records. From this list certain companies were eliminated for the following reasons:

1. Companies which did not have stocks outstanding in the hands of the public and for which there was no market evaluation.

2. Companies whose gross revenue was predominantly obtained from services other than distribution of manufactuerd and/or mixed gas.

3. Companies which were in receivership at the end of 1939.

4. Companies with gross revenues in 1939 of less than $1,000,000.

With these eliminations the following companies remained:

Bridgeport Gas Light Company

Brooklyn Union Gas Company

Elizabethtown Consolidated Gas Company

Hartford Gas Company

Laclede Gas Light

Peoples Gas Light & Coke Company (p. 2116)

Providence Gas Company

Seattle Gas Company

Springfield Gas Light Company

Washington Gas Light Company (p. 2117)

With reference to natural gas companies a list was prepared of all operating and holding companies engaged in

any phase of the natural gas business. From this list he eliminated:

1. Companies which had no stocks outstanding in the hands of the public.

2. Companies which were not exclusively engaged in the natural gas business.

3. Companies in receivership at the end of 1939.

After such eliminations the following companies remained:

Duquesne Natural Gas Company
El Paso Natural Gas Company
Houston Natural Gas Corporation
Interstate Natural Gas Company
Lone Star Gas Corporation (p. 2118)
Memphis Natural Gas Company
Mountain Fuel Supply Company
National Fuel Gas Company
Northern Oklahoma Gas Company
Northern Utilities Company
Oklahoma Natural Gas Company
Pacific Lighting Corporation
Southern Natural Gas Company (p. 2119)

Included in the above group of natural gas companies was the Pacific Lighting Corporation. This company through subsidiaries distributes natural gas to 272 cities and towns in California, including Los Angeles. Its subsidiaries serve about half the population of the state. Market prices of the securities of the operating companies are not available, in view of which this holding company was treated as a single operating company in the above group. As a result, its indicated market value is nearly 40% of that of the entire group of natural gas companies, thus giving entirely too much weight in this group to a purely distributing company. This company owns no gas producing facilities, and does not run any of the risks of producing and trans-

portation (p. 2120). For these reasons the risks of capital employed in this company more nearly approximate those of strictly distributing companies serving manufactured or mixed gas.

The comparison as worked out under the formula above described is as follows:

"Comparison of Investors' Appraisal of Risks of Capital in Pacific Lighting Corporation as Compared with the Manufactured and Mixed Gas Companies Group.

	Per Cent 1937	Per Cent 1938	Per Cent 1939	Per Cent Three Yr. Average	Per Cent Jan.-Oct. 1940
Pacific Lighting Corporation	7.20	7.35	6.26	6.94	5.42
Manufactured and Mixed Gas Companies Group	6.22	6.52	6.56	6.43	6.98"

In the following table all figures for the Pacific Lighting Corporation are eliminated, and with this elimination the figures for the twelve natural gas companies remaining in the groups are as follows: (p. 2121)

"Determination of the Investors' Appraisal of the Risks of Capital for Natural Gas Companies (Excluding Pacific Lighting Corporation).

	1937	1938	1939	Jan.-Oct. 1940
Total Indicated Market Value of Capital	$294,414,969	$263,667,801	$275,217,638	$278,359,660
Total Earnings Available for Indicated Capital	24,488,305	21,213,539	22,902,944	25,529,032
Investors' Appraisal of Risks of Capital	8.32%	8.05%	8.32%	9.17%" (p. 2122.)

The summary in percentage, including Pacific Lighting Corporation and excluding that company, is shown in the following table for the years 1937 to 1939 inclusive, and the interim period of 1940:

"Investors' Appraisal of Capital Risk in Various Divisions of the Utility Business.

	Per Cent 1937	Per Cent 1938	Per Cent 1939	Per Cent Three Yr. Average	Per Cent Jan.-Oct. 1940
Electricity Utility Operating Companies	5.47	5.50	5.41	5.46	5.42
Water Companies	5.52	5.39	5.66	5.52	5.17
Manufactured and Mixed Gas Companies	6.22	6.52	6.56	6.43	6.98
All Natural Gas Companies	7.91	7.79	7.53	7.74	7.77
All Natural Gas Companies Excluding Pacific Lighting Corporation	8.32	8.05	8.32	8.23	9.17" (p. 2124)

William Chase Gilman, a witness for respondent, testified on rate of return (Exhibit 74, Vol. XVI, p. 2256).

He graduated from the Massachusetts Institute of Technology with degree of Bachelor of Science in 1922 and received the degree of Master of Science in Electrical Engineering in 1923. He is a professional engineer in the State of New York.

From 1923 to 1925 he was engineer for the General Electric Company; from 1925 to 1927, Manager Lighting Division, Commercial Department, Central Hudson Gas and Electric Corporation; 1928, Engineer Carolina Power and Light Company; 1928 to 1935, Engineer in the Treasurer's office of the Equitable Life Assurance Society; 1935 to 1937, Director of Public Utilities Division Securities and Exchange Commission; 1937 to date, partner in Gilman & Hickey, Financial Consultants, New York (p. 2258).

During the seven years he was with the Equitable, it was his duty and responsibility to recommend to the Treasurer for purchase by the Society of public utility and industrial securities. The Equitable is among the very large insurance companies of the country and purchases many millions of dollars of such securities each year. In this connection he visited the properties and investigated the operations and analyzed the securities of a large majority of the electric and gas companies of importance having securities out-

standing in the hands of the public. As a part of such analysis the question of rate of return was involved.

During this seven year period the investment of the Society in securities in the field for which he was responsible, increased from approximately $110,000,000 to $262,000,000.

During the early period of that employment the Equitable made no purchases of natural gas pipe line securities. During the latter part of the period he began making studies of the industry; and in (p. 2259) 1935 the Equitable purchased $4,000,000 of an issue of $16,000,000 bonds of the Northern Natural Gas Company. The remainder of the issue was sold to other large insurance companies, and this was the first large purchase of bonds of a natural gas pipe line company by institutional buyers, except for two relatively small blocks of bonds of subsidiaries of Columbia Gas and Electric Corporation bought a year previously by the Metropolitan and the Mutual Life Insurance Companies.

In 1935 he resigned from the Equitable to join the staff of the Securities and Exchange Commission in Washington, and took part in the organization of the Public Utilities Division. Shortly thereafter he became the first Director of that Division. In that position he was responsible for the administration of the Holding Company Act (p. 2260). The staff had the responsibility under his direction to analyze the various applications filed by registered holding companies and their subsidiaries with reference to issuance of securities, and to prepare recommendations to the Commission.

During the past three years his firm has been engaged in work of a financial consultation nature, chiefly in the utility field (p. 2261). Their clients consist of financial institutions, investment trusts, underwriting houses, legal firms, and utility operating and holding companies. His firm had experience in appraising stock of dissenting stockholders in a statutory consolidation, and in making special investigations and reports for insurance companies, and in making studies and giving testimony as to the value of utility property (p. 2262).

He had inspected properties of the Colorado Interstate and had discussed certain phases of its business and opera-

tion with company officials. From his previous work with the Equitable he has for a number of years been familiar with the business and operations of the Public Service Company. He had examined the statements and all financial data of the Colorado Interstate through the full year 1939 (p. 2263) and has examined copies of exhibits already introduced in this case (p. 2264).

No single standard can be set up as to what constitutes a fair rate of return. The facts in each case, the currently prevailing conditions, the degree of risk, the current cost of money and similar factors must be considered. The return should be sufficient to maintain the credit of the utility and to attract capital, and should be equal to that generally being made at the same time in the same region on investments in other enterprises which have corresponding risks. Consideration should be given also to the financial history of the utility and its historical cost of capital.

He considered the language of the Supreme Court in the Bluefield Case as a good guide of what constitutes a fair rate of return (p. 2265).

Investors will invest in a regulated industry only when they feel that there is a combination of return and safety which is at least as high as they can obtain in other fields. Public utilities and other regulated enterprises are in competition for the investor's dollars against all other businesses (p. 2266).

After describing the property, operations and business of Colorado Interstate (pp. 2268-69), he stated that this company is entirely unlike the ordinary public utility company, such as a water, electric or telephone company, as they are relatively permanent in character, and have no problem comparable to that involved in the natural gas industry, namely, that they may find themselves suddenly without the supply of their product.

Neither are manufactured gas companies comparable to any extent that is helpful. They, too, are able to continue the manufacture of gas over an indefinite period, and are not dependent upon a wasting natural resource (p. 2270).

There is an important distinction between a natural gas

company having a completely integrated business and a natural gas pipe line company. A natural gas company having an integrated business, that is, one which owns or controls the distribution in addition to production and transmission, generally speaking, is a less risky enterprise than the pipe line company which owns only production and transmission facilities and sells its gas at wholesale to distributors who control the market.

He was unable to find other business or companies having securities outstanding in the hands of the public which have risks and uncertainties precisely corresponding to Colorado Interstate. The business of companies affording the closest comparison to risks and uncertainties are other natural gas pipe line companies (p. 2271).

Since the Bluefield decision, the public utility industry has grown much larger, and has become too large to be financed almost wholly with local capital. Accordingly, securities of the large public utilities and industrials have been sold throughout every state in the United States. In addition, improved methods of transmission and dissemination of information, and the largely increased amount of data generally available to investors, has made it easy for investors in every part of the country to have up-to-date information. For these reasons, any business needing a substantial amount of capital will usually secure it in a national money (p. 2272) market, or at least is not limited to the locality in which it operates.

In Appendix 1 to Exhibit 74, there is shown a list of natural gas companies which are engaged in the purchase or production, or both, transmission and sale of natural gas, which have annual gross operating revenue of $2,000,000 or more, and which have common stock outstanding in the hands of the public. Natural gas companies owning large amounts of distribution facilities have not been included in the list for the reason that such companies are less directly comparable. The five companies listed in the Appendix are comparable to Colorado Interstate to some extent, in that they all (1) purchase or produce natural gas in producing areas; (2) transmit it a substantial distance by means of large pipe lines; (3) sell gas to industrial customers or to distributing companies for resale (p. 2273).

These five companies are:

El Paso Natural Gas Company

Interstate Natural Gas Company

Memphis Natural Gas Company

Panhandle Eastern Pipe Line Company

Southern Natural Gas Company

and statistics are given with respect to each of these companies.

Since 1935 there has been sold to the general public and to institutional investors, publicly and through private sales, substantial amounts of first mortgage bonds of companies engaged in the natural gas pipe line business. Generally speaking, the size of the mortgage bond issue has been modest in proportion to the property account and the maturities have not been in excess of fifteen years, with heavy sinking funds provided, sufficient to amortize the total bond issue over its life. In practically all cases the life of the supply has been estimated by independent geologists to be longer than the maximum maturity of the bonds.

In recent years there have been no substantial sales of preferred stock of natural gas pipe line companies, and in his opinion such security is not suited to natural gas pipe line companies. There have been no substantial sales to the public of (p. 2274) common stocks of natural gas pipe line companies in recent years (p. 2275).

From the statistics shown in Appendix 1 he pointed out that the earnings price ratios for those companies range from 6.75% to 18.75%, indicating the investors' appraisal of the common stock of natural gas pipe line companies (p. 2276).

The future of the company is somewhat uncertain. Its contracts with its largest customer, Public Service Company of Colorado, and subsidiaries, from which it derives approximately 48% of its revenues from gas sales, expire in 1948 and 1949 (p. 2277).

Under today's conditions a company such as Colorado Interstate could normally be most economically financed

through the issue and sale of bonds to the extent of 50% of the amount of capital required and the balance of 50% through the issue and sale of common stock. With the existing uncertainity as to the renewal of the contracts expiring in 1948, the maturity of the bonds would of necessity be prior to 1948.

Colorado Interstate's bonds outstanding bear interest at 2¾% and mature December 1, 1945. The cost of bond money to the company, including the expenses of issue, would be approximately 3%.

From his knowledge of investor requirements and his study of the market's appraisal of other natural gas pipe line companies' securities, it was his opinion that the common stock equity money could be obtained from investors on approximately an 11% to 12% basis. Taking into consideration the expenses of issuance, the (p. 2278) cost to the company of the equity portion would be at least a 13% basis.

On the basis of a capitalization of 50% bonds at 3%, and 50% common at 13%, the resulting cost of money would be 8%, and accordingly it was his opinion that the rate of return on the fair value of the property necessary to attract investors to put up the necessary funds is 8% (p. 2279).

Herbert S. Sands, a witness for the respondent, testified on rate of return (Exhibit 92, Vol. XIX, p. 2653).

He is a graduate of the University of Colorado, with a degree of Electrical Engineer. He entered the student course of the Edison General Electric Company at Schenectady, New York, in 1889, and completed the course in 1893. He became erecting engineer for the company, and later superintendent of construction, 1894 to 1898.

He was construction engineer and superintendent of the Colorado Springs and Cripple Creek District Railway (p. 2653), 1898 to 1899.

Was superintendent of construction and later superintendent of operation of the La Bella Water and Power Company at Goldfield, Colorado, 1899 to 1901.

He was construction engineer and superintendent of the Seaton Mountain Light, Heat and Power Company at Idaho Springs, Colorado, 1901 to 1905.

Later he was manager of the industrial division of the intermountain territory of the Westinghouse Electric and Manufacturing Company, in connection with which he had charge of industrial engineering, which involved consulting on most of the large industrial developments of the intermountain region (p. 2654).

Has been an independent consulting engineer since 1927, involving rate analysis and design of electric rates for the Home Gas and Electric Company at Greeley, Colorado; Glenwood Springs, Colorado; municipal plant at Oak Creek, Colorado; Arvada Electric (p. 2655) Company, Arvada, Colorado; Colorado Central Power Company at Englewood, Colorado; gas rates for the Cheyenne Light, Heat and Power Company, electric rates at Fort Collins, and gas, electric and water rates for the City of Denver.

He has been engaged in the inventory and appraisal of utilities and industrial plants, including the Public Service Company of Colorado, Glenwood Light and Water Company, Colorado Central Power Company, Colorado Utilities Corporation, Home Gas and Electric Company, Arvada Electric Company, Mountain Utilities Corporation (p. 1656), Western Public Service Company, Central Power Company, Redlands Irrigation and Power Company.

He has also been engineering advisor to the legal staff of the Nebraska Power Company, Western Public Service Company, Nebraska-Iowa Power Company, Central Power Company, and Northwestern Public Service Company.

He has acted as officer of the Federal District Court in the appraisal of the property of the Colorado Fuel and Iron Corporation in reorganization.

He has made an appraisal of the Colorado & Wyoming Railway, and has been consulting electrical engineer for the four upper basin states of the Colorado River, and engineering advisor for the seven railroads in Colorado.

He has been chairman of the State Board of Engineer Examiners of Colorado.

He is registered as an Electrical Engineer in the state of Colorado.

He is a member of the American Institute of Electrical Engineers, and was Vice President 1923-24 (p. 2658).

In considering the rate of return for Colorado Interstate he gave consideration to the territory to be served, describing in some detail the property of Colorado Interstate, the principal cities and their growth of population, and the industries, showing that the entire area is progressing and developing, and that the load is diversified (pp. 2659-62).

He considered the fact that the natural gas industry is an extractive industry, and that the supply is continually being depleted, and that the integrity of the investment is entirely dependent upon the estimate of geologists. He took into consideration the fact that an adequte supply of gas had been available for twelve years, and from all indications the supply is still adequate (p. 2663). He considered the fact that in addition to Canadian River there were five additional gas companies taking gas from the Amarillo Field in considerable quantities, and there is a possible hazard of other companies adding to the depletion of the field (p. 2664).

He considered the fact that regulation necessitates changes in methods and is attended by expense of hearings, and in the case of increased operating expenses and decreasing earnings the company can resort to the Commission for adjustment. Nevertheless, there is always a lag between the ascending price of commodities, labor and taxes, and the relief afforded.

He considered the fact that 21% of the total gas sold is sold under contracts expiring in 1943, 49% in 1946, and 28% in 1948; also, that increased demands on the pipe line will increase the operating expenses of the compressor stations. Taxes have increased from 1.38 cents per Mcf. in 1930 to 2.10 cents in 1939 (p. 2666).

The Colorado Interstate has no control over the market which is served through resale companies, and must rely on the vigilance and aggressiveness of the respective purchasers for resale.

He also took into consideration competition in the matter of supply, the risk of other gas fields being discovered closer

to Denver, and the possibility of bringing gas from the Hugoton field in Kansas; and also the competition of other fuels (p. 2667).

He considered also the pipe line hazards due to outages resulting from various causes, which he described in considerable detail (pp. 2668-71).

He considered the fact that the management was of the highest order (p. 2672).

His final conclusion, taking all of these matters into consideration, was, that 8½% would be a fair return (p. 2673).

Arthur H. Bosworth, a witness for the respondent, testified on rate of return (Exhibit 93, Vol. XX, p. 2766).

He graduated from Yale in 1908 in mechanical engineering, and entered the employ of William E. Sweet & Company, investment dealers in Denver. For the first three years his duties were primarily in purchasing, and in that connection he traveled throughout the states of Colorado, Wyoming, Idaho, Montana, Utah, New Mexico and Arizona.

In 1914, the firm of Sweet, Causey, Foster & Company (p. 2766) was merged with another local investment house under the name of Sweet Causey, Foster & Company, and he became Vice President.

At the end of 1916 he founded the present firm of Bosworth, Chanute, Loughridge & Company.

He is a Director, Vice President and member of the Executive Committee of The Denver Union Stock Yard Company, a Director of Daniels & Fisher Stores Company and The Denver Fire Clay Company (p. 2767), and Chairman of the Board of North Oklahoma Gas Company (p. 2767).

He was formerly a Director of the First National Bank of Denver, prior to the passage of the Federal law prohibiting an investment banker from being a director in a National Bank.

His own firm specializes in handling municipal bonds and local securities, and participates either as underwriters or selling group members in a great many national issues (p. 2768). His firm has been interested in natural gas securi-

ties for a number of years. In 1935 they, with associates, organized the Northern Oklahoma Gas Company, serving Ponca City and nearby points. In 1936 his firm was a member of the purchasing group which acquired the captal stock of the Oklahoma Natural Gas Company, and have distributed to their customers the bonds, convertible preferred stock and common stock of that company, and have dealt in the bonds and common stock of El Paso Natural Gas Company, the Mountain Fuel Supply Company and the Lone Star Gas Company common stock, and distributed a block of stock of the Interstate Natural Gas Company.

In 1930, and again in 1935, he testified as a witness on rate of return for the Denver Union Stock Yard Company (p. 2769).

In his study of the subject of rate of return he secured statistics and information from the company and examined reports of the Public Service Company at the office of the Colorado Public Utilities Commission, and talked with officials of the company. He gave consideration to the specific customers of the company, which he listed (p. 2770), and considered the possibility of competition by the discovery of gas fields much closer to the consuming markets, and he also considered the franchise situation in Colorado and the attitude of investors toward natural gas securities (p. 2771).

Electric companies, manufactured gas companies and water companies expect to remain in business almost in perpetuity. The life of a natural gas utility depends upon the life of the supply, which is the greatest hazard any natural gas pipe line company has. It is an extractive industry, comparable to an oil industry or mining industry (p. 2772). A gas company has to sell its heating units, and these same heating units can be obtained from electricity, coal or oil. That is one reason why the investor does not consider the gas industry as safe as other classes of utilities mentioned. A natural gas company usually sells a substantial part of its output to industrial consumers, and fluctuations in business affect the earnings of a natural gas company to a greater extent than is experienced by other public utilities. Therefore, the investor, at the same rate of interest, would prefer to invest in the securities of other public utilities.

Evidence that the investor believes that the securities of natural gas companies have more inherent risk than those of other public utilities is found in the fact that certain states having laws regulating the investments of savings banks discriminate to some extent against natural gas issues (p. 2773), including Connecticut, Pennsylvania, Maine and Massachusetts.

Then follows a somewhat detailed description of the company and its business (pp. 2774-76), showing generally the growth of the business.

He then referred to a rule announced in the Bluefield Case (p. 2777).

He thought it a fact that investments in this part of the country usually carry a somewhat higher return than is the case in the East or Middle West.

Since it is impossible to find other businesses which have the same risks as this company, he thought the investors' appraisal of what the rate of return should be, should be considered (p. 2778).

He listed in Schedule 1 a brief description of nine natural gas companies whose securities have a fairly active market. They are:

El Paso Natural Gas Company

Interstate Natural Gas Company

Lone Star Gas Company

Memphis Natural Gas Company

Mountain Fuel Supply Company

National Fuel Gas Company

Oklahoma Natural Gas Company

Panhandle Eastern Pipe Line Company

Southern Natural Gas Company

In each case the capitalization of the companies is shown, the recent earnings per share of common stock, and market quotations. The dividends per share paid during the past year were shown, and the percentage of earnings per share

to the market price, and a brief description of the business of each company.

It is significant that if the percentage of earnings per share on the market price of the stock is taken in each case and averaged, the resulting figure is 12.21%, from which it appears that the investor expects to buy natural gas common stock on a liberal earning basis.

He said that the rate of return should be a single rate applicable to the value of the (p. 2779) entire property, leaving the disposition of the income derived to the judgment and convenience of its owners.

He then showed the earnings price ratios of a number of speculative or highly profitable ventures, mostly mining companies, as ranging from 13.3% to as high as 341.2% (pp. 2781-83).

He next referred to earnings price ratios of stocks in the so-called Standard Oil group, ranging from 9.12% to 14.66%.

He next listed a number of other oil companies showing earnings price ratios of stock ranging from 8.15% to as high as 20.67% (pp. 2784-85).

He then listed a number of speculative stocks also showing earning price ratios ranging from 10.30% to as high as 30.28% (pp. 2786-87).

He then gave his opinion, based upon a consideration of all of the factors touched upon, that a reasonable rate of return for the Colorado Interstate is 8% (p. 2888).

Charles W. Knapp, Jr., a witness for the Commission, testified on rate of return (Exhibits 225 and 225-A, Vol. LXXIV, p. 10799).

He is a principal Examiner of Accounts for the Federal Power Commission, and is employed by the Division of Finance and Statistics (p. 10794).

He graduated from the University of Vermont in 1931 with the degree of Bachelor of Arts. Following his graduation he studied accounting and became a certified public accountant in 1934 in the state of New York. He had previously, prior to 1931, held various positions as bookkeeper and junior accountant.

In the fall of 1935 he was employed as an accounting expert by the Federal Communications Commission in its investigation of the American Telephone and Telegraph Company (p. 10796), and while with the Commission made an analysis of the principles and methods of consolidation employed in preparation of the published financial statements of the Bell System, and also prepared historical analyses and reports on investments of the A. T. and T. Company and its operating subsidiaries, and collaborated in the preparation of the financial history of the Western Electric Company.

In June, 1937, he was again employed by an accounting firm, and was in charge of the annual audit of the United Aircraft Corporation.

In April, 1938, he resigned to engage in private business as a public accountant, and in December of that year accepted his present position with the Commission (p. 10797). He has been engaged in studies and in the preparation of exhibits on the subject of rate of return, and has testified as a witness for the Commission on this subject in five rate proceedings, all electric companies except Natural Gas Pipe Line Company of America and New York State Natural Gas Corporation (p. 10798).

His written statement, beginning on page 10800, explanatory of the exhibits, is quite lengthy, as the exhibits themselves are very lengthy.

He testified that after the completion of these exhibits he learned of the refunding operations of the Panhandle Eastern Pipeline Company during the month of January, 1941. There was a public offering through an underwriting group of $12,000,000 principal amount of 3% Series B first mortgage bonds. These bonds carried only A rating, and were offered to the public at 102⅞ of principal amount to yield 2.87% to purchasers (Vol. LXXXIII, p. 12301).

In conjunction with the public offering of Series B bonds, the company sold privately $6,250,000 principal amount of Series A bonds to four banks and insurance companies. Series A bonds mature serially in equal annual installments on November 1, 1946 to 1950 inclusive, with interest rates ranging from 1.65% to 2.30%, according to maturity.

At the same time the company arranged for the private sale of $5,000,000 face amount of Series notes due in four equal installments on November 1, 1942 to 1945 inclusive, with interest rates ranging from .75% to 1.50% according to maturity.

It was reported that the proceeds of the three issues were to be applied to the reduction of the company's outstanding first mortgage bonds in the amount of $22,300,000. These were 4% bonds due March 1, 1952 (p. 12302).

The cost to the company on the first bond issue was 3.07% (p. 12303).

The first case he testified in was the Safe Harbor Case, in which he used the same general headings as in this case, and the treatment in Part 1 of Exhibit 225 was generally the same as in this case. The same is true of the other electric cases in which he testified (p. 12306).

In the two natural gas cases the material was generally the same as in this case.

Part 1 of Exhibit 225 he would use in any case, whether electric or gas, before the Federal Power Commission. It consists of what may be said to be background material (p. 12307).

In presenting his studies he did not express an opinion as to what the rate of return should be. He was not instructed to recommend a specific rate of return, but merely to prepare a study which contains the facts and factors which should be considered, and in that work he had a free hand (p. 12308). The principles governing the assembly of information are essentially those laid down in the Bluefield Case (p. 12309).

The purpose of Exhibit 225 was to give a general picture of what the money market is, and what investment opportunities are generally.

Chart 1 and supporting Schedule 1 was derived from Moody's Investors Service (p. 12310). The bonds in that schedule are given a rating of Aaa.

There is no company that is engaged solely in the gas business, either manufactured or mixed. The same is true of the bonds with AA rating (p. 12311), and on the succeeding page

bonds rated as Baa, except for Peoples Gas, Light and Coke Company, a company that distributes mixed gas in Chicago, and which is one of the largest distributing companies in the country.

Moody's, in selecting for their investors service these groups of bonds of the four ratings, only included the one company that receives its revenues only from the sale of gas, and that happens to be the lowest rating of these groups (p. 12312).

The electric industry is the only industry which in rate of growth and future prospect and national importance is in any way comparable to the natural gas industry. He gave consideration to the fact that the natural gas industry is based upon extracting a diminishing asset or an exhaustible asset, and that the electric company does not have that limitation. Notwithstanding the difference, he thought there was a better comparison than with the gas company that buys its gas from one of the pipe line companies (p. 12314).

The only way a company like the Colorado Interstate can grow is for the gas distributing companies to grow (p. 12315).

The growth of Colorado Interstate's business is largely dependent on what the Public Service Company of Colorado does with its gas distribution business, rather than what it does with its electric distributing business (p. 12316).

Chart 1 was not put out for the purpose of indicating it has any direct bearing on what the rate of (p. 12317) return should be.

The yields on Treasury bonds, the same as short term commercial paper, have no direct bearing on what the rate of return shall be (p. 12318).

In Chart 4 is shown the bonds of forty public utilities, and here again the only company that is exclusively in the gas business is the Peoples Gas, Light and Coke Company. The purpose of the Chart is to show the trend of interest on bonds of that character (p. 12321).

Chart 5 shows yields on forty utilities, forty industrials and forty railroads. He was not putting this chart and the schedules in to indicate that these companies or all of them

have the same corresponding risks and uncertainties as Colorado Interstate, but he gives investment opportunities on that type of bonds and shows the trend of interest rates and the investors appraisal of the yield (p. 12322).

The list of companies in Schedule 7 and 7-A relate to yields on outstanding preferred stocks of electric operating utilities, and these were selected by him on the basis of preferred dividends being earned one and one-half times in 1938, and for which market quotations in each year could be obtained during the period 1929 to 1939 (p. 12325).

The common stock shown in Schedule A relates to a different group of companies. They are the ones that had common stock outstanding, with respect to which he could get information (p. 12326).

In terms of an unweighted arithmetic average, the earnings price ratio for the group of fourteen common stocks was 4.06% in 1929, and increased in the three succeeding years to 4.59% in 1930, 5.95% in 1931 and 7.74% in 1932. This abated somewhat from 1933 to 1939, ranging from 7.02% in 1933, 7.57% in 1934, 7.32% in 1935, 5.89% in 1936, and advancing again in 1937 and 1938 to 6.77% and 7.42% respectively, and in 1939 declined again to 7.04% (p. 12328).

The yields which investors have demanded on common stock have not been parallel with the yields which they demand on bonds (p. 12329).

In his chart on Schedule 8, the purpose of showing the average was not to indicate that the average had significance as representing the best investment situation, but merely to disclose the trend for common stocks for which earnings price ratios were available (p. 12331). If he were going to finance any electric utility he would have to take into consideration what the demands of the investors were for yields on common stock, and there are a lot of new issues where the yields run 8% and more in the last few years (p. 12332).

He did not contend that you can consider a rate of return without considering cost of equity capital. He thought the only investment consideration that should be considered

with respect to Colorado Interstate is the best investment situation (p. 12333).

As shown on Schedule 6, the weighted average of bond yields of public utility companies, and as shown on Schedule 8, the average yield for common stocks for the years indicated, are as follows:

For 1929, bonds 5.37; stocks 4.06; total 9.43;

For 1930, bonds 5.11; stocks 4.59; total 9.70;

For 1931, bonds 4.65; stocks 5.95; total 10.60;

For 1932, bonds 5.66, stocks 7.74; total 13.40;

For 1933, bonds 4.95; stocks 7.02; total 11.97;

For 1934, bonds 4.81; stocks 7.57; total 12.38;

For 1935, bonds 3.92; stocks 7.32; total 11.24;

For 1936, bonds 3.56; stocks 5.89; total 9.45;

For 1937, bonds 3.56; stocks 6.77; total 10.33;

For 1938, bonds 3.49; stocks 7.42; total 10.91;

For 1939, bonds 3.45; stocks 7.04; total 10.49.

(pp. 12336-37)

Schedules 9, 10 and 10-A do not list companies that are engaged solely in the gas business (p. 12341). The same is true of Schedules 10-B, 11 and 11-A.

That portion of this exhibit relating to economic conditions was merely background material (p. 12344).

Exhibit 225-A shows a considerable increase in customers of natural gas companies from 1929 to 1939 (p. 12362).

About 1926 was when the first long distance pipe line was constructed (p. 12363).

In the next exhibit, Schedule No. 2 shows the dollars reflecting the additional sales which these pipe lines have made to industrial customers and new groups where no gas had been distributed before.

"Q. So we have during that last decade a condition in the natural gas industry of growth that was based

on different facts than growth that might have taken place in the electric industry in that same period?

"A. Well, I don't know just what—

"Q. I mean this: In 1930 practically all of the communities (consumers) that resided in the United States did have electric service and the growth that took place in that period would be increased consumption by the people who lived there or by the industries there rather than the installation of electric service in the areas where there had been no such previous service?

"A. Well, except for the increase in rural sales, that might be so.

"Q. But there is a different situation of natural gas where large cities such as Denver, Detroit and others that (p. 12364) formerly had distributed manufactured gas, then changed over to natural gas, and that would bring a large group of customers in in a short period of time for the total number of customers being served with natural gas?

"A. That is right."

With respect to Chart 3 in Exhibit 225-A he did not include in the curve any industrial sales (p. 12365).

"Q. It is the change over to natural gas that increases the volume. On that same chart you show transported in interstate commerce three times as much gas in 1939 as in 1926, do you not?

"A. That is correct.

"Q. That indicates long distance transportation?

"A. That is right.

"Q. And again you go from 23 states where gas was consumed in 1926 to 35 states in 1939. That again indicates, does it not, a tremendous area where natural gas was never served before and is now being served?

"A. That is correct." (p. 12369).

Starting with 1937, the average approximate yields to maturity of the bonds issues shown in Schedule No. 5-A are as follows:

For 1937, 4%; (p. 12370)

For 1938, 5.26%;

For 1939, 4.81%;

For 1940, 4.89%;

For the four years the arithmetic average is 5.05%.

On Schedule No. 6, relating to bonds of natural gas companies sold during the period January 1, 1935, to October 15, 1940, the prices at the time of issuance as distinguished from the market prices shown on Schedule 5-A, average 3.57%. That is the weighted average (p. 12371). The arithmetic average is 4.34%.

Taking the issues, the cost to the company or the difference between the per cent cost to the company and the per cent yield to the purchaser is on the average, about .31 (p. 12372).

With respect to Schedule 5-E, the average of the earnings price ratio of the common stock issues is:

For 1937, 13.44%;

For 1938, 12.69%;

For 1939, 12.59%;

For 1940, 13.74%; (p. 12374)

The average for the four year period being 13.12%.

Further Testimony of the Company's Witness, Paul B. Coffman.

Q. You don't know about the bond issue recently, refunding issue of the Public Service of Colorado?

A. No, I don't.

Q. It didn't occur to you that you should check into that company?

A. As I say, I confined my attention solely in this study to those companies upon which we reported and upon which we could find market quotations.

Q. Let's take the next one, the Northern Oklahoma Gas Company. Before you go there, I'll ask you this: Did you know that when you started to making this study, did you take into consideration at all the capital structure of the Canadian River and Colorado Interstate Gas Companies?

A. No. There again I did not see that that had anything to do with this study. I was making an objective study of the investors' appraisal of the risks of capital. I wasn't studying the particular company.

(Vol. XV, p. 2163.)

Q. All right, now, take this Southern California Edison Company, Ltd., and give us what your bond rating of that company is.

A. Well, the capitalization of the Southern California Edison Company, Ltd. as refunding mortgage bonds, series of 3-3¼, due May 1, 1967, $3,000,000 outstanding, rating A-1.

Q. A-1?

A. A-1.

Q. That's about the highest, isn't it?

A. A-1 plus is the highest. A-1 is next. That's very high rating.

(Continuing) Series B, 3-3¼, due July 1, 1960, 35,000,000 outstanding, also rated A-1, and there is a series of 3-1¼'s due September 1, 1964, 30,000,000, also A-1.

There is Pacific Light & Power Company first mortgage 5's, due July 1, 1942, 4,134,000 outstanding, and that's A-1 plus.

Q. That's about A-1 plus. Now, just exactly what is that?

A. That is our highest rating. In other words, all bonds in the rating class of A, A-1, or A-1 plus, are considered sound investment bonds and the A-1 and the 1-plus, merely indicate the degree of additional coverage or what we call security principal and interest behind the bond.

Q. Let's see, now, let's take this Consolidated Electric Light & Power of Baltimore here—by the way, I'll ask you this: Do you know what sort of business that company is engaged in—Consolidated Electric Light & Power Company of Baltimore?

A. Yes, supplying gas to Baltimore and vicinity.

Q. That is a holding company, isn't it?

A. Well, according to the definition I have already given, it is predominately an operating company because

it is in the service itself rendering the gas service to the community. Actually it supplies electricity and gas without competition to the City of Baltimore and surrounding territory, wholly within Maryland, under franchise unlimited except as to a minor amount of gas business. It also furnishes steam to the central business district of Baltimore.

Q. You are familiar with this Pennsylvania Water and Power Company, aren't you?

A. Well, that company together with the Pennsylvania Power and Safe Harbor Power and Potomac, has a contract with the Pennsylvania Railroad. I am aware of those things, under which power is to be supplied.

Q. You don't know whether the consolidated is holding stock in those two named companies or not—Pennsylvania Company or the Safe Harbor?

A. Well, let's see. The company owns the entire capital stock of the Maryland Counties Gas Company, and a two-thirds stock interest in the Safe Harbor Water and Power, and the remaining stock interest being held by the Pennsylvania Water and Power Company.

The company also owns 25,300 shares of six per cent outstanding common stock of the Pennsylvania Water and Power Company.

Q. What is the rating for the bonds there?

A. Well, the ratings of the bonds in the Consolidated Electric Light, Gas & Power Company of Baltimore in the first refunding mortgage sinking fund bonds, Series M, 3-1/2's due July 1, 1965, 6,466,000 outstanding. It's A-1 plus. As a matter of fact, all of the series under that first refunding mortgage are A-1 plus. There is Series M, N, O, and P, and I know it has assumed certain obligations of Consolidated Gas Company of Baltimore.

City generals, mortgage, 4-1/2's, due April 1, 1954, 6,100,000, those are A-1 plus. In other words, all the bonds outstanding are A-1 plus.

Q. How did it so accidentally happen that when you came to electric utilities you pick out A-1 pluses and when you came to gas utilities you just had one A in the group?

A. Well, that statement, of course, is not true. The listing that I have already described, and it just so hap-

pens that investors generally rate operating electric utility companies on a different basis than they do gas companies and the classification that I have been using is the one which I have already defined as to the elimination process.

Q. You mean gas companies whose stock is held widely by the public when you make that statement?

A. That's correct. It is analyzed.

Q. You haven't made any comparison of gas companies such as Canadian River and Colorado Interstate and Natural Gas Pipeline Company of America with these very profitable electric utilities?

A. Well, I haven't made any comparison of any companies upon which I couldn't get market quotations and have earning statements available to know what the company was doing.

(Vol. XV, pp. 2170-2173.)

Q. Do you know of a company by the name of the Panhandle Eastern Pipe Line Company?

A. Yes; I do.

Q. You didn't include that one in your list, did you?

A. No, I did not.

Q. Do you know the extent of the physical properties of that company?

A. Yes, I am aware of those.

Q. And have you Poor's statement on that?

A. Yes. What figure do you want, the plant and property again?

Q. Yes.

A. As of December 31, 1939 the property, plant and equipment totaled $59,479,728.

Q. Does it give the mileage of main pipe line?

A. It has approximately, as of December 31, 1939, 860 miles.

Q. What states does it operate in?

A. Well, the company operates the natural gas transmission system from the Amarillo gas field in the Texas Panhandle, and in Oklahoma, Kansas and Illinois, and to a point near Dana, Indiana, which is adjacent to the Indiana-Illinois state line.

Q. At that point it delivers its gas for ultimate delivery in Detroit, Michigan?

A. Yes.

Q. Does that indicate or give a figure as to the volume of gas sold or transported during any calendar or fiscal year?

A. I have it in dollars, the gas sales, in dollars.

Q. All right.

A. For the year ending December 31, 1939, the gas sales totaled $11,461,388.

Q. It doesn't give it in Mef.?

A. The total open flow connected in terms of Mef. for the year ending December 31, 1939, was 4,021,000.

Q. That company is engaged solely in the natural gas operations, is it?

A. Yes, sir.

Mr. Dougherty: Excuse me. You said "connected load," or did you say that it was the sale? Is that what they have connected to the well?

The Witness: This sentence says: "The total open flow connected in terms of Mef."

Mr. Dougherty: That is the well. What Mr. Lange wants is the output of the pipe line.

Mr. Lange: Yes.

The Witness: Gas sales in Mef. amounted to 47,850,723.

Mr. Dougherty: Mef.?

The Witness: Mef.

By Mr. Lange:

Q. That is a sizeable company in the industry, isn't it?

A. Yes, it is a sizeable company in the industry.

Q. What do you have these on their bonds?

A. Well, the funded debt has some Texas Interstate Pipe Line Company leasehold purchase obligations—they are outstanding in the amount of $41,000; the Panhandle Eastern Pipe Line first mortgages and first lien bonds, Series A, 4 per cent, due 1952; rating A; outstanding, $22,500,000.

The Trial Examiner: Is that your rating, Mr. Coffman, or is that Poor's?

The Witness: This is Poor's.

By Mr. Lange:

Q. You haven't any rating on them?

A. We have a rating on it, but since it was excluded from our list I don't have our sheet, but again the ratings would be about the same.

Q. Now, then, how did the size of that company compare, for instance, with the El Paso Natural Gas Company that you have in your list?

A. Well, the El Paso Natural Gas Company for June 30, 1940, had property, plant and equipment of $22,266,832, and the Panhandle Eastern Pipe Line Company had for December 31, 1939, property, plant and equipment of $59,479,728—a little less than half.

Q. You don't have in your list the Northern Natural Gas Company, do you?

A. No.

Q. Will you look at Poor's on that company and give us the size of the physical properties—the extent of the physical properties?

A. Northern Natural Gas Company as of December 31, 1939, had plant, property and equipment, and so forth, of $49,631,451.

Q. What states does that company operate in?

A. Well, it operates natural gas transmission lines extending from the Texas Panhandle and the Hugoton-Kansas gas field to South Dakota and Minnesota.

Q. Give the mileage of main lines.

A. The mileage is approximately 2730 miles with the company and its subsidiary.

Q. The volume of its gas sales in the last year?

A. No, sir, that figure isn't given.

Q. Is it given in dollars?

A. The only figures given in dollars are gross earnings from operations and as of December 31, 1939 that was $11,194,470.

Q. What is given on the company's outstanding bonds?

A. Well, it has common stock outstanding of 203,000 shares, and that is owned 30 per cent by Lone Star Gas Corporation, 35 per cent by North American Light & Power, and 35 per cent by United Light & Railways Company. It

has $16,000,000 of first mortgage and first lien bonds, Series A, 3-1/4's of 1954 outstanding; Poor's rating, A. That comprises the capital structure.

Q. Now, that company is engaged solely in natural gas operations?

A. Yes, that is correct.

Q. And you don't think that the inclusion of that company or a company of that size, any of the physical properties in operation, is essential to get a correct picture of the industry?

A. Well, there again I couldn't get the investors' appraisal of the securities because they weren't in this period being transacted over the counter so you could get some idea of the investors' appraisal of what the shares or bonds were worth.

Q. You did state, however, that your company has a rating on all of those companies; that is, the United Gas Pipe Line, and Northern Natural, and Panhandle Eastern?

A. I don't believe I said quite that. If bonds are held exclusively by a given company so that there is no general investment in it, we don't rate the bond because there is no purpose in it.

Q. Poor's rates all of those, doesn't it?

A. Poor's has ratings on these.

Q. And where do they get their information?

A. Well, they get the same information we get.

Q. But they include them in their ratings?

A. Well, they give a rating on the issues of which I have discussed.

Q. What does Poor's attempt to reflect? What is the purpose of the use of Poor's in the industry?

A. Well, they are supplying information to investors the same as we are, and wherever there is any general investment interest in a security they supply the same information that we do.

Q. Well, isn't the broader the gauge the better the information—the more accurate?

A. Well, I still come back to the statement I made again that if the great bulk of the capital structure of any company isn't traded upon so that you can find either an actual quotation for transactions or at least a bid and ask

quotation, I don't know how you can appraise the investors' attitude toward the risk involved.

Q. Oh, does Poor's list bonds of Canadian River Gas Company and Colorado Interstate Gas Company? Let's have the rating on that.

A. I don't find anything here on Canadian River, and there is nothing on Colorado Interstate directly. There is nothing on either one of those companies.

Q. Nothing on either Canadian River or Colorado Interstate?

A. Not as such.

Q. Doesn't Poor's list them at all?

A. The only reference made to Colorado Interstate is referred to only in connection with the Peoples Gas, Light & Coke Company. There is nothing on it directly.

Q. How is it referred to indirectly?

A. Well, the only reference that I can find is merely a description here of certain contractual relationships in regard to gas supply.

Q. Contractual relationships?

A. Yes. It says: "On October 15, 1931, also, Natural Gas Pipeline Company of America entered into a contract with Colorado Interstate Gas Company (in which company the "Peoples" Company has no interest but which, it understands, is owned or controlled by certain other stockholders of Natural Gas Pipeline Company of America) for the purchase, at Gray, Oklahoma, of 25 percent of its requirements for natural gas. Said contract continued in effect until September 30, 1946, and thereafter at the election of Natural Gas Pipeline Company of America for additional periods of two years each. The "Peoples" Company understands that Colorado Interstate Gas Company purchases its entire supply of natural gas under a long term contract from Canadian River Gas Company (in which company the "Peoples" Company has no interest), which, the company is informed, owns leaseholds covering substantial natural gas acreage in the Texas Panhandle gas field."

Q. And as far as you can find, is that all that Poor's has on it?

A. That seems to be the only reference that I can find in here to Colorado Interstate.

Mr. Lange: Well, that's all right, then. I believe that's all for the present, Mr. Examiner.

The Trial Examiner: Mr. Coffman, you used the term here, "investors' appraisal of risks of capital." Now, as a matter of fact, through the application of your formula to the specific companies named in Exhibit 73, doesn't the result merely indicate that the securities of the electric utilities therein named were more favorably received on the average than the natural gas utilities securities named therein?

The Witness: I think that is one way of stating it. I think yesterday that I described it as saying that for the summary on Page 21 which gives them all to you in one view, that the conclusion is that investors, based upon this information I have presented, believe that there is less risk connected with electric utility operating companies or water companies who manufacture gas and mixed gas, than they do believe there is risk connected with the all natural gas companies.

Now, I presume that they look with more favor upon it is equally as good a way to explain it. In terms of risk, however, it seems to me it indicates they feel less risk attached to electrical utility operating companies than they feel there is risk attached to natural gas companies.

The Trial Examiner: Well, now, one further question: Supposing that, we'll say that Colorado Interstate, for instance, there is some holder of a large block of stock in that company that desires to place that stock upon the market and sell it to the public and supposing a prospective purchaser contacts you seeking whatever information you had, we'll say, with regard to this particular purchase, and supposing that at the same time another offer of securities was made, we'll say, by the Boston Edison Company. Would you advise the prospective purchaser of the securities of the Colorado Interstate Gas Company that that purchase involved a risk of approximately 3.75 per cent greater than the purchase of the securities of the Boston Edison Company?

The Witness: Well, I think our first approach would be to that problem that we would consider information such as given here. It gives some idea to either the purchaser or the seller as to what the general appraisal seems to be at the present.

Now, in the case of the Colorado Interstate, we would consider, for instance, the question of marketability on the one hand and in contrast to Boston Edison as a separate consideration. We would also consider the fact that to date we, and we believe, investors generally have had no information on Colorado Interstate; whereas, we have had what we consider to be reasonably good information in regard to Boston Edison and it would be a question in looking over all of these risks of apprizing the investor of what we thought the thing was worth if we had more information to go on. If we didn't have any more information in regard to Colorado Interstate under the circumstances you mention than we do right now, all we could hope to do would be to present some general information of this kind and then let the prospective buyer form his own opinion. As a matter of fact, in the case of the Colorado Interstate, if we had no balance sheet and operating statements, we wouldn't advise the man what we thought about the price at all because we have nothing to go on except this general information here which shows the general class of yield at the time.

The Trial Examiner: But that is all that you could submit to him, would be general information? You couldn't on the basis of your formula here, you couldn't get down to the specific risk involved in the purchase of securities in Colorado Interstate Gas Company?

The Witness: Well, we could approach it on the basis that we have this general information; that is, how in the general utility field on the whole one class of security seems to sell in comparison to another. We feel that would be helpful to a prospective buyer.

If his question to us is: "What should I pay for Colorado Interstate common stock?" let us say, we would have to say just what I have said in this hearing, that we have no financial and operating information in regard to that company. Therefore, we couldn't pass an opinion on that phase of the question.

Mr. Lange: Just one further question.

Q. Isn't it true, Mr. Coffman, that an investor when

he desires an appraisal of securities he wants the appraisal of any particular company, not of a lump group?

A. I would say that was not correct. When we make an analysis in our business of companies we first start with as thorough an analysis as we can make of the industry to see what actually is happening in that particular type of activity—industrial activity, and then from that we come down to individual companies, and I think we are giving that full weight right along the line on all the companies, regardless of whether utility, industrial, or what it is.

Q. But in the instance as cited by the Examiner, you wouldn't be able to give them anything on Colorado Interstate or Canadian River?

A. Not on the individual company because we do not have financial or operating statements on those companies.

Q. Well, what information do you give investors with reference to individual classes of stock as between common and preferred, for instance, of a company?

A. Well, I am not sure I get your question. We present in our service, of course, the balance sheet as it is reported in the annual report which shows the breakdown of the capital structure as to commons, preferreds, and bonds.

Q. Your appraisals to investors are not as to individual classes of stock?

A. Well, in our earnings bulletin, as I have pointed out, we group them according to class so that a man can look across the board.

(Vol. XVI, pp. 2193-2204.)

* * * * *

Q. Can you get the appraisal of a risk of a particular company if you only have, say, bonds as a part of your study and have no information on what prices have been paid for other securities of the company?

A. No, unless we could get quotations on the capital structure as a whole so that we could see what we term the indicated market value of that capital was, we couldn't get the appraisal of the investor.

Q. Is it necessary, then, in order to get the general picture, and an accurate picture of the investors' appraisal of any particular company that you have this information on all securities that that company has outstanding?

A. Yes, it is.

Q. Is that the reason why you didn't include gas companies such as Northern Natural, Panhandle Eastern, and United Gas Pipe Line Company?

A. It is.

Q. If the other securities; that is, if the securities of those companies other than bonds had been bought and sold during this period in such a manner as to give you a record of what the sales were, would you have included them?

A. If we would have had sufficient information we would have included them.

Q. You were asked a question the other day—or yesterday—about Public Service Company of Colorado, as to why you did not include that. Can you tell us why, referring to whatever information you need from Poor's manual?

A. Well, the Public Service Company of Colorado is a subsidiary of the Cities Service, Power & Light; and it has a total funded debt outstanding, December 31, 1939, of $52,500,000. Further, the income account—the consolidated income account, ended December 31, 1939, showed that electrical revenues were $11,797,769; whereas, the gas revenues were $5,510,878, so that it wasn't a natural gas company and fit into the division of which we were discussing the natural gas company group.

Q. Does that Manual show the ownership of the common stock of Public Service Company of Colorado?

A. The common stock, $100 par, was outstanding in the amount of 229,900 shares. Cities Service Power and Light Company owns 229,879 shares, or 99.99 per cent. It also owns 31,235 shares of the 7 per cent preferred; 7644 shares of the 6 per cent preferred, and 1356 shares of the 5 per cent preferred.

Q. In the absence of any sales of common stock of that company, could you form an opinion as to the investors' appraisal of the risk of capital in that particular company?

A. Well, no, we couldn't, because the common stock in that particular case was a very important section of the capital of the company as a whole.

(Vol. XVI, pp. 2209-2211.)

Further Testimony of the Company's Witness Gilman.

Q. What do you understand is the thing that is referred to as the spread of the underwriters or the amount which the underwriters obtain for selling these securities—take bonds, for example?

A. The cost of financing a particular class of securities is composed of two items; one, the fee or the commission which the underwriter gets for his work in selling the issue to the public, and the second part, the cost which is necessarily incurred by the company for its counsel for its cost, perhaps, of obtaining the approval of the registrary authorities; for printing of its prospectus, for its accountant—the *sume* of the two go to make up the total cost of financing.

In the normal case the public utility companies, of which a good many millions of dollars of bonds for refunding have been sold in the last five years, two per cent of two points is by and large the standard fee which is required by underwriters for their services in distributing the securities in sizeable blocks for companies with a good credit rating.

Q. That, as I understand it, is prescribable to bond issues?

A. Bond issues. In addition to that, in connection with the issuance of bonds, there would be the expenses of the company, which I have just described, such as for accountant fees, legal bills, and things of that kind which vary anywhere from one-half of a per cent up to as high as one per cent or higher. So the measure of the cost of issuance of bonds, including the underwriting spread and the expenses of the company, would vary from two and a half to perhaps three per cent. I think two and a half would be a minimum figure.

Q. I notice that you say in your statement that very few preferred stocks or common stocks of utilities have been issued in the last several years. Has there come under your observation, either while you were with the Securities and Exchange Commission or since, any issue of preferred or common stock of public utilities which did cost the companies more for those who sold the stock?

A. There have been a few issues of preferred stocks of public utility operating companies, primarily electrical companies. Generally speaking, they have been issues which

have been of a lower dividend rate and have been put out by electric companies to replace an outstanding issue of preferred stock that had a higher dividend rate of six or seven per cent, and being replaced by a four and a half or five per cent issue. There have been a few issues of that kind by companies of high credit standing.

There have been practically no sales or very few sales of public utility operating company common stocks in recent years—by "recent years" I mean from 1935 to 1940. There have been, as far as my search indicates, only four or five instances involving the sale of common stock of public utility operating companies to the public.

Q. Are you familiar with the price of those stocks to the public at the time they were sold and the commission or charge that the underwriter made in those instances?

A. I am.

Q. Now, having in mind your suggested form of capitalization of a company such as Colorado Interstate of 50 per cent bonds and 50 per cent common stock, what in your opinion would be the cost of financing of the bonds and the common stock—in other words, dividing it into those two factors—what would be the overall cost?

A. Well, if under today's conditions Colorado Interstate Gas Company would be financed, and if financed as I believe it could be most economically financed, 50 per cent bonds and 50 per cent common stock to the public, in my opinion the cost of obtaining the borrowed portion of the money would be a minimum of 2½ per cent of the proceeds. The cost of obtaining the equity portion would be substantially higher. As I say, there have been few sales of public utility common stock in recent years from which to obtain a gauge of what underwriters would require. There have been no sales of any importance of pipe line company stocks. I think the best indication of what it would cost to sell the common stocks of a company such as Colorado Interstate Gas Company would be obtained from an examination of what it has cost to sell the common stocks of the few companies which have been sold in recent years. Among those are the common stocks of the Washington Gas Light Company, Indianapolis Power and Gas Company, Newport Electric Corporation, Michigan Public Service Company, and Danbury & Bethel Gas & Electric Light Company. Those

as I say, as far as my search indicates, are the only important issues for sale to the public of common stock of public utility operating companies in recent years.

In the case of the Indianapolis Light and Power Company, a large electric company serving Indianapolis, Indiana, where approximately $5,000,000 worth of common stock was sold to the public, the underwriting discounts and commissions were $1,429,670 or 8.3 per cent of what the public paid for the stock.

In the case of the Newport Electric Corporation, a smaller electric company serving Newport, Rhode Island, the common stock was sold to the public under which the underwriter's commission was $2.50 per share for common and the sale price to the public was $29.50 a share or a cost of 8.5 per cent.

In the case of the Washington Gas Light Company in which approximately $10,600,000 of common stock were sold to the public, the fees and commissions to the underwriters—I should say, rather, the underwriting discount or commission—amounted to $576,683, or 5.4 per cent of the price to the public. In that case it should be noted that the underwriters did not enter into a firm commitment to purchase the stock. They did agree to purchase a portion of the stock and they underwrote that in the common sense of the word "underwrite." The balance of the stock they sold from the box—in other words, they took no commitment with reference to the balance of the stock—so that is not really a fair measure. They didn't take a risk on all of the stock and their fees were below what would be considered customary.

In the case of a recent issue of common stock in November 1940 where the stock was offered to the public and sold to the public, but where I understand the offer was later withdrawn, the underwriting fees and discounts were $1.50 per share of common, and the sale price was $17.50 per share of common stock or a figure of 7.2 per cent.

Q. What company is that?

A. The Danbury & Bethel Gas & Electric Light Company.

I have omitted one company, which is the common stock

of the Michigan Service Company, a small operating company, primarily an electric company in the lower peninsula of Michigan, where the underwriting discounts and commissions were approximately 13 per cent of the price to the public.

The range which covered these five issues of common stocks show a cost of issuance in the Washington Gas Light Company where there wasn't a complete underwriting, from 5.4 per cent to 13.7 per cent as in the case of the Michigan Public Service Company. There were several substantial issues in the neighborhood of 8 per cent.

In my opinion, if Colorado Interstate Gas Company were to offer their underwriters common stock for a sale to the public under today's condition the cost of the issuance, including underwriting, discounts, commissions, and expenses, would be at a minimum 8 per cent. Therefore, if 50 per cent of the capital is obtained through bonds which cost 2½ per cent, as I have previously stated, and 50 per cent common stock at a cost of 8 per cent, the overall cost of obtaining all of the capital would be 5.25 per cent.

Q. In your opinion is that a reasonable estimate of the cost of financing for a company of this sort under the capital structure you mentioned?

A. It is.

(Vol. XVI, pp. 2290-2295.)

* * * * *

Q. And have you testified in any other proceeding in the rate of return?

A. Yes, I testified in the proceeding before the Federal Power Commission and the Illinois Commission in the matter of rate of return for the Natural Gas Pipeline Company of America.

Q. And what rate of return did you testify to in that proceeding?

A. Eight per cent.

(Vol. XVII, p. 2303.)

* * * * *

Q. Do you know what company or group controls the Colorado Interstate Gas Company at present?

A. I do.

Q. Who?

A. 42½ per cent of the common stock is owned by Standard Oil Company (N. J.); 42½ per cent by Southwestern Development Company, and 15 per cent by Public Service Company of Colorado.

Q. Well, you state, though, in your testimony, that you would propose a financial structure that would consist of 50 per cent bonds and 50 per cent stocks for this company, didn't you?

A. Yes, if it were being financed today I think that would be a reasonable financial structure for the company.

Q. Why?

A. Because I think that is the financial structure under which, if the company was to be financed today, that would give the most economical cost of capital.

Q. Why wouldn't this enterprise be financed now as it was when it was constructed?

A. Well, I could make no assumptions. I have to assume, or anybody would have to assume that if the company were to be financed today that it would be financed with public sale of its securities.

Q. And you are certain that it could not be refinanced in the same fashion that it was originally financed?

A. I wouldn't say that it couldn't be, but I would say the probabilities are that it would not be and I am trying to adopt a most reasonable probability.

Q. Of the construction or financing of a hypothetical company newly organized, or to be newly organized?

A. I don't believe that under today's conditions that it would be feasible, proper or reasonable to assume that a natural gas pipe line enterprise such as this kind would be financed through the issuance of debt up to 80 or 90 per cent of the value or cost of construction.

Q. Well, have you approached this whole subject in the light of reconstructing a hypothetical company here with its properties?

A. No, sir.

Q. Have you given any consideration to the original cost of the properties?

A. I haven't attempted to determine any values of the property.

Q. To what extent have you given any study or consideration to the records of this company as to its original cost?

A. Well, I have had available to me the company's finan-

cial statements which show the book value of its fixed capital. I have examined the estimates of reproduction costs new and reproduction costs new less depreciation as introduced in this case and I have looked at the study of original costs prepared by the company.

Q. Well, wouldn't investors be very much concerned with what the history of this company was as to the cost of its properties?

A. Yes, investors are concerned about those things.

(Vol. XVII, pp. 2314-2313.)

* * * * *

Q. Well, then, going back to this contract between Colorado Interstate Gas Company and Canadian River Gas Company, did you assume that that contract would expire and not be renewed at its termination?

A. There is an option arrangement in that contract under which Colorado Interstate Gas Company can continue to get gas as long as it finds that it can economically market that gas.

Q. So you didn't place any element of risk at that point, did you, as to the possibility of no renewal taking place?

A. I don't understand that question.

Q. You didn't assume any element of risk in connection with the possibility of Colorado Interstate Gas Company not being able to get an adequate supply of gas after the termination of this present contract with Canadian River Gas Company?

A. No, I don't think there is any element of risk there. The contract says that Colorado Interstate Gas Company has gas up to a certain time and thereafter it has the right to obtain gas from Canadian River Gas Company as long as it can economically—if it determines it can economically market that gas.

Q. So, insofar as the source of supply of Colorado Interstate Gas Company's requirements are concerned, it will have available to it a supply of gas as long as Canadian River Gas Company can supply it from its own reserves?

A. I think that is right. If Colorado Interstate Gas Company finds that it can economically market the gas, the Canadian River Gas Company under the contract—that option exists.

(Vol. XVII, pp. 2330-2331.)

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A. One of the requirements of this list is stated very clearly in that there has to be a common stock outstanding in the hands of the public in order to get an investors' appraisal.

Q. Are these the only ones available for that kind of a study, these in appendix 1, where you can get an investors' appraisal of risks from common stock that is in the hands of the public?

A. Those are the only companies in my opinion which are natural gas pipe line companies not engaged in substantial distribution operations which have gross operating revenues of $2,000,000 or more, and which have common stock outstanding in the hands of the public from which a measure of investors' appraisal may be obtained.

Q. In other words, there are a number of other natural gas companies, that if they had common stock in the hands of the public that you would have taken into consideration?

A. Yes.

Q. Supposing it was the other extreme. This is a pretty small list among the numerous companies operating in the natural gas business in the United States, isn't it?

A. As many as I could get.

Q. Suppose there weren't any at all available; you could not make any study then?

A. We would have to rely upon other information.

(Vol. XVII, p. 2377.)

Further Testimony by the Company's Witness, Sands:

Q. By what mathematical formula do you arrive at 8½ per cent?

A. That is purely a judgment figure after considering all of the hazards.

Q. That is purely a judgment figure?

A. Purely a judgment figure. It is just arrived at in the same manner as a legal opinion or a doctor's diagnosis.

Q. You placed it on that same basis?

A. It is professional judgment.

(Vol. XIX, pp. 2695-2696.)

Q. You do know that the natural gas as well as all electric energy distributed in Denver is distributed by one company, the Public Service Company of Colorado.

A. Yes, correct. What extent they push either one of the commodities, I don't know.

Q. To what extent they are competing with themselves, you don't know?

A. They are very active, and I presume they push their commodity—

Q. But you don't have that character of direct competition between two companies that you had cited as obtaining in those other towns?

A. That's right, on cooking and refrigeration. That's not true of coal, of house-heating.

(Vol. XIX, pp. 2713-2714.)

* * * * *

Q. Did you give any consideration—strike that.

In determining the element of risk that may be there, did you give any consideration at all to the corporate affiliation between Colorado Interstate Gas Company and Public Service Company of Colorado?

A. No, I assume that—

Q. That has no bearing on your assumption at all?

A. No, that relationship is going to be economical, entirely.

Q. It is an economical relationship entirely?

A. Yes.

Q. And you gave no consideration to the background of the history of this project at all in connection with the—

A. No.

Q. —with Colorado Interstate Gas Company and Public Service Company of Colorado?

A. No.

Q. Do you know what company owns Public Service Company of Colorado or the majority of its stock or any phases of the corporate control?

A. I believe Cities Service Power Co.

Q. Do you know what company owns the control of Cities Service?—Cities Service and Power?

A. I am under the impression that Cities Service does.

Q. And you, of course, know that Public Service Com-

pany of Colorado owns the control of Colorado-Wyoming Gas Company?

A. I have no idea who owns control of Colorado-Wyoming.

Q. Oh, you do not?

A. I stated that just a few minutes ago.

Q. Now, then, you say that because of the expiration date, this Denver contract, and the obtaining of a new franchise at the time of such expiration, the element of risk comes into the picture as discussed by you. What in your opinion will take place at the time of expiration of that contract?

A. Will take place in what way?

Q. As to the possible renewal of the contract, or the continued purchase of natural gas by Public Service Company of Colorado from Colorado Interstate Gas Company?

A. You don't expect me to prognosticate the vote of the people of Denver, do you? I am a poor hand at prognosticating votes, I find.

(Vol. XIX, pp. 2724-2726.)

* * * * *

Q. When has there been any total interruption of service to domestic users since then at Denver?

A. Give me just a minute and I'll see if there have been any more. I think that is the only total interruption.

Q. How long has this company operated?

A. It started sometime in 1928, I believe.

Q. There has been one total interruption during that entire period up to date?

A. One total interruption of 49 hours.

Q. All right, because of that interruption, did any of the people that had used gas cease using it because they were afraid of that risk?

A. I don't think that's the question.

Q. Oh, it isn't? Well, what is the question of the risk?

A. The question is, did anybody fail to come out on the line and use gas?

Q. After that time?

A. After that time.

Q. Have there been any people or any possible users that have failed to come on the line because of that break?

A. I couldn't tell you.

Q. You don't know?

A. No, I don't.

Q. Did they lose any customers at that time because of the break?

A. I don't think so. I don't know.

Q. Well, what character of risks do you have in mind that these supposed breaks or interferences—what is the character of risk that you have in mind?

A. You are just talking of one outage, the one of 9/9/33, that's a total outage.

Q. I want to know what effect it had, if any, and the risk element that you took into consideration in preparing this rate of return study.

A. All right.

Q. Is it purely a mechanical risk or what?

A. The longest out they had, not a total outage, was 63 hours at one time. That was the Colorado Portland Cement Company.

Q. And that was an industrial load.

A. That was an industrial load that was cut off to preserve the domestic load.

Q. Well, all of these industrial contracts except a particular part of Colorado Fuel & Iron have that provision that they are subject to being cut off?

A. That's right.

Q. Surely.

A. That's right.

Q. Why does that constitute a risk?

A. It constitutes a risk. How often can these outages occur and still have the company continue to use the gas service?

Q. The company can continue—you mean the purchaser?

A. Yes, the ultimate purchaser.

Q. This purchaser doesn't know the element of weather?

A. No, but he wants continuity of production in operations.

Q. He writes his contracts and he knows that his service may be interrupted at any time the degree days are such as to make it imperative on the company to interrupt that service, doesn't he?

A. Yes.

Q. All right, is that a risk that you have taken into consideration?

A. You bet your life.

Q. The character of the contracts that the industrial consumers enter into giving domestic priority over them, that is a risk that you take into consideration?

A. Yes, sir.

Q. Has the company, as a result of placing such a condition or restriction in its contract, lost any of its customers at any time?

A. That I don't know. I just know that it is sound business to know that a company is not going to be cut off for seventy-five hours—I think it was—very frequently.

Q. And the contracts—

A. And the companies don't care about the—the manufacturer, the producer won't stand for continuous interruptions. He can't afford to.

Q. Even though the same interruptions would occur because of weather conditions that would necessitate the interruption of his service, because of cold days that require the interruption of the service to industrial users because of the requirements of domestic users?

A. You'll have to repeat that question. Read that.

Q. Just strike that. I'll make it this way:

The contracts that are entered into between the industrial users and the Colorado Interstate Gas Company all have priority of service, don't they?

A. That's right.

Q. And the industrial users enter into those contracts with that condition in them?

A. Yes, that's correct.

Q. And those priority of use provisions come into play whenever cold weather sets in to such a degree that the domestic use may demand the deferring or cutting off of that industrial user?

A. Yes.

Q. He enters into that contract with that condition in mind, doesn't he?

A. He does, and realizing and hoping that that hazard won't be too great, but if that hazard becomes too great he won't continue as a customer, because he can't afford to do it.

Q. Well, has the company lost any industrial customers because of that hazard?

A. I can't tell you. It is a hazard that exists.

(Vol. XIX, pp. 2737-2741.)

* * * * * *

Q. Mr. Sands, in your exhibit you state you have an office in the First National Bank Building of Denver?

A. Yes, sir.

Q. What position, if any, do you hold with any department of the City of Denver?

A. I am on the Water Commission of the City of Denver.

Q. The Water Commission of the City of Denver.

A. Yes, sir.

Q. How long have you been on that Board?

A. Oh, I think seven or eight years.

Q. You are not appearing in this case in any official capacity, are you, for the City of Denver?

A. None whatever.

(Vol. XX, p. 2744.)

Further Testimony of the Company's WITNESS, O'CONNOR.

Q. Just this question in connection with the preparation of the exhibit, Mr. O'Connor: Will you briefly state what information you received and from whom and what was the manner of your assembling the data for the preparation of the exhibit?

A. Well, as far as estimating sales volumes, we had the records of the Canadian River Gas Company from 1928 on, and the records of the Colorado Interstate Gas Company.

Q. Over what period?

A. From inception through 1940.

Q. Both companies?

A. That's right, and then we interviewed the Amarillo Oil Company group and got some information and got some information from Mr. W. W. Rusk, the Chief Engineer, and also from Mr. P. C. Spencer from New York, and then we interviewed each company to whom the Canadian River Gas Company—I mean the Colorado Interstate Gas Company sells gas, both distribution companies and direct customers, and we got information from all of those sources; and then we interviewed the larger industrial customers served by the distribution companies and got further information from

them. We didn't interview anybody in connection with the Chicago line but we found that the company had estimated a practically constant volume of sales in the future—oh, through about the next seven years, and we adopted the same figure for 1941 as actual sales for 1940.

Now, our estimate is higher than the company's estimate, but it is due to the fact that their estimate for 1940; that is, the Chicago Company estimate for 1940 is quite a bit below what they actually did sell. We assumed the sales for 1941 would be practically the same as 1940. The line is pretty well loaded up. I have a long list of people that we interviewed. It runs three pages.

Q. That encompasses the names of the people representing the purchasing companies or industrials to whom sales were made?

A. Yes.

Q. And approximately over what period of time was this information and the data assembled on which you predicated the preparation of the exhibit?

A. Part of the people were interviewed in May and June of 1940, but some of the more important people were interviewed subsequently, some as late as February 1941.

(Vol. C, pp. 15553-15555)

Further Testimony of the Commission's WITNESS, BOSWORTH.

"As a result of the construction of this pipe line, fuel costs for a number of industries were reduced and domestic consumers received a very substantial reduction in the cost of their gas. If you take Denver as an example, in 1927, the last full year in which the Public Service Company supplied manufactured gas, a total of 3,252,107 Mcf. was sold and total gross revenues of the gas department of the Public Service Company for that year were $2,368,145. In 1939, gas sales were 7,054,174 Mcf. and total gross revenues were $4,021,384.

"The revenue had increased about 75 per cent and the amount of gas sold had more than doubled. In one respect this comparison is misleading, because the manufactured gas sold in 1927 contained only 336 B.T.U. per cubic foot, whereas, in 1939 the natural gas had approximately 850

B.T.U. content. In other words, one cubic foot of natural gas in 1939 would do two and one-half times the work of one cubic foot of gas in 1927. Therefore, the consumption in heat units in 1939 was nearly five times that of 1927 and the heat units increased nearly 430 per cent.

"Using the reports from the Public Service Company of Colorado, filed with the Colorado Public Utilities Commission, one learns that in 1927 the Public Service Company received $2.16 per million B.T.U. of manufactured gas (Denver only) and in 1939 the company received an average of 69 cents per million B.T.U. One million B.T.U. might seem like a very large amount but as a matter of fact that is only 1.2 Mcf. of natural gas. These are total figures which include residential, commercial, industrial and other sales. The domestic consumer in 1927 paid $2.50 per million B.T.U. for his manufactured gas and in 1939 he paid 96 cents per million B.T.U. for his natural gas. In 1927, the Public Service Company had practically no house heating customers, but in 1940 there were over 14,000 houses in Denver heated by natural gas. The number of customers is steadily increasing which indicates that the consumer prefers natural gas to other fuels.

(Vol. XX, pp. 2775-2777.)

* * * * * *

Q. Now, Mr. Bosworth, what consideration, if any, did you give to the term of that contract?

A. Twenty year—

Q. The period of its life in this study?

A. I gave full consideration to it.

Q. What consideration, if any, did you give to its expiration date? When does it expire?

A. In 1948.

Q. In 1948?

A. But it is subject to renewal.

Q. It is subject to renewal?

A. As long as Canadian River has gas and as long as Colorado Interstate determines it is profitable to buy on the terms of that contract.

Q. Well, did you give any consideration to that phase of it in your study?

A. Yes.

Q. What respect did that have a bearing on your rate of return?

A. That apparently this gas line has a gas supply as far as can be determined for some years ahead.

Q. What investigation did you make with reference to that?

A. I made none.

Q. You did not?

A. I inquired—I mean, I am not an engineer, you know. I didn't make an engineering investigation.

Q. From whom did you get your information with reference to its supply of natural gas?

A. The latest was from Mr. Hendee.

Q. From Mr. Hendee?

A. Yes. I have been interested in the subject as relating to other things. I talked to Mr. W. H. Ferguson, Executive Vice President of the Continental Oil Company about the Texas Panhandle.

Q. First of all I will ask you this: What did Mr. Hendee tell you with reference to the adequacy of the supply?

A. He told me that there was no question but what the gas supply would extend longer than the Canadian River's contract.

Q. Longer than the Canadian River's contract?

A. Yes.

Q. Did you discuss with him further the character of the holdings in the field, the wells they have, and the productivity they have? Did you go into any of those phases?

A. I asked about matters of that kind. I don't think it is possible for anyone to state just what the life of that field would be with four or five major pipe lines pulling on it. It is a very different situation than when this company started. When it started it was the only one big pipe line drawing on those fields. Since then the other companies have come in and are depleting the field—

(Vol. XX, pp. 2817-2820.)

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Q. What is the correct statement with reference to what the two major markets of Colorado Interstate Gas Company are?

A. Well, certainly the major wholesale market is the Natural Gas Pipeline Company of America because I have just stated that I believe that one-half of the gas handled by this company goes to that line, and the other half goes to the Denver line, and of that about forty per cent of the

gas that goes to the Denver line goes to the Colorado Fuel and Iron.

Q. I was limiting my question to the Denver line.

A. I see.

Q. Considering the Denver line alone, the two major markets on the Denver line are Colorado Fuel and Iron Company and the Denver gate, aren't they?

A. Unquestionably, yes.

(Vol. XX, p. 2830.)

Q. You say there is some element of risk in that there may be a possibility of the contract between Colorado Interstate and Public Service of Colorado not being renewed?

A. I think to this extent: If the company has gas at that time which it can and desires to sell, I think Public Service Company will want to purchase gas from Colorado Interstate, but the question of price, there is certainly uncertainty whether Colorado Interstate can secure as good a price as they are now getting. Nobody can tell today.

Q. The users in Denver and vicinity have converted all their equipment for the use of natural gas, haven't they?

A. Not all.

Q. Those who are using it, of course, are using equipment usable for natural gas?

A. That's right.

Q. Where is Public Service Company of Colorado going to get its gas if they don't get it from Colorado Interstate?

A. Gets natural gas?

Q. Yes.

A. They could, of course, go back to manufactured gas if they had to. They wouldn't do it if the natural gas supply were available. There are eight years yet in which new discoveries might come in.

Q. Where?

A. In Colorado.

Q. Do you know of any?

A. Or it might be possible to get it in Wyoming, because there is a very large amount of gas in Wyoming for which there is now no market, or it is conceivable they could get it from the Hugoton field.

Q. Where is the Hugoton field located?

A. In Kansas.

Q. About what distance is that from Denver?

A. Well, roughly, three hundred miles.

Q. Three hundred miles?

A. Yes.

Q. And you know, of course, that such company would have to apply for a certificate of public convenience and necessity?

A. I do.

Q. They would have to make a pretty detailed showing, wouldn't they?

A. Yes, but supposing they said to the Public Service, somebody came in—you and I, and we said, "We'll bring gas from the Hugoton field," and we make the arrangements down there satisfactorily, and we come up here to the City Council here and say, "We'll sell you gas at 30 cents."

Q. All right.

A. And Colorado Interstate says, "No, our gas is worth 35 cents. We can't afford to sell it any cheaper," then you go to the Federal Power Commission and say, "We want a certificate." I don't believe under the wording of that Act they would have much trouble in getting that certificate, would they?

Q. You mean you could get the gas at Hugoton field and sell it at the gate here at 30 cents?

A. That is an illustration of what might happen. I made no investigation as to whether they could sell it at 50 cents or 25 cents. I can't testify on that without going into an investigation.

Q. What is the illustration worth if it can't be followed through?

A. To show a hazard in spite of the fact that a certificate has to be obtained from the Federal Power Commission.

Q. A hazard to the Colorado Interstate?

A. Yes, of losing this business.

Q. That you think that in your experience as a man who had dealt with the securities of natural gas pipe line companies that they could construct a line from the Hugoton field and transport gas into Denver and sell it at 30 cents and make sufficient on it that they can finance such a project?

A. I didn't say that at all. I said if this contract had run out and if we found by reason of the purchases to be made down there and by a careful investigation of the con-

struction costs of such a line, if we found we could sell it at 30 cents, I thought we could get a certificate from the Federal Power Commission.

Q. I am asking you now, as a man that has had experience in selling securities of this character, whether that basis that you gave, on that assumption, that they could construct a pipe line into Denver from Hugoton and make a showing that they could sell gas at the gate here at 30 cents; the project would be feasible, economical, and that you could get investors to invest in such an enterprise.

A. I certainly made no such statement as that, and I didn't make the assumption that it could be done. I said, if it could be done or if the Public Service Company could get its gas from Wyoming or perhaps in Morgan County, Colorado where there is some gas, or some other place, or we may open up some gas around Fort Morgan. There are a lot of possibilities that may take place before 1948.

Q. There is a lot of possibilities of anything liable to happen, but the only certainty about there being an adequate supply of gas in some other area is the Hugoton field at present?

A. I didn't say that. I say, there is just as good a chance of getting the gas in Wyoming.

Q. There is? Where?

A. Southern Wyoming, I believe there is — Hiawatha, North, South & Middle Baxter Basin, Powder Wash Dome.

Q. Would you advise investors to invest in building a pipe line from there into Denver now?

A. I wouldn't do it without a great deal of study and getting expert engineering advice. That hasn't been done.

Q. In other words, you would know about what the reserves and adequacy and the probable life of them would be?

A. I would attempt to arrive at that information, certainly.

Q. And how certain you would be of the Denver market, too, wouldn't you?

A. Certainly.

Q. Both of those would have to be pretty definitely shown to you before you would attempt to advise anybody of the feasibility of such a project or to put any money into such a project?

A. I certainly agree with you on that.

Q. You haven't made that investigation with reference

to either piping it from Wyoming or from Hugoton, have you?

A. No.

The Trial Examiner: Mr. Bosworth, some mention I believe was made by you of the contract with Canadian River Gas Company by Colorado Interstate where the cost of the gas is based on some sort of a cost arrangement.

The Witness: Yes, sir.

The Trial Examiner: Well, in view of that, do you think it would be possible for production to come out of the Hugoton field at any less cost to the pipe line than the cost to the Colorado Interstate?

The Witness: I don't think so.

The Trial Examiner: Don't you think that the Colorado Interstate Gas Company in view of its trained personnel and its management and its present experience could transport this gas at least as cheaply as any company that would come out of the Hugoton field?

The Witness: I should think so, absolutely.

(Vol. XX, pp. 2837-2842.)

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Q. We haven't gotten to that point on this question. You presented one where the pipe line company produces its gas. Isn't it a fact that in this instance the same interest that controls Colorado Interstate Gas Company controls Canadian River Gas Company?

A. I think that is probably true. I can't testify as to that control.

Q. Then you have one other factor entering into that ideal situation remaining open and that is the marketing of the gas?

A. That is right.

Q. Now, then, you have already stated that the Colorado Fuel and Iron Company and Denver constitutes the major portion of the Colorado Interstate Gas Company's market by a large and major portion?

A. That is right.

Mr. Brock: The Denver line?

Mr. Lange: The Denver line.

The Witness: That is right.

By Mr. Lange:

Q. You have the delivery to the Colorado-Wyoming Gas Company?

A. Yes.

Q. Then those three constitute almost what percent of the total market of the Colorado Interstate Gas Company?

A. I don't know that figure because I don't know it.

Q. Roughly, it constitutes the great bulk of the market of that company, doesn't it? Those three gates?

A. Yes, I am sure of that.

Q. What element of uncertainty is there with reference to those three deliveries?

A. Because they do not control the marketing policies. They are wholesalers and it stops there. If they are a retailer and do a good job, fine; if he doesn't do a good job, what can you do about it?

Q. You are then viewing it in the light that the affiliation that exists between them has no bearing as to the certainty and continuity of that market?

A. I am not assuming that there is any affiliation that exists except contractual relationship.

Q. Are you assuming that there is none existing?

A. As far as I know there is none existing aside from the contractual relationship, the fact that the Public Service Company of Colorado owns 15 per cent of the stock in the Colorado Interstate pipe line.

Q. Very well. On the schedule—

A. I would like to—

Q. Yes.

A. May I make one remark?

Q. Yes.

A. I had forgotten for the moment, but as I understand it, the Canadian River Gas Company is 100 per cent owned by the Southwestern Development Company. The Southwestern Development Company owns 42-½ per cent of the stock of Colorado Interstate Gas Company, so there is a relative difference, I think, between the situation that would exist if the Colorado Interstate Gas Company owned a hundred per cent of Canadian River and the existing situation.

Q. How did you arrive at that conclusion that the difference would exist?

A. As I understood the question you asked me, the purport was "Why isn't it just the same thing as Colorado Interstate owning its own gas supply?"

Q. That is right.

A. I say that to me it is a little bit different because if Colorado Interstate owned 100 per cent of Canadian River, I would agree with you; it would be for practical purposes another thing, although there might be another corporate entity. Here Colorado Interstate doesn't own Canadian River at all. It is 42-½ per cent of the stock that is owned by a company which owns 100 per cent of Canadian River, or thereabouts, or there could be a conflict of interests arise that would be very different than if the situation were perfectly simple in that Colorado Interstate owned its Canadian River stock 100 per cent; if they owned 100 per cent of the Public Service Company and 100 per cent of Pueblo Gas and Fuel Company, and if they had no security outstanding, it would be a clean operating company to my mind.

Q. You say there might be a conflict of interest?

A. I would think so.

Q. Do you know of any that has occurred since the project has been in operation?

A. No, sir.

(Vol. XX, pp. 2860-2863.)

Further Testimony of the Commission's Witness, Charles Knapp.

"A. I commenced work in the year 1920. By 1925 I had taken business courses and completed my high school education through attendance at evening classes. In the fall of 1927 I entered the University of Vermont and studied for the degree of Bachelor of Arts and graduated with that degree in 1931. I majored there in languages and philosophy and was elected to membership in Phi Beta Kappa in my junior year. Following graduation I studied accounting, sat for the C.P.A. examinations and in 1934 obtained a certificate from the State of New York as a certi-

fied public accountant. I am a member of the New York State Society of Certified Public Accountants.

"My experience began in 1921, when I was employed by Babcock and Wilcox Company as a cost ledger clerk. Thereafter I became bookkeeper for a wholesale lumber concern. In January 1925 I obtained employment with Peat, Marwick, Mitchell and Company as a junior accountant, and later during the same year worked on the staff of a smaller public accounting firm, and afterwards as bookkeeper for a silk manufacturing concern. The following year, I was again employed by Peat, Marwick, Mitchell and Company in their income tax department for approximately a year, and then accepted a position as an accountant for a large wholesale bakery company, which position I resigned in the fall of 1927 when I entered college.

"For three years while attending college I was employed on the staff of the firm of Francis C. Derby Company, public accountants in Burlington, Vermont, and continued with that firm for over a year after graduation. In the fall of 1932 I was employed by the firm of Arthur Anderson & Co., as a semi-senior accountant, but shortly thereafter my status was changed to that of senior accountant. In the fall of 1933 and thereafter while with Arthur Anderson & Co., I was in charge of audits of the eastern telephone operating subsidiaries of probably the largest independent system of telephone utility companies in the country, and was also in charge of holding and sub-holding company audits and consolidation work for that system. I was also engaged on audits of electric, gas and water utilities during the same period.

"In the fall of 1935 I was employed as an accounting expert by the Federal Communications Commission on its investigation of American Telephone and Telegraph Company. While with that Commission I made an analysis of the principles and methods of consolidation employed in preparation of the published financial statements of the Bell System. I also prepared historical analyses and reports on investments of American Telephone and Telegraph Company in its telephone operating subsidiaries, and collaborated in the preparation of a report on the financial

history of the Western Electric Company, together with other studies and reports.

"In June of 1937 the telephone investigation was terminated and I obtained employment as a senior accountant with the public accounting firm of Allen R. Smart and Company. While employed by this firm I was in charge of the annual audit of United Aircraft Corporation and subsidiaries for the year 1937, and conducted a comprehensive investigation of that client's system of internal control.

"In April of 1938 I resigned to engage in private business as a public accountant, and in December 1938 accepted my present position with the Federal Power Commission. Since that time I have been employed in the Division of Finance and Statistics of the Bureau of Accounts, Finance and Rates with the title of Principal Examiner of Accounts and have been engaged in the study and preparation of reports on accounting and financial aspects of applications filed with the Commission in connection with sales of properties, mergers and consolidations and issuance of securities.

"I have also been engaged in studies and in the preparation of exhibits on the subject of rate and return and have testified as a witness for the Commission on this subject in five rate proceedings, namely, the Safe Harbor Water Power Corporation, Docket No. IT-5494, the Natural Gas Pipeline Company of America and Texoma Natural Gas Company, Docket Nos. G-109 and G-112, the Moline-Rock Island Manufacturing Company, Docket No. IT-5517, the New York State Natural Gas Corporation, Docket Nos. G-114 and G-125, and Chicago District Electric Generating Corporation, Docket No. IT-5500."

(Vol. LXXIV, pp. 10795-10798.)

* * * * *

A. "Introduction

I have been instructed to prepare a rate of return study setting forth the more important facts and factors which should be considered in arriving at a fair and reasonable rate of return for the Canadian River Gas Company, Colorado Interstate Gas Company and Colorado-Wyoming Gas Company.

Definition of "Rate of Return."

The "return" received by a public utility consists of the amount of revenue remaining after deduction of necessary and reasonable operating expenses, rents, taxes, and depreciation and amortization accruals, but before provision for interest, dividends, or additions to corporate surplus. This "return" is ordinarily conceived as the product of a "Rate base" times a given "rate of return." Conversely, the "Rate of Return" may be defined as that percentage rate which, when applied to the rate base, will yield the total, over-all return for the particular utility.

Statement of Principles.

It is generally conceded that the basic principles to be considered in determining the reasonableness of a particular rate of return were stated by the Supreme Court in the general rule laid down in the Bluefield decision as follows:

"What annual rate will constitute just compensation depends upon many circumstances and must be determined by the exercise of a fair and enlightened judgment, having regard to all relevant facts. A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market and business conditions generally."

Another fundamental principle was stated by the Supreme Court in United Railways v. West in the following

words: "'What will constitute a fair return in a given case is not capable of exact mathematical demonstration.'"

Although other factors doubtless have been considered by various courts and commissions, the underlying principles to be considered in connection with the problem of rate of return are probably nearly all covered in the above citations from holdings of the Supreme Court.

Identification of Rate of Return Study.

Based on consideration of the underlying principles set forth above, I have made certain studies and have either prepared or have directed and supervised the preparation of certain charts and schedules which have been assembled in two bound volumes, designated as Part I and Part II, respectively, for presentation in the present proceedings as exhibits entitled "Rate of Return Study."

Part I contains data on general interest rates and yields, utility interest rates and yields and recent financing, general economic conditions, comparative stability of earnings of public utilities and other forms of enterprise, local conditions in the general area of ultimate consumption of natural gas supplied through the pipe line facilities of the companies involved in the present proceedings, and data reflecting the present situation with respect to idle investment funds and the factors contributing thereto.

Part II of the rate of return study, besides containing some general statistics of the natural gas industry, presents facts concerning the ownership, issuance, prices and yields of securities of natural gas pipe line companies.

(Vol. LXXIV, pp. 10800-10803.)

General Interest Rates and Yields.

Moody's Investors Service publishes a considerable amount of financial data and its publications are accepted and relied upon generally for purposes such as are now being considered. Chart 1 shows Moody's composite bond yield average based on bonds of 120 domestic corporations which carry the four highest bond ratings assigned by Moody's publication. The chart also shows the average

yield for the 30 bonds included in each of the four rating groups, namely, Aaa, Aa, A and Baa. There are not always 120 corporations in Moody's compilation and there are not 120 corporations at this time, principally because of the difficulty of finding industrial bonds of the higher ratings.

Chart 1—Chart 1 reflects the range of bond yield averages since 1920. The composite average yield for all bonds included in the data had reached by the end of 1936 the lowest level recorded since 1920, namely, 3.67 per cent. After rising during 1937 and the early part of 1938 to 4.50 per cent in April 1938, a decline took place which, by August 1939, had carried the composite average down to the 1936 low point.

The month of September witnessed a sharp rise resulting from the outbreak of war in Europe. The composite average moved from 3.67 per cent to 3.95 per cent in that month. Between September 1939 and the year-end, the average declined to the August level.

From December of last year through April of this year the composite average declined from 3.69 per cent to 3.54 per cent. Following the invasion of the Low Countries in May, however, the increase in bond yields brought the average for May to 3.67 per cent, and for June to 3.72 per cent. By August the average had declined to the April level, and for September the composite yield was at a record low point of 3.50 per cent.

Since Chart 1 shows the individual rating group averages from which the composite average is derived, it can be seen that by September 1940 the average yields for bonds of Aaa, Aa and A rating, after advancing about 0.10 per cent in May and June, had also declined to new low levels, these being considerably lower than the levels established in 1936. For example, the low points in 1936 as compared with the yields shown for September 1940, are as follows:

Aaa bonds, 1936—3.10 per cent; September 1940—2.82 per cent;

Aa bonds, 1936—3.28 per cent, September 1940—3.01 per cent;

A bonds, 1936—3.78 per cent, September 1940—3.52 per cent.

On the other hand, the risk factor associated with bonds of Baa rating is reflected by the more pronounced rise in the average yield on such bonds commencing in the latter part of 1937 and culminating in the early part of 1938 than was the case for bonds of higher rating.

The 1936 low point for Baa bonds was 4.52 per cent, the yield subsequently rising to 5.16 per cent in September, 1937, and to 6.47 per cent in April 1938. The yield declined rapidly during the remainder of 1938 to 5.27 per cent in December 1938.

During 1939 the average yield on Baa bonds declined still further but, in December 1939, at 4.92 per cent was still 0.40 per cent above the 1936 low point, in contrast with the experience of bonds of higher grade. The average yield on Baa bonds continued to decline during the first four months of 1940, but in May increased sharply by 0.20 per cent and in June advanced 0.17 per cent, resulting in a rise of 0.37 per cent over the April average.

This rise compares with that of about 0.10 per cent in the average yield for the higher grade bonds in the same two-months period. From June to September, the Baa average reflected a more substantial decline than was recorded for higher grade bonds with the result that the September average of 4.66 per cent was only 0.14 per cent above the 1936 low point, a decline of 0.26 per cent from the average for December 1939.

Also reflected by Chart 1 is the virtual collapse of the bond market which occurred in 1931 and the continuation of an extreme degree of weakness thereafter for the greater part of three years. In this period bonds most severely affected were those regarded as subject to greater investor risk. It will be observed, for example, that while the yields for Baa and A bonds reached 11.63 per cent and 8.5 per cent, respectively, in this period, the highest yield recorded for Aa bonds was 6.60 per cent and for Aaa bonds was only 5.41 per cent.

The data upon which Chart 1 is based appear in Sched-

ule 1 which will be found immediately following the chart. Page 1 of Schedule 1 contains the composite monthly and annual average yields for each year commencing with the year 1920 on bonds of 120 domestic corporations including bonds of the four highest Moody bond rating groups, namely, Aaa, Aa, A and Baa.

Similarly, Page 2 contains the average yield on bonds of Aaa rating, Page 3 on bonds of Aa rating, Page 4 on bonds of A rating and Page 5 on bonds of Baa rating. Each rating group includes, so far as they are available for inclusion, 30 domestic corporation bonds.

A footnote on Page 5 indicates the source from which the data were taken. The lines on the chart can be readily associated with the data contained in the schedule. For example, Page 1 of Schedule 1 shows that the composite yield on bonds of 120 domestic corporations was 4.50 per cent in April 1938, as reflected on Chart 1.

Page 6 describes the mathematical basis of the yield computations. Monthly yield averages are unweighted arithmetic averages of daily yields computed on the basis of closing prices and calculated to maturity dates. For each rating group the average is based on the bonds included in that group and the composite average is the average of the four rating group averages.

Commencing on Page 6 and continuing on Page 7 of Schedule 1 will be found the key to Mood.'s bond ratings. For example, bonds of Aaa rating are those judged as representing bonds of the best quality, generally referred to as "gilt edge" because they carry the smallest degree of investment risk. Interest payments on such bonds are protected by large or exceptionally stable margins, changes in which are most unlikely to impair the fundamentally strong position of such issues, and principal is secure.

Bonds of Aa rating rank high but lack one characteristic or another of the highest type of bond investment. Together with the Aaa group they comprise what are generally known as high grade bonds. Bonds carrying the A rating possess many favorable investment attributes and are to be considered as higher medium grade obligations. Baa bonds are those considered as lower medium grade ob-

ligations, i. e., they are neither highly protected nor poorly secured. Such bonds, besides lacking outstanding investment characteristics, in fact exhibit speculative characteristics as well.

Pages 8 to 11, inclusive, of Schedule 1 contain lists of the bonds currently used in Moody's bond yield averages according to rating groups. Aaa bonds, grouped according to classification as Industrials, Railroads and Public Utilities are listed on Page 8, Aa bonds are similarly listed on Page 9, A bonds on Page 10 and Baa bonds on Page 11.

It will be noted that the lists of Industrial Aaa and Aa bonds contain fewer than ten bonds, there being only four bonds in the Aaa group, and four in the Aa group. Similarly, there are only five Railroad bonds in the Aaa group. Moody's explanation, as given on Page 6 of Schedule 1, is that it has not been possible since 1933 to find a sufficient number of representative bonds for these rating groups. However, as previously indicated, the averages for these groups are given equal weighting in combining them with other group averages.

Chart 2—The purpose of the next two charts is to show that the trend of bond yields is not an isolated phenomenon but is part of the movement of interest rates in general, as indicated by the broadly similar patterns observed in the trend of interest rates on 4-6 months commercial paper and on 60-90 day time loans, as well as in the yields on U. S. Treasury bonds. In other words, the purpose of these two charts is merely to furnish added data regarding the movement of interest rates as such, and not to offer short-term money rates or yields on Treasury Bonds, as a measure of a proper rate of return.

(Vol. LXXIV, pp. 10805-10811.)

Chart 3—Chart 3 shows the yield on U. S. Treasury Bonds due or callable after twelve years, as computed by the U. S. Treasury Department for the period since 1920. This chart portrays a somewhat similar situation as that shown on Charts 1 and 2, the trend being generally downward in recent years.

The low point for the period 1920-1936 was reached about

the end of 1936 with a yield of 2.51 per cent, as indicated in Schedule 3. Increasing by April 1937 to 2.80 per cent, the yield subsequently declined, reaching a record low of 2.13 per cent in June 1939.

In September, 1939, as in the case of domestic corporation bonds, the yield on U. S. Treasury Bonds reached the highest level of the year, 2.65 per cent, but subsequently declined and for the month of December 1939 was 2.35 per cent. The decline continued in 1940 and in March and April the yield averaged 2.25 per cent. An increase of 0.13 per cent occurred in May 1939, in line with the increase previously noted for corporate bonds in the Aaa, Aa and A groups, but this increase was later cancelled and in August the average again stood at 2.25 per cent. For the month of September, not shown on the chart, the average was 2.18 per cent, and for the week ending October 19, 1940, it was 2.09 per cent, indicating a decline to new low levels.

Undoubtedly the lower yield recorded for Treasury bonds in comparison with Moody's average yield on corporation bonds of Aaa rating may be attributed to the low risk associated with these securities and to the fact that income derived therefrom is in part exempt from taxation.

From the data presented in this section, it is apparent that in recent months interest rates and yields, generally, have reached the lowest levels witnessed in many years; in fact, they probably have not been lower at any time in the history of the country.

Utility Interest Rates and Yields and Recent Financing.

"This section deals with the cost of money as indicated by bond yields, pefferred stock yields, and common stock earnings-price ratios, with particular reference to public utilities.

Chart 4—Chart 4 shows Moody's bond yield averages, commencing with the year 1934, based on the bonds of 40 public utilities according to Moody's bond ratings. In contrast with Chart 1, which shows declines in yield below the 1936 level only for domestic corporation bonds of the three highest Moody's rating groups, Aaa, Aa, and A, Chart 4 shows declines below that level through September 1940

for public utility bonds of all four rating groups. The September 1940 yield averages for public utility bonds in the respective rating groups, as shown in Schedule 4, Pages 1 and 2, are as follows:

Aaa—2.74 per cent, Aa—2.88 per cent, A—3.18 per cent, and Baa—3.94 per cent.

Chart 4 is supported by Schedule 4. The companies whose issues are currently used in computing the average yield shown on the chart are listed in Page 3 of the schedule.

It will be noted by inspection of the annual averages shown on Pages 1 and 2 of Schedule 4 that the average yield on public utility bonds in each rating group declined substantially between 1934 and 1939, the comparative yields and declines being as follows:

Aaa—1934 average, 3.92 per cent—1939 average, 2.88 per cent, a decline of 1.04 per cent; Aa—1934 average, 4.66 per cent—1939 average, 3.03 per cent, a decline of 1.63 per cent; A—1934 average, 5.55 per cent—1939 average, 3.52 per cent, a decline of 2.03 per cent; Baa—1934 average, 7.49 per cent—1939 average, 4.50 per cent, a decline of 2.99 per cent.

Relatively these declines range from 26.5 per cent for Aaa bonds to 40 per cent for Baa bonds, indicating that investors in public utility bonds have more recently been willing to accept a relatively lower rate of compensation than in 1934 in proportion to the degree of risk assumed.

Another method of measuring the willingness of investors to accept relatively less compensation in proportion to the degree of risk assumed is to compare the ratio of the yield on Baa bonds to that on Aaa bonds. Such ratios computed for the years 1934 to 1939, inclusive, and for the month of September 1940 are as follows:

Period	Baa Yield	Aaa Yield	Ratio of Baa to Aaa Yield
Year 1934	7.40 per cent	3.92 per cent	1.91
Year 1935	5.56 per cent	3.52 per cent	1.58
Year 1936	4.67 per cent	3.21 per cent	1.45
Year 1937	5.09 per cent	3.21 per cent	1.59
Year 1938	5.26 per cent	3.03 per cent	1.74
Year 1939	4.50 per cent	2.88 per cent	1.56
Sept. 1940	3.94 per cent	2.74 per cent	1.44

From the foregoing, it appears that in 1934 the yield demanded by investors on Baa bonds was 1.91 times that required on Aaa bonds. The ratio declined to 1.45 in 1936, increased to 1.74 in 1938, and dropped back to 1.56 in 1939.

In September 1940, the ratio stood at approximately the same low level for the period as that recorded in 1936.

Chart 5—Chart 5 shows Moody's bond yield averages for the periods since 1920 based on bonds of 120 domestic corporations classified into three groups, namely, railroads, public utilities and industrials. The general trends reflected in this chart are similar to those described in connection with the previous charts.

Starting from the low point for all groups reached in 1936, the average yields increased until midyear of 1938. The rise in yield for railroad bonds in this period was much more abrupt than in the case of public utilities and industrials and carried the yield on railroad bonds to 5.75 per cent, public utility yields increasing only to 4.11 per cent and industrials to 3.55 per cent.

From these points the trend toward lower yields has continued with minor interruptions for all groups, but only in the case of public utilities and industrials have the yields established new low levels. For example, the August 1939 figures were 3.40 per cent (1936—3.69 per cent) for public utilities and 3.21 per cent (1936—3.37 per cent) for industrials.

Railroad yields in August averaged 4.41 per cent, which was still considerably higher than the 3.95 per cent yield recorded for January 1937, reflecting the greater degree of

risk attaching to railroad securities from the viewpoint of investors. The rise in yields which occurred in September 1939 had been cancelled before the year-end, and subsequently through April 1940 all yields registered further declines, public utility and industrial bond yields falling to the then lowest levels on record, while railroad bond yields still remained 0.38 per cent above the January 1937 low point.

In May and June, following the invasion of the low Countries an abrupt rise in yields of all bonds occurred, but this rise was subsequently cancelled, except in the case of industrial bonds, railroad bond yields declining through September to a level only 0.28 per cent above the previous low point in the period since 1920, while public utility bond yields were established at the lowest level on record. The September 1940 averages, as shown in Schedule 5, Pages 1, 2 and 3, were as follows:

Industrials—3.10 per cent, Public Utilities—3.19 per cent and Railroads—4.23 per cent.

By inspection of the annual averages shown on Page 2 of Schedule 5, it will be seen that the average yield on 40 public utility bonds declined from 6.30 per cent in 1932 to 4.43 per cent in 1935, and levelled off at approximately 3.90 per cent during the years 1936, 1937 and 1938. For 1939 the average was lower, at 3.48 per cent, than for any year since 1920, while the average for the first nine months of 1940, 3.28 per cent, as well below the 1939 average.

Chart 5 indicates that the experience of the industrial group has been somewhat more favorable than that of the public utilities, especially in recent years, but this may be due in part to the limited number of industrial bond issues available for inclusion in the two highest Moody bond rating groups.

Schedule 5 gives the monthly and annual average yields for the three groups of corporation bonds on which Chart 5 is based, together with a list of the bonds currently included in the groups.

Chart 6—Chart 6 shows annually, for the period since 1921, Moody's weighted averages of yields on newly issued

domestic bonds of industrials, railroads, and utilities. The averages shown are based on yields at offering prices of newly issued bonds, calculated to maturity and weighted by the amounts of all new issues floated in any given classification or period. The classification "utility bonds," which includes bonds of light, power, and gas utilities, consists wholly of operating companies. The yields indicated in Chart 6 are not, of course, representative of bonds of the same companies or issues at any one date or during any given period."

This chart shows a generally downward trend since 1921 for all classes of companies in yields on newly issued bonds. The trend was interrupted in 1929 and 1932, but commencing in 1933 and continuing until about 1936 the downward trend was greatly accelerated. In 1937 and 1938 the yields leveled off somewhat, but in 1939 a substantial decline occurred, particularly in yields on new railroad and industrial bond issues.

The 1939 decline in yield on newly issued light, power, and gas utility bonds was fractional, but nevertheless brought that yield also to the lowest point reached throughout the entire period since 1921. There has been superimposed on Chart 6 from Schedule 10 the average yield on newly issued bonds of electric operating utilities beginning with the year 1935, which shows a somewhat more favorable market for bonds of electric operating utilities than for those of light, power, and gas utilities combined.

The chart indicates that from 1921 through 1932 the market for new utility bonds appears to have been somewhat less favorable than for railroad bonds. In 1933, however, this position was reversed and except in the years 1937 and 1938, utility bonds were marketed from 1933 through 1939 on more favorable terms than railroad bonds.

It also appears that from 1921 through 1938 the market for new utility bond issues was consistently more favorable than for industrial issues. A reversal of this situation occurred in 1939 when the average yield on new utility bond issues was 3.45 per cent, as compared with 3.09 per cent on new industrial issues. In this connection, however, attention is directed to Page 1 of Schedule 10 where it is indi-

cated that in 1939 a substantially larger proportion of electric operating utility bond issues consisted of lower medium grade bonds of Baa rating than was the case in prior years, which would appear to account, at least in part, for the failure of the yield on new utility bond issues to follow the yield on industrial issues in that year.

The rapid decline in the yield on newly issued domestic bonds, particularly noticeable since 1934, suggested that the decline could be attributed not only to the course of the bond market itself but also to the quality of the offerings. This assumption is confirmed by comparison of the average yield for newly issued utility bonds with the average yield on utility bonds then outstanding of the three highest Moody bond rating groups, i. e., Aaa, Aa, and A.

The line superimposed on Chart 6, showing the average annual yield from 1934 to 1939 on 30 utility bonds carrying these Moody ratings, very closely conforms to that showing the yield on newly issued utility bonds, except in 1939 for the reason above noted, and indicates that a very large proportion of the utility bonds offered during that period consisted of higher grade bonds.

Schedule 7—This schedule reflects annual yields on a group of electric operating utility preferred stocks during the period of eleven years from 1929 to 1939, inclusive, based on averages of yearly high and low market quotations. The issues included in this exhibit comprise all electric operating utility preferred stocks shown in Schedule 19 of a Federal Communications Commission publication issued June 15, 1938, for which preferred dividends and prior requirements were earned in excess of 1.50 times in 1938, and for which market quotations for each year in the period 1929-1939 were available. The title of the publication referred to is "The Problem of the 'Rate of Return' in Public Utility Regulation."

Schedule 7 reflects a definite upward trend through 1933 in yields demanded by investors on preferred stocks, and a definite downward trend in the years 1934, 1935 and 1936. After 1936 investors' demands fluctuated within a narrow range at approximately the 1936 level. Expressed in terms of an index based on the 1929 average of the yields on the

16 preferred stocks as equal to 100 per cent, the average yield advanced to 106 in 1931, to 117 in 1932, and to 140 in 1933. In 1934 the average declined to 125, and fell to 103 in 1935. In 1936 the average was about 15 points lower at 88 and, with minor fluctuations in the years 1937 and 1938, stood at 86 in 1939, for which year the average yield demanded by investors was lower than for any other in the 11-year period.

Expressed in terms of per cent yield, the unweighted arithmetic average yield on the 16 preferred stocks increased from 5.74 per cent to 8.04 per cent between 1929 and 1933, declined to 5.10 per cent between 1933 and 1936, and was 5.19 per cent for 1937, 5.27 per cent for 1938 and 4.96 per cent for 1939.

Schedule 7-A.—This schedule reflects yields on electric operating utility preferred stocks and number of times preferred dividends and prior requirements are earned based on averages of high and low market quotations for the first nine months of 1940, with earnings coverage based on income for the latest twelve months for which reported.

Schedule 7-A contains a list of 22 preferred stocks and, as indicated in the footnote, includes all electric operating utility preferred stocks shown in Schedule 19 of the previously mentioned publication of the Federal Communications Commission, for which preferred dividends and prior requirements were earned in excess of 1.50 times in 1938.

Examination of this schedule will show that of the 22 preferred stocks listed, two issues were selling to yield from 3.90 per cent to 4.00 per cent to investors, three issues to yield between 4.00 per cent and 4.25 per cent, four issues to yield between 4.25 per cent and 4.50 per cent, four issues to yield from 4.50 per cent to 5.00 per cent, five issues to yield between 5.00 per cent and 5.50 per cent and four issues to yield from 5.50 per cent to 6.02 percent. In no instance did any issue sell on a basis to yield in excess of 6.02 per cent. Twelve of the 22 issues reflected yields of 4.74 per cent or lower on the basis indicated. For eight of these twelve issues, preferred dividends and prior requirements were earned in excess of 2.50 times, and with respect to eight of the issues yielding in excess of 4.74 per cent such requirements were earned less than two times.

The unweighted arithmetic average of yields on the 22 preferred stock issues shown in Schedule 7-A is 4.82 per cent, as compared with 1939 average of 4.96 per cent for the 16 issues shown in Schedule 7. The nine-months average of 4.87 per cent for the 16 issues in Schedule 7 which are also included in Schedule 7-A reflects a continuation in 1940 of a somewhat downward tendency in electric operating utility preferred stock yields.

Schedule 8—This schedule reflects annual earnings-price ratios, that is, the per cent of net earnings per share to market price, on a group of electric operating utility common stocks during the period of eleven years from 1929 to 1939, inclusive, based on averages of yearly high and low market quotations and published annual earnings per share of common stock. The issues included in the exhibit comprise all electric operating utility common stocks shown in Schedule 26 of the previously mentioned publication of the Federal Communications Commission issued June 15, 1938. The stocks listed from such publication include only those common stocks which are held by the public to the extent of at least 5 per cent of the number of shares outstanding.

Schedule 8 reveals that, on the average, from 1929 through 1932 there was a definite upward trend in common stock earnings-price ratios on these common stocks. In other words, during this period, investors demanded that increasing earnings be available for common stock per dollar of market price. In terms of an unweighted arithmetic average, the average earnings-price ratio for the group of 14 common stocks was 4.06 per cent in 1929, and increased in the three succeeding years, rising to 4.59 per cent in 1930, to 5.95 per cent in 1931, and to 7.74 per cent in 1932, the latter ratio being the highest reflected in any year during the eleven-year period.

In 1933, investors' demands abated somewhat, the average earnings-price ratio declining to 7.02 per cent. In 1934 the ratio rose to 7.57 per cent, but declined to 7.32 per cent in 1935 and to 5.89 per cent in 1936. In 1937 and 1938 the ratio advanced to 6.77 per cent and 7.42 per cent, respectively, but in 1939 declined again and was 7.04 per cent for that year.

It will be observed that during the eleven-year period the average did not exceed eight per cent in any year. Aside form the two years 1929 and 1930 for which the average was less than five per cent, there were two years for which the average was less than six per cent, one year 1937, for which it was 6.77 per cent, and five years for which the average was above 7 per cent, the highest average, as above stated, being 7.74 per cent in 1932. The simple average ratio for the last four years of the period was 6.78 per cent.

Schedule 8-A—This schedule reflects earnings-price ratios of electric operating utility common stocks and the per cent of gross income available for common stock based on averages of high and low market quotations for the first nine months of 1940, and on twelve-months' earnings per share as published in the latest quarterly reports.

Schedule 8-A contains a list of 14 common stocks and, as indicated in the footnote, includes all electric operating utility common stocks listed in Schedule 26 of the previously mentioned publication of the Federal Communications Commission, of which at least five per cent of the issue was outstanding in the hands of the public.

Inspection of data contained in this schedule will show that the earnings-price ratios of the 14 common stocks listed were as follows: one at 4.98 per cent, one at 5.65 per cent, three from 6.00 per cent to 7.00 per cent, five between 7.00 per cent and 7.75 per cent, two at 8.00 per cent, one at 8.67 per cent, and one at 9.31 per cent. Ten of the fourteen issues reflected earnings-price ratios of less than 7.75 per cent on the basis indicated. It will be noted that for three issues selling on a basis of 8 per cent or more the proportion of gross income available for common stock falls below 50 per cent.

The unweighted arithmetic average of the earnings-price ratios of the fourteen common-stock issues shown in Schedule 8-A is 7.29 per cent, as compared with 1939 average of 7.04 per cent and the 1938 average of 7.42 per cent for the same issues shown in Schedule 8.

Schedule 9—Schedule 9 presents annual information on the volume of all corporate financing in the United States since 1934, and the portion thereof representing financing

by public utilities, as compiled by The Commercial & Financial Chronicle. The total volume of financing in each year is segregated to show the portions representing new capital and refunding issues, and subdivisions of the amounts representing new capital, refunding and total corporate financing disclose the proportionate amounts of long-term bonds and notes, short-term bonds and notes, preferred stock and common stock issues comprising the total, both for all corporate issues in the United States and for the portion thereof representing security issues of public utilities.

The total amount of new corporate issues in the United States during 1934 was 491 million dollars, for 1935—2,267 millions, for 1936—4,632 millions, for 1937—2,434 millions, for 1938—2,139 millions, for 1939—2,479 millions, and for the first nine months of 1940—1,674 millions, the total for the entire period being 15,816 millions. Of this total, 7,596 millions, or 48 per cent, represented financing by public utilities. By years the proportions of the total of public utility security issues to all corporate issues in the United States were: 1934—32.3 per cent, 1935—56.6 per cent, 1936—45.9 per cent, 1937—34.0 per cent, 1938—57.2 per cent, 1939—60.5 per cent, and 1940 through September 29.4 per cent.

In this connection, attention is directed to Note 3 on Page 4 of Schedule 9 which indicates that The Commercial and Financial Chronicle, which is the source of the above data on corporate financing, does not classify non-retailing natural gas pipe line companies as public utilities. Securities issued by such natural gas companies are reported by that publication under the heading "Miscellaneous."

The proportion of the total amount of all corporate financing during the period from 1934 to date represented by new capital was 29.8 per cent. New capital accounted for 11.3 per cent of all public utility financing during the same period. By new capital, in this connection, is meant capital obtained for the purpose of additions to plant and property or to increase working capital. By refunding is meant the issuance of new securities for the purpose of retiring existing obligations at or before maturity, or of effecting reductions in dividend rates on preferred stocks.

New capital raised by corporations in the United States during the period from 1934 to date aggregated 4,710 million dollars of which public utility issues accounted for 855 millions, or 18.2 per cent. Of this 855 millions of new capital raised by public utilities, 94.3 per cent was represented by bonds and notes, 4.7 per cent by preferred stocks, and 1.0 per cent by common stocks, whereas the corresponding percentages of new capital obtained from all corporate issues were, for bond and notes—76.1 per cent, for preferred stocks—10.2 per cent, and for common stocks—13.7 per cent.

The total amount of all corporate issues for refunding purposes during the same period was 11,106 million dollars of which public utility issues accounted for 6,741 millions, or 60.7 per cent. This clearly demonstrates that public utilities have taken advantage of the favorable market in recent years to conduct large-scale refunding operations. In 1939 public utility issues accounted for 70 per cent of all corporate securities issued for refunding purposes. In 1938 the percentage accounted for by public utilities was somewhat higher, at 75 per cent, but was based on public utility refunding issues aggregating 950 millions, as compared with 1,261 millions in 1939.

Public utility financing during the period since 1934 accounted for the following proportions of all corporate issues: long-term bonds and notes, maturing later than five years from date of issue—7,007 millions, or 52.7 per cent of all long-term corporate issues; short-term bonds and notes—158 millions, or 32.5 per cent of all short-term corporate issues; preferred stocks—412 millions, or 32.4 per cent of all preferred stock issues; and common stocks—20 millions, or 2.7 per cent of all common stock issues.

As previously stated, public utility issues of all kinds accounted for 48 per cent of all corporate issues over the entire period under discussion. However, during the years 1937 and 1938 public utility financing accounted for very nearly 60 per cent of all corporate financing in the United States.

Analysis of the various types of securities issued by public utilities during the period covered by Schedule 9 reveals that there were no capital stock issues sold in 1934. Small

amounts of preferred and common stock representing new capital were sold in 1935, approximately $4,500,000 of preferred but no common stock issues representing new capital were sold in 1936, approximately $5,700,000 of preferred stock issues and $700,000 of common stock issues representing new capital were sold in 1937; no common stock issues were sold in 1938 and only $300,000 was raised from the sale of common stock in 1939.

In contrast with this record, Page 5 of Schedule 9 reflects the sale of approximately $6,600,000 of common stock and $18,500,000 of preferred stock representing new capital in the first nine months of 1940. The combined total of such issues in 1940 is somewhat in excess of the aggregate of all preferred and common stock issued for new capital purposes during the entire preceding six-year period.

Schedule 10—This schedule contains a summary of all known electric operating utility bond issues, other than bonds and debentures having serial maturities, sold during the years 1935 to 1939, inclusive, and shows that during this period 276 such bond issues were sold aggregating in excess of four and one-half billion dollars. The summary on Page 1 is presented by years and discloses the following weighted average yields on newly issued electric operating utility bonds based on offering prices to purchasers: 1935—3.81 per cent, 1936—3.48 per cent, 1937—3.63 per cent, 1938—3.43 per cent, and 1939—also 3.43 per cent. The weighted average yield on all issues sold during the five-year period, irrespective of rating, was 3.55 per cent.

Page 2 of Schedule 10 reflects average yields on the same bond issues classified according to ratings assigned by Moody's publications. It is there shown that 104 issues, or approximately 38 per cent of the total number sold during the five-year period, represented bonds of Aaa and Aa rating and 91 issues represented bonds of A and Baa rating. However, it will be observed that in 1939 only one Aaa issue and three Aa issues were sold in contrast with the larger number of such issues sold in previous years. On the other hand, about one-fourth of the 49 issues sold in 1939 represented bonds of Baa rating and one-fifth represented bonds of A rating, bonds of these two rating groups thus accounting for approximately one-half of the number of electric operating utility bond issues sold in 1939.

The summary on Page 2 of Schedule 10 also discloses that average yields to purchasers have declined since 1936. With respect to bonds carrying the four highest Moody's ratings, yields on issues sold in 1939 were lower than in any other year of the five-year period, such yields being as follows: Aaa—2.75 per cent, Aa—3.08 per cent, A—3.31 per cent, and Baa—3.87 per cent.

Of the 276 issues included in the summary for the five-year period, 74 were issues to which no rating was assigned by Moody's publications. The majority of such issues represented bonds which were privately sold. No rating is ordinarily assigned to bonds which are sold privately inasmuch as there is usually no trading in such issues.

Schedule 10-A—This schedule contains certain details in connection with offerings of electric operating utility bond issues sold during the year 1939. Such offerings aggregated approximately $800,000,000 in principal amount. The weighted average yield to purchasers of these issues was 3.43 per cent.

On Page 1 will be noted an issue of Public Service Company of Colorado, 3-½ per cent first mortgage bonds, due 1964, Rating A, in the principal amount of $40,000,000, which were offered to the public in November 1939, at 102, resulting in a yield to maturity of 3.38 per cent.

There is shown on Page 2 the ten-year 4 per cent Debenture issue of that company, Rating Baa, in the principal amount of $12,500,000, which was also offered to the public in November 1939 at 102, the yield to maturity in this instance being 3.76 per cent.

Schedule 10-B—Schedule 10-B contains a list of all electric operating utility bond issues sold during the first nine months of 1940. The aggregate principal amount of such issues was $419,337,300. There were 40 issues sold during this period, including one Aaa issue sold in July on a 2.73 per cent yield basis, four Aa issues at an average yield of 2.93 per cent, six A issues sold to yield an average of 3.17 per cent, five Baa issues on which the average yield was 3.81 per cent, and two Ba issues sold at an average yield of 4.37 per cent. Twenty-two issues, to which no rating

was assigned, were sold in this period of which all but one were sold privately. The weighted average yield of all issues sold was 3.29 per cent, which figure was somewhat lower than the average of 3.43 per cent on newly issued electric operating utility bonds sold during the years 1938 and 1939.

Schedule 11—Schedule 11 represents a compilation of all known preferred stock issues of electric operating utility companies sold in the period 1935-1939, showing the cost of money to issuing companies and yields to purchasers. The average yield to purchasers of such issues was 4.38 per cent for 1935, 4.62 per cent for 1936, 4.63 per cent for 1937, 4.85 per cent for 1938, and 4.99 per cent for 1939. Yields on individual issues in excess of $1,000,000 ranged from 4.09 per cent to 5.95 per cent. For the entire period, the average yield on all issues sold was 4.64 per cent.

Comparison with Schedule 10 indicates the relatively low proportion of preferred stock to bonds issued by electric utilities during the five-year period, new issues of bonds and preferred stock having been sold in proportions of about 25 to 1. However, it should not be inferred that such a relationship exists between outstanding bonds and preferred stocks in the capital structure of electric operating utilities.

For example, in the volume entitled "Statistics of Electric Utilities in the United States—1938," published by the Federal Power Commission, it is shown on Page IX that for 393 Class A and Class B privately owned electric utilities, long-term debt constituted 52.2 per cent of the total amount of securities outstanding as of December 31, 1938, while preferred stocks comprised 15.4 per cent of the total. In addition, common stocks accounted for 31.6 per cent of the securities outstanding and the remainder, or 0.8 per cent, consisted of premiums, assessments, and so forth, on capital stock.

Schedule 11 shows for each issue the net proceeds per share realized by the issuing company from the sale of preferred stock as well as the offering price per share to the public. In addition, it shows the per cent relationship of annual dividends both to net proceeds and to price paid by public.

For example, a 4½ per cent preferred stock issue of Wisconsin Michigan Power Company was sold in December 1939 at par of $100 per share to yield 4.50 per cent to purchasers. The company realized $96.11 per share as the net proceeds from the sale after meeting all expenses of floating the issue, the dividend requirement of $4.50 per share representing an annual cost to the company for preferred stock capital of 4.68 per cent ($4.50 ÷ $96.11). The expenses of floating the issue therefore resulted in increasing the annual preferred stock expense of the company over the annual yield to purchasers by 0.18 per cent. Stated another way, the yield to purchasers, 4.50 per cent, plus cost of financing, 0.18 per cent, equals the annual cost to the company for preferred stock capital, 4.68 per cent.

Inspection of Schedule 14 reveals that the weighted average cost of financing in connection with electric operating utility preferred stock issues was 0.12 per cent in 1935 (4.50 per cent—4.38 per cent), 0.15 per cent in 1936 (4.77 per cent—4.62 per cent), 0.15 per cent in 1937 (4.78 per cent—4.63 per cent), 0.19 per cent in 1938 (5.04 per cent—4.85 per cent), and 0.22 per cent in 1939 (5.21 per cent—4.99 per cent).

Over the entire period 1935-1939, the weighted average cost of financing was 0.15 per cent (4.79 per cent—4.64 per cent). In 1939 the cost of financing for four preferred stock issues carrying a 4½ per cent dividend rate ranged from 0.07 per cent (Consolidated Gas Electric Light & Power Co. of Baltimore) to 0.19 per cent (Wisconsin Gas & Electric Co.). These four issues were sold at par or better to yield from 4.00 per cent to 4.50 per cent to purchasers.

Schedule 11-A—This schedule contains details of all known electric operating utility preferred stock issues sold to the public in the first nine months of 1940. The aggregate offering price of such issues was approximately $34,000,000, and the weighted average yield to purchasers was 4.41 per cent, a decline of 0.58 per cent from the corresponding average for the year 1939. It will be noted that a 4½ per cent issue of Consolidated Gas Electric Light & Power Co. of Baltimore was sold in August at four points above par to yield 3.85 per cent to purchasers.

Schedule 12—Schedule 12 contains details of all known offerings of electric operating utility common stocks during the period from 1935 through September 1940. Of the five issues listed in this schedule, three were offered to the public during March and April of the present year, the other two issues representing primarily offerings to stockholders in 1935 and 1937, respectively.

In contrast with Schedule 9, Page 5, which reflects the sale of $6,622,520 of new issues of common stock in the months of January to September 1940, Schedule 12 reflects common stock sales amounting to approximately $28,000,000 during the same period. By reference to the footnotes in Schedule 12 it will be seen that only the issue of West Penn Power Company ($4,320,000), and 68,855 shares of the Indianapolis Power & Light Company issue ($1,652,520) fall within the category of new issues. The difference between the sum of the foregoing amounts, $5,972,520, and the above total of $6,622,520 for common stock issues in 1940, is represented by an issue of common stock of Bridgeport Hydraulic Company, a non-electric utility, amounting to $650,000.

For each issue listed in Schedule 12 there are given the name of the issuing company, the offering date, the number of shares offered, the price to public in dollars per share and the aggregate amount paid by the public, together with the amount of the issuing company's annual earnings per share of common stock for the year preceding the offering date, the per cent of such earnings per share to offering price, and the per cent of gross income available for common stock in the years for which earnings per share are given.

The first issue in Schedule 12 is that of Boston Edison Company (formerly Edison Electric Illuminating Co. of Boston) comprising 82,289 shares of common stock offered to stockholders in the latter part of 1935 at a subscription price of $150 per share. Approximately 94 per cent of the shares offered were taken up by stockholders and the remaining shares were offered to the public at a price of $166 per share. The proceeds were used to retire a portion of the company's outstanding indebtedness. On the basis of earnings per share recorded for the years 1934

and 1935, the average offering price resulted in an earnings-price ratio of between 6.25 per cent and 6.43 per cent. The proportion of the company's gross income available for common stock was 56.85 per cent in 1934 and 61.68 per cent in 1935.

The second issue in Schedule 12 represents an offering to stockholders of Tampa Electric Company in November 1937 to purchase 31,497 shares of the company's common stock at a subscription price of $20 per share. The stockholders subscribed to 30,712 shares or approximately 97.5 per cent of the shares offered. On the basis of earnings per share recorded for 1936 and 1937, the offering price of $20 per share resulted in an earnings-price ratio of between 11.50 per cent and 11.65 per cent. In this connection it should be noted that the range of market quotations for Tampa Electric Company common stock in 1937 was 25-1/4—41. It is thus apparent that the price of $20 per share paid by stockholders was well below the then current market price.

The next three offerings listed in Schedule 12 were made in March and April of the present year. In March 1940 a block of 200,000 shares of Commonwealth Edison Company stock was offered to the public. It was reported that the offering price of 32-3/8 was based on the closing price for the stock on the New York Stock Exchange on March 6, 1940.

It is of interest to note that the price range on Commonwealth Edison Company stock from January 1 to March 6, 1940, was 30-7/8—32-5/8. Accordingly, it may be seen that the offering price was within one-quarter of a point of the highest quotation recorded in 1940 prior to the offering date.

A footnote in Schedule 12 relative to this sale indicates that the stock was offered by a syndicate headed by Dillon, Read & Co. which acquired the shares offered upon conversion of approximately $5,000,000 principal amount of Commonwealth Edison Company convertible debentures purchased from Continental Illinois National Bank and Trust Company of Chicago (each $100 of debentures being convertible into four common shares). The 200,000 shares

so offered to the public did not therefore constitute a new issue of securities in the sense that the offering was initiated by Commonwealth Edison Company as a sale of securities to the public. On the basis of 1939 earnings of $2.43 per share, the offering price of 32-3/8 resulted in an earnings-price ratio of 7.51 per cent. The proportion of the company's gross income available for common stock in 1939 was 61.69 per cent.

In April 1940, 714,835 common shares of Indianapolis Power & Light Company were offered to the public at a price of $24 per share. Of this number, 645,980 shares represented previously issued common stock which had been held by the Trustee of Utilities Power & Light Corporation, former parent company. The remaining 68,855 shares represented new financing by Indianapolis Power & Light Company, the proceeds from which constituted new capital. Based on 1939 earnings of $2.05 per share, the offering price of 27 resulted in an earnings-price ratio of 8.54 per cent. The proportion of the company's gross income available for common stock in 1939 was 33.95 per cent. In conjunction with its offering of common stock Indianapolis Power & Light Company also sold privately an issue of 2,500 shares of 6 per cent cumulative preferred stock as indicated in Schedule 11-A.

West Penn Power Company offered for sale to the public in April 1940 an issue of 160,000 shares of common stock representing new capital. The shares were sold at 27, which price, on the basis of 1939 earnings of $1.62 per share of common stock, resulted in an earnings-price ratio of 6.00 per cent. The proportion of the company's gross income available for common stock in 1939 was 52.85 per cent. In the same month the company offered publicly its first mortgage 3 per cent bonds, Series K, due 1970, Rating Aa, in the principal amount of $3,500,000 at a price of 104-1/4 to yield 2.78 per cent to purchasers, as indicated in Schedule 10-B.

Economic Conditions.

Chart 7—Chart 7 shows the range of the composite wholesale commodity price index of the U. S. Bureau of Labor Statistics over the period since 1920, as well as the whole-

sale price indexes for farm products, foods, and industrial products.

Chart 7 clearly portrays the severe decline in prices which started in 1929 and reached a record low point for the period in 1933. It will also be seen that from March 1933 to March 1937 prices rose steadily, with minor interruptions, the composite index rising from 60 per cent to 88 per cent of the 1926 level during this period. Subsequent to 1937, there was a gradual but steady decline in wholesale prices, with August 1939 indexes at the lowest levels since 1937.

However, in September 1939, coincident with the outbreak of war in Europe, all indexes advanced sharply. It is of interest to note that wholesale prices of farm products and foods advanced to a much greater extent than prices of industrial products, as indicated below:

	September 1939	August 1939	Net Increase
All Commodities	79.1	75.0	4.1
Farm Products	68.7	61.0	7.7
Foods	75.1	67.2	7.9
Industrial Products	82.1	80.1	2.0

Although the indexes for other commodities registered declines immediately following September 1939, the index for industrial products continued to rise for several months before the upward trend was checked.

From the end of 1939 through August 1940 the index for all commodities registered a net decline of 1.8 per cent, more than half of this decline having occurred since the end of May. The net decline in wholesale prices during the first eight months of 1940 was uniformly distributed among the three classes of commodities. However, fluctuations in prices among the individual commodity groups were wider than those reflected in the combined index.

The fluctuations in farm products prices were wider than in the case of foods and industrial products. From May through August, the farm products index declined from 67.9 to 65.6, or 2.3 per cent; the foods index from 71.4 to

70.1, or 1.3 per cent, and the industrial products index from 82.5 to 82.0, or 0.5 per cent.

Although the trend of wholesale commodity prices has been generally downward since September 1939, prices of the various commodity groups in August 1940 were still somewhat above the August 1939 levels, as disclosed in the following tabulation:

	August 1939	August 1940
All Commodities	75.0	77.4
Farm Products	61.0	65.6
Foods	67.2	70.1
Industrial Products	80.1	82.0

There have been some fluctuations in prices since August 1940, latest figures indicating that for the week ended October 5, the combined index was 77.8, with farm products at 65.5, foods at 70.7, and industrial products at 82.9.

(Vol. LXXIV, pp. 10813-10843.)

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Chart 12—Chart 12 reflects the trend of corporate earnings, that is, net earnings available for preferred and common stock, based on earnings indexes computed by Standard Statistics Company for 13 utilities, 117 industrials and all Class 1 Railroads.

From this chart it may be seen that the trend of utility earnings has not been subject to very sharp fluctuations as in the case of industrials and railroads. While the earnings indexes for the latter two groups dropped within less than four years from peaks of 140 and 120, respectively, in the latter part of 1929, down to below-zero levels indicating substantial deficits in 1933, the reduction in public utility earnings in the same period is indicated by a decline in the earnings index from 140 to 90 (base year 1926 = 100).

In all three corporate groups there was a decline in earnings commencing in the latter part of 1937, but the decline in public utility earnings was much less pronounced. It will be noted that an upward trend in net earnings was maintained by all three groups throughout the year 1939, with the result that 1939 earnings exceeded those for 1938. Actually, utility and railroad earnings for 1939 almost

equalled the 1937 calendar-year levels, but industrial earnings still remained approximately 30 per cent below the 1937 level.

On the basis of estimated earnings for the nine months ended September 1940, as published by Standard Statistics Company, the average level of earnings for the twelve months ended September 1940 were considerably above the level for the calendar year 1939. The indexes for the year ended in September, as shown in Schedule 18, are as follows:

Public Utilities — 134.3; Industrials — 102.2; Railroads — 26.5. It will be noted that industrial earnings, at 102.2, were slightly below the 1937 level of 106.1, while utility and railroad earnings for the year ended September 1940 were at a somewhat higher level than in 1937.

It is of interest to note the average earnings indexes for the ten-year period 1930-1939 of the three groups of companies, which are as follows: Public Utility—110.5; Industrials—56.1; Railroads—10.0. In each instance the earnings index is compared with 1926 calendar-year earnings as equal to 100.

(Vol. LXXIV, pp. 10854-10855.)

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Idle Money Factors:

The data in this section are presented for the purpose of showing the present situation with respect to the volume of idle investment funds and the factors contributing to the growth of such funds in recent years.

Schedule 26—This schedule reflects the total amount of funds carried by member banks of the Federal Reserve System in their reserve balances with the twelve Federal Reserve Banks, together with the portion thereof representing "required" reserves and "excess" reserves, as of the close of each year commencing with 1923.

Required reserves are funds which member banks are required by law to keep on deposit with the Federal Reserve Banks as reserves against deposits made with the member banks by their own customers. Member banks may carry balances with the Federal Reserve Banks in excess of their

required reserves, such excess balances constituting what are known as excess reserves.

Changes in reserve requirements since June 21, 1917 are shown on Page 2 of Schedule 26. Reserve requirements on demand deposits of member banks vary according to classes of banks. Member banks are classified into three groups: central reserve city banks, reserve city banks, and country banks. Central reserve city banks are member banks located in New York City and Chicago, reserve city banks are member banks in sixty other cities of lesser size, and country banks are member banks located elsewhere. It will be noted that reserve requirements on time deposits are uniform for all member banks, while there are important variations among classes of banks in required reserves based on demand deposits.

It will be noted that in the early years of the period the total reserve balances were not subject to marked fluctuation and excess reserve balances were comparatively small in relation to total reserves, some years in fact reflecting deficiencies in required reserves. This was the situation prevailing generally prior to 1931. In that year total reserves reached their lowest level following 1923 at 1,961 millions of dollars. In the following two years the reserves increased to 2,729 millions, but the increases in total reserves were reflected by increases in excess reserves which, at the end of 1933, were higher than those shown for any previous year.

From 1933 to 1935 total reserves more than doubled and excess reserves increased by approximately two billion dollars. Reserve balances continued to increase in 1936 but due to an increase in reserve requirements in August of that year excess reserves decreased 866 millions despite an increase of approximately a billion dollars in total reserves. The increases in reserve requirements in March and May 1937 effected a still further reduction of 772 millions in excess reserves, although total reserves increased about 400 millions in that year.

In April 1938 reserve requirements were reduced to approximately those established in March 1937 and thereafter, with no charges in reserve requirements, total reserves continued to increase to a level in excess of 13½ billion

dollars in 1940. Required reserves have increased from 5,815 to 7,058 millions since 1937, but excess reserves have increased by 5,400 millions to an unprecedented total of over 6½ billion dollars, the figure at September 25, 1940 being 6,645 millions.

Schedule 27.—The purpose of this schedule is to set out the factors which supply member bank reserve funds and those which use such funds in such manner as to show the various changes which have accounted for the rise in member bank reserve balances in the Federal Reserve Banks between June 1929 and September 1940.

The schedule shows that the factors supplying funds for the building up of member bank reserve balances are increases in outstanding Federal Reserve Bank credit, increases in the monetary gold stock, and increases in U. S. Treasury currency outstanding. Decreases in these items operate to decrease member bank reserve balances. Federal Reserve Bank credit consists of bills discounted for or advances made to member banks, bills bought in the open market, holdings of U. S. Government securities, and other items such as industrial advances made under Section 13b of the Federal Reserve Act.

On the other hand, the factors using or drawing upon member bank reserve balances are increases in currency in circulation, in U. S. Treasury cash holdings, in U. S. Treasury deposits with Federal Reserve Banks, in non-member bank deposits with Federal Reserve Banks and in other Federal Reserve accounts. Decreases in these items operate to increase member bank reserve balances. The item "other Federal Reserve accounts" consists of the sum of paid-in capital, surplus, other capital accounts, and all other liabilities (excluding deposits and Federal Reserve notes in circulation), less bank premises and all other assets (excluding gold certificates, cash, and so forth, on hand and holdings of bills discounted, U. S. Government securities, and so forth)

Inspection of Schedule 27 will show that the net effect of changes in these factors between June 1929 and September 1940 has been an increase of 11,347 million dollars in member bank reserve balances with the Federal Reserve Banks. With respect to such increase in member bank

reserve balances, it is shown that required reserves increased by 4,725 million dollars and excess reserves increased by 6,622 million dollars.

It is apparent from inspection of Schedule 27 that the most important factor contributing to the increase in member bank reserve balances has been the increase in the monetary gold stock. From approximately 4 billion dollars in June 1929 the gold stock had increased to 21 billion dollars in September 1940, a growth of over 17 billion dollars during the eleven-year period.

Analysis of the growth in the gold stock reveals that approximately 13 billion dollars of the increase has originated since 1934. Data available through September 1940, up to which time the increase in the gold stock since 1934 amounted to approximately 13 billion dollars, indicate that about half of this increase was accounted for by the net movement of capital to this country from foreign countries, not including over 4 billion dollars of gold imports arising from unaccounted-for transactions. The remainder of the increase was accounted for principally by favorable balances of trade and services with foreign countries and domestic gold production, which were offset to some extent by net imports of silver.

Schedule 28.—This schedule shows comparative figures for all years since 1923 on total deposits and total loans and investments of all banks in the United States as contained in annual and monthly publications of the Board of Governors of the Federal Reserve System. Data are shown separately for non-member banks and member banks of the Federal Reserve System.

The data on deposits reflect an increase of approximately seven billion dollars in total deposits, exclusive of interbank deposits, from June 1929 to June 1940, whereas the comparable figures on loans and investments indicate a decrease during the same interval of about seven billion dollars. The comparison reflects a net increase in uninvested funds during the eleven-year period of around fourteen billion dollars for all banks in the United States.

For member banks of the Federal Reserve System the increase in deposits during the eleven-year period was about ten billion dollars and the decrease in loans and

investments amounted to approximately one billion dollars, indicating a net increase of around eleven billion dollars in uninvested funds of member banks during the period. This amount is seen to correspond closely with the increase in member bank reserve balances between June 1929 and September 1940 shown in Schedule 27. (A comparison with June 1940 member bank reserve balances would give substantially the same result inasmuch as the June reserve balances did not exceed the September balances by more than twenty million dollars.)

Because of reserve requirements imposed upon member banks by law, it is evident from Schedule 27 that they are restricted in the use of reserve balances for expansion of loans and investments to that portion thereof representing excess or idle reserves. These excess reserves, as above stated, amounted to 6,645 million dollars at September 25, 1940. By reference to Page 2 of Schedule 26, however, it is apparent that loans and investments could be expanded several times the amount of current excess reserves before the latter would be absorbed into required reserves under operation of current reserve requirements. This possibility arises from the fact that expansion in loans and investments by the member banks considered as a whole would give rise to increased deposits, unless there are offsetting influences, whereas the banks would be required to maintain reserves against such increased deposits only to the extent of the required percentages shown in Schedule 26.

From the data presented in this section, it may be seen that opportunities for investment, because of the growth in the volume of idle funds, have been more limited in the past few years than formerly, particularly in view of the fact that since the beginning of 1934, as reflected in Schedule 9, more than two-thirds of all corporate financing in the United States has been for refunding purposes. This situation with respect to idle funds has been reflected in the declining level of interest rates during the period since 1934.

(Vol. LXXIV, pp. 10866-10872.)

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Rate of Return Study—Part II.

As previously stated, Part II of the rate of return study contains some general statistics of the natural gas industry

and presents certain facts with respect to the ownership, issuance, prices and yields of securities of natural gas pipe-line companies. The statistical data are contained in Schedule 1 to 4, inclusive, and Charts 1 to 3, inclusive, as listed in the Table of Contents. The data pertaining to securities of natural gas pipe-line companies are contained in Schedule 5, together with its underlying Schedules 5-A, 5-B, 5-C, 5-D, 5-E, 5-F, and 5-G, and in Schedule 6. Chart 4 and Schedule 7 contains information respecting the corporate affiliations of the companies involved in the present proceedings, and recent financing by companies affiliated therewith.

Operating and Financial Statistics of the Natural Gas Industry: Schedule 1.

Revenues from Sales to Customers. Schedule 1 portrays the growth of the distributing end of the natural gas industry. It shows revenues, volume of gas sales, and number of customers by years from 1929 to 1939, both inclusive, as taken from Statistical Bulletin No. 41, October, 1940, published by the American Gas Association under the title "Annual Statistics of the Natural Gas Industry in 1939." The data on revenues, gas sales and customers are set forth under separate captions in the upper, middle, and lower portions of the schedule.

As indicated in the footnote, the figures do not include natural gas used in field operations and in the manufacture of carbon black or gas used by distributing companies in the conduct of their own operations. Furthermore, the statistics do not include data for companies selling mixed manufactured and natural gas.

By referring to the upper section of the schedule, it will be seen that during the eleven-year period revenues increased from 376 million to 448 million dollars, or by approximately 19 per cent. With the general falling off of business in 1938, revenues declined some 28 million dollars below the 1937 level but in 1939 they increased approximately 33 million dollars and exceeded 1937 revenues by over 5 million dollars. Following 1929, revenues increased somewhat in 1930; fell off in 1931, 1932 and 1933 and recovered in 1934, each year thereafter except 1938 reflecting a substantial increase over the previous year. According to the latest

report of the American Gas Association, revenues for the first seven months of 1940 have reflected a substantial increase over the revenues for the same period in 1939.

The classification of revenues shown in Schedule 1 reveals that revenues derived from sales to domestic consumers, including natural gas sold for house heating purposes, constitute substantially more than half of the total revenues reported. In 1929 such revenues amounted to $223,000,000 and, while falling off to the extent of 5 percent at the low point of the depression, recovered rapidly and were $32,000,000 higher in 1939 than in 1929.

Commercial revenues showed steady improvement each year during the eleven-year period, except in 1933 and 1938, increasing from $32,000,000 in 1929 to over $50,000,000 in 1939, a gain of over fifty per cent.

Revenues from industrial sales, including natural gas used as fuel by electric utilities, amounted to $120,000,000 in 1929. During the depression years, revenues from this source declined to $75,000,000 in 1932, but recovered in 1933 and by 1937 were $26,000,000 higher than in 1929. In 1938 revenues from industrial and electric utility consumers amounted to $126,000,000 off $20,000,000 from 1937, but in 1939 recovered again to $142,000,000 which amount, however, was still $5,000,000 below the 1937 total. According to the latest report of the American Gas Association, the revenues for industrial and electric generation consumers for the first seven months of 1940 exceeded the revenues for the same period in 1939 by over $6,000,000.

Average Annual Revenue per M.C.F. of Gas Sales. The average annual revenue per M.C.F. of gas sold amounted to 38 cents in 1929, was 41.1 cents in 1932, 33.7 cents in 1937, 34.3 cents in 1938, and 33.8 cents in 1939, a net decrease of 4.2 cents since 1929.

The average revenue from domestic sales was 66.7 cents in 1929 and, after reaching 71.1 cents in 1932 and 1933, gradually declined to 68.6 cents in 1939, a net increase of 1.9 cents per M.C.F. since 1929.

The average revenue per M.C.F. of gas sold to commercial consumers has been following a steadily downward trend since 1929 and declined from 56.5 cents in 1929 to 46.1 cents in 1939, a net decrease of 9.4 cents per M.C.F. since 1929.

The average for industrial and electric utility sales has declined from 20.1 cents per M.C.F. in 1929 to 16.9 cents in 1939, a decrease of 3.2 cents, the 1939 average being almost one cent higher than the average of 16.0 cents for 1934.

Gas Sales to Consumers (M.C.F.). Total gas sales reported for 1929 aggregated 991 million M.C.F. In 1932, sales reached a low point of 834 million M.C.F. for the eleven-year period. Subsequent years through 1937 witnessed steady improvement and the 1937 total was 1314 million M.C.F., a decline of about 104 million M.C.F. taking place in 1938, but during 1939 the total again reached a new level of 1,328 million M.C.F. The bulk of the large increase of 337 million M.C.F. in volume of sales between 1929 and 1939 was brought about by increased sales to industrial and commercial consumers. Commercial consumption increased from 58 to 109 million M.C.F. during the period and industrial consumption increased from 597 to 846 million M.C.F., while domestic consumption increased from 335 million M.C.F. in 1929 to 373 million M.C.F. in 1939. About 85 percent of the increase in total gas sales in 1939 over 1938 was attributable to the increase in industrial consumption. Fluctuations in industrial consumption normally would tend to conform to changes in economic conditions. However, upon comparison with the fluctuations reflected in the Federal Reserve Board's index of industrial production, it was found that, using an index with 1929 as the base year in each case, industrial consumption did not fall during the depression years to the lowest level reached by the index of gas sales to industrial and electric utility consumers has been at a substantially higher level than the index of industrial production. This situation would appear to be accounted for in large part by the expansion in number of industrial customers since 1929, such expansion being indicated by the increase from 22,000 customers in 1929 to 43,000 in 1939.

Average Annual Gas Sales (M.C.F.) per Customer. Average annual sales in M.C.F. per customer are based on the number of customers at the end of each year.

Sales to domestic consumers declined during the period as a *whole*, the average M.C.F. per customer per year being 60.5 in 1929 and 54.3 in 1939. However, the low point was 51.3 in 1934 and there was slight increases in 1935, 1936 and

1937, as well as in 1939, although in the latter year the average was still slightly below the 1937 figure.

The average consumption per commercial customer was 175.6 M.C.F. per year in 1929, reaching a low point of 164.2 in 1931, increased to 179.5 in 1932, fell off to 170.4 in 1933 and increased thereafter in each year to 204.1 in 1937.

Average industrial sales in M.C.F. per customer per year, fluctuated more sharply as would be expected in a period of changing economic conditions such as business has experienced since 1929. The sales per customer were 27,135 M.C.F. in 1929, dropped to 17,440 in 1933 and recovered thereafter, reaching 21,294 in 1937. In 1938 the average consumption per customer declined to 18,044 M.C.F., but in 1939 increased to 19,673 M.C.F.

Number of Customers at End of Year. The data on number of customers at end of year shown in the lower portion of Schedule 1 reveals a substantial growth since 1929, the number of all customers increasing from 5,896,000 in that year to 7,454,000 in 1939, an increase of 1,558,000 customers. In only one year 1932, is a decline in total number of customers shown although it will be noted that the number of customers did not vary between 1930 and 1931.

Domestic customers increased from 5,540,000 in 1929 to 4,870,000 in 1939, a gain of 24 per cent in the eleven-year period. Except in 1931 and 1932 there was a substantial increase in domestic customers each year. The number of commercial customers reflected a marked growth during the period since 1929, the increase in this group being from 334,000 in 1929 to 541,000 in 1939, a gain of over 60 per cent. The number of industrial customers has almost doubled, increasing from 22,000 in 1929 to 43,000 in 1939.

Average Annual Revenue per Customer. The average revenue per domestic customer was $40.34 in 1929 and $37.24 in 1939. For commercial customers the average was $97.54 in 1929 and $93.09 in 1939. It will be noted that in 1939 average annual revenue for both domestic and commercial customers increased over that for 138 but was somewhat lower than in 1937. Average revenues per industrial customer fluctuated considerably during the eleven-year period, and, while the number of customers almost doubled, the

annual revenue per industrial customer dropped from $5,463.95 in 1929 to $3,318.42 in 1939.

Schedule 2—Schedule 2 contains comparative estimated income statements for the years 1931 to 1939, inclusive, of the companies for which revenues, gas sales and customer data were presented in Schedule 1, and was taken from the same statistical bulletin of the American Gas Association.

It will be noted that the revenues from gas sales to consumers shown on the first line in Schedule 2 are in agreement with the revenue data shown in the upper portion of Schedule 1. Examination of Schedule 2 discloses that net operating income, designated as "Utility Operating Income" was $107,681,000 in 1939, or about $10,000,000 higher than that for 1938 although $4,000,000 lower than the 1937 figure of $111,811,000 which represented the peak for the nine-year period, and $2,000,000 lower than the 1936 total. The low point following 1931, for which year net operating income was reported at $84,601,000 was reached in 1933 at $65,188,000. In 1934 net operating income recovered to $71,382,000 and increased to $93,508,000 in 1935.

Net income available for dividends and surplus followed the same general trend, starting at $51,103,000 in 1931, declining to $26,940,000 in 1933, rising steadily to $74,989,000 in 1937, declining to $62,275,000 in 1938, and increasing to $72,152,000 in 1939. It will be noted that although net operating income in 1939 was lower than in 1936, net income available for dividends and surplus was higher in 1939 by $3,000,000, chiefly because of a decrease in interest and other deductions of almost $6,000,000.

Utility plant, which is reported only for the years 1934 to 1939, inclusive, increased from 1934 to 1938 by approximately $111,000,000. In 1939 utility plant was reported at $2,414,490,000, which was about $30,000,000, less than the amount reported for 1938.

Chart 1.—This chart shows at the right monthly sales of natural gas and revenues there from by months during the years 1929 1937, 1938, 1939 and the first half of 1940. At the lower left, are shown monthly revenues of the manufactured gas industry and at the upper left combined revenues of the total gas industry during the same years, except for 1939 which in general coincided with 1938.

The revenues for the entire gas industry were generally higher in 1937 than in 1929 and 1938, but showed a substantial increase over 1937 during the first half of 1940, due generally to the increase in sales of natural gas. Revenues from the sale of manufactured gas show generally a decline since 1929. On the chart at the right, the lower group of curves shows that the revenues of the natural gas industry have increased generally since 1929 and are at a new high level in 1940.

The upper group of curves on the chart at the right shows that the business of natural gas companies is highly seasonal in character, as indicated by monthly fluctuations in the volume of gas sold. Volume of sales in recent years has been substantially greater than in 1929. In 1939 sales were greater in the first and last few months but smaller in the summer months than was the case in 1937, total sales for 1939, however, exceeding those of 1937 by about 13,000,000 M.C.F. Deliveries during most of the first six months of 1940 were greater in volume than in 1939, with sales in February at the greatest volume recorded for that month.

Chart 2—Chart 2 is presented in order to show the monthly trend of sales in 1940 as compared with 1939 both in total and by classes of revenue, that is, domestic, commercial and industrial. The chart shows that total monthly revenues in 1940 through the month of June were substantially higher than in 1939, with the largest consistent gain being in domestic revenues, although industrial and commercial revenues, particularly in the first few months of 1940, also reflected a substantial increase over 1939. The February peak in revenues will be seen to have been accounted for by peaks in domestic and commercial revenues recorded in that month.

Chart 3—Chart 3 is a photostatic copy of a chart taken from the American Gas Association's Statistical Bulletin No. 41 of October 1940. The chart compares the American Gas Association's index of total natural gas consumption by domestic and commercial consumers, with its index of manufactured gas consumption by all classes of consumers, and with the Standard Statistics index of industrial ac-

tivity, all indexes being based on the year 1926 as equal to 100.

The reason for omitting industrial sales in constructing the index of natural gas sales while including them in the index of manufactured gas sales is easily found by comparison of the relationship of industrial sales to total sales. In the case of manufactured gas, industrial sales for the twelve months ended December 1939, as reported in the American Gas Association's Monthly Summary of Gas Company Statistics for that month, amounted to approximately 58.5 million Mcf., or roughly 16 per cent of total manufactured gas sales. However, sales of natural gas for industrial use in the same period, including sales for electric generation purposes, amounted to approximately 846 million Mcf., or 64 per cent of total natural gas sales.

The chart shows that manufactured gas sales rose to 116 per cent of the 1926 level in 1930, fell to somewhat less than the 1926 level in 1933, increased steadily thereafter through 1939, the index reaching about 120 in that year. Sales of natural gas, however, on the basis indicated, have increased to a substantially greater extent since 1926 than manufactured gas sales.

The index of natural gas sales rose to 130 by 1929, dropped to 118 in 1933, which was still far above the 1926 level, advanced to about 146 by 1937 and fell off to a moderate extent in 1938, but reached a new peak in 1939. Thus in 1939 the volume of natural gas sales was approximately 54 per cent greater than in 1926, while manufactured gas sales were only about 20 per cent greater.

It will be seen by comparison with the Standard Statistics index of industrial activity that although both the natural and manufactured gas industries experienced a decline in volume of gas sold during the depression years, the volume did not decline below the 1926 level, except to a slight extent in the case of manufactured gas, in contrast with the experience of industry in general, for which a decline in activity of about 45 per cent from the 1926 level was recorded at the lowest depth of the depression.

Schedule 3—Schedule 3 shows the total amount of natural gas production and consumption in the United States for

the years 1926 to 1939, inclusive, and the amount transported in interstate commerce for the years 1926 to 1938, inclusive. From 1926 to 1939, natural gas production increased from 1,313 million to 2,435 million Mcf. Consumption, excluding gas used for field operations and manufacture of carbon black, increased from 704 million to 1,436 million Mcf. in the same period.

Natural gas transported in interstate commerce increased from 209 million Mcf. in 1929 to 636 million Mcf. in 1938. In other words, since 1926 production has increased 85 per cent, and consumption other than for field use and carbon black manufacture has more than doubled. These increases were accompanied by an increase of over 209 per cent in the quantity of natural gas transported in interstate commerce up to 1938 and, as will be seen from column (e) of the schedule, the proportion of the total quantity of natural gas consumed which is transported in interstate commerce has also been steadily increasing. Thus in 1938 this proportion was about 48 per cent of total consumption, whereas in 1926 the proportion was approximately 30 per cent, indicating the increased importance of natural gas as a commodity in interstate commerce.

Schedule 4—Schedule 4 is presented for the purpose of showing data on the interstate movement of natural gas into the states of Colorado and Wyoming, as taken from publications of the U. S. Bureau of Mines. The schedule shows that since 1929 Texas has been the largest source of natural gas transported into Colorado from other states.

The quantity of gas transported from Texas into Colorado is shown in Schedule 4 to have increased from 12,563,000 Mcf. in 1929, the first full year of operation of the Denver line, to 20,511,000 Mcf. in 1937, and to have declined to 18,210,000 Mcf. in 1938. The records of the Federal Power Commission indicate that all gas moving into Colorado from Texas is transported through the pipe lines of the Canadian River Gas Company and Colorado Interstate Gas Company, two of the three companies involved in the present proceedings.

With respect to natural gas transported into the state of Wyoming from other states, Schedule 4 shows that since

1931, the largest portion thereof has consisted of gas transported from Texas. In 1929 and 1930, the only interstate movement of gas into Wyoming was reported as gas transported from Colorado. The Commission's records disclose that the only movement of natural gas into Wyoming from Texas is transported through the facilities of the two above-named companies and those of the Colorado-Wyoming Gas Company, the third company involved in the present proceeding. The latter company formerly transported gas into Wyoming from the Wellington, Colorado, fields, but when that field began to show signs of depletion, the company's pipe line system was extended south and connected with the system of Colorado Interstate Gas Company in 1931.

Ownership, Issuance, Prices and Yields of Securities of Natural Gas Pipe Line Companies.

Schedule 5—Schedule 5 contains summarized data with respect to the security issues of 25 natural gas pipe line companies.

In preparing this list an attempt was made to include all natural gas companies which had the following characteristics:

(1) Companies engaged in the production and transmission of natural gas and sales thereof at wholesale and to main line industrial customers.

(2) Companies engaged in the transmission of natural gas and sales thereof at wholesale and to main line industrial customers.

(3) Companies so engaged which had operating revenues of $2,500,000 or more.

The purpose in selecting companies conducting operations of the type mentioned with revenues of $2,500,000 or more was to obtain a group of companies exhibiting generally the characteristics shown by the companies involved in the present proceedings.

Schedule 5 sets forth for each of the 25 companies having the characteristics just mentioned the total amount of securities outstanding and a breakdown of the total for each company according to classes of securities, i. e., bonds, de-

bentures, notes, preferred stock, and common stock. Also shown for each company and each class of security, based on the most recent information available, are the amounts of securities held by the public, by institutions, and by affiliates. Institutional holdings include securities held by banks, insurance companies, universities, and so forth.

In this connection, it should be pointed out that Schedules 5-A to 5-G, inclusive, contain details supplementing or supporting the data contained in Schedule 5. For example, Schedule 5-A contains certain information with respect to the bonds, debentures, and notes of the companies listed in Schedule 5 which are held by the public. Schedule 5-B gives details regarding the identity of institutional holders of bonds, debentures, and notes of the companies and the amounts of individual holdings. Schedule 5-C lists the holdings of bonds, debentures and notes by affiliates. Schedule 5-D shows certain information with respect to preferred stock of the companies held by the public, and Schedule 5-E sets forth the holdings of preferred stock by affiliated interests. Schedule 5-F contains data on market prices, earnings per share, dividends, and so forth, on common stock of the companies held by the public. Lastly, common stock holdings by affiliates of the companies are listed in Schedule 5-G.

The summary at Page 5 of Schedule 5 discloses that the 25 natural gas pipe line companies listed therein had securities outstanding as of the latest date for which information is available in the aggregate amount of $657,399,135. These outstanding securities consisted of bonds, debentures and notes in the amount of $328,447,620, or 50.0 per cent of the total; preferred stocks in the amount of $25,131,000 or 3.8 per cent and common stocks in the amount of $303,820,515, or 46.2 per cent. The respective amounts of bonds, debentures and notes outstanding, together with the relationship of each to the total amount of all securities outstanding, were as follows:

	Amount	Per Cent of All Securities Outstanding
First mortgage bonds	$188,083,523	28.6
Debentures	39,350,000	6.0
Notes	101,014,097	15.4
Total	$328,447,620	50.0

Of the total amount of bonds, debentures and notes outstanding, affiliated interests held $182,408,097, or 55.5 per cent, institutional holdings totalled $126,628,000, or 38.6 per cent, and holdings by the general public amounted to $19,411,523, or 5.9 per cent. Of the total of $25,131,900 of preferred stocks outstanding, holdings by affiliated interests amounted to $23,639,200, or 94.1 per cent, and the remainder, or 5.9 per cent, was held by the public. Of the common stock outstanding, amounting to $303,820,515, the public held $10,394,418, or only 3.4 per cent, and affiliated interests owned the remainder.

Applying similar calculations to the total of all outstanding securities of the 25 companies listed in Schedule 5, it is found that the proportion held by the general public was 4.7 per cent and that held by institutional investors was 19.3 per cent, while the proportion held by affiliated interests constitutes 76.0 per cent of the total.

The foregoing calculations clearly indicate the predominant position held by affiliated interests with respect to the ownership of outstanding securities of natural gas pipe line companies. To summarize, affiliated interests owned 55.5 per cent of the bonds, debentures and notes, 94.1 per cent of the preferred stocks, and 96.6 per cent of the common stocks of the 25 companies listed in Schedule 5. On the other hand, only 5.9 per cent of bonds, debentures and notes, 5.9 per cent of preferred stocks, and 3.4 per cent of common stocks of the 25 companies were held by the general public.

With respect to each of the companies listed in Schedule 5, except Canadian River Gas Company and Colorado In-

terstate Gas Company for which it is believed an adequate description will appear in the record of the present proceedings, a brief statement is presented in the following paragraphs describing the nature and location of operations, source of supply, and other pertinent data. Although some of the information presented below is given as of the end of 1938, it is believed that it will suffice as a general description of the companies' operations.

The Arkansas-Louisiana Gas Company is engaged in the production, transmission and distribution of natural gas. Its sources of supply are the Monroe, Richland and Elm Grove fields in Louisiana and certain other fields in Texas and Arkansas. The company supplies natural gas to a large number of communities in Arkansas, Louisiana, and Texas. The principal communities served at retail are Little Rock, Arkansas; Shreveport, Louisiana; and Texarkana, Texas. Gas is sold at wholesale, among others, to Consumers Gas Company for distribution in the city of Hot Springs, Arkansas, and to other companies for distribution in two smaller communities in Arkansas.

The company has 1,371 miles of transmission lines and has 10 compressor stations with an aggregate rated capacity of 26,390 h.p. The First Mortgage, 2¾ per cent, 1940-1944 bonds in the amount of $3,300,000 were held, it is indicated on Page 1 of Schedule 5, by institutions.

Referring to Page 1 of Schedule 5-B, it will be seen that the $3,300,000 First Mortgage bonds above mentioned are held by the Guaranty Trust Company of New York and by the Central Hanover Bank & Trust Company, the former owning $2,800,000 of the bonds and the latter, $500,000 thereof. The first mortgage, 3½ per cent, 1945-1954 bonds in the amount of $9,700,000 were also owned by institutions, as is indicated in Schedule 5, and Schedule 5-B shows that the entire issue was owned by the following institutions in the amounts indicated:

Equitable Life Assurance Society of U. S.	$4,850,000
Metropolitan Life Insurance Company	3,550,000
Massachusetts Mutual Life Insurance Company	400,000
Sun Life Assurance Co. of Canada	350,000
Teachers Ins. & Annuity Association of America	300,000
Provident Mutual Insurance Co. of Philadelphia	250,000
	$9,700,000

The $6,500,000 of Debentures shown in Schedule 5 were all held by the Arkansas Natural Gas Corporation as is shown on Page 1 of Schedule 5-C. Common stock of the company outstanding consisted of 298,988 shares of an aggregate par value of $14,949,400. All of the common stock was held by affiliates and Schedule 5-G indicates that the entire issue in question was owned by the Arkansas Natural Gas Corporation, a subsidiary of the Cities Service system.

Chicago District Pipeline Company. This company is engaged in the purchase, transmission and sale of natural gas. Its gas transmission system consists of approximately 43 miles of 24-inch pipe line from Joliet, Illinois, to a point of connection with a transmission main of the Peoples Gas Light & Coke Company or the southern limits of the city of Chicago; approximately 1.3 miles of 20-inch pipe line from the company's 24-inch system to a point on the Illinois-Indiana State line; approximately 31 miles of 24-inch pipe line and 4 miles of 20-inch pipe line forming a connection with a transmission main of the Peoples Gas Light & Coke Company on the western limits of the city of Chicago. The Chicago District Pipeline Company purchases its gas requirements from the Natural Gas Pipeline Company of America. The largest sales by the Chicago District Pipeline Company are to the Peoples Gas Light and Coke Company. The notes payable of the company in the amount of $2,769,897 were owned by the Natural Gas Investment Company, as shown in Schedule 5-C. The common stock, consisting of 7,500 shares of no par value, with book amount of $659,000, was all held by the Natural Gas Investment Company, as indicated in Schedule 5-G.

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Cities Service Gas Company. This company is engaged in the production and transmission of natural gas. It obtains its gas from a number of fields in Texas, Oklahoma, and Kansas, including particularly, the Panhandle field in Texas and the Oklahoma City and Seminole fields in Oklahoma. The company's system consists of 4,273 miles of pipe lines and 29 compressor stations. Gas is sold at wholesale to distributing companies serving 229 communities, including Kansas City, St. Joseph, Springfield, and Independence, Missouri; Bartlesville, Oklahoma; and Kansas City, Leavenworth, Topeka, and Wichita, Kansas.

The company has outstanding First Mortgage 3¼ per cent and 3¾ per cent bonds due 1940-1954 in the amount of $35,000,000, all of which bonds are held by institutions. The 3¾ per cent bonds, aggregating $20,000,000, were owned outright by two insurance companies, as indicated on Page 1 of Schedule 5-B, and the remaining $15,000,000, 3¼ per cent bonds were held as collateral for loans, as noted on Page 1 of Schedule 5.

The $8,000,000 Debentures, 5½ per cent, 1956, were held by the Cities Service Company and subsidiaries, as shown in Schedule 5-C. The common stock of the company consisting of 350,000 shares of no par value was all held by the Empire Gas & Fuel Company, a Cities Service subsidiary, as shown in Schedule 5-G.

The El Paso Natural Gas Company is an operating and holding company. It purchases gas from producers in southeastern New Mexico. The company and its subsidiaries are engaged in the business of purchasing natural gas from producers in New Mexico, transmitting it through a pipe line system and selling it at wholesale to public utility and industrial customers located principally in or near El Paso, Texas; Hurley, New Mexico; Phoenix, Arizona; and Cananea, Mexico. The pipe lines of the company and its subsidiaries consist of 1,331 miles including duplicate lines, branch lines, and gathering lines. The First Mortgage, 3¼ per cent bonds of the company in the amount of $6,000,000 and its First Mortgage, 3 per cent bonds in the amount of $3,000,000, were held by the following institutions, as is shown on Page 2 of Schedule 5-B:

Sun Life Assurance Co. of Canada	$900,000
Equitable Life Assurance Society of U. S.	2,500,000
Massachusetts Mutual Life Insurance Company	275,000
Metropolitan Life Insurance Company	2,000,000
Mutual Life Insurance Co. of New York	475,000
Harvard College	100,000
Total, First Mortgage, 3½% bonds	$ 6,300,000

All of the preferred stock of the company, consisting of 7 per cent cumulative preferred stock of a par value of $100 per share, was owned by the public, and the common stock of the company was likewise held by the public.

The Hope Natural Gas Company is engaged in the production, purchase, transmission and distribution of natural gas. It is one of the oldest and most important gas subsidiaries of the Standard Oil Company (New Jersey) in the Appalachian field. The company's operations are confined to the State of West Virginia, but its main outlets are sales to the East Ohio Gas Company which operates in the State of Ohio, and to the Peoples Natural Gas Company which operates in the state of Pennsylvania, both of which companies are likewise subsidiaries of the Standard Oil Company (New Jersey). The only security outstanding of the Hope Natural Gas Company was common stock, all of which was owned by the Standard Oil Company (New Jersey).

The Houston Gulf Gas Company is engaged in the production, purchase, transmission and wholesale distribution of natural gas. The principal producing properties of the company are located in South Texas. The main pipe lines extend from the field in South Texas to Houston, Texas, and industrial areas in that vicinity. Pipe lines of the company aggregate 482 miles.

The company sells at wholesale substantially all requirements of about 18 communities in southern Texas. The company is also engaged in the production, transportation and sale of a limited amount of crude oil. The bonds and debentures of the company, as shown in Schedule 5, were

*The First Mortgage, 3 per cent bonds were held by these five insurance companies, the amounts held by each not being reported.

largely held by the public. The company's outstanding notes were held by an affiliate, United Gas Pipeline Company, as shown in Schedule 5-C. The preferred stocks were largely held by an affiliate, United Gas Pipeline Company, as indicated in Schedule 5-E. Most of the common stock of the company was also held by the United Gas Pipeline Company, a subsidiary of United Gas Corporation, as shown in Schedule 5-G.

The next company is Interstate Natural Gas Company, Inc., whose securities outstanding consisted of common stock, some of which was held by the public but the major portion of which, however, was held by Standard Oil Company (New Jersey) and the Columbian Carbon Company, as indicated in Schedule 5-G. The Interstate Natural Gas Company, Inc., owns 170 miles of main pipe line, 22 inches in diameter, running from the Monroe Gas Field in northern Louisiana to Baton Rouge, Louisiana. It serves at wholesale companies supplying natural gas to Natchez and Baton Rouge, and it connects at Baton Rouge with a pipe line of the United Gas Pipeline Company, which supplies gas for resale in the city of New Orleans.

The Lone Star Gas Company is engaged in the production, transmission and distribution of natural gas and also, to some extent, in the production of crude oil. Its transmission lines are in two service groups. A main group extends from the southeastern extremity of the Texas Panhandle to Fort Worth and Dallas, where it connects with transmission and distribution lines which extend through the central part of Texas and southern Oklahoma.

The company distributes gas directly in Fort Worth. The secondary group extends in a southwesterly direction from Brownwood, Texas, to San Angelo, Texas. The company owns 4,384 miles of mains and field lines and 21 compressor stations. The company had outstanding notes in the amount of $16,000,000 which were held by the Lone Star Gas Corporation, parent company, as shown in Schedule 5-C. All of the company's outstanding common stock was held by same holding company, as indicated in Schedule 5-G.

The Kentucky-West Virginia Gas Company is engaged in the production, transmission and sale of natural gas. The

company owns and operates natural gas properties and 518 miles of pipe line in the states of Kentucky and West Virginia.

Practically the entire output is furnished to the Louisville Gas & Electric Company and the Philadelphia Company and subsidiaries. As shown in Schedule 5-E all of the 5 per cent cumulative first preferred stock of this company was held by Louisville Gas & Electric Company, and all of the 7 per cent cumulative second preferred was held by the Philadelphia Company and subsidiaries. The company's common stock was owned by the Louisville Gas & Electric Company (40 per cent) and the Philadelphia Company (60 per cent), as indicated in Schedule 5-G.

The Memphis Natural Gas Company is engaged in the purchase and transmission of natural gas. The company's main pipe line extends from the Monroe field in Louisiana to Memphis, Tennessee, a distance of 402 miles. All of the notes of the company were held by institutions and somewhat more than half of the common stock of the company was held by the public while the remainder was held by Commonwealth Gas Corporation.

The Mississippi River Fuel Corporation is engaged in the transmission of natural gas. The company owns and operates 450 miles of main pipe line from Louisiana to St. Louis, Missouri, together with main compressor stations and branch pipe lines incident to the delivery of natural gas to industrial consumers and to distributors to communities along the route. All of the first mortgage bonds of the company were held by institutions. The 6 per cent notes payable and all the common stock were held by affiliates.

The Michigan Gas Transmission Corporation is engaged in the purchase and transmission of natural gas. The company owns a transmission line which commences at the Illinois-Indiana State line near Dana, Indiana, connecting at that point with the main line of the Panhandle Eastern Pipe Line Company, and extends to Muncie, Indiana, where it connects with the line of the Ohio Fuel Gas Company.

The company also owns a pipe line extending to Detroit, Michigan, from Zionville, Indiana, through which it transports natural gas to Detroit for the account of Panhandle

Eastern Pipe Line Company. Natural gas is purchased from Panhandle Eastern Pipe Line Company and sold by the company at wholesale only.

All of the company's outstanding securities, consisting of notes payable amounting to $6,470,500 and $2,240,000 of common stock, were held by Columbia Gas & Electric Corporation.

The Natural Gas Pipeline Company of America is engaged in the purchase and transmission of natural gas. Gas from the Texas Panhandle field is purchased by the company from Texoma Natural Gas Company and Colorado Interstate Gas Company at a point of delivery near Gray, Oklahoma. The company transports the gas through its own transmission system extending through the states of Oklahoma, Kansas, Nebraska, Iowa, and Illinois to Joliet, Illinois, where the gas is delivered to Chicago District Pipeline Company which sells the gas to utilities for distribution in the Chicago area. Comparatively small amounts of gas are sold by the company at different points along its main transmission line, the largest proportion of such gas being sold for resale to communities in Iowa.

The company's securities, consisting of First Mortgage 6 per cent bonds due 1946 in the amount of $42,300,000 and $3,000,000 book amount of common stock, were all held by affiliated interests.

The New York State Natural Gas Corporation is engaged in the production and transmission of natural gas in northwestern Pennsylvania and southwestern New York where gas is produced and transported for sale to distribution systems of others in several cities and towns in central New York, of which Syracuse, Auburn, Cortland and Ithaca are the most important. The system, including pipe lines of an affiliate, Keuka Construction Corporation, consists of approximately 256 miles of pipe lines, owned or leased gas rights on approximately 325,500 acres of land and 36 wells.

The company's securities, consisting of income notes and common stock, were all owned by Lycoming United Gas Corporation, a subsidiary of Standard Oil Company (New Jersey).

The Northern Natural Gas Company is engaged in the

production, purchase, transmission and distribution of natural gas. The company and subsidiaries own and operate approximately 2,200 miles of natural gas transmission lines, extending from the Texas Panhandle and Hugoton, Kansas, fields to South Dakota and Minnesota. The main transmission lines are largely 24 inches in diameter. Natural gas is sold principally at wholesale in Iowa, Kansas, Nebraska, South Dakota, and Minnesota. Cities supplied at wholesale include Omaha and Lincoln, Nebraska; Council Bluffs, Des Moines, Sioux City, Mason City and Fort Dodge, Iowa; Sioux Falls, *South* Dakota; and Minneapolis and Rochester, Minnesota. The company's First Mortgage, 3½ percent, 1954 bonds and the 2⅛ percent notes due 1940-1946 were all held by institutions. The bonds were sold to the institutions in August of last year. The common stock of the company was all held by three affiliates.

The Panhandle Eastern Pipe Line Company is engaged in the production, purchase, transmission and distribution of natural gas. The company owns a natural gas transmission system extending from the Amarillo gas field in the Texas Panhandle through Oklahoma, Kansas, Missouri and Illinois to a point near Dana, Indiana, adjacent to the Illinois-Indiana State line. The major portion of the gas transmitted is sold at wholesale to other gas transmission and distributing companies and the balance is sold to industrial consumers. The principal distributing company served is the Michigan Consolidated Gas Company which supplies gas to customers in Detroit, Michigan, and vicinity. The company's transmission system consists of approximately 2,100 miles of pipe line. The First Mortgage, 4 percent, 1952 bonds of the company were owned in part by the public, but largely by institutions. The bonds were issued in March 1937. The preferred stock, both Series A and Series B, was all held by the Columbia Oil & Gasoline Corporation, and the common stock was held by the Columbia Oil & Gasoline Corporation and by the Missouri Kansas Pipe Line Company.

The Pittsburgh & West Virginia Gas Company is engaged in the production, purchase, transmission, distribution and sale of natural gas. The company operates 1,375 miles of pipe line and serves gas to 44 communities in the State of West Virginia, and sells gas at wholesale to a number of

companies. The outstanding notes of the company, amounting to $13,090,446, were held by affiliated companies. All of the common stock of this company was held by Philadelphia Company, a Standard Gas & Electric subsidiary."

The Southern Natural Gas Company is engaged in the transmission of natural gas. The company purchases gas under long term contract from the Monroe and Richland fields in Louisiana and transports gas from these fields to markets in Mississippi, Alabama and Georgia. The main line extends eastward to Atlanta, Georgia, and comprises approximately 504 miles of pipe line mileage but parallel transmission lines and a branch line to Columbus, Georgia, bring the total length of the system to 1,300 miles. Gas is sold chiefly to 12 distributing companies. The First Mortgage, 4½ percent, 1951 bonds were held almost equally by the public and by institutions. The First Mortgage, 4½ percent, 1952 bonds were all held by institutions. The Adjustment Mortgage bonds of 1960 were held in approximately equal amounts by the public and by affiliates, a small portion being held by institutions, and notes in the amount of $800,000 were held by banks. Of the common stock of an aggregate par value of $5,189,776, $2,698,684 was in the hands of the public and the balance was owned by affiliates. The Adjustment Mortgage bonds were issued in 1936, pursuant to a reorganization plan, to holders of predecessor company's convertible 6 percent debentures, 1944, and to holders of filed and allowed claims on the basis of $500 of the new adjustment bonds, plus 48 shares of new Class A stock, for each $1,000 principal amount of old debentures and each $1,030 of claims. The Class A stock together with Class B stock was subsequently converted into the presently outstanding common stock.

The Texoma Natural Gas Company is engaged in the production and transmission of natural gas. The company owns a 24-inch main pipe line extending approximately 76 miles from Fritch, Texas, to a point near Gray, Oklahoma, where it connects with the transmission system of the Natural Gas Pipeline Company of America. The company produces all of its requirements from its own wells in the Amarillo gas field in the Texas Panhandle, and sells the major portion of the gas produced to the Natural Gas Pipeline Company of America. The company's properties also include a re-

finery at Fritch, Texas, for the purification of natural gas and the extraction of gasoline.

The outstanding securities of the Texoma Natural Gas Company consist of $18,750,000 principal amount of Gas & Pipeline Mortgage, 6 percent, 1946 bonds, all owned by Natural Gas Pipeline Company of America, and 10,000 shares of no-par-value common stock stated, at the book amount of $500,000, which are owned by a group of five affiliates.

The United Fuel Gas Company is engaged in the production, purchase, transmission and distribution of natural gas. The company's production operations are carried on in West Virginia and it sells principally at wholesale to distribution companies in West Virginia, Kentucky and Ohio, although it also supplies natural gas to many communities in West Virginia as well as in southeastern Ohio at retail. The 4 percent notes of the company, due 1940-1946, in the amount of $4,500,000 were all held by institutions. Other notes aggregating $14,535,000, were held by the Columbia Gas & Electric Corporation and all of the common stock was held by the same company.

The United Gas Pipe Line Company is engaged in the purchase, and transmission of natural gas. Gas is purchased principally at the wells in Texas, Louisiana and Mississippi, and is gathered and transported for sale to distributing systems of United Gas Corporation, to industrial corporations, and to others. The company owns 4,743 miles of main pipe lines in Texas, Louisiana, Mississippi, Alabama and Florida. The company, therefore, has long pipe lines serving a very wide territory. All of the outstanding securities of the company were held by affiliates, the debentures and common stock being owned by the United Gas Corporation, and the bonds being held by Electric Bond & Share Company.

The United Natural Gas Company is engaged in the production, purchase, transmission and distribution of natural gas and obtains its supply from northwestern Pennsylvania. The company supplies gas to several towns in Pennsylvania and a large quantity of gas is sold to Iroquois Gas Corpora-

tion, an affiliated company, for distribution in western New York. The only security the company had outstanding was common stock, all of which was held by the National Fuel Gas Company.

The Warfield Natural Gas Company is engaged in the production, purchase, transmission, distribution and sale of natural gas. The company operates approximately 500 miles of pipe line, including gathering and transmission mains, and supplies gas to a number of communities in the State of Kentucky, the principal community being Ashland. The company's principal customers are affiliated companies. The notes of the company outstanding in the amount of $9,790,000 as well as all of the company's common stock are held by the parent company, Columbia Gas & Electric Corporation.

Schedule 5-A—Schedule 5-A lists the bond and debenture issues of the companies included in Schedule 5 of which any portion was held by the public. The schedule also lists the bond issues of such companies which were outstanding in the hands of the public during a part of the period 1937-1939, but which had been retired before the end of that period. For each issue the schedule shows the name of the issuing company, a description of the issue, the total principal amount outstanding, the portion thereof held by the public and the ratings assigned by Moody's and Poor's publications. The schedule next shows the averages of high and low market prices for the years 1937 to 1939, inclusive, and for the first nine months of 1940, together with the approximate yields to maturity based thereon. This information is followed by data on market prices as of September 30, 1940, and yields to maturity based on such prices. The last two columns of the schedule show the respective current call prices for general and sinking fund purposes.

The first issue shown in Schedule 5-A consists of First Mortgage 4 percent Bonds, due 1951, of Arkansas Louisiana Gas Company. This issue, which carried Moody's and Poor's A rating, was offered to the public in 1936, as shown in Schedule 6, at a price of 98 to yield 4.18 percent to purchasers. On the basis of average high and low market prices the yield to investors was slightly less than 4.00 percent in 1937 and 1938, and 3.69 percent in 1939. The bonds

were retired in connection with refunding operations in October 1939, when the company sold privately one issue of short-term, and one issue of long-term, serial bonds at par to yield 2.75 percent and 3.50 percent, respectively, to purchasers.

The next issue listed is that of El Paso Natural Gas Company, consisting of First Mortgage 4½ percent Bonds, due 1951. These bonds were also offered to the public in 1936, as shown in Schedule 6, and were sold at a price of 98½ to yield 4.64 percent. The issue carried Moody's Ba rating and Poor's B** rating. The bonds were selling above par in 1937 and 1938 to yield 4.17 percent and 4.09 percent, respectively, but were retired in January 1939 with the proceeds of an issue of 3 percent Serial Notes and a new issue of First Mortgage 3½ percent Bonds, due 1953. The new bonds were sold privately at 99 to yield 3.59 percent to purchasers. In 1940 the company sold privately $3,000,000 principal amount of First Mortgage 3 percent Bonds, due 1955, at 98½ to yield 3.13 percent.

The next issue shown on Schedule 5-A is that of Houston Gulf Gas Company designated as First and Collateral 6's of 1943. These bonds were originally offered in April 1928 at 99½ in the amount of $11,000,000. At December 31, 1939, $4,238,000 principal amount was outstanding, of which $3,777,000 was held by the public. The bonds are indicated as carrying Moody's Ba rating and Poor's B** rating. Moody's rating was revised from Baa to Ba on October 28, 1939, but Poor's rating has not been revised.

The 6½ debentures, due in 1943, were originally offered in May 1928 at 99 in the principal amount of $8,000,000. They were convertible at par into 7 percent preferred stock, Series B, until March 31, 1938. The amount outstanding at December 31, 1939 was $1,850,000 of which $1,453,000 was held by the public. Moody's and Poor's ratings are reported as B and B*, respectively. Moody's rating on the debentures was also revised in conjunction with its revision of rating on the 6 percent bonds, in this instance the rating having been lowered from Ba to B on October 28, 1939 and, as above, with no change in Poor's rating.

As indicated in Schedule 5-A, the outstanding bonds and debentures of Houston Gulf Gas Company were called for

redemption on October 1, 1940, at 101. They were called in connection with proposed refunding operations of United Gas Corporation which, through United Gas Pipeline Company, owns a 99.6 percent interest in the common stock of Houston Gulf Gas Company. Inasmuch as notice of call was published prior to September 30, 1940, the September 30 bid price in each instance was the same as the call price. However, market prices for 1940 preceding notice of call averaged $102\frac{3}{4}$ for the bonds and $101\frac{7}{8}$ for the debentures, resulting in yields of 5.00 percent and 5.82 percent, respectively. These yields were somewhat lower than those for 1939 but were substantially below the corresponding yields of 5.75 percent and 6.58 percent for 1937.

The First Mortgage 4 percent Bonds, due 1952, of Panhandle Eastern Pipe Line Company were quoted on September 30, 1940, at $103\frac{5}{8}$, or $1\frac{1}{8}$ points above call price, resulting in a yield of 3.63 percent. These bonds, which carry both Moody's and Poor's A rating, were sold by public offering in March 1937 on a 4.23 percent yield basis, as shown in Schedule 6. However, the yield established for the remainder of that year, based on average market price, was 4.06 percent. The yield declined to 3.85 percent in 1938 and to 3.77 percent in 1939, and, as above indicated, was still lower in 1940. Of the $23,000,000 principal amount of bonds outstanding, holdings by the public amounted to $4,918,000.

The bonds of Southern Natural Gas Company listed in Schedule 5-A include two issues, consisting of First Mortgage $4\frac{1}{2}$ percent Bonds, due 1951, Baa and B** rating, and Adjustment Mortgage 6 percent Bonds, due 1960, B and B* rating. On September 30, 1940, the $4\frac{1}{2}$ percent bonds were quoted at $106\frac{5}{8}$, or $1\frac{5}{8}$ points above call price, resulting in a yield of 3.75 percent while the 6 percent bonds were quoted at $100\frac{1}{2}$ point above call price, resulting in a yield of 5.96 percent. The current yields on both bond issues are substantially lower than the 1937 yields of 4.70 percent for the $4\frac{1}{2}$ percent bonds and 7.44 percent for the 6 percent bonds. Public holdings of both the $4\frac{1}{2}$% and 6% issues constituted approximately one-half of the total principal amount outstanding.

It will be noted that the total shown in Schedule 5-A under the column "Held by Public", $19,411,523, is in agreement

with the total designated as Bonds, Debentures and Notes Held by the Public in the summary on Page 5 of Schedule 5.

An additional fact which should be mentioned concerning the issues listed in Schedule 5-A is that in each instance the trust indenture contains provisions for the gradual retirement of the issues through sinking fund operations.

Schedules 5-B and 5-C—These schedules show the individual holdings by institutions and affiliates, respectively, of bonds, notes and debentures of the companies included in Schedule 5.

Schedule 5-D—Schedule 5-D contains similar information with respect to preferred stock held by the public as was shown in Schedule 5-A for bonds and debentures of the companies listed in Schedule 5. However, Moody's publications do not assign ratings to capital stock issues; therefore, only Poor's rating is given.

The schedule shows that only two of the 25 companies listed in Schedule 5 had preferred stock issues of which *any* part was outstanding in the hands of the public, and the public held such a small portion of the preferred stock issues of Houston Gulf Gas Company that no market quotations for those issues were available.

It will be seen that the public held the entire amount of outstanding 7 percent preferred stock of El Paso Natural Gas Company, of which $600,000 appears to have been issued at date of organization in 1928 and the remainder through subsequent conversion of other securities. A yield of 6.36 percent is indicated for this stock on the basis of a September 30 bid price of 110. In this connection, it is of interest to note that the bid price for this stock was equal to the call price.

End of month bid prices on the preferred stock of El Paso Natural Gas Company ranged from 94 to 107 in 1937, 102 to 109 in 1938, and 108 to 111 in 1939. The dividend record on this stock discloses that dividends in arrears amounting to $26.25 per share were cleared up on June 22, 1936, since which date dividends have been paid regularly.

The total of $1,491,800, shown as the last figure in the column headed "Held by Public" on Schedule No. 5-D is

in agreement with the amount shown in the second column of the summary on Page 5 of Schedule 5 opposite Preferred Stock.

Schedule 5-E—It is believed that Schedule 5-E, which shows individual holdings by affiliated interests of preferred stock of the companies listed in Schedule 5, requires no comment.

Schedule 5-F—Schedule 5-F gives certain information relative to the common stock issues of the six companies included in Schedule 5 which had common stock outstanding in the hands of the public.

The schedule shows for each issue the name of the issuing company, the number of shares and book amount of common stock outstanding, the portion thereof *held* by the public, the par value, if any, and Poor's rating. Next are shown the earnings per share for the years 1937, 1938 and 1939, and for the latest twelve months for which reported; the averages of high and low market prices for the years 1937 to 1939, inclusive, and for the first nine months of 1940; and the earnings-price ratio, i.e., the percent of earnings per share to market price, for the periods indicated. Finally, there is shown for each issue the earnings-price ratio based on market price at September 30, 1940 and on latest earnings per share reported.

Market quotations could not be obtained for the common stock of Houston Gulf Gas Company as relatively few shares were held by the public. None of the common stock of Panhandle Eastern Pipe Line Company was held by the public prior to September 1939. The presently outstanding common stock of Southern Natural Gas Company has been outstanding only since its issuance in May 1939 in exchange for the Class A and Class B stock formerly outstanding. Accordingly, only three of the six common stock issues listed in Schedule 5-F have been held by the public throughout the period 1937-1940, namely, those of El Paso Natural Gas Company, Interstate Natural Gas Company, Inc., and Memphis Natural Gas Company.

The earnings-price ratios of the respective common stock issues for the periods and on the basis indicated in Schedule 5-F are set forth in the following summary:

Company	Common Stock Earnings-Price Ratios				
	1937	1938	1939	1940	9/30/40
El Paso Natural Gas Co.	13.79%	14.08%	10.60%	11.37%	11.70%
Houston Gulf Gas Co.	(No Market Quotations)				
Interstate Natural Gas Co.	9.90	10.02	8.88	9.08	8.79
Memphis Natural Gas Co.	16.63	13.96	15.74	14.84	13.68
Panhandle Eastern Pipe Line Co.	—	—	9.61	13.03	11.97
Southern Natural Gas Co.	—	—	18.14	20.37	18.25

Schedule 5-G—This schedule contains a list of the individual holdings by affiliates of common stock of the companies listed in Schedule 5. None of such common stock is held by institutions.

Schedule 6—Schedule 6 contains a compilation of bond issues sold by the natural gas companies listed in Schedule 5 during the years 1935 to 1940, inclusive. The issues are grouped according to Moody's ratings, and for each issue there appears the name of the issuing company, the approximate offering date, a description of the issue, principal amount of the offering, net cost to company and price to public. In addition, the schedule shows the distribution of holdings of those issues still outstanding among public holders, institutional holders, and affiliates.

Under "Net Cost to Company" are shown the net proceeds to the company per $100 of principal amount after underwriters' commissions and other expenses and in the adjoining column a percentage representing the annual cost of the funds borrowed calculated to maturity. Under "Price to Public" are shown the selling price to the public and in the adjoining column a percentage representing the annual yield to purchasers calculated to maturity.

The first issue shown in Schedule 6 is that of Arkansas-Louisiana Gas Company offered in July 1936, which consisted of First Mortgage, 4 percent bonds, due 1951 in the

amount of $10,000,000, with a rating of A. On this issue the yield to the public was 4.18 percent and cost to the company 4.62 percent. These bonds were refunded in September 1939 when, as shown in the lower portion of the schedule, $3,300,000 First Mortgage 2¾ percent Series A bonds due 1940-44 and $9,700,000 First Mortgage 3½ percent Series B bonds due 1945-54 were sold privately at par to yield 2.75 percent and 3.50 percent, respectively. The cost to the company was 3.01 percent on the 2¾ percent bonds and 3.59 percent on the 3½ percent bonds.

The Panhandle Eastern Pipeline Company in March 1937 issued $24,000,000 of first mortgage 4 percent *conds* due in 1952, with rating of A, at a yield of 4.23 percent and cost to the company of 4.46 percent. These bonds were selling to yield 3.63 percent at September 30 and the market price was above call price at that date.

The Southern Natural Gas Company, in November 1936, issued $15,000,000 principal amount of first mortgage 4½ percent bonds due in 1951, rating Baa, at a yield of 4.50 percent and net cost to the company of 4.85 percent. At September 30 these bonds were selling at a price in excess of call price on the basis of a yield of 3.75 percent. In *October* 1937, Southern Natural Gas Company negotiated the private sale of $650,000 principal amount of 4½ percent first mortgage Bonds due in 1952 at a yield to purchasers of 4.71 percent. The proceeds were deposited with the corporate trustee to be drawn against for expenditures made for bondable property.

The El Paso Natural Gas Company, in June 1936, issued first mortgage 4½ percent bonds due 1951, rating Ba, in the amount of $7,500,000, at a yield to the public of 4.64 percent and cost to company of 5.06 percent. Also in June 1936, the company sold $3,750,000 principal amount of 4¾ percent convertible debentures, due in 1946, at a yield to investors of 4.75 percent and cost to company of 5.38 percent. The debentures carried Moody's B rating. It is reported that the conversion privilege was exercised by holders of virtually the entire debenture issue, such conversion resulting in the issuance of approximately 225,000 of the 600,000 presently outstanding shares of the company's common stock. The same company in October 1937 sold privately an issue of $1,200,000 first mortgage 4 percent

bonds due in 1952 at a yield to purchasers of 4.20 percent, the purpose of the issue having been to reimburse the company's treasury for construction expenditures previously made and to provide additional working capital.

In connection with refunding operations the El Paso Natural Gas Company in December 1938 sold privately a $6,000,000 issue of first mortgage 3½ percent bonds, due in 1953, at a yield to purchasers of 3.59 percent. The proceeds from this issue, together with funds obtained through the issuance of 3 percent Serial Notes in the amount of $4,000,000 to Chase National Bank, were applied to the redemption on January 16, 1939, of the outstanding principal amount of bond and debenture issues sold in 1936, 1937 and 1938, and to retire $660,000 of short-term notes and for other corporate purposes.

In June and July 1940 the El Paso Natural Gas Company sold *preivately* two issues of first mortgage 3 percent bonds due in 1955 in the aggregate principal amount of $3,000,000 to yield 3.13 percent. The proceeds from these issues are reported to have been used for the retirement before maturity of $1,500,000 of bank loans and for other corporate purposes.

The last group of issues shown in Schedule 6 includes all issues which were sold privately during the period 1935-1940. It will be noted that Moody's assigns no rating to issues that are sold in this manner.

The first item shown is the first mortgage 4 percent bond issue, due 1952, of the Mississippi River Fuel Corporation sold in February 1937 to yield 4 percent at an assumed price of par to purchasers.

The issues sold privately by El Paso Natural Gas Company and Southern Natural Gas Company have already been referred to above.

The Cities Service Gas Company in December 1938 issued $20,000,000 principal amount of 3¾ percent first mortgage bonds due serially in the years 1947-54. The bonds were sold privately at par to yield 3.75 percent. At the same time the company negotiated bank loans in the amount of $15,000,000 secured by an equal principal amount of first mortgage 3¼ percent bonds due 1940-46.

The Northern Natural Gas Company, in August 1939, issued first mortgage 3¼ percent bonds due 1956 in the principal amount of $16,000,000 at a yield to the public of 3.25 percent, and cost to the company of 3.35 percent. These bonds were issued for refunding purposes. At the same time the company issued unsecured promissory notes to the Chase National Bank in the amount of $6,000,000 carrying interest at 2⅛ percent and maturing over the period 1940-1946. It was reported that the proceeds from these unsecured promissory notes were to be used as follows: $3,000,000 for construction of a 240-mile pipe line from Sioux City, Iowa, to Minneapolis; $1,200,000 for compressor station property, lateral pipe lines, distribution system properties of subsidiaries and development costs, all directly incidental to the pipe line; and $1,200,000 to defray cost of additions and betterments to the company's existing property, including distribution systems of subsidiaries, etc.

The issues of Arkansas-Louisiana Gas Company in September 1939 have already been described.

In conclusion, with respect to Schedule 6, there are two additional facts which should be mentioned. In the first place, a characteristic feature of natural gas company bond issues, arising from the fact that the business of such companies is based on exploitation of a wasting resource, is their relatively short life to maturity. As will be seen from the schedule this life generally does not exceed 15 years, whereas for electric utility bond issues the life is generally 25 or 30 years. For example, of the 15 issues listed in Schedule 6, eleven have a 15-year life to maturity, one has a 10-year life, and three have serial maturities. Of these three, the last maturity date is 16 *years* from date of issue in one instance, 15 years in another instance, and only five years in the case of Arkansas-Louisiana Gas Company's first mortgage 2¾ percent bonds due 1940-44.

Finally, in the case of each of the bond issues listed in Schedule 6, the trust indenture contains provisions relative to sinking fund requirements with a view toward the gradual retirement of the bonds over the life of the issue. The only exceptions that will be noted are the three issues having serial maturities, and a provision for serial maturities accomplishes the same purpose as redemption through sinking fund operations.

In the preceding discussion with respect to the ownership, issuance, prices and yields of securities of natural gas pipeline companies, reference has been made to the limited data available regarding yields on securities of such companies because of the *predominant* ownership of their securities by affiliated interests. Moreover, the fact that ten of the fifteen bond issues sold by such companies in the period since 1935 were disposed of privately by negotiation with institutional investors has had the effect of limiting the number of bonds of representative companies actually traded in on the market. Consequently, with only 5.9 percent of bonds, debentures and notes, 5.9 percent of preferred stocks, and 3.4 percent of the common stocks of a representative group of 25 companies being outstanding in the hands of the public and traded in on the market, it follows that caution must be exercised in relying upon the limited data available with respect to market appraisal of securities of natural gas pipe-line companies in attempting to ascertain the opportunity cost of capital under existing market conditions for particular companies engaged in natural gas pipe-line operations.

Corporate Affiliations of Canadian River Gas Company, Colorado Interstate Gas Company, and Colorado-Wyoming Gas Company and Recent Financing by Affiliated Companies. Chart 4—This chart is presented for the purpose of showing the corporate affiliations of the companies involved in the present proceedings. The chart shows that all of the common stock of Canadian River Gas Company is owned by Southwestern Development Company whose stock, in turn, is owned by Consolidated Oil Corporation (51 percent), and by The Mission Oil Company (47.28 percent).

It will be noted that the Southwestern Development Company also controls the Amarillo Oil Company and the Clayton Gas Company, two customer companies of Canadian River Gas Company, and has a substantial minority stock interest in Natural Gas Pipeline Company of America and in Texoma Natural Gas Company. The Natural Gas Pipeline Company of America purchases 25 per cent of its gas requirements from Colorado Interstate Gas Company which in turn obtains its total requirements from the Canadian River Gas Company, and deliveries by Colorado Interstate

Gas Company are made to Natural Gas Pipeline Company of America through facilities leased from Texoma Natural Gas Company.

It will also be noted that two customer companies of Amarillo Oil Company, itself a subsidiary of Southwestern Development Company, are also wholly-owned subsidiaries of the latter company. The two customer companies referred to are the Dalhart Gas Company and the Panhandle Pipe Line Company. Another wholly-owned subsidiary of Southwestern Development Company is the Amarillo Gas Company which purchases its requirements from the Panhandle Pipe Line Company.

Further reference to Chart 4 will show that the Southwestern Development Company owns a 42.5 percent stock interest in Colorado Interstate Gas Company. An equal percentage of the latter's stock is owned by Standard Oil Company (New Jersey), and the remainder is held by Public Service Company of Colorado. Standard Oil Company (New Jersey) also owns a substantial minority interest in Natural Gas Pipeline Company of America.

With respect to Public Service Company of Colorado it will be noted that its common stock is 99.99 percent owned by Cities Service Power & Light Company. The latter company's stock is owned to the extent of 91.88 percent by the Cities Service Company, although such stock has been pledged by Cities Service Company under an indenture securing its outstanding debentures, and voting rights therein have been relinquished to the trustee under that indenture. It will also be seen that the Cities Service Company owns a substantial minority interest in the capital stock of Natural Gas Pipeline Company of America.

Further examination of Chart 4 will disclose that Public Service Company of Colorado is the sole owner of all outstanding stock of Colorado-Wyoming Gas Company. The latter company's capital stock, consisting of 50,000 shares without par value, is reflected on its books at $1,501,000, and the company has no funded debt. Not shown on the chart is the 100 percent ownership by Public Service Company of Colorado of Cheyenne Light, Fuel & Power Company, which is engaged in the production and distribution of electric energy and in the purchase from Colorado-Wyo-

naing Gas Company) and distribution of natural gas in Cheyenne, Wyoming.

Schedule 7—This schedule contains certain information with respect to recent financing by companies affiliated directly and indirectly with the companies involved in the present proceedings. The data in Schedule 7 disclose financing by Consolidated Oil Corporation, Public Service Company of Colorado, Standard Oil Company (New Jersey), and Southwestern Development Company from 1936 through September 1940.

Consolidated Oil Corporation—The first issue listed for this company was sold in June 1936 and consisted of $50,000,000 of 3½ percent Debentures due 1951 which were offered to purchasers at 98 to yield 3.67 percent to maturity. In August 1938 the company negotiated the private sale at par to Equitable Life Assurance Society of 3⅜ percent Debentures due 1950 in the amount of $25,000,000.

Public Service Company of Colorado—In November 1939 this company offered publicly a $40,000,000 issue of First Mortgage 3½ percent bonds due 1964 at 102 to yield 3.38 percent, and a $12,500,000 issue of 4 percent Debentures due 1940 at 102 to yield 3.76 percent.

Standard Oil Company (New Jersey)—This company in May 1936 issued $85,000,000 principal amount of 3 percent Debentures due 1961 of which $30,000,000 were offered publicly and $55,000,000 were sold privately to Rockefeller Foundations. The price to purchasers for the 3 percent Debentures was 98, resulting in a yield to maturity of 3.12 percent. In July 1938 the company issued $50,000,000 of 2¾ percent Debentures which were offered at 99 to yield 2.83 percent, and $35,000,000 of 1¾ percent-2½ percent Serial Notes offered at par of which $4,000,000 were *sold* to the Rockefeller Institute for Medical Research and the remainder were sold to the public. These notes were redeemed on July 2, 1940, funds for their redemption having been obtained from the issuance of $35,000,000 1¼ percent-1½ percent Promissory Notes sold at par. Of the latter notes $14,000,000 consisted of 1¼ percent notes due July 1, 1943 and 1944 which were sold privately to two purchasers, and $21,000,000 consisted of three 1½ percent notes due July 1, 1945, 1946 and 1947, respectively, evidencing borrowings from two banks.

Southwestern Development Company.—On July 1, 1936, this company obtained a 2-4 percent loan secured by collateral and due 1937-1941, from the Guaranty Trust Company of New York. The collateral consisted of certain of the company's holdings of securities in natural gas companies. Subsequently a reduction in interest rate from 4 percent to 3½ percent and an extension of maturity date were obtained with approval of the Securities and Exchange Commission and a new 3 percent collateral note, in exchange for the outstanding 3½ percent note, was issued on August 1, 1939.

In December 1936 and 1937 the company issued its unsecured 4 percent notes to holders of its common stock in payment of dividends at the rate of $43.18 per share in 1936 and $50.00 per share in 1937. The notes issued in December 1936 were redeemed on January 3, 1938.

On November 1, 1937, the company negotiated a $3,292,000 collateral loan, 4 percent, due 1939-1943, from the Guaranty Trust Company of New York. The collateral consisted of 6 percent First Mortgage and Collateral Trust Sinking Fund Gold Bonds, due January 1, 1945, of South Plains Pipe Line Company (assumed by West Texas Gas Company, a wholly-owned subsidiary of Southwestern Development Company). The Southwestern Development Company obtained approval of the Securities and Exchange Commission of the sale of $3,150,000 principal amount of the above 6 percent bonds to the West Texas Gas Company and applied the proceeds to the discharge of the unpaid balance of its 4 percent collateral loan dated November 1, 1937. The West Texas Gas Company had obtained the funds with which to purchase the bonds from Southwestern Development Company through a 3 percent collateral loan, due January 1, 1945, made by the Guaranty Trust Company of New York.

The most recent financing by the Southwestern Development Company was undertaken in January 1940 when the company arranged with the Guaranty Trust Company of New York a 3 percent collateral loan, due 1940-1945, in order to redeem the 4 percent unsecured notes issued for dividend purposes in December 1937 and to liquidate the balance of

the 3 percent collateral loan dated August 1, 1939 and due July 1, 1944."

(Vol. LXXIV, pp. 10873-10929.)

* * * * *

Q. Mr. Knapp, since the time of the completion of your rate of return study, Exhibit No. 225 and Exhibit No. 225-A, I will ask you whether you have had the opportunity to learn about the refunding operations of the Panhandle Eastern Pipeline Company that took place sometime during the month of January 1941.

A. I have.

Q. Could you explain briefly what additional information you obtained concerning those matters?

A. The Panhandle Eastern Pipe Line Company on January 30, 1941 made a public offering through an underwriting group of $12,000,000 principal amount of 3 per cent Series B first mortgage and first lien bonds, dated November 1, 1940 and maturing November 1, 1960. These bonds carrying Moody's rating were offered to the public at a price of 102 per cent of principal amount to yield 2.87 per cent to purchasers.

In conjunction with the public offering of Series B bonds, the company sold privately $6,250,000 principal amount of Series A bonds to four banks and an insurance company. The Series A bonds were dated November 1, 1940 and are to mature serially in equal annual instalments on November 1, 1946 to 1950, inclusive, with interest rates ranging from 1.65 per cent to 2.30 per cent according to maturity.

At the same time the company arranged for the private sale of $5,000,000 face amount of Serial notes due in four equal instalments on November 1, 1942 to 1945, inclusive, with interest rates ranging from .75 per cent to 1.50 per cent according to maturity.

It was reported that the proceeds of the three issues were to be applied to the reduction of all of the company's outstanding $22,500,000 principal amount of first mortgage and first lien Series A four per cent bonds due March 1, 1952.

Q. Does that complete your investigation as to that particular refunding operation?

A. It does.

(Vol. LXXXIII, pp. 12301-12302.)

* * * * *

Q. As I gather the plan of your presentation of rate of return study, it consists in effect of two parts; one, Part 1 which might be called general background material; and then Part 2 which is that which is directly and particularly applicable to the case in which the exhibit is being offered.

A. That is in connection with natural gas companies, yes.

Q. Yes.

A. Correct.

Q. That is, you would use this Part 1 which is in Exhibit 225, in any rate case whether electric or gas, before the Federal Power Commission?

A. That is true.

Q. And so I say it consists of what I say is back-ground material. I don't know what you call it.

A. I have the same view of it.

Q. It is a lot of general information that you feel is pertinent but the direct and particular data on natural gas companies is contained in Part 2?

A. Well, I don't mean in answering that question to *minimunize* the significance of Part 1. I think Part 1 is essential to an understanding of Part 2.

Q. You would use it, though, in an electric case just the same as in a gas case?

A. That is correct.

Q. As I understand it, in presenting these studies you do not express an opinion as to what percentage of return a fair rate of return to be?

A. That is true. I have not been instructed to recommend a specific rate of return. I have merely been instructed to prepare a study which contains the facts and factors which should be considered in arriving at such a determination on the part of the Commission.

(Vol. LXXXIII, pp. 12307-12308.)

* * * * *

Q. Now, on that schedule, Page 8 of Schedule 1, there is no company that is engaged solely in the gas business, either manufactured or mixed gas?

A. That is correct.

Q. Then with respect to the rating AA on the following page, that is again true, is it not?

A. It is.

Q. And the same thing is true with respect to rating A bonds on the succeeding page?

A. That is correct.

Q. And then when we come to the Baa bonds I believe the only company that is in the gas business solely is the Peoples Gas, Light and Coke Company?

A. That is correct.

Q. Now, that is the distributing company that distributes mixed gas in the city of Chicago, Illinois?

A. It is.

Q. And is one of the largest gas distributing companies in the United States, is it not?

A. I believe it is the largest mixed gas distributor.

Q. At any rate, it is in the second largest city in the United States?

A. That is correct.

Q. So that Moody's, in selecting for their investors service, a group of the bonds of the four ratings shown, have included only one company that receives its revenue only from the sale of gas?

A. That is so.

Q. And that happens to be in the lowest rating of those groups?

A. Yes.

(Vol. LXXXIII, pp. 12311-12312.)

* * * * *

Q. I take it it is your opinion that cost of money as represented by bonds sold by a natural gas pipe line company is the best source of information as to the cost of that capital for such companies?

A. In a general way the answer is yes.

Q. In answer to my question a little while ago you said that my question assumed there were no natural gas pipe line bonds available and that was a premise to your dis-

cussion, so from that I adduce that you consider the best source of comparison what actually has been done with natural gas pipe line bonds by companies engaged in that business and actually issued?

A. I answered that question by saying in a general way, yes. My reason for that was simply that if we were to encounter a condition where bonds of natural gas pipe line companies were outstanding in the hands of the public and were selling above call price but were not refunded; when an opportunity for refunding was here, then the figures that you would get as yields on natural gas pipe line company bonds would not necessarily represent the lowest bond money cost available.

Q. Well, Chart 1 shows not the bond money cost to the companies when the issue was put out, but the investors appraisal of the return on market price, doesn't it?

A. It does; it shows yield to the public.

Q. You could do the same thing with respect to natural gas pipe line bonds if they were sold in the market?

A. Yes, but it would be necessary to analyze market transactions to determine upon what basis the bonds were being traded as to price.

(Vol. LXXXIII, pp. 12316-12317.)

* * * * *

A. That is right. Chart 1 contains a list of what purports to be 120 bonds of three classes of industry, public utilities, industrials, and railroads. The yields are shown by rating groups. In Chart 4 we take only the bonds of the forty public utilities and show those bonds by rating groups.

Q. Here again the only company that is exclusively in the gas business is the Peoples Gas, Light & Coke Company?

A. It is the same company that appeared in the other place.

Q. In neither of those lists has Moody included any natural gas pipe line company bonds—

A. That is correct.

(Vol. LXXXIII, p. 12321.)

* * * * *

Q. You have in addition to those which you mentioned, those three which you mentioned as being not of such good

investment opportunities; the companies that distribute electricity in Boston, Cleveland, Chicago, Baltimore, Detroit, and Hartford, Connecticut. Isn't that as conservative, sound and excellent a group of electric operating utilities as you can find?

A. As I said before, if you were to give consideration to the quality of issues in your compilation that was presented to me as to common stocks and then were to do the same thing as to bonds, then the compilation might have some significance, but otherwise I just can't express any opinion about the results that you have obtained here.

Q. You haven't answered my last question as to the character of the group of electric companies in those cities I mentioned.

Will you read the question so Mr. Knapp can answer it, Mr. Reporter?

(The question referred to was read by the reporter, as set forth above.)

By Mr. Dougherty:

Q. Do you understand the question, Mr. Knapp?

A. Yes, sir. If you will just permit me to consider that a moment.

Q. Yes.

A. I consider that group as a good quality group on the average.

Q. You could find few companies that are better?

A. Mr. Dougherty, all of the companies that you can find are on this schedule as to my knowledge.

Q. Well, now, you then attribute my attempt at mathematical computation as an interesting phenomena if true?

A. That is correct.

Q. Will you read them off for the years I have indicated so we will have them in the record just in case somebody agrees with me and not with you?

A. How would you like these figures read?

Q. Suppose you let me read them and you can confirm them.

A. Very well.

Q. As shown on Schedule 6, the weighted average of bond yields for public utility companies, and as shown on

Schedule 8, the average yield for common stocks shown on that schedule for the years as I have indicated are as follows:

For 1929, bonds 5.37; stocks 4.06; total 9.43;

For 1930, bonds 5.11; stocks 4.59; total 9.70;

For 1931, bonds 4.65; stocks 5.95; total 10.60;

For 1932, bonds 5.66; stocks 7.74; total 13.40;

For 1933, bonds 4.95; stocks 7.02; total 11.97;

For 1934, bonds 4.81; stocks 7.57; total 12.38;

For 1935, bonds 3.92; stocks 7.32; total 11.24;

For 1936, bonds 3.56; stocks 5.89; total 9.45;

For 1937, bonds 3.56; stocks 6.77; total 10.33;

For 1938, bonds 3.49; stocks 7.42; total 10.91;

For 1939, bonds 3.45; stocks 7.04; total 10.49.

(Vol. LXXXIII, pp. 12335-12337.)

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Q. Now, if a company has no debt or no preferred stock, normally the earnings-price ratio on that company would be lower than if it did have debt and preferred stock ahead of it?

A. Normally, yes.

Q. That is what you get, then, is a general overall picture where there is any common stock outstanding?

A. That is right.

Q. And where you have bonds or preferred stock you have from the earnings-price ratio, you get the position—the inferior position that the common has?

A. If you don't intend to characterize the word "inferior." Common stock, of course, is inferior to bonds and preferred stock.

Q. I will say "subordinate" instead of "inferior."

A. Subordinate, yes.

Q. So where you have a company that has only common stock outstanding, you really get a better overall picture of investor appraisal of that company's position from the

common than you do from the common where there are these issues of bonds and preferred stock?

A. Well, I don't agree as to that, Mr. Dougherty, about your statement that you get a better overall picture. If by that you mean that your overall rate, cost of money is lower, I don't agree.

Q. I didn't mean it would be lower in this sense that you have considered the cost of money for bonds and cost of money for preferred stock and cost of money for common, but I was directing my question solely to the significance of the earnings-price ratio of common stock between a company that had nothing but common and a company that had both bonds and preferred stock outstanding.

A. Generally speaking, if you limit your comparison to common stock alone, you will find a lower earnings price ratio for the company which had only common stock outstanding.

Q. Now, Schedule 9 which is headed "New Corporate Issues in the United States, all Public Issues and Public Utility Issues," is it not a fact that that schedule shows that of the financing done since 1934, the principal amount has been refunding rather than for new capital?

A. Yes.

Q. And I note that on Schedule No. 9, Page 4, you quote from the Commercial and Financial Chronicle—or, rather, you don't quote from it, you refer to it and make this notation, that that periodical does not include natural gas pipe line companies that are not engaged in retailing to general consumers within the category of public utility issues?

A. That is true.

Q. Do you know why that Commercial and Financial Chronicle does make that classification of natural gas pipe lines?

A. No, I do not know why.

Q. On Schedule 10, where you have a listing or compilation of electric operating utility bonds sold from 1935 to 1939, I take it those are, as you say, only electric companies and do not include any companies that are engaged solely in the gas business?

A. That is correct.

Q. And again on—well, all through Schedule 10—I should say Schedule 10-A, that same situation holds, does it not?

There are no companies there that are engaged solely in the gas business?

A. That is correct.

Q. Where you have shown in these tables the yield to the purchaser, that I take it does not represent exactly the cost of the bond money to the company?

A. It does not represent cost to the company.

Q. So that in order to know what the cost to the company would be there would have to be something added to what you show as yield to the purchaser?

A. That is correct.

Q. In all of Schedule 10-B, it again contains no company in the gas business only?

A. That is correct.

Q. The same thing is true with Schedules 11 and 11-A?

A. That is correct.

Q. Are there any bonds outstanding of the Indianapolis Power and Light Company, which company is referred to on Schedule 12, as having recently sold an issue of common stock in 1940?

A. I can't imagine it not having bonds, but let me see. I have here the Banking Quotation Record, issue of February 6, 1941, which on the New York curb exchange quotations indicates that the Indianapolis Power and Light has 3¾ per cent bonds due in 1970 outstanding.

Q. Was the quotation then about par, or what was it?

A. January 31, 1941, bid 107, ask 108.

Q. And what yield would that result to the purchaser?

A. That would be a yield of somewhere between 2.85 and 2.90 per cent.

Q. Now, having that yield in mind and having in mind the earnings-price ratio as shown on Schedule 12 for the Indianapolis common stock, which you show as 8.4 in comparison of those two figures, it would indicate, would it not, that the common stock purchaser is demanding almost three times return on his purchase of common stock as the purchaser of bonds of the same company demands for interest yield?

A. Well, you will note on Schedule 12 that for the year 1939 Indianapolis Power and Light had only 33.95 per cent of its gross income available for common stock. I think that explains that high ratio.

Q. But in that situation the statement I made is correct, with the situation of that company?

A. Yes. If its bonds are reasonable in proportion to the property account, there is no reason why the bonds could not have a good rating and a good yield.

Q. So you have all the way through this situation of investors' appraisal a fluctuating rate which is demanded depending upon the percentage of bonds, percentage of common stock, amount available of gross for fixed charges on bonds and dividends on common?

A. Oh, yes, that is one of the indicators. I might put it this way: coverage is one of the indicators of risk.

(Vol. LXXXVII, pp. 12339-12343.)

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Q. Well, I note on Chart 12 where you show the trend of corporate earnings for industries, utilities and railways, that you have not put on that chart any separate line with respect to the gas industry, either those engaged in distribution of natural or mixed gas, or natural gas pipe line companies.

A. I would like to do that right now.

Q. That's okay with me.

A. I refer you to my direct testimony at the top of Page 46 relating to Chart 12, at which place you will see a comparison of five electric utilities—the five electric utilities included among the thirteen utilities on Chart 12, with the thirteen utilities as to index as to net earnings based on the year 1926 as equal to 100 per cent.

Now, statistics are available for the natural gas industry from which an index based on the year 1931 as 100 per cent can be constructed. In order to make a comparison, however, it will be necessary to reconstruct the index of earnings for the thirteen utilities and the five electric utilities shown on Page 46 of the written testimony to a 1931 base year.

I have done that and I will read the comparative figures for the electric utilities and for the natural gas industry into the record.

Q. Will you first state why you have to reconstruct it for the year 1931?

3. Because the available data on the natural gas industry does not go back beyond that year.

Well, isn't that also because of the fact that most of these long distance pipe line companies have come into existence since 1928 and therefore that has created a new type of business in the natural gas industry that did not exist prior to that date?

A. Yes, to the extent that you refer only to pipe line companies. Of course, I think there has been distribution of natural gas probably for a few years, at any rate, prior to 1928.

Q. I can assure you it has been since 1880. You go ahead and read the figures.

A. The figures, then, are as follows:

1931, the net earnings of the five electric utilities—and when I refer to electric utilities hereafter I refer to those five—were for 1931, the index for that year being 100, the index for both the electric utilities and the natural gas industries would be 100.

In 1932 the index for electric utilities was 78; for natural gas industry, 86.

For 1933, for electric utilities, 65; for natural gas industry, 53.

For electric utilities in 1934, 62; for natural gas industry, 61.

For the electric utilities in 1935, 69 and for natural gas, 110.

For 1936, electric utilities, 74; for natural gas, 135.

In 1937, for electric utilities, 86; for natural gas industry, 146.

For 1938, electric utilities, 76, and for natural gas industry, 121.

For 1939, electric utilities, 89, and for natural gas, 141.

Q. Now, you have used there under the electric utilities the five same companies each year?

A. That is correct.

Q. So that what you get is a relationship of the—is it net or gross?

A. Net income.

Q. —of the net earnings of five companies. Now, what you have got so far as the natural gas industry is concerned, however, is all companies reporting to the American Gas Association?

A. That is correct.

Q. And let me point this out—let me ask you here if you know about this: that within the period of time that you speak, the Detroit changed from—changed over from manufactured gas, so that it almost tripled between 1935 and 1940.

A. That is correct.

Q. And that would all have—what you are doing in that comparison is comparing five companies and only the natural growth of those five electric companies and you are comparing with that the natural gas industry which has multiplied, company by company, and taken over a lot of business that was formerly under the manufactured gas business, haven't you—what you are attempting to do?

A. That is true, Mr. Dougherty, but the mere growing of an industry does not increase its growth of net income. It may increase its gross revenue.

Q. Well, when you have three pipe lines instead of one, and each one of them is making money, you will have more net income from the three than you would have from the one?

A. In talking about the pipe line companies, yes.

Q. That's what I am talking about.

A. Yes.

Q. Do your figures for 1931, 1932 and 1933 include all of the natural gas business that was done in these communities that subsequently changed to natural gas?

A. It does.

Q. You have added them in?

A. I haven't added them in, the American Gas Association did that.

Q. What compilation of statistics have got that in?

A. The annual statistics of the natural gas industry in 1939, statistical bulletin No. 41, dated October 1940, American Gas Association.

Q. Now, that table you are speaking of lumps both manufactured gas revenues and net income along with that from the natural gas business, doesn't it; that is, they take for the years prior to the time these companies that formerly were distributing manufactured gas and put those revenues in and carry them all the way forward through to 1939 in the same manner as if they had been received for natural gas?

A. That is correct, yes.

Q. So after all, what you have got in the figure you have read from is a combination of revenues from manufactured gas for a number of years and then revenues for natural gas for a succeeding number of years?

A. That is correct.

(Vol. LXXXIII, pp. 12345-12349.)

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Q. Then your next Schedule No. 2 which is the statistics on dollars which you referred to before, that of course would reflect such additional sales as these pipe lines made to industrial customers and new groups where no gas had been distributed before?

A. You mean for natural gas?

Q. Yes, for natural gas.

A. Yes, I think that is correct.

Q. So we have had during that last decade a condition in the natural gas industry of growth that was based on different facts than growth that might have taken place in the electric industry in that same period?

A. Well, I just don't know what—

Q. I mean this: In 1930 practically all of the communities that resided in the United States did have electric service and the growth that took place in that period would be increased consumption by the people who lived there or by the industries there rather than the installation of electric service in the areas where there had been no such previous service?

A. Well, except for the increase in rural sales, that might be so.

Q. But there is a different situation of natural gas where large cities such as Denver, Detroit and others that formerly had distributed manufactured gas, then changed

over to natural gas, and that would bring a large group of customers in in a short period of time for the total number of customers being served with natural gas?

A. That is right.

(Vol. LXXXIII, pp. 12364-12365.)

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Q. So again here these statistics represent a growth of new business as distinguished from merely a growth of territory previously occupied?

A. I just don't quite get your distinction there. Do you mean growth or new business?

Q. Business in addition, new business in territories not previously served by natural gas as distinguished from additional sales by companies occupying territories and selling gas there during that same period.

A. Of course, these figures give effect to both situations.

Q. Oh, yes, quite so, but I am saying that a substantial part of it represents the new sales of gas where natural gas had never been sold before.

A. Yes, but we don't have a situation where natural gas is supplanting some form of service other than gas. We still have gas in there and to that extent your sales of natural gas in volume can't be said to reflect increases of totally new business that was never had before.

Q. You are familiar with the fact, are you not, Mr. Knapp, that the volumes of natural gas sold by the distributing companies which formerly distributed manufactured gas increased substantially within the period of the first five years when the changeover was made?

A. That is undoubtedly true. What I am point out is there was some volume there to begin with.

A. Oh, yes, but if those companies had continued to distribute manufactured gas, those increases would not have resulted, would they?

A. Probably not, because natural gas is cheaper than manufactured gas.

Q. And you bring in house heating which was not done formerly?

A. That is correct.

Q. You take the trends in manufactured gas in cases

like Consolidated Edison in New York. They have not shown the same type of increase from 1936 to 1939 as these statistics indicate for natural gas, have they?

A. That is true.

Q. It is the changeover to natural gas that increases the volume. On that same chart you show transported in interstate commerce three times as much gas in 1939 as in 1926, do you not?

A. That is correct.

Q. That indicates long-distance transportation?

A. That is right.

Q. And again you go from 23 states where gas was consumed in 1926 to 35 states in 1939. That again indicates, does it not, a tremendous area where natural gas was never served before and is now being served?

A. That is correct.

Q. And those are the significant factors in interpreting the statistics, are they not?

A. The statistics reflect that factor, if you want to call it a factor.

(Vol. LXXXIII, pp. 12367-12370.)

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Q. Panhandle Eastern, whose bonds you said were rated A, and has this low rate of interest, around three per cent on its long-term debt, has a reflection in the people who buy its common stock, however, of rather a high earnings-price ratio?

A. Well, there are several reasons for that, Mr. Dougherty.

Q. Well, first the fact is so?

A. It is so.

Q. I assume if there were no reasons for it it would be something different.

A. I would like to explain that reason right now in answer to your question.

Q. That's all right, go ahead.

A. In view of Panhandle Eastern Pipe Line Company's earnings record, it has not been a very impressive record. It was not until 1936 when the Detroit market was opened to the company that it began to even show a profit. In the second place, the company has outstanding 11 million dollars in par value preferred stock of which with respect to

40 million dollars the stock is participating with common stock in earnings available for distribution as dividends. In the third place, Panhandle Eastern has been involved in litigation for the last several years with respect to its control.

Q. Now, with respect to the market situation, there is no indication now that it has—having this large market around Detroit, that its business will not be maintained on the same level which it has experienced for the last couple years.

A. That may be, but its record has not been consistent in the past.

Q. Well, it is consistent in this fact that it was low for a long while and as soon as it got the market, why, it started to boom rather rapidly, didn't it? That is, you have to more than just see the figures on paper to understand what the situation is, don't you, Mr. Knapp?

A. I think an investor will understand it is better off with its Detroit market than it would be without it, but at the same time, the circumstances peculiar to that company which I have pointed out operate in my opinion to keep that earnings-price ratio above the level which it could attain.

Q. Now, with respect to Memphis Natural, there is a company that has very little debt outstanding and correspondingly its per cent of gross revenues that would be available for dividends on common stock would be relatively high, wouldn't it?

A. That is true.

Q. That is, having in mind the discussion we had this morning about the electric company common stocks.

A. That is true, but with respect to Memphis Natural gas, I'd like to read into the record its record of earnings per share since 1929.

1929, 7 cents; 1930, 43 cents; 1931, 66 cents; 1932, 36 cents; 1933, 33 cents; 1934, 25 cents; 1935, 22 cents; 1936, 35 cents; 1937, 77 cents; 1938, 55 cents, later revised to 64 cents; and 1939, 65 cents; a record which has certainly been remarkable for its lack of stability during this period of time.

Q. Now, of course, you recognize that Memphis Natural did not begin business until about 1929—1928—along in there?

A. Yes, I have a note here that its 18-inch line from the Monroe field to Memphis was constructed in 1928.

Q. So you wouldn't expect it to start off and make the same money in the first six months that it makes after its market has been built up for six or seven years?

A. No, I don't expect it in the first year.

Q. As a matter of fact, if you would examine the records of all of these natural gas pipe line companies you would find that the first two or three years have been lean years in beginning to build up the line and it has taken four or five years to get the load on the line?

A. That may be true with respect to the first few years, but these conditions I have pointed out have persisted for a longer period of time than that.

Q. It took some of them longer to build up the market than others?

A. Whatever the cause was, the earnings record was not a favorable one.

Q. Of course, all of these earnings are included in these statistics which you have quoted from the American Gas Association which shows this tremendous growth in earnings during the last several years?

A. Well, I don't know how that relates to these particular companies.

Q. You don't know whether they report or not to the American Gas Association?

A. Oh, yes, the figures are included in there, but the effect on the total is something I am not prepared to say.

Q. Well, I say, they are included. Now let's take the El Paso Natural. What is your explanation of instability for that company?

A. Well, taking a look at the record on that particular company, we find that that company was unable to pay its preferred dividends from 1932 to 1936, but it did pay those dividends clearing up arrears in 1936. The record shows that the initial dividend on the common stock was paid on December 29, 1936, that the next dividend was paid in 1937, $1.80 regular, 20 cents special, and that following that date it paid 50 cents quarterly through 1938 and continued paying that dividend through 1939, and again we have a company whose earnings record has not been too favorable.

Q. That company started business in 1932, didn't it?

A. I don't think so. According to my information it constructed its pipe line to El Paso, Texas in 1929.

Q. And made an extension of some considerable size in 1932, is that it? Do you have any information on that?

A. Well, I can't give you the precise date, but the line was later extended from El Paso to Douglas, Arizona and from there to Tucson and from there to Phoenix.

Q. You don't have the date of that?

A. I don't have that.

Q. That increased its business considerably, did it not, Mr. Knapp?

A. Well, the indication I have is that the deliveries in cubic feet began to show a marked increase in 1934.

Q. Since that time—since 1935, at any rate, the earnings have been fairly steady and substantial for that company, haven't they?

A. I would say probably from 1937 that condition has obtained.

Q. And having established their load, you have no indication there that there will be any change in that result?

A. No, sir, I have no indication of that. Here again we have a company whose record in the past has not been very favorable and which now is beginning to reach a favorable status.

Q. Well, that, of course, is true with a great many long distance pipe lines, is it not, Mr. Knapp? You don't mean by that, do you, that you attribute the same result from that fact as if an electric company that has been in business for 50 years in a community had shown poor earnings over the last ten years?

A. No, I attribute it to, more than anything else, the fact that most of the natural gas pipe line companies which have been the most profitable ones have not had common stock outstanding in the hands of the public.

Q. Well, that isn't the thing that causes some of them to have business and some of them not to have business, does it?

A. It isn't the thing that causes them to have business, perhaps, but the fact remains that there are many more companies which have enjoyed a consistent record of favorable earnings which have no common stock in the hands of the public. There is, therefore, no way by which you can appraise the public's attitude toward those particular securities.

Q. That is because, of course, there are none outstanding?

A. That is correct.

Q. And it so happens those pipe lines for that reason, either management or territory or whatever it may be, built their load up a little quicker than others?

A. Well, that is the assumption.

Q. Now, what about the Interstate Natural Gas Company? There has been stock outstanding in the hands of the public since 1926 or '7, hasn't there, on that company?

A. For Interstate, my indications are that that company constructed its 18- to 20-inch pipe line from the Monroe field to Baton Rouge in 1926. I have been unable to find any published earnings record prior to 1933. Beginning with that year, the earnings per share were 35 cents; in 1934, 71 cents; in 1935, $1.16; in 1936, $1.82; 1937, $2.50; 1938, $2.13; 1939, $2.11.

Also with respect to Interstate, the initial dividend on that stock, 25 cents, was paid on December 15, 1930. The next dividend paid June 15, 1931 for 25 cents, and no dividends thereafter until December 15, 1936 when $1.75 was paid; 1937, $2.60; 1938, it dropped down to $1.75, and in 1939 it increased slightly to $2.00, which appears to me to indicate that company's record of earnings has been erratic and its dividend policy has been erratic.

Q. You observed, I suppose, that up to 1936 the company paid off all of its bonded debt?

A. Well, I know that it had none outstanding in 1937.

Q. Well, did you obesrve that that had taken place and its surplus increased from 1926 up to that time by that amount?

A. I am sorry to differ with you, Mr. Dougherty, but surplus does not increase for the purpose of paying off bonds.

Q. But it does by virtue of not paying out dividends?

A. It may by virtue of various things. Funds for paying off bonds could be derived from provisions for reserves for depreciation or depletion.

Q. When you do not pay dividends your surplus will increase more rapidly than if you pay dividends out?

A. Assuming that you have earnings, Mr. Dougherty.

Q. Well, you can't pay dividends out without earnings.

A. You say assuming that you paid no dividends your surplus will increase.

Q. Have you any information on Interstate Natural Gas Company back in 1936 to answer what I have asked you about the surplus?

A. Well, you asked me a moment ago if they had not built up enough surplus to pay off its bond issue and my answer is that they don't pay off bond issues by building up surplus.

Q. You pay off by taking money out of the receipts of the company?

A. That's right.

Q. Do you know whether that was done in that case?

A. I presume it must have done so.

Q. And that would naturally result in some increase in surplus if earnings during that year were so utilized?

A. Well, assuming that we know that the company did have some earnings, it is undoubtedly true that a surplus may have increased. I don't know without having seen the figures of the company.

Q. You don't think that was important to go back and find out beyond 1935 what they paid?

A. I don't think it is absolutely essential. I have read you the earnings record of the company which I think speaks for itself. As to whether they paid off their bonds or did not pay off their bonds, I don't think that affects their situation particularly.

Q. It does with respect to whether they pay dividends or not. You gave some indication of not paying dividends as to that having a bad market effect.

A. Well, I think that an inconsistent, erratic dividend policy does have an unfavorable market effect.

Q. Now, how many years do you have to go back to have a consistent dividend policy?

A. Well, I just don't know what you mean, Mr. Dougherty.

Q. Well, the company has had consistent dividend policy for four or five or six years?

A. I wouldn't say it was exactly consistent.

Q. To be consistent, do you have to pay the same amounts each year?

A. It shouldn't be subject to downward fluctuations, I don't think, in order to make it attractive.

Q. Now, you apply that to all other corporations, gas

same; that when they have some decrease in their annual dividends, why, that has a very deteriorating effect?

A. I think it does on a good many investors.

Q. Is it your idea that for one of these natural gas pipe line companies which has a common stock, that would truly represent an accurate appraisal of purchaser interests, that it should have started paying dividends the first year it was in operation and continue to pay at least the same or more each year thereafter?

A. Well, I can say this: A company, of course, may not be able to pay any dividends for the first year or two of its existence, but regardless of that fact, I think a fixed dividend policy has an effect on investors. Whether a company should or should not do a thing does not matter.

Q. It is true also of them that none of them began to pay dividends for four or five years after they started, isn't that true—these natural gas pipe line companies?

A. I wouldn't—well, with respect to those that I have cited, the dividends were paid not long after the companies were organized.

Q. Well, in any event you have used all the available material that there is and is there any difference in the commencing of dividends and the time of the beginning of the line that dividends were paid by these companies than these other natural gas pipe line companies where common stocks are not held by the public?

A. Read that, please.

(The question referred to was read by the reporter as set forth above.)

The Witness: I just don't understand that question.

By Mr. Dougherty:

Q. Do you know anything about the dividend record of other natural gas pipe line companies where common stocks are not held by the public?

A. Yes.

Q. Take the Panhandle Eastern. You had no common stock out until just recently. When did it first pay dividends on its common stock?

A. The first dividend paid by Panhandle Eastern was a stock dividend of $28.26 per share. That was paid on March 25, 1936.

Q. That line was built when—1931, would you say?

A. Its line from the Amarillo field to Springfield, Illinois, was constructed in 1931.

Q. Now take this company—the Colorado Interstate Gas Company. Do you know when it paid its first dividend on its common stock? Do you know what year it was?

A. Yes, I have that information. The first dividend was paid on preferred stock in 1935, apparently cleaning up an arrearage on preferred stock.

Q. That was about the same thing as the El Paso Natural Gas Company. They cleared up their arrearage by not paying it for a number of years.

A. That is true.

Q. When was the first dividend paid on the common stock of the Colorado Interstate Gas Company?

A. 1936.

Q. And this company was constructed in 1928, so that is a longer period of time between the inception of the company and the payment of the dividend than any of those others?

A. Yes, but let me give you a summary of the rate at which Colorado Interstate and Canadian River were establishing earnings after 1928.

Q. Rate on what?

A. Earnings, utility income related to adjusted book cost of plant less reserve for depreciation and depletion as adjusted, plus working capital.

Q. That is the same figure put in by the Power Commission accountant, isn't it?

A. That is correct.

Q. It is already in the record. They show on their computation about an average of 15 per cent over the entire period.

A. Yes.

Q. You haven't any similar figures for El Paso Natural Gas Company, Mr. Knapp?

A. No, I wouldn't think I would be in a position to furnish the figures on El Paso Natural Gas Company.

Q. You haven't them for the Interstate Natural Gas Company?

A. I haven't similar figures because they are not available.

Q. The similar figures you have for Colorado Interstate

and El Paso Natural Gas Company indicate no preferred dividends were paid by Colorado Interstate until 1935 and no common until 1936. Now, isn't that an erratic dividend policy up to that date?

A. That might have some effect on it; that is, if the preferred and common stocks were outstanding in the hands of the public, but they have been held by holding companies.

Q. It is only with some other companies where earnings ratio has some effect but with Colorado Interstate it has no effect?

A. That is not the way I interpret it at all.

Q. That is what you said, Mr. Knapp, practically. The very thing you say affected the high ratio price of El Paso Natural Gas Company you say now would have no such effect if the stock of Colorado Interstate were outstanding, isn't that just what you said?

A. The situation is entirely different, because El Paso Natural Gas Company's stock has been outstanding all this time. Colorado Interstate's stock has not been outstanding all this time. We haven't had an opportunity to see what effect, if anything, Colorado Interstate has upon the investor's appraisal of these securities.

Q. People would react differently here under the same set of circumstances than they would for the El Paso Natural Gas Company?

A. It would seem to me in view of the earnings record I have pointed out that if that stock of Colorado Interstate Gas Company had been held by the public those dividends would not have been in arrears such a long period of time.

Q. Of course, that is your assumption?

A. It is an assumption, but—

Q. Let's take the Colorado Interstate Gas Company. In the first place, you have accepted their earnings on a certain basis that the company didn't publish?

A. In connection with Colorado Interstate?

Q. In connection with Colorado Interstate.

A. Yes, I have.

Q. That is, they were put in by the Commission's witnesses and were not furnished by the company and not put in by the company's witnesses?

A. That is correct.

Q. Let's take Interstate Natural Gas Company. They

didn't pay a dividend in substantial amount until 1935 or 1936, did they?

A. They paid a dividend of 25 per cent in 1930 and again in 1931.

Q. Well, then, they skipped until 19 what?

A. 1936.

Q. So that they even paid dividends before Colorado Interstate did? You can answer that, Mr. Knapp.

A. I can answer it, Mr. Dougherty, but it has no meaning whatsoever.

Q. That is up to somebody else to decide. You answer my questions and then somebody else will decide whether they will have meaning. We want the facts here.

A. I am trying to—

Q. Isn't it a fact that that company paid dividends sooner after its inception than did the Colorado Interstate Gas Company.

A. It did but that doesn't explain why.

Q. Oh, not to you, I know, but that is a fact. Do you still believe that the failure to pay dividends and to have an erratic dividend policy has an effect upon investor appraisal?

A. I think it has an important effect, but I don't think it is the most important effect.

Q. It wouldn't have any effect on Colorado Interstate Gas Company, although it does have an effect upon the Interstate Natural Gas Company?

A. I don't follow your line of reasoning.

Q. Do you think it has had an effect upon Interstate Natural Gas Company's market price ratio?

A. I can't measure the effect but I think it may have had some effect. I think the earnings feature is the more important of the two.

Q. Of course you have no figures that have been furnished to you by the Power Commission's witnesses as to what their computed earnings on certain estimated bases would be for that company, have you?

A. No, I do not.

Q. You are unable to get any market reaction other than the ones of the stocks you have listed here?

A. That is correct.

(Vol. LXXXIII, pp. 12376-12392.)

NATURAL GAS INDUSTRY IN THE UNITED STATES

NATIONAL REVENUES FROM SALES TO CONSUMERS, GAS SALES TO CONSUMERS (M.C.F.), AND NUMBER OF GAS CUSTOMERS

Years 1909 to 1939, Inclusive

Year	Total	Domestic(1)	Commercial	Industrial and Electric Generation	Total	Domestic(1)	Commercial	Industrial and Electric Generation
	Revenues From Sales to Consumers				Average Annual Revenue Per M.C.F. of Gas Sales (2)			
1909	$ 374,290,000	$ 285,444,000	$ 32,579,000	$ 120,267,000	$ 0.380	$ 0.667	$ 0.555	$ 0.201
1910	385,857,000	257,485,000	33,994,000	114,378,000	0.390	0.692	0.558	0.197
1911	344,846,000	237,797,000	37,899,000	90,608,000	0.401	0.696	0.558	0.192
1912	368,651,000	255,063,000	38,995,000	73,293,000	0.359	0.711	0.558	0.173
1913	389,889,000	233,484,000	37,165,000	79,240,000	0.355	0.711	0.554	0.166
1914	367,867,000	213,649,000	38,376,000	75,072,000	0.356	0.704	0.555	0.160
1915	376,388,000	205,145,000	40,314,000	108,689,000	0.357	0.703	0.560	0.164
1916	418,444,000	237,210,000	46,664,000	128,771,000	0.359	0.698	0.560	0.165
1917	463,168,000	268,175,000	48,842,000	146,991,000	0.357	0.690	0.571	0.178
1938	438,756,000	262,178,000	47,347,000	128,421,000	0.348	0.688	0.468	0.167
1939	448,886,000	265,908,000	50,908,000	143,890,000	0.358	0.686	0.461	0.168
	Gas Sales To Consumers (M.C.F.)				Average Annual Gas Sales (M.C.F.) Per Customer (2)			
1909	998,036,000	335,418,000	58,441,000	596,977,000	168.1	60.5	175.6	87,138.9
1910	980,066,000	347,979,000	61,708,000	580,385,000	159.2	57.6	170.9	86,181.1
1911	888,870,000	340,991,000	64,795,000	498,896,000	146.9	56.5	164.2	80,177.6
1912	934,010,000	320,841,000	77,160,000	436,269,000	144.1	56.5	179.5	68,134.1
1913	888,388,000	300,286,000	73,788,000	488,321,000	139.	55.0	170.4	17,160.0
1914	876,141,000	303,321,000	79,153,000	493,667,000	132.7	54.3	177.1	17,986.9
1915	1,053,806,000	320,733,000	88,115,000	644,958,000	153.5	52.5	188.3	19,544.2
1916	1,215,930,000	339,893,000	96,759,000	779,278,000	159.5	54.0	196.3	21,061.6
1917	1,314,997,000	379,880,000	103,220,000	832,797,000	163.3	52.0	202.1	21,994.9
1938	1,228,958,000	382,858,000	108,743,000	737,857,000	167.8	52.0	182.3	18,044.8
1939	1,288,243,000	372,971,000	110,314,000	805,458,000	178.2	54.3	202.1	19,673.4
	Number of Customers at End of Year				Average Annual Revenue Per Customer (2)			
1909	3,896,000	3,540,000	334,000	22,000	99.81	80.34	97.54	5,465.95
1910	3,829,000	3,460,000	341,000	28,000	98.00	80.47	94.17	5,199.00
1911	4,883,000	3,777,000	439,000	27,000	95.95	83.15	90.45	3,355.85
1912	6,188,000	5,671,000	490,000	27,000	95.92	80.88	88.69	2,799.74
1913	6,177,000	5,716,000	433,000	28,000	94.44	37.35	85.85	2,889.57
1914	6,391,000	5,911,000	447,000	33,000	94.31	36.14	85.85	2,280.96
1915	6,495,000	6,018,000	448,000	33,000	94.99	36.93	90.44	3,291.78
1916	6,817,000	6,299,000	488,000	31,000	60.50	37.70	95.81	3,488.82
1917	7,044,000	6,521,000	505,000	40,000	60.75	38.06	96.38	3,644.78
1938	7,216,000	6,656,000	524,000	36,000	57.02	38.42	88.88	3,080.26
1939	7,484,000	6,870,000	561,000	48,000	60.38	37.24	93.09	3,353.42

Source: "Annual Statistics of the Natural Gas Industry in 1939", Statistical Bulletin No. 41, October 1940, Issued by American Gas Association.

(1) Includes natural gas sold for house heating.
(2) Computed averages.
Note: These figures do not include natural gas used in field operations and in the manufacture of carbon black, or gas used by distributing companies in the conduct of their own operations.
Companies selling mixed manufactured and natural gas are not included in these data.

EXHIBIT 225A

COMPARATIVE ESTIMATED INCOME STATEMENT

NATURAL GAS INDUSTRY IN THE UNITED STATES*

COMPARATIVE ESTIMATED INCOME STATEMENT FOR THE YEAR 1931 - 1939

(Thousands of Dollars)

	1939	1938	1937	1936	1935	1934	1933	1932	1931	Percent Change 1938-39
Revenue from Gas Sales to Consumers	$448,859	415,756	443,408	412,444	376,388	347,867	329,889	342,651	366,246	+ 8.0
Miscellaneous Operating Revenue	6,643	6,735	5,631	4,289	3,726	2,846	2,705	2,056	4,065	- 1.4
Total Operating Revenue	455,502	422,491	449,039	416,733	380,114	349,913	332,594	344,707	370,311	+ 7.0
Operating Expense**	233,353	215,808	225,417	205,033	195,759	191,753	185,256	182,350	199,968	+ 8.1
Maintenance	14,576	17,238	16,614	17,503	15,205	13,297	12,971	13,788	15,553	- 15.4
Retirement, Deple., Depre. Exp.	55,298	51,882	53,885	47,090	43,712	42,339	39,911	41,368	40,734	+ 6.6
Taxes Accrued	44,594	39,968	41,312	37,506	31,930	31,142	29,268	30,679	29,995	+ 11.6
Total Revenue Deductions	347,821	324,896	337,228	307,132	286,606	278,531	267,406	268,182	286,250	+ 7.1
Utility Operating Income	107,681	97,595	111,811	109,601	93,508	71,382	65,188	76,525	84,061	+ 10.3
Non-Operating Income	4,236	4,141	5,388	5,001	5,702	5,599	5,322	5,860	7,776	+ 2.3
Gross Corporate Income	111,917	101,736	117,199	114,602	99,210	76,981	70,510	82,385	91,837	+ 10.0
Interest & Other Deductions	39,765	39,461	42,210	45,424	42,953	45,489	43,570	38,262	40,734	+ 0.8
Net Income Available for Dividends and Surplus	$ 72,152	62,275	74,989	69,178	56,257	31,492	26,940	44,123	51,103	+ 15.9
Utility Plant (000 omitted)	$2,414,490	2,441,840	2,414,484	2,369,490	2,345,384	2,330,984				

* Companies formerly distributing manufactured gas but which were distributing natural gas at the beginning of 1936 have been included in the above tabulation for all nine years. The data shown above for 1931 to 1939 are therefore not comparable with data on the natural gas industry previously issued for those years.

** Includes leased property rents.

Source of Data: Annual Statistics of the Natural Gas Industry in 1939, Bulletin No. 41, October, 1940, issued by the American Gas Association.

SCHEDULE NO. 2
EXHIBIT 225A
2063

(All Gas Quantities in Thousand Cubic Feet)

Year	Total Natural Gas Production	Total Natural Gas Consumption(1)	Natural Gas Transported in Interstate Commerce(2)	Interstate Transportation, Per Cent of Total Consumption (1)	Number of States in which Natural Gas Was	
					Produced (3)	Consumed
(a)	(b)	(c)	(d)	(e) = (d) + (c)		
1926	1,313,019,000	704,344,000	209,361,000	29.7	22	23
1927	1,445,428,000	751,702,000	194,217,000	25.8	24	25
1928	1,568,139,000	819,144,000	241,210,000	29.4	24	25
1929	1,917,693,000	951,261,000	324,779,000	34.1	26	27
1930	1,943,421,000	951,854,000	378,803,000	39.8	26	30
1931	1,686,436,000	917,488,000	330,307,000	36.0	2	35
1932	1,555,990,000	856,720,000	329,781,000	38.5	24	35
1933	1,555,474,000	872,159,000	344,652,000	39.5	24	35
1934	1,770,721,000	980,513,000	408,382,000	41.6	24	35
1935	1,916,595,000	1,087,898,000	462,224,000	42.5	24	35
1936	2,167,802,000	1,258,629,000	566,907,400	45.0	24	35
1937	2,407,620,000	1,410,636,000	687,428,000	48.7	24	35
1938	2,295,562,000	1,309,944,000	636,626,000	48.6	24	35
1939	2,435,000,000P	1,436,154,000P	Not Available			

P. Preliminary.

Source of Data:

Years 1926 to 1934, inclusive-Data compiled by U.S. Bureau of Mines, as represented at page 160 of record of hearing before a Subcommittee of the Committee on Interstate and Foreign Commerce, House of Representatives, 74th Congress, 2nd Session, on H. R. 11662 "To Regulate the Transportation and Sale of Natural Gas in Interstate Commerce and for Other Purposes", April 1936.

Years 1935-1936 - U.S. Bureau of Mines, "Minerals Year Book", 1937 and 1938 editions.

Year 1937 - U.S. Bureau of Mines, "Mineral Market Reports, No. M.M.S. 682", issued December 13, 1938.

Year 1938 - U.S. Bureau of Mines, "Mineral Market Reports, No. M.M.S. 772", issued December 19, 1939.

Year 1939 - U.S. Bureau of Mines, Preprint of Chapter on Natural Gas - "Minerals Year Book", 1940 editions.

(1) Excluding gas used for field operations and manufacture of carbon black. Natural gas used for latter purpose is used in the State in which it is produced.

(2) Excluding amounts transported to Canada and Mexico.

(3) Five states produce over 80 percent of total natural gas. These states, ranked according to volume of gas produced in 1939, are Texas, California, Louisiana, Oklahoma and West Virginia.

SCHEDULE NO. 3
EXHIBIT 225A

2065

SCHEDULE NO. 4

EXHIBIT 225A

NATURAL GAS TRANSPORTED INTO STATES OF COLORADO AND WYOMING

YEARS 1929 TO 1938, INCLUSIVE

(M.C.F.)

TRANSPORTED INTO STATE OF COLORADO

Year	Total	From State of Texas	Kansas	New Mexico	Wyoming
1929	12,654,000	12,563,000	-	91,000	-
1930	15,056,000	14,914,000	-	142,000	-
1931	16,051,000	15,779,000	165,000	106,000	1,000
1932	15,644,000	15,227,000	294,000	102,000	21,000
1933	15,095,000	14,638,000	292,000	112,000	53,000
1934	15,731,000	15,331,000	286,000	111,000	3,000
1935	16,908,000	16,433,000	338,000	137,000	-
1936	19,253,000	18,694,000	411,000	148,000	-
1937	20,511,000	19,928,000	421,000	161,000	1,000
1938	18,855,000	18,210,000	457,000	164,000	24,000
1939	- - - - - - - - - - - - - Not Available - - - - - - - - - - - - -				

TRANSPORTED INTO STATE OF WYOMING

Year	Total	From State of Texas	Colorado	Utah
1929	851,000	-	851,000	-
1930	439,000	-	439,000	-
1931	469,000	364,000	105,000	-
1932	611,000	396,000	215,000	-
1933	623,000	352,000	271,000	-
1934	459,000	316,000	143,000	-
1935	573,000	399,000	174,000	-
1936	669,000	506,000	163,000	-
1937	767,000	523,000	153,000	91,000
1938	665,000	481,000	91,000	93,000
1939	- - - - - - - - - - - - - Not Available - - - - - - -			

Source: U.S. Bureau of Mines Publications
Years 1929 to 1931, inclusive, "Minerals Resources of the United States".
Years 1932 to 1937, inclusive, "Minerals Year Book".
Year 1938 Pamphlet of Chapter on Natural Gas - "Minerals Year Book" - 1940 edition.

SCHEDULE NO. 5
PAGE 1
EXHIBIT 225A

SECURITIES OF NATURAL GAS COMPANIES

SUMMARY ACCORDING TO CLASSES OF HOLDERS

Company and Issues	Total Securities Outstanding	Held by Public	Institutions	Affiliates
Arkansas Louisiana Gas Co.				
Bonds and Debentures:				
First Mtg. 2 3/4%, A, 1940-44	$ 3,300,000	-	$ 3,300,000	-
First Mtg. 3 1/2%, B, 1945-54	9,700,000	-	9,700,000	-
Debentures, 4%, 1955	6,500,000	-	-	6,500,000
	$19,500,000	-	$13,000,000	$ 6,500,000
Common Stock 298,988 Shs. Par $50	14,949,400	-	-	14,949,400
Total	$34,449,400	-	$13,000,000	$21,449,400
Canadian River Gas Co.				
First Mtg. 6% Notes, 1940-48	$ 5,057,000	-	-	$ 5,057,000
Common Stock	1,348,254	-	-	1,348,254
Total	1	-	-	1
	$ 6,405,255	-	-	$ 6,405,255
Chicago District Pipeline Co.				
Notes	$ 4,869,897	-	-	$ 4,869,897
Common Stock, 7,500 Shs. No Par	659,000	-	-	659,000
Total	$ 5,528,897	-	-	$ 5,528,897
Cities Service Gas Co.				
Bonds, Debentures and Notes:				
First Mtg. 3 3/4%, 1947-54	$20,000,000	-	$20,000,000	-
Debentures, 5½%, 1956	8,000,000	-	-	8,000,000
Notes Payable	13,000,000	-	13,000,000	-
	$41,000,000	-	$33,000,000	$ 8,000,000
Common Stock 350,000 Shs. No Par	30,000,000	-	-	$30,000,000
Total	$71,000,000	-	$33,000,000	$38,000,000

Notes Payable of $13,000,000 are secured by $15,000,000 First Mtg. 3¾%, 1940-46.

Colorado Interstate Gas Co.				
First & Coll. Trust 3½%, 1948	$ 8,865,000	-	$ 8,865,000	-
Preferred Stock, 6%, Par $100	2,000,000	-	-	2,000,000
Common Stock, 1,250,000 Shs. No Par	2,352,941	-	-	2,352,941
Total	$13,217,941	-	$ 8,865,000	$ 4,352,941

SCHEDULE NO. 5
PAGE 2
EXHIBIT 225A

SECURITIES OF NATURAL GAS COMPANIES

SUMMARY ACCORDING TO CLASSES OF HOLDERS

Company and Issues	Total Securities Outstanding	Held by Public	Held by Institutions	Held by Affiliates
El Paso Natural Gas Co.				
Bonds and Notes:				
First Mtg. 3½%, 1953	$ 6,000,000	$ -	$ 6,000,000	$ -
First Mtg. 3%, 1953	3,000,000	-	3,000,000	-
	$ 9,000,000	$ -	$ 9,000,000	$ -
Preferred Stock, 7%, Par $100	1,479,700	1,479,700	-	-
Common Stock, 601,594 Shs. Par $3	1,804,782	1,804,782	-	-
Total	$12,284,482	$3,284,482	$ 9,000,000	$ -
$3,000,000 First Mtg. 3%, 1953, were offered in 1940. Company also has recorded $3,407,212 Premium on Common Stock.				
Hope Natural Gas Co.				
Common Stock, 279,693 Shs. Par $100	$27,969,300	$ -	$ -	$27,969,300
Houston Gulf Gas Co.				
Bonds, Debentures and Notes:				
First & Collateral, 6%, 1943	$ 4,238,000	$3,777,000	$ 461,000	$ -
Debentures, 6½%, 1943	1,850,000	1,453,000	397,000	-
Notes, 7%, 1945	1,500,000	-	-	1,500,000
	$ 7,588,000	$5,230,000	$ 858,000	$ 1,500,000
Preferred Stocks:				
7%, Series A, Par $100	$ 806,300	$ 11,100	$ -	$ 795,200
7%, Series B, Par $100	1,500,000	1,000	-	1,499,000
	$ 2,306,300	$ 12,100	$ -	$ 2,294,200
Common Stock, 517,008 Shs. No Par	$ 5,170,080	$ 21,160	$ -	$ 5,148,920
Total	$15,064,380	$5,263,160	$ 858,000	$ 8,943,120
Interstate Natural Gas Co.				
Common Stock, 952,953 No Par	$ 6,529,530	$1,893,564	$ -	$ 4,635,966
Lone Star Gas Co.				
Notes	$16,600,000	$ -	$ -	$16,600,000
Common Stock, 540,000 Shs. No Par	28,113,220	-	-	28,113,220
Total	$44,713,220	$ -	$ -	$44,713,220
Kentucky West Virginia Gas Co.				
Preferred Stocks:				
5% Cum. First, Par $100	$ 2,937,500	$ -	$ -	$ 2,937,500
7% Cum. Second, Par $100	5,407,500	-	-	5,407,500
	$ 8,345,000	$ -	$ -	$ 8,345,000
Common Stock 100,000 Shs. No Par	1,304,715	-	-	1,304,715
Total	$ 9,649,715	$ -	$ -	$ 9,649,715

EXHIBIT 225A

SECURITIES OF NATURAL GAS COMPANIES

SUMMARY ACCORDING TO CLASSES OF HOLDERS

Company and Issues	Total Securities Outstanding	Held by Public	Held by Institutions	Held by Affiliates
Memphis Natural Gas Co.				
Notes	$ 1,610,000	$ -	$ 1,610,000	$ -
Common Stock, 918,680 Shs. Par $5	4,593,400	2,381,678	-	2,211,722
Total	$ 6,203,400	$ 2,381,678	$ 1,610,000	$ 2,211,722
Mississippi River Fuel Corp.				
Bonds and Notes:				
First Mtg. 4%, 1952	$ 8,332,000	$ -	$ 8,332,000	$ -
Notes, 6%, 1940	2,400,000	-	-	2,400,000
	$10,732,000	$ -	$ 8,332,000	$ 2,400,000
Common Stock, 655,220 Shs.Par $10	6,552,200	-	-	6,552,200
Total	$17,284,200	$ -	$ 8,332,000	$ 8,952,200
Michigan Gas Transmission Corp.				
Notes	$ 6,470,500	$ -	$ -	$ 6,470,500
Common Stock, 44,800 Shs. Par $50	2,240,000	-	-	2,240,000
Total	$ 8,710,500	$ -	$ -	$ 8,710,500
Natural Gas Pipeline Co. of America				
First Mtg. 6%, 1946	$42,300,000	$ -	$ -	$42,300,000
Common Stock, 1,500,000 Shs.No Par	3,000,000	-	-	3,000,000
Total	$45,300,000	$ -	$ -	$45,300,000
New York State Natural Gas Corp.				
Income Notes, 6%, 1942	$ 4,500,000	$ -	$ -	$ 4,500,000
Common Stock, 20,900 Shs. Par $100	2,090,000	-	-	2,090,000
Total	$ 6,590,000	$ -	$ -	$ 6,590,000
Northern Natural Gas Co.				
Bonds and Notes:				
First Mtg. 3½%, 1954	$16,000,000	$ -	$16,000,000	$ -
Notes, 2 1/8%, 1940-46	6,000,000	-	6,000,000	-
	$22,000,000	$ -	$22,000,000	$ -
Common Stock, 203,000 Shs.No Par	19,273,460	-	-	19,273,460
Total	$41,273,460	$ -	$22,000,000	$19,273,460
Panhandle Eastern Pipe Line Co.				
First Mtg. 4%, A, 1952	$23,000,000	$ 4,918,000	$18,082,000	$ -
Preferred Stock:				
Class A, $6, Par $100	$10,000,000	$ -	$ -	$10,000,000
Class B, $6, Par $100	1,000,000	-	-	1,000,000
	$11,000,000	$ -	$ -	$11,000,000
Common Stock, 807,367 Shs.No Par	$20,184,175	$ 1,594,550	$ -	$18,589,625
Total	$54,184,175	$ 6,512,550	$18,082,000	$29,589,625

SCHEDULE NO. 5
PAGE 4

SECURITIES OF NATURAL GAS COMPANIES — EXHIBIT 225A

SUMMARY ACCORDING TO CLASSES OF HOLDERS

Company and Issues	Total Securities Outstanding	Held by Public	Held by Institutions	Held by Affiliates
Pittsburgh & West Virginia Gas Co.				
Notes	$13,090,446	$ -	$ -	$13,090,446
Common Stock, 344,000 Shs. No Par	8,600,000	-	-	8,600,000
Total	$21,690,446	$ -	$ -	$21,690,446
Southern Natural Gas Co.				
Bonds and Notes:				
First Mtg. 4½%, 1951	$12,408,000	$ 6,447,000	$ 5,961,000	$ -
First Mtg. 4½%, 1952	572,000	-	572,000	-
Adj. Mtg., 1960	5,771,523	2,816,523	48,000	2,907,000
Notes, 4½%	800,000	-	800,000	-
	$19,551,523	$ 9,263,523	$ 7,381,000	$ 2,907,000
Common Stock, 691,970 Shs.Par $7.50	5,189,776	2,698,684	-	2,491,092
Total	$24,741,299	$11,962,207	$ 7,381,000	$ 5,398,092
Texoma Natural Gas Co.				
Gas & Pipeline Mtg. 6%, 1946	$18,750,000	$ -	$ -	$18,750,000
Common Stock, 10,000 Shs. No Par	500,000	-	-	500,000
Total	$19,250,000	$ -	$ -	$19,250,000
United Fuel Gas Co.				
Notes:				
4%, 1940-46	$ 4,500,000	$ -	$ 4,500,000	$ -
Affiliates	14,535,000	-	-	14,535,000
	$19,035,000	$ -	$ 4,500,000	$14,535,000
Common Stock, 300,000 Shs.Par $1	300,000	$ -	$ -	$ 300,000
Total	$19,335,000	$ -	$ 4,500,000	$14,835,000
United Gas Pipeline Co.				
Bonds and Debentures:				
Northern Texas, 6%, 1940	$ 790,000	$ -	$ -	$ 790,000
Debentures, 6%, 1952	23,000,000	-	-	23,000,000
	$23,790,000	$ -	$ -	$23,790,000
Common Stock, 100,000 Shs. No Par	96,772,535	-	-	96,772,535
Total	$120,562,535	$ -	$ -	$120,562,535
United Natural Gas Co.				
Common Stock	$15,125,000	$ -	$ -	$15,125,000
Warfield Natural Gas Co.				
Notes	$ 9,790,000	$ -	$ -	$ 9,790,000
Common Stock 5,470 Shs. Par $100	547,000	-	-	547,000
Total	$10,337,000	$ -	$ -	$10,337,000
Grand Total	$697,399,135	$31,297,741	$126,628,000	$499,473,394

EXHIBIT 225A

SECURITIES OF NATURAL GAS COMPANIES

SUMMARY ACCORDING TO CLASSES OF HOLDERS

Company and Issues	Total Securities Outstanding	Held by Public	Held by Institutions	Held by Affiliates
Grand Total by Types of Securities				
Bonds, Debentures and Notes	$328,447,620	$19,411,523	$126,628,000	$182,408,097
Preferred Stock	25,131,000	1,491,800	-	23,639,200
Common Stock	303,820,515	10,394,418	-	293,426,097
Grand Total	$657,399,135	$31,297,741	$126,628,000	$499,473,394

The above information is as of December 31, 1939, with effect given to any information regarding changes since December 31, 1939.

BONDS, DEBENTURES AND NOTES OF NATURAL GAS COMPANIES

REGULATED BY PUBLIC

Company	Issue	Total Outstanding	Held by Public (a)	Ratings Moody's	Ratings Poor's	Average of High-Low Prices 1937	1938	1939	1940(b)	Approximate Yield to Maturity 1937	1938	1939	1940	Basis, 12-31-1940 Market Price	Basis, 12-31-1940 Yield	Current Call Price Sinking Fund General	Current Call Price Sinking Fund
Arkansas Louisiana Gas Co.	First Mortgage, S.F. 4½, 1951	Retired in October 1939(d)		A	A	100.38	100.25	103.00	-	3.968	3.988	3.496	-	-	-	-	-
El Paso Natural Gas Co.	First Mortgage, S.F. 4½%,1951	Retired in January 1939(e)		Ba	B++	103.50	104.06	-	-	4.17	4.09	-	-	-	-	-	-
Houston Gulf Gas Co.	First & Coll. 6%, A, 1943	$ 4,250,000	$ 3,777,000	Ba	B++	101.25	101.00	103.25	102.75	5.75	5.77	5.09	5.006	101.00	(b)	101	101
" " " "	Debentures, 6%, 1943	1,850,000	1,853,000	B	B+	99.63	99.75	101.75	101.88	6.58	6.56	6.00	5.82	101.00	(b)	101	101
Panhandle Eastern Pipe Line Co.	First Mtg., S.F., A, 3%, 1966	21,250,000	4,918,000	A	A	99.31	101.63	102.38	104.13	4.06	3.89	3.77	3.57	103.63	3.63	102-1/2	100
Southern Natural Gas Co.	First Mtg., P.L.S.F.3½%, 1951	12,408,000	6,447,000	Baa	B++	98.00	96.90	103.56	105.63	4.70	4.87	4.12	3.87	106.63	3.75	105	100-1/2
" " " "	Adj. Mtg., 6%, 1960	5,771,523	2,836,523	B	B+	89.25	81.75	98.00	97.88	7.44	7.74	6.17	6.19	100.50	5.96	100	-
	TOTALS	$97,267,523	$69,411,523														

Notes: (a) The difference between Total Outstanding and Held by Public is held by Institutions and Affiliates.
(b) Called for redemption on October 1, 1940, in conjunction with proposed refunding operations by United Gas Corporation.
(c) Nine months ended September 30, 1940.
(d) In September 1939, the company sold privately the following issues:
First Mtg. 2-3/4%, A, 1940-50 - $1,500,000 principal amount sold at par
First Mtg. 3-1/2%, B, 1960-70 - 3,700,000 " " "
(e) In December 1938, the company sold privately $6,000,000 of 3% Serial Notes; also $6,000,000 of First Mortgage 3½% Bonds, due 1953, at 99 to yield 3.59% to purchasers. In June and July 1940, the company sold privately $1,000,000 of First Mortgage 3% Bonds, due 1955, at 94 to yield 3.19% to purchasers.

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BONDS, DEBENTURES AND NOTES OF NATURAL GAS COMPANIES

HOLDINGS BY INSTITUTIONS

Company and Issue	Total Outstanding	Holding Institution	Amount	% of Total Outstanding
Arkansas-Louisiana Gas Co.				
First Mtg. 2 3/4%, A, 1940-44	$ 3,300,000	(a) (Guaranty Trust Co. of New York	$2,800,000	
		(Central Hanover Bank & Trust Co.	500,000	
			$3,300,000	100.0
First Mtg. 3½%, B, 1945-54	9,700,000	(a) (Equitable Life Assurance Society of U.S.	$4,950,000	
		(Metropolitan Life Insurance Co.	3,550,000	
		(Massachusetts Mutual Life Ins. Co.	400,000	
		(Sun Life Assurance Co. of Canada	350,000	
		(Teachers Ins. & Annuity Assoc. of America	300,000	
		(Provident Mutual Ins. Co. of Philadelphia	250,000	
			$9,700,000	100.0
Cities Service Gas Co.				
First Mtg. 3 3/4%, 1947-54	20,000,000	(b) (Equitable Life Assurance Society of U.S.	$10,000,000	
		(Metropolitan Life Insurance Co.	10,000,000	
			$20,000,000	100.0
Notes Payable (Secured by $15,000,000 First Mtg. 3½%, 1940-46)	13,000,000	(c) Bank Loan	$13,000,000	100.0
Colorado Interstate Gas Co.				
First & Coll. Trust 3½%, 1948	8,865,000	(b) Mutual Life Ins. Co. of N. Y.	$ 4,865,000	
		(a) Guaranty Trust Co. of N. Y.	4,000,000	
			$ 8,865,000	100.0

See Schedule No. 5-B, Page 5 for Notes.

BONDS, DEBENTURES AND NOTES OF NATURAL GAS COMPANIES

HOLDINGS BY INSTITUTIONS

Company and Issue	Total Outstanding	Holding Institution	Amount	% of Total Outstanding
El Paso Natural Gas Co.				
First Mtg. 3 1/8s, 1963	$6,000,000	(b)(Equitable Life Assurance Society of U. S.	$2,250,000	
		(Harvard College	100,000	
		(Massachusetts Mutual Life Insurance Co.	275,000	
		(Metropolitan Life Insurance Co.	2,000,000	
		(Mutual Life Insurance Co. of N. Y.	475,000	
		(Sun Life Assurance Co. of Canada	900,000	
			$6,000,000	100.0
First Mtg. 3s, 1951	3,000,000	(a)(Equitable Life Assurance Society of U. S.		
		(Metropolitan Life Insurance Co.		
		(Sun Life Assurance Co. of Canada	$ 3,000,000	
		(Mutual Life Insurance Co. of N. Y.		
		(Massachusetts Mutual Life Insurance Co.		
			$ 3,000,000	100.0
Equitable Gulf Gas Co.				
First & Collateral s. 6s, 1943	4,236,000	(b)(Princeton University	$200,000	
		(10 Other Institutions	261,000	
			$461,000	10.9
Debentures, 6s, 1943	1,850,000	(b)(Massachusetts Mutual Life Insurance Co.	$163,000	
		(6 Other Institutions	234,000	
			$397,000	21.5
Memphis Natural Gas Co.				
Notes	1,610,000	(c) Various Banks	$1,610,000	100.0
Mississippi River Fuel Corp.				
First Mtg. 4s, 1952	6,332,000	(b)(Equitable Life Assurance Society of U. S.		
		(Metropolitan Life Insurance Co.	$6,332,000	
		(Mutual Life Insurance Co. of N. Y.		
		(Prudential Insurance Co. of America		
			$6,332,000	100.0

See Schedule No. 4-F, Page 5 for Notes.

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BONDS, DEBENTURES AND NOTES OF NATURAL GAS COMPANIES

HOLDINGS BY INSTITUTIONS

Company and Issue	Total Outstanding	Holding Institution	Amount	% of Total Outstanding
Northern Natural Gas Co.				
First Mtg. 3 1/4%, 1954	$16,000,000	(b)(Equitable Life Assurance Society of U. S.	$ 3,600,000	
		(Metropolitan Life Insurance Co.	5,400,000	
		(Prudential Insurance Co. of America	3,600,000	
		(Sun Life Assurance Co. of Canada	1,000,000	
		(Travelers Insurance Co.	2,400,000	
			$16,000,000	100.0
Notes, 2 1/8%, 1940-46	6,000,000	(c) Chase National Bank	$ 6,000,000	100.0
Panhandle Eastern Pipe Line Co.				
First Mtg. 4%, A, 1952	23,000,000	(b)(Equitable Life Assurance Society of U. S.	$ 4,891,000	
		(Harvard College	194,000	
		(Massachusetts Mutual Life Ins. Co.	880,000	
		(Metropolitan Life Insurance Co.	4,323,000	
		(Mutual Life Insurance Co. of N. Y.	1,500,000	
		(Princeton University	200,000	
		(Provident Mutual Life Ins. Co. of Phila.	241,000	
		(Prudential Insurance Co. of America	980,000	
		(Sun Life Assurance Co. of Canada	3,000,000	
		(Travelers Insurance Co.	730,000	
		(25 Other Institutions	1,143,000	
			$18,082,000	78.6

See Schedule No. 5-B, Page 5 for Notes.

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BONDS, DEBENTURES AND NOTES OF NATURAL GAS COMPANIES

HOLDINGS BY INSTITUTIONS

Company and Issue	Total Outstanding	Holding Institution	Amount	% of Total Outstanding
Southern Natural Gas Co.				
First Mtg. 4 1/2%, 1951	$12,408,000	(b)(Harvard College	$ 100,000	
		(Insurance Co. of North America	238,000	
		(Massachusetts Mutual Life Insurance Co.	421,000	
		(Metropolitan Life Insurance Co.	2,901,000	
		(Modern Woodmen of America	284,000	
		(Princeton University	100,000	
		(Provident Mutual Life Insurance Co.	269,000	
		(Sun Life Assurance Co. of Canada	385,000	
		(Travelers Insurance Co.	275,000	
		(Wilmington Savings Fund Society	138,000	
		(29 Other Institutions	370,000	
			$ 5,961,000	48.0
First Mtg. 4 1/2%, 1952	572,000	(b)(Metropolitan Life Insurance Co.	$ 572,000	100.0
Adjustment Mtg. 1960	5,771,523	(b)(Central Life Ins. Co. of Illinois	$ 23,000	
		(Order of Scottish Clans	25,000	
			$ 48,000	8.3
Notes, 4 1/2%	800,000	(c) First National Bank, Birmingham, Ala.	$ 800,000	100.0
United Fuel Gas Co.				
Notes, 5%, 1940-46	4,500,000	(b)(Metropolitan Life Insurance Co.	$ 3,750,000	
		(Mutual Life Insurance Co. of N. Y.	675,000	
			$ 4,500,000	100.0
GRAND TOTAL			$155,385,000	

See Schedule No. 5-B, Page 5 for Notes.

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BONDS, DEBENTURES AND NOTES OF NATURAL GAS COMPANIES

HOLDINGS BY INSTITUTIONS

Source of Data:

(a) S. E. C. Holding Company Release No. 1731, dated September 26, 1939.

(b) Poor's Institutional Holdings of Securities, 1940.

(c) Moody's Public Utilities, 1940.

(d) Moody's Public Utilities Supplements, September 11, 1940.

(e) Working papers of F.P.C. Accountants, Docket Nos. G-118, G-121, and G-124.

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BONDS, DEBENTURES AND NOTES OF NATURAL GAS COMPANIES

HOLDINGS BY AFFILIATES

Company and Issue	Total Outstanding	Holding Affiliate	Amount	% of Total Outstanding
Arkansas-Louisiana Gas Co.				
Debentures, 4½%, 1955	$ 6,500,000	(a) Arkansas Natural Gas Corp.	$ 6,500,000	100.0
Canadian River Gas Co.				
First Mtg. 6%	5,057,000	(a) Colorado Interstate Gas Co.	$ 5,057,000	100.0
Notes, 1940-48	1,348,294	(d) Colorado Interstate Gas Co.	$ 1,348,294	100.0
Chicago District Pipeline Co.				
Notes	4,869,897	(a) Natural Gas Investment Co.	$ 4,869,897	100.0
Cities Service Gas Co.				
Debentures, 5½%, 1956	8,000,000	(a) Cities Service Co. and subsidiaries	$ 8,000,000	100.0
Houston Gulf Gas Co.				
Notes, 7%, 1945	1,500,000	(a) United Gas Pipe Line Co.	$ 1,500,000	100.0
Lone Star Gas Co.				
Notes	16,600,000	(c) Lone Star Gas Corp.	$16,600,000	100.0
Michigan Gas Transmission Corp.				
Notes	6,470,500	(c) Columbia Gas & Electric Corp.	$ 6,470,500	100.0
Mississippi River Fuel Corp.				
Notes, 6%, 1960	2,400,000	(b) (United Carbon Co.) (United Gas Corp.) (Standard Oil Co. of N. J.) (Columbian Carbon Co.)	$ 2,400,000	
			$ 2,400,000	100.0

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[illegible] AFFILIATES OF NATURAL GAS COMPANIES

HOLDINGS BY AFFILIATES

Company and Issue	Total Outstanding	Holding Affiliate	Amount	% of Total Outstanding
Natural Gas Pipeline Co. of America				
First Mtg. 6%, 1946	$[illegible],300,000	a) (Cities Service Co. (Natural Gas Investment Co. (Standard Oil Co. of N. J. (Southwestern Development Co. (Texas Co. (Columbian Carbon Co.	$[illegible],800,000	
			$42,500,000	100.0
New York State Natural Gas Corp.				
Income Notes, 6%, 1942	4,500,000	(a) Lycoming United Gas Corp.	[illegible],500,000	100.0
Pittsburgh & West Virginia Gas Co.				
Notes	15,090,446	(a) Affiliated Companies	$15,090,446	100.0
Southern Natural Gas Co.				
Adjustment Mtg. 6%, 1960	5,771,523	(a) Federal Water Service Corp.	[illegible],907,000	50.4
Texoma Natural Gas Co.				
Gas & Pipeline Mtg. 6%, 1946	18,750,000	(a) Natural Gas Pipeline Co. of America	$18,750,000	100.0
United Fuel Gas Co.				
Notes	14,535,000	(c) Columbia Gas & Electric Corp.	$14,535,000	100.0
United Gas Pipe Line Co.				
Northern Texas, 5% Bonds, 1961	730,000	(a) Electric Bond & Share Co.	$ 730,000	100.0
Debenture, 6%, 1956	[illegible],300,000	(a) United Gas Corp.	$23,300,000	100.0
Warfield Natural Gas Co.				
Notes	9,790,000	(a) Columbia Gas & Electric Corp.	$ 9,790,000	100.0
Grand Total			$162,408,097	

Source of Data: (a) Moody's Public Utilities, 1940
(b) Poor's Industrial Manual, 1940
(c) 1940 Annual Report to Federal Power Commission (Form 1-S)
(d) Working papers of FPC Accountants, Docket Nos. G-118, G-121, and G-128.
(e) Working papers of FPC Accountants, Docket Nos. G-114, and G-125

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EXHIBIT 225

PREFERRED STOCKS OF NATURAL GAS COMPANIES

HOLDINGS BY PUBLIC

Company	Issue	Total Outstanding	Held by Public (a)	Poor's Rating	1937 High	1937 Low	1938 High	1938 Low	1939 High	1939 Low	1940 Latest	Current Yield %	Call Price
El Paso Natural Gas Co.	7% Cum. Pfd. - Par $100	$1,479,700	$1,479,700	B++	107 (b)	94 (b)	109 (b)	102 (b)	111 (b)	108 (b)	110 Bid.	6.36	110
Houston Gulf Gas Co.	7% Cum. Series A - Par $100	806,900 (c)	11,100	C+	-	-	-	-	-	-	-	-	107
" " " "	7% Cum. Series B - Par $100	1,900,300 (c)	1,000	C+	-	-	-	-	-	-	-	-	107
		$3,786,900	$1,491,800	-	-	-	-	-	-	-	-	-	-

Notes: (a) The difference between Total Outstanding and Held by Public is Held by Affiliates
(b) End of month bid quotations
(c) Dividends in arrears from September 1, 1931 to December 31, 1939 aggregate $58.33-1/3 per share

PREFERRED STOCKS OF NATURAL GAS COMPANIES

HOLDINGS BY AFFILIATES

Company and Issue	Total Outstanding	Holding Affiliate	Amount	% of Total Outstanding
Colorado Interstate Gas Co.				
Preferred Stock 6%, Par $100	$ 2,000,000	(a)(Standard Oil Co. of N. J.	$ 1,000,000	50.0
		(Consolidated Oil Corp.	1,000,000	50.0
			$ 2,000,000	100.0
Houston Gulf Gas Co.				
7% Cum. Preferred, A, Par $100	806,300	(a) United Gas Pipeline Co.	$ 795,200	98.6
7% Cum. Preferred, B, Par $100	1,500,000	(a) United Gas Pipeline Co.	$ 1,499,000	99.9
Kentucky-West Virginia Gas Co.				
5% Cum. First Preferred, Par $100	2,937,500	(a) Louisville Gas & Electric Co. (Ky)	$ 2,937,500	100.0
7% Cum. Second Preferred, Par $100	5,407,500	(a) Philadelphia Co. and subsidiaries	$ 5,407,500	100.0
Panhandle Eastern Pipe Line Co.				
Class A, $6, Par $100	10,000,000	(a) Columbia Oil & Gasoline Corp.	$10,000,000	100.0
Class B, $6, Par $100	1,000,000	(a) Columbia Oil & Gasoline Corp.	$ 1,000,000	100.0
GRAND TOTAL			$21,639,200	

Source of Data: (a) Moody's Public Utilities, 1947

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SERIES NO. 54

COMMON STOCKS OF NATURAL GAS COMPANIES

HOLDINGS BY PUBLIC

Company	Total Outstanding Shares	Total Outstanding Amount	Total Held By Public (b) Shares	Total Held By Public (b) Amount	Par Value	Moody's Rating	Earnings Per Share 1937	1938	1939	1940(Latest Available)	Average of High-Low Prices 1937	1938	1939	1940(b)	Earnings-Price Ratios 1937	1938	1939	1940	September 30, 1940 Earnings Per Share	Market Price	E.-P. Ratio
El Paso Natural Gas Co.	601,594	$ 1,804,782(a)	601,594	$ 1,804,782	$3.00	B*	$3.00	$3.50	$3.75	$3.86	(12 mo.-8/31/40)	$21.75	$23.50	$35.38	$33.94	13.79%	14.08%	10.60%	11.37%	$3.86	$33.50	11.79%
Houston Gulf Gas Co.	517,000	5,170,000	2,116	21,160	No Par		0.68	0.03	0.25	0.25	(Year 1939)	-	-	-	-	-	-	-	-	0.25	-	-
Interstate Natural Gas Co.	342,353	6,529,530	276,350	1,893,564	No Par	B	2.50	2.13	2.11	2.11	(Year 1939)	25.25	21.25	23.75	23.25	9.90	10.00	8.88	9.08	2.11	20.00	9.79
Memphis Natural Gas Co.	318,680	4,593,600	476,336	2,381,678	5.00	B	0.17	0.55(d)	0.69	0.69	(Year 1939)	4.63	3.94	4.13	4.38	16.63	13.96	15.74	14.84	0.69	9.75	13.68
Panhandle Eastern Pipe Line Co.	667,317	20,184,175	63,766	1,928,550	No Par	B	5.57(e)	2.84(e)	3.82(e)	4.43(e)	(12 mo.-6/30/40)	(f)	(f)	39.75	44.50	-	-	9.61	13.03	4.43	57.00	11.07
Southern Natural Gas Co.	661,970	5,189,770	399,824	2,998,680	7.50	B	2.11(c)	1.44(c)	2.05	3.31	(12 mo.-7/31/40)	(g)	(g)	14.06	16.25	-	-	18.14	20.37	3.31	56.88	18.79
Total		$43,471,793		$15,324,760																	

Notes: (a) Exclusive of $1,967,212 Premium on Common Stock.

(b) The difference between Total Outstanding and Held by Public is held by Affiliates

(c) Based on 661,970 shares of common stock issued in exchange for former Class A and Class B stocks in May 1939

(d) Earnings for 1938 before revision to $.69 per share to give effect to compromise settlement under city gate contract with Memphis Power & Light Co.

(e) Computed on participating basis. Common stock entitled to participate with Class A 7% preferred stock in additional dividend distributions after payment of regular dividend on preferred stock and $1.75 per share on common stock on basis of 75% to Class A preferred and 75% to the common stock

(f) No stock sold by public prior to September 1939

(g) Prior to issuance of the presently outstanding common stock on May, 1939, there were two classes of common stock outstanding

(h) Nine months ended September 30, 1940

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COMMON STOCKS OF NATURAL GAS COMPANIES

OWNERSHIP BY AFFILIATES

Company and Issue	Total Outstanding	Holding Affiliate	Amount	% of Total Outstanding
Arkansas-Louisiana Gas Co.				
Common - 248,988 shs. - Par $50	$12,449,400	(a) Arkansas Natural Gas Co.	$12,449,400	100.0
Canadian River Gas Co.				
Common	1	(a) Southwestern Development Co.	$ 1	100.0
Chicago District Pipeline Co.				
Common, 7,000 shs. - No Par	694,000	(a) Natural Gas Investment Co.	$ 694,000	100.0
Cities Service Gas Co.				
Common, 551,000 shs. - No Par	50,000,000	(a) Empire Gas & Fuel Co. (Del.)	$50,000,000	100.0
Colorado Interstate Gas Co.				
Common, 1,250,000 shs. - No Par	2,352,941	(a) (Southwestern Development Co. (25%) (Standard Oil Co. of N. J. (25%) (Public Service Co. of Colorado (1%)	$ 2,352,941	100.0
Hope Natural Gas Co.				
Common, 279,695 shs. - Par $1.0	27,969,500	(b) Standard Oil Co. (N. J.)	$27,969,500	100.0
Houston Gulf Gas Co.				
Common, 517,[illegible] shs. - No Par	5,170,080	(a) White Gas Pipeline Co.	$ 5,148,920	99.6
Interstate Natural Gas Co.				
Common, [illegible] shs. - No Par	[illegible]	(b) (Standard Oil Co. of N. J. (54%) (Columbian Carbon Co. (17%)	$ 4,645,966	71.0

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COMMON STOCKS OF NATURAL GAS COMPANIES

HOLDINGS BY AFFILIATES

Company and Issue	Total Outstanding	Holding Affiliate	Amount	% of Total Outstanding
Lone Star Gas Co.				
Common, 540,000 shs. - No Par	$28,113,220	(c) Lone Star Gas Corp.	$28,113,220	100.0
Kentucky West Virginia Gas Co.				
Common, 100,000 shs. - No Par	1,304,715	(a) Louisville Gas & Electric Co. (Ky.) (40%) Philadelphia Co. (60%)	$ 1,304,715	100.0
Memphis Natural Gas Co.				
Common, 318,860 shs. - Par $5	4,593,600	(a) Commonwealth Gas Corp.	$ 2,211,722	48.15
Michigan Gas Transmission Corp.				
Common, 44,800 shs. - Par $50	2,240,000	(c) Columbia Gas & Electric Corp.	$ 2,240,000	100.0
Mississippi River Fuel Corp.				
Common, 655,280 shs. - Par $10	6,552,800	(d) (United Carbon Co. (13.43%) United Gas Corp. (46.65%) Standard Oil Co. of N. J. (22.39%) Columbian Carbon Co. (17.02%)	$ 6,552,800	
			$ 6,552,800	100.0
Natural Gas Pipeline Co. of America				
Common, 1,500,000 shs. - No Par	3,000,000	(a) (Cities Service Co. (26.6290%) Natural Gas Investment Co. (26.6290%) Texas Corp. (17.9836%) Standard Oil Co. of New Jersey (13.3145%) Southwestern Development Co. (13.3145%) Columbian Carbon Co. (2,598 S)	$ 3,000,000	
			$ 3,000,000	100.0

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COMMON STOCKS OF NATURAL GAS COMPANIES

HOLDINGS BY AFFILIATES

Company and Issue	Total Outstanding	Holding Affiliate	Amount	% of Total Outstanding
New York State Natural Gas Corp.				
Common, 20,000 shs. - Par $100	$ 2,000,000	(f) Lycoming United Gas Corp.	$ 2,000,000	100.0
Northern Natural Gas Co.				
Common, 205,000 shs. - No Par	19,273,460	(a) (Lone Star Gas Corp. (30.0%) (North American Light & Power Co. (35.0%) (United Light & Railways Co. (35.0%)	$19,273,460	
			$19,273,460	100.0
Panhandle Eastern Pipe Line Co.				
Common, 907,367 shs. - No Par	20,184,175	(a) (Columbia Oil & Gasoline Corp. (50.08%) (Missouri-Kansas Pipe Line Co. (42.02%)	$18,589,685	92.10
Pittsburgh & West Virginia Gas Co.				
Common, 344,000 shs. - No Par	8,600,000	(a) Philadelphia Co.	$ 8,600,000	100.0
Southern Natural Gas Co.				
Common, 641,970 shs. - Par $7.50	5,184,776	(a) Federal Water Service Corp.	$ 2,491,092	48.0
Texoma Natural Gas Co.				
Common, 10,000 shs. - No Par	500,000	(a) (Cities Service Co. (26.6490%) (Natural Gas Investment Co. (26.6490%) (Southwestern Development Co. (26.6490%) (Texas Corp. (17.5852%) (Columbian Carbon Co. (2.5298%)	$ 500,000	
			$ 500,000	100.0
United Fuel Gas Co.				
Common, 300,000 shs. - Par $1	300,000	(a) Columbia Gas & Electric Corp.	$ 300,000	100.0
United Gas Pipe Line Co.				
Common, 100,000 shs. - No Par	26,772,582	(a) United Gas Corp.	$26,772,582	100.0

COMMON STOCKS OF NATURAL GAS COMPANIES

HOLDINGS BY AFFILIATES

Company and Issue	Total Outstanding	Holding Affiliate	Amount	% of Total Outstanding
United Natural Gas Co.				
Common	$15,125,000	(a) National Fuel Gas Co.	$15,125,000	100.0
Warfield Natural Gas Co.				
Common, 5,470 shs. - Par $100	547,000	(c) Columbia Gas & Electric Corp.	$ 547,000	100.0
Grand Total			$255,446,047	

Source of Data: (a) Moody's Public Utilities, 1940
(b) Standard Corporation Records
(c) 1939 Annual Report to Federal Power Commission (Form 133)
(d) Response to FPC Order No. 51
(f) Working papers of FPC Accountants, Docket Nos. G-114 and G-125

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BONDS OF NATURAL GAS COMPANIES SOLD IN PERIOD FROM JANUARY 1, 1935 TO OCTOBER 15, 1940

COST OF MONEY TO LISTING COMPANIES AND YIELD TO PUBLIC

Company	Approximate Offering Date	Issue	Principal Amount	Net Cost to Company Amount	Net Cost to Company Cost %	Price to Public Amount	Price to Public Yield %	Sold to Public	Sold to Institutions	Sold to Affiliates
		Moody's A Rating								
Arkansas Louisiana Gas Co. (a)	July 1936	First Mtg. S. F. 4½, 1951	$10,000,000	94.20	4.62	98.00	4.16	$ -	$ -	$ -
Panhandle Eastern Pipe Line Co.	Mar. 1937	First Mtg. S. F. 4½, A, 1952	25,000,000	95.02	4.40	97.50	4.43	4,918,000	18,082,000	-
			$35,000,000	-	-	97.65	4.38			
		Moody's Baa Rating								
Southern Natural Gas Co.	Nov. 1936	First Mtg. P. L. S. F. 4½, 1952	$15,000,000	96.29	4.85	100.0	4.50	6,447,000	5,553,000	-
		Moody's Ba Rating								
El Paso Natural Gas Co. (b)	June 1936	First Mtg. S. F. 4½, 1951	$ 1,500,000	94.44	5.06	98.50	4.64	-	-	-
		Moody's B Rating								
El Paso Natural Gas Co. (b)	June 1936	Convertible Debentures, 4 3/4%, 1946	$ 3,750,000	97.10	5.55	100.00	4.75	-	-	-
		No Rating Assigned (All Issues Privately Sold)								
Mississippi River Fuel Corp.	February 1937	First Mtg. P. L. S. F. 4½, 1952	$10,000,000	(d)	(d)	100.00 (c)	4.00	-	8,552,000	-
El Paso Natural Gas Co. (b)	October 1937	First Mtg. S.F., B, 4½, 1952	1,200,000	(d)	(d)	97.75	4.20	-	-	-
" " " " " (b)	December 1938	First Mtg. S. F. 3½%, 1955	6,000,000	(d)	(d)	99.00	3.59	-	6,000,000	-
" " " " "	June 1940	First Mtg. S. F. 3½, 1955	4,400,000	(d)	(d)	98.50	3.43	-	2,900,000	-
" " " " "	July 1940	First Mtg. S. F. 3½, 1956	500,000	(d)	(d)	98.50	3.43	-	500,000	-
Southern Natural Gas Co.	October 1937	First Mtg. P. L. S. F. 4½, 1952	690,000	(d)	(d)	97.75	4.71	-	572,000	-
Cities Service Gas Co.	December 1938	First Mtg. P. L. S. F. 3 3/4%, 1947-56	20,000,000	(d)	(d)	100.00	3.75	-	20,000,000	-
Northern Natural Gas Co.	August 1939	First Mtg. " F. 3½% A, 1954	16,000,000	98.84	3.55	100.00	3.25	-	16,000,000	-
Arkansas Louisiana Gas Co. (a)	September 1939	First Mtg. 2 3/4%, A, 1960-61	3,300,000	99.20	3.01	100.00	2.75	-	3,300,000	-
" " " "	September 1939	First Mtg. 3½%, B, 1965-66	9,700,000	99.20	3.59	100.00	3.50	-	9,700,000	-
			$80,540,000	-	-	99.75	3.71			

Notes:

(a) Arkansas Louisiana Gas Company's $9,100,000 outstanding First Mtg. S. F. 4½, 1951, were retired on Oct. 31, 1939, together with $1,400,000 principal amount of Debentures sold by parent company. The funds for these purposes were obtained from sale in Sept. 1939 of $3,300,000 First Mtg. 2 3/4%, A, 1960-61, and $9,700,000 First Mtg. 3½%, B, 1965-66.

(b) Proceeds of $6,000,000 First Mtg. S. F. 3½%, 1955 and of $4,000,000 3% Serial Notes due semi-annually over seven-year period (issued to Chase National Bank were applied to redemption on January 16, 1939 of: $6,809,000 outstanding First Mtg. S. F., A, 4½%, 1951; $1,145,000 outstanding First Mtg. S. F., B, 4½, 1952; $65,000 outstanding Convertible Debentures, 4 3/4%, 1946 (all but $2,000 converted into common stock); and $900,000 principal amount of 2½% and 3½% short-term notes and for other corporate purposes.

(c) Assumed price of par.

(d) Not cost to company not available.

Source of data: Issues in period from January 1, 1935 to December 31, 1939, from "Security Issues of Electric and Gas Utilities, 1935-1939-1937-1938-1939" issued by Securities and Exchange Commission. Issues in period from January 1, 1940 to October 15, 1940, from Moody's Public Utilities, 1940 and Supplements to Moody's Public Utilities. Data on issues of Cities Service Gas Company, Mississippi River Fuel Corporation, El Paso Natural Gas Company 1937 and 1938 issues and Southern Natural Gas Company (October, 1937 issue) were not reported by Securities and Exchange Commission, information thereon having been obtained from Moody's publications.

EXHIBIT 225A

2109

Schedule No. 7
Sheet 1

EXHIBIT 225A

Recent Financing by Companies Affiliated (Directly and Indirectly) with Canadian River Gas Company, Colorado Interstate Gas Company and Colorado-Wyoming Gas Company

Company	Date of Issue	Issue	Price to Purchasers	Yield to Purchasers %
Consolidated Oil Corporation	June 1936	$50,000,000 Debenture, 3½%, 1951	98	3.67 (1)
" " "	August 1938	$25,000,000 Debenture, 3 3/8%, 1950 (Entire issue sold to Equitable Life Assurance Society of the United States)	100	3.38 (1)
Public Service Company of Colorado	November 1939	$40,000,000 First Mtg. 3¾%, 1964	102	3.38 (2)
" " "	November 1939	$12,500,000 Debenture, 4%, 1949	102	3.76 (2)
Standard Oil Company (N.J.)	May 1936	$30,000,000 Debenture, 3%, 1961	98	3.12 (1)
" " "	May 1936	$55,000,000 Debenture, 3%, 1961 (Sold to Rockefeller Foundations)	98	3.12 (1)
" " "	July 1938	$50,000,000 Debenture, 2 3/4%, 1953	99	2.83 (1)
" " "	July 1938	$35,000,000 Serial Notes, 1 3/4-2¾%, 1943-47. ($31,000,000 sold to public, and $4,000,000 sold to Rockefeller Institute for Medical Research) (Redeemed on July 2, 1940; funds for purpose were obtained from sale in July 1940 of $35,000,000 Promissory Notes, 1¼-1¾%, 1943-47)	100	1.75-2.50 (1)
" " "	July 1940	$35,000,000 Promissory Notes, 1¼-1¾%, 1943-47 (The new notes consist of two 1¾% notes of $7,000,000 each due on July 1, 1943 and 1944, sold privately to two purchasers; and three 1¼% promissory notes due $7,000,001 on July 1, 1945, $7,000,000 on July 1, 1946, and $6,999,999 on July 1, 1947, evidencing borrowing from two banks)	100	1.25-1.50 (3)
Southwestern Development Company	July 1, 1936	$6,376,348.36 Collateral Loan, ~~6-4%, 1937-41~~, payable to Guaranty Trust Company, New York. (Reduction in interest rate from 6% to 3½%, and extension of maturity of balance of $2,562,298.36 beyond July 1, 1941, approved by SEC on May 10, 1939. New 3% collateral note issued as of August 1, 1939, in exchange for outstanding 3½% collateral note. (The 4% note was redeemed on January 2, 1940).	100	2.00-4.00 (4)
	December 19, 1936	$1,762,003.08 Unsecured Notes, 4%, due July 1, 1942 (Issued to holders of company's common stock as a dividend at rate of $43.19 in notes for each share held). (Redeemed on January 3, 1938).	100	4.00 (5)
	November 1, 1937	$3,252,000 Collateral Loan, 4%, 1939-43 payable to Guaranty Trust Company New York	100	4.00 (6)

Schedule No. 7
Sheet 2

EXHIBIT 225A

Recent Financing by Companies Affiliated (Directly and Indirectly) with Cumulative Gypsum Company, Colorado Interstate Gas Company and Colorado-Wyoming Gas Company

Company	Date of Issue	Issue	Price to Purchasers	Yield to Purchasers %	
Southwestern Development Company	December 1937	$2,040,300 Unsecured Notes 6%, due July 1, 1943 (Issued to holders of company's common stock as a dividend at rate of $30.00 in notes for each share held). (Redeemed on January 2, 1940).	100	6.00	(7)
	January 2, 1940	$1,425,75% Collateral Loan, 3%, 1940-45, payable to Guaranty Trust Company, New York. (Issued to redeem $2,040,300 Unsecured Notes, 6%, due July 1, 1943; and balance of $2,385,45% Collateral Loan, 3% due July 1, 1944.)	100	3.00	(2)

Source of Data:
(1) Moody's Industrials, 1940
(2) Moody's Public Utilities, 1940
(3) Moody's Industrials, Supplements, August 21, 1940
(4) SEC Decisions, Volume 1.
(5) Moody's Public Utilities, 1937
(6) SEC Holding Company, Release No. 881, dated November 15, 1937
(7) Moody's Public Utilities, 1938

29. Net Operating Earnings, After Income and Capital Stock Taxes, of Colorado Interstate Under Its Contracts from the Denver Line, 1928 to 1939, Inclusive, and as Estimated, 1940 to 1947, Inclusive, Applicable to Depreciation, Amortization and a Return on the Original Cost of Its Property, Plus Working Capital.

The company's Exhibit 170 (Vol. XLVIII, p. 6598), as amended by Exhibit 170-B (Vol. C, p. 15460), both presented by witness Lusk, bring together the following data for the purpose of presenting the facts set forth in the caption.

The original cost of the company's portion of the Denver Line as shown in Exhibits 67 and 133. These exhibits, as well as exhibits 65, 75, 139, 195, and 196, are all abstracted under Title 18 supra.

The cost of contracts as shown by Exhibit 77. This exhibit and Exhibits 16, 7-E, 7-H, and 7-I are all abstracted under Title 19 supra.

Necessary working capital as shown by Exhibit 70. This exhibit and Exhibit 145 are abstracted supra under Title 22.

Revenues from the sale of gas from the Denver Line as shown by Exhibits 56, 43 and 59. These exhibits, as well as Exhibits 60, 63, 72 and 293, are abstracted under Title 15 supra.

Operating expenses and operating taxes as shown by Exhibits 76, 135 and 135-A. These exhibits and Exhibits 140, 173, 196 and 293 are abstracted under Title 23 supra.

Cost at contract price for gas delivered to Colorado Interstate at Clayton Junction for the Denver Line as shown by Exhibit 164 abstracted under Title 25 supra.

In this Exhibit 170, as amended by Exhibit 170-B, Lusk records for the past and computes for the future all state and Federal income capital stock and like taxes hereinafter abstracted.

After giving effect to all the foregoing data and factors, Exhibits 170 and 170-B show net operating earnings remain-

ing for depreciation and amortization after first deducting amounts necessary for return. These results are set forth in Statement 1 of Exhibit 170, as amended by Exhibit 170-B, as follows:

Colorado Interstate Gas Company

The Denver Line for All Gas Sold

Past and Future Net Operating Earnings Applicable to Depreciation Amortization and Return 1928 to 1947 Inclusive

Calendar Year	Original Cost Rate Base at Jan. 1st	Revenues All Gas Sales and Rentals	Operating Costs and All Taxes	Net Operating Earnings for Return, Depreciation and Amortization		
				Total Net Earnings	Amount required for 8% Return	Available for Depreciation and Amortization
	(1)	(2)	(3)	(4)	(5)	(6)
Actual						
1928 (A)	$10,950,045	$ 830,014	$ 365,891	$ 464,123	$ 510,999	$ —46,876
1929	11,214,748	2,639,334	1,172,833	1,466,501	897,180	569,321
1930	11,821,379	3,278,930	2,025,181	1,253,749	945,710	308,039
1931	12,559,727	3,405,381	2,161,805	1,243,576	1,004,778	238,798
1932	14,012,937	3,411,740	2,092,068	1,319,672	1,121,035	198,637
1933	14,147,763	3,055,504	1,934,673	1,120,831	1,131,821	—10,990
1934	14,130,545	3,029,973	1,759,281	1,270,692	1,130,444	140,248
1935	14,218,164	3,298,164	1,699,768	1,598,396	1,137,453	460,943
1936	14,386,405	3,951,394	1,876,535	2,074,859	1,150,912	923,947
1937	14,440,854	4,221,165	1,978,039	2,243,126	1,155,268	1,087,858
1938	14,613,319	3,923,225	1,997,096	1,926,129	1,169,066	757,063
1939	14,762,254	4,318,019	2,169,096	2,148,923	1,180,980	967,943
Estimated						
1940	14,797,750	4,487,968	2,466,469	2,021,499	1,183,820	837,679
1941	14,916,486	4,822,323	2,648,510	2,173,813	1,193,319	980,494
1942	14,924,486	4,966,868	2,719,110	2,247,758	1,193,959	1,053,799
1943	15,146,812	5,042,633	2,779,660	2,262,973	1,211,745	1,051,228
1944	15,147,812	5,179,859	2,845,457	2,334,402	1,211,825	1,122,577
1945	15,149,812	5,337,040	2,941,648	2,395,392	1,211,985	1,183,407
1946	15,150,812	5,337,040	3,014,910	2,322,130	1,212,065	1,110,065
1947	15,151,812	5,337,040	3,209,429	2,127,611	1,212,145	915,466
Total for Period		$79,873,614	$43,857,459	$36,016,155	$22,166,509	$13,849,646

Note: (A) 7 Months.

The "original cost rate base" at January 1 for each of the years shown in Column 1 is comprised of the original cost of the physical properties, plus the original cost of the contracts, plus necessary working capital. The "operating costs and all taxes" include the cost of gas abstracted under Title 25, the operating expenses and operating taxes, abstracted under Title 23 supra, plus state and Federal income and capital stock and like taxes next mentioned.

As already stated, Exhibit 170 was corrected by Exhibit 170-B to cure an error in computation of excess profits taxes as estimated for the years 1940 to 1947 inclusive. Statement 1 set forth above shows the corrected figures for those years. The tax computations were originally made before copy of the 1940 Revenue Act and Regulations thereunder had been received. When Lusk received them, he found that they permitted a deduction of normal tax accrued for any one year before computation of the excess profits tax. Thereupon he recalculated the excess profits taxes for the years 1940 to 1947 inclusive, and they are shown in the statement set forth above (Vol. C, p. 15460, et seq.)

The capital stock and state and Federal income and related taxes (which, together with the cost of gas, and operating costs and operating taxes are totaled in Column 3) are set forth in Statement 5 of Exhibit 170, as amended by Statement 5 of Exhibit 170-B, as follows:

Colorado Interstate Gas Company

Capital Stock Tax and Income Taxes on Earnings from Denver Line Sales of All Gas 1928 to 1947, Inclusive

Year	Capital Stock Tax	Federal Income Taxes					Colorado State Income Tax	Total Capital Stock and Income Taxes
		Normal	Declared Value Excess Profits	Undistributed Profits	Excess Profits Tax	Total Federal Taxes		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Actual:								
1928 (A)		$ 17,030				$ 17,030		$ 17,030
1929		69,802				69,802		69,802
1930		51,282				51,282		51,282
1931		44,068				44,068		44,068
1932		60,339				60,339		60,339
1933	$ 4,300	47,122				51,422		51,422
1934	4,300	72,263				76,563		76,563
1935	4,829	143,876	$17,964			166,669		166,669
1936	18,000	229,020				247,020		247,020
1937	18,000	261,865				279,865	$ 8,408	288,273
1938	18,000	237,005				255,005	18,262	273,267
1939	18,500	294,105				312,605	27,514	340,119
Estimated:								
1940	20,900	443,114			$ 32,327	496,341	25,534	521,875
1941	24,750	521,873			137,161	683,784	28,138	711,922
1942	26,950	567,082			201,585	795,617	29,623	825,240
1943	26,950	575,120			214,043	816,113	29,888	846,001
1944	29,700	625,242			293,402	948,344	31,342	979,686
1945	31,350	668,925			362,567	1,062,842	32,631	1,095,473
1946	31,900	670,154			364,515	1,066,569	32,690	1,099,259
1947	31,900	547,142			173,170	752,212	29,072	781,284

Note: (A) 7 months

On cross-examination with respect to these exhibits, Lusk stated that there were involved two Federal Excess Profits Taxes: First, the "declared value excess profits tax," which was complementary to the Federal Capital Stock Tax, both of which had been in effect for many years; and second, the new excess profits tax imposed on corporations by the Second Revenue Act of 1940. He stated that under the Federal statute the capital stock tax and the declared value excess profits tax were so designed that the company was allowed to declare a capital stock tax base or value in any amount it chose. It then paid a capital stock tax at a rate of $1.10 per $1,000, of declared value (originally $1 per $1,000). Percentages of this same "declared value" are then subtracted from the net income to determine the taxable "declared value excess profits" and such excess profits are taxed at the rate set forth in the Act. He stated that it was to the advantage of the company to declare a value (and pay a capital stock tax thereon at the rate of $1.10 per $1,000) high enough to avoid a declared value excess profits tax at much higher rates (Vol. XLVIII, pp. 6623-26). Explaining how these two taxes were related and how it was more economical to pay the capital stock tax and avoid excess profits tax, he said:

> "To take the year 1940, the declared value, instead of being $19,000,000, assume it was $10,000,000. Our income for that year was $1,500,000. We would immediately fall into the declared value excess profits tax because our income was $1,500,000, and ten per cent of our declared value of $10,000,000 would be only $1,000,000. We would immediately have to pay an excess profits tax on $500,000, so it is much more economical to increase the capital stock base than it is to fall into the surtax values." (p. 6626).

He then pointed out that because the company had neglected to declare a sufficiently large capital base or value in 1935 it was penalized with a large excess profits tax, stating:

> "I might add in that connection that the company in 1935 fell into the error of being forced to pay a declared excess profits tax of $18,000 and they aren't going to let that happen again.

"The Trial Examiner. That is what that lone item out there stands for?

"The Witness: Yes, sir." (p. 6627).

He then explained the operation of the new additional excess profits tax imposed by the Second Revenue Act of 1940 and which, for the purpose of his computation, he assumed would continue in effect without increase, as he did with the other tax rates for the purpose of his exhibits. He explained how excess profits taxes were assessed in addition to normal taxes and as an example took 1940, as follows:

"Well, now, how did you arrive at your estimate, say, for the year 1940, of the figure $712,592, Column 4, Statement 4 of your exhibit?

"A. If we take the estimated revenue less the estimated operating expense and less the actual interest to be paid on the bonds of Colorado Interstate Gas Company, and after deducting depreciation, allowed under the Internal Revenue Department's rulings, we will arrive at a figure which produces the 24 per cent normal income tax of $443,114.

"Now, in addition to that under the 1940 Internal Revenue Act that $443,114 represents the tax on the amount of net income which is in excess of the average for 1936, 1937, 1938 and 1939. That excess under the 1940 Revenue Act produces an excess profit tax of $226,591.

"Q. You proceed from that point, that is, from 1940 through 1947, in making these estimates in Column 5, Statement 5, on the assumption that the 1940 Revenue Act, of course, will remain the same and the same provision will apply?

"A. That is the only assumption we can make." (pp. 6619-20).

This example of the computation employed the figures for the year 1940 of Statement 5 of Exhibit 170 before they were amended, by Statement 5, Exhibit 170-B, but the principle and the method are the same. The figures shown for Colorado income tax under the state law which became effective in 1937 were in the amounts actually paid for 1937

(fractional year) and for 1938 and 1939 and are estimated for the years 1940 to 1947 inclusive on the assumption that the same rates will obtain (pp. 6620-21).

The new excess profits tax was calculated as the act permits on the basis of the "average income method"; that is, the average for 1936, 1937, 1938 and 1939 (Statement 5, Exhibit 170-B). He explained that the terms "normal tax" and "excess profits tax" were used as those terms were defined in the income tax laws p. 6621).

The Commission's accountant Early in his Exhibit 140 suspended all state and Federal income taxes pending determination by the Commission of what he called "a fair return," stating:

> "The Examiner recommends that expenses chargeable to the ratepayers include, with respect to income tax, only such an amount as would represent the necessary taxes required to be paid, based upon the income which the Commission determines it is proper for the company to earn." (Exhibit 140, p. 11; Vol. XXXV, p. 4877). 4877).

By his Entry 142, Exhibit 140, this same accountant Early removed from the expense account for 1937 $944.67 excess profits tax paid for that year. He stated:

> "Excess profits taxes are not regarded as a necessary cost of conducting gas operations and are therefore not includible in expenses which are to be borne by gas consumers."

By his Entry 143 this same accountant removed from operating expenses $17,707 for 1937; $22,184 for 1938; and $22,693.50 for 1939 representing a portion of the capital stock taxes paid. He stated:

> "Since excess profits taxes are not a necessary cost of conducting gas operations, capital stock taxes paid to avoid payment of excess profits taxes are likewise not properly includible in the cost of gas operations."

He had not determined whether the company might have paid "excessive ad valorem taxes" which ought to be disallowed on the same principle (Vol. XXXV, p. 4878). He

admitted that whether an excess profits tax was paid had no reference either to the original cost of the property or any valuation of the property.

"Q. Now, the determination of that unreasonable rate, if there was one, is not made in the same manner as the determination whether excess profits taxes would be under that Federal law. You don't compute them the same way?

"A. That is correct.

"Q. So that don't you believe that there is a difference in your interpretation of what excess profits taxes as levied by the Federal law are in its relationship to a rate case of charges which ought to be charged against the rate payers?

"A. I do not even recall or do not know enough about the excess profits tax law to recall exactly how that item is computed.

* * * * * * * * *

"Q. * * * You have already said that, and you have just said that you are not very familiar with the excess profits law; so maybe wasn't it the phrase 'excess profits' that caught your eye, and you just assumed that possibly that would carry over?

* * * * * * * * * *

"The Witness: I perhaps should not have said that I knew that the methods of computing the taxes were different." (Vol. XLVI, pp. 6403-04).

As to the capital stock tax, although it was based upon purely voluntary declaration of value, he eliminated a portion of the tax corresponding to a portion of the value eliminated and which he himself had allocated to the cost of contracts (pp. 6405-06). He would allow capital stock tax only on a declared value corresponding to "stock issued for a cash consideration" or its equivalent (p. 6405).

On cross-examination Lusk was asked to furnish a reconciliation between the total net earnings of the company and the taxable income shown in these exhibits for each of the years 1928 to 1947 inclusive, which he did in Exhibit 170-A.

In conclusion with respect to these exhibits, Lusk pointed

ut that the cumulative total through 1947 of balance net arnings "available for depreciation and amortization" as hown in Column 6, to-wit, the total $13,849,646, would fall ónsiderably short of amortizing and depreciating the com- any's total accumulated investment through that same eriod, or original cost rate based up through 1947 in the otal amount of $15,151,812. The deficiency will be $1,302,- 66; that is, $15,151,812 less $13,849,646. (Exhibit 170, p. 2, s amended Exhibit 170-B, Statement 1).

The deficiency in that amount is arrived at on the follow- ng assumptions:

First, that the present prices or rates for gas will continue and that the revenues of the company will hold up as shown in Exhibits 56 and 43 as abstracted under Title 15 supra.

Second, that the cost of gas shown by Exhibit 164, as abstracted under Title 25 supra, will remain the same.

Third, that other operating expenses and operating taxes as shown by Exhibits 76, 135 and 135-A, as abstracted under Title 23 supra, will not increase over the estimates therein made.

Fourth, that the Federal and state income taxes and capital stock taxes based on present laws (1940) and as abstracted and computed herein, will not be increased

(Vol. XLVIII, p. 6620).

EXPENSES SUSPENDED FOR FURTHER CONSIDERATION BY THE COMMISSION
FOR THE YEARS 1937, 1938 AND 1939

Line No.	Income Statement Suspension No.	Particulars	Year Ended December 31, 1939	1938	1937
		(1)	(2)	(3)	(4)	(5)
	C (Cont'd)	In view of the statements made by Mr. Lerch and the relative smallness of the amounts involved, it is recommended that the charges identified by the suspension be allowed as necessary and legitimate expenses and therefore included in the cost of conducting gas operations. Suspension has been made by the Examiner primarily in order that the Commission might have before it in this suspension and in Suspension B a summarization of service charges made by associated companies to the Respondent and included in its operating expenses.			
9	D	Federal income tax	$ 391,526.13	$ 309,837.61	$ 335,064.29
		Income taxes for the years 1937, 1938 and 1939, as adjusted, have been suspended for further study and consideration by the Commission and its staff for the reason that the income received by the Respondent, and which constituted the basis for the assessment of its income taxes, may, as a result of this proceeding, be found to have been in excess of a fair return. The Examiner recommends that expenses chargeable to the ratepayers include, with respect to income taxes, only such an amount as would represent the necessary taxes required to be paid based upon the income which the Commission determines it is proper for the Company to earn.			
10	E	Colorado income tax.	$ 27,514.12	$ 18,262.11	$ 8,407.57
		The comments above under Suspension D also pertain to Suspension E			
11	F	Items charged to expense claimed as cost of gas plant in report of Ford, Bacon & Davis, Inc., dated April 15, 1940	$ 44,383.75	$ 50,158.76	$ 55,691.00
		Certain expenses for the years 1937, 1938 and 1939, now claimed by the Respondent as gas plant capital expenditures, have been suspended in order that the expenses so claimed may be identified for the attention of the Commission and its staff. The report of Ford, Bacon & Davis, Inc. covering the claim for restatement of plant has been filed with the Commission by the Respondent. A reconciliation of the amounts shown in the report of Ford, Bacon & Davis, Inc. for the years 1937, 1938 and 1939 with the amounts of this suspension is as follows:			

	1939	1938	1937
Per Ford, Bacon & Davis, Inc. report	$44,622.63	$52,051.24	$56,777.13
Portion of work order 270 (making profile map) claimed as gas plant, expended in the year 1937, and closed to expense in the year 1938 (The entire amount charged to this work order in the year 1937 is transferred to 1937 operating expenses in Examiner's entry R-151)		(559.21)	559.21
Less, interest during construction claimed as gas plant, not included in this suspension	(238.88)	(1,333.27)	(1,645.34)
Per this suspension	$44,383.75	$50,158.76	$55,691.00

Exhibit No. 14C

2125

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO THE INCOME ACCOUNT

56

Particulars	Year to Which Applicable	Debit	Credit
No. 142			
Miscellaneous income deductions	1937	$ 944.67	
Taxes - Federal income and excess-profits taxes	1937		$ 944.67

To transfer Federal excess-profits tax paid for the year 1937 to miscellaneous income deductions. Excess-profits taxes are not regarded as a necessary cost of conducting gas operations and are therefore not includible in expenses which are to be borne by gas consumers.

COLORADO INTERSTATE GAS COMPANY
EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES
RELATING TO THE INCOME ACCOUNT

57

Particulars	Year to Which Applicable	Debit	Credit
No. 143			
Miscellaneous income deductions	1939	$ 22,693.50	
do.	1938	22,184.00	
do.	1937	17,707.00	
Taxes - Federal capital stock tax	1939		$ 22,693.50
do.	1938		22,184.00
do.	1937		17,707.00

To transfer to miscellaneous income deductions the portion of Federal capital stock tax for 1937, 1938 and 1939 not properly includible in gas expenses, computed as follows:

	1939	1938	1937
Capital stock account per books	$4,352,941.17	$4,352,941.17	$4,352,941.17
Deduct: Amount credited to capital stock representing value placed upon contracts to buy and sell gas (See also Examiner's entry No. 224 re plant account)	2,352,941.17	2,352,941.17	2,352,941.17
Balance (represents stock issued for cash consideration	$2,000,000.00	$2,000,000.00	$2,000,000.00
Surplus, per books, at beginning of each year	2,495,890.30	2,366,937.89	2,609,196.84
Total adjusted base for Federal capital stock tax purposes	$4,495,890.30	$4,366,937.89	$4,609,196.84
Tax at $1.00 per each full $1,000.00	$ 4,495.00	$ 4,366.00	$ 4,609.00
Tax per Respondent's books	27,188.50	26,550.00	22,316.00
Excess transferred to miscellaneous income deductions	$22,693.50	$ 22,184.00	$ 17,707.00

Further Testimony of the Company's WITNESS, LUSK.

Q. Mr. Lusk, the figures in Column 5, Statement 5, Exhibit 170, are the ones that are corrected in your Exhibit 170-B, Statement 5, Column 5?

A. Yes, sir, that is the only change.

Q. And the figures in Column 5, Exhibit 170-B, are computed on the basis of the present act as well as the latest regulations of the Treasury Department?

A. No, the last two years—the last amendment was not considered in this.

Q. It was not?

A. No, sir. That is the amendment that states where the last two years are higher than the first two years the last two years can be used as a basis for computing excess profits.

Q. Do you have Exhibit 285 there before you, Mr. Lusk?

A. Yes, sir.

Q. Turn to Statement 5 of that exhibit, Column 3 of your Exhibit 170-B. Why does the normal tax differ in each one of those, one from the other, in those two exhibits?

A. Well, on Exhibit 285 everything is computed on an 8 per cent return, and on Exhibit 170-B in connection with Exhibit 170, that is computed on an estimated annual revenue derived on a sales basis.

Q. I see, and based on the presently existing contracts?

A. That's right.

Q. So that would indicate a present earning in excess of 8 per cent?

A. That is on Colorado Interstate.

Q. Yes.

A. Exhibit 285 does bring that out on Statement 1.

Q. That's right.

A. Yes.

Mr. Lange: That's all.

Redirect Examination.

By Mr. Dougherty:

Q. Mr. Lusk, you also have a different cost of gas to Colorado Interstate Gas Company in the statements which are the basis of 170 as compared with the cost of gas in 285?

A. That's correct.

Q. So you would have to have a completely different computation in each exhibit?

A. That's right. The cost of gas changes with the 8 per cent return.

(Vol. C, pp. 15462-15464.)

Q. Now, you have included it, as I take it, in what you term original cost rate base, first of all the original cost. Now, what do you define under original cost, Column 2, Statement 2 of the exhibit?

A. That is the original cost to the Colorado Interstate Gas Company as indicated in Exhibit No. 67 and Exhibit 133.

Q. Those figures in Column 2, are they per book cost?

A. They are as per books with certain adjustments.

Q. Which adjustments are all reflected in Exhibit 67 and Exhibit 133?

A. Yes, sir.

Q. And those adjustments—strike that.

The original cost as set up by you, Column 2, Statement 2, that also carries forward again the reclassification of certain items that we have discussed heretofore in connection with those exhibits?

A. That is correct, and as a contra to that over in the operating expenses on Statement 4, Exhibit 135, and a contra deduction has been made for those items against expense.

Q. Against expense?

A. Yes, sir.

Q. Now, then, the second element that you have gone into is what you term the original cost rate base as set up in Column 3, Statement 2. That is the cost of gas contracts?

A. That is correct.

Q. Under what theory do you include that in your rate base?

A. My theory is that the Colorado Interstate Gas Company is entitled to include cost of gas contracts in its rate base and earn a return on the cost of those contracts.

Q. For that reason you have included them in your Statement 2 as an element in that original cost rate base?
A. Yes.

(Vol. XLVIII, pp. 6609-6610.)

Further Testimony of the Commission's WITNESS, EARLY.

Q. Mr. Early, if you will please turn to your Adjustments 142 and 143 on Pages 56 and 57—
A. Yes, sir.
Q. What is your authority for your statement that excess profits taxes are not regarded as necessary cost of conducting gas operations?
A. That is my opinion.
Q. You understand, I assume, that the determination of excess profits taxes in 1937, as well as in 1938 and 1939, are not made on the basis of the original cost of the property or any valuation of the property and the net earnings being earned therefrom?
A. Just a moment. There were no excess profits taxes except in the year 1937.
Q. Well, I'll limit it to that. What I had in mind is this, that the determination of whether an excess profits tax was to be paid in 1937 had no reference to either the original cost of the property or any valuation of the property?
A. According to my knowledge of the tax law, that is correct.
Q. So that it is not computed in the same way as the determination of either expenses—not expenses—is not computed in the same way as the question of revenues or profits made from utility operations and the determination of whether those are in excess of a reasonable rate?
A. I don't understand that question.
Q. Well, you have a different basis? You speak in your testimony here and in your exhibit a number of times about if the rates were higher than they should be and therefore more money was made than would be justified on reasonable rates—you mention that in different times in your report.
A. That is correct.
Q. Now, the determination of that unreasonable rate,

if there was one, is not made in the same manner as the same manner as the determination whether excess profits taxes would be under that Federal law. You don't compute them the same way?

A. That is correct.

Q. So that don't you believe that there is a difference in your interpretation of what excess profits taxes as levied by the Federal law are in its relationship to a rate case of charges which ought to be charged against the rate payers?

A. I do not even recall or do not know enough about the excess profits tax law to recall exactly how that item is computed.

Q. Well, you said it was your own opinion that these taxes ought not to be charged against the rate payers. What are your reasons for that?

A. My reason for that is that if the company earns a profit which is large enough to be taxed with excess profits taxes, it might follow that they are also—well, it might follow that chart excess profit is more than a reasonable rate of return.

Q. Of course, you do recognize the fact that the methods of computing both are different? You have already said that, and you have just said that you are not very familiar with the excess profits law; so maybe wasn't it the phrase "excess profits" that caught your eye, and you just assumed that possibly that would carry over?

A. Read that, please.

(The question referred to was read by the reporter as set forth above.)

The Witness: I perhaps should not have said I knew that the methods of computing the taxes were different.

By Mr. Dougherty:

Q. Do you know that they are the same?

A. No.

Q. Do you know anything about it?

A. No.

Q. Now, then, let's turn to 143 which is on Page 57. I note in your computation of the tax base upon which capital stock taxes are paid you have included surplus for each year, 1937, 1938 and 1939.

A. That is correct.

Q. Now, I observe, however, that that is not surplus which has been established by you in this exhibit on the basis of what adjustments you have made and also on the basis of revisions of depreciation and amortization.

A. That is correct. The surplus figure, as I state here, is as per books.

Q. Now, I note, however, that you did deduct $2,352,941.17 which is per books because that had been adjusted by Mr. Schutte.

A. That is correct.

Q. Well, why don't you treat both of them the same way? If you are going to build up surplus for some purposes, why isn't it good for all purposes?

A. I believe that the two cases aren't identical. The elimination of the capital stock representing the capitalization of the contract to buy and sell gas is in my opinion an elimination that is required or is necessary to bring the capital stock account down to that which represents stock issued for a cash consideration, or in other cases for any consideration. The adjustments increasing the surplus account, however, as I have previously stated, I do not know whether they would be reflected on the company's books or not.

Q. Well, you don't know whether the adjustment that Mr. Schutte made is going to be reflected on the company's books either, do you?

A. No, I do not know that it is going to be reflected on the company's books, no.

Q. It looks like you have got a "heads you win, tails we lose" proposition. What I would like to know here is why you don't follow the same rule in both instances. If your adjustment in surplus is good enough for certain purposes in your report, why isn't it good enough for this?

A. It seems to me that if I were to use the adjusted surplus figures here I would be attempting to compute the company's—what the company's—I would be restating the company's surplus in tax accounts from 1937, and that has not been my intention.

Q. Well, you have restated the surplus account of the company right up through 1939.

A. Yes, but I have not meant to imply that that would be reflected on the company's books.

Q. Well, of course, none of this computation that you have made here on Page 57 would ever be reflected on the company's books?

A. Not to my knowledge.

Q. Well, the taxes have been paid?

A. That is correct.

Q. And the thing that you were doing here was determining what you call a total adjusted base for Federal capital stock tax purposes. Now, you recognized, apparently, in determining that phase. Under your theory you add surplus to what you call the corrected capital stock account?

A. That is correct.

Q. Well, don't you have much confidence in the surplus figure which you have boosted up from five million dollars here altogether?

A. I think it is approximately four million dollars—yes, I have confidence in those figures.

Q. But not confidence enough to use it for the purpose of determining what an adjusted base for Federal capital stock purposes is?

A. No, I have attempted to show here the capital stock tax which in my opinion the company should have—or, rather, would have paid had not there been included there in the capitalization of franchises and contracts, and also had not the ta been based upon a declared value far in excess of the book value.

Q. Yes, but what you have here is a tax base which takes the capital stock account by the books and subtracts a deduction which reflects an adjustment made by Mr. Schutte and which you have said should have been made but doesn't accept and doesn't include any addition to surplus which has been and is included in your report. That is exactly what has been done?

A. That is exactly correct.

Q. Now, in your report, altogether, in every respect it includes all of the gas business of the Colorado Interstate Gas Company. All revenue has been taken in here and all expenses, full income?

A. Correct.

Q. There has been no attempt by you to determine what part of the income of the company comes from the gas that it sells directly to industrial consumers in Colorado in this exhibit?

A. No, I have made no allocation—pardon me, Mr. Dougherty, you say the portion of the revenue or the net income?

Q. Net income.

A. Yes.

Q. What portion of the profits come from that?

A. My answer is correct.

Q. You made no attempt to determine what portion of the profits come from the sale of gas to the Natural Gas Pipeline Company of America?

A. No, sir.

Q. So you don't know whether the excess profits which you say would have resulted here, or at least would have resulted if the tax base had not been declared as it was declared, would result from those items of business?

A. Which items of business?

Q. The business of selling gas directly to industrial consumers and the business of selling gas to the Natural Gas Pipeline Company of America.

A. No, I have made no allocations of net income.

Q. So that if the excess profits came from that other business they wouldn't represent excess charges made to the other customers in Colorado?

A. I am sorry, I do not understand the question, Mr. Dougherty.

Q. Well, probably you have covered the point when you say you have made no allocation, you have just taken it on the broad overall basis.

A. That is correct.

Q. Is there any account other than 507 that you charge to taxes under the Federal Power Commission Code referring to tax expense, particularly Federal income tax or State income tax or capital stock tax or excess profits tax?

A. I might refer you to Page 7 of the System of Accounts, general instruction No. 2, Paragraph F. I'll read that:

"All charges to the accounts prescribed in this system for gas plant, operating revenues and operating expenses

shall be just and reasonable and any payments by a natural gas company in excess of just and reasonable charges shall be included in Account 538, miscellaneous income deductions."

Q. Do you think that the taxing authorities made an unjust and unreasonable charge against us? That is what that refers to.

A. I did not.

Q. Well, that is what that account is that you have read.

A. The computation—I did not determine that it was an unreasonable billing.

Q. That instruction you just read refers to whether or not a payment made by a gas company is unreasonable, not whether or not what it collects is unreasonable. That is, that would mean that if the tax we pay was unreasonable, then we could only charge into gas expense the amount that was reasonable. That applies to every expenditure, doesn't it? If the Colorado Interstate Gas Company pays me a fee that is more than reasonable, under that item the Commission could make them charge such portion as was unreasonable to that item, isn't that correct?

A. My interpretation of that paragraph—it is not official—is that it related to charges in excess of just and reasonable charges to the rate payers.

Q. Well, your idea would be, then, that the difference between a reasonable rate and what is not a reasonable rate would go against miscellaneous income deductions. That would be the result of what you are talking about?

A. You speak of a reasonable rate for what?

Q. Well, for what you are selling the rate payers, whatever it is. What you are doing is trying to interpret out of the language, just and reasonable, which is the amount that would permit you to charge an expense into Account 538 because you would say it is not just and reasonable to the rate payers? Well, that doesn't say "rate payers" here, does it?

A. No, that is not mentioned.

Q. What they are talking about here is whether it, in and of itself, is a just and reasonable charge, isn't that correct?

A. My interpretation is "charges in excess of just and reasonable charges to the rate payer."

Q. That is your own interpolation?
A. Yes, sir.

The Trial Examiner: That is, you mean a tax that results from an unjust and unreasonable charge to the rate payers, is that what you had in mind?

The Witness: Yes, sir.

Mr. Dougherty: That is what he has done. That isn't what the instruction says, which we just developed, with which he agrees.

The Trial Examiner: I gather that that is his interpretation.

Mr. Dougherty: That is his interpretation.

(Vol. XLVI, pp. 6402-6412.)

Further Testimony of the Company's WITNESS, LUSK.

Q. Now, the income and capital stock taxes in Column 4, are they exactly as far as 1939 was concerned?
A. It is an actual computation on all gas of the Denver line.
Q. You mean you allocated this portion of the tax to the Denver line?
A. No, sir, we computed it.
Q. You computed it?
A. Yes.
Q. Well, do these represent portions or represent taxes actually paid through 1929?
A. A portion of them do, yes, sir.
For instance, in 1939 the Colorado Interstate Gas Company for all of its business was assessed an income tax for $392,000. Now, this total Federal income tax applicable to resale gas from the Denver line alone is computed at $312,605.
Q. Well, that is set forth in Column 6, Statement 5, isn't it?
A. That is right.
Q. That isn't as per books?
A. That $312,605 includes the capital stock tax, the normal income tax as well.

Q. What was the total?

A. The total income tax in 1939 was $392,000.

Mr. Dougherty: Mr. Lusk, you used the term "resale gas" in the Denver line in your answer just preceding this question. This exhibit contains all gas from the Denver line?

The Witness: Yes, sir.

In 1939 the Federal income tax of Colorado Interstate Gas Company was $392,000 and the Federal capital tax was $27,188.50.

By Mr. Lange:

Q. How do you arrive at that allocation factor, then?

A. We didn't allocate it. All of these taxes are computed on a strictly income basis.

Q. They are computed on a strictly income basis?

A. Yes.

Q. What are your proper divisions for the year 1938? How did you arrive at that?

A. That is a computed amount. The Federal income tax in 1938 was $309,000; that is, on all profits of Colorado Interstate Gas Company, and the Federal capital stock tax was approximately $25,000. I don't see it in the working sheet here, but I know it was paid.

Q. Has it been computed for each of the preceding years also?

A. Yes, sir, in each of the preceding years and each of the years from 1940 to 1947. All of these taxes have been computed, based strictly on the income basis taken from the income and expense shown in the previous sheets of this exhibit.

Q. Well, now, how did you arrive at your estimate, say, for the year 1940, of the figure $712,592, Column 2, Statement 4 of your exhibit?

A. If we take the estimated revenue less the estimated operating expense and less the actual interest to be paid on the bonds of Colorado Interstate Gas Company, and after deducting depreciation, allowed under the Internal Revenue Department's rulings, we will arrive at a figure which produces the 24 per cent normal income tax of $443,114.

Now, in addition to that under the 1940 Internal Revenue Act that $443,114 represents the tax on the amount of net income which is in excess of the average for 1936, 1937, 1938 and 1939. That excess under the 1940 Revenue Act produces an excess profit tax of $226,591.

Q. You proceed from that point, that is, from 1940 through 1947, in making these estimates in Column 5, Statement 5, on the assumption that the 1940 Revenue Act, of course, will remain the same and the same provision will apply?

A. That is the only assumption we can make.

Mr. Dougherty: At least, that percentage wouldn't be any lower than that?

The Witness: I am quite sure of that.

Mr. Dougherty: You haven't made the assumption it wouldn't be increased?

The Witness: I haven't made that assumption and I haven't made the assumption it wouldn't be lower.

By Mr. Lange:

Q. You made the assumption that the yardstick in the tax will also remain there?

A. Yes, sir, that is the latest Internal Revenue Act.

Q. In what fashion did you proceed on your Colorado State income tax, Column 7, Statement 5?

A. The Colorado—

Q. First of all, as to 1939, 1938 and 1937, as to those figures, where did they come from?

A. The Colorado State income tax?

Q. Yes.

A. Actual payments.

Q. Actual payments?

A. Yes.

Q. They were not computed figures there?

A. No.

Q. For 1940?

A. From 1940 through to 1947 the computation for Colorado State income tax is based on a relation of the actual payment for 1937, 1938 and 1939 to the net income.

Q. Now, what did you mean by "normal" as you have described it under the Federal income tax in Column 2, Statement 5 of the exhibit?

A. That is the normal tax as set forth in the Revenue Act in the previous years.

Q. You are using the phrase "as defined." Where do you get the word "normal" itself?

A. In the Act itself in Section 101, Paragraph B.: "Imposition of tax—there shall be levied, collected and paid for each taxable year upon the normal-tax net income of every corporation and the normal-tax net income of which is more than $25,000 * * * "

Q. You have applied the amount as indicated in the Act?

A. Yes, sir, to arrive at the figures in Column 2.

Q. To arrive at the figures in Column 2?

A. That is right.

Q. Statement 5?

A. Statement 5.

Q. Now, how did you arrive at the—strike that.

And those computations for the years 1928 through 1939 are actually obtained on that basis?

A. Yes. We take from 1928 to 1939 and compute all of the tax assessed against the Colorado Interstate Gas Company under the heading of "Normal Tax" purposes so as to distinguish it from the excess value of profits tax and undistributed profits taxes, or any excess surplus accumulation which is another form of tax, and which is not shown here as being paid, but the normal tax itself is taken right from the wording and the definition in the various revenue acts applicable to the years 1928 through 1939.

Mr. Dougherty: You used the percentages that each of those laws had in effect in those years?

The Witness: We used the actual rates.

By Mr. Lange:

Q. When you proceeded beyond 1940, how did you arrive at the estimate under Column 2?

A. Well, in Column 2 we are taking 24 per cent of the net income which is computed, using the statement preceding this as the basis, and using the operating expenses which are also shown in this exhibit.

Q. And you based that on the 1940 tax law?

A. Yes, sir.

Q. Now, what rate did you use for the 1940 estimate?

A. 24 per cent.

Q. And for each of the following years?

A. 24 per cent.

Q. Now, your capital stock in Column 2, is that actually from 1933 to 1939?

A. No, that is also computed?

Q. How?

A. For all gas purposes.

Q. Just how did you go about it? What are the mechanics of that?

A. The mechanics of it are this: I used the company's method of working out on the basis of net income, using a capitalization rate of either ten or 12½ per cent. In other words, the company had $800,000 of income and they capitalized it at 12½ per cent, and I would take it and multiply by eight and that would be all. They had the same thing at ten per cent which they actually did in those years. They assumed a base income and capitalized it at either ten or twelve and one-half per cent and used that as their capital stock declared value.

Q. Under Column 1 the tax for 1939 is $18,500. Under what acts was that computed?

A. That is under the 1935 or 1936 act.

Q. When you arrived at an estimate for 1940, how did you arrive at the $20,900 as listed under that column?

A. That is done in the same manner. The mechanics are exactly the same.

Q. Is there a different rate applicable to make that amount?

A. No, sir, there is no rate on the capital stock tax at all except the capitalization rate. I used 12½ per cent which is the rate the company used for the years 1934, 1935, 1936, 1937, 1938 and 1939.

(Vol. XLVIII, pp. 6617-6624.)

30. Estimated Net Operating Earnings After Income and Capital Stock Taxes of Colorado Interstate from an Assumed Denver Line for Resale Gas Only Under Its Contracts, 1928 to 1947, Inclusive, Applicable to Depreciation and Amortization and a Return on Equivalent Original Cost of Its Property, Plus Working Capital.

Exhibit 172 (Vol. XLIX, p. 6720), as amended by Exhibit 172-A (Vol. C., p. 15465), both presented by the company's witness Lusk in a manner similar to his method employed in the preceding subdivision, bring together the following data for the purpose of presenting the facts set forth in the caption:

The equivalent original cost of "a Denver Line for resale gas only," Exhibit 134 abstracted under Title 20 supra.

The cost of contracts, Exhibit 77. This exhibit and Exhibits 1, 16, 7-H, 7-I, 7-E are abstracted under Title 19 supra.

Adjusted necessary working capital, Exhibit 70 abstracted under Title 22 supra.

Past and estimated future revenues from resale gas only, Exhibits 43 and 56. These exhibits, as well as 59, 60, 63, 72 and 293, are abstracted under Title 15 supra.

Annual operating costs and operating taxes of a "Denver Line for resale gas alone," Exhibit 136 abstracted under Title 24 supra.

Cost at the contract price at Clayton Junction of resale gas only, Exhibit 167 abstracted under Title 26 supra.

The witness, in the Exhibits 172 and 172-A, computed Federal and state income taxes and Federal capital stock and like taxes arising from the sale of resale gas only in the same manner as outlined in the preceding subdivision for all gas. Since his method was the same, we reproduce here only the total of such taxes for the years 1932 to 1947 inclusive, there being no tax prior to 1932 when resale gas alone is considered.

1932	$ 2,840	1940	$283,925
1933	3,200	1941	415,398
1934	3,200	1942	526,327
1935	54,446	1943	557,172
1936	87,696	1944	662,557
1937	132,715	1945	770,633
1938	143,439	1946	769,038
1939	159,193	1947	436,808

(Statement 5, Exhibit 172, as amended by Statement 5, Exhibit 172-A.)

After giving effect to all the foregoing data and factors, Exhibits 172 and 172-A show net operating earnings remaining for depreciation and amortization after first deducting amounts necessary for return. These results are set forth in Statement 1 of Exhibit 172, as amended by Statement 1, Exhibit 172-A, as follows:

Colorado Interstate Gas Company

"A Denver Line for Resale Gas Alone"

Rate Statement Showing Net Operating Earnings Applicable to Depreciation, Amortization and Return, 1928 to 1947 Inclusive

Calendar Year	Original Cost Rate Base at Jan. 1st	Revenues Resale Gas Sales and Rentals	Operating Costs and All Taxes	Net Operating Earnings for Return, Depreciation and Amortization		
				Total Net Earnings	Amount Required for 8% Return	Available for Depreciation and Amortization
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Actual						
1928 (A)	$10,064,790	$ 471,229	$ 274,129	$ 197,100	$ 469,690	$ —272,590
1929	10,297,805	1,552,909	505,823	647,086	823,824	—176,738
1930	10,760,908	2,172,641	1,643,864	528,777	860,873	—332,096
1931	11,483,345	2,433,741	1,789,687	644,054	918,668	—274,614
1932	12,715,436	2,553,260	1,716,740	836,520	1,017,235	—180,715
1933	12,846,179	2,121,096	1,537,532	583,564	1,027,694	—444,130
1934	12,824,128	2,049,680	1,344,141	705,539	1,025,930	—320,391
1935	12,910,440	2,311,043	1,292,677	1,018,366	1,032,835	— 14,469
1936	13,072,752	2,544,737	1,382,540	1,162,197	1,045,820	116,377
1937	13,120,685	2,877,754	1,507,352	1,370,402	1,049,654	320,748
1938	13,285,460	2,839,830	1,545,838	1,293,992	1,062,837	231,155
1939	13,434,181	2,948,226	1,665,407	1,282,819	1,074,734	208,085

Estimated						
1940	14,130,771	3,212,499	1,951,326	1,261,173	1,130,462	130,711
1941	14,134,771	3,434,113	2,058,869	1,375,244	1,130,782	244,462
1942	14,141,771	3,575,908	2,124,387	1,451,521	1,131,342	320,179
1943	14,373,771	3,703,123	2,223,806	1,479,317	1,149,902	329,415
1944	14,374,771	3,837,599	2,298,783	1,538,816	1,149,982	388,834
1945	14,375,771	3,992,030	2,393,244	1,598,786	1,150,062	448,724
1946	14,376,771	3,992,030	2,447,051	1,544,979	1,150,142	394,837
1947	14,377,771	3,992,030	2,660,023	1,332,007	1,150,221	181,786
Total for Period		$56,615,478	$34,763,219	$21,852,259	$20,552,689	$ 1,299,570

Note: (A) 7 Months.

The original cost rate base at January 1 for each of the years shown in Column 2 is comprised of the "equivalent original cost" of such a Denver Line for resale gas only, plus the original cost of the contracts, plus necessary working capital. The "operating costs and all taxes" shown in Column 4 include the cost of gas abstracted under Title 26 supra, the operating expenses and operating taxes, abstracted under Title 24 supra, plus state and Federal income and capital stock and like taxes, computed as above stated.

The accumulated total of balance net earnings "available for depreciation and amortization" through 1947 is $1,299,570, whereas the total estimated "equivalent original cost" rate base accumulate through that period and which would have to be depreciated or amortized is $14,377,771, resulting in a deficit of $13,078,201.

The deficiency in that amount is arrived at on the following assumptions:

First, that the present prices or rates for gas will continue and that the revenues of the company will hold up as shown in Exhibits 56 and 43 as abstracted under Title 15 supra.

Second, that the cost of gas as shown by Exhibit 167, as abstracted under Title 26 supra, will remain the same.

Third, that other operating expenses and operating taxes, as shown by Exhibit 136, as abstracted under Title 24 supra, will not increase over the estimates therein made.

Fourth, that the Federal and state income taxes and capital stock taxes based on present laws (1940) and as abstracted and computed herein will not be increased

(Vol. XLVIII, p. 6620).

Q. Mr. Lusk, in the preparation of this Exhibit 172, I understand that it confines itself to resale gas alone?

A. That's correct.

Q. And, of course, resale gas alone of Colorado Interstate Gas Company?

A. That is all.

Q. And, of course, in so far as the present actual operation of Colorado Interstate Gas Company and the operations of that company for all the years back, 1939 back to 1928, have in fact included sales both direct as well as resale?

A. That is correct.

Q. As is reflected in your Exhibit 170?

A. That's right. That takes in all gas.

Q. And as far as you know, that is the way that the company proposes to continue its operations as is indicated in your Exhibit 170 when you projected those total sales forward?

A. That is correct.

Q. Through 1947.

A. It is my understanding that the Colorado Interstate Gas Company will continue to sell all types and classifications of gas.

Q. Now, then, as I take it, this Exhibit 172 takes the figures as set forth in your Exhibit 170 and relates the applicable ones to resale gas alone in this Exhibit 172?

A. No, that is not quite correct, Mr. Lange. Exhibit 172 is a distinct compilation of its own.

Q. Of its own?

A. Yes.

Q. And in what respect does it find support in Exhibit 170?

A. The only material taken from Exhibit 170 is working capital for the purposes of this exhibit.

Q. All right, let's go to your Statement 1 of Exhibit 172, Column 1, which is labeled "Original Cost, Rate Base at January 1st."

Mr. Dougherty: Column 2.

Mr. Lange: Column 2.

The Witness: Column 2.

By Mr. Lange:

Q. I requested you yesterday on cross examination to give your definition of what you contemplate under the term "rate base," and I will ask you now whether that same definition applies here.

A. It does, yes.

Q. Now, in constructing this Column 2 which is designated "Original Cost Rate Base at January 1," what statement in your Exhibit 172 provides the support for that?

A. Statement 2 supports Column 2.

Q. And referring, then, to Statement 2 of the exhibit, Column 2, in what manner did you construct the figures under that column?

A. On Statement 2, Column 2, the figures are taken from Exhibit 134 with the exception of the first year, 1928, which is the book balance as of June 1, 1928. All of the other figures are taken from Exhibit 134. Now, Column 1, Statement 1, in Exhibit 170, finds its support in Statement 2 of that exhibit, Column 2.

Q. Yes—no, in Column 1, Exhibit 170.

A. I beg your pardon. That also finds its support, yes, sir, in Statement 2 of the Exhibit 170.

Q. And Statement 2 of your Exhibit 170 gives as the support the following items:

Original cost as of June 1st and cost of gas contracts, average working capital. I see in your Statement 2 of Exhibit 172 you say "equivalent original cost." You make that modification in order to comply with the figures set forth in Exhibit 134, or what?

A. That is the reason for it. I am using the heading and the classifications of Exhibit 134, "Equivalent Original Costs."

Q. Which, of course, means that it isn't the same even in adjusted figures comparable to the book figures?

A. No, the equivalent original costs in Exhibit 134 is the reduced cost of the pipe line from Clayton to Devine, reducing the diameter of the pipe from 22 inches to 20 inches, with the corresponding reductions, if any, in the compressing station.

Q. Now, then, in the next item supporting the original cost rate base in your Exhibit 172, Statement 2, that is cost of contracts. I see that is the same as that appearing in Column 3, Statement 2 of Exhibit 170.

A. That is the same amount, yes, sir.

Q. Now, then—the same amount both for the past as well as the estimated future are the same as that set forth in Exhibit 170?

A. Yes, sir.

Q. I believe I asked you in connection with that column and the items in that column in Exhibit 170 whether or not you had made any allocation as to any other market other than the Denver market and you stated you did not.

A. I did not.

Q. Because the contracts were already in existence prior to the time the Colorado Interstate Gas Company developed or acquired any other market, particularly the Chicago market.

A. That is correct.

Q. Now, then, here in this Exhibit 172 you are still not allocating, although isn't it very definitely set forth in that contract of January 3, 1928, that direct sales are a part of that contract, and naming those direct sales?

A. The direct sales are a part of that contract, yes, sir.

Q. Then, why should not a part of this cost of gas contracts be allocated to direct sales?

A. I had no basis in which to allocate them and I had no basis in which to separate the first contract.

Q. You had no basis?

A. I had no basis for making any allocation.

Q. Well, then, I will ask you, as an accountant in the light of your knowledge of the facts and in the light of your knowledge of the total volumes of gas that is attributable to direct sales during all of these years, whether it wouldn't have been proper to make an allocation of part of that cost for gas contracts to direct sales?

A. I wouldn't do that for the simple reason that the volume basis is not a sound basis.

Q. Is not a sound basis?

A. No, sir.

Q. Then, it is your position that the direct sales should not bear any part of that at all?

A. No, I am not of that opinion. As far as the separation of this cost of gas contracts is concerned, that is one of my immediate problems and I hope to solve it very soon.

Mr. Dougherty: Well, Mr. Lusk, this complete statement here is not based on allocation, is it?

The Witness: None of this is based on allocation.

Mr. Dougherty: That is, this 10-inch line project is not an allocation?

The Witness: That is not an allocation.

By Mr. Lange:

Q. You take the position in Exhibit 170 which covers all of the gas, both direct and resale gas, that cost of gas contracts is an item directly includable in the rate base, as you term it, for those entire sales?

A. That is true, yes, sir.

Q. Now, you attempt or make a separation that you would set up applicable to resale gas alone which is a part of the total sales contemplated and considered in your Exhibit 170?

A. That is correct.

Q. And a very substantial part of that gas that enters into the consideration in 170 is excluded from your Exhibit 172?

A. That is right.

Q. Well, then, as an accounting matter, shouldn't a part of that cost attributable to direct sales be allocated to those direct sales and not the entire amount attributable to these resale items alone?

A. Well, I think I stated, Mr. Lange, that the first part of this cost of gas contracts, $2,000,000, was an amount represented by the stock issued to the Southwestern Development Company as nominee for the Canadian River Gas Company. I think I stated in my testimony that I don't dispute that there may be some part of that contract applicable to the direct sale gas, but that when I made this exhibit up I had no basis for separating it, and that is one of my immediate problems.

Q. Then, why couldn't you then, in light of the fact that that knowledge was absent and you didn't have it, why couldn't that entire amount, then, under Column 3, Statement 2 of Exhibit 172 be attributable to and charged to the direct sales?

A. Well, by making up a direct sale gas exhibit on the same basis as this, then I would still have the problem of separating the two million dollars gas contract costs.

Q. In other words, if you were preparing such a direct sales statement and still did not have any more informa-

tion with reference to how to allocate than you have now, you could very well have set up that whole cost to direct sales as well as you did to the resales here?

A. No, I wouldn't set up the entire cost because everything over and above two million dollars represents actual resale gas.

Q. No, but I am referring to the costs of gas contracts set forth under Column 3, Statement 2 of Exhibit 172 that you set up in their entirety in this resale exhibit in the same amounts as they have appeared in your Exhibit 170 covering all sales.

A. No, I wouldn't set that up for direct sales. As I mentioned—

Q. Why?

A. Everything over and above two million dollars is strictly resale gas.

Q. Well, then, what would you set up in such a statement of direct sales?

A. I am not prepared to state. I still repeat that I still have the problem of separating that two million dollars.

Q. And you haven't reached any conclusion on that?

A. No, sir.

Q. Well, then, if you would follow the same course of reasoning in connection with the preparation of that direct sale statement computation, why couldn't you have put at least two million dollars of that Column 3 item into that computation on direct sales?

A. That wouldn't be fair either.

Q. Why?

A. Because the direct sales are under the terms of the contract, the direct sales and resales are together.

Q. That's right, but what I am concerned about is your putting that entire amount in this resale computation in Column 3 of Statement 2 when it is definitely not only apparent but definitely assignable in the contract that direct sale customers named or in that contract of January 3, 1928, were contemplated at that time.

A. That is correct. They were both contemplated and both classes of customers contemplated in that contract—resale and direct sale.

Q. So that at this time in the absence of having made

any study, further study as to how to treat at least a portion of that cost of gas contracts, you say as an accountant that the items appearing in Column 3, Statement 2 of Exhibit 172 are in excess of what they ought to be for resale gas alone?

A. They are to the extent that I have not made any separation between the two million dollars cost of gas contract between direct sale and resale and I still have to work that problem out.

Q. And you aren't prepared to say as to what would be the fair amount that should be attributable to resale in so far as that particular item in Column 3 is concerned?

A. No, sir, I am not prepared.

Q. Now, you say that that is still a problem which you at this time have got to solve. What are your thoughts—what basis are you expecting to use to arrive at a solution of that?

A. That is the problem.

Q. That is the problem. Now, your average working capital, that is a computed figure in Column 4, Statement 2 of Exhibit 172, isn't it?

A. Yes, sir, it is. It is taken from Exhibit 170 and then computed on the basis of the operation expense ratio between all gas and resale gas.

Q. Now, what is your definition of "average working capital" as you have used it?

A. Well, this average working capital that I have used here and that we have used practically all through our exhibits, is a compilation of the operating expense, materials and supplies on hand, cash in local banks, all added together and divided by eight on a 45-day working basis.

Q. Oh, you utilize a 45-day working basis?

A. Yes, sir, and the basis of all of these computations of working capital throughout all of our exhibits is based on a 3- and 5-year average, and not confined to any one year.

Q. Just how would you as an accountant determine the proportionate part of the average working capital that could be allocated directly to resale gas by this company in the light of the fact that during the 3- or 5-year period that you used as support, the company in fact sold both resale and direct?

A. That is correct.

Q. I say, then, how did you go about making your estimate on a resale basis alone in the light of that history?

A. Well, it is just as I explained in the text in here and I think I can explain it again, that the average working capital determined for resale gas alone was based on the working capital contained in Exhibit 170 and the factors were derived by taking the ratios of the operating expenses between resale and all gas. Those operating expenses being the subject of previous exhibits.

Q. And when you are speaking of taking into consideration the company's actual experience over a period of years past, of course, that actual experience of the company was had in connection with their total sales which includes both resale as well as direct sales?

A. That is correct and that is what Exhibit 170—

Q. So in so far as that particular phase of it is concerned, you did predicate your working capital calculations on Exhibit 170?

A. That is correct, yes, sir.

Q. Right at that point, I don't know whether I asked you heretofore whether or not you had ever made any estimates or constructed any skeleton statement which had reference to direct sales of gas alone similar to this Exhibit 170?

A. No, sir.

Q. You did not?

A. No, sir.

Q. You don't know what those results would show?

A. I haven't tried it. I haven't attempted to.

(Vol. XLIX, pp. 6726-6737.)

31. Cost of Gas to Colorado Interstate at Clayton Junction as Computed by the Company for the Denver Line Determined on a Regulatory Basis and Under the Assumption That the Supply of and Markets for the Gas Continue Beyond 1948, the End of the Project Term, and Until the End of 1956.

These costs are shown in Exhibit 276. This exhibit and the testimony relating thereto is covered more fully by Canadian and is adopted by Colorado Interstate. The costs there shown are for the years 1939 to 1947 inclusive and are as follows (Statement 1):

Year	Production	Gathering	Transmission	Total
(1)	(2)	(3)	(4)	(5)
1939	$ 643,088	$ 129,199	$ 567,573	$1,339,860
1940	708,450	140,421	685,882	1,534,753
1941	734,493	146,270	710,724	1,591,487
1942	690,315	140,954	711,376	1,542,645
1943	680,726	142,170	784,333	1,607,229
1944	679,422	142,117	815,078	1,636,617
1945	674,970	144,344	843,626	1,662,940
1946	767,455	170,879	875,390	1,813,724
1947	1,399,104	370,245	914,542	2,683,891

As stated in the caption, the cost of gas in this exhibit is computed on the assumption that the supply of and market for gas will extend beyond the project term, that is, beyond 1948. In the cost, there is included amortization and depreciation spread through, so to speak, to the end of 1956. Such year was used for this purpose because other witnesses for the company estimated that the economic life of the field would cease by the end of 1956. The cost above stated accordingly reflects annual depreciation and amortization charges based on a life extending through 1956, however, the total cost of gas is estimated for the purpose of this case only through 1947.

32. Cost of Gas to Colorado Interstate at Clayton Junction as Computed by the Company for an Assumed Denver Line for Resale Gas Only Determined on a Regulatory Basis and Under the Assumption That the Supply of and Markets for the Gas Continue Beyond 1948, the End of the Project Term, and Until the End of 1956.

These costs are shown in Colorado Interstate's Exhibit 277. This exhibit and the testimony relating thereto is included by Canadian hereinafter and is adopted by Colorado Interstate. The costs there shown for the years 1939 to 1947 inclusive are as follows (Statement 1):

Year	Production	Gathering	Transmission	Total
(1)	(2)	(3)	(4)	(5)
1939	$ 399,115	$ 85,430	$ 566,534	$1,051,079
1940	461,301	99,940	693,264	1,254,505
1941	485,734	105,900	709,237	1,300,871
1942	454,798	100,578	714,040	1,269,416
1943	453,881	101,618	771,254	1,326,753
1944	456,048	102,175	826,520	1,384,743
1945	457,472	104,682	854,009	1,416,163
1946	536,437	128,653	880,991	1,546,081
1947	1,201,815	378,896	909,202	2,489,913

As stated in the caption, the cost of gas in this exhibit is computed on the assumption that the supply of and market for gas will extend beyond the project term, that is, beyond 1948. In the cost, there is included amortization and depreciation spread through, so to speak, to the end of 1956. Such year was used for this purpose because other witnesses for the company estimated that the economic life of the field would cease by the end of 1956. The cost above stated accordingly reflects annual depreciation and amortization charges based on a life extending through 1956, however, the total cost of gas is estimated for the purpose of this case only through 1947.

Q. What is your purpose in the presentation of this first exhibit No. 276.

A. The purpose is to show cost of gas delivered to the Colorado Interstate Gas Company at Clayton Junction, New Mexico, on the regulatory rate basis as defined.

Q. You proceeded with the discussion of your exhibit on Page 3 where you referred in Paragraph 4 to the fact that the rate base used herein as of January 1, 1939 is the depreciated original cost as of December 31, 1938, shown by Exhibit 272.

A. Exhibits 272 and 273.

Q. Exhibits 272 and 273?

A. Yes.

Q. Those are the exhibits heretofore identified by Mr. Roberts?

A. That is correct.

Q. Now, then, you use the term "depreciated original cost." You are using that phrase in the same fashion as Mr. Roberts employed it; that is, applying the depreciation that is predicated upon per cent condition of the property and then relate it to dollars?

A. That is correct, the depleted and depreciated original cost as of December 31, 1938, as indicated in Mr. Robert's Exhibits 272 and 273.

Q. In employing that phrase in the sentence that Mr. Roberts employed, you of course don't relate that so-called accumulated depreciation to the depreciation that has heretofore been set up on the company's books?

A. No, sir.

Q. You begin with December 31, 1938 and set up, as you say in the next paragraph, Paragraph 5 of your Statement 3, a sinking fund method of depreciating?

A. The sinking fund method or the compound interest method of amortization.

Q. Amortization?

A. Yes, sir.

Q. That is entirely a new departure as far as the company's history is concerned?

A. That is correct. The company has not used the sinking fund method.

Q. Not in any time heretofore?

A. No, sir.

Q. In any of the properties?

A. No, sir.

Q. You are relating that as of the beginning, January 1, 1939, the setting up of the sinking fund?

A. That is correct, yes, sir. The date of it is January 1, 1939, beginning with the observed depreciated and depleted condition.

Q. Heretofore the company had set up a debt amortization plan beginning in 1928, hadn't it?

A. Yes, sir.

Q. And it had set up a depreciation plan in 1931?

A. That is correct.

Q. Had you also set up a different plan for depreciating short-life properties, or how were they treated?

A. They were usually handled on a 25 per cent basis.

Q. How had they been handled before?

A. On a 25 per cent basis.

Q. Now you come to January 1, 1939 and all of those previous methods have definitely been discarded for this new sinking fund plan you have here?

A. For the purpose of this exhibit here, all of the company's methods have been discarded.

Q. As a matter of fact, though, actually, this being presently March 24, 1941, there has been no sinking fund method put into effect by the company?

A. No, sir.

Q. Although this contemplates the setting up of such a plan as of January 1, 1939?

A. That is correct.

Q. Now, this new sinking fund method, that is going to be more or less an all-embracive one excepting for short life property?

A. That is correct.

Q. It supersedes your previous debt amortization plan as well as any other method of acumulating any reserve for those purposes?

A. This is the alternative plan based entirely upon the regulatory or rate basis using the compound interest calculation for amortization.

Q. And going back to that method of computing depre-

ciation as set up on the company's books in 1931, that was set up on a straight line basis?

A. That was a 25 year life, strictly.

Q. And had been so viewed?

A. Yes, sir.

Q. But you are not in accord with the idea of the company depleting its properties on a straight line basis?

A. Oh, yes, for an accounting basis, I think the straight line is all right, but for the purpose of rate making, I think the compound interest method is much better.

Q. You think the compound interest method is much better?

A. Yes, sir.

Q. Are you in accord with the definition of the sinking fund method as Mr. Paton sets it up in his Accountants Handbook where he says: "This method involves the systematic accumulation, in the hands of a trustee or otherwise, of a fund which will amount to the total of the depreciation in any case by the estimated date of retirement, and the interest rate involved, instead of being the estimated earning power of the asset being depreciated, or of the general business assets of the concern involved, is the contractual rate actually secured on the fund."?

A. That is what the premise of this exhibit is.

Q. That is the method you advocate in this exhibit?

A. Yes, sir.

Q. But as you just stated, although it contemplates such a method being set up as of January 1, 1939, it has not in fact been set up by the company as of this time?

A. It has not.

Q. So it is being advocated by you merely for the purpose of this exhibit?

A. Merely for the purpose of this exhibit and for the purpose of this hearing, this proceeding.

Q. As far as you know, the company doesn't in fact contemplate setting up such a sinking fund method on its books?

A. I don't think it does.

Q. How do you define the straight line method of depreciation?

A. The straight line method ordinarily is an estimated life of so many years divided into one, which would give a rate.

Q. And that is the method that the Commission's accountants have presented in this proceeding?

A. Yes, they have used an estimated life, a service life.

Q. What is your objection to the use of that method?

A. My chief objection to the use of that method is it is always a diminishing rate base.

Q. It is always a diminishing rate base?

A. That is correct.

Q. That is not so good, is it?

A. Not to my knowledge—not to my way of thinking, no, sir.

Q. But you would let a plant be in existence eleven years and then just by the process of inspection of its physical properties find a per cent condition and relate that per cent condition to what you would determine accumulated depreciation as of that date and start from there?

A. I think that is quite proper, yes, sir, for rate purposes.

Q. For rate purposes?

A. Yes, sir.

Q. Disregarding that entire 11-year period in so far as the life of the property is concerned?

A. That is correct.

Q. Supposing this rate proceeding, instead of having taken place at this time had not in fact taken place until 1953 or 1954. You would still proceed in the same fashion, setting up the same methods as you have here?

A. That is right.

Q. Even though you also at that time would have the same information available to you as made available by your geologists in this proceeding, namely, that in their opinion from their estimates of the life of the Canadian River Gas producing acreage or its acreage in the Panhandle field would expire or come to an end in 1956?

A. That would be based primarily on what their judgment was or what their calculations resulted in as far as the depletion of the field as a whole was concerned.

Q. Let's assume just for the sake of the problem that at that time that would have been their opinion, or would be their opinion, and 1956 was just ended and this rate proceeding, instead of taking place now would have taken place in 1954. I take it then you would set up a sinking fund method of depreciation and amortization of the properties

that would require the amortization of the entire plant during a period of—well, it might be a year and a half or less than that.

A. Well, the principle would be the same but I doubt very much if the companies would allow themselves to get into a position whereby they only had two remaining years to recoup the value of a property at a given date.

Q. You just now stated that you didn't contemplate having the company set up on its books a sinking fund method of depreciating and amortizing properties but that this was computed and set up merely for the purpose of this exhibit, so they would continue on as they have now until 1954, saying there hadn't been a rate proceeding in the interim?

A. They would continue the same way as they are doing now, and as far as this exhibit is concerned, it would be set up on the same basis, but I doubt very much whether the company would recover it in a two-year period. As a matter of fact, I don't think they could.

Q. They couldn't?

A. I think not.

Q. So they would probably reach 1955 or 1956 and if the property were maintained in the same high level it is now it might still be in 93 per cent condition?

A. That is correct, and the company would in that last two-year period, if the field went out in such a short period of time, be faced with a loss of that property.

Q. They would?

A. Yes, sir.

Q. In your opinion it isn't the proper way to spread your depreciation and amortization over the entire life of the properties ratably from 1928 to the time you say that the field life would come to an end?

A. No, this particular exhibit here, Exhibit No. 272, begins with January 1, 1939, as of that date.

Q. You would proceed in the same fashion whether this proceeding had taken place at any *late* year, starting right from scratch?

A. In dealing with extremes where we have a narrow margin of two years, as you mentioned before, the company would have to sustain the loss.

Q. Suppose you would have this in 1945 instead of now, you would set it up on the same plan?

A. On the same plan.

Q. Having there instead of 4.36—

A. I would get a little higher figure.

Q. You would probably have some higher figure?

A. It would be around 6.

Q. Although from the estimates made, the useful life of these properties would be the period from 1928 to 1956, you wouldn't give any consideration to that period of life of the properties that had gone before but would begin from whatever period there would be a rate proceeding?

A. We would do that in the case—when we started with a depreciated and depleted condition as of December 31, 1938, we did give effect to the loss in service value and the depletion of the field as a whole and we would begin with the depreciated and depleted condition.

Q. But you only pay respect in so far as the depreciated condition of these properties are concerned, in so far as the per cent condition that you may find *them*?

A. That is the observed condition, yes, sir.

Q. And no other factor with reference to the service life has already expired?

A. We considered the factor of depletion; the amount of gas withdrawn.

Q. In so far as the depletion is concerned, you do?

A. Yes, sir.

Q. But that is only related to the leaseholds and the producing gas wells?

A. That is correct.

Q. You will proceed in that fashion with reference to those two items of property but you don't think it is correct to proceed in a similar fashion with respect to the other units of property?

A. No, sir, I don't, because the observed condition is our starting point in practically all of the rate proceedings set up on this particular basis.

Q. You wouldn't think of doing that to try to observe the performance of the gas well at any particular time?

A. I don't think the performance of a gas well; that is, as far as the depleted property is concerned, can be observed.

Q. That is your difficulty there?

A. That is the difficulty of the hole in the ground, the vertical hole, yes, sir.

Q. You have had considerable experience in connection with the operation of properties like those of Canadian River. What in your opinion would have been the condition of the Canadian River's main lines if there hadn't been a high maintenance taking place? If they hadn't been maintained at a pretty high rate of maintenance, what would have been the condition?

A. I don't know just what you mean. Do you mean a high cost of maintenance?

Q. No. What in your opinion would you have found as to the per cent condition of the property as of December 31, 1939 if there had been a lack of maintenance by the company?

A. Ordinarily, maintenance itself tends to keep up the service life of the property. Deferred maintenance has the reverse effect, as far as I know from my experience in the natural gas business.

Q. So if there hadn't been a good maintenance on those lines prior to December 31, 1938, you probably at that time wouldn't have had a 93 per cent condition?

A. Well, I don't know as you can relate the actual per cent condition against a particular form of maintenance. I think, as Mr. Roberts explained, that in many cases during inspection the number of pits were observed and it may have been due to the inspection itself that certain joints of pipe were removed. All of that was taken into consideration as to the per cent of observed condition.

Q. But, Mr. Lusk, if there had been no maintenance at all on these properties, certainly in the light of your experience you wouldn't say that they wouldn't have been in 93 per cent condition, the maintenance would have been in 93 per cent condition as of December 31, 1938?

A. No, and I think Mr. Roberts explained that when he said that it might be in some other per cent condition. They may have found a lower one.

Q. A lower one? It may not have been higher?

A. I beg your pardon, but I was talking about maintenance. It probably would have been lower.

Q. Lower?

A. Yes.

Q. As a matter of fact, that same situation would obtain with other units of property if there should have been an entire lack of maintenance?

A. If there was an entire lack of maintenance, the property would have been in a lower per cent condition.

Q. I believe the company's past history shows that they set up a debt amortization plan right at the beginning of the operations of these properties in 1928, doesn't it?

A. That is right. The mortgage indentures provided for uniform retirement.

Q. That is under the contract?

A. That is under the contract, yes, sir.

Q. As a good accounting matter, why didn't the company at that time set up a plan of amortizing its investment in those properties over the life of the property?

A. They saw fit to amortize the debt rather than the property.

Q. They did?

A. Yes, sir.

Q. In that fashion they would recover their debt much quicker, wouldn't they?

A. The debt is being liquidated under the terms of indenture.

Q. Would it be liquidated much quicker?

A. Yes.

Q. And ratably over a period of years?

A. 20 years.

Q. Under that plan that was set up by them to amortize that debt, they have already been able to recover over that period—it is 13 years now, isn't it? Or is it 12 years?—that portion of the debt?

A. The debt the Canadian River Gas Company now is about 60 per cent retired; that is, the initial debt.

Q. Through that method of amortizing it over that period of years?

A. That is correct.

Q. In the computation of the direct cost of gas that is included as a part of that cost, isn't it?

A. That is right. In the exhibits preceding these showing the cost of gas at contract, the Clayton method is used and provides for the amortization of not only the bonds but the subsequent notes plus interest.

Q. Now, then, you provide for a period of years ending —what is that date? Is 1956 the date of the life of the field?

A. Yes, sir.

Q. At that time you contemplate that the operations of these properties, gas producing and gathering, as far as Exhibit No. 276 is concerned, will cease?

A. That is correct. On Page 3 of the written statement, Mr. Hendee in his Exhibit No. 255 has testified that from the standpoint of major gas pipe line companies, the economic life of the field will be reached; that is, in 1956, and the commercial production of gas will cease by the end of that year.

Q. Now, in setting up your requirements of revenues—well, first of all, in Exhibit 276, as well as in the related exhibits following, I don't see where you have given any consideration at all to the net salvage value that the two exhibits—rather, the exhibits presented by your company as Exhibit 281 called for.

A. No, there is no consideration of salvage given in any of these exhibits.

Q. I see in Exhibit No. 281, the exhibit put on by the company, shows a net salvage value as of January 1, 1956 of $198,384.69.

A. I haven't considered it.

Q. Why haven't you given it any consideration?

A. In the first place, I was dealing principally with the amount of property as of December 31, 1956, the end of that year. The property beginning on a rate basis is as of January 1, 1939. I did not consider the salvage, because in the first place I didn't have the salvage figure available; in the second place, for the purpose of this particular exhibit, I don't think the salvage plays an important part in it. It is only $198,000 and that $198,000 on the Canadian River Gas Company would not make any material difference in the cost of gas at Clayton.

Q. It would serve as a credit if you did utilize it, wouldn't it?

A. It would serve as a slight deduction, yes, sir. However, $198,000 against the total property base of approximately $14,000,000 is not a very large figure.

Q. Over that period of years there would be an additional charge of that total of $198,384.69?

A. That is right.

Q. That does not now appear or is not reflected in your exhibit?

A. No, sir, it doesn't appear in my exhibit.

Q. Returning to Exhibit 276, I notice in Mr. Roberts' exhibit he does not depreciate either land or rights of way in Exhibit 272 and the related exhibits.

A. I don't think he does.

Q. If I recall correctly, he specifically stated that he did not depreciate lands in fee or rights of way.

A. That is correct, Mr. Roberts hasn't shown any accumulated depreciation or depletion of lands or rights of way.

Q. Yet you have included both land as well as rights of way in your amortization plan. Lands, as I have it, includes an item of $3,656 and rights of way $60,659. Why have you included them in your amortization plan?

A. Well, the company expects to recoup under the principle set forth in Exhibit 276 all of the cost, which includes lands and rights of way.

Q. That is true, but there is no depreciation accruing on either one of those items?

A. Not under this plan, no, sir.

Q. And Mr. Roberts doesn't contemplate that either one of those items is depreciable property?

A. That is correct.

Q. But you still, under your method of computing this Exhibit 276, included them in your amortization plan?

A. That is correct.

Q. Well, then, as you see it, the company hasn't been able to get any of its investment on that back between 1928 and 1939 on either one of the two items?

A. That is correct. Mr. Roberts' exhibit and this exhibit begins with January 1, 1939.

Q. You proceed in that fashion, although the rate has heretofore been set on debt amortization in the contract?

A. That is correct.

Q. Let's turn to Statement 12, Exhibit 276. That pertains to the working capital requirement on all gas, doesn't it?

A. That is correct.

Q. First of all, how did you determine the amount of working capital required for future years 1940-1947?

A. That was based upon the estimated operating expenses for the year 1940 in relation to Exhibit No. 192, and the averages were moved every year. It is set forth on a five-year moving average basis.

Q. Then in addition to estimating the total, you got an estimate here by dividing the amount required between the production, gathering, and transmission of compressing systems?

A. That is correct.

Q. How did you arrive at that allocation?

A. That allocation was arrived at on the basis of Exhibit No. 192 which provides three component parts of working capital, material and supplies, one-eighth of the annual operating expenses, and a nominal amount for cash in local banks. The materials and supplies were segregated on a property basis; the annual operating expenses were segregated on an expense basis and the cash required, the nominal amount of cash required, was also segregated on an expense basis.

Q. Then you assumed an increase of your cash balance of about 50 per cent over a period of years, and through 1946, don't you?

A. Well, we assume here in 1940 a total working capital required as computed by the basis I explained of $205,000, and in 1947 it was $275,000.

Q. How do you assume a 50 per cent increase in your materials and supplies during that period of years? Is that in Line 1 of your computation on—what statement in your Exhibit 276 is comparable with Statement 10, Exhibit No. 277? I see your Statement 10 in Exhibit 276. Let's turn to that.

A. That isn't working capital, Mr. Lange.

Q. I know, but I want to refer to that statement.

A. All right.

Q. That sets forth the property investment as of January 1, 1939 and right on through 1948, doesn't it?

A. Yes, sir.

Q. Now, that shows an increase over that period of years of approximately 20 per cent, doesn't it?

A. The total property under Column 8, Statement 10, Exhibit 276, shows an increase of about $2,500,000 which is about 20 per cent.

Q. About 20 per cent?

A. Yes, sir.

Q. Why are you providing for an increase of approximately 50 per cent in your working capital for materials and supplies during that year when your property investment as shown herein increases only 20 per cent during that period?

A. Well, as far as the working capital statement is concerned, that is not based primarily on materials and supplies, but on the increased operating expenses to a great extent.

Q. That is, to some extent but not entirely?

A. Well, the weighting of the materials and supplies increase is based upon the property increase, and the increase in operating expense would take up the difference between 20 per cent and 50 per cent, or 25 per cent and 50 per cent.

Q. So that is a judgment figure that probably increases requirements in working capital?

A. It is a computed figure based upon previous exhibits.

Q. And the allocation of it is estimated?

A. It is based on—as I said before, part of it is based upon a property division and part of it on an expense division.

Q. Going back again to Statement 10, Exhibit 276, the property investment as of January 1, 1939, the items under production system, Column 3, are taken from a previous exhibit heretofore prepared by you?

A. Yes, sir, the additions as indicated by Note B, Statement 10, property additions in 1940 and thereafter, as shown in Statement No. 3, Exhibit 184, and Statement 3, Exhibit 133.

Q. Under the production system, that first item of $5,825,683 in 1939 includes the total of those leaseholds that have been set up on the books heretofore, including what had previously been under that Appreciation account?

A. That is correct, with the depletion as indicated in Mr. Roberts' Exhibits 272 and 273.

Q. Going down to Line 17, replacement reserves, autos and trucks, drilling and cleaning equipment, now, those items of property are what you would term short-life property?

A. Yes, sir.

Q. The depreciation there is on the straight line basis as distinguished from your sinking fund method applicable to the other method?

A. That is correct.

Q. Going back to Statement 2, Columns 8, 9 and 10, are those set up here in lieu of your debt amortization provision in your contract?

A. That is correct, replacement reserve, provisions for depreciation and depletion and an 8 per cent return in lieu of the present method of interest and the amortization of debt.

Q. Now, Column 11, Statement 2, that is where you set up the Federal taxes?

A. Yes, sir.

Q. How do you arrive at this almost 100 per cent increase in 1947 of $414,184 as against $207,159 in 1946?

A. In 1947 you will notice that over in Column 2, the column there, gas royalties have been reduced almost 50 per cent due to the elimination of the Chicago line gas, principally. As explained in the other operating statements, or the other statements and exhibits, the total operating expenses under Column 7 have been reduced from $710,777 to $493,830. The taxes have also been reduced under Column 6.

Now, any reduction in operating expenses and in operating taxes, all of which are allowable deductions and under the present statutory regulations for income tax purposes, naturally tend to increase income taxes.

Q. That, of course, assumes your revenues would be the same as you have heretofore projected?

A. That assumes that the company would still be entitled to enjoy an 8 per cent return on the value of its property.

Q. And this Column 6 where you have taxes set up and a reduction in 1947, you mean by that a reduction in severance taxes?

A. That is principally reduction in severance taxes.

Q. This exhibit basically is intended to present these figures as you computed them, disregarding in its entirety the provisions of the contract?

A. That is correct. This is an alternative method of the contract for rate making purposes.

Q. Let's turn to Statement 11, Exhibit 276, Mr. Lusk. Now, the first item in Column 2, $5,825,683, that is the depreciated original cost base as you have it in your production system for January 1, 1939?

A. That is correct; that comes from Statement 10.

Q. Well, what do you add to that after the year 1939?

A. Well, the property additions in 1940 and thereafter are taken from Exhibits 184 and 133. Those exhibits are the production and gathering system and the transmission system, including the Bivins compressing station from the intake side of Bivins going north.

Q. That's all that is added every year to the figures in Column 2?

A. Well, it is only the production system in Column 2.

Q. In so far as production system properties are concerned?

A. They do appear on one exhibit.

Q. And in subsequent years the items appearing in Column 2 don't reflect any deductions for depreciation during any of those years?

A. No, sir.

Q. You are just adding to them every year whatever additions have been made to the property?

A. That's correct.

Q. And do those additions also include replacements?

A. No, sir.

Q. They don't?

A. No, sir, only as shown in Exhibit 184, the amounts shown in Statement No. 10 and Statement No. 11 for the production and gathering system, taken from Exhibit 184.

Q. And they contemplate only whatever additions have been made to the properties over and above any replacements?

A. That is correct, yes, sir.

Q. And you proceed in the same fashion with Statement 11 of the exhibit with reference to the gathering system properties and also with reference to the transmission and compressing properties?

A. That is correct. The additions to the gathering system are taken from Exhibit 184 and additions to the transmission and compressing system are taken from Exhibit 133.

Q. And in each instance, of course, the items; that is, under Column 6 for gathering and Column 10 for transmission and compressing properties, represents the depreciated base as of January 1, 1939?

A. That is correct, as taken from Mr. Roberts' Exhibits 272 and 273.

Q. And for subsequent years in each of those columns the dollar additions represent property additions?

A. And estimated property additions at a gross figure, yes, sir.

Q. And then the only other element in computing the rate base in each instance for the three systems is the average working capital that you have projected under Columns 3, 7 and 11?

A. That is correct.

The Trial Examiner: We will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Lange:

Q. Mr. Lusk, turn to Exhibit 276, Statement No. 6, required revenues from all gas. I notice in Column 10 there you have the amount required for the 8 per cent return for each year.

A. Yes, sir.

Q. Now, in the computation of your required taxes, that is set up on Statement 13, isn't it?

A. Which tax?

Q. Capital stock tax and income tax.

A. That is set up on Statement 13, yes, sir.

Q. Now, in Column 10 of Statement 6, I see you have for 1940 the amount required for an 8 per cent return, being $909,027.

A. That's correct.

Q. Now, how do you determine the amount attributable to the Denver line as distinguished from the amount for those taxes attributable to the Chicago line and other sales?

A. Well, in Exhibit 276 the amount of gas delivered to Chicago has been excluded in its entirety. The allocations for property and all of the operating expenses begin with Statement 2 for production system, and an 8 per cent return shown under Column 13, Statement 2. The percentages arrived at are taken from Statement No. 9 in Exhibit 164 which excludes all of the Chicago gas from both production and gathering.

In the transmission system the Chicago system doesn't enter into any of Canadian River Gas Company's transmission system.

Q. But in computing your percentages in each of your—well, Statements 2, 3 and 4, the columns 13, 10 and 14, respectively, as to the amount of return required, wouldn't that when applicable to the total required show that the income tax returns applicable to the Denver line are much higher than what they should be?

A. Well, the income tax applicable to the Denver line is a computed figure based on the 8 per cent return of $643,088 as shown in Column 14, Statement 2, and also in Column 11 of Statement 3 and Column 5 of Statement 4.

The additions, or any amount that is applicable to the Chicago line, is excluded from all of these computations.

Q. What about the amounts applicable to Amarillo?

A. They are included in the totals. That is, the Amarillo Oil Company and the deliveries along the line—

Q. Yes.

A. They are excluded in the percentage for the Amarillo Oil Company gathering and Transmission under the B contract is excluded, because they are well mouth delivery.

Q. Now, going back to that Statement 6 of the exhibit in Column 10 for the year 1940, doesn't that $909,027, that's the total amount that you say is required for the obtaining of the 8 per cent return?

A. That's correct. That comes from Statement No. 11.

Q. Well, now, that's applicable to all three systems, isn't it?

A. That's correct, production, gathering and transmission.

Q. That necessarily applies to all details, doesn't it?

A. This is all gas delivered at Clayton, yes, sir.

Q. Now, does this $909,027 on Statement 6 refer to the total amount required with reference to all properties of the company?

A. All properties of the company devoted to delivery of gas at Clayton Junction, New Mexico for the Colorado Interstate Gas Company.

Q. Yes. Now, I notice also in the computation of your Federal income and capital stock taxes, Statement 13, Column 4, on the basis of what law are you computing those taxes for the years 1940 through 1947?

A. In Column 4?

Q. Yes.

A. The excess profits—that is on the basis of the 1940 excess profits law.

Q. You don't take into consideration the subsequent amendment to the act which would have the effect of reducing that excess profit?

A. Providing the last two years were higher than the first two years of the four.

Q. Providing the last two years were higher than the first two?

A. That is correct.

Q. That is your interpretation of the applicable provision only?

A. The amendments of the 1940 excess profits law which became effective about the middle of March of this year allows companies subject to excess profits tax to compute their excess profits tax allowable base either by the average four-year method or the last two years, whicheyer produces the largest amount of allowable in order to effect the smaller amount of tax.

Q. And in the light of your interpretation, then, you say that that doesn't in any manner *effect* your computations in Column 4, Statement 13?

A. It might affect them slightly but I don't believe that the difference in the tax would amount to a great deal.

Q. It would have the effect of reducing them?

A. Reducing them slightly, yes, sir.

Q. Now, you stated previously in your testimony this morning with reference to the method that had been pursued by the company in amortizing its debt under the contract that that method was put into force and effect at the time of the commencement of operation in 1928, wasn't it —the amortization plan?

A. The amortization of the debt of the Canadian River Gas Company did not begin until about 1930, as I remember, under the terms of the indenture.

Q. Under the terms of the indenture?

A. That's right.

Q. And you also stated the approximate amount that had been retired on that debt under that plan, up through 1938, didn't you?

A. Oh, when I mentioned the 60 per cent I was thinking of the present date.

Q. The present date?

A. Yes.

Q. That is as of now?

A. Yes.

Q. Rather, or say as of December 1, 1940? Or what particular time did you have in mind?

A. I think I have a 1939 statement here which I can read right off.

Q. Yes.

A. "The amount of first mortgage debt outstanding as of December 31, 1939 was $5,057,000.

Mr. Dougherty: That is Canadian River?

The Witness: Canadian River Gas Company, and the initial debt of the Canadian River Gas Company of first mortgage bonds was $11,000,000. It's about 55 per cent retired as of December 31, 1939.

By Mr. Lange:

Q. And that was over a period of how many years?

A. As I recall, the first amortization of debt began in 1929 or 1930.

Q. Now, you stated this morning in connection with the question I asked you as to what would be the situation in the event this proceeding—this present proceeding hadn't taken place now but might probably have taken place in 1954 or thereabouts, that if such were the case the company within a short period of a year or two years would have to suffer that loss in difference in value or difference in the amount of dollars that they hadn't recouped.

A. That's correct, theoretically they would suffer a loss.

Q. That would be theoretical because if the hearing was not had they would very likely continue to proceed in the fashion that they have heretofore proceeded up to now.

A. That is correct. It is a difference of opinion between a regulatory rate making basis and what actually occurred from an accounting standpoint as actually stated on the books.

Q. So when you made a statement as to the company sustaining a loss, that is theoretically?

A. That's right, as set forth in Exhibit 276 for rate making purposes.

Q. Because under the provisions of that contract there are sections that take care of the matter of the company being fully reimbursed for its expenditures and investments made during the period?

A. That is correct. Under the contract the Canadian River Gas Company's debt will be extinguished as of June 1, 1948.

Q. Now, on Page 4 of your Exhibit 276 you state that you set up your sinking fund basis on the strength of certain figures that appeared in Mr. Knapp's exhibit.

A. That is correct. That is to arrive at an interest rate of two or three-quarters per cent which was used in the computation of accruals to the sinking fund in this exhibit.

Q. And as you have previously stated, the company has of course not in fact set up any sinking fund method on its books at all.

A. No, the company does not set up a sinking fund on its books. It makes payments to a sinking fund for the extinguishment of its debt.

Q. Yes, but it doesn't proceed in the fashion as defined in the term, or as contemplated under the term "sinking fund method of depreciation"?

A. No, it doesn't follow that at all.

Q. Of course, any additions after 1939, plant additions to the company's property would be financed by these accumulations rather than by any funds set aside under this sinking fund method?

A. No. In this exhibit it is not contemplated to upset the sinking fund once it has been started. It continues as a sinking fund without using the fund itself for any additions to capital required.

Q. Well, just as a matter of practical application, do you think any company would set aside that amount of money every year at that rate of interest as you theoretically calculate under this sinking fund method?

A. Well, any company that is setting aside an amortization reserve under the sinking fund method at the present rate of 2-3/4 per cent, I think would be perfectly justified in keeping their fund intact without disturbing it in that way of making withdrawals from it for property additions.

Q. They would be perfectly justified in doing it but in your opinion as a practical matter, do you think the Canadian River Gas Company would ever contemplate doing that in practice?

A. If the Canadian River Gas Company were forced into it, I think they would.

Q. Well, you say if they were forced into it, but that appears very improbable that they would proceed in setting up a method contemplating the recovery of only that small amount of interest, doesn't it?

A. Well, as far as the recovery of a small amount of interest is concerned, of 2-3/4 per cent, I think that the Canadian River Gas Company and the Colorado Interstate Gas Company also in order to protect themselves against loss and risk, they would be forced to invest in securities, either the triple A as defined by Moody or United States Treasury bonds, the average yield of which is 2-3/4 per cent.

Q. But as you say, they haven't in fact done that, and so far as you know it is not contemplated that they are going to do it.

A. I don't think they will, no, sir.

Q. Do you really think as an accountant that the Canadian River Gas Company would put money in such a fund when they could be earning 8 per cent interest on the rate base?

A. Well, as far as the Canadian River Gas Company is concerned for the purposes of this proceeding and the Colorado Interstate Gas Company, neither property is an expanding or a growing property, so they can't reinvest the sinking fund in their own securities—or in their own properties, I should have said, not securities.

Q. Well, there is a growth over that period of years as shown in Statement 10 of your exhibit.

A. That is quite right. These are just as explained in previous exhibits for well drilling and for the additional lines or the new wells. As far as expanding the property itself is concerned, no.

Q. Well, of course, that is a relative term, but there is an increase in the company's investment of some 20 per cent over that period of ten years.

A. That's correct. It increases about two million, five hundred thousand dollars in ten years. That's $250,000 a year average.

Q. And if they could earn 8 per cent on that money or any portion of it, it certainly wouldn't comport with good operating management to not get that return if it could.

A. Well, that—under the principle established in this exhibit we have contemplated keeping the fund itself intact at the 2-3/4 per cent rate.

Mr. Lange: I believe that is all on this exhibit.

Mr. Dougherty: Mr. Lusk, I think on Statement 10 there is a blank space at the bottom where there is a reference to other exhibits to be put in. That is Statement 10, Exhibit 276.

The Witness: That's "Accumulated Depreciation and Depletion" shown in Exhibits Nos. 272 and 273.

Mr. Lange: That's Statement 10, Mr. Lusk?

The Witness: Yes.

Mr. Dougherty: Then I think the same thing would be true on Statement 10 of Exhibit 277, would it not?

The Witness: The accumulated depreciation and depletion shown in Exhibits Nos. 274 and 275.

Mr. Dougherty: I have no redirect on those.

By Mr. Lange:

Q. Turn to your Exhibit 277, Mr. Lusk.

A. Yes, sir.

Q. That exhibit consists, or confines itself to the treatment of assumed resale gas and assumed resale gas operations alone as distinguished from all gas.

A. That's correct, yes, sir.

Q. Now, turning to the Statement No. 2 of the exhibit, Column 3, I note that your rentals on unoperated leases, you have that entire amount attributable to resale as well as you have to all sales, haven't you?

A. That's correct, yes, sir.

Q. And under gas expense you have practically all of that attributable to resale, haven't you?

A. That's correct. All of the—in Columns 2, 3, 4, 5 and 13, all of those amounts are taken from Exhibit No. 167.

Mr. Dougherty: What statement are you reading from?

The Witness: Statement 2, Exhibit 277.

Mr. Dougherty: Well, Mr. Lusk, all of those items shown in Items 2, 3 and 4, and subsequently, are totals.

The Witness: For resale gas alone.

Mr. Dougherty: But you applied your percentage in Column 2 to all of those totals?

The Witness: I mentioned that 2, 3, 4, 5, and 13, in Exhibit 267.

By Mr. Lange:

Q. And then how do you arrive at that percentage that you apply in Column 13?

A. That is shown on Statement 9 of Exhibit 167.

Q. Will you proceed in the same fashion with reference to the treatment of the items and the percentage on Statement 3 of the exhibit?

A. Yes, sir. That is the same total gathering operation for resale gas alone, including 8 per cent return on depreciated original cost base, Column 10, and the per cent as shown on Statement 9, Exhibit No. 167.

Q. Now, Statement 4 of the exhibit, do you have under "Gasoline Expense" how much of that is assigned to resale gas only for the year 1939?

A. This is all of the gasoline operation and the resale gas alone percentage under the transmission costs as shown under Column 14 which is also taken from Exhibit 167, Statement 9.

Q. Now, under Column 7 of that same Statement 4, your revenue gasoline plant attributable to resale gas alone, how do you arrive at that per cent?

A. That is the total gasoline plant revenue taken from Statement 8 attached and only applies to the Bivins gasoline plant. The gasoline plant revenues shown on Statement 8 are taken from Exhibit 167, Statement 4.

Q. And your replacement reserve, Column 9, Statement 4?

A. That is shown on Column 10 attached.

Q. In that instance, again it is the same as on all gas?

A. Yes, sir, all of these statements, 2, 3, and 4, are total operation, and the percentages in Column 14 are applied

Q. I notice in your treatment of lands in fee and rights of way—referring to Statement 10, do I understand you proceeded in the same fashion in this exhibit as you did in Exhibit 276? You included both lands in fee as well as rights of way in your amortization plan?

A. That is correct.

Q. Although Mr. Roberts did not in computing his items of depreciable property include either one of those as items of depreciable property?

A. That is correct, Mr. Roberts in his Exhibits 274 and 275 does not depreciate or set up any accumulated depreciation for either lands or rights of way.

Q. Of course, in the property investment item on Statement 10, Column 3, your production system property, there has been no allocation made as to leasehold property between all gas and resale gas?

A. No, sir. In Exhibits 134 and 193 there has been no allocation of the value of the leaseholds on the premise of Mr. Watson's Exhibit No. 121 in which he states that he would need all of the leases even if the company only enjoyed resale gas alone.

Q. But if you had a resale system of gas alone and not the all sale gas system operating, it is very probable that there would be a different volume of withdrawals as well as rates of withdrawal of gas in the field?

A. That is possible.

Q. If there were different volumes of withdrawals as well as a different rate of withdrawal, that would have a definite effect upon the life of the field, the producing life of the field? As you would draw more gas from the well it would be apt to shorten its life, and if you withdrew less gas you would be apt to lengthen the life of the well?

A. Well, in the particular case of Canadian River Gas Company, if we took the direct sale of gas as we determined it and reduced the total withdrawals, the difference in the depleted condition would be about one-half of one per cent as of January 1, 1939.

Q. As projected by you as to the contemplated requirements for those future years?

A. That is correct.

Q. But a difference in the actual withdrawals as well as in actual rate of withdrawals would have a very definite bearing upon the life of the field?

A. Well, it might. I don't know, as I would have to work that out as to just what the withdrawals were and the rates of the withdrawals.

Q. I am not viewing it from a geologist's standpoint, because you are not intending to get into that province.

A. No, sir.

Q. It is purely from an accounting standpoint, what an accountant would have to take into consideration?

A. That is possible, yes.

Q. And as I understand it, Mr. Lusk, in the preparation of this exhibit you have followed the same method in which you computed the items in Exhibit No. 276?

A. That is correct, the same principle applies.

Q. Excepting Exhibit 276 in so far as 1939 is concerned, represents figures reflecting actual operations as computed by you?

A. That is correct

Q. But not any of the figures as set forth in Exhibit No. 277 do or could in fact reflect actual operations?

A. They are estimates applicable to resale gas alone.

(Vol. C, pp. 15387-15427.)

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33. **Colorado Interstate's Estimated Net Operating Earnings, After Income and Capital Stock Taxes and Payment for Gas at Regulated Price at Clayton Junction, of Colorado Interstate from the Denver Line, Determined on a Regulatory Basis and Under the Assumption that the Supply of and Markets for Gas Continue Beyond 1948, the End of the Project Term, and Until the End of 1956, Applicable to Depreciation, Amortization and a Return on the Original Cost, Less Accumulated Depreciation, and Amortization of Such Property, Including Contracts Plus Working Capital.**

The company's Exhibit 285 by the witness Lusk (Vol. XCVII, p. 15010) brings together the data, most of which has already been abstracted, to present the facts stated in the caption.

The past and estimated future revenues from all gas sales have been abstracted under Title 15 supra and are the same as those shown in Exhibits 170 and 172.

The computed cost of gas on a regulatory basis is taken from Exhibit 276, which has been abstracted under Title 31 supra. All other operating expenses and taxes, less rentals received, are taken from Exhibit 135, which, together with other related exhibits, have been abstracted under Title 23 supra.

The expenses on account of income and capital stock and like taxes are computed in Statement 5, Exhibit 285, where he used the same methods abstracted under Title 29 supra. His computation of these taxes is further abstracted hereinafter.

Depreciation and amortization expenses are based: (a) for physical property on the original cost less the observed depreciation abstracted under Title 27 supra, and (b) for gas purchase and sales contracts on the unamortized book cost remaining on January 1, 1939, and are computed on a sinking fund basis. This subject is further abstracted hereinafter.

The rate base which he uses, and denominates "depreciated original cost rate base," is made up of the original cost of the properties as shown in Exhibit 67, which, together with other related exhibits, is abstracted under Title 18 supra. From this original cost he subtracts the accumulated depreciation to December 31, 1938, as shown in Exhibit 283 abstracted under Title 27 supra; he then adds the annual property additions required to the end of 1947, shown by Exhibit 133 also abstracted under Title 18 supra; he then adds the cost of the gas contracts, set forth in Exhibit 77 and abstracted under Title 19 supra, properly depleted or amortized. The gas purchase contract with Canadian is depleted with the exhaustion of the recoverable gas reserves and the book cost of the sales contracts is amortized over their respective lives. Finally he adds in working capital, as abstracted under Title 22 supra. These items all set forth in Statement No. 4 of Exhibit 285 result in his total rate base at January 1 of each of the years 1939 to 1947 as follows:

1939	$12,938,453	1944	$13,324,011
1940	12,973,949	1945	13,326,011
1941	13,092,685	1946	13,327,011
1942	13,100,685	1947	13,328,011
1943	13,323,011		

He then uses an 8% return, as set forth in Exhibits 73, 74, 92 and 93, all abstracted under Title 28 supra. After giving effect to all the foregoing data and factors, he arrived at the following earning statement: (Statement 1, Exhibit 285).

Colorado Interstate Gas Company
Revenues on a Regulatory Rate Basis (A)
The Denver Pipe Line Sales of All Gas
Summary by parts, and Comparison with Actual, 1939 to 1947 Inclusive

Calendar Year	Revenues All Gas Sales (B)	Required Operating Revenues				Revenues Addition to Revenues Required for 8% Return
		Operating Costs and All Taxes (C)	Depreciation and Amortization (D)	Required for 8% Return (E)	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1939	$ 4,309,232	$ 2,250,543	$ 600,372	$ 1,035,076	$ 3,885,991	$ 423,241
1940	4,479,168	2,576,162	600,372	1,037,916	4,214,450	264,718
1941	4,813,523	2,765,581	600,372	1,047,415	4,413,368	400,155
1942	4,958,068	2,842,051	600,372	1,048,055	4,490,478	467,590
1943	5,033,833	2,938,919	600,372	1,065,841	4,605,132	428,701
1944	5,171,059	3,035,798	600,372	1,065,921	4,702,091	468,968
1945	5,328,240	3,160,654	600,372	1,066,081	4,827,107	501,133
1946	5,328,240	3,282,289	600,372	1,066,161	4,948,822	379,418
1947	5,328,240	3,765,377	600,372	1,066,241	5,431,990	—103,750
Totals for Period	$44,749,603	$26,617,374	$ 5,403,348	$ 9,498,707	$41,519,429	$ 3,230,174

Notes: (A) Including an 8 per cent return on a depreciated original cost rate base as shown on Statement No. 4, and provision for depreciation and amortization by a sinking fund method with compound interest at a rate of 2¾ per cent per annum.

(B) From Exhibit No. 170. Statement No. 3, Column (5).

(C) From Statement No. 2 attached.

(D) From Statement No. 3 attached.

(E) From Statement No. 4 attached.

This earning statement follows the same general pattern of the earning or rate statements abstracted supra. The facts and evidence especially applicable to it are now dealt with.

As to depreciation and amortization, Lusk included the following statement: (Exhibit 285, p. 2; Vol. XCVII, p. 15011 et seq.)

"Depreciation and amortization are estimated by the sinking fund method as shown in Statement No. 3 attached, whereby the amounts invested in the property would be recovered by equal annual payments and accumulated compound interest at a rate of 2¾ per cent over the respective useful lives of the several items listed below:

(a) Those items whose lives extend through 1956:

1. The original cost of the depreciable gas property at December 31, 1938 (Exhibit No. 67) less the accumulated depreciation therein (Exhibit No. 283), plus the annual additions in 1939 up through 1947 at cost (Exhibit No. 133).

2. The recorded book amount and cost of the gas purchase contract with Canadian River Gas Company (Exhibit No. 77) depleted with the exhaustion of the recoverable gas reserves.

(b) Those items whose lives extend through June, 1948:

1. The recorded book amount and cost of the gas sales contracts with the Public Service Company of Colorado and Pueblo Gas and Fuel Company (Exhibit No. 77) less the accumulated amortization at December 31, 1938, pro rata with their expired lives.

2. The recorded book amount and cost of the gas sales contract with the City of Colorado Springs (Exhibit No. 77) less the accumulated amortization at December 31, 1938 pro rata with its expired life.

"Another witness (Mr. R. W. Hendee, Exhibit No. 255) has testified in respect to the gas supply of Colorado Interstate Gas Company that from the standpoint of the major gas pipe line companies the economic life of the Panhandle Field will be reached and the com-

mercial production of gas will cease by the end of 1956. Colorado Interstate's property and the cost of its gas purchase contract therefore should be fully amortized by that time.

"As noted in Exhibit No. 276 for the cost of all gas delivered at Clayton, 2¾ per cent is the average of the interest rates on AAA Utility Bonds and U. S. Treasury Bonds from 1937 to 1940, basic data for which was taken from Exhibit No. 225 by Mr. Knapp.

"An allowance has also been included herein for the annual accumulation of funds needed for the replacement of short lived property such as trucks and automobiles. Such provision has not been made in the sinking fund requirements for depreciation and amortization."

Statement 3, Exhibit 285, summarized his treatment of depreciation and amortization as follows:

Colorado Interstate Gas Company

Annual Provision for Depreciation, Amortization and Replacements on a Regulatory Rate Basis

The Denver Pipe Line Sales of All Gas

Depreciated Original Cost at January 1, 1939 Plus Additions at Cost to January 1, 1948

Classification of Property	Total Amount to Be Recovered (A)	Annual Requirements for Depreciation Amortization and Replacements	
		Per Cent of Total	Amount
(2)	(3)	(4)	(5)
Physical Property Subject to Depreciation	$11,606,730	4.368% (B)	$506,990
Property Subject to Amortization:			
Gas Purchase Contract	1,229,880	4.368 (B)	53,718
Gas Sales Contracts:			
Public Service Co. of Colorado and Pueblo Gas & Fuel Co.	167,649	9.809 (C)	16,445
City of Colorado Springs	131,949	9.809 (C)	12,943
Total	$ 1,529,398		$ 83,106
Property Subject to Short Term Replacement:			
Automobiles and Trucks	36,883		10,276 (D)
Total	$13,173,011		$600,372

Notes: (A) As shown in total on Statement 4 attached.

(B) Based on life expiration in 1956.

(C) Based on life expiration in June, 1948.

(D) Annual accumulation based on average annual provision from 1934 to 1938.

On being cross-examined as to this Exhibit 285, as well as Exhibit 286 dealt with in the next title, and related exhibits of Canadian 276 and 277, he stated that the company itself had not set up depreciation or amortization as he had done in this exhibit but that such sinking fund provisions had been set up only in case regulation became effective and as an alternative plan which the company could then elect to follow (Vol. C, p. 15391).

The physical properties to be depreciated by sinking fund method were those in existence at December 31, 1938, plus the estimated additions (p. 15433), less, in the case of physical properties in existence, the observed depreciation existing at December 31, 1938, shown in Roberts Exhibit 283 (p. 15437). The period over which such properties are to be depreciated is an eighteen-year term; that is, the period January 1, 1939, to the end of 1956, on the assumption that the gas supply would last through that year (pp. 15436-37-38). The property to be depreciated as set forth in this exhibit, as well as the property in Exhibit 286 and the related exhibits 276 and 277 of Canadian, is the depreciated original cost as of December 31, 1938 (p. 15388); that is, its observed depreciated condition at that time (p. 15389), plus necessary additions to the property (p. 15396-97).

The cost of the gas purchase contract with Canadian is included in the property to be amortized without deduction or apportionment because of the Chicago Line. The Chicago Line came in long after that contract was made (p. 15434). The remaining cost of this contract ($1,229,800) is amortized over an eighteen-year period to the end of 1956. This is on the assumption that the gas supply will last to that time and this contract is amortized over that period because, while it terminates on June 1, 1948, it has a renewal clause (p. 15429). But as to sales contracts with Public Service, Pueblo Gas and Fuel and the City of Colorado Springs, they must be amortized by June 1, 1948, when they expire. (Evidence as to the expiration of franchises from Denver to Public Service and from Pueblo to Pueblo Gas and Fuel and the requirements of the charter that there must be public elections to renew such franchises to such distributing companies has been abstracted under Titles 1, 3, 5 and 8 supra.). The gas sales contracts

with Public Service and Pueblo Gas and Fuel are being amortized over a twenty-year period ending June 1, 1948 (p. 15431) and the contract with Colorado Springs over a seventeen-year period beginning in 1931, with the inception of the contract and ending June 1, 1948. The remaining costs of these sales contracts must be amortized because the company paid for them as a condition of getting such business (pp. 15429-32).

In setting up the depreciation and amortization reserves on the sinking fund method, he assumed that the money set aside for that purpose would be kept intact and invested and not used to purchase additional plant (Vol. C, p. 15419), and he assumed that such money would draw interest, which would be compounded, at the rate of 2¾% over the respective useful lives of the items of property covered by the fund. He took the figure of 2¾% as being the return on non-speculative investments, arrived at by the Commission's witness Knapp in his Exhibit 225, Charts 3 and 4.

In setting up the depreciation reserve he did not give effect to salvage either in this exhibit or in Exhibit 286 or in Canadian's related Exhibits 276 and 277. Evidence of the amount of salvage was not available at the time he prepared this Exhibit 285 (p. 15402). Later, the company witnesses Taubman, Smith and Solow testified that for all of Colorado Interstate's property, the salvage would be only $131,019.95. (This evidence is abstracted under Title 27 supra.) And in the case of Canadian the salvage would be only $198,000 (Vol. C, p. 15402).

The Commission's engineer Lee M. Hill testified that at the end of the service lives assigned by him to the several items of property, the salvage would be "negligible" (Title 27 supra). Salvage would therefore not affect importantly the net results over the period extending through 1956 (p. 15402).

The Federal and state income taxes and the Federal excess profits and capital stock taxes were calculated on the assumption that present tax rates would continue in effect and the computations were made in the same manner as in the case of Exhibits 170 and 172, as amended, abstracted under Titles 29 and 30 supra.

Revenues from the sales to the Chicago Line are not reflected in these tax expenses applicable to the Denver Line and the Denver Line is not "carrying the entire tax for all operations." (pp. 15451-53).

Summing up this operating statement, Lusk said: (Exhibit 285, p. 4)

> "It will be noted on Statement No. 1 that the revenues received, both actual and estimated as shown by Column (2) which include both resale and direct sale gas, are greater than the total required operating revenues as shown by Column (6). The additional earnings shown by Column (7), amounting to $3,230,174 in the nine year period shown are entirely attributable to sales of direct sale gas."

The balance in this amount depends on the following assumptions:

> First, that the present prices or rates for gas will continue and that the revenues of the company will hold up as shown in Exhibits 56 and 43 as abstracted under Title 15 supra.
>
> Second, that the cost of gas as shown by Exhibit 276 as abstracted under Title 31 supra, will remain the same.
>
> Third, that other operating expenses and operating taxes as shown by Exhibits 76, 135 and 135-A, as abstracted under Title 23 supra, will not increase over the estimates therein made.
>
> Fourth, that the Federal and State income taxes and capital stock taxes based on present laws (1940) and as abstracted and computed herein, will not be increased (Vol. XLVIII, p. 6620).
>
> Fifth, that the company can remain in business and be able to use its property beyond 1948 and until the end of 1956, and that, accordingly, annual depreciation and amortization expense will not have to be increased so as to retire or recover said property or the investment therein by 1948 instead of 1956.

Through its accountant, Kenneth L. Smith, in his exhibit 185 (Vol. LIV, page 7495, et seq.) the Commission offered a consolidation of figures for both Colorado Interstate and Canadian, after giving effect to the disallowances, adjustments and reclassifications made by its accountants with respect to the expenses, rate base, recomputed reserve for depreciation, and a reduced rate of return for each of said companies. After giving effect to all of these reductions and disallowances and adjustments by these accountants of the Commission, he shows an average return on the net investment, as computed by him for the period of 1928 to December 31, 1939, of 15.14%.

Respecting this exhibit he testified on cross-examination: He realized that the two companies were separate entities and each has contracts, which have been filed (Vol. LXXXVII, p. 13182) but that he did not follow contract terms (p. 13187). He did not take the net revenues actually received but operating revenue deductions were built up by Mr. McKinstry, another Commission accountant and him (p. 13187). He took income and surplus accounts bodily from the exhibits of the Commission accountants (p. 13188).

Although not subject to Commission jurisdiction, he included figures with respect to sales to Amarillo Oil Company.

"Q. So the consolidated operating revenue figure in Column 7 is not the gross income of Colorado Interstate Gas Company from the sale of gas from its pipe line and sale to Chicago, but represents some money that it does not receive?

"A. That is correct. Of course, I think that following that situation through that it has been dealt with in Mr. Lyon's Exhibit." (p. 13190).

The depreciation figures are based on the service lives furnished by the Commission's engineer, Mr. Hill, and on the life of Canadian's acreage in the field testified to by the Commission's witness Mr. Hammer (p. 13198).

"Q. Now, on Sheet 24 you have deducted each year the accrued depreciation. Is there anything in the Federal Power Commission Code of Accounts to provide for doing that?

"A. I think indirectly there is, yes.

. . . . . .

"Q. But the Code actually doesn't provide for making that subtraction in showing your balance sheet as you have done here on Page 24?

"A. It doesn't spell it out but it doesn't prohibit it." (pp. 13200-01).

The results as set forth in his exhibit are not what the "past history" or the "books" of the company show but what would be the case after all Commission deductions and disallowances and reaccounting for depreciation are given effect (pp. 13205-06).

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34. Estimated Net Operating Earnings, After Income and Capital Stock Taxes and Payment for Gas at Regulated Price at Clayton Junction, of Colorado Interstate for an Assumed Denver Line for Resale Gas Only, Determined on a Regulatory Basis and Under the Assumption That the Supply of and Markets for Gas Continue Beyond 1948, the End of the Project Term, and Until the End of 1956, Applicable to Depreciation, Amortization and a Return on the Equivalent Original Cost, Less Accumulated Depreciation and Amortization of Such Property, Including Contracts, Plus Working Capital.

The company's Exhibit 286 by the witness Lusk (Vol. XCVII, p. 15016) brings together the evidence showing the facts stated in the caption. The methods employed are similar to those shown in Exhibit 285, last above abstracted. This exhibit is also analogous to some extent to Exhibit 172, as amended, abstracted under Title 30 supra.

The revenues from resale gas are as shown in Exhibits 43 and 56 abstracted under Title 15 supra and are the same as set forth in Exhibit 172, above abstracted under Title 30.

The cost of gas at Clayton Junction determined on a regulatory basis is taken from Exhibit 277 and this subject is abstracted under Title 32 supra.

The operating expenses and operating taxes applicable to a Denver Line for resale gas only (excluding income and

capital stock and like taxes) are as shown in Exhibit 136, less rentals received, as shown in Exhibit 172. Such operating expenses and taxes are abstracted under Title 24 supra.

Expenses on account of depreciation and amortization are estimated on a sinking fund basis and in the same general manner as set forth in Exhibit 285 abstracted next above. As the property to be depreciated, he took the equivalent original cost of the depreciable property as shown in Exhibit 134, plus the annual additions required 1939 to 1947 at cost as shown in Exhibit 134, abstracted under Title 20 supra, and he gave effect to the accumulated depreciation as of December 31, 1938, as shown in Exhibit 284, abstracted under Title 27 supra.

He included for working capital the amounts estimated in accordance with Exhibit 70, abstracted under Title 22 supra.

He computed state and Federal income and Federal capital stock and excess profits taxes applicable to resale gas alone in Statement 5 attached to this Exhibit 286 in the same manner as for all gas covered by Exhibit 285 and abstracted in the preceding title.

He used as a rate base the equivalent original cost at January 1 of each of the years shown as set forth in Exhibit 134, plus the annual additions required, 1939 to 1947, at cost, all abstracted under Title 20 supra. From this he subtracted the observed accumulated depreciation at December 31, 1938, as shown in Exhibit 284 abstracted under Title 27 supra. To this he added the cost of gas contracts depleted or amortized in the same manner as set forth in the preceding Title 33. He then added average working capital as abstracted in Title 22 supra. Altogether these items resulted in the "depreciated equivalent original cost rate base" set forth in Statement 4 to Exhibit 286, as follows:

1939	$11,675,536	1944	$12,616,146
1940	12,372,146	1945	12,617,146
1941	12,376,146	1946	12,618,146
1942	12,383,146	1947	12,619,146
1943	12,615,146		

He used an 8% return as set forth in Exhibits 73, 74, 92 and 93, abstracted under Title 28 supra, pointing out that such return was testified to by all witnesses regardless of whether the sales were of direct sale or resale gas.

Giving effect to all of this evidence and these factors, his Statement 1 attached to Exhibit 286 shows the following results:

Required Operating Revenues on a Regulatory Rate Basis (A) From "A Denver Pipe Line for Resale Gas Alone"

Summary by Parts and Comparison with Actual, 1939 to 1947 Inclusive.

Calendar Year	Operating Costs and All Taxes (B)	Required Operating Revenues: Depreciation and Amortization (C)	Required Operating Revenues: Amount Required for 8% Return (D)	Required Operating Revenues: Total Required Operating Revenues	Total Revenues Actual and Estimated (E)	Deficiency of Actual Revenues to Meet an 8% Return
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1939	$ 1,762,920	$ 569,583	$ 934,044	$ 3,266,547	$ 2,938,383	$ 328,164
1940	2,169,744	569,583	989,772	3,729,099	3,202,643	526,456
1941	2,228,845	569,583	990,092	3,788,520	3,424,257	364,263
1942	2,220,232	569,583	990,652	3,780,467	3,566,052	214,415
1943	2,322,598	569,583	1,009,212	3,901,393	3,693,267	208,126
1944	2,360,429	569,583	1,009,292	3,939,304	3,827,743	111,561
1945	2,415,931	569,583	1,009,372	3,994,886	3,982,174	12,712
1946	2,599,649	569,583	1,009,452	4,178,684	3,982,174	196,510
1947	3,563,976	569,583	1,009,532	5,143,091	3,982,174	1,160,917
Totals for Period	$21,644,324	$5,126,247	$8,951,420	$35,721,991	$32,598,867	$3,123,124

Notes: (A) Including an 8 per cent return on a depreciated equivalent original cost rate base as shown on Statement No. 4 and provision for depreciation and amortization by a sinking fund method with compound interest at a rate of 2¾ per cent per annum.

(B) From Statement No. 2 attached.

(C) From Statement No. 3 attached.

(D) From Statement No. 4 attached.

(E) From Exhibit No. 172 Statement No. 3 Column 4.

In conclusion Lusk stated on page 4 of Exhibit 286:

> "It will be noted on Statement No. 1 that the total domestic and industrial resale gas revenues received both actual and estimated as shown by Column (6) are less than the required operating revenues as shown by Column (5) and are therefore insufficient to meet an 8 per cent return on the depreciated equivalent cost rate base. The amount of deficiency in revenue from resale gas shown by Column (7) amounts to $3,123,124 in the nine year period shown."

The deficit or deficiency in that amount is arrived at on the following assumptions:

> First, that the present prices or rates for gas will continue and that the revenues of the company will hold up as shown in Exhibits 56 and 43 as abstracted under Title 15 supra.
>
> Second, that the cost of gas as shown by Exhibit 277 as abstracted under Title 32 supra, will remain the same.
>
> Third, that other operating expenses and operating taxes as shown by Exhibit 136, as abstracted under Title 24 supra, will not increase over the estimates therein made.
>
> Fourth, that the Federal and state income taxes and capital stock taxes based on present laws (1940) and as abstracted and computed herein, will not be increased (Vol. XLVIII, p. 6620).
>
> Fifth, that the company can remain in business and be able to use its property beyond 1948 and until the end of 1956, and that, accordingly, annual depreciation and amortization expense will not have to be increased so as to retire or recover said property or the investment therein by 1948 instead of 1956.

The witness was cross-examined about his Exhibit 286 in conjunction with Exhibit 285 and his statements as to the method of computing income taxes and requirements for depreciation and amortization made with respect to Exhibit 285 are in general applicable to his Exhibit 286 (Vol. C, p. 15438-43).

Further Testimony of the Company's Witness, Lusk.

Q. Mr. Lusk, you have also prepared Exhibits 285 and 287 relating to the operations of the Colorado Interstate Gas Company?

A. Yes, sir.

Q. Turn to Statement 3, Exhibit 285. I note that on Statement 3 you have an addition to your Item No. 1, physical property, also subsequent items. First of all, is item 2, gas purchase contract, which you included in your base. Is that correct?

A. Yes, sir.

Q. What gas purchase contract is that in Item 2?

A. That is the gas purchase contract between the Canadian River Gas Company and the Colorado Interstate Gas Company, dated January 3, 1928.

Q. You have included that in your regulatory rate base and applied what you assumed would be the annual requirement for the depreciation and amortization of that item?

A. Yes, sir.

Q. Well, is that the way the company has heretofore treated that purchase contract?

A. No, sir, the amount of the gas purchase contract as treated heretofore by the company—that was treated by writing it off over a 20-year period.

Q. Over a 20-year period?

A. Yes, sir.

Q. Beginning when?

A. June 1, 1928.

Q. June 1, 1928?

A. Yes, sir, and to terminate on June 1, 1948.

Q. I notice you have the Letter "B" affixed to this gas purchase contract "Based upon Life Expiring in 1956," is that correct?

A. That is correct.

Q. In that respect you are also departing from the method that the company is computing its amortization of that contract?

A. Yes, under the principle and premise that that contract will expire in 1948, but there is a renewal clause in that contract.

Q. After 1948?

A. After 1948.

Q. Well, then, the way you treat the item here, you contemplate that the Colorado Interstate Gas Company will avail itself of that option?

A. That is the premise here.

Q. And it will renew the contract?

A. Yes, sir.

Q. Now, the total amount of dollars in Column 3 for that item, $1,229,800, is that a departure, too, from the company's treatment of the item?

A. That is right.

Q. What does the company set that up on?

A. On a 20-year life basis with approximately five per cent a year. For the purpose of Exhibit 285, gas purchase contract has been depleted in accordance with the gas withdrawn from the Panhandle field.

Q. According to the company's books, to what extent has it been depleting? What I meant was this: What was the amount of amortization up through 1938, 1939, or 1940?

A. I don't have the New York statement with me, but I believe it is around 55 per cent amortized.

Q. Approximately $950,000 net as of this time?

A. That is correct. If it is 5 per cent amortized, the amortization would be $1,100,000 and the remainder $900,000.

Q. As of January 1, 1939, that is the date you set up in Statement 3, isn't it?

A. Yes, sir.

Q. You have also included in your regulatory rate basis in Statement 3, two other gas sales contracts, Items 3 and 4, haven't you?

A. The first one was a gas purchase contract.

Q. Yes. There are two gas sales contracts?

A. Yes.

Q. And you have treated those in connection with this exhibit as having a life expectancy until June 1948?

A. That is correct. On the sales contracts of the Public Service Company of Colorado and the Pueblo Gas & Fuel Company it is a 20-year life, and on Colorado Springs it is approximately 17 years. Both contracts expire as of June 1, 1948.

Q. Well, how has the company treated its items on its books heretofore?

A. They have been amortizing those on a straight life basis.

Q. Over what period of time?

A. Twenty years for the Public Service Company of Colorado and the Pueblo Gas and Fuel contract, and approximately 17 years for the city of Colorado Springs.

Q. Beginning as of what year in each instance?

A. The contracts with the Public Service Company of Colorado and the Pueblo Gas and Fuel Company began in 1928 and the City of Colorado Springs contract began in 1931 with the subsequent amendment and adjustment as of March 1932. All of that is shown in Exhibit No. 77.

Q. Now, then, if in June 1948—strike that.

Do either of those contracts have any renewal provisions in them?

A. Not that I know of.

Q. Then if in June 1948 substitute contracts would get into the picture there, you would have to upset your amortization plan, wouldn't you?

A. No.

Q. What would you do from that period on to 1956?

A. Well, if those contracts were renewed they would be new contracts.

Q. And you would begin a new amortization of them over that period to 1956?

A. If it cost the company anything, yes.

Q. What do you mean, cost the company anything? Supposing there is some stock issued for them?

A. The company would probably follow the same procedure.

Q. The company would probably follow the same procedure as they had heretofore?

A. Yes.

Q. Now, your automobiles and trucks, those are treated as short-life property on the straight line depreciation basis?

A. Yes, sir.

Q. So when you take this Statement 3 and view it in the light of what you say the annual requirements in so far as depreciation and amortization matters are concerned, you have a pretty diverse setup here, haven't you, on several bases?

A. No, there are only two bases as shown in Statement 3. The physical property subject to depletion and amorti-

zation and the gas purchase contract are the same and the application would be the same in both cases.

The two gas sale contracts are taken on a straight life basis.

Q. Of course, in addition to that, you begin with your physical property against which you have applied per cent condition as of December 31, 1938, disregarding any previous amortization of debt or depreciation that had been set aside and had accumulated?

A. That is correct.

Q. And Statement 3, Item 1, Physical Property, as I understand it, also includes land in fee as well as rights of way that are included in your amortization requirements?

A. That is correct, all of the property shown as of December 31, 1938, plus the estimated additions have been amortized as of 1956.

Q. In the same fashion you did in connection with Canadian River Gas Company's property in Exhibit 276?

A. Yes, sir, the same principle applies.

Q. Returning again to this Item 2, Statement 3, that—strike that.

Statement 3 is applicable to the Denver line sales of all gas?

A. Yes, sir.

Q. It is?

A. Yes, sir.

Q. Now, then, going down to Item 2, gas purchase contract, have you made any allocation of the $1,229,800 or the item that the company has on its books for that amount to the Chicago or other sales points of the gas?

A. No, sir.

Q. Why not?

A. Because the Chicago line gas came in long after this contract was made.

Q. Well, the purchases are made under that contract, aren't they?

A. That is correct.

Q. It is applicable to the Chicago line?

A. That is correct.

Q. Well, if the purchases of gas are actually being made under that very same contract, don't you think that good

accounting practice would require that a proportionate part of that alleged contract cost be allocated to the Chicago sales?

A. Well, I think there may be another exhibit showing an apportionment of all these items.

Q. That isn't in here?

A. No, sir.

Q. So you haven't apportioned them in this exhibit?

A. No, sir, there hasn't been any apportionment of the Chicago line gas, as far as the gas purchase contract is concerned, in this exhibit.

Q. Now, you haven't, or have you, prepared an exhibit showing what the revenues from direct sales of gas would be?

A. No, sir.

Q. You haven't?

A. No, sir.

Q. So when you make this statement on Page 4 of your written statement that certain additional earnings shown in Column 7, Statement 1, amounting to $3,230,174 in the 9-year period shown are entirely attributable to sales of direct sale gas, you are arriving at that amount purely on the basis of deduction, not directly?

A. That is correct, arrived at by deduction.

Q. By the process of deduction?

A. Yes, sir.

Q. Of course you haven't set up what a system devoting itself entirely to direct sale gas would produce?

A. No, sir. There have been no computations made of a hypothetical system for direct sale gas alone.

Q. So in arriving at this 3 million dollar item on Page 4, that is the result of deductions made by you?

A. Yes, sir.

Q. Now, on Statement 2 of your Exhibit 285, Mr. Lusk, Column 2, computed cost of all gas at Clayton, where is that taken from?

A. That comes from Exhibit 276, the one we just finished.

Q. Do you have Exhibit 276 there before you?

A. Yes.

Q. In Statement 1 of Exhibit 276—oh, yes, that Column 5 of Statement 1 of Exhibit 276?

A. Yes, sir, that is carried over to Column 2, Statement 2, Exhibit 285.

Q. Now, your Statement 1, Exhibit 285, Column 4, the depreciation and amortization requirements that you say will have to be set up for that period through 1947, are equal annual instalments computed where? On statement 3?

A. Computed from Statement 3—computed on Statement 3, yes, sir.

Q. And for physical property, the rate is 4.368 per cent?

A. Yes, sir.

Q. And if, of course, the properties to which this rate is made applicable on Statement No. 3 had been amortized over the entire life of those properties, you would have a rate of probably one-half of that, wouldn't you?

A. Well, I think instead of having an 18-year period, I would have the 28-year period.

Q. 28-year period, and those portions of the—or, rather, that percentage of the property that has heretofore been—that percentage of the investment that has heretofore been recouped is entirely disregarded in setting up this 4.368 per centage at this time, isn't that true?

A. That's correct. For the purposes of this exhibit as in the Canadian River Exhibits 276 and 277, we begin as of a date certain, January 1, 1939, for both companies.

Q. And now the loss in property value during the life of the property, what consideration have you given that in setting up this computation?

A. Well, in setting up this computation here, as is also the case with Canadian River Gas Company, beginning with a date certain, and merely adding the gross amount of additions. The depreciation as of January 1, 1939 is set forth in Mr. Roberts' exhibits.

Q. Well, now, do you know what the Uniform System of Accounts' definition gives for amortization, Definition No. 4, amortization? It says: "Amortization means the gradual extinguishment of an amount in an account by prorating such amount over a fixed period over the life of an asset or liability to which it applies, or over the period of which it is anticipated the benefit will be realized."

Do you agree with that definition?

A. The amount on Statement 1 of Column 4 includes compound interest calculation.

Q. That is true, but this says over the life of the asset

or the period during which it is anticipated the benefit will be realized.

A. Well, the life in this case for, the purpose of this exhibit is assumed to be in 1956 based on the economic life of the field.

Q. Yes, but at the end—that is, at the end period, but what about the beginning period? This certainly doesn't contemplate in the use of the term "life of the asset" that you begin long after middle age and then just compute up to the end?

A. Well, that's quite right, but the Federal Code of Accounts now doesn't make—or the Federal Power Commission itself doesn't make any provision retroactive and the Code itself under the Federal Power Act became effective in 1938 and we are beginning as of January 1, 1939.

Q. Well, this became effective January 1, 1940, the Uniform System of Accounts.

A. There was a two-year allowance or a two-year period of grace for the natural gas companies to put their houses in order and attempt to follow the Federal Code of Accounts.

Q. Is this the putting of the house in order, then, in setting up this method of accruing your depreciation and amortization?

A. Well, that's our present principle here.

Q. Well, what is your opinion with reference to the definition in the Uniform System of Accounts from an accounting standpoint?

A. Well, I think as far as Exhibits 285 and 286 and 276 and 277 are concerned, why, the depreciation and amortization columns—that's what we are talking about—Definition No. 4 is the same thing. The gradual extinguishment of an amount by prorating over a fixed period. That's exactly what we are doing.

Q. Yes, but it doesn't stop there. It says the life of the asset or the period during which it is anticipated the benefit will be realized.

A. Well, the position taken in all of these statements is that the life begins as of January 1, 1939.

Q. Well, then, you don't consider that the company had gotten any benefit that accrued prior to that time at all?

A. Yes, it did receive and enjoy benefits prior to that time, but again I state that—

Q. To a very considerable extent, too, didn't they?

A. Yes, sir.

Q. All of which was paid out of the proceeds of the sales of gas the company made.

A. That's correct.

Q. Oh, I don't believe I asked you whether your agreed with the definition that the Uniform System of Accounts gives us to depreciation, Definition 14.

A. Yes, I think that is a fair definition.

Q. A fair definition? What do you mean by a fair definition, Mr. Lusk, now treating it purely from an accounting standpoint? Isn't that a very practical method to set up there or contemplated under that definition?

A. It is a practical method but I think that the phrase "means a loss in service value" should be elaborated upon.

Q. You think it should be elaborated upon?

A. Yes.

Q. There is one phrase that doesn't need any elaboration at all and that is—"depreciation means loss in service value"—you may have some elaboration there, but this part doesn't need any elaboration, does it—"not restored by current maintenance?" You are in accord with that, aren't you?

A. Yes, sir.

Q. Well, now, when you proceed to Definition 35, you find service value defined, don't you? Isn't that sufficiently elaborated on there to give you the meaning?

A. No, I think there should be a little more elaboration on the use of the term "service value."

Q. It says it means: "The difference between the original cost and the net salvage value of the gas plant."

You have an exhibit which you say is the net salvage value and all we have got to do is to determine what the original cost is, and of course you say you don't agree with Definition 29 of original cost of such property first devoted to a public service.

A. I think I have *dispose* of salvage *an* original cost.

Q. Doesn't that fully spell out any possible implication that may be in the picture there, either by inference or otherwise?

A. No, for this reason: Loss in service value can be construed in several ways. For instance—and Mr. Lee Hill

in his service value life has used the life of the field. The pipe lines themselves may be in 95 per cent physical condition when the field goes out. Now, what is the loss in depletion of a gas field?

Q. Well, if you compute your depreciation as the straight line method contemplates and take into consideration the service lives in computing that and also observe this portion of the definition on depreciation in the computation of your service lives, I think you won't get into that difficulty. Under Definition 14 of depreciation: "Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities; and in the case of natural gas companies the exhaustion of natural resources."

That is taking the factors into consideration that you were complaining about.

A. Well, service value here means over in Instruction 35, it means original cost, and net salvage value. Now, when did the net salvage value take place, at the time the natural gas field is exhautsed? And then again the exhaustion of property of natural gas companies due to the exhaustion of natural resources, how can that be restored, by current maintenance?

Q. Well, if you set up your books on the straight line method and proceed in the fashion as contemplated under this Definition 14, I don't see—rather, I want to know from an accounting standpoint why you don't think that that would be practical.

A. I do. I think it is practical if those definitions are elaborated upon.

Q. Now, then—oh, yes, I forgot to ask you in connection with your use of the term "original cost," Statement 3 of Exhibit 285. I mean in so far as the words "original cost" there are concerned, you again disregarded the original cost as contemplated by the definition in the Uniform System of accounts.

A. Oh, no.

Q. As to cost to predecessor companies.

A. Not in the case of the Colorado Interstate Gas Company. There wasn't any predecessor in the Colorado Interstate.

Q. That's right. That was only applicable to the Canadian River Gas Company?

A. That's right.

Q. Well, then, going back to your Exhibit 276, I think that was Canadian River.

A. And 277.

Q. 276 and 277, where you there use the words "Depreciated original cost." The word "original" did not contemplate the original cost to predecessor companies?

A. That's quite right. It is the cost to the Canadian River Gas Company in Exhibits 276 and 277.

Q. That's right, but in your Statement 3 of Exhibit 285, Item 1, "Physical Property," the 11 million dollar item does include your reaccounting?

A. Yes.

(Vol. C, 15428-15443.)

* * * * *

Cross Examination (Continued).

By Mr. Lange:

Q. Do you have Exhibit No. 286 before you, Mr. Lusk?

A. Have you finished with Exhibit 285?

Q. For the time being. You might keep it there in front of you, though.

A. All right.

Q. This exhibit confines itself to assumed revenues applicable to a resale gas plant alone of Colorado Interstate Gas Company.

A. Yes, sir.

Q. I notice that on Page 4 of the written statement, Exhibit 285, you say: "The additional earnings shown by Column 7, amounting to * * *" that is Statement 1, isn't it?

A. Statement 1, Column 7.

Q. "* * * amounting to $3,230.174 in the 9-year period * * *"

A. Yes, sir.

Q. That, of course, is computed on an assumed basis of the plant devoting itself to resale gas alone and entirely disregarding all direct line sales, including Colorado Fuel & Iron sales?

A. Yes, sir, the exhibit itself is built up of operating

costs and taxes from another statement, another exhibit, and depreciation and amortization and the amount required for an 8 per cent return calculated on the property base of a 20-inch line from resale gas alone.

Q. Which is not in fact existent?

A. No, sir.

Q. Now, then, you say that your 8 per cent return that you utilized is predicated upon testimony that has been presented in this proceeding by Mr. Coffman, Mr. Gilman, Mr. Sands, and Mr. Bosworth, in several exhibits named on Page 3 of your written statement.

A. That is correct. All of those gentlemen have testified to an 8 per cent return.

Q. All of those gentlemen also testified with reference to a plant that sold all gas?

A. I believe that is correct, yes, sir.

Q. I don't believe any one of them contemplated predicating or fixing a rate of return for a company that did not sell all gas?

A. Their testimony was confined to the Colorado Interstate Gas Company on an 8 per cent return overall.

Q. That is right, overall.

A. I believe that is right.

Q. It wasn't in any fashion limited to a resale gas operation?

A. I don't think so, no, sir.

Q. If that is the case, the fact that you used their testimony in this respect is of course reading into it a limitation as to what kind of company they had in mind, isn't it? In other words, you are limiting it to the kind of company, a resale company, whereas they had no such limitation in mind in their testimony or exhibits?

A. I don't know what they had in mind. The 8 per cent return used in this exhibit—it is implied the 8 per cent would apply to all gas and resale gas alone. There is no distinction as far as these exhibits are concerned.

Q. In other words, you make it applicable to the all gas exhibit as well as to the resale gas exhibit without distinction?

A. That is correct.

A. And in both instances you predicated it upon the testimony and exhibits of those named witnesses?

A. Yes, sir.

Q. And in each instance, of course, not any of those witnesses in his testimony or in his exhibit made any such distinction between all gas and resale gas alone?

A. I am not sure but I don't believe they did.

Q. Note Statement 3, Exhibit 286. Under your property items that are included in your regulatory rate base, the gas purchased contract as well as the gas sales contract, being Items 2, 3, and 4, have not been allocated between resale gas and all gas, have they?

A. No, sir.

Q. Exhibit 285, Statement 3, shows the all gas items, and items 2, 3 and 4 are the same in both exhibits?

A. The same in both exhibits for all columns 3, 4 and 5.

Q. And the general property; that is, the property subject to short term replacement, such as automobiles and trucks, is the same?

A. That is the same, yes, sir.

Q. And in the construction of this exhibit you followed the same methods that you did in the construction of the previous exhibits that you identified; that is, of the series beginning with 276?

A. Yes, sir, the same applies to Exhibits Nos. 276, 277, 286, and 287.

Q. You mean—

A. I mean 285 and 286, not 286 and 287.

Q. And the principles applied by you on the two resale gas exhibits; that is, Exhibits 277 and 287, are predicated on the same basis as the previous resale exhibits you identified in this proceeding?

A. That is correct, yes, sir.

Q. Now, there is a matter I wanted to ask you about that is applicable to all of these exhibits. Please get your Exhibit 276, Mr. Lusk.

A. All right.

Q. Refer to Statement 6 of the exhibit. I didn't quite get it clear this morning—

A. You mean Statement 6?

Q. Statement 6, Exhibit 276, required revenues from all gas on a regulatory rate base. I didn't quite get clear this morning as to your method of computing income taxes. I just wanted to inquire at this time with reference to the

amount set up for 1940. Column 10 shows the amount required on an 8 per cent return for the year 1940 of $909,027.

A. That is right.

Q. That is the starting point of your computation of the Federal income tax figures you have on Statement 13 of the exhibit?

A. Yes, that is the ground work for the Federal income tax computation on Statement 13.

Q. All right, now let's go to Statement 2 of the exhibit. That covers the production operations, doesn't it?

A. That is production, yes, sir.

Q. Under Column 10 you have the amount required for an 8 per cent return for 1940 of $510,866.

A. That is for all of the production operations of the Canadian River.

Q. That is 45.69 per cent of the total in Column 13?

A. No, Column 13 is the percentage applied to Column 12. That is in order to arrive at the amount of production cost on an 8 per cent return for all of the gas delivered at Clayton.

Q. Now, Statement 3, Column 7, for the year 1940 shows a total of $104,409, doesn't it?

A. Yes, sir.

Q. And the percentage applicable is 52.47, Column 10?

A. That is right, 52.47 of the gathering cost and 8 per cent return all gas delivered at Clayton Junction.

Q. Now, Statement 4, referring to transmission operations, Column 11, gives the figure of $293,752 for the year 1940.

A. Yes, sir.

Q. And the percentage applicable is 97.76 per cent?

A. That is correct for transmission cost and 8 per cent return all gas delivered at Clayton Junction.

Q. All right. Now, the total of the items which we have covered in Statements 2, 3 and 4, make up that total of $909,027?

A. Yes, sir.

Q. And it was on the total of $909,027 that you computed your Federal income tax on Statement 13 for the year 1940?

A. Yes, that was the basis.

Q. That is your normal tax of $123,660 for 1940?

A. That is right.

Q. Well, now, if you apply the percentages applicable as we have just read them to each of the producing, gathering and transmission figures and add the resulting totals, you have a total that is almost 40 per cent less, don't you, upon which you would compute your income tax figures?

A. In order to compute the estimated amount of taxes to be paid and assessed, there were certain deductions made from the $909,027 base.

Q. What deductions had to be made from that base?

A. For the year 1940 the base was $909,027. In addition to that $909,027 for tax purposes under the Internal Revenue Bureau's ruling we added back depreciation adjustments in accordance with the Internal Revenue's ruling in the amount of $44,009. The interest earned on the sinking fund under this method was $15,693 plus the income taxes of previous years which are non-allowable deductions. That made the gross $1,043,968.

As deductions, the depletion adjustment was $108,326, and the bond premiums $12,486, and the interest paid on the present indebtedness Canadian River Gas Company bonds was $407,905, making the total deductions $528,771, coming down to a net taxable income of $515,251.

Q. That is a net taxable income for all operations?

A. That is correct with the exception of the Chicago line gas.

Q. Does that exclude your Chicago line gas?

A. I was just thinking whether I said exclude or include. That includes the Chicago line gas.

Q. Includes it?

A. Yes, sir.

Q. Of course that figure is the one you used to start with to tabulate your 8 per cent return?

A. It is all profit, yes, sir.

Q. And that is how you arrived at the $123,660?

A. Yes, sir.

Q. It was calculated applying the percentage of tax?

A. That is correct.

Q. It is on Statement 13?

A. That is right.

Q. It is in Column 3?

A. That is right.

Q. Well, then, the Denver line is carrying the entire tax for all operations?

A. No. On Statement 2, Column 11, after the required amount for an 8 per cent return the computed Federal tax, Column 12 was the total production system of operations and we take 45.69 per cent of that.

Q. Well, now, if you took those percentages against each producing, gathering, and transmission system, that would give you the following figures: $233,415, which would be 45.69 per cent of the production figure?

A. I don't understand you.

Q. Take the production figure on Statement 2.

A. We will take 45.69, Column 11.

Q. Yes. What does that give you?

A. $21,556.

Q. And you applied the applicable percentage to the gathering as well as to the transmission system property as you indicated?

A. Yes, sir. That would be 52.47 of $22,497, Statement 3, or roughly, $13,000.

Q. On Statement 4?

A. It would be 97.66 per cent of $65,652, or roughly, $63,000.

Q. Now take your Statement 13, Exhibit 276. In Column 4, your excess profits tax, did you make similar percentage allocations there?

A. Yes, this $137,318, the total Federal taxes, is carried over to the earlier statement, being carried over to Statements 2, 3 and 4.

Q. Well, then, it would necessarily follow that you would assume that the excess profits tax applicable each year would arise on the same basis as allocation of cost of your normal income tax?

A. The excess profits tax is computed on the total amount of taxes under a normal rate. The excess profits tax itself is computed on the average net income for the past four years, 1936, 1937, 1938, 1939, and the excess over and above that is the basis for the excess profits tax.

Q. But the way it is allocated, necessarily shows it is predicated or based definitely on cost alone?

A. That is right.

Q. And it is not based in any manner on the relationship of selling price to cost?

A. That is right.

Q. You proceeded with the treatment of income tax computation and the allocation of it in the same manner in your other exhibit?

A. In Exhibit 277, yes, sir.

Q. Exhibit 277?

A. Yes, and in the Colorado Interstate exhibits 285 and 286 the same principle is followed.

Q. Of course in connection with Exhibit 286, the resale gas exhibit, the Colorado Interstate Gas Company does not presently confine its operations to resale gas alone and has not in the past confined its operation?

A. That is correct.

Mr. Lange: I believe that is all on that.

Redirect Examination.

By Mr. Dougherty:

Q. Mr. Lusk, in preparing Exhibits 276, 277, 285 and 286, were they prepared for the purpose of furnishing the basis for any rewriting of the company's books?

A. No, sir.

Q. As I understand, they were prepared for the purpose of showing what revenue should be collected by each company in order to give an 8 per cent return on the property base shown plus the various operating expenses and the provision for depreciation, depletion, and amortization.

A. That is the only purpose of these exhibits.

(Vol. C, 15444-15454.)

* * * * *

Q. In Exhibit No. 285, Statement 1, Column 7, revenues in addition to revenues required for 8 per cent return, are reflected in your income tax computation?

A. Did you say Exhibit 285, Mr. Lange?

Q. Yes, sir, Column 7, Statement 1, revenues in addition to revenues required for 8 per cent return.

A. That is right.

Q. Those are revenues in excess of 8 per cent return?

A. Yes.

Q. And, of course, those are also reflected in the computation of your Federal income tax requirements as set forth in Statement 5 of the exhibit?

A. Yes, sir, that is right.

Q. Both normal as well as excess profits tax?

A. Yes.

Q. It necessarily tends to increase the normal as well as the excess profits?

A. It depends upon whether the amount is computed on an 8 per cent return or whether it is revenues from all gas in Column 2, Statement 1, as taken from Exhibit 170.

Q. It would definitely increase the normal tax in Column 3?

A. That is right.

Q. And very probably would increase the Column 4 figure?

A. No, not Column 4. The depreciation and amortization is computed on a property basis.

Q. I mean Statement 5.

A. Statement 5?

Q. Column 3 is the normal column and Column 4 is the excess profits tax?

A. What's that?

Q. Column 3 is the normal column and Column 4 is the excess profits tax?

A. That is right.

Q. In fact, the large part, if not the greater part of this excess profits tax under Column 4 for each of the years could very well be due to that excess in revenues over 8 per cent that you have in Column 7, Statement 1?

A. That is right.

(Vol. C, 15455-15457.)

Further Testimony of the Commission's WITNESS, KENNETH L. SMITH.

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
CONSOLIDATED BALANCE SHEET, AS ADJUSTED
DECEMBER 31, 1959

Line No.	Assets and Other Debits (1)	Canadian River Gas Company (2)	Colorado Interstate Gas Company (3)	Total (4)	Eliminations Debit (5)	Eliminations Credit (6)	Consolidated (7)
	Utility Plant						
1	Gas plant in service	$ 9,323,389.54	$11,586,746.35	$21,160,076.89			$21,160,076.89
2	Construction work in progress	150,582.36	29,677.85	180,260.21			180,260.21
3	Gas plant held for future use	80,958.45	19,994.71	100,947.16			100,947.16
4	Gas plant adjustments	4,091,880.88	2,352,961.17	6,444,842.05			6,444,842.05
5	Total Utility Plant	$13,646,745.63	$13,989,379.08	$27,636,125.71			$27,636,125.71
	Investment and Fund Accounts						
6	Other physical property	$ 1,176.34	$ 16,723.91	$ 17,900.25			$ 17,900.25
7	Investment in and advances to associated company		6,405,554.14	6,405,554.14	(500)	$6,405,554.14	
8	Total Investment and Fund Accounts	$ 1,176.34	$ 6,421,978.05	$ 6,423,154.39		$6,405,554.14	$ 17,900.25
	Current and Accrued Assets						
9	Cash and working funds	$ 11,809.65	$ 44,196.18	$ 55,205.83			$ 55,205.83
10	Special deposits	866.82	48,000.00	48,866.82			48,866.82
11	Notes receivable	365.00	67,941.85	68,306.85			68,306.85
	Accounts receivable						
12	Customers		492,699.51	492,699.51			492,699.51
13	Other	5,617.31	3,314.65	8,931.96			8,931.96
14	Receivables from associated companies	43,917.86	998,187.84	1,042,105.70	(501)	$ 271,340.54	771,065.16
15	Accrued interest receivable		174.38	174.38			174.38
16	Accrued utility revenues		78,685.11	78,685.11			78,685.11
	Materials and supplies						
17	Held for use in gas business	87,452.89	60,185.60	147,637.89			147,637.89
18	Gasoline held for sale	3,484.62		3,484.62			3,484.62
19	Prepayments	4,146.40	15,634.84	20,079.64			20,079.64
20	Total Current and Accrued Assets	$ 156,558.95	$ 1,809,332.16	$ 1,965,891.11		$ 271,340.54	$ 1,694,550.57
	Deferred Debits						
21	Unamortized debt discount and expense		$ 167,745.48	$ 167,745.48			$ 167,745.48
22	Other deferred debits	$ 34,519.70	316,127.04	350,646.74			350,646.74
23	Deferred rate case expenses	54,600.61	58,290.20	112,890.81			112,890.81
24	Total Deferred Debits	$ 89,120.31	$ 542,162.66	$ 631,282.97			$ 631,282.97
25	Total Assets and Other Debits	$14,493,601.23	$22,762,852.95	$37,196,454.18		$6,676,997.68	$30,519,837.10

Exhibit No. 185

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY

CONSOLIDATED BALANCE SHEET, AS ADJUSTED

DECEMBER 31, 1939

Sheet 2

Line No.	Liabilities and Other Credits (1)	Canadian River Gas Company (2)	Colorado Interstate Gas Company (3)	Total (4)	Eliminations Debit (5)	Eliminations Credit (6)	Consolidated (7)
	Capital Stock						
26	Common stock	$ 1.00	$ 2,352,941.17	$ 2,352,942.17			$ 2,352,942.17
27	Preferred stock		2,000,000.00	2,000,000.00			2,000,000.00
28	Total Capital Stock	$ 1.00	$ 4,352,941.17	$ 4,352,942.17			$ 4,352,942.17
	Long-Term Debt						
	First Mortgage and Collateral Trust Twenty-year Sinking Fund Gold Bonds, due June 1, 1948						
29	Canadian River Gas Company, 6%	$ 5,057,000.00		$ 5,057,000.00	(500) $ 5,057,000.00		
30	Colorado Interstate Gas Company, 3½%		$ 8,865,000.00	8,865,000.00			$ 8,865,000.00
31	Advances from associated company	1,348,254.14		1,348,254.14	(500) 1,348,254.14		
32	Total Long-Term Debt	$ 6,405,254.14	$ 8,865,000.00	$15,270,254.14	$6,405,254.14		$ 8,865,000.00
	Current and Accrued Liabilities						
33	Accounts payable	$ 134,256.95	$ 69,934.85	$ 204,191.80			$ 204,191.80
34	Payable to associated companies	272,037.81	4,000.00	276,037.81	(501) $ 271,342.94		4,694.87
	Accrued liabilities						
35	Taxes	81,291.82	618,742.11	700,033.93			700,033.93
36	Interest		25,856.25	25,856.25			25,856.25
37	Other current and accrued liabilities	11,097.53		11,097.53			11,097.53
38	Total Current and Accrued Liabilities	$ 498,684.11	$ 718,533.21	$ 1,217,217.32	$ 271,342.94		$ 946,874.38
	Reserves						
39	Reserve for depreciation of gas plant in service	$ 1,435,050.74	$ 2,650,380.58	$ 4,085,437.32			$ 4,085,437.32
40	Reserve for depreciation of gas plant held for future use	2,339.96	2,344.14	4,684.10			4,684.10
41	Reserve for amortization and depletion of producing natural gas land and land rights in service	324,543.42		324,543.42			324,543.42
42	Reserve for amortization and depletion of producing natural gas land and land rights held for future use	1,423.16		1,423.16			1,423.16
43	Total Reserves	$ 1,763,363.28	$ 2,652,724.72	$ 4,416,088.00			$ 4,416,088.00
	Contingent Liabilities						
	Colorado Interstate Gas Company has guaranteed the principal and interest of a demand note of Ford, Bacon & Davis, Inc. in the amount of $38,000.00						
44	Surplus	$ 5,826,298.70	$ 6,113,633.85	$11,939,932.55			$11,939,932.55
45	Total Liabilities and Other Credits	$14,493,601.23	$22,702,832.95	$37,196,434.18	$6,676,597.08		$30,519,837.10

Exhibit No. 185

Exhibit No. 185

Docket G-124

Schedule No. 2
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ELIMINATING ENTRIES RELATING TO THE CONSOLIDATED BALANCE SHEET AS OF DECEMBER 31, 1939

3

Particulars	Debit	Credit
No. 500		
First Mortgage and Collateral Trust Twenty-Year Six Per Cent Sinking Fund Gold Bonds, due June 1, 1948 (Canadian River Gas Company)	$5,057,000.00	
Advances from associated company (Canadian River Gas Company)	1,348,254.14	
Investment in and advances to associated company (Colorado Interstate Gas Company)		$6,405,254.14
To eliminate Colorado Interstate Gas Company's investment in and advances to Canadian River Gas Company.		
No. 501		
Payables to associated companies (Canadian River Gas Company)	$ 271,342.94	
Receivables from associated companies (Colorado Interstate Gas Company)		$ 271,342.94
To eliminate the net amount due from Canadian River Gas Company to Colorado Interstate Gas Company, other than the long-term debt eliminated in entry No. 500.		

CONSOLIDATED INCOME AND SURPLUS ACCOUNTS, AS ADJUSTED
FOR THE YEAR ENDED DECEMBER 31, 1939

Line No.	Particulars (1)	Canadian River Gas Company (2)	Colorado Interstate Gas Company (3)	Total (4)	Eliminations Debit (5)	Eliminations Credit (6)	Consolidated (7)
	Utility Income						
1	Operating revenues	$2,393,386.99	$5,772,009.87	$ 8,166,396.86	(502) $2,126,389.91	(502) $ 13,379.81	$ 6,052,146.16
	Operating revenue deductions:						
2	Gas purchased for resale		$2,112,950.70	$ 2,112,950.70		(502) $2,112,950.70	
3	Operating expenses (Schedule No. 8)	$ 665,286.93	425,018.63	1,090,305.56			$ 1,090,305.56
4	Depreciation	153,987.13	266,384.97	420,372.10			420,372.10
5	Depletion	44,865.27		44,865.27			44,865.27
6	Taxes	175,141.03	614,947.77	790,088.80			790,088.80
7	Nonrecurring expenses	222.60	45.19	267.79			267.79
8	Total operating revenue deductions	$1,039,502.96	$3,419,347.26	$ 4,458,850.22		$2,112,950.70	$ 2,345,899.52
9	Net operating revenues	$1,353,884.03	$2,352,662.61	$ 3,707,546.64	$2,126,389.91	$2,126,389.91	$ 3,707,246.64
	Exploration and Development Costs						
10	Delay rentals	$ 10,401.58		$ 10,401.58			$ 10,401.58
11	Nonproductive well drilling	29,293.73		29,293.73			29,293.73
12	Abandoned leases	1,878.18		1,878.18			1,878.18
13	Total exploration and development costs	$ 41,573.49		$ 41,573.49			$ 41,573.49
14	Net utility income	$1,312,310.54	$2,352,662.61	$ 3,665,973.15	$2,126,389.91	$2,126,389.91	$ 3,665,673.15
	Other Income						
15	Interest	$ 17.88	$ 440,384.31	$ 440,402.19	(503) $ 432,197.71		$ 8,204.48
16	Profit on Canadian River Gas Company bonds redeemed		11,900.00	11,900.00	(504) 11,900.00		
17	Miscellaneous (net)	292.39	542.37	834.76			834.76
18	Total other income	$ 310.27	$ 452,826.68	$ 453,136.95	$ 444,097.71		$ 9,039.24
19	Gross income	$1,312,620.81	$2,805,489.29	$ 4,119,110.10	$2,570,487.62	$2,126,389.91	$ 3,674,712.39
	Income Deductions						
20	Interest on long-term debt	$ 327,235.00	$ 329,233.33	$ 656,468.33		(503) $ 327,235.00	$ 329,233.33
21	Amortization of debt discount and expense		40,178.95	40,178.95			40,178.95
22	Interest on debt to associated company	104,962.71		104,962.71		(503) 104,962.71	
23	Other interest charges	11,403.39	1,754.02	13,157.41			13,157.41
24	Miscellaneous	29,372.17	32,538.31	61,910.48			61,910.48
25	Total income deductions	$ 472,973.27	$ 403,704.61	$ 876,677.88		$ 432,197.71	$ 444,480.17
26	Net income	$ 839,647.54	$2,402,784.68	$ 3,242,432.22	$2,570,487.62	$2,558,587.62	$ 3,230,232.22
	Earned Surplus						
	Credits:						
27	Balance at beginning of year	$4,998,551.16	$5,705,849.17	$10,704,400.33			$10,704,400.33
28	Net income as above	839,647.54	2,402,784.68	3,242,432.22	$2,570,487.62	$2,558,587.62	3,230,532.22
29	Total credits	$5,838,198.70	$8,108,633.85	$13,946,832.55	$2,570,487.62	$2,558,587.62	$13,934,932.55
	Debits:						
	Dividends declared and paid:						
30	On common stock		$1,875,000.00	$ 1,875,000.00			$ 1,875,000.00
31	On preferred stock		120,000.00	120,000.00			120,000.00
32	Premium on bonds redeemed	$ 11,900.00		11,900.00		(504) $ 11,900.00	
33	Total debits	$ 11,900.00	$1,995,000.00	$ 2,006,900.00		$ 11,900.00	$ 1,995,000.00
34	Balance at end of year	$5,826,298.70	$6,113,633.85	$11,939,932.55	$2,570,487.62	$2,570,487.62	$11,939,932.55

Exhibit No. 185

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
CONSOLIDATED INCOME AND SURPLUS ACCOUNTS, AS ADJUSTED
FOR THE YEAR ENDED DECEMBER 31, 1938

Line No.	Particulars (1)	Canadian River Gas Company (2)	Colorado Interstate Gas Company (3)	Total (4)	Eliminations Debit (5)	Eliminations Credit (6)	Consolidated (7)
	Utility Income						
1	Operating revenues	$2,285,734.32	$5,201,372.59	$ 7,487,166.91	(502) $2,015,665.10	(502) $ 9,137.85	$ 5,480,641.66
	Operating revenue deductions					(502) $2,006,525.25	
2	Gas purchased for resale		$2,006,525.25	$ 2,006,525.25			$ 1,068,050.01
3	Operating expenses (Schedule No. 9)	$ 673,129.80	394,920.21	1,068,050.01			414,045.80
4	Depreciation	153,008.23	261,037.57	414,045.80			36,323.03
5	Depletion	36,323.03		36,323.03			682,240.73
6	Taxes	167,241.04	514,999.69	682,240.73			8,085.14
7	Nonrecurring expenses	6,274.35	1,810.79	8,085.14			
8	Total operating revenue deductions	$1,035,976.45	$3,179,293.51	$ 4,215,389.96		$2,006,525.25	$ 2,208,744.71
9	Net operating revenues	$1,249,817.87	$2,022,079.08	$ 3,271,896.95	$2,015,665.10	$2,015,665.10	$ 3,271,896.95
	Exploration and Development Costs						
10	Delay rentals	$ 18,333.81		$ 18,333.81			$ 18,333.81
11	Abandoned leases	674.30		674.30			674.30
12	Total exploration and development costs	$ 19,008.11		$ 19,008.11			$ 19,008.11
13	Net utility income	$1,230,809.76	$2,022,079.08	$ 3,252,888.84	$2,015,665.10	$2,015,665.10	$ 3,252,888.84
	Other Income						
14	Interest	$ 625.91	$ 477,731.16	$ 478,357.07	(503) $ 468,778.14		$ 9,578.93
15	Profit on Canadian River Gas Company bonds redeemed		14,790.00	14,790.00	(504) 14,790.00		743.43
16	Miscellaneous (net)	268.80	474.63	743.43			10,322.36
17	Total other income	$ 894.71	$ 492,995.79	$ 493,890.50	$ 483,568.14	$2,015,665.10	$ 3,263,211.20
18	Gross income	$1,231,704.47	$2,515,074.87	$ 3,746,779.34	$2,499,231.24		
	Income Deductions						
19	Interest on long-term debt	$ 362,830.00	$ 589,595.83	$ 952,425.83		(503) $ 360,830.00	$ 589,595.83
20	Amortization of debt discount and expense		7,632.19	7,632.19			7,632.19
21	Interest on debt to associated company	105,948.14		105,948.14		(503) 105,948.14	
22	Other interest charges	45.00	6,627.70	6,672.70			6,672.70
23	Premium on Colorado Interstate Gas Company bonds redeemed		25,800.00	25,800.00			25,800.00
24	Miscellaneous	23,532.74	35,146.05	58,678.79			58,678.79
25	Total income deductions	$ 492,355.88	$ 664,801.77	$ 1,157,157.65		$ 466,778.14	$ 688,379.51
26	Net income	$ 739,348.59	$1,850,273.10	$ 2,589,621.69	$2,499,231.24	$2,481,441.24	$ 2,574,831.69
	Earned Surplus						
	Credits:						$ 9,499,568.64
27	Balance at beginning of year	$4,273,992.57	$5,225,576.07	$ 9,499,568.64	$2,499,231.24	$2,481,441.24	2,574,831.69
28	Net income as above	739,348.59	1,850,273.10	2,589,621.69	$2,499,231.24	$2,481,441.24	$12,074,400.33
29	Total credits	$5,013,341.16	$7,075,849.17	$12,089,190.33			
	Debits:						$ 1,250,000.00
	Dividends declared and paid		$1,250,000.00	$ 1,250,000.00			120,000.00
30	On common stock		120,000.00	120,000.00			
31	On preferred stock	$ 14,790.00		14,790.00	(504) $ 14,790.00	$ 14,790.00	$ 1,370,000.00
32	Premium on bonds redeemed	$ 14,790.00	$1,370,000.00	$ 1,384,790.00			
33	Total debits	$4,998,551.16	$5,705,849.17	$10,704,400.33	$2,499,231.24	$2,499,231.24	$10,704,400.33
34	Balance at end of year						

Exhibit No. 185
22223
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FOR THE YEAR ENDED DECEMBER 31, 1937

Line No.	Particulars (1)	Canadian River Gas Company (2)	Colorado Interstate Gas Company (3)	Total (4)	Eliminations Debit (5)	Eliminations Credit (6)	Consolidated (7)
	Utility Income						
1	Operating revenues	$2,277,815.24	$5,569,883.92	$7,847,699.16	(502) $1,998,761.14	(502) $ 16,492.84	$5,865,430.26
	Operating revenue deductions						
2	Gas purchased for resale		$1,982,268.90	$1,982,268.90		(502) $1,982,268.90	
3	Operating expenses (Schedule No. 10)	$ 557,248.35	394,353.76	951,602.11			$ 951,602.11
4	Depreciation	144,723.45	261,156.72	405,880.17			405,880.17
5	Depletion	39,199.22		39,199.22			39,199.22
6	Taxes	165,448.99	533,746.26	699,195.25			699,195.25
7	Nonrecurring expenses		4,516.49	4,516.49			4,516.49
8	Total operating revenue deductions	$ 906,620.01	$3,176,042.13	$4,082,662.14		$1,982,268.90	$2,100,393.24
9	Net operating revenues	$1,371,195.23	$2,393,841.79	$3,765,037.02	$1,998,761.14	$1,998,761.14	$3,765,037.02
	Exploration and Development Costs						
10	Delay rentals	$ 19,960.45		$ 19,960.45			$ 19,960.45
11	Total exploration and development costs	$ 19,960.45		$ 19,960.45			$ 19,960.45
12	Net utility income	$1,351,234.78	$2,393,841.79	$3,745,076.57	$1,998,761.14	$1,998,761.14	$3,745,076.57
	Other Income						
13	Interest	$ 1,182.90	$ 517,372.95	518,555.85	(503) $ 507,339.22		$ 11,216.63
14	Profit on Canadian River Gas Company bonds redeemed		17,820.00	17,820.00	(504) 17,820.00		
15	Miscellaneous (net)	305.60	458.65	764.25			764.25
16	Total other income	$ 1,488.50	$ 535,651.60	$ 537,140.10	$ 525,159.22		$ 11,980.88
17	Gross income	$1,352,723.28	$2,929,493.39	$4,282,216.67	$2,523,920.36	$1,998,761.14	$3,757,057.45
	Income Deductions						
18	Interest and long-term debt	$ 398,400.00	$ 682,425.00	$1,080,825.00	(503)	$ 398,400.00	$ 682,425.00
19	Amortization of debt discount and expense		701.76	701.76			701.76
20	Interest on debt to associated company	108,939.22		108,939.22	(503)	108,939.22	
21	Premiums on Colorado Interstate Gas Company bonds redeemed		15,570.00	15,570.00			15,570.00
22	Miscellaneous	30,253.64	33,691.80	63,945.44			63,945.44
23	Total income deductions	$ 537,592.86	$ 732,388.56	$1,269,981.42		$ 507,339.22	$ 762,642.20
24	Net income	$ 815,130.42	$2,197,104.83	$3,012,235.25	$2,523,920.36	$2,506,100.36	$2,994,415.25
	Earned Surplus						
	Credits:						
25	Balance at beginning of year	$3,476,682.15	$5,085,971.24	$8,562,653.39			$8,562,653.39
26	Net income as above	815,130.42	2,197,104.83	3,012,235.25	$2,523,920.36	$2,506,100.36	2,994,415.25
27	Total credits	$4,291,812.57	$7,283,076.07	$11,574,888.64	$2,523,920.36	$2,506,100.36	$11,557,068.64
	Debits:						
	Dividends declared and paid:						
28	On common stock		$1,937,500.00	$1,937,500.00			$1,937,500.00
29	On preferred stock		120,000.00	120,000.00			120,000.00
30	Premium on bonds redeemed	$ 17,820.00		17,820.00	(504) $ 17,820.00		
31	Total debits	$ 17,820.00	$2,057,500.00	$2,075,320.00	$ 17,820.00	$2,057,500.00	
32	Balance at end of year	$4,273,992.57	$5,225,576.07	$9,499,568.64	$2,523,920.36	$2,523,920.36	$9,499,568.64

2225
Exhibit No. 185

[redacted]

EXAMINER'S ELIMINATING ENTRIES RELATING TO THE CONSOLIDATED
INCOME AND SURPLUS ACCOUNTS FOR THE YEARS 1937, 1938 AND 1939

Line No.	Particulars	1939 Debit	1939 Credit	1938 Debit	1938 Credit	1937 Debit	1937 Credit
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	No. 802						
1	Operating revenues (Canadian River Gas Company)	$2,126,329.91		$2,015,663.10		$1,998,761.14	
2	Gas purchased for resale (Colorado Interstate Gas Company)		$2,112,950.70		$2,006,525.25		$1,982,268.90
3	Operating revenues (interdepartmental sales)		13,379.21		9,137.85		16,492.24
	To eliminate gas sales by Canadian River Gas Company to Colorado Interstate Gas Company, and to transfer credit for gas used in operations by latter company to an interdepartmental sales account. (Gas used by Colorado Interstate Gas Company is not stated in expenses on basis of cost as adjusted.)						
	No. 803						
4	Interest revenues (Colorado Interstate Gas Company)	$ 432,197.71		$ 468,778.14		$ 807,339.22	
5	Interest on long-term debt (Canadian River Gas Company)		$ 327,235.00		$ 361,830.00		$ 398,400.00
6	Interest on debt to associated companies (Canadian River Gas Company)		104,962.71		106,948.14		108,939.22
	To eliminate the interest paid by Canadian River Gas Company to Colorado Interstate Gas Company on its long-term debt, notes, current and other accounts.						
	No. 804						
7	Profit on Canadian River Gas Company bonds redeemed (Colorado Interstate Gas Company)	$ 11,900.00		$ 14,790.00		$ 17,680.00	
8	Surplus - premium on bonds redeemed (Canadian River Gas Company)		$ 11,900.00		$ 14,790.00		$ 17,680.00
	To eliminate the premium paid by Canadian River Gas Company to Colorado Interstate Gas Company on the bonds of the former company redeemed.						

Exhibit No. 22

Docket G-124

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
CONSOLIDATED INCOME AND SURPLUS ACCOUNTS, AS ADJUSTED
1928 TO 1939, INCLUSIVE

Line No.	Particulars	Year Ended December 31 1939	1938	1937	1936	1935	1934	1933	1932
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Utility Income								
1	Operating revenues	$ 6,053,446.16	$ 5,480,641.66	$5,865,430.26	$5,540,871.83	$4,604,980.44	$4,078,397.67	$3,711,388.05	$4,069,711.12
	Operating revenue deductions								
2	Operating expenses	$ 1,090,305.56	$ 1,068,050.01	$ 951,602.11	$ 939,637.86	$ 760,212.51	$ 774,971.89	$ 707,569.30	$ 833,041.30
3	Depreciation	420,372.10	414,045.80	405,880.17	405,469.16	402,322.00	404,821.39	403,699.34	399,984.80
4	Depletion	44,865.27	36,323.03	39,199.22	35,395.08	26,906.50	23,336.89	17,328.43	17,253.98
5	Taxes	790,088.80	682,240.73	699,195.25	627,023.28	485,720.85	371,237.41	360,691.68	334,559.62
6	Nonrecurring expenses	267.79	8,085.14	4,516.49	25,923.46	44,231.73	39,308.03		
7	Total operating revenue deductions	$ 2,345,899.52	$ 2,208,744.71	$2,100,393.24	$2,033,448.84	$1,719,393.59	$1,613,675.61	$1,489,288.75	$1,584,839.70
8	Net operating revenues	$ 3,707,546.64	$ 3,271,896.95	$3,765,037.02	$3,507,422.99	$2,885,586.85	$2,464,722.06	$2,221,799.30	$2,484,871.42
	Exploration and Development Costs								
9	Delay rentals	$ 10,401.58	$ 18,333.81	$ 19,960.45	$ 12,720.81	$ 47,232.89	$ 53,525.40	$ 107,652.92	$ 155,679.81
10	Nonproductive well drilling	29,293.73							
11	Abandoned leases	1,878.18	674.30		43,173.67	36.79		81,585.13	5,459.07
12	Other exploration costs								
13	Total Exploration and Development Costs	$ 41,573.49	$ 19,008.11	$ 19,960.45	$ 55,894.48	$ 47,269.68	$ 53,525.40	$ 189,238.05	$ 161,138.88
14	Net Utility Income	$ 3,665,973.15	$ 3,252,888.84	$3,745,076.57	$3,451,528.51	$2,838,317.17	$2,411,196.66	$2,032,561.25	$2,323,732.54
	Other Income								
15	Interest	$ 8,204.48	$ 9,578.93	$ 11,216.63	$ 8,835.06	$ 9,120.19	$ 12,733.61	$ 9,291.13	$ 9,028.18
16	Miscellaneous (net)	834.76	743.43	764.25	629.51	(73.84)	114.23	113.33	684.58
17	Total Other Income	$ 9,039.24	$ 10,322.36	$ 11,980.88	$ 9,464.57	$ 9,046.35	$ 12,847.87	$ 9,404.46	$ 9,712.76
18	Gross Income	$ 3,675,012.39	$ 3,263,211.20	$3,757,057.45	$3,460,993.08	$2,847,363.52	$2,424,044.53	$2,041,965.71	$2,333,445.30
	Income Deductions								
19	Interest on long-term debt	$ 329,235.33	$ 589,595.83	$ 682,425.00	$ 723,920.00	$ 819,900.00	$ 882,180.00	$ 944,460.00	$1,006,740.00
20	Amortization of debt discount and expense	40,178.95	7,632.19	701.76	701.76	701.76	701.76	701.76	701.76
21	Other interest charges	13,157.41	6,672.70			21.42	2,419.50	20,383.14	42,890.71
22	Interest charged to construction - credit								
23	Premium on Colorado Interstate Gas Company bonds redeemed		25,800.00	15,570.00	46,680.00	31,140.00	31,140.00	31,140.00	41,520.00
24	Miscellaneous	61,910.48	58,678.79	63,945.44	10,091.75	6,811.85	2,131.19	2,080.50	1,931.65
25	Total Income Deductions	$ 444,480.17	$ 688,379.51	$ 762,642.20	$ 781,393.51	$ 858,575.03	$ 918,572.45	$ 998,763.40	$1,093,784.12
26	Net Income (loss)	$ 3,230,532.22	$ 2,574,831.69	$2,994,415.25	$2,679,599.57	$1,988,788.49	$1,505,472.08	$1,043,202.31	$1,239,661.18
	Earned Surplus								
27	Balance at beginning of period	$10,704,400.33	$ 9,499,568.64	$8,562,653.39	$7,565,553.82	$6,476,765.33	$4,971,293.25	$3,928,090.94	$2,688,429.76
28	Net income (loss) as above	3,230,532.22	2,574,831.69	2,994,415.25	2,679,599.57	1,988,788.49	1,505,472.08	1,043,202.31	1,239,661.18
	Dividends declared and paid								
29	On common stock	(1,875,000.00)	(1,250,000.00)	(1,937,500.00)	(1,562,500.00)				
30	On preferred stock	(120,000.00)	(120,000.00)	(120,000.00)	(120,000.00)	(900,000.00)			
31	Balance at End of Period	$11,939,932.55	$10,704,400.33	$9,499,568.64	$8,562,653.39	$7,565,553.82	$6,476,765.33	$4,971,293.25	$3,928,090.94

Exhibit No. 185

Schedule No. 7
Sheet 1 of 1

8

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
CONSOLIDATED INCOME AND SURPLUS ACCOUNTS, AS ADJUSTED
1928 TO 1939, INCLUSIVE

Year Ended December 31										Period Ended
1938 (3)	1937 (4)	1936 (5)	1935 (6)	1934 (7)	1933 (8)	1932 (9)	1931 (10)	1930 (11)	1929 (12)	Dec. 31, 1928 (13)
$ 5,480,641.66	$5,865,430.26	$5,540,871.83	$4,604,980.44	$4,073,397.67	$3,711,088.05	$4,069,711.12	$3,864,787.75	$3,666,850.93	$2,978,462.30	$984,971.38
$ 1,068,050.01	$ 951,602.11	$ 939,637.86	$ 760,212.51	$ 774,971.89	$ 707,569.30	$ 833,041.30	$ 791,751.25	$ 619,068.49	$ 445,469.50	$248,656.69
414,045.80	405,880.17	405,469.16	402,322.00	404,821.39	403,699.34	399,984.80	389,490.53	363,273.17	336,282.19	156,858.02
36,323.03	39,199.22	35,395.08	26,906.50	23,336.89	17,328.43	17,253.98	15,698.16	14,803.66	9,015.41	3,045.35
682,240.73	699,195.25	627,023.28	485,720.85	371,237.41	360,691.68	334,559.62	286,888.97	238,529.94	292,971.35	37,548.29
8,085.14	4,516.49	25,923.46	44,231.73	39,308.03						
$ 2,208,744.71	$2,100,393.24	$2,033,448.84	$1,719,393.59	$1,613,675.61	$1,489,288.75	$1,584,839.70	$1,483,828.91	$1,235,675.26	$1,083,738.45	$446,108.35
$ 3,271,896.95	$3,765,037.02	$3,507,422.99	$2,885,586.85	$2,464,722.06	$2,221,799.30	$2,484,871.42	$2,380,958.84	$2,431,175.67	$1,894,723.85	$538,863.03
$ 18,333.81	$ 19,960.45	$ 12,720.81	$ 47,232.89	$ 53,525.40	$ 107,652.92	$ 155,679.81	$ 140,880.04	$ 87,917.13	$ 95,317.49	$ 60,450.47
							61,160.96			
674.30		43,173.67	36.79		81,585.13	5,459.07		3,313.45	1,943.52	
								16.29	1,260.22	
$ 19,008.11	$ 19,960.45	$ 55,894.48	$ 47,269.68	$ 53,525.40	$ 189,238.05	$ 161,138.88	$ 202,041.00	$ 91,246.87	$ 98,521.23	$ 60,450.47
$ 3,252,888.84	$3,745,076.57	$3,451,528.51	$2,838,317.17	$2,411,196.66	$2,032,561.25	$2,323,732.54	$2,178,917.84	$2,339,928.80	$1,796,202.62	$478,412.56
$ 9,578.93	$ 11,216.63	$ 8,835.06	$ 9,120.19	$ 12,733.64	$ 9,291.13	$ 9,028.18	$ 9,989.23	$ 25,094.16	$ 9,838.30	$ 3,493.46
743.43	764.25	629.51	(73.84)	114.23	113.33	684.58	5,210.67	4,215.96	14,604.79	1,241.47
$ 10,322.36	$ 11,980.88	$ 9,464.57	$ 9,046.35	$ 12,847.87	$ 9,404.46	$ 9,712.76	$ 15,199.90	$ 29,310.12	$ 24,443.09	$ 4,734.93
$ 3,263,211.20	$3,757,057.45	$3,460,993.08	$2,847,363.52	$2,424,044.53	$2,041,965.71	$2,333,445.30	$2,194,117.74	$2,369,238.92	$1,820,645.71	$483,147.49
$ 589,595.83	$ 682,425.00	$ 723,920.00	$ 819,900.00	$ 882,180.00	$ 944,460.00	$1,006,740.00	$1,069,020.00	$1,131,275.00	$1,013,904.67	$496,807.50
7,632.19	701.76	701.76	701.76	701.76	701.76	701.76	698.25	698.25	698.25	349.13
6,672.70			21.42	2,419.50	20,381.14	42,890.71	52,329.84	14,716.57	61,103.74	208,866.84
										(324,598.44)
25,800.00	15,570.00	46,680.00	31,140.00	31,140.00	31,140.00	41,520.00	41,520.00	41,480.00		
58,678.79	63,945.44	10,091.75	6,811.85	2,131.19	2,080.50	1,931.65	3,676.28	7,142.26	716.82	358,315.14
$ 688,379.51	$ 762,642.20	$ 781,393.51	$ 858,575.03	$ 918,572.45	$ 998,763.40	$1,093,784.12	$1,167,244.37	$1,195,312.08	$1,076,423.48	$739,740.17
$ 2,574,831.69	$2,994,415.25	$2,679,599.57	$1,988,788.49	$1,505,472.08	$1,043,202.31	$1,239,661.18	$1,026,873.37	$1,173,926.84	$ 744,222.23	($256,592.68)
$ 9,499,568.64	$8,562,653.39	$7,565,553.82	$6,476,765.33	$4,971,293.25	$3,928,090.94	$2,688,429.76	$1,661,556.39	$ 487,629.55	$ (256,592.68)	
2,574,831.69	2,994,415.25	2,679,599.57	1,988,788.49	1,505,472.08	1,043,202.31	1,239,661.18	1,026,873.37	1,173,926.84	744,222.23	($256,592.68)
(1,250,000.00)	(1,937,500.00)	(1,562,500.00)								
(120,000.00)	(120,000.00)	(120,000.00)	(900,000.00)							
$10,704,400.33	$9,499,568.64	$8,562,653.39	$7,565,553.82	$6,476,765.33	$4,971,293.25	$3,928,090.94	$2,688,429.76	$1,661,556.39	$ 487,629.55	($256,592.68)

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ENTRIES TO ALLOCATE GENERAL AND ADMINISTRATIVE EXPENSES
YEARS 1957, 1958 AND 1959

Line No.	Particulars	1959 Debit	1959 Credit	1958 Debit	1958 Credit	1957 Debit	1957 Credit
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	No. 505						
1	Transmission expenses - general expenses - transmission system	$ 10,614.33		$ 1,356.84		$ 1,279.55	
2	Transmission expenses - general expenses - compressing system	10,792.23		1,525.89		1,589.97	
3	Distribution expenses - general expenses	3,300.92		458.40		445.89	
4	General and administrative expenses		$ 24,707.48		$ 3,341.13		$ 3,315.19
	To allocate the following general and administrative expenses of Colorado Interstate Gas Company to functional groups on the basis of the total pay roll charges to operation and maintenance accounts included in each functional group:						
	Account / 1959 / 1958 / 1957						
5	Injuries and damages $ 419.49 $ 811.86 $ 142.24						
6	Absent time due to illness 2,274.49 2,502.10 2,907.09						
7	Employees' welfare 22,013.50 26.18 265.86						
8	Total $24,707.48 $ 3,341.13 $ 3,315.19						
	No. 506						
9	Transmission expenses - general expenses - transmission system	$ 32,417.60		$ 33,582.05		$ 29,794.56	
10	Transmission expenses - general expenses - compressing system	33,903.16		34,736.07		37,583.39	
11	Distribution expenses - general expenses	12,488.98		13,822.50		12,534.19	
12	General and administrative expenses		$ 78,809.74		$ 82,110.60		$ 79,911.96
	To allocate the remainder of Colorado Interstate Gas Company's general and administrative expenses (all other than the three accounts allocated on entry No. 505 above) on the basis of the total direct charges to each functional group.						
	Particulars / 1959 / 1958 / 1957						
13	Total general and administrative expenses, as adjusted $103,517.22 $86,451.73 $85,227.15						
14	Less amounts allocated on entry No. 505 24,707.48 3,341.13 3,315.19						
15	Remainder, allocated on this entry $ 78,809.74 $82,110.60 $79,911.96						

Exhibit No. 185 21

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
EXAMINER'S ENTRIES TO ALLOCATE GENERAL AND ADMINISTRATIVE EXPENSES
YEARS 1937, 1938 AND 1939

Line No.	Particulars	1939 Debit	1939 Credit	1938 Debit	1938 Credit	1937 Debit	1937 Credit
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	No. 807						
16	Production expenses - general expenses	$ 121,891.06		$ 90,982.61		$ 100,648.21	
17	Transmission expenses - general expenses - transmission system	6,422.86		5,706.11		5,867.22	
18	Transmission expenses - general expenses - compressing system	15,374.69		11,207.28		13,236.04	
19	General and administrative expenses		$ 143,688.65		$ 107,866.00		$ 119,451.47

To allocate the total general and administrative expenses of Canadian River Gas Company on the basis of the total direct charges to each functional group, after the following adjustments (for allocation purposes only):

(1) Add back the credit for residuals produced,
(2) Deduct residuals operating expenses applicable to Fritch station, and
(3) Deduct lease and operating expenses paid to Texoma Natural Gas Company.

Exhibit No. 185 22

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Exhibit No. 185

Docket G-124

Schedule No. 12
Sheet 1 of 1

23

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
CONSOLIDATED WORKING CAPITAL
BASED ON OPERATIONS DURING THE YEAR 1939

Functional Allocation	Total (Note 1)	Canadian River Gas Company	Colorado Interstate Gas Company
(1)	(2)	(3)	(4)
Production	$135,338.82	$135,338.82	
Transmission:			
Other than compressing	65,375.22	5,470.25	$ 59,904.97
Compressing	48,684.05	9,929.31	38,754.74
Distribution	10,405.27		10,405.27
Total	$259,803.36	$150,738.38	$109,064.98

Note:

(1) No intercompany eliminations are involved in the consolidated working capital, as no allowance was made for Colorado Interstate Gas Company's purchased gas. If the consolidated working capital were computed, based on the consolidated operations during the year 1939, the result would be approximately $1.900 less than the total shown above, which represents a mere combination of working capital requirements of Canadian River Gas Company and Colorado Interstate Gas Company. The $1,900 difference referred to would result from the decrease of about two days in the lag in the receipt of consolidated revenues as compared with the lag in the receipt of revenues by Canadian River Gas Company. Due to the comparatively small difference involved (less than one percent) the computation of working capital on a consolidated basis has not been presented. The above combination of the working capital requirements of the two companies yields a result which is substantially the same amount as if the computation were on the basis of consolidated operations.

Docket G-124

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
RATE OF RETURN
1928 TO 1939, INCLUSIVE

Line No.	Particulars	Reference	Average	Year Ended December 31 1939	1938	1937	1936	1935	1934	1933	1932
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Based on Adjusted Accounts										
1	Average balance of gas plant in service, as adjusted	Sch. 13-A, Line 8		$21,220,967.39	$20,835,624.94	$20,493,666.38	$20,213,657.91	$20,080,373.97	$19,977,114.55	$19,819,299.03	$19,660,269.58
2	Less average balance in reserves for depreciation and depletion of gas plant in service, as adjusted	Sch. 13-A, Line 16		4,204,857.56	3,793,716.45	3,400,315.67	3,017,430.22	2,673,810.02	2,329,079.23	1,933,896.62	1,557,069.10
3	Net average investment in gas plant in service, as adjusted			$17,016,109.83	$17,041,908.49	$17,093,350.71	$17,196,227.69	$17,406,563.95	$17,648,035.32	$17,885,402.41	$18,083,200.48
4	Working capital (Note 1)	Sch. 12		259,803.36	259,803.36	259,803.36	259,803.36	259,803.36	259,803.36	259,803.36	259,803.36
5	Total average investment		$17,396,672.19	$17,275,913.19	$17,301,711.85	$17,353,154.07	$17,456,031.05	$17,666,367.31	$17,907,838.68	$18,145,205.77	$18,343,003.84
6	Net utility income (Note 2)	Sch. 7, Line 14	$ 2,634,365.74	$ 3,665,973.15	$ 3,252,888.84	$ 3,745,076.57	$ 3,451,528.51	$ 2,838,317.17	$ 2,411,196.66	$ 2,032,561.25	$ 2,323,732.54
7	Rate of return		15.14%	21.22%	18.80%	21.58%	19.77%	16.07%	13.46%	11.20%	12.67%

Notes: (1) The consolidated working capital based on operations during the year 1939 is used above in the computation of the rate of return for all years. If the working capital for the years prior to 1939 were actually computed, the result would be less than the amounts used above, and the rate of return slightly larger since the operating expenses and material and supply accounts were smaller in each of the years prior to 1939 than in the year 1939.

(2) Income of years 1937, 1938 and 1939 was adjusted in detail; of years prior to 1937 for significant items only.

(3) The rate of return as computed for the seven months ended December 31, 1928 is stated on an annual basis.

Exhibit No. 185

Schedule No. 13
Sheet 1 of 1

24

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
RATE OF RETURN
1928 TO 1939, INCLUSIVE

Average	Year Ended December 31											Seven Months Ended Dec. 31
	1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928
(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	$21,220,967.39	$20,835,624.94	$20,493,666.38	$20,213,657.91	$20,080,373.97	$19,977,114.55	$19,819,299.03	$19,640,269.58	$18,876,367.45	$17,247,932.27	$16,227,741.35	$16,157,556.29
	4,204,857.56	3,793,716.45	3,400,315.67	3,017,430.22	2,673,810.02	2,329,079.23	1,933,896.62	1,557,069.10	1,190,255.72	824,966.13	485,893.44	248,403.24
	$17,016,109.83	$17,041,908.49	$17,093,350.71	$17,196,227.69	$17,406,563.95	$17,648,035.32	$17,885,402.41	$18,083,200.48	$17,686,111.73	$16,422,966.14	$15,741,847.91	$15,909,153.05
	259,803.36	259,803.36	259,803.36	259,803.36	259,803.36	259,803.36	259,803.36	259,803.36	259,803.36	259,803.36	259,803.36	259,803.36
$17,396,672.19	$17,275,913.19	$17,301,711.85	$17,353,154.07	$17,456,031.05	$17,666,367.31	$17,907,838.68	$18,145,205.77	$18,343,003.84	$17,945,915.09	$16,682,769.50	$16,001,651.27	$16,168,956.41
$ 2,634,365.74	$ 3,665,973.15	$ 3,252,888.84	$ 3,745,076.57	$ 3,451,528.51	$ 2,838,317.17	$ 2,411,196.66	$ 2,032,561.25	$ 2,323,732.54	$ 2,178,917.84	$ 2,339,928.80	$ 1,796,202.62	$ 478,412.56
15.14%	21.22%	18.80%	21.58%	19.77%	16.07%	13.46%	11.20%	12.67%	12.14%	14.03%	11.23%	5.07% (Note 3)

Notes: (1) The consolidated working capital based on operations during the year 1939 is used above in the computation of the rate of return for all years. If the working capital for the years prior to 1939 were actually computed, the result would be less than the amounts used above, and the rate of return slightly larger since the operating expenses and material and supply accounts were smaller in each of the years prior to 1939 than in the year 1939.

(2) Income of years 1937, 1938 and 1939 was adjusted in detail; of years prior to 1937 for significant items only.

(3) The rate of return as computed for the seven months ended December 31, 1928 is stated on an annual basis.

Docket G-124

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
DETAILS OF CERTAIN ITEMS INCLUDED IN COMPUTATION OF RATE OF RETURN, BASED ON ADJUSTED ACCOUNTS

Line No.	Particulars	Year Ended December 31 1939	1938	1937	1936	1935	1934	1933	1932	1931
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Average Balance in Gas Plant in Service, As Adjusted									
	Canadian River Gas Company									
1	Balance at beginning of period	$ 9,454,054.44	$ 9,229,902.71	$ 8,944,063.25	$ 8,768,811.93	$ 8,814,756.24	$ 8,748,615.66	$ 8,535,520.15	$ 8,505,297.34	$ 8,272,674.20
2	Balance at end of period	9,923,329.94	9,454,054.44	9,229,902.71	8,944,063.25	8,768,811.93	8,814,756.24	8,748,615.66	8,535,520.15	8,505,297.34
3	Total	$19,377,384.38	$18,683,957.15	$18,173,965.96	$17,712,875.18	$17,583,571.17	$17,563,371.90	$17,284,135.81	$17,040,817.49	$16,777,971.54
	Colorado Interstate Gas Company									
4	Balance at beginning of period	$11,537,804.04	$11,449,688.70	$11,363,878.10	$11,350,559.54	$11,226,617.22	$11,164,239.99	$11,190,222.26	$11,049,499.41	$ 9,925,263.94
5	Balance at end of period	11,526,746.35	11,537,804.04	11,449,688.70	11,363,878.10	11,350,559.54	11,226,617.22	11,164,239.99	11,190,222.26	11,049,499.41
6	Total	$23,064,550.39	$22,987,492.74	$22,813,566.80	$22,714,437.64	$22,577,176.76	$22,390,857.21	$22,354,462.25	$22,239,721.67	$20,974,763.35
7	Combined (line 3 plus line 6)	$42,441,934.77	$41,671,249.89	$40,987,532.76	$40,427,315.82	$40,160,747.93	$39,954,229.11	$39,638,598.06	$39,280,539.16	$37,752,734.89
8	Average (line 7 divided by 2)	$21,220,967.39	$20,835,624.94	$20,493,666.38	$20,213,657.91	$20,080,373.97	$19,977,114.55	$19,819,299.03	$19,640,269.58	$18,876,367.45
	Average Balance in Reserves for Depreciation and Depletion of Gas Plant in Service, As Adjusted									
	Canadian River Gas Company									
9	Balance at beginning of period	$ 1,572,294.65	$ 1,404,532.08	$ 1,268,516.94	$ 1,108,418.47	$ 1,057,647.50	$ 907,884.14	$ 753,470.86	$ 641,128.58	$ 492,387.10
10	Balance at end of period	1,759,600.16	1,572,294.65	1,404,532.08	1,268,516.94	1,108,418.47	1,057,647.50	907,884.14	753,470.86	641,128.58
11	Total	$ 3,331,894.81	$ 2,976,826.73	$ 2,673,049.02	$ 2,376,935.41	$ 2,166,065.97	$ 1,965,531.64	$ 1,661,355.00	$ 1,394,599.44	$ 1,133,515.68
	Colorado Interstate Gas Company									
12	Balance at beginning of period	$ 2,427,439.72	$ 2,183,166.45	$ 1,944,415.88	$ 1,713,509.14	$ 1,468,044.93	$ 1,224,581.89	$ 981,856.36	$ 737,682.42	$ 509,313.34
13	Balance at end of period	2,650,380.58	2,427,439.72	2,183,166.45	1,944,415.88	1,713,509.14	1,468,044.93	1,224,581.89	981,856.35	737,682.42
14	Total	$ 5,077,820.30	$ 4,610,606.17	$ 4,127,582.33	$ 3,657,925.02	$ 3,181,554.07	$ 2,692,626.82	$ 2,206,438.24	$ 1,719,538.77	$ 1,246,995.76
15	Combined (line 11 plus line 14)	$ 8,409,715.11	$ 7,587,432.90	$ 6,800,631.35	$ 6,034,860.43	$ 5,347,620.04	$ 4,658,158.46	$ 3,867,793.24	$ 3,114,138.21	$ 2,380,511.44
16	Average (line 15 divided by 2)	$ 4,204,857.56	$ 3,793,716.45	$ 3,400,315.67	$ 3,017,430.22	$ 2,673,810.02	$ 2,329,079.23	$ 1,933,896.62	$ 1,557,069.10	$ 1,190,255.72

Exhibit No. 185

Subschedule No. 13-A
Sheet 1 of 1

25

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
DETAILS OF CERTAIN ITEMS INCLUDED IN COMPUTATION OF RATE OF RETURN, BASED ON ADJUSTED ACCOUNTS

	Year Ended December 31										Period Ended
1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	Dec. 31,1928
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
$ 9,454,054.84	$ 9,229,902.71	$ 8,944,063.25	$ 8,768,814.93	$ 8,814,756.24	$ 8,748,615.66	$ 8,535,520.15	$ 8,505,297.34	$ 8,272,674.20	7,055,458.56	$ 7,466,275.02	$ 7,466,275.02
9,923,329.94	9,454,054.84	9,229,902.71	8,944,063.25	8,768,814.93	8,814,756.24	8,748,615.66	8,535,520.15	8,505,297.34	8,272,674.20	7,055,458.56	7,466,275.02
$19,377,384.38	$18,683,957.15	$18,173,965.96	$17,712,878.18	$17,583,571.17	$17,563,371.90	$17,284,135.81	$17,040,817.49	$16,777,971.54	$15,328,132.76	$14,521,733.58	$14,932,550.04
$11,537,804.04	$11,449,488.70	$11,363,878.10	$11,350,559.54	$11,226,617.22	$11,164,239.99	$11,190,222.26	$11,049,499.41	$ 9,925,263.94	$ 9,242,467.84	$ 8,691,281.27	$ 8,691,281.27
11,526,746.35	11,537,804.04	11,449,488.70	11,363,878.10	11,350,559.54	11,226,617.22	11,164,239.99	11,190,222.26	11,049,499.41	9,925,263.94	9,242,467.84	8,691,281.27
$23,064,550.39	$22,987,292.74	$22,813,366.80	$22,714,437.64	$22,577,176.76	$22,390,857.21	$22,354,462.25	$22,239,721.67	$20,974,763.35	$19,167,731.78	$17,933,749.11	$17,382,562.54
$42,441,934.77	$41,671,249.89	$40,987,332.76	$40,427,315.82	$40,160,747.93	$39,954,229.11	$39,638,598.06	$39,280,539.16	$37,752,734.89	$34,495,864.54	$32,455,482.69	$32,315,112.58
$21,220,967.39	$20,835,624.94	$20,493,666.38	$20,213,657.91	$20,080,373.97	$19,977,114.55	$19,819,299.03	$19,640,269.58	$18,876,367.45	$17,247,932.27	$16,227,741.35	$16,157,556.29
$ 1,572,294.65	$ 1,404,532.08	$ 1,268,516.94	$ 1,108,418.47	$ 1,057,647.50	$ 907,884.14	$ 753,470.86	$ 641,128.58	$ 492,387.10	$ 355,590.18	$ 220,997.94	$ 173,251.42
1,759,600.16	1,572,294.65	1,404,532.08	1,268,516.94	1,108,418.47	1,057,647.50	907,884.14	753,470.86	641,128.58	492,387.10	355,590.18	220,997.94
$ 3,331,894.81	$ 2,976,826.73	$ 2,673,049.02	$ 2,376,935.41	$ 2,166,065.97	$ 1,965,531.64	$ 1,661,355.00	$ 1,394,599.44	$ 1,133,515.68	$ 847,977.28	$ 576,588.12	$ 394,249.36
$ 2,427,439.72	$ 2,183,166.45	$ 1,944,415.88	$ 1,713,509.14	$ 1,468,044.93	$ 1,224,581.89	$ 981,856.35	$ 737,682.42	$ 509,313.34	$ 292,641.64	$ 102,557.12	
2,650,380.58	2,427,439.72	2,183,166.45	1,944,415.88	1,713,509.14	1,468,044.93	1,224,581.89	981,856.35	737,682.42	509,313.34	292,641.64	$ 102,557.12
$ 5,077,820.30	$ 4,610,606.17	$ 4,127,582.33	$ 3,657,925.02	$ 3,181,554.07	$ 2,692,626.82	$ 2,206,438.24	$ 1,719,538.77	$ 1,246,395.76	$ 801,954.98	$ 395,198.76	$ 102,557.12
$ 8,409,715.11	$ 7,587,432.90	$ 6,800,631.35	$ 6,034,860.43	$ 5,347,620.04	$ 4,658,158.46	$ 3,867,793.24	$ 3,114,138.21	$ 2,380,511.44	$ 1,649,932.26	$ 971,786.88	$ 496,806.48
$ 4,204,857.56	$ 3,773,716.45	$ 3,400,315.67	$ 3,017,430.22	$ 2,673,810.02	$ 2,329,079.23	$ 1,933,896.62	$ 1,557,069.10	$ 1,190,255.72	$ 824,966.13	$ 485,893.44	$ 248,403.24

A. "This report is a consolidation of figures taken from reports on Canadian River Gas Company and Colorado Interstate Gas Company prepared for the purpose of this proceeding by this Examiner and others, and is presented to show a composite picture of the operations of the two companies. It contains thirteen schedules and one subschedule which include a balance sheet as at December 31, 1939; Income and Surplus Accounts for the years 1928 to 1939, inclusive; Operating Expenses for the years 1939, 1938, and 1937; Working Capital based on Operations during the year 1939; and Computation of Rate of Return. Except in the Working Capital Study where the matter was a minor concern, eliminations of intercompany transactions have been effected by means of journal entries. The financial relation and the operating arrangements existing between the two companies makes it imperative to present the operations of these two companies on a consolidated basis if a clear picture of the cost of producing and transmitting natural gas to Denver and other points is to be given.

"Most of the figures used in this report were obtained from the statements and schedules included in the plant, income and surplus, balance sheet, and working capital reports of Canadian River Gas Company and Colorado Interstate Gas Company, and in all cases the figures used represent the amounts as adjusted by the various examiners who have already testified to the individual exhibits of each company.

"The two most important accounting principles which have been followed in the preparation of this report are these:

"(1) All intercompany items have been eliminated from the consolidated statements, in order to show the financial condition, or the results of operations, with respect to outsiders only;

"(2) The accounts to be consolidated have been set up on a comparable basis in order that they may be combined. (In only a few minor instances was it necessary to group or subdivide the adjusted accounts appearing on the statements or schedules of either company in order that the accounts could be combined.)

"Schedule No. 1, entitled 'Consolidated Balance Sheet,

as Adjusted, December 31, 1939', shows the adjusted balance sheet of Canadian River Gas Company in Column No. 2, and that of Colorado Interstate Gas Company in Column No. 3. Column No. 4 represents the total of Columns Nos. 2 and 3. The intercompany receivables and payables are eliminated in Columns Nos. 5 and 6, and the consolidated balance sheet is shown in Column No. 7.

"All elimination entries in this report are in the '500' series, so marked for identification purposes. The two eliminating entries that affect the balance sheet are shown in Schedule No. 2, and are self-explanatory. They are posted directly to the consolidated balance sheet.

"Schedule No. 3 consolidates the top income and surplus accounts, as adjusted, of Canadian River Gas Company and Colorado Interstate Gas Company for the year 1939. The adjusted income and surplus accounts of the respective companies are shown in Columns Nos. 2 and 3. The amounts are totaled in Column No. 4, and the intercompany transactions are eliminated in columns Nos. 5 and 6. The consolidated income and surplus accounts are shown in Column No. 7.

"Schedules Nos. 4 and 5 show information for the years 1938 and 1937, respectively, comparable with that shown on Schedule No. 3 for the year 1939. The three schedules are identical in form and purpose.

"The eliminating entries relating to the consolidated income and surplus accounts for the years 1937, 1938, and 1939 are shown on Schedule No. 6 and are three in number. Entry No. 502 eliminates from the consolidated accounts the gas sales by Canadian River Gas Company to Colorado Interstate Gas Company; Entry No. 503, the interest paid by Canadian River Gas Company to Colorado Interstate Gas Company; and Entry No. 504, the premiums on bonds paid by Canadian River to Colorado Interstate.

"The eliminating entries have no effect on the combined surplus accounts of the two companies. The balance in the consolidated surplus account, as adjusted, at December 31, 1939, is equal to the sum of the balances in the surplus accounts, as adjusted, at December 31, 1939, of each of the two companies (cf. line 44, Sheet 2 of Schedule No. 1).

"The purpose of Schedule No. 7 is to present a compara-

tive summary of the operations, as adjusted, of Canadian River Gas Company and Colorado Interstate Gas Company on a consolidated basis from the commencement of their operations to December 31, 1939, and to show the build-up by years of the consolidated surplus account, as adjusted, at December 31, 1939. The figures for 1939, 1938 and 1937 shown in Columns Nos. 2, 3 and 4, of this schedule are the same as those shown in Column No. 7 of Schedules Nos. 3, 4 and 5, respectively.

"The amounts for each of the years prior to 1937 were obtained in the same manner as the amounts for 1937, 1938, and 1939, which have already been explained. That is, the accounts of the two companies, as adjusted, were combined and the intercompany transactions eliminated. The details of the consolidations and the eliminating entries for the years 1936 and prior are not presented in this report.

"The purposes of Schedule No. 8, entitled 'Consolidation and Allocation of Operating Expenses, As Adjusted, for the Year Ended December 31, 1939', are (1) to present in detail, by type of expenses, consolidated operating expenses, as adjusted, and (2) to allocate general and administrative expenses to the several functions performed by the companies, that is, producing, compressing, transmission other than compressing, and distribution. The total operating expenses shown in Schedule No. 8, amounting to $1,090,305.56, agree with the amount shown on Schedule No. 3. Details of the bases used in allocating general and administrative expenses are shown on Schedule No. 11.

"Schedules Nos. 9 and 10 present the details of the operating expenses for the years 1938 and 1937, respectively, in the same manner that Schedule No. 8 presents them for the year 1939. The three schedules are identical in form and purpose.

"As previously indicated, the purpose of the allocation entries, shown in Schedule No. 11, is to present, for the years 1937, 1938 and 1939 the total costs of producing, transmitting and distributing gas. This treatment was necessitated by the fact that the two companies handle certain general expenses in different manners. That is, certain general expenses of Canadian River Gas Company are allocated to the functional divisions on the books, while in the case of

Colorado Interstate Gas Company all general expenses are classified as such on the books. Therefore, the allocating entries also have the effect of stating the operating expenses of the two companies on a comparable basis. The various bases used in allocating the general expenses are shown in the text or explanation following each entry. In general, the bases are the same that were used in the working capital computations for the respective companies, which have been presented as evidence in this proceeding.

"The allocating entries are merely transfers within the caption 'Operating Expenses,' and do not change the total.

"In Schedule No. 12 the working capital requirements of Canadian River Gas Company and Colorado Interstate Gas Company have been combined, and the result is shown as the consolidated working capital. There were no eliminations, since no allowance was made in working capital of Colorado Interstate Gas Company for purchased gas. However, if the consolidated working capital were computed based on the consolidated operations, in a manner similar to the working capital exhibits of the individual companies which have previously been presented as evidence in this proceeding, the result would be approximately $1,900 less than the $259,803.36 shown on Schedule No. 12. This decrease would result from the fact that the lag in the receipt of consolidated revenues would be 1.98 days less than the lag in the receipt of Canadian River revenues so that the allowance to pay gas well royalties could consequently be reduced 1.98/365ths of the annual amount of gas well royalties (cf. Canadian River Gas Company working capital requirements study, Sheet 1 thereof.)

"Schedule No. 13 contains computations of the rate of return earned by Canadian River Gas Company and Colorado Interstate Gas Company on a consolidated basis, for each year of operations, and the weighted average rate of return for the entire period of operations. All computations are based on the adjusted plant, reserve, and income accounts of the two companies combined.

"Subschedule No. 13-A is merely a work sheet containing computations and cross references in support of certain figures appearing on Schedule No. 13."

(Vol. LIV, pp. 7496-7502.)

Q. Mr. Smith, what is the reason for consolidating both capital and income accounts of these two companies, that is, Canadian River Gas Company and Colorado Interstate Gas Company?

A. Speaking first of the income accounts, I think that the consolidated income account gives a better picture of the operations of the project which is operated essentially as one project, and if we are going to get a clear concise picture of the cost of producing and transmitting gas to Denver and any other points that the Commission might be interested in, I think the consolidated income statement is of great convenience in that respect.

Q. You are aware of the fact that Canadian River Gas Company has filed contracts with the Federal Power Commission covering the sale of gas to the Colorado Interstate Gas Company?

A. Well, I am not entirely familiar with the act of filing. I do know that that contract is in existence and is in evidence in this case.

Q. Well, are you unaware of the fact that Canadian River Gas Company has filed its contracts that cover the sale of gas in interstate commerce for resale with the Federal Power Commission as a separate company distinct from and apart from Colorado Interstate Gas Company's filings of the contracts under which it sells gas?

A. I realize that there are two separate entities and also that each company has its contracts and that they have been filed. I think that I am familiar with all those facts.

Q. The investigation which the Commission is making involves the prices charged by Canadian River Gas Company, does it not, as well as prices charged by Colorado Interstate Gas Company?

A. This general investigation, Docket G-124, as I understand it is just as it states on the title page of this exhibit. It is the order of investigation directed into and concerning all rates, charges, classifications, rules, regulations, practices and contracts of the three companies, the three respondents.

Q. And that would mean, wouldn't it, an investigation that should determine the reasonableness of the prices which each company charges?

A. Well, I don't know that I would be able to draw a conclusion as to that.

Q. Well, let's assume that the Commission will determine the reasonableness of the price which Canadian River charges Colorado Interstate Gas Company for gas where it is sold for the Denver line at Clayton and would in the event it found that the existing price charged was unreasonable, fix a price which Canadian River should charge. This consolidated statement does not give information that would determine what that price should be, does it?

A. Only as it sets forth, of course, the figures for each company and then consolidates them. There is no absence of that information in the consolidation so far as I can see.

Q. You show, for example, on your consolidated income account for 1939 which is Schedule 3, Sheet 1, gross income in Column 7, which is I take it the combined gross income of the two companies with the amounts paid by Colorado Interstate to Canadian River eliminated?

A. That is true. Before I get to Column 7, I have set forth in Columns 2, 3 and also in 4 and 5 and 6 the details of how I get the Column 7, so there is no absence of information pertaining to the separate companies.

Q. Well, that information, of course, is already in evidence in other exhibits, is that correct?

A. That is correct.

Q. So that the only reason you have set that information here separately is to indicate how you have made the consolidation of the two companies?

A. So far as Schedule No. 3 is concerned, that is true.

Q. There is no purpose in having this exhibit merely to restate the separate information with respect to Canadian River Gas Company and Colorado Interstate Gas Company, because that is already contained in the other exhibits?

A. So far as the individual companies are concerned, I believe everything is in the separate exhibits except the allocation of general expenses to functional division.

Q. So if you take the consolidated figures you have, that really treats the thing as to Colorado Interstate. We are collecting all revenue—or, rather, a combined company—we are collecting all of the revenue and paying its expenses and then having a net income?

A. Yes. Well, as far as the operations are concerned, that is almost the situation.

Q. Well, that isn't true with respect to the dollars there, Mr. Smith. They don't combine the dollars that way.

A. No. There are two corporate entities so far as—with regard—from an operating standpoint and from the standpoint of looking at it as a rate payer here in Denver might look at it, the two separate corporate entities are somewhat artificial and not essential.

Q. Well, Mr. Spencer would violently disagree with you on that, but what I am getting at is this: that for the purpose of determining the reasonableness of rates which Colorado Interstate charged, you couldn't take this consolidated statement and from those consolidated figures, both income and plant accounts, get information that relates solely to Colorado Interstate?

A. Well, you could do this, though: you could use this consolidation as a means of setting a rate. I believe that you could use it; that is, as a basis for setting the rate at the city gate in Denver and then if it were necessary to set rates between the two parties to the project, then that would be a separate operation.

Q. Well, you are starting at the end where the sales were made in that method, and you could do the same thing if you set a rate for Canadian River which it should charge Colorado Interstate and then on the basis of that rate for gas purchased as one of the items of operating expenses determine how much Colorado Interstate Gas Company should charge. Isn't that the logical way in which it really would be done?

A. Well, it is not necessarily the more logical way. I think it could be done that way. I think that this type of statement give a controlling account for the whole picture, the whole situation, and I believe that it is easier to present the picture at the Denver gate. It would be less confusing to any reviewing body to be dealing with these consolidated figures because that is the objective, confining ourselves to the Denver gate alone. That is the objective as I see it.

Q. Well, the same thing might be said of the city gateway to Cheyenne, couldn't it?

A. So far as Docket G-121, I believe it is.

Q. Well, G-124 includes all of these companies, doesn't it?

A. The order of investigation did, that's correct.

Q. G124, and that is primarily the one we are discussing, you could do the same thing there, determine what the city gate at Cheyenne should be and then work back?

A. That would be possible and if we didn't know that

we were particularly interested in an intermediate point, a consolidation carrying the thing through to the Cheyenne gate might be very feasible.

Q. The basis of the statement of income accounts of course disregards the terms of the contracts between the Colorado Interstate Gas Company and Canadian River Gas Company, doesn't it?

A. I am not so sure that it does.

Q. Well, you have not followed the contract terms in arriving at the various operating expenses of Canadian River Gas Company?

A. No, as an accountant I couldn't possibly be bound by any provision set up in a contract to tell me that something is operating expense when it is not operating expense.

Q. You have, so far as revenues are concerned, taken for Canadian River Gas Company the dollars which it actually receives for its gas, with certain adjustments?

A. That's right. The revenues of Canadian River Gas Company were an accomplished fact and of course an intercompany elimination is made in this study, and they were taken exactly as shown in Mr. McKinstry's exhibit on the income accounts of Canadian River Gas Company.

Q. But your operating revenue deductions were built up by Mr. McKinstry himself and aren't taken from the company's books as showing the cost of delivering this gas—that is, in total, I mean?

A. Well, he did this: He started with the company's books with respect to any of its costs which were properly classifiable as operating revenue deductions under a proper accounting method and then he made certain reclassifications and adjustments and came to an adjusted picture showing the operating revenue deductions which the Commission's accounting staff thought were the correct items to reflect the true cost of gas.

Q. Now, all of those figures that you have in Column 2, for example, on Schedule 3 and corresponding columns showing the income and surplus acounts are based entirely upon and taken bodily from Mr. McKinstry's exhibit?

A. That is correct.

Q. And the same thing is true with those figures with

respect to Colorado Interstate Gas Company on these sheets that show income account, those were from Mr. Early's exhibit?

A. That is correct.

Q. And dependent entirely upon the validity and correctness of those two exhibits?

A. So far as this study is concerned, putting it another way, if those figures would have been different, these figures would be different.

Q. And all you have really done here is combined them and eliminated intercompany payments generally in order to get at the consolidated overall picture?

A. With respect to that sheet, that is correct.

Q. Now, there would be a question of determining whatever rate might be fixed for the consolidated picture based on the revenues and expenses as you have shown them consolidated, in dividing that between Canadian River Gas Company and Colorado Interstate Gas Company, wouldn't there; that is, you would have to determine other than the consolidated figures where this profit you show is being made?

A. I thought when you started out you were speaking of setting a rate.

Q. Yes. Well, you fix your rate on the basis of the consolidated figures, then, when you divide it up, you would have to do that with respect to the property accounts and the operating expense items with respect to the two companies.

A. If it is necessary to set a rate as between Canadian River Gas Company and Colorado Interstate Gas Company, and assuming that the question of rate was settled, say at the city gate at Denver, then the matter of setting the rate as between Canadian River Gas Company and Colorado Interstate Gas Company would necessarily be a separate operation.

Q. And you know that Canadian River Gas Company does sell gas to the Amarillo Oil Company which is not involved entirely in this proceeding?

A. I know that there is the sale of gas and the extent to which it is involved or related to this proceeding, I am not exactly certain as to the ultimate legal status of that

question. I do know that Amarillo Oil Company was not subject to an investigation.

Q. That's what I mean, and you have, however, those figures in here.

A. Oh, the costs that relate to the gas which is ultimately sold in Amarillo are included in the figures as well as the Chicago line sales.

Q. As well as the operating revenues?

A. Correct.

Q. And that is why you get for the consolidated picture a greater dollar figure for revenue than you show for Colorado Interstate?

A. Yes, that is the primary reason.

Q. So the consolidated operating revenue figure in Column 7 is not the gross income of Colorado Interstate Gas Company from the sale of gas from its pipe line and sale to Chicago, but represents some money that it does not receive?

A. That is correct. Of course, I think that following that situation through that it has been dealt with in Mr. Lyon's exhibit.

Q. Yes, he did show revenues, I believe, didn't he, in his exhibit?

A. He compared revenues with cost all the way through.

Q. Now, with respect to your plant accounts, that is, your balance sheets which contain utility plant, again those figures which are shown under the Canadian River Gas Company column, Column 2 on Schedule 1, Sheet 1, and the figures shown under Column 3 for Colorado Interstate Gas Company have been taken bodily from Mr. Luttring's Exhibit for Canadian River Gas Company and Mr. Schutte's exhibit for Colorado Interstate Gas Company?

A. Are you referring now only to plant?

Q. Yes. That is the first five items there—or the first four items.

A. I believe those will tie in with the summaries on those exhibits you referred to, and I might state that these figures were taken more directly from Mr. McKinstry's exhibit on the balance sheet for Canadian River Gas Company and Mr. Early's exhibit on the balance sheet for Colorado Interstate Gas Company.

Q. Did not those exhibits, then, take with respect to

utility plant the totals shown on Mr. Luttring's and Mr. Schutte's exhibits?

A. I believe that is correct.

Q. But directly you took these from the balance sheet exhibits?

A. That is correct.

Q. And again that is true all the way down, that any change in those exhibits for any reason would require a corresponding change here?

A. That is correct.

Q. Whatever eliminations have been made, either in the balance sheet exhibits or in the original cost of the property exhibits, of course, are still reflected in your figures in this exhibit 185.

A. Are you speaking of their adjusting entries, eliminating certain items from plant account or earmarking them?

Q. Yes, that's right.

A. Yes, those are all given effect in these consolidated statements.

Q. Now, in your spread of certain overheads which I think you have got starting on Schedule 8, you have made certain allocations as between the different operating divisions of the company.

A. Yes.

Q. General expense.

A. The only purpose there was to assign the general expenses on some equitable basis to the functional groups.

Q. But, however, when carried to your income statements such as, for example, Schedule 3 which is for 1939, that is again all lumped together in operating revenue deductions?

A. Take Schedule 3, Page 4, Line 3 there reflects the operating expenses which is in turn supported as to detail by Schedule No. 8 and any allocation of general expenses between functional groups in Schedule No. 8 would not affect the total carried forward to Schedule No. 3 for either company in one way or another.

Q. Well, what use have you made of these distribution—or allocation of your general expense?

A. Well, the use that I have made of them at this point is not to carry them any further than to assign them to functional groups. Now, I believe that when Mr. Lyon made his allocation of cost of service that he accepted allocations

of general expense which I had made and carried them forward in his study.

Q. Now, what is your basis of allocation as a general expense—of general expense?

A. On Page 21 the allocation of general expenses is shown in journal entries. Entry No. 505 deals with the Colorado Interstate Gas Company, and Entry 506 also deals with the Colorado Interstate Gas Company. In Entry 505, we take the accounts indicated in the tabulation following the explanation of the entry and those are allocated to functional groups on the basis of total payroll charges appearing in the operation and maintenance expenses in such functional group. Those items which are allocated on the basis of total payroll charges are shown to be injuries and damages, absent time due to illness, and employes' welfare, which includes their pension scheme.

And now Entry 506 deals with the remainder of the general administrative expenses of Colorado Interstate Gas Company and those are simply allocated on a dollar basis. Of course, these all relate back to Mr. Early's adjusted figures, *of* in his income account for Colorado Interstate Gas Company; then on the following page, Page 22, the total general and administrative expenses of Canadian River Gas Company are allocated on the basis of total direct charges; that is, on a dollar basis to each functional group, after making the adjustment for allocation purposes only indicated at the end of the explanation. That is, in making this allocation we have treated with the direct charges in the functional groups after adding back residuals produced credit and deducting the residuals operating expense applicable to the Fritch station and also deducting lease and operating expenses paid to the Texoma Natural Gas Company for leased facilities of the Chicago line.

Q. In doing that on a dollar basis, is that on the theory that the time spent by the employes and officials who were engaged in the general administrative group is fairly relative to the dollars of the direct expense of each of the functional groups?

A. Well, it is hard to narrow it down to any limitation of that sort. I don't know, and I don't know whether anybody else would know whether time was the basic factor.

My only purpose was to come to some allocation that would be reasonably equitable.

Q. Well, is it ever the practice to use time as the basis of distributing this general administrative expense between the functional groups?

A. I understand that time—rather meticulous time records are kept by some companies for the allocation of their general and overhead expenses; or at least if the time records are kept, that time estimates are not made currently. I suppose that more particularly ties into the subject of allocating a part of those expenses to construction where the companies elect to do that and have quite a lot of construction going on all the time.

If time records are available, of course it is a method of allocation that is rather difficult to impeach.

Q. But in the absence of that, it is customary in allocating these general expenses to the functional groups to do just as you have done; that is, take the same ratio that the direct expenses are.

A. That is an acceptable method as long as the result does not appear to be inequitable and knowing that the operations of the Canadian River Gas Company were largely almost wholly, you might say, production, and knowing that the operations of the Colorado Interstate Gas Company are almost wholly transmission, the results obtained would seem to indicate that the basis I chose was reasonable and equitable and that is about all I was interested in.

Q. Now, will you turn to Sheet 13—or Schedule 13, which is on Page 24, the first line which is the average balance of gas plant in service taken from the next Page 25. Those dollars I take it are all from the exhibits either of Mr. Luttring or Mr. Schutte?

A. That is true. I might add that the adjustments made by them had to be applied back to book balances of previous years in order to get the yearly figures which I have used here. Mr. Luttring and Mr. Schutte don't show yearly adjusted figures. They merely show the adjusted figures at the end of 1939.

Q. And did you spread those back into different years?

A. Well, back to the year that we felt that the adjustment applied to so that our cumulative balance at the end

of each year would be an adjusted balance for each year and would still come to our adjusted total on Dec. 31, 1939.

Q. How are you able to determine the year in which the adjustments should be made?

A. Well, they were related primarily to the year that the entries were put on the books, that we made adjustments of—or, rather, that Mr. Luttring, Mr. Teel and Mr. Schutte made the adjustments for.

Q. Now, the figures with respect to Colorado Interstate Gas Company and Canadian River Gas Company both, then, on Sheet 25, with the exception of the adjustment back to previous years, represent, then, the information contained in the exhibits of Mr. Luttring and Mr. Schutte and are not original figures which you prepared?

A. That is true, through Line 8.

Q. And I suppose for 1939, those figures would be identical since the adjustments are all carried into that year?

A. Yes. They should be identical. That is the balance at the end of the period for 1939.

Q. Now with respect to Lines 9 and 10, that is, the depreciation and depletion accruals, from what source are those figures?

A. Well, those figures are from accounting exhibits on the subject of annual and accrued depreciation and depletion which were sponsored by Mr. Luttring and myself in the case of Canadian River Gas Company and by myself in the case of Colorado Interstate Gas Company.

Q. And the figures that you have here, then, in Lines 9 and 10, then, again, depend upon the validity of correctness of the depreciation and depletion accruals and reserves as contained in those exhibits you just mentioned?

A. Yes, it is just a process of carrying forward, so far as this particular schedule is concerned.

Q. And as I recall it, those depreciation and depletion exhibits were based on Mr. Hill's exhibit on his service lives which he introduced in this case?

A. With respect to depreciation, they were.

Q. And the depletion figures, those were based on the life of the field, or rather, testimony given by Mr. Hammer?

A. Yes. The total recoverable reserves of the Canadian River acreage were used as a basis for these depletion fig-

ures and that was set forth in one of Mr. Hammer's exhibits.

Q. Well, the depreciation, or service lives, I should say, of Mr. Hill I think were based in part on Mr. Hammer's estimates of the life of the field?

A. Well, the record will speak for itself in that respect.

Q. So that at any rate the figures you have here all go back to Messrs. Hill and Hammer for the maintenance of them.

A. They go back to them in part.

Q. In what part do they not go back?

A. Well, as to the base.

Q. I meant—I'm sorry, I meant Lines 9 and 10, depreciation.

A. It still stands.

Q. I see what you mean.

A. All that Mr. Hill furnished me was the service lives estimate, and the rest of it was accounting work.

Q. That is, you took the average balance of the plant accounts as the base and computed your depreciation by applying percentages that result from Mr. Hill's exhibit?

A. That is correct.

Q. So that the reserve figures as shown here depend on Mr. Hammer and Mr. Hill and the plant account exhibits of Messrs. Luttring and Schutte?

A. That is true, I believe.

Q. Now, then, I observe here, Mr. Smith, that in making the accruals of depreciation that the total in the reserve for depreciation and depletion both at the end of 1939 apparently is a lesser amount than the additions to plant from the beginning up to 1939, is that correct?

A. You are comparing now on Line 15 of Column 2 the figure of $8,409,715.11 with—that is the combined depreciation-depletion reserve. Well, now, the combined—

Q. Well, your average is—well, where I was getting my figures from was Sheet 24 where you show your depreciation, and it is also on Sheet 25, Line 16; that is, the average depreciation.

A. Yes, that is the average for the year 1939.

Q. And that is applied as against the amount in Line 8, that amount 21,220,967. I think you can see what I have in mind on Sheet 24 where in Column 4 you have deducted

the reserve from the adjusted plant account and you come out to a net average investment, as you call it, of $17,016,109, and what I was pointing out was that that was a greater amount than the initial plant account which you show in Column 15 on Sheet 24.

A. Yes. The net average investment for the year 1939 is greater than that investment for 1928.

Q. So that on the basis of recovering through depreciation, depletion and amortization, the two companies combined have a greater number of dollars at the end of 1939 on the reserves for the remaining life of the field than they had at the beginning of their business in 1928, even after giving effect to your depreciation reserves?

A. It looks as though their combined plant account has increased about 5 million dollars between 1928 and 1939—that is, the original cost of plant.

Q. As adjusted?

A. That's correct.

Q. Now, on Sheet 24 you have deducted each year the accrued depreciation. Is there anything in the Federal Power Commission Code of Accounts to provide for doing that?

A. I think indirectly there is, yes.

Q. Does it provide that you set it up in your balance sheet that way?

A. The Code of Accounts for convenience includes all reserves under the general caption of liabilities and other credits. Of course the reserves come into—they are one of the other credits and that is a matter of convenience.

It would be entirely proper to set up the balance sheet for a natural gas company and deduct the depreciation and depletion reserve from the gas plant section.

Q. That is, you would put it—you would make a deduction under the asset side under the plan and then show a net book cost or net book investment?

A. Yes, I think that would be a satisfactory caption.

Q. But the Code actually doesn't provide for making that subtraction in showing your balance sheet as you have done here on Page 24?

A. It doesn't spell it out but it doesn't prohibit it.

Q. I am confused many times as to what we have to

follow and what we don't have to follow, but it is certainly Pages 14 and 15 setting up your balance sheet that shows the heading of "Reserve" under Roman Numeral XI as the total of all of these reserve accounts that go there?

A. That is correct.

Q. In substance, however, what you have done on this Sheet 24 is to state it in the balance sheet as though you had deducted reserves on utility plant. Is that the result of what is defined in the definition of the Federal Power Commission Code No. 24, Page 4, as net book cost where it says, "When applied to gas plant it means the book cost less related depreciation, amortization, and depletion reserves"?

A. Of course I haven't come to net book cost, if you want to take my gas plant in service as adjusted book cost—

Q. That is what you have all through here; that is, your figures are all adjusted book cost figures, aren't they?

A. Yes, but if you go back to the definition of book cost it would have to be with a slight limitation. Calling it adjusted book cost is just a matter of words.

Q. That would be net book cost if you would be keeping the books or as the accounts have been revised or books revised by you and the other Examiners.

A. I believe that is correct.

Q. Of course these are not the book cost figures as carried by the two companies on their books?

A. No. That is the point I was making a while ago, that I have used our adjusted figures.

Q. Now, Sheet 24 is substantially a balance sheet that would show the plant account less reserve and then the income which again is adjusted income as set forth on Line 8.

A. The net utility income is set forth on line 6.

Q. That is as adjusted by the examiners that had to do with the income exhibits?

A. Yes, sir, and it is carried through to this consolidated exhibit.

Q. But it contains all of the adjustments and eliminations that were made, recomputation of the depreciation and depletion and all of the various factors that are involved in the various accounting exhibits offered by your examiners?

A. That is correct.

Q. Then, you simply made a percentage computation

there which shows that on the basis of these figures as adjusted for net income that such adjustment of that utility income is a certain percentage of the net adjusted book cost as worked out in these accounting exhibits?

A. Yes, plus working capital.

Q. This in no way changes the actual dollars which the company has collected from their bills and had in their till after they collected it?

A. Well, I don't know. My assumption is that the revenue for those years is water over the dam, but I don't know.

Q. Yes, that is right. It is not your intention, is it, to imply by reason of this exhibit any retroactive rule with respect to the past revenues? That isn't your understanding?

A. That would in the final analysis be a matter of the Commission's policy and its responsibility under the Natural Gas Act. It is a legal matter. All I am attempting to do here is essentially the work of a historian showing what has happened in the past.

Q. The reflection of these percentages you have would not be reflected on the company's books as they were kept?

A. I take it your mean if we took the plant account per their books and income per their books we would come to a different percentage?

Q. Precisely.

A. I think follows from the fact that we just stated a moment ago that all of the Federal Power Commission accounting adjustments had been given effect herein.

Q. So that these percentages are really computed percentages on the basis of the plant accounts and income accounts and other accounts as finally adjusted by the various examiners?

A. That is correct. It is the intention to show the relationship of the income on the basis of the Commission's accountant's findings as related to the investment in plant as found by the Commission's accountants.

Q. In your role as a historian you of course not only went back and recorded history as you found it but as you thought it should have been?

A. Well, I don't know. I think I recorded it as I found it.

Q. Certainly not as it is found on the books.

A. I think the history was on the books. It was just according to the way you used the figures on the books.

Q. You decided to eliminate certain historical incidents so that your history has been arrived at by throwing out certain events and making certain adjustments in others?

A. I think it goes back to that word "legitimate" that has been used so much, which we might say also means "proper" in this respect. We related what we considered to be the proper investment in original cost of plant plus working capital to the proper operating income or utility income for these periods.

Q. It is the history as you think it should have been rather than as it was actually recorded on the company's books and applied by them?

A. I wouldn't want to put it just that way. I think this history as we have it here had to be reflected in the history of the company. We haven't picked anything out of thin air. As I have said, what we considered to be the legitimate investment of the plant or the proper investment in the plant, we have taken that and related it to what we considered to be the proper utility income that the company enjoyed during that period. I don't mean to imply that would necessarily be the proper income under regulation because I am not conceding that the revenue would be the proper revenue, but I mean more particularly with reference to the expenses as related to the revenue which it actually did receive.

Q. What I had in mind was this, Mr. Smith: You found on the company's books certain accruals for depreciation and depletion which I assume is the historical fact as recorded by the company, and then you revised that on the basis of what you think on present information the effect that depreciation and depletion has. That is the point I am trying to get at. You didn't take the history as you found it but you rewrote it and reconstructed.

A. With respect to depletion and depreciation we have restated the companies accounting for those items.

(Vol. LXXXVII, pp. 13181-13206.)

* * * * * *

Further Testimony of the Company's WITNESS, LUSK.

Q. Under the terms of which particularly Paragraph or Section 10, you have arrived at these cost figures that appear in Exhibit 164 and you have related them to resale only in Exhibit 167?

A. That is correct.

Q. But in so far as the Canadian River Gas Company is concerned, it doesn't now nor has it in the past endeavored to limit its sales to resale gas only, has it?

A. No, sir there is no distinction of gas sales in the Canadian River Gas Company and has not been any since the company commenced operation.

Q. Nor is there any contemplated as far as you know?

A. As far as I know, no.

(Vol. XLVI, p. 6371.)

Further Testimony of the Company's WITNESS, RHODES.

Q. As I understand it, your firm, Ford, Bacon & Davis, Inc., in 1928, in designing this line designed it for this dual load, both the domestic and industrial consumers, and the retail consumers?

A. That is correct.

Q. At that time did you make any study as to the possibility of constructing a line and the cost of constructing a line just to serve the resale customers?

A. No. At that time we did not make such a study.

(Vol. XXII, p. 3164.)

Q. You wouldn't want to recommend at this hearing here at this time without additional study that a 12-inch line would take care of this industrial load, would you?

A. No, I wouldn't be willing to recommend any size of line without a very considerable study and probably my indications at the present time would be not to build a line, if that is all the business you had.

The Trial Examiner: The first of that is true, isn't it, Mr. Rhodes? You wouldn't build a line for the sole purpose of serving resale customers; that is, the average re-

sale customer, we'll say, that has a large domestic load and a very few industrial customers?

The Witness: Well, that isn't so clear, because the total volume of business is enough so that you can get the advantage of the big increase in capacity with a small increase in pipe diameter. You see, roughly speaking, it would only cost about 50 per cent more for a 20-inch system than for a 12-inch system, and it will carry two to three times as much load.

The Trial Examiner: Yes, but what I mean is: If you were to connect no industrial customers at all, you would give it considerable study before you would construct a pipe line such as this pipe line?

The Witness: It is very difficult to justify any long pipe line purely for domestic consumers. You don't get enough use out of the capacity that you have to provide. Ordinarily, you wouldn't get on the average more than 25 or 30 per cent use of that capacity which makes it difficult to justify it.

The Trial Examiner: You may proceed, Mr. March.

By Mr. March:

Q. Mr. Rhodes, you have both industrial consumers and domestic consumers on your resale load, do you not?

A. Yes.

(Vol. XXIII, pp. 3214-3215.)

* * * * *

Now, I know that we have discussed the suction pressure to a limited extent heretofore, but I want to know how you arrived at your conclusion that by 1943 the suction pressures would reach 150 pounds.

A. It is purely a matter of judgment in watching the way gas fields have been operated, that it would be necessary to have that pressure pulled down to about 150 pounds in the near future to make it easily possible to handle the gas field. I reached that conclusion myself and later talked it over with Max Watson and found that he had reached the identical conclusion at almost the same identical time. It is a matter of having enough difference in pressure between your station and your operating wells to have a con-

venient means of controlling and dispatching the variations in your load.

Q. If your suction pressure is going to be 150 pounds by 1943, what would be your well pressures?

A. I don't know.

Q. You didn't give that any consideration?

A. No.

Q. That has nothing to do, then, with the declining pressures of the field?

A. Only indirectly.

Q. Well, how, indirectly?

A. Well, as the field pressures go down, naturally the pressure at the compressor stations go down, but I have found it in my experience in watching the behavior of certain other fields with big wells in it, like this field, that it is rather difficult to maintain such pressures of very much over a third of the well pressures and still have the ability to control properly the delivery of gas into the pipe lines.

Now, this 150 pounds which I have taken here is considerably over a third of the virgin pressure of the wells.

Q. What field have you got in mind?

A. I had in mind the Monroe gas field in Louisiana which is a field very similar to this in that it has large wells of 15 or 20 million feet a day, and also the Richland gas field which is near the Monroe gas field and has since been exhausted. In the case of those fields, at the present time with the average well pressures probably—oh, four or five hundred pounds, the compressor stations are running with suction pressures of a hundred pounds or less.

Q. The well pressures are over 400 pounds and the suction pressure less than 100 pounds?

A. Yes.

Q. What has been your experience in observing pressures in the Panhandle field?

A. What?

Q. What has been your experience and your observations in the Panhandle field, the relation between the well pressures and the suction pressure?

A. I haven't made any particular study of that, except as I say, I reached certain conclusions that Mr. Watson completely confirmed when I talked with him about it.

Q. In other words, you are not familiar with the behaviors of the pressures in the Panhandle field?

A. I haven't studied them in detail. I have been familiar with the Panhandle field for more than ten years, but I haven't been operating in the field.

Q. Do you know what the present suction pressure is at the Bivins station?

A. Oh, it varies. I think they are able to keep it up to pretty close to 250 pounds right now.

Q. Do you know what the present average well pressures are, approximately?

A. Whose well pressures?

Q. The present average well pressures in the Panhandle acreage—I mean, the Canadian River acreage in the Panhandle field.

A. Something over 350 pounds.

(Vol. XXIII, pp. 3216-3219.)

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35. **Colorado Interstate's Method of Apportioning Costs of Producing, Gathering and Transmitting the Gas Between Resale Gas and Direct Sale Gas on the Basis of Priority Use of Facilities, Which Method Is Alternative to the Determination of Such Respective Costs by Comparing Costs for All Gas with Costs Applicable to a Resale Line Only.**

The evidence so far abstracted shows, as the Company contends, the relative cost of resale gas and direct sale gas by comparing the cost of all gas with the cost applicable to a line for resale gas only. Such method was employed by the Company, first, on the basis of contracts, and then on a regulatory basis. In Title 29 supra, there was abstracted evidence contained in Exhibits 170 and 170-B which showed operating costs, plus amount required for a return (8%) on the property, and without regard to amortization or depreciation for *all* gas under present contracts. In Title 30 supra, there was abstracted Exhibits 172 and 172-A, which showed such costs, as contended by the Company for *resale* gas only. The following comparison of such evidence for the year 1939 will show the apparent increment cost as contended by the Company of and return required for direct sale gas, as follows:

All gas—Exhibit 170—Title 29 supra	$3,350,076
Resale gas only—Exhibit 172—Title 30 supra	2,740,141
Apparent cost of and return required for direct sale gas	609,935

From the evidence abstracted supra under Titles 33 and 34, a similar comparison is made for 1939 on a regulatory basis:

All gas—Exhibit 285—Title 33 supra	$3,885,991
Resale gas only—Exhibit 286—Title 34 supra	3,266,547
Apparent cost of direct sale gas	619,444

The Company's witness Lusk states in his Exhibits 319 and 320, abstracted hereinafter, these two figures of $609,935 on a contract basis, and $619,444 on a regulatory basis, represent the "measure of the increment costs involved in the sale of direct gas over and above the base costs * * * occasioned in delivery of the resale gas which, except as to resale special industrial gas, has a prior right to the use of the facilities of the Denver Line." (p. 3, Ex. 319, p. 4, Ex. 320.)

Under the present title we now abstract a method of apportioning costs submitted by the Company, and alternative to the foregoing, and also based, to an extent, on priority or preference in the use of facilities by the resale gas over the direct sale gas. This was presented by the witness Rhodes in Exhibit 316 (Vol. CII, p. 15881). This witness who, as the evidence already abstracted shows, checked the design of this line before it was built, stated:

> "In this exhibit the Denver Line is treated in its entirety from Bivins Station to Denver and the classification of gas transported through the line in interstate commerce is based upon the sales made from the line. Two general classes of customers are served: (A). The first class consists of customers who purchase gas for resale, these being:

Clayton Gas Company

Pueblo Gas and Fuel Company

Citizens Utilities Company

Arkansas Valley Natural Gas Company

City of Colorado Springs

Colorado Wyoming Gas Company

Public Service Company of Colorado

"B: The second class consists of industrial customers who buy gas for industrial use and consumption and not for resale.

"Gas sold to the first class is referred to as resale gas and gas sold to the second class as direct sale gas.

"Certain facilities are devoted exclusively to the sale of resale gas and certain facilities exclusively to the sale of direct sale gas. By far the greater part of the property is used in the delivery of gas to both classes. This exhibit develops a method by which there can be allocated to each class of business that part of the total costs fairly representing the share which each class of business should bear.

"Resale gas is the primary business of the Denver line. During peak loads this gas is supplied principally for resale to domestic and small industrial consumers, which constitutes the firm resale load of the line. They have the first call on all the gas in the line. Direct sale gas is the secondary business of the Denver line. Th gas is for large industrial consumers served directly by Colorado Interstate. A large part of their requirements can be supplied by other fuels on short notice. The direct sale gas uses available spare capacity of the line when, as and if it is not needed by the resale gas. The same applies to resale gas for large industrial customers. It is appropriate that the firm resale gas with its dominant priority in the line should bear the base of underlying costs and that the direct sale gas and resale special industrial gas should bear the added or increment costs necessary to its supply.

"This exhibit describes methods of apportionment which are closely related to the sources and causes of costs and under which the direct sale gas and resale special industrial gas bear not only their own increment costs but also a fair portion of the base costs of the system that otherwise would have to be borne by the firm resale gas alone.

"This exhibit also develops methods for apportioning to the resale gas from the Denver line, the appropriate part of the producing and gathering facilities of Canadian River Gas Company.

"The apportionment of costs in the gas business as between various classes of gas is best arrived at by a consideration of those causes which primarily affect the costs. Furthermore, the type of apportionment ratios to be used depends on the equality or non-equality in priority of the several classes of business.

"The causes which affect costs in the gas business are either directly or indirectly related to rates of delivery. Those costs which are controlled by maximum rates of delivery are appropriately apportioned on ratios determined from such maximum rates, whether they be maximum monthly rates, maximum daily rates or maximum daily obligations to deliver gas to the respective classes of business. Only those costs which are controlled by annual rates of delivery are appropriately apportioned on ratios determined from such annual volumes of gas required by the respective classes of business.

"When two or more classes of business have equal rights at all times to a full and uninterrupted supply of gas from the pipe line then they have equal priority rights. If the available supply of gas from the pipe line is deficient for any cause then the supply to each of the classes of gas is curtailed in like proportion. Each class of gas having equal priority should share costs pro rata.

"When one class of business, however, has the first call on the available supply of gas from the pipe line and the other class of gas can take only that which is

left, then that class of gas with the first call has a primary right or priority. In the event of shortage of gas, those classes of gas with inferior rights must, if necessary, suffer a complete interruption of service in assuring a full supply of gas to that class with the primary right. As between classes of gas with different priorities, ratios based on increment costs, namely, increment ratios, are appropriately used. In such a case the base or foundation costs are appropriately charged to the primary business and the remainder to the secondary business." (Exhibit 316, pp. 1 to 4.)

This method of apportionment is based on a consideration of the priority or preference that the resale gas has over the direct sale gas in the use of the facilities, and also upon the consideration of the "peak load" obligations, as the Company contends.

The company's evidence of this priority or preference has been fully abstracted under Title 12 supra, "Preferential Service To Domestic Consumers Over Industrial Consumers." The evidence as to "peak load" obligations has also been abstracted under Title 16 supra, "Peak Load Obligations And Line Capacity Of The Denver Line As Found Through The Winter 1939-1940, And As Estimated Through 1947, And Estimated Necessary Additional Facilities."

The witness Rhodes in this Exhibit 316 applies his method of apportionment to each class of property of both Canadian and Colorado Interstate.

As to Colorado Interstate's property, he first develops the apportionment percentages applicable to the transmission line. He takes the section of the 22 inch main trunk line north from Clayton Junction to Arkansas Valley Lateral Junction, and studies the load thereon in the month of January, during which month it was loaded to the limit of its capacity, as then developed. Rhodes states:

"* * * The manner of its use in handling resale gas and direct sale gas during that month must be taken into consideration in arriving at a fair apportionment of costs." (Exhibit 316, p. 10.)

He employs the same methods and principles as developed in his study of peak load obligations and line capacity

as shown in Exhibit 66, abstracted in Title 15 supra, but points out that the data pertaining to that particular section of the main line in general are slightly smaller than the line as a whole shown in Exhibit 66, because of the different percentages of direct sale and resale gas in that section of the line, compared to the whole line. He exemplifies his method by pointing out that on Wednesday, January 24, with the mean temperature at 1.5 degree Fahrenheit, the maximum resale load was 67,783 Mcf., and the maximum direct sale was 47,343 Mcf. The total maximum for that day, of both direct sale and resale gas, was 115,126 Mcf., or 10,126 Mcf. more than the flow capacity of the line (105,000 Mcf.). Stored gas in the line was used to supply this excess demand. As a result, pressures became dangerously low, and the Pueblo steel mill was shut off to the extent of 10,000 Mcf. per day. This shutoff, combined with moderate weather, restored the line's storage.

He then points out that, if 67,783 Mcf. was required on a day with a mean temperature of 1.5 degrees Fahrenheit, then, for the Denver minimum of — 15 degrees Fahrenheit, the load for the resale gas would be under average condition of wind and clouds, at least 77,400 Mcf. per day. (p. 11.) He then points out that this amount is the peak load obligation for domestic and small industrial gas for that month. (See Title 15, supra.)

With all compressor stations in operation on such a day, the capacity available to direct sale gas and resale special industrial would be 27,600 Mcf. per day (105,000 Mcf. minus 77,400 Mcf.). If compressor trouble reduced the line capacity to its net flow of 86,500 Mcf., then the surplus capacity available to the large industrials would be 9,100 Mcf. (86,500 Mcf. minus 77,400 Mcf.), but, under the terms of the sales contract, this must be shared by direct sale gas and resale special industrial gas. If shared pro rata with peak load obligations of the two classes, then 1,100 Mcf. would be available to the resale gas and 8,000 Mcf. to the direct sale gas. (pp. 11 and 12.)

The relation between the actual loads, available net-line capacities and peak load obligations in January, 1940, which, as above pointed out, correspond with the calculated loads and capacities, he sets forth in Table A. (p. 12) as follows:

Table A.

Line Capacities, Peak Load Obligations and Peak Loads. Main Line Clayton to Arkansas Valley Junction, January, 1940.

	Mcf. Per Day		
	Resale	Direct Sale	Total
Actual Peak at 1.5 deg. F.	67,783	47,343	115,126
Actual Peak Adjusted to —15 deg. F.	79,385	47,343	126,728
Net Available Capacity	78,500	8,000	86,500
Firm Peak Obligations	77,400	.....	.....
Special Industrial Resale	7,600	.....	.....
Direct Sale	.....	52,500	.....
Total Peak Load Obligations	85,000	52,500	137,500
Maximum Day Obligation Ratio Based on Total Peak Load Obligations	61.8%	38.2%	100.0%
Quota of Line Capacity	65,000	40,000	105,000

He then points out that if the 105,000 Mcf. gross flow capacity of the 22-inch line in January, 1940, is allotted to resale gas (including resale special industrial gas), and to direct sale gas pro rata with their respective total peak load obligations, as shown in Table A, then the resale gas quota would be 61.8% (p. 14). He then points out:

> "The resale business, however, with its 61.8 per cent quota of gross flow capacity (65,000 Mcf. out of 105,000 Mcf. per day) nevertheless has prior rights to 73.8 per cent and equal right to 1 per cent of the gross flow capacity of the line (78,500 Mcf. out of 105,000 Mcf. per day), and prior right to 89.5 per cent and equal right to 1.3 per cent of the net flow capacity of the line (78,500 Mcf. out of 86,500 Mcf. per day)." (p. 15).

This being so, he then states:

> "* * * The least part of the cost that should be borne by the resale gas is the cost of a line with 61.8 per cent of the full capacity." (p. 15).

His next step is to convert or translate this per cent of flow capacity into a corresponding percentage of diameter of pipe, because, as he states:

> "The cost of a pipe line does not vary in direct proportion to its capacity but the cost does vary substantially in direct proportion to the diameter." (p. 15).

By the use of Weymouth's formula, and illustrating his computations with charts, he obtains this result:

> "A line of 61.8 per cent capacity has, as shown on Chart 11 attached, a diameter of 83.5 per cent of full diameter referred to as the diameter ratio. Accordingly, the resale gas should bear 83.5 per cent of the full cost of that part of the trunk line in which its quota is 61.8 per cent of capacity. The remaining 16.5 per cent of the cost to be borne by the direct sale gas is an ample charge since it provides only 9.2 per cent of the net capacity of the system which can definitely be counted on under maximum peak condition.
>
> "With the cost divided pro rata with diameter ratios, the resale gas taking the base diameter, it would pay for 83.5 per cent of the cost and have the right to 90.8 per cent of the net firm capacity. It would thus get 108.7 per cent of what it paid for. Similarly, the direct sale gas would pay 16.5 per cent of the cost but would have the definite right to use only 9.2 per cent of the net firm capacity. It would thus get 55.8 per cent of what it paid for. The direct sale gas would then pay almost twice as much per unit of net firm capacity as the resale gas. This is an ample payment for the right to use surplus capacity when not needed by resale gas." (p. 17).

He then, on pages 17 and 18 of this exhibit, summarizes the reasons why such apportionment is more than favorable to the resale gas, and why other methods should not be used.

He then applied the method, illustrated by the foregoing application to the section of line from Clayton Junction to Arkansas Valley Junction in January, 1940, to the whole pipe line system of the company.

The overall composite use of the whole line in January, 1940, is determined in statements attached to his exhibit. This overall use is the weighted average of the uses of the several lines, weighted in proportion to their dimensions. The weighting unit is the "inch-mile", which is the product of the outside diameter in inches and the length in miles.

His percentages for the whole line are set forth in Table B, page 21, as follows:

Table B.

Apportionment of the Pipe Lines of the Denver Pipe Line System, January, 1940.

	Apportionment of Lines in Inch-Miles		
	Total Inch-Miles	To Resale Gas	
		Per Cent	Inch-Miles
Canadian River Gas Company			
22 Inch Main Line	1,903	83.76%	1,594
All Laterals	42	100.00	42
Total Inch-Miles	1,945	84.11%	1,636
Colorado Interstate Gas Company			
22 Inch Main Line	3,269	84.00%	2,746
20 Inch Main Line	2,100	99.48	2,089
Arkansas Valley Lines	634	58.20	369
Other Laterals	638	42.32	270
Total Inch-Miles	6,641	82.43%	5,474
Both Companies Combined	8,586	82.81%	7,110

In addition to the mains, the other facilities, such as land, rights of way, maintenance camps and miscellaneous structures, used primarily in the operation and maintenance of the line, are apportioned on the same basis as the mains. (p. 22).

As to the cost of operation and maintenance of the transmission line, he then demonstrates that it is but little affected by the size of the pipe, but is controlled by the mileage. On a strict increment cost basis, little or none of the

operating and maintenance expenses would be chargeable to direct sale gas, but he makes the apportionment in the same ratio as the capital costs, which he concludes is a division of expense most favorable to the direct sale gas. (p. 22).

No further detail of these apportionment percentages for the transmission line is included here, for the reason that such apportioned percentages are set forth in full in Exhibits 320 and 319 by the witness Lusk in Titles 38 and 39, hereinafter abstracted.

Mr. Rhodes then makes an apportionment of compressor stations. He states:

> "* * * The first unit installed at each station is dedicated to and used practically continuously by the primary business on the line and therefore its cost should be borne entirely by the resale business. The costs of additional units of the stations are chargeable both to resale gas and direct sale gas in proportions reflecting its use for the two services." (p. 23).

Of Colorado Interstate's stations, Clayton and Canyon stations are each of three units and the Devine station two units. His problem was to apportion the units, in addition to the first unit, in each of those three stations. For this purpose he refers back to the facts developed in his study of the peak load and line capacity actually existing during the month of January, 1940, and which the evidence already abstracted shows corresponded with the calculated peak loads. He then said:

> "* * * It is seen that with all equipment in operation, 65,000 Mcf. per day out of a total of 105,000 Mcf. per day, or 61.8 per cent of the capacity, is allotted to resale gas as its quota and that the remainder of 38.2 per cent is allotted to direct sale gas as its quota. However, when spare equipment in the stations is out of commission then the direct sale quota is reduced to 8,000 Mcf. per day out of a total net flow capacity of the line of 86,500 Mcf. per day, namely 9.2 per cent. Such percentage is all of the capacity of the Clayton and Canyon Stations that can definitely be counted upon by the direct sale business and if con-

tribution to the cost were made in that proportion then the direct sale gas and the resale gas would be contributing like amounts per horsepower of net firm capacity. Any contribution by direct sale gas to the cost in excess of that percentage would constitute a contribution to the costs of the compressor station equipment that must otherwise be borne by the primary or resale business.

"The cost of installing the first compressor unit, including the base or fixed cost, may be obtained by deducting the incremental cost of the second unit of a two unit station from the total cost of that station. The incremental is determined by comparison of the costs of a three unit station, such as Clayton, with a two unit station, such as Devine. Using reproduction costs new as of December 31, 1938 exclusive of land and State sales tax given by Exhibit No. 70, the incremental cost of an additional unit is obtained as follows:

Clayton Compressing Station	$499,180
Devine Compressing Station	382,396
Incremental Cost of 1 Unit	$116,784

Therefore, by subtraction of the incremental cost of one unit from the cost of Devine Station, the cost of a one unit station, including the base or fixed cost, is determined to be $265,612, or about two thirds the total cost of a two unit station. It can similarly be shown that the cost of a one unit station, including the base or fixed cost, is about one half (two fourths) the total cost of a three unit station.

"Therefore, the first unit (1,000 hp.) of a three unit (3,000 hp.) station would be charged to resale gas and the cost of the other units pro rata with their use by the kinds of service. The subtraction of 33 1-3 per cent (one unit) from the resale quota (61.8 per cent) shown by Chart I, leaves 28.5 per cent of the resale quota which must share the remaining 66 2/3 per cent capacity (2,000 hp.) with the direct sale quota of 38.2 per cent. The 66 2/3 per cent capacity would then be

allocated (28.5 divided by 66.67) 42.7 per cent to resale gas and the direct sale gas would be called upon to bear the remaining cost. The total cost of a three unit (3,000 hp.) station would therefore be allocated to resale gas as follows:

Basis of Allocation of Compressor Station to Resale Gas.

	Basis of Use		Percentage of Cost	
Horsepower	Resale Percentage	Horsepower	Total	Resale Gas
1 Unit —1,000 hp.....	100.0%	1,000	50.0%	50.0%
2 Units—2,000 hp.....	42.7	854	50.0	21.4
Total Resale.....	61.8%	1,854	100.0%	71.4%

The resale gas must bear all of the cost of the base unit of 50 per cent plus its pro rata use of 42.7 per cent of 50 per cent remaining costs (or 21.4 per cent) making a total capital allocation to resale gas of 71.4 per cent. Thus the direct sale gas would be called upon to bear 28.6 per cent of the cost as compared with 9.2 per cent of its net safe capacity available to direct sale gas. This would constitute ample contribution by direct sale gas to the costs that would otherwise have to be borne by the resale business." (pp. 23 to 25).

He then applies his principal to each of the three stations, and arrives at the following proportions of compressor station costs chargeable to resale gas on the basis of actual conditions obtaining in January, 1940, as follows:

Table C.

Proportions of Compressor Station Cost Chargeable to Resale Gas, January, 1940.

Station	Installed Capacity Horse-power	Resale Per Cent	Quotas Horse-power	Cost Quotas Total Per Cent	Cost Quotas Resale Per Cent
Colorado Interstate Gas Co.					
Clayton:					
Basic Unit	1,000	100.0%	1,000	50.0%	50.0%
Other Units	2,000	42.7	854	50.0	21.4
Gross Power	3,000	61.8%	1,854	100.0%	71.4%
Canyon:					
Basic Unit	1,000	100.0%	1,000	50.0%	50.0%
Other Units	2,000	42.7	854	50.0	21.4
Gross Power	3,000	61.8%	1,854	100.0%	71.4%
Devine:					
Basic Unit	1,000	100.0%	1,000	66.0%	66.0%
Other Units	1,000	83.8	838	34.0	28.5
Gross Power	2,000	91.9%	1,838	100.0%	94.5%

He then determines on this basis the proportions for all the stations throughout the years, which determinations are set forth in statements attached to his exhibit. As to the operating and maintenance expense of compressing stations he states:

> "The operating expenses of compressor stations are affected by size much less than are their construction costs, but are little affected by the amount of gas handled. The maintenance expenses vary with size of station about as much as do the construction costs, but they are considerably affected by the amount of gas handled. A fair apportionment of the total annual expenses of these stations is arrived at by apportioning them as between direct sale gas and resale gas identically with their original costs as described above." (p. 27).

No further detail as to the apportionment of percentages of compressor stations and maintenance and operating expense thereof are given, for the reason that such detail is contained in Exhibits 320 and 319 by the witness Lusk, abstracted hereinafter under Title 38 and 39.

As to the apportionment of gasoline and desulphurizing plants, he first points out that they are necessary to the proper transportation of gas, and for that reason their costs and the revenues from the gasoline plant are considered as a part of the Denver Line. However, he states that the apportionment of those facilities should be on a basis different from the compressing stations because, under extreme peaks, some of the gas is by-passed. He states:

> "• • • The maximum loads, therefore, on which these facilities should be apportioned are the average daily loads during maximum months rather than the extreme peak load obligations."

Accordingly, he apportions the capital cost of the gasoline and desulphurizing plants and operating expense pro rata with the maximum month's requirements of resale gas and direct sale gas.

He then points out that the amount of gasoline recovered is proportionate to the quantity of gas treated, and the revenues therefrom are therefore apportioned pro rata with the annual quantities of gas handled. (p. 28.)

As to Colorado Interstate's meters, they may definitely be divided as between direct sale meters and resale meters, by the specific use to which they are put. Referring back to Exhibits 134 and 136, such apportionment on the basis of such use is found to be 60% to the resale gas and 40% to the direct sale gas. (p. 29.)

As to the telephone system, he refers back to Exhibits 67 and 133, and demonstrates that it should be chargeable to the transmission system alone, and that the cost and expense should be apportioned to direct sale gas and resale gas in the same manner as general property; that is, pro rata with the original cost of the operating property itself, apportioned to the two classes of business. (p. 30.)

General property is apportioned to the resale gas and

direct sale gas pro rata with the total amounts of original cost of the operating department property, in the proportion as already described. (p. 31.)

General expenses (other than operating taxes), are apportioned in the same manner as general property. (p. 33.)

Operating taxes, comprised of general property taxes, pay roll taxes, and miscellaneous taxes, are apportioned like general property and general expense. (p. 34.)

As to the cost of the gas purchase contract with Canadian, he points out that it covers three classes of gas: first, resale gas for the Denver Line; second, direct sale gas for the Denver Line; and third, all gas sold to the Chicago Line, and then states:

> "• • • The book amount and cost of this agreement is fairly apportioned to the three classes of gas pro rata with their total respective volumes of gas to be received by Colorado Interstate throughout the entire project period of the Denver line."

As to the gas sales contracts with the Public Service Company for Denver, and Pueblo Gas and Fuel Company for Pueblo, he points out that they cover the sale of resale gas exclusively, and the book costs thereof are chargeable to the resale gas alone. (p. 35.)

As to the gas sales contract with the City of Colorado Springs, it covers the sale of gas for resale, but also, the sale of gas to the city for its power plant. The cost of this agreement is therefore apportioned to resale gas and direct-sale gas pro rata with the respective gross revenues received and to be received from the city over the life of the contract. (p. 36.)

As to working capital, he refers back to Exhibits 68 and 70 (abstracted under Title 22 supra), and points out that it is comprised of three elements: first, percentage of annual expense; second, a cash working fund, and third, materials and supplies. The working capital required by the first two elements or components is governed by the annual operating and maintenance requirements, "and the closely related maintenance of credit." These two parts or components of working capital are therefore apportioned

between resale gas and direct sale gas pro rata "with the respective total amount of direct expenses of the operating departments apportioned to the two classes of gas * * *"; that is, in the same manner as the general expense. (pp. 37 and 38.) The third component or element of working capital, that is, materials and supplies, is controlled by the extent of the property and it is thus appropriately apportioned between the two classes of gas "pro rata with the respective total amounts of operating system property" as already apportioned. (p. 38.)

The detailed percentages of apportionment for each item of property are shown in supporting statements to this Exhibit 316, and are employed by the witness Lusk in his Exhibits 320 and 319, abstracted hereinafter under Titles 38 and 39.

On cross-examination (Vol. CII, pp. 15886-15948) Mr. Rhodes stated that when he checked the design of the line he had in mind both the "primary" business, that is, the gas to be resold for domestic and small industrial users, and which was to be given preferential or priority use of the facilities, and the "secondary" business, that is, the direct sales to industrials, which would have to get off the line when necessary to accommodate the preferred business; that the line was built as small, and therefore as inexpensively, as could be done, and yet provide safe capacity for the estimated peak load capacity for resale gas; that these estimates have been closely borne out in operation; that the primary and secondary business are both essential; that is, you cannot do without both of them, and you cannot do without either of them (p. 15943); that all natural gas pipe lines in America have been made possible and have been built up on that same basis, and that such basis makes the assignment only of "incremental" costs to the secondary business not only appropriate but necessary.

Further Testimony of the Company's Witness, Rhodes.

Q. Mr. Rhodes, you have heretofore presented a number of exhibits in this proceeding, have you not?

A. Yes.

Q. The first of which had to do with the reproduction cost new of properties less observed depreciation?

A. Yes.

Q. You have also prepared a number of exhibits having to do with and confining themselves to the construction of a plant devoted to resale gas alone, in the Denver line?

A. Yes.

Q. Following your exhibits of that nature, there have also been presented in this record exhibits sponsored by Mr. Lusk, where the accounting phases of that nature were presented?

A. Yes.

Q. And testified to by him?

A. Yes.

Q. Now, in what respect does this Exhibit 316, that is now sponsored by you, differ from these cost allocation exhibits heretofore presented in this record?

A. Well, those exhibits, as to description of the line, the determination of its equivalent original costs, and so forth, that were designated as a line for Denver line for resale gas alone, finally culminated in one of Mr. Lusk's exhibits which showed the rate statement relating to that business alone, showing the earnings available and applicable to the equivalent original cost of such a line.

In other words, it showed what I call the base costs, arising from the resale business, which has, at least to the extent of the domestic and small industrial loads, a first call on capacity.

There were other exhibits which showed similar rate statements over the whole of the company's operations, and the difference between those sets of exhibits would show the increment costs or additional costs incurred by the company, to put itself in a position to handle, and also in the handling of the gas sold directly to consumers.

Well, this exhibit goes further, in that it charges to the direct sale gas, in addition to its own increment costs, a portion of the base cost that actually would be required in a project to handle the resale gas alone.

Q. This exhibit for the first time definitely attempts to spell out what you label incremental costs?

A. Not specifically. I refer to incremental costs in here—

Q. (Interposing) Yes, I will ask you right there what do you define that to be?

A. Well, the incremental costs, as related to direct sale gas for instance, are the added costs incurred to make provision for and to handle that business, over and above the costs that would be incurred in the absence of that business.

Q. Well, but you, on page one of your written statement, Exhibit No. 316, begin with the premise, the third last line on the page, this premise, "Resale gas is the primary business of the Denver Line."

Now, is that an abstract statement or do you attempt to really relate that to the Denver Line?

A. Well, in what follows, it is related to the Denver Line, the remainder of the paragraph.

Q. Then you say that resale gas, in your opinion, is not the primary business of the Denver Line.

A. I say it is the primary business of the Denver Line.

Q. I mean, it is the primary business of the Denver Line?

A. Yes.

Q. And you make that statement in the light of the history of the operation of the Denver Line?

A. With the knowledge of the history of the line, yes.

Q. And with knowledge of the purposes that prompted the building and construction of the line?

A. Yes. The line was built to supply resale load as the primary business, which I define more fully here as that business which has the first call on the capacity of the line.

Q. You definitely had that in mind?

A. Yes.

Q. When you prepared this Exhibit?

A. Yes.

Q. Weren't you part of the organization of Ford, Bacon & Davis at the time this line was constructed, or were you?

A. Yes, I was.

Q. Do you recall any provision in the contract of June 1, 1928, between Canadian River Gas Company and Ford, Bacon & Davis, Incorporated, the engineering agreement for the building of this line, paragraph 11, which reads as follows:

"The company"—meaning Canadian River Gas Company —"desires to begin deliveries of gas to the Colorado Fuel & Iron Company, December 1, 1928, and as much earlier as is possible, and the engineers agree to use the utmost speed

consistent with sound practice in all construction work and in the event the engineers do not progress with speed satisfactory to the company, the company may direct the engineers to employ additional help and take additional means to expedite construction, or the company may itself employ additional help and take additional means to expedite such construction."

Do you recall that paragraph?

A. The general provisions of it, yes.

Q. Isn't that the only paragraph in that entire contract of 6-1-28 that refers to any market, of Canadian River Gas Company, on this Denver Line?

A. I don't recall the whole contract.

Q. Why, in your opinion, then, was Colorado Fuel & Iron Company market singled out in a definite paragraph in this contract to expedite construction in this contract and effectuate deliveries to that market?

A. There were two reasons for such a provision. One reason would be that it involved a large load that could immediately be connected to the line and produce immediate revenue, and the second reason is that in making arrangements for such a large load, it is necessary to give the consumer some assurance as to when it will be able to get the gas.

Q. But what I particularly want to draw your attention to is the fact that there wasn't anything said about any other market, not even the Denver market, and that they singled out Colorado Fuel & Iron to the engineers?

A. Well, the engineers were well acquainted with the whole market and, when they designed the line, they designed the line to handle the whole market, and furthermore it was anticipated by the engineers, in the design of the line, that, as the other markets increased in extent, it would probably be necessary to make curtailments of that particular load during extreme cold weather peaks.

Q. That is your opinion?

A. Well, it is more than an opinion, because I checked the design of the line, and I, myself, surveyed the market.

Q. All right, you recall, too, what Mr. Edward G. Hill, one of your associates at Ford, Bacon & Davis, had to say at the early part of this hearing, don't you, with reference to Colorado Fuel and Iron?

A. I heard him testify, yes.

Q. Page 218 of volume 2, Mr. Hill said—he was asked, "Did you have anything to do with the negotiation of the Colorado Fuel & Iron Company contract?" He answered, "No."

"Question: Ford, Bacon & Davis, Incorporated, negotiated that contract?

"Answer: Yes, they did.

"Question: For Colorado Interstate?

"Answer: Yes, I think really before Colorado Interstate was formed and when the project was at its embryo, that was one of the essentials."

Then he also mentioned that well-known phrase in this proceeding about the Denver market and the Colorado Fuel & Iron being the two pillars on which this line was founded or built?

A. Yes, that is true.

Q. Now, you come along at this late stage, and throw aside one of the pillars and have this resale business to be the primary business of the construction of the Denver Line, and that the direct sales are secondary?

A. I throw aside nothing. I accept the facts of the situation as they are, that the resale business, at least to the extent of the domestic and small industrial business, is a first call on all the gas in the line, and, for that reason, I call it the primary business, that the other business sold directly to the consumer must get off the line as necessary to protect deliveries to the domestic consumers, and for that reason I call it the secondary business.

Q. You say, you are accepting the facts. You mean you are taking the abstract and reading it into the provisions of these rate contracts, that do set up certain provisions as to priorities.

Are you calling those priority provisions as facts, or are you calling what has actually happened as facts?

A. Well, what has actually happened is the curtailment of the large industrial loads to protect deliveries to the domestic consumers. That is a fact.

Q. When you are speaking of priorities, are you speaking of those provisions in the rate schedules or contracts?

A. Why, I don't recall the provisions of the rate schedule, but having been in the gas business for a good many years, I know that the domestic consumer must be served and the domestic consumer has therefore, as I see it, a prior right to the gas in the line and it is on the basis of that premise that this exhibit has been developed.

Q. You are going right back to what I asked you at first. Are you laying that down as an abstract proposition applicable to gas companies or a great many gas companies, or are you relating the matter directly to the Denver Line in the light of its history?

A. Well, there are a number of questions there, but, as related to this particular exhibit, it relates to the Denver Line.

Q. And is predicated on what has actually happened, or what may happen?

A. Both.

Q. Both?

A. On both.

Q. You say, then, that the resale gas is the primary business of the Denver Line, in the light of what has actually happened during the operation of that line?

A. Yes, as I define the primary business, namely that which has the first call on all the gas in the line.

Q. That which actually has the first call or that which has had the first call?

A. Both.

Q. Let us see what you mean. You mean that which has the right to have the first call?

A. I am not attempting to interpret the contract, but I know that the direct sale business must get off the line to the extent required to assure deliveries of domestic gas on the resale contracts.

Q. And your whole exhibit is predicated on that theory?

A. On that—among other things, on that theory, yes. That is a basic theory back of this exhibit.

Q. That one sentence, "Resale gas is the primary business of the Denver Line." You follow through on that?

A. Yes.

Q. Your exhibit?

A. Yes.

Q. Now, do you recall this early exhibit that Mr. Lusk presented in this proceeding, Exhibit No. 43?

A. I don't recall it by number.

Q. In that exhibit, Mr. Lusk gives the facts and figures that he stated were taken from the company's books and records, showing actual volume of gas sold from the Denver Line, 1928 to 1939 inclusive. Do you recall that?

A. I recall such an exhibit, yes.

Q. Statement A-1, is what I want to direct your particular attention to, because I note the breakdown appears on line nine, item nine of that statement, where sales of gas direct to consumer single out Colorado Fuel & Iron Company?

A. May I see the exhibit?

Q. Yes (handing). I think that is one of the few exhibits that gives a definite breakdown between Colorado Fuel & Iron Company deliveries and other direct sales.

A. Yes, I see that.

Q. You see in the year 1928, item nine being Colorado Fuel & Iron Company deliveries; Colorado Fuel & Iron Company was the only direct sale customer, wasn't it?

A. That is correct.

Q. During that period, 1928, Colorado Fuel & Iron Company purchased 2,521,748 M.c.f. from Colorado Interstate, did it not?

A. Yes.

Q. During that same period, the resale domestic customers purchased from Colorado Interstate, Line twelve, 1,200,311 M.c.f., didn't it?

A. That is the total resale domestic sold by Colorado Interstate and Canadian River from the line.

Q. 2,521,000 M.c.f. for direct sale to Colorado Fuel & Iron as against 1,200,000 M.c.f., domestic. Is that what occurred in 1928?

A. Yes.

Q. Still, if we would stop right there, you would still say that the direct sales are the primary business of the Denver Line?

A. Well, you don't build a line for seven months. You build a line for a longer period.

Q. I am just going to get to that. Let us follow right on through your item nine, right on through to 1939. Your item twelve, right on through to 1939. That is what I was getting at.

Now, in the light of that history, tell me, are you still

definitely convinced that the resale gas is the primary business of the Denver Line?

A. M.c.f. per year or for five years or for any number of years, in itself, is no measure of what is the primary business or the secondary business. The thing which is the measure of the primary business is the business which has the primary or first rights to the capacity of the line, and the domestic business does have and has had the first rights to the gas in the line.

Q. Although in the light of what has actually happened during the entire history of the line, these facts, statement 1-A of 43 are correct?

A. The facts are correct, but they are wholly unrelated to which is the primary and which is the secondary business, the M.c.f. delivered.

Q. Then, as I take it, in your opinion, if there were a provision in a rate contract giving "A" company certain priorities, if you want to label them that, for the taking of gas, and that so-called priority was never exercised or seldom exercised during the entire history of the company, that would still justify your labeling that as the primary business of the company?

A. That is a hypothetical question that has no relation to this project.

Q. Oh, it doesn't?

A. No. The primary business, the domestic business and the resale business has had, and always has had the first call on the gas in the line.

The domestic business of the resale group has never been curtailed by shortage of gas that is being asked to be shut off, but the direct sale to consumers have at times been disconnected and some of the large industrial consumers, that receive gas from the distributing companies, have been curtailed to protect deliveries to domestic consumers.

Q. Then, how do you arrive at the conclusion that the fact that a customer or a group of customers, as you say, have been curtailed or cut out, that that directly relates to cost of serving that customer or group of customers?

A. A customer which can take what is available when it is available, as it is available, and if—when, as, and if available—certainly is not getting the service or using the capacity of the system in the same manner as the consumer

that always gets what it wants when it wants it, with an obligation on the part of the line to increase its capacity to meet their increasing requirements as necessary.

There is no comparison between the two classes of business and similarly there is no direct comparison between the costs involved in the two classes of business.

Q. In what manner do you relate additional cost to a portion of the business that would technically, as you have it, have the right to have some priority over the other class of business.

Under what theory do you relate additional cost to one as against the other?

A. I don't quite follow you.

Mr. Lange: Just strike that.

By Mr. Lange:

Q. Under what theory of estimating costs do you say that one group of customers should have allocated to it certain costs as against another group, because that first group has technically some priority over the other group, which may not have been called into play?

A. Well, that is a rather long question, but the business which causes the costs, should bear the costs and the business which only brings about incidental additional costs, strictly speaking, should only bear those additional costs, if you are trying to determine costs.

Q. Now, which business are you saying that brings the additional volume that should bear the additional cost?

A. The business which has the prior right to the capacity of the line should bear the base costs, and the business which takes what is left should bear the additional or increment costs.

Q. That additional business is what you call the "incremental business"?

A. Yes.

Q. And that should bear what is called an additional or incremental cost?

A. Basically, yes.

Q. All right, which is other or new business that ought to bear an incremental cost, as being incremental business?

A. The business which takes gas when it is permitted to

take it, namely the large industrial business, whether it be direct sale business or the gas which is sold to the distributors or resale to large industrial. That business should bear the increment costs.

Q. Although, just for the sake of an example, supposing both those classes of businesses or their takings were placed in parallel columns, and the takings of each was almost equal, you would still say that one was primary and the other was secondary?

A. If, in fact, they both had equal rights to the capacity in the line, I don't believe you could distinguish between the two as primary and secondary business, except as one of the classes might be a short-time business, that might or might not be renewed in later years, and another class of business was a long-time business.

If during the period they had simultaneously equal rights in the line, then the long-time contract I would consider to be a primary contract, because it has rights and privileges that the other contract does not have.

Q. So, with the exception of the matter of rights between one, as disinguished from the other, both columns representing long-time business and continuing business, the only reason why one would be primary and the other secondary, is because of the right that one would have, that the other wouldn't exercise primary taking?

A. I don't think that question of yours is quite what you mean.

Q. All right. Let us take the two columns again, with takings over periods of years being comparable. One is resale gas, one is direct sale gas.

In both instances, they are long term contracts, or there haven't been any interruptions in the taking of them in so far as renewal being necessary.

Now, your resale gas, you say, has priority, because it is not subject to the interruptions that the direct sales are?

A. Well, it has priority, in that it has the right to get the gas without being interrupted or curtailed.

Q. Just because it has that right, different costs are related to it than to the other direct sales?

A. Primarily so, yes.

Q. What do you mean by primarily so? Why should any

different costs be related to it than to the other direct sales?

A. Because it is the business—being the business that must be served and having that situation of requiring the other business to get off in case of trouble, that business, I believe, should bear the prime or base cost.

It is customary—it is the custom of the business. It is the custom of other businesses. The surplus products or the things that are available, not necessarily regularly, but sold if, when, and as available, are customarily sold at lower prices than those like products that are sold under a firm obligation to deliver when they are required.

Q. Yes, but we are relating costs here, not to what the resale customer and the direct sale customer paid.

We have before us here, the costs to Colorado Interstate and Canadian River Gas Company. That is what we are trying to find out?

A. Well, the cost to those two companies was shown in the previous exhibits related to resale gas alone, and those are the costs which would have been incurred had there been no other business.

Now, the additional costs are readily obtained by subtraction as between those exhibits and another set of exhibits which would show the additional costs that actually were incurred by the company to handle this resale business.

Q. In this Exhibit 316?

A. No. Those increment costs would be obtained from the other exhibits previously referred to.

In this exhibit I have assigned more cost to the direct sale gas than its true increment cost.

Q. On what basis do you predicate that assignment of additional cost to the resale customers in 316?

A. On what seemed to me to be a fair basis of the secondary business, sharing in the basic or prime costs.

Q. What I still want to know is on what theory do you allocate costs, where Colorado Interstate and Canadian River Gas Company are the ones selling resale, as well as the direct.

Where is there more cost to the companies selling, or delivering this resale gas, as distinguished from the direct

sale gas, regardless of these priorities that you are speaking of?

A. The costs incurred by the company or costs actually incurred as a lump, and I am trying to apportion those costs in a fair manner. They must be apportioned, if it is desired to divide the costs.

I have considered, as I have repeatedly said, that those costs which have the first call on the capacity of the line are the ones that should bear the cost.

I will give an illustration of that from the text—

Q. (Interposing) What page?

A. (Continuing)—without reading directly from the text, but I show in the text, beginning on page 14, and in discussing the use of the transmission lines, I show that of the net capacity of the system, as it existed in January 1940, namely, Colorado Interstate System, of the 86,500,000 cubic feet per day, net flow capacity of the line, 77,400,000 cubic feet a day would be required to meet the obligations of the firm resale gas, that another 1,100,000 cubic feet per day would give the special industrial gas its share of the remaining capacity, and that the direct sale gas would only have 8,000,000 cubic feet per day in the capacity of the line that it could be definitely assured of.

Strictly speaking, on a pro rata basis, the direct sale business should pay for 8,000,000 feet of the capacity of that system and no more, because that is all that it can be sure of getting.

The resale business should pay for 78,500,000 cubic feet of the capacity of that line, because it can get it and be sure of getting it, even if all the direct sale business has to be shut off.

Equality in cost should be measured by what is obtained from the cost, rather than by some figure that is quite unrelated to the cost of running the transmission line.

Q. Now, let me ask you again and get this clear in my mind: that statement—this Exhibit No. 316 and the statement—when you speak of methods of apportionment of costs, you are speaking of costs to Canadian River Gas Company and Colorado Interstate Gas Company, aren't you?

A. Yes, I am speaking of costs to the project.

Q. Costs to the company?

A. Costs to the project—the company, yes.

Q. Not costs to the purchasers or consumers of the gas? You are speaking of costs to the company?

A. Yes.

Q. Let's get that clear.

A. The other is price.

Q. Let's get that definitely understood. It is costs to these companies.

What I still want to know is why a provision in the contract, providing for priority, should itself constitute an element of cost to the company furnishing that gas.

A. Well, in itself it doesn't constitute an element of cost, but in this particular case, in that particular year, it gave a right to more than 90 per cent of the safe capacity of the line to one class of business and left less than ten per cent of the safe capacity of the line to the other class of business.

Q. What year are you talking about?

A. I am talking about the month of January, 1940.

Q. All right, I think we know something about the year 1940—and 1939, too.

If we look to Exhibit 307, I think we will find there that these direct sales don't just fill in—don't just fill in as secondary sales.

A. I don't know what you mean.

Q. Well, I will just take the year—you were taking one month in the year 1940 as an example?

A. I was taking as an example the month in the history of the company which, up to that time, resulted in the line handling the maximum amount of gas.

Q. All right. What year was that?

A. That was in the year—January 1940, when the line was loaded to the limit of its capacity and in fact beyond the limit of its capacity on two days.

Q. All right. January, 1940, the direct industrial sales were 1,030,088 as against the resale gas of 1,204,123 up to the Denver gate.

Now you say that that still presents a picture of the resale gas bearing the primary load and should be assessed with the basic costs first?

A. Yes, because the monthly or particularly the average volume of gas handled has very, very little effect on the costs.

Almost all of the costs of the natural gas business are occasioned by capacity—the ability to supply gas for a single day, and but a small portion of the costs are affected by the actual volume of gas that might be delivered over a month or a year.

It is basically the day, the ability to deliver gas on a single day, that occasions the cost.

Q. However, the very purpose of the construction of the line was to serve a direct sale customer (A), a résale customer (B)? It started out that way, didn't it, without distinction? The genesis of the line was that, wasn't it?

A. The genesis of the line was to provide sufficient capacity to meet the requirements of the market, and it was the capacity that was provided that cost the money.

The costs, if they are shared, as they should by rights be, to use that capacity, would be charged, as far as this section of the line is concerned, more than 90 per cent to the resale gas, because it has a right to 90 per cent of the safe capacity of that pipeline, and the other ten per cent is all that is really chargeable to the business which can only be assured of ten per cent of the capacity of the line.

Q. Let us again forget the right, and point to what actually occurred.

In 1928, during the seven months, as shown in Exhibit No. 43, Statement A-1, Colorado Fuel & Iron purchased 2,521,000-plus M.c.f. as against 1,200,000-plus M.c.f. of resale domestic customers.

Supposing we stop right there and, as a matter of determining cost allocations, were in the picture, as far as Denver line was concerned, what would you do?

A. Well, the line never would have been built, if you are going to stop right there.

Q. Oh, it wouldn't?

A. Oh, no. The line was built as a twenty year project.

Q. All right, we will go right through 1929. Colorado Fuel & Iron took 8,191,000 M.c.f. of gas as against 3,662,000 M.c.f., resale domestic. What about that?

A. Well, the method of apportioning costs, and all of the factors required are shown in this exhibit of mine.

Q. All right. 1930. Speaking of the history, now, not of any theoretical rights, or something that may have been written but not exercised, speaking of what actually occurred in 1930, the Colorado Fuel & Iron took 7,576,000-plus M.c.f. as against 4,925,000 M.c.f. for resale domestic. Resale still is the primary subject of being assessed with primary and basic costs, on the Denver line?

A. Yes, because this line was built, not to supply the domestic load that existed in 1928, 1929, or 1930; it was built to supply the increasing domestic load as it increased year by year by year by year, until, 1946, the domestic load was estimated to be many times that of the first year.

Q. The actual figures are the ones that we actually know?

A. I know, but the line had to be built for what was actually expected when the line was designed.

Q. We have the period for several months, during 1928 and through 1939, actually. Take 1931, Colorado Fuel & Iron, 5,419.000-plus M.c.f. as against 5,452,000 M.c.f. of domestic resale. 1932, 4,718,000-plus M.c.f. as against 5,725,000 resale.

Then each of the years '33 and '34 are just about the same, not much difference. So is '35.

'36, Colorado Fuel & Iron took 8,476,000-plus M.c.f. as against only 5,990,000-plus M.c.f. for the resale domestic. 1937, Colorado Fuel & Iron still took more—7,817,000-plus M.c.f. as against 6,777,000 M.c.f. of resale.

1938, they are just about comparable.

1939, Colorado Fuel & Iron took 8,241,000 M.c.f. as against 7,020,000 M.c.f. for resale domestic.

In the light of that history, those facts, Mr. Rhodes, you still persist in saying that the resale gas is the primary business of the Denver line?

That is what I want to know. I don't want to know any abstract theories. Is that a fact?

A. As related to the facts that you have cited, they have little or nothing to do with what is the primary business and what is the secondary business.

Q. They have little or nothing to do with the costs to the companies?

A. The costs are not—talking about the project as a whole, now—the costs aren't affected very much by the annual volumes of business.

Q. Not by the monthly volumes of business?

A. They are fixed primarily by the costs incurred on the maximum day—the capacity to handle gas on the maximum day dominates, by a very large percentage the cost of doing business in the natural gas business.

Q. All right, we will get back *fo* 1928 again. How many compressor units did you start out with?

A. I don't recall what was operating in that year, but —I don't recall the dates of starting the compressor units, but I think I may have something here.

Q. What I want to know is what you allocated to resale and what you said wasn't allocable to resale gas.

Mr. Dougherty: To compressor stations?

Mr. Lange: Yes.

Mr. Dougherty: Don't you have a sheet that shows that, Mr. Rhodes?

The Witness: The year 1928 is just a part of the year —it is the getting started—and all apportionments for that portion of the year were based on the peak loads that occurred in the winter of 1928 and 1929.

Now, on compressor stations the apportionment of compressor stations for the year 1929—that is, for the winter of 1929-1930, which I considered as applicable in the partial year 1928—

Mr. Dougherty: (Interposing) Is that statement 12, Mr. Rhodes—is that the one?

The Witness: Statement No. 12 shows the Canadian River Gas Company's Bivins Station on the first page, and shows that for 1929 and 1930, 68.2 per cent of the cost of that station was apportioned to the resale business.

Now, in the year 1929 and 1930 there was no station operating on Colorado Interstate's portion of the line, so the Bivins Station was the only station apportioned.

By Mr. Lange:

Q. In 1928?

A. Well, on the basis of the winter of 1929 and 1930, which was the only basis of apportioning the 1928 cost.

Q. So the Bivins was the only one operating?

A. That is right.

Q. What would you do with the Bivins Station there? You would allocate that under your method in 316 entirely to resale, winter of 1929?

A. No, sir. Only 68.2 percent of the cost was apportioned.

Q. But you state in your exhibit 316 the first unit is allocable to resale?

A. That is right.

Q. Well that was the only unit?

A. Oh, no, there were 3 units in the station.

Q. 3 units in the station?

A. Yes.

Q. Then you have allocated the first entirely to resale gas?

A. That is right.

Q. And the others to apportionment between resale and industrial?

A. Apportioned them between resale and direct sale, after giving due allowance for the use of the first capacity by the resale business. In that winter, based on the peak obligations, 57.5 percent of the capacity in horse power would be required by the resale business as compared with the direct sale business, and I have allocated 68.2 percent of the cost to the resale business, thru this apportioning of the base unit, which is the most expensive unit in any station, to the primary business.

Q. Now you are reading from what statement?

A. I am reading from page 1 of statement number 12.

Q. Now, then, what I want to know is how you arrived at those percentages at this time, for the year 1929 and 1930?

A. How I arrived at them?

Q. Yes. How you arrived at them at this time and related them back to 1929 and 30?

A. Well, the 57½ percent of the power is the ratio of the resale gas, peak load obligations during that winter, to the sum of the peak load obligations of both resale and direct sale gas.

Q. How did you know what the peak load obligations were during that winter?

A. Why, from the records of the company's loads.

Q. For the winter 1929?

A. For the year 1929-30, yes.

Q. When did you finally determine your peak day for each one of those years or each one of those winters?

A. Well, these figures were made out last winter.

Q. Last winter?

A. In Denver.

Q. You determined what the peak capacity of the system was at that time?

A. Well, for the purpose of this exhibit, yes.

Q. And then related it back?

A. Yes.

Q. So, in the winter of 1929 and 30, when Colorado Fuel and Iron was taking 8,191,000-plus M.c.f. as against 3,662,000 M.c.f. for resale domestic, your percentages as set forth on statement 12, page 1, would be the ones that would obtain correctly?

A. Those are the—57½ percent as the true ratio of the peak load for that particular winter and the 68.2 percent apportionment to resale gas gives due effect to the resale gas prior right and in fact sole right to the base unit in the plant.

Q. And what portion of this 8,191,000 M.c.f., that Colorado Fuel and Iron purchased in 1929 was subject to being reduced or cut back?

A. There were no curtailments in those early days. The least capacity that could be provided, having in mind the future domestic requirements was ample in those days to take care of all business.

Q. It couldn't have cut back beyond a certain percentage or curtailed in any way, could it, under the contract with Colorado Fuel and Iron?

A. I don't recall the terms of the contract but I do know—

Q. Do you know what the provisions of that contract were?

A. —but I do know as a matter of fact, that at that time the metallurgical processes were equipped to burn oil, which they had been burning before natural gas was available, and had there been a line break it would have been possible to cut back the steel mill in Pueblo.

Q. Yes, but you know from the very inception Colorado Fuel and Iron agreement provided that a certain portion of its take, applicable for certain particular uses, was to be uninterrupted?

A. I don't recall the exact phraseology of the contract in that respect. I am just stating the facts that it could have been interrupted without any serious difficulty had it been necessary.

Q. I am just asking you, though, whether it isn't a fact that the contract with Colorado Fuel and Iron has such a provision?

A. The contract is a matter of record in this case.

Q. Yes?

A. And I think it will speak for itself.

Q. You gave no consideration to that provision in proceeding in your exhibit 316?

A. No, I considered only the facts that the domestic gas would get the break—

Q. You are still speaking in the abstract, giving not even lip service to what the company's history and actual contracts are, are you?

A. I am basing this on the customs of the business.

Q. Oh, the customs. Now, that is what we are getting at.

A. And the well known and the accepted prior right of the domestic and small industrial business that is universally recognized in the natural gas business.

Q. That is what I thought, that it is purely an abstract approach with no definite relation to what the actual facts were in the history of this line.

A. It is based wholly on the facts of the history of this line.

Q. You just stated it was not.

A. The figures as to apportionment are based on the facts.

Q. You just stated that you gave no consideration whatsoever to that particular clause in C. F. & I. direct sale contract that prohibits the interruption of a certain portion of its load.

A. As I have stated before, I don't recall the contract, and this division as between the primary business, based on priority, and the secondary business, based on secondary priority, is based on the customs of the business.

Q. That is right.

A. Now, in designing this line, the design of which I checked before it was built, just about—in fact, the least capacity that could be provided to take care of the domestic obligations in the future years, the smallest line that you could reasonably expect to build, had ample capacity in the line so that the business to the C. F. & I. need not be interrupted.

It had to be provided and it is provided at practically no cost.

Q. All right, and, as the business of the line increased, the load increased, that same clause remained in the C. F. & I. contract, didn't it?

A. I don't recall the contract, but I do know from investigations, as to what was being done with respect to shutting off loads, that the C. F. & I. rather preferred to have shut off this business that the contract, as you state, says it is not to be shut off, they preferred to have that business shut off rather than some other use.

Q. Regardless of what they may have preferred or said, we are speaking of costs now. That you are relating two different classes of businesses, aren't you? You are relating costs to Colorado and Interstate and Canadian River, to two distinct classes of business?

A. No, I am apportioning costs. The costs have been separately determined in other exhibits. This is an apportionment of costs.

Q. Of those costs?

A. Yes.

Q. You are apportioning them between what you term one is primary business and the other is secondary business?

A. That is right. The prime cost of the business with the first right in the line and the remainder of the costs to the business with the second right in the line.

Q. Now, speaking in the abstract, supposing that these so-called priorities that you say are prevalent in the operation of a natural gas transmission line, if such a priority, as for the sake of example, had never been exercised in the operation of a line, you would still say that that apportionment of costs would be allocable regardless of whether the priority had been exercised or not?

A. Yes.

Q. In other words, you would read the priority provision, putting it in a homely way, without listening to what actually occurred?

A. No, I wouldn't do anything of the kind.

Q. Well, that is exactly what you have done here.

A. No, I haven't. The gas business and the long distance transmission of natural gas could only have been developed on a basis of assigning secondary or increment costs to the increment business.

Every market for natural gas that has existed has included consumers to whom the gas was worth, in some instances, a very low price, competing with the cheapest form of fuel that is useful—for instance, in steam making all through higher and higher values of gas to the consumer up to the point where, to the domestic consumer, the gas was worth the most.

Now, in laying out a line and studying the market, if you start in with a line to supply the market to whom the gas is worth the most, namely, the domestic consumers, it costs so much to supply that market that it is generally not considered to be a satisfactory project.

In broadening your market to take on additional classes of business at a lower value to the consumer, and as you go down in the scale, you will finally reach a point of having sufficient volume of business so that the project can be supported, getting from the consumers to whom the gas was worth the least practically all the gas was worth, making it necessary then to charge for the domestic gas very much less than the gas could possibly be sold for if you didn't follow that practice.

In other words, the charging in the minds of the promoters of the project of the increment cost to the low class of business, which has secondary right in the line, is the thing which has made these big, long natural gas projects feasible.

It could never have been done on any other basis.

Q. Can you show me anything on this 1928—this exhibit 1, where the preliminary negotiations were had, or your Exhibit 43, where the facts are actually set up as to what has transpired since then, that there was any mention of this theory that you have just related there in the abstract fashion?

A. Well, it isn't a matter of theory. The facts surrounding that principle that I have outlined was so well

known in the business that there was no occasion to write them down in contracts any more than it is necessary to write down the multiplication table when you do some figuring. They were well accepted principles and had it been necessary for some reason or other to sell all gas for the same price per Mcf on some theory that the cost was the same, you never would sell gas to a consumer like the C. F. & I. They couldn't pay the cost.

Q. You still maintain that all of this abstract statement you have just made has a definite relation to cost and I can't relate it to cost?

A. To what statement are you referring?

Q. What has been done in the industry and why gas has been able to be transported over long distances to domestic users and so forth and so on, wherein does that have any relation to costs of Colorado Interstate and Canadian River Gas Company?

A. It reflects the cause of cost in the order in which it would be incurred.

Now, it is a well known fact that to supply a certain market that is going to cost $10,000,000 in a pipeline, if it costs that amount of money to supply that market, you have a measure of the price you would have to charge in supplying that market to support the project.

Now, double that market in peak load, Mcf per day on the one day in the year could be provided for less than $5,000,000 more.

Now, that second block of gas only cost $5,000,000, where the first gas cost $10,000,000. It cost half as much per unit of the second block of gas by extending the market as it cost for the first block of gas.

Now, that is no abstract theory; that is a fact; and those facts in their general relation have been well known in the natural gas industry for a good many years.

Q. The fact still remains in your example that the total cost would have been $15,000,000?

A. The total cost was about $1,000,000 less than that, as I remember, if you eliminate the market for the direct sale gas.

It cost almost as much to supply the retail market alone

as to supply the whole market and that is shown on these other exhibits based on my description of Denver line for resale gas alone.

Q. Aren't you definitely confusing value of gas to somebody with cost of gas to Colorado Interstate and Canadian River?

A. No, I have very clearly in mind the elements of value. Of course, you can't sell gas to a large consumer like C. F. & I. for more than the gas is worth.

Q. I suppose they know what they are paying for and you have got your Mcf that you sold them. I still want to know what relation that would have to cost to Colorado Interstate.

A. Costs in the gas business, as I have stated many times to you, can only be determined by apportionment and if you try to apportion your costs of gas on a basis of so many Mcf per year, you just can't sell the gas if you are going to sell it at a profit—you can't sell it.

Then you would be trying to sell gas to some consumers for far less than it will cost because you wouldn't be able to sell it to the other consumers, and if you start out on the basis—suppose you start out on the basis and you figure a project and your cost is 10 cents per 1000 cubic feet on the average and let us assume it is only worth 5 cents per thousand cubic feet to part of the fellows that you thought you were going to sell it for 10, and you don't sell it to them, then you sell it to the rest of the people for 10 and when you get through, instead of its costing you 10 cents a thousand, it is costing you 15 or 20 cents a thousand. The whole marketing of natural gas is predicated on that fact that you can add capacity for a fraction of the cost of the base capacity and thus make money out of increment business and cut down the cost and the prices of the gas to the consumers to whom it is worth the most.

Q. All right. Where does primary business end and increment business begin?

A. Well, the primary business extends to the business which has the first call on the gas in the line and that is the end of it, and the gas which has the second call on the gas in the line is increment business and if you have three classes of call on the line, you could have still a second

degree of increment business, and that exists in the gas business.

Q. All right.

What character of load was this primary load that domestic resale had on the Denver line when they started out?

A. The load at the start was small, but the business in the territory was such that it would have been necessary to build a twenty-inch line if nothing else was considered except the domestic business.

It doesn't make any difference what the load was.

In 1928, costs were occasioned by what the load was going to be.

Q. Do I get it definitely and unequivocally from you, that, in your opinion, the Colorado Fuel & Iron load in 1928 and for all the following years is an increment load?

A. It is an increment business which can be assigned and can be assigned only the increment costs.

Q. And it was that from its very inception?

A. Yes, it is something inherent in the nature of the business.

Sometimes that class of business in the early days of the development of project is referred to as surplus gas and the Commission, itself—representatives of the Commission, itself, have adopted the principle in certain exhibits they have presented of charging to the domestic business the primary cost to the line.

Q. I object to that. Is there anything in this case to that effect?

A. I am just stating it as a fact that I know.

Q. Is there anything in this proceeding to that effect?

A. To the effect that that has been done?

Q. Yes, in this case.

A. No Commission representative in this case has done it, no.

Mr. Lange: Then I want it *striken* from the record. Whatever may have been done in other proceedings that we are not trying—we are trying the Canadian River In-

terstate in this proceeding. I don't think it has any relevancy or bearing here.

Trial Examiner: I don't think it will do any harm.

By Mr. Lange:

Q. It is your position, definitely, then, that from the very outset of the Denver line, Colorado Fuel & Iron Company load was incremental load?

A. Yes, it was an incremental load that could be charged only with the incremental costs of doing business.

Q. Regardless of what the purpose was in the construction of the line and the very genesis of the building of the line?

A. That was the purpose and that was the consideration of that load in building the line; namely, that it was a business at which the gas must be sold at a price that would enable it to bear only the increment costs of doing business.

Q. That is written into the picture in Exhibit 316 by you?

A. Those were the basic facts back of the carrying out of the project.

Q. And, throughout your Exhibit 316, as you proceed, right on the second page, you again speak of the fact that direct sale gas is the secondary business. You first spoke of resale gas being the primary business on page 1 and then you again label the direct sale gas as the secondary business of the Denver line on page 2.

A. Yes.

Q. And that direct sale gas, of course, includes Colorado Fuel & Iron Company loads from its very inception?

A. Yes.

Q. As well as other direct sales?

A. Yes.

Q. And you proceed on those two basic assumptions in setting up your apportionment factor?

A. Well, they are not assumptions. They are facts, as I have defined it, and I state here on page 2—I said, "It is appropriate that the firm resale gas with its dominant priority in the line should pay the base or underlying costs and that the direct sale gas and resale special industrial gas should bear the added or increment cost necessary to its supply."

Q. What other load could have come on later as being an incremental load other than direct sale?

A. Well, in a way, the Colorado & Wyoming load was an incremental load, in that, at the initial inception of the project, that market was not taken into consideration.

Q. So that is an incremental load, too?

A. Yes.

Q. Although a large part of that is resale gas?

A. Yes, and if I recall correctly, the contract definitely makes it subordinate in character to the other resale gas.

Q. Well, according to your interpretation, though, regardless of what the contracts may say, it is the basic theory in the industry that resale gas is the one upon which the primary costs are to be fixed, and direct sales are secondary?

A. Well, those terms aren't necessarily universal in the industry. It is the domestic and small industrial gas which is the gas with the dominant priority, and it is the large industrial gas, however it may be sold, that is of the secondary priority.

Q. Well, in what respect do you draw a distinction there?

A. Why, the distinction there is that large industrial consumers can supply themselves with other fuel on short notice and get off the line, whereas domestic consumers and small industrial consumers generally are dependent solely upon the line for their fuel supply when they once become connected.

Q. Well, you are then relating factors of cost to elements that are clearly within the control of the operating company, aren't you?

A. Well, I am relating elements of cost to their cause. Business which can be shut off doesn't cause costs to the same extent as business which can't be cut off.

Q. All right.

The company has it within its control to determine what additional compressor units are necessary to take care of the line's requirements, hasn't it? You can determine whether you need an additional compressor unit; then you determine to what class that cost is applicable, don't you?

A. Why, the additional compressor unit on the basis I

have used here, apportioned as between the two classes of business, practically pro rata with their use of the compressor station.

Q. Yes, but you don't start off with that kind of allocation. You charge the first unit directly to the resale alone regardless of the volume that that unit may take care of?

A. Yes, that is right, because that unit is required to supply the firm demand for gas.

Q. All right.

I want to know right there how under the sun, you can determine the cost element applicable to that first unit when both resale and direct sale gas are being pumped through?

A. You don't determine the costs; you apportion the costs on a fair basis, which I have done.

Q. Purely a matter of judgment?

A. Largely a matter of judgment, because jointly used property does not show distinct and separate costs for the different uses to which it is put.

These over-all costs must be apportioned and they must be apportioned with due regard to the facts.

Q. All right.

Speaking of various characters of incremental loads, then I suppose this house heating load that came on in later years would be an incremental load, too?

A. The house heating load is a part of the business that it is expected to get when a project such as this is worked out.

Had this market been entirely devoid of any possibilities for house heating load, then the domestic sales would have been very much less and it is questionable if the project would have been worth while.

Now, the actual incremental costs of the house heating load, the low costs of incremental business, are really the only things that make it possible to supply the house heating load at the city gate.

If the project were built for the cooking and water heating load, with its very high load factor, the line would be so small that it would make the costs prohibitive.

Now, the house heating load has a very poor load factor —oh, about 25 per cent or therabouts as compared with 80 per cent for the other.

Now, a 25 per cent load factor gas, in itself, would be very expensive, but the added capacity of the line is provided so cheaply, over and above that required for the domestic cooking and water heating load, that the true costs of the very poor load factor househeating increment gas are quite in line with the costs of the more favorable load factor cooking and water heating.

Q. Well, there you add a little extra phrase to your definition of incremental costs because, certainly, the house heating load has no priority distinction like the resale has over direct sale, does it?

A. No, but I am not attempting to apportion costs between the two classes of domestic gas. I am merely pointing out the fact that the house heating gas on the basis of the real average cost—because of cost—ought to be sold at a higher price than the other, but due to the very favorable increment costs of increasing the capacity of transmission lines, the house heating gas can be sold at the same city gate price as the other increment gas.

Q. Yes, but you are applying a different approach—rather, you are approaching that problem in a different fashion than you are the incremental cost problem applicable to direct sales?

A. It is a different problem. I am not attempting to apportion the costs as between the two classes of domestic gas.

Q. Then, you are not treating that character of incremental load like you are the direct sale load?

A. I am not treating that segregation at all. I am treating the domestic and small industrial as one individual unit.

Q. In other words, you are segregating the two classes of domestic gas?

A. I am not at all. I am not attempting to apportion the costs that fine. If I were going to apportion the costs that fine, I would treat the cooking and water heating as the very first prime business and then the house heating as the next increment and then the small industrial as another in-

crement and the big industrial as the last increment, each one of these getting the advantage of the increment costs with the added business and, if that were done, why, it would show the cost of gas to these small—for house—for cooking and water heating, would be rather a great deal more than anybody would be willing to pay for them.

Q. Well that just goes to show the question I asked you a while ago: Where does the primary load end and the incremental load begin if it can just be moved backwards and forward in the construction of an exhibit like this at will?

A. Not for this kind of exhibit. I have definitely two classes of gas that have been defined by somebody else, and it is my mission to apportion the cost between those two classes of gas, which I have done.

The natural division between primary business and secondary business, however, is that division where it becomes possible to shut off the load. Take, for instance, a certain business, which the real primary business is that which cannot be shut off when a project is once built. The secondary business is business over and above that which can be shut off, either under contract provisions or because the consumer is in a position to take care of himself without difficulty.

Q. So, in so far as any other incremental loads are concerned, particularly as the example that we have just had of house heating load, that is an incremental load that you don't attempt to treat in this exhibit at all?

A. I am taking it into account, but I am not treating it separately. I am not attempting to segregate costs, as between all the different classes of business.

Q. So an incremental load can get into the picture in the absence of any priority affecting it?

A. Well, when a project is being designed, yes, you design it to take care of the different increments of load as I have described, starting in with the first most valuable gas and taking on increments of less and less valuable gas until you have worked out a project which is a worked out project.

Q. But always coming back to the fact that the construction of the Denver line, the very history of the genesis of the line as well as its operation, definitely show that it was intended for joint use, both domestic and direct sale.

A. The line was laid out for a primary business of domestic and small industrial gas, and an increment or secondary business of special industrial gas that went to the limits to which this particular project has gone, namely, selling gas for a minimum of around ten cents.

Q. That is your interpretation of what the purpose of building of this line was?

A. It is my interpretation of the principles under which the line was designed and upon which the design of the line was checked by me.

Q. I still want to know what relation that would have to cost by these two companies, of delivering that gas to various destinations.

A. Well, I think I have explained that. The costs without the increment business would be the cost shown by the exhibits based on the Denver line for resale gas alone. Those were the costs without the increment business, and the costs with the increment business as shown by the rate statements, for the project as a whole. Now, those are costs. This is an apportionment of costs that goes beyond that.

Q. That is true, but you have taken it upon yourself to set out the bases of those two apportionments, and you further take it upon yourself to fix the points at which those two bases are to be set. You show to what extent primary gas is to form one basis and secondary gas the other basis, don't you?

A. In a way, but as I pointed out, my division is the division as between that gas which can't be interrupted and that gas which can.

Q. And although house heating load or any other load that may be attached later and is not subject to any interruption, it is still in the class of incremental load?

A. It is incremental as compared with cooking and water heating, but it is not incremental as compared with the large industrial consumer.

Q. Where, other than has been shown in this record as to the history of the construction of this line and its purpose, is that in the record, that you have just stated, with reference to the character of treatment you have given resale gas as distinguished from direct sale in apportioning costs.

A. I think that question is a little confused. I wish you would rephrase it.

Q. Where in this record is there an apportionment indicated between resale gas and direct sale gas, to bear out the theory you have followed here.

A. The costs, not apportioned, but actual costs, are in the record in exhibits which resulted from my determination of the line for resale gas alone, and the cost incurred in connection with that line, and actually incurred in connection with the line as actually built. Those are costs, and they are very definitely on a true increment basis.

Now this is the first exhibit in the record which is attempting to go beyond that and which is apportioning the cost on the so-called increment theory.

Q. You have a chart that you set up on page 19 of this exhibit that I would like to have you explain, as to the relative capacity of pipe lines. I suppose you employ the Weymouth formula?

A. Yes, that is a graphic representation of the Weymouth formula, showing the relation between diameter and capacity of the pipe line.

Q. You really have a portion of two different charts on that page 19, haven't you?

A. No, it is the same line, split for ready reference. The lower line takes care of diameters up to 60% only, whereas the upper line takes care of diameters from 60 per cent to 120%, so that the chart may be used either way for an increased capacity or a decreased capacity.

Q. I notice your horizontal scale is zero to 60 and then 60 to 120.

A. Yes, that is the same both above and below.

Q. That is the same both above and below. Now why don't you have the same vertical scale? You employ a different vertical scale to the right than you do to the left?

A. Well, that is to make the chart more useful, more accurately readable.

Q. More accurately readable?

A. Yes.

Q. Suppose this were all projected in one, you would have a different curve, wouldn't you? You would have a uniform scale vertically?

A. As far as the figures are concerned, the figures would be identical, but the shape to look at would be different. The figures taken from the curve would be identical if you could read it.

Q. What is the purpose of the curve if it could be projected in a different fashion?

A. This curve was divided into two parts to facilitate its use.

Mr. Dougherty: So you could get it on one sheet of paper?

A. Yes, so I could get it on one sheet. I could have drawn the thing on a great big scale, so the lower parts related to, say, 20% diameter, would be readable with a reasonable degree of accuracy. It is purely a matter of convenience. There are a dozen different ways that this curve could be drawn.

By Mr. Lange:

Q. You can relate the two together although your vertical scale is different?

A. Yes, the two curves are mathematically identical, one of them relating to from 0 to 60% diameter, the other from 60 to 120. The same identical curve.

By Mr. Dougherty:

Q. If you took that top part and cut it off and then moved it over to the right so that the vertical scale is to be coterminous, then you would have a complete curve, wouldn't you?

A. Yes, but it would be a broken curve.

Q. That is right.

A. If the lower curve were plotted to be on exactly the same scale as the upper curve, then the right-hand end of the low curve would be down at the same level as the left-hand end of the upper curve, and it would be less easy to read it accurately.

By Mr. Lange:

Q. Now, on page 28, where you speak of the apportionment of gas line and de-sulphurizing plant, is my inter-

pretation correct that you have apportioned the entire cost of de-sulphurizing plants to the Denver line—resale gas on the Denver line?

A. No, the gas line and the desulphurizing plants are apportioned pro rata with the maximum monthly requirements.

Q. But you have allocated them entirely to the Denver line?

A. Yes.

Q. Now, is no part or portion of them allocable to any other load?

A. No, as the gas line plant is physically a part of the Denver line, and the proposed location of the de-sulphurizing plant is to deliver gas into the Bivins station.

Q. Then, in your opinion, no portion at all of that could be allocable to any other delivery.

A. Not as it is proposed to install it.

Q. And the apportionment of the telephone system, that is entirely apportioned to the Denver line, too, isn't it, page 30?

A. Yes.

Q. And you recall testimony in this proceeding, that shows the use made of that system, not only—or rather, not confined to the Denver line alone, isn't that true?

A. It is very difficult to differentiate between the uses there solely for the Denver line and the other uses. It is so closely related to the operation of the Denver line, however, that it seems appropriate to consider it all as chargeable to the Denver line.

Q. And on page 35, gas purchase agreement with Canadian River Gas Company, you allocated that entirely to the Denver line?

A. No, it is apportioned as between the Denver line and the Chicago.

Q. On what basis is that apportionment?

A. Pro rata with the total volumes of gas delivered and expected to be delivered through the initial contract period.

Q. Now, is there anything in this record, Mr. Rhodes, that—any document or any agreement or letter or any memorandum of any character—that would indicate that

this line was constructed for the purpose of being the primary one for resale gas?

A. I think I have stated it quite a number of times, both today and in previous testimony which I have given.

Trial Examiner: Mr. Lange, I believe he has made it quite clear on that.

Mr. Lange: I want to be certain that there weren't any inferences of any nature that we haven't touched upon that. I wanted to be sure. I believe that is all for the present.

Trial Examiner: Any redirect?

Redirect Examination.

By Mr. Dougherty:

Mr. Rhodes, I wanted to call your attention to a provision of exhibit one, which is the original memorandum of stipulations entered into between Southwestern Development, Cities Service Company, and Standard Oil Company, wherein reference is made to the contracts that are to be made between pipeline companies and distributing companies.

I am reading from page 15 of that exhibit, paragraph "e" as follows: 'In any of said contracts, it is to be stipulated that the demands of domestic consumers upon the supply of natural gas are to be preferred over service to industrial consumers, and that the remainder may be pro rated after demands of domestic consumers, among commercial and industrial consumers, but that such domestic preference should not be exercised so as to deprive Colorado Fuel & Iron Company of the volume of gas needed to complete open hearth heats then in jeopardy, and to keep its furnaces warm during extreme domestic demand upon the pipelines of the Colorado Company, or so to deprive any other industrial consumer which requires a small proportion of its normal gas demand to prevent damage to its appliances."

Now, does that recognize that the demands of domestic consumers, as the line was originally conceived, were to have prior rights except for these emergencies just referred to for certain industrial uses?

Mr. Lange: (interposing) That paragraph speaks for itself, Mr. Examiner. I object to this witness reading into that—

Mr. Dougherty: You asked him, Mr. Lange, if he knew of anything in the record that showed that domestic gas—

Mr. Lange: (interposing) That is true—

Mr. Dougherty: (Continuing) —was the basic or prior gas and I am asking him now if this doesn't do that.

Mr. Lange: That would be purely an interpretation.

Mr. Dougherty: That is what you asked him for.

Mr. Lange: I wanted him to find out whether there is one.

Trial Examiner: Supposing you let the Examiner determine that, Mr. Dougherty?

Mr. Lange: Besides, the witness said he paid no attention to what Colorado Fuel & Iron—

Mr. Dougherty: There is no contention on your part that incremental business is not as necessary to its financial success as the domestic business, is there?

A. I believe it is essential.

Q. In other words, secondary business is just as important as primary business.

A. Yes, from the standpoint of earnings.

Q. When you cannot do without both of them, of course, you cannot do without either?

A. That is correct.

Q. And when you discuss the phrase, "primary business," you are not making any assumption that that business, so called, would, in and of itself, support the pipeline —primary business?

A. No, I am not.

Q. Now, in making this apportionment of costs, you make a reference in your statement on page 3, in the second paragraph, as follows: "The causes which affect costs in the gas business are, either directly or indirectly, related to rates of delivery," and then you go on to discuss questions of maximum rates, *hether* they be maximum

monthly rates or maximum daily rates, or maximum daily obligations.

Now, have you, in this apportionment study, made any apportionment to the primary business, that is, the resale firm business, on this incremental basis, except where the use of the property by the resale business was of such a character as constituted a prior or primary utilization of it? For example in the question of gas leaseholds?

A. Yes. Well, I have apportioned those costs related to the production and gathering of gas as between the primary and secondary business, as though they had equal rights, except that I have rather favored the primary business by using the maximum month instead of the maximum daily obligations.

Q. Now, what I wanted to get at was this, that when you utilized your difference between primary and secondary gas, it is only when the primary gas has a prior right of use of the line that you follow that principle?

A. That is right.

Q. Now, with respect to leaseholds themselves, you there say that you are apportioning those between the Chicago and the Denver Line entirely on the basis of aggregate volumes of gas marketed?

A. And expected to be marketed.

Q. And expected to be?

A. Yes.

Q. And there you have disregarded any priority that the Denver Line may have over Chicago?

A. That is right.

Q. When, however, you get to the question of the utilization of leases—that is, that portion of the leases that have been allocated or apportioned to the Denver Line, do you use the monthly maximum basis there?

A. Yes, a monthly maximum basis is used throughout for apportioning those production costs, which are controlled by peak loads.

Q. Now, when you were discussing the pipe line itself, there you are talking about daily maximum obligations, are you not?

A. That is right.

Q. That is, it is the peak use or peak, or right of peak use of the line which you think should be charged against the resale gas?

A. That is true.

Q. And if that right did not exist, and if that use might never take place, or if you were sure the use definitely wouldn't take place then you might follow some other principle?

A. I might, depending on circumstances.

Q. If all classes of gas were to be curtailed alike, and pro rata, to the volumes that they take, then you wouldn't use this same principle for apportioning pipeline costs?

A. No. I would use the principle that I used as apportioning the costs of Canadian River's portion of the line, as between its own gas sold for resale and the gas which goes to Colorado Interstate for resale.

Namely, those costs are apportioned pro rata with the peak load obligations, directly.

Q. So the basis of your determination of what percentage of a certain pipeline should be charged against the resale business is on the basis of right to use?

A. That is the fundamental basis of those things which are integrals, like a pipeline.

Q. When you use January 1940 as the peak month and took the peak day of that month, that gave you the actual capacity that was used by the resale gas?

A. That is right.

Q. And you used that as one of the basic factors in determining then what percentage of the transmission line ought to be charged against that business?

A. Yes, that is a starting point.

Q. Yes, that is what I mean. The result of applying your principles of apportionment would over all give place to a greater portion of the costs against the direct sale gas than would be placed against them as the result of using your computed costs on that 20 inch line basis?

A. Yes. A much greater portion.

Q. Or I should say that the amount of cost chargeable against the resale gas, as a result of this apportionment method, are less than actually were computed by you in those exhibits relating to the Denver Line for resale gas only?

A. That is right.

Mr. Dougherty: That is all.

Recross Examination.

By Mr. Lange:

Q. Just one question. That peak day that you used in January 1940, you used that figure for the one day in January, you utilized that one day in January to compute your figures, didn't you?

A. No. I explained in connection with my exhibit on peak load obligations, how these ratios were determined. They were based on a study of the conditions throughout the winter months as compared with the summer months.

As it happened, on that particular day, the ratio of use is closely in line with that which I determined by considering the over-all obligations during the winter months.

Q. Yes, but you didn't take the whole month of January as a basis of comparison, did you?

A. It isn't the month of January that occasions the costs. It is the one day when the line is loaded to the limit.

Q. That is the one day that you used?

A. In effect, yes.

Q. You paid no—

A. (Interposing) That is, for that particular season.

Q. And you gave no consideration to the use of the load that went to direct sales as compared with the *laod* that went to the resales during each of the months of the year?

A. No, I didn't consider them, because they do not contribute to the cost. They were taken into account, however, in determining and apportioning those parts of the cost, which arise from volume as distinguised from capacity.

(Vol. CII—(1), pp. 15886-15948.)

35-A. Commission's Method of "Allocation of Cost of Service".

	Name of Customer (1)	Point of Service (2)	At Well Head (3)	Gathering (4)	Treating & Refining (5)	Volumetric Costs (6)	Dom. Com'l & Lost Gas (7)	Industrial (8)	Distribution (9)	Total Cost (10)	Revenue (11)
1	TRANSMISSION SALES										
2	Direct Industrial Sales										
3	Colorado Fuel & Iron Corp.	Pueblo, Colo.									
4	American Crystal Sugar Co.	Rocky Ford, Colo.	211,841.03	38,334.04	(15,799.86)	299,060.80	---	496,795.84	14,615.92	1,047,887.87	1,877,089.76
5	A. T. & S. Fe R.R.	LaJunta, Colo.									
6	Colo. Portland Cement Co.	Portland, Colo.									
7	The Girdler Corp.	Thatcher, Colo.									
8	Total Direct Industrial Sales										
9	Sales to Public Authorities										
10	U.S. Dept. of Interior	Thatcher, Colo.	[illegible]21	2.84	(1.21)	22.98	57.34	-	1,274.74	1,373.04	460.40
11	Veteran's Administration	Ft. Lyon, Colo.	[illegible]27	839.74	(345.65)	6,842.28	14,592.25	-	1,799.37	23,064.23	43,876.64
12	Total Sales to Public Authorities		4,672.88	842.58	(346.86)	6,865.17	14,649.59	-	3,074.11	24,437.27	44,317.04
13	Sales to Other Gas Utilities										
14	Ark. Valley Nat. Gas Co.	Ft. Lyon, Colo.	21.72	3.82	(1.61)	30.61	71.67	-	-	126.21	377.70
15		Ftn.Val., Colo.	341.74	61.[illegible]	(25.37)	480.15	-	1,040.93	1,347.62	3,246.70	3,187.12
16		Fowler, Colo.	161.80	29.18	(12.01)	227.34	444.36	63.73	1,223.78	2,138.15	3,126.67
17		Las Animas, Colo.	545.60	98.40	(40.50)	766.60	2,064.13	106.22	1,821.23	5,351.68	9,788.92
18		Manzanola, Colo	53.86	9.71	(4.00)	75.68	114.67	-	1,209.17	1,459.09	1,002.79
19		Ordway, Colo.	199.15	35.92	(14.78)	279.81	329.69	393.00	1,289.33	2,512.12	3,179.88
20		Sugar City, Colo.	17.19	3.10	(1.28)	24.16	71.67	-	1,129.03	1,243.86	300.14
21		Adjustments	-	-	-	-	-	-	801.14	801.14	(551.46)
22	Total Ark. Valley Nat. Gas Co.		1,341.06	241.86	(99.55)	1,884.24	3,096.19	1,603.88	8,821.27	16,888.85	20,350.64
23	Citizen's Utilities Co.	LaJunta, Colo.	1,805.46	325.61	(134.03)	2,536.75	3,841.57	1,614.50	4,393.14	14,383.00	29,959.69
24		Hy.Ford, Colo.	1,169.77	210.98	(86.84)	1,643.58	4,328.94	828.49	3,555.21	11,650.11	20,073.74
25		Adjustments	-	-	-	-	-	-	-	-	437.25
26	Total Citizen's Utilities Co.		2,975.23	536.57	(220.87)	4,180.33	8,170.51	2,443.99	7,948.35	26,033.12	50,470.68
27	City of Colorado Springs	Colo.Spgs., Colo.	17,696.75	3,191.54	(1,313.69)	24,854.69	30,947.61	15,892.68	5,842.98	96,822.55	212,957.45
28	Colorado Wyoming Gas Co.	Arapahoe, Colo.	62,964.33	11,356.37	(4,674.04)	88,467.59	106,632.03	91,134.33	1,672.24	357,651.85	496,460.81
29	Pueblo Gas & Fuel Co.	Pueblo, Colo.	9,946.24	1,793.77	(738.34)	13,974.90	22,834.44	8,691.68	11,693.91	68,196.60	157,572.31
30	Pub. Serv. Co. of Colo.	Aurora, Colo.	802.89	108.73	(44.75)	847.08	1,906.46	-	1,748.37	[illegible]68.77	11,205.78
31		Denver, Colo.	136,063.56	24,538.53	(10,100.43)	191,175.16	392,328.01	99,334.30	24,919.04	858,258.17	2,023,077.31
32		Englewood	1,818.24	327.91	(134.97)	2,554.71	6,966.44	-	2,575.00	13,907.33	33,472.46
33		Fitzsms. Hosp.	6,844.72	1,234.42	(508.10)	9,617.12	1,791.78	18,163.14	2,112.89	39,256.77	44,563.11
34		Littl'n, Colo.	870.37	102.86	(42.34)	801.40	2,494.16	329.27	1,813.95	6,069.67	9,913.47
35		Sullivan, Colo.	42.44	7.65	(3.15)	59.63	3,640.90	116.84	1,165.46	5,029.77	863.36
36		U.S.Army Air Sch., Denver	91.27	16.46	(6.78)	128.24	-	-	-	229.19	1,845.20
37	Total Pub. Serv. Co. of Colorado		146,033.49	26,336.56	(10,840.52)	205,183.34	409,127.74	117,943.55	34,134.51	927,918.67	2,124,745.69
38	TOTAL SALES TO OTHER GAS UTILITIES		240,957.10	43,456.67	(17,887.21)	339,586.09	580,708.62	235,409.11	70,313.23	1,491,611.71	3,061,577.68
39	Sales to Associated Gas Utilities										
40	Clayton Gas Co.	Clayton, N.M.	2,299.09	414.83	(170.67)	3,250.35	4,787.83	2,697.92	-	13,288.93	24,708.06
41	Amarillo Oil Co. (Special)	Hartley, Tex.	116.94	21.09	(8.68)	164.81	430.03	95.60	-	819.29	833.00
42		Dalhart, Tex.	8,000.89	1,442.87	(593.91)	11,241.17	10,492.66	12,894.78	-	43,478.14	44,238.54
43		Texline, Tex.	202.16	36.46	(15.01)	284.04	873.37	180.57	-	1,561.59	1,873.47
44	Total Associated Gas Utilities		10,618.78	1,915.05	(788.27)	14,919.85	16,583.89	15,868.85	-	59,817.95	71,646.07
45	Interdepartmental Sales										
46	Gas Used in Co. Operations	Compressor Sta.	9,510.80	1,715.23	(706.01)	13,363.08	-	-	-	23,883.10	20,645.49
47		Co. Dwellings	618.35	111.52	(45.90)	868.80	-	-	-	1,552.77	1,269.71
48		Dehydration Plant	74.52	13.44	(5.53)	104.71	-	-	-	187.14	121.26
49	Total Interdepartmental Sales		10,203.67	1,840.19	(757.44)	14,336.59	-	-	-	25,623.01	22,036.45
50	TOTAL TRANSMISSION SALES - DENVER LINE		479,295.16	86,458.63	(35,579.44)	673,427.50	611,441.80	780,073.80	88,002.36	2,883,297.81	4,481,845.95
51	PRODUCTION SYSTEM SALES										
52	Sales to Other Gas Utilities										
53	Nat.Gas Pipeline of America	Fritch Sta., Tex.	486,334.31	82,296.09	(118,508.69)	-	230,607.83*		-	680,631.24	1,376,289.49
54	Sales to Assoc. Gas Utilities										
55	Amarillo Oil Co. (At the Wells)	Contract B	106,381.20	-	(15,056.24)	-	-	-	-	90,324.96	157,889.73
56	(" " ")	Contract C	4.04	-	-	-	-	-	-	4.04	20.17
57	(" " ")	Special, Channing, Tex.	221.55	-	-	-	-	-	-	221.55	332.59
58	Total Assoc. Gas Utilities		106,606.79	-	(15,056.24)	-	-	-	-	90,550.55	158,242.49
59	Interdepartmental Sales										
60	Gas Used in Co. Operations	Compressor Sta.	23.30	4.21	-	-	-	-	-	27.51	37.94
61		Gasoline Plant	7,824.60	1,387.05	-	-	-	-	-	9,211.65	15,506.60
62		Field Operations	2,917.07	526.08	-	-	-	-	-	3,443.15	4,747.72
63		Co. Dwellings	22.11	3.99	-	-	-	-	-	26.10	35.98
64	Total Interdepartmental Sales		10,787.08	1,921.31	-	-	-	-	-	12,708.39	20,328.44
65	TOTAL PRODUCTION SYSTEM SALES		603,728.18	84,189.40	(133,564.93)	-	230,607.83	-	-	783,880.18	1,554,860.42
66	TOTAL TRANSMISSION & PRODUCTION SYSTEM SALES		1,083,023.34	170,648.03	(169,144.37)	673,427.50	842,049.63	780,073.80	88,002.36	3,667,177.99	6,036,706.37

*Rental of Leased Facilities

EXHIBIT

TABLE 1

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TABLE 2

EXHIBIT 229

231

	NAME OF CUSTOMER (1)	LOCATION OF SERVICE (2)	ANNUAL SALES, 1959 Domestic & Commercial (3)	Gas Lost (4)	Industrial (5)	Total (6)	COINCIDENTAL SYSTEM MAXIMUM DAY DELIVERY, THURSDAY, FEB. 9, 1959 Domestic Commercial Gas Lost (7)	Industrial (8)	Total (9)	INDUSTRIAL CUSTOMERS (10)
1	**Transmission Sales**									
2	Direct Industrial Sales									
3	Colorado Fuel & Iron Corp.	Pueblo, Colo.	-	-	7,857,379	7,857,379		30,363	30,363	32,578
4	American Crystal Sugar Co.	Rocky Ford, Colo.	-	-	532,998	532,998		105	105	7,383
5	Atchison, Topeka &									
6	Santa Fe R. R.	La Junta, Colo.	-	-	487,169	487,169		1,522	1,522	1,609
7	Colorado Portland Cement Co.	Portland, Colo.	-	-	1,676,091	1,676,091		2,213	2,213	5,390
8	The Girdler Corp.	Thatcher, Colo.	-	-	-	-		-	-	-
9	TOTAL DIRECT INDUSTRIAL SALES		-	-	9,895,637	9,895,637		34,203	34,203	46,960
10	Sales To Public Authorities									
11	U.S. Dept. of Interior	Thatcher, Colo.	743	-	-	743	4	-	4	-
12	Veterans Administration	Fort Lyon, Colo.	212,065	-	-	212,065	1,018	-	1,018	-
13	TOTAL SALES TO PUBLIC AUTHORITIES		212,808	-	-	212,808	1,022	-	1,022	-
14	Sales To Other Gas Utilities									
15	Arkansas Valley Nat. Gas Co.	Fort Lyon, Colo.	911	78	-	989	5	-	5	-
16		Fountain Valley, Colo.	-	(638)	16,202	15,564		93	93	98
17		Fowler, Colo.	6,685	(896)	980	7,369	31	3	34	6
18		Las Animas, Colo.	25,133	654	882	26,669	144	10	154	10
19		Manzanola, Colo.	2,441	12	-	2,453	8	-	8	-
20		Ordway, Colo.	5,322	(439)	4,187	9,070	23	37	60	37
21		Sugar City, Colo.	731	52	-	783	5	-	5	-
22	TOTAL ARKANSAS VALLEY NAT. GAS CO.		39,223	(391)	22,251	61,077	216	143	359	151
23	Citizens Utilities Co.	La Junta, Colo.	53,575	10,707	17,946	82,228	268	100	368	152
24		Rocky Ford, Colo.	39,632	6,800	6,844	53,276	302	40	342	78
25		Adjustments	2,789	(2,729)	-	-	-	-	-	-
26	TOTAL CITIZENS UTILITIES CO.		95,996	14,778	24,790	135,504	570	140	710	230
27	City of Colorado Springs	Colorado Springs, Colo.	362,414	-	453,567	805,981	2,159	1,447	3,606	1,468
28	Colorado Wyoming Gas Co.		1,130,975	-	1,736,674	2,867,649	7,432	3,902	11,334	8,580
29	Pueblo Gas & Fuel Co.	Pueblo, Colo.	324,386	-	128,605	452,992	1,593	534	2,127	630
30	Public Service Co. of Colo.	Aurora, Colo.	27,458	-	-	27,458	133	-	133	-0
31		Denver, Colo.	4,158,140	-	2,038,742	6,196,882	27,370	8,734	36,104	9,352
32		Englewood, Colo.	82,810	-	-	82,810	486	-	486	-
33		Fitzsimmons Hospital	8,635	-	303,101	311,736	125	1,490	1,615	1,710
34		Littleton, Colo.	22,421	-	3,556	25,977	174	31	205	31
35		Sullivan, Colo.	228	-	1,705	1,933	254	10	264	11
36		U.S. Army Air School,								
37		Denver, Colo.	4,157	-	-	4,157	-	-	-	-
38	TOTAL PUBLIC SERVICE CO. OF COLO.		4,303,849	-	2,347,101	6,650,950	28,502	10,265	38,807	11,104
39	TOTAL SALES TO OTHER GAS UTILITIES		5,861,167		4,712,969	10,974,136	40,512	16,431	56,943	22,165
40	Sales to Associated Gas Utilities									
41	Clayton Gas Co.	Clayton, N.M.	51,154	6,356	47,200	104,710	334	254	588	254
42	Amarillo Oil Co. (Special)	Hartley, Tex.	4,046	375	905	5,326	30	9	39	9
43		Dalhart, Tex.	122,493	4,385	237,503	364,379	732	1,214	1,946	1,214
44		Texline, Tex.	5,974	619	2,614	9,207	40	17	57	17
45	TOTAL ASSOCIATED GAS UTILITIES		183,667	11,735	288,222	483,622	1,136	1,494	2,630	1,494
46	Interdepartmental Sales									
47	Gas Used in Company Operations	Compressor Stations	-	-	433,160	433,160				
48		Company Dwellings	28,162	-	-	28,162				
49		Dehydration Plant	-	-	3,394	3,394				
50	TOTAL INTERDEPARTMENTAL SALES		28,162	-	436,554	464,716	-	-	-	-
51	TOTAL TRANSMISSION SALES (DENVER LINE)		6,697,537		15,131,402	21,828,939	42,670	52,328	94,998	70,617
							44.917%	55.083%	100.000%	
52	Production System Sales									
53	Sales To Other Gas Utilities									
54	Natural Gas Pipeline Of America	Fritch Sta. Tex.				20,783,301				
55	Sales To Associated Gas Utilities									
56	Amarillo Oil Co. (At the Wells)	Contract "B"				4,799,484				
57	" " "	Contract "C"				184				
58	" " "	Special Channing, Tex.				10,090				
59	TOTAL ASSOCIATED GAS UTILITIES					4,809,758				
60	Interdepartmental Sales									
61	Gas Used in Company Operations	Compressor Station				1,061				
62		Gasoline Plant				342,701				
63		Field Operations				132,855				
64		Company Dwellings				1,007				
65	TOTAL INTERDEPARTMENTAL SALES					477,824				
66	TOTAL PRODUCTION SYSTEM SALES					26,070,883				
67	TOTAL TRANSMISSION & PRODUCTION SYSTEM SALES					47,899,822				

* Gas Lost is included in Domestic and Commercial Classification only

		Total (2)
1	**Gas Disbursements**	
2	Total Transmission and Production System Sales	47,899,622
3	Free Gas to Lessors	9,893
4	Leakage and Unaccounted For	(1,126,121)
5	Total Disbursements	46,783,394
6	**Gas Receipts**	
7	Gas Purchased	—
8	Gas Produced	46,783,394
9	Total Receipts	46,783,394

TABLE 3

Exhibit No. 226

2321

TABLE 4

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY EXHIBIT 226

SUMMARY OF COST OF SERVICE

YEAR 1939

	Cost
OPERATING REVENUE DEDUCTIONS	
Operating Expenses	
Natural Gas Production	$321,619.38
Natural Gas Transmission	701,949.17
Natural Gas Distribution	66,737.01
Total Operating Expenses	1,090,305.56
Depreciation	
Natural Gas Production	66,888.96
Natural Gas Transmission	314,888.94
Natural Gas Distribution	5,573.00
Natural Gas General	33,022.20
Gas Plant Held for Future Use (Transmission)	-
Total Depreciation	420,372.10
Depletion	
Natural Gas Production	44,865.27
Taxes	
Federal Income	457,929.15
State of Colorado Income	27,514.12
State of Texas Gross Receipts	34,220.09
Property	236,704.04
Labor	21,437.77
Corporate and Miscellaneous	12,283.63
Total Taxes	790,088.80
Non-Recurring Expenses	267.79
TOTAL OPERATING REVENUE DEDUCTIONS	$2,345,899.52
EXPLORATION AND DEVELOPMENT COSTS	
Delay Rentals	10,401.58
Non-Productive Well Drilling	29,293.73
Abandoned Leases	1,878.18
TOTAL EXPLORATION AND DEVELOPMENT COSTS	$ 41,573.49

Exhibit No. 226

TABLE 4 (Continued)

	Cost
RENT FROM COMPANY DWELLINGS (Transmission Revenues)	(16,913.12)
MISCELLANEOUS GAS ROYALTIES (Production Revenues)	(256.69)
RETURN AT 6% ON NET BOOK COST - ADJUSTED OF GAS PLANT IN SERVICE	
Natural Gas Production	320,426.08
Natural Gas Transmission	671,015.71
Natural Gas Distribution	7,111.69
Natural Gas General	22,413.21
TOTAL RETURN ON PLANT	1,020,966.69
RETURN AT 6% ON WORKING CAPITAL	
Natural Gas Production	8,120.33
Natural Gas Transmission	6,843.55
Natural Gas Distribution	624.32
TOTAL RETURN ON WORKING CAPITAL	15,588.20
TOTAL COST OF SERVICE	$3,406,857.99

Exhibit No. 226

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY

SUMMARY OF COST OF GAS AT WELL HEAD

YEAR 1939

Account (1)			Cost (2)	Percent (3)
Operation:	Gas Wells Labor, Supplies and Expense		$ 8,119.35	.76
	Measuring Stations Labor, Supplies and Expenses		13,993.28	1.32
Maintenance:	Gas Wells Equipment		4,234.88	.40
	Measuring Station Equipment		9,393.76	.88
	Drilling and Cleaning Tools		693.35	.07
Miscellaneous:	Gas Well Royalties		354,718.78	33.70
	General Expenses (Allocated)		101,253.91	9.62
Annual Accrual For:	Depletion and Depreciation of Leaseholds and Gas Well Intangible Costs		44,865.27	4.48
	Depreciation of Gas Well Tangible Costs		20,178.20	1.97
	Depreciation of Drilling and Cleaning Equipment		1,314.81	.11
	Depreciation of Field Measuring Stations		2,493.52	.23
	Proportion of Depreciation of General and Undistributed Plant		6,441.00	.60
Annual Accrual For Federal Income Tax:	Leaseholds and Gas Wells Intangible Costs		93,761.57	8.90
	Gas Well Tangible Costs		16,541.68	1.56
	Drilling and Cleaning Equipment		76.64	.01
	Field Measuring Stations		1,308.39	.12
	Proportion of General and Undistributed Plant		1,799.00	.17
Annual Accrual For Ad Valorem Taxes:	Leaseholds and Gas Well Intangible Costs		25,571.84	2.40
	Gas Well Tangible Costs		4,511.46	.41
	Drilling and Cleaning Equipment		20.90	-
	Field Measuring Stations		356.84	.03
	Proportion of General and Undistributed Plant		512.99	.05
Annual Accrual For:	Texas Gross Receipts Tax		34,220.09	3.24
	Corporate Taxes		2,990.29	.23
	Labor Taxes		6,595.33	.68
Exploration and Development Costs:	Delay Rentals		10,401.58	.98
	Non-Productive Well Drilling		29,293.73	2.77
	Abandoned Leases		1,878.18	.17
Return on:	Leaseholds and Gas Well Intangible Costs		205,723.65	19.56
	Gas Well Tangible Costs		36,294.35	3.44
	Drilling and Cleaning Equipment		168.16	.02
	Field Measuring Stations		2,870.76	.27
	Proportion of General and Undistributed Plant		4,127.02	.49
	Proportion of Working Capital		4,985.68	.46
Non-Recurring Expenses			267.79	.03
Miscellaneous Gas Royalties			(256.69)	(.02)
	Total Cost of Gas at the Well Head		$1,051,721.34	100.00
	MCF of Gas Produced Available for Sale	47,899,622 MCF		
	Average Cost per MCF	$.02196		
Gas Disposed of as follows:				
	Amarillo Oil Co. Contract B	4,799,484 MCF	$ 105,381.20	
	Amarillo Oil Co. Contract C	184 MCF	4.04	
	Amarillo Oil Co. Special (Channing, Texas)	10,090 MCF	221.56	
	Delivered to Gathering System	43,089,864 MCF	946,114.56	
	Total	47,899,622 MCF	$1,051,721.34	

Exhibit No. 226

TABLE 6

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
SUMMARY OF COST OF PRODUCTION SYSTEM GATHERING
YEAR 1939

Account (1)		Cost (2)	Percent (3)
Operation:	Field Lines Labor, Supplies and Expense	$ 17,555.07	10.29
	Field Compressing Station Labor, Supplies & Expense	3,628.72	2.13
Maintenance:	Other Production and Gathering Structures	239.60	.14
	Field Line Equipment	5,857.33	3.43
	Abandonment of Lines	358.90	.21
	Field Compressing Station Structures	55.78	.03
	Field Compressing Station Equipment	317.49	.19
Miscellaneous:	General Expenses (Allocated)	7,251.41	4.25
Annual Accrual for Depreciation:	Of Field Lines	30,424.51	17.83
	Of Field Compressor Station	730.01	.42
	Of Proportion of General and Undistributed Plant	1,708.53	1.00
Annual Accrual for Federal Income Taxes :	Field Lines	27,605.40	16.18
	Field Compressor Station	370.14	.22
	Proportions of General & Undistributed Plant	476.80	.28
Annual Accrual for Ad Valorem Taxes:	On Field Lines	7,528.89	4.42
	On Field Compressor Station	100.95	.06
	On Proportion of General and Undistributed Plant	136.15	.08
Annual Accrual for:	Corporate Taxes	793.12	.47
Annual Accrual for:	Labor Taxes	472.33	.28
Return on:	Field Lines	60,569.42	35.49
	Field Compressor Station	812.13	.47
	Proportion of General and Undistributed Property	1,095.36	.64
	Proportion of Working Capital	2,539.99	1.49
	Total Cost of Gathering	170,628.03	100.00
	M.C.F. of Gas Gathered	43,089,864	
	Average Cost per M.C.F.	$.00396	

TABLE 7

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
SUMMARY OF COST OF RESIDUALS REFINING
YEAR 1939

Account (1)		Residuals Produced (2)	Expenses (3)	Net Cost (4)
Joint Operation of Texoma Natural Gas Co. Gasoline Plant at Fritch, Texas		(206,523.88)	88,015.19	(118,508.69)
M.C.F. delivered for treatment	20,783,301			
Average cost per M.C.F.	($.0057)			
Operation of Respondents Gasoline Plant at Bivins Station				
Residuals Produced		(177,691.35)		
Residuals Operating Expenses*			83,570.90	
General Expenses (Allocated)			21,633.15	
Annual Accrual for Depreciation on Gasoline Plant			11,747.91	
Annual Accrual for Proportion of Depreciation on General & Undistributed Plant			372.12	
Federal Income Taxes and Net Return on Gasoline Plant			6,375.06	
Proportion of Federal Income Taxes and Net Return on General & Undistributed Plant			104.17	
Annual Accrual for Ad Valorem Taxes on Gasoline Plant			1,738.89	
Annual Accrual for Proportion of Ad Valorem Taxes on General & Undistributed Plant			29.66	
Annual Accrual for Federal Tax on Transportation of Natural Gasoline			-	
Annual Accrual for Federal Tax on Recovery of Natural Gasoline			137.83	
Annual Accrual for Labor Taxes on Gasoline Plant			1,409.11	
Annual Accrual for Corporate Taxes on Gasoline Plant			172.47	
Return on Net Adjusted Book Cost of Plant			13,987.61	
Return on Proportion of Net Adjusted Book Cost of General & Undistributed Plant			238.57	
Return on Proportion of Working Capital			594.66	
Total Operation of Respondents Gasoline Plant at Bivins Station		(177,691.35)	142,111.91	(35,579.44)
M.C.F. delivered for treatment	21,828,939			
Average cost per M.C.F.	($.00163)			
Income from the Extraction of Natural Gasoline by the Cannon Gasoline Plant from Gas delivered to the Amarillo Oil Co. at well head				(15,056.24)
M.C.F. delivered for treatment	4,799,484			
Average cost per M.C.F.	($.00314)			
Total Cost of Residuals Refining				(169,144.37)

* Note: Operating expenses include charges for shrinkage of gas and for fuel gas used in the operation of the plant.

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
SUMMARY OF COST OF TRANSMISSION
YEAR 1939

Account (1)	Percent (2)	Cost (3)
Operation of Transmission Lines (Including Dehydration Plant)	3.57	$ 80,826.66
Operation of Compressing System (Labor and Supervision)	4.51	102,346.54
Operation of Compressing System Supplies and Expenses	1.77	40,188.01
Maintenance of Transmission System (Including abandonment of lines and dehydration plant)	3.37	76,259.78
Maintenance of Compressing System Structures	.22	5,053.94
Maintenance of Compressing System Equipment	1.81	41,120.07
Miscellaneous-Joint Expenses Rental of Leased Facilities	10.17	230,507.53
Miscellaneous-Bivins Camp Expense	.46	10,370.39
Miscellaneous-General Expenses-Transmission System (Allocated)	2.27	51,541.96
Miscellaneous-General Expenses-Compressing System (Allocated)	2.82	63,734.29
Annual Accrual for: Depreciation of Transmission Plant (Except Bivins Camp)	13.67	309,623.53
Depreciation of Bivins Camp	.23	5,264.41
Proportion of Depreciation of General and Undistributed Plant	1.06	24,101.82
Annual Accrual for: Federal Income Tax on Transmission Plant (except Bivins Camp)	13.02	294,918.93
Federal Income Tax on Proportion of General and Undistributed Plant	.33	7,509.52
Federal Income Tax on Bivins Camp	.17	3,810.84
Annual Accrual For: Colorado State Income Tax on Transmission Plant	1.17	26,412.80
Colorado State Income Tax on Proportion of General and Undistributed Plant	.03	724.41
Annual Accrual for Ad Valorem Taxes on: Transmission Plant (Except Bivins Camp)	8.27	187,433.34
Bivins Camp	.05	1,039.34
Proportion of General and Undistributed Plant	.22	4,953.92
Gas Plant held for Future Use (Transmission Plant)	.02	351.00
Annual Accrual for Corporate Taxes	.36	8,103.68
Annual Accrual for Labor Taxes	.52	11,835.73
Return on: Net adjusted book cost of Transmission Plant (Except Bivins Camp)	29.24	662,654.28
Proportion of net adjusted book cost of General and undistributed plant	.74	16,672.05
Bivins Camp	.37	8,361.43
Return on Proportion of Working Capital	.31	6,843.55
Rent from Company Dwellings	(.75)	(16,913.12)
Total Cost of Transmission	100.00	$ 2,265,650.63

*Note: Accruals for Depreciation of Compressing Station Equipment.

Volume of gas transmitted - MCF	21,828,939 MCF.
Average volumetric costs per MCF transmitted	$ .030 50

TABLE 8

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
SUMMARY OF COST OF TRANSMISSION
YEAR 1939

Account (1)	Percent (2)	Cost (3)	Volumetric Costs (4)	Capacity Costs (5)	Rental of Leased Facilities Cost (6)
smission Lines (Including Dehydration Plant)	3.57	$ 80,826.66	$	$ 80,826.66	
ressing System (Labor and Supervision)	4.51	102,345.54	51,173.27	51,173.27	
ressing System Supplies and Expenses	1.77	40,188.01	40,188.01		
ansmission System (Including abandonment of lines and dehydration plant)	3.37	76,259.78		76,259.78	
mpressing System Structures	.22	5,053.94		5,053.94	
mpressing System Equipment	1.81	41,120.07	41,120.07		
nt Expenses Rental of Leased Facilities	10.17	230,507.53			230,507.53
ins Camp Expense	.46	10,370.39		10,370.39	
eral Expenses-Transmission System (Allocated)	2.27	51,541.96		51,541.96	
eral Expenses-Compressing System (Allocated)	2.82	63,734.29		63,734.29	
r: Depreciation of Transmission Plant (Except Bivins Camp)	13.67	309,623.53	48,953.15*	260,670.38	
Depreciation of Bivins Camp	.23	5,264.41		5,264.41	
Proportion of Depreciation of General and Undistributed Plant	1.06	24,101.82		24,101.82	
r: Federal Income Tax on Transmission Plant (except Bivins Camp)	13.02	294,918.93	147,459.46	147,459.47	
Federal Income Tax on Proportion of General and Undistributed Plant	.33	7,509.52		7,509.52	
Federal Income Tax on Bivins Camp	.17	3,810.84		3,810.84	
r: Colorado State Income Tax on Transmission Plant	1.17	26,412.80	13,206.40	13,206.40	
Colorado State Income Tax on Proportion of General and Undistributed Plant	.03	724.41		724.41	
r Ad Valorem Taxes on: Transmission Plant (Except Bivins Camp)	8.27	187,433.34		187,433.34	
Bivins Camp	.05	1,039.34		1,039.34	
Proportion of General and Undistributed Plant	.22	4,953.92		4,953.92	
Gas Plant held for Future Use (Transmission Plant)	.02	351.00		351.00	
r Corporate Taxes	.36	8,103.68		8,103.68	
r Labor Taxes	.52	11,835.73		11,835.73	
djusted book cost of Transmission Plant (Except Bivins Camp)	29.24	662,654.28	331,327.14	331,327.14	
tion of net adjusted book cost of General and undistributed plant	.74	16,672.05		16,672.05	
s Camp	.37	8,361.43		8,361.43	
ion of Working Capital	.31	6,843.55		6,843.55	
Dwellings	(.75)	(16,913.12)		(16,913.12)	
Total Cost of Transmission	100.00	$ 2,265,650.63	$ 673,427.50	$1,361,715.60	$ 230,507.53

for Depreciation of Compressing Station Equipment.

ume of gas transmitted - MCF	21,828,939 MCF
rage volumetric costs per MCF transmitted	$ .030850

Exhibit No. 226

TABLE 9

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
SUMMARY OF COST OF DISTRIBUTION
YEAR 1939

Account (1)	Percent (2)	Total Cost (3)	Allocated Equally Per Customer (4)	Allocated on Basis of Adjusted Book Cost of Plant as at 12-31-39 (5)
tribution Operating & Maintanance Expenses	57.90	$50,947.11	$11,364.84	$39,582.27
eral Expenses (Allocated)	17.95	15,789.90	3,522.73*	12,267.17*
ual Accrual for Depreciation of Distribution Plant	6.33	5,573.00		5,573.00
ual Accrual for Proportion of Depreciation of General and Undistributed Plant	0.45	398.73		398.73
ual Accrual for Federal Income Taxes on Distribution Plant	8.08	7,111.59		7,111.59
ual Accrual for Federal Income Taxes on Proportion of General and Undistributed Plant	0.14	127.21		127.21
ual Accrual for Colorado State Income Taxes on Distribution Plant	0.41	362.62		362.62
ual Accrual for Colorado State Income Taxes on Proportion of General and Undistributed Plant	.02	14.29		14.29
ual Accrual for Ad Valorem Taxes on Distribution Plant	2.64	2,326.40		2,326.40
ual Accrual for Ad Valorem Taxes on Proportion of General & Undistributed Plant	0.10	91.67		91.67
ual Accrual for Corporate Taxes	0.10	86.24		86.24
ual Accrual for Labor Taxes	1.28	1,125.27	251.05*	874.22*
urn on Adjusted Net Book Cost of Distribution Plant	3.57	3,143.80		3,143.80
urn on Proportion of General & Undistributed Plant	0.32	280.21		280.21
urn on Proportion of Working Capital	0.71	624.32		624.32
Total Cost of Distribution	100.00	$88,002.36	$15,138.62	$72,863.74

*NOTE: General Expenses and Payroll taxes distributed in proportion to direct expenses.

Exhibit No. 22

TABLE 9 (Continued)

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
SUMMARY OF COST OF DISTRIBUTION
YEAR 1939

Location	Allocated Equally Per Customer	Allocated on Basis of Adjusted Book Cost of Plant	Total Cost
Airport (Colorado Springs, Colo.)	$ 560.69	$ 524.62	$ 1,085.31
American Crystal Sugar Refining Co.	560.69	1,734.16	2,294.85
Apishapa (50% to LaJunta and 50% to Rocky Ford)	560.69	648.49	1,209.18
Arapahoe Measuring Station	560.69	1,311.55	1,872.24
Aurora, Colorado	560.69	1,187.68	1,748.37
Colorado Fuel & Iron Corp.	560.69	7,599.69	8,160.38
Colorado Springs, Colorado	560.69	4,196.95	4,757.64
Denver, Colorado	560.69	24,358.35	24,919.04
Englewood	560.69	1,814.31	2,375.00
Fitzsimmons General Hospital	560.69	1,552.00	2,112.69
Fort Lyon, Colorado	560.69	1,238.68	1,799.37
Fountain Valley School	560.69	786.93	1,347.62
Fowler, Colorado	560.69	663.06	1,223.75
Hawley (Ark. Valley Natural Gas Co.)	560.69	240.45	801.14
La Junta, Colorado	560.69	3,227.86	3,788.55
Las Animas, Colorado	560.69	1,260.54	1,821.23
Littleton, Colorado	560.69	1,253.26	1,813.95
Manzanola, Colorado	560.69	648.48	1,209.17
Ordway, Colorado	560.69	728.64	1,289.33
Portland (Colorado Portland Cement Co.), Colo.	560.69	1,930.89	2,491.58
Pueblo, Colorado	560.69	10,404.94	10,965.63
Pueblo County Poor Farm (Pueblo, Colo.)	560.69	167.59	728.28
Rocky Ford, Colorado	560.69	2,389.93	2,950.62
Santa Fe (New)	560.69	1,107.52	1,668.21
Sugar City, Colorado	560.69	568.34	1,129.03
Sullivan, Colorado	560.69	604.77	1,165.46
Thatcher, Colorado (Girdler Corporation)	560.68	714.06	1,274.74
Total Cost of Distribution	$15,138.62	$72,863.74	$88,002.36

COLORADO INTERSTATE GAS COMPANY

STATEMENT SHOWING REVENUES OF COLORADO INTERSTATE GAS COMPANY AVAILABLE FOR THE PURCHASE OF GAS FROM THE CANADIAN RIVER GAS COMPANY (AFTER RETURN OF 6% ON NET ADJUSTED BOOK COST OF PLANT AND WORKING CAPITAL) WITH REVENUES ASSUMED EQUAL TO THE TOTAL COST OF SERVICE TO ITS CUSTOMERS

YEAR 1939

COLORADO INTERSTATE GAS COMPANY REVENUES		
Total Cost of Service Applicable to Denver Line Revenues		
Exhibit ____, Table 1, Lines 1 to 38, Inclusive	$ 2,568,856.85	
Exhibit ____, Table 1, Line 46, Compressor Stations	12,572.28	
Exhibit ____, Table 1, Line 47, Company Dwellings	656.30	
Total		$ 2,582,085.43
Total Cost of Service Applicable to Natural Gas Pipeline Company of America Revenues		650,631.24
Total Colorado Interstate Gas Company Revenues		$ 3,232,716.67
COLORADO INTERSTATE GAS COMPANY COSTS		
Total Cost of Service (Including Cost of Gas Purchased as Determined by Examiners of the Commission)	$ 3,956,706.06	
Less Amount Included for Gas Purchased for Resale	2,112,950.70	
Less Amount Included for Gas Purchased for Use	13,379.21	
Net Cost of Service Except for Gas Purchased		$ 1,830,376.15
NET AVAILABLE FOR COST OF GAS PURCHASED FROM CANADIAN RIVER GAS COMPANY		$ 1,402,340.52

Exhibit No. 226A
Page 1

STATEMENT SHOWING DETAILS OF SUMMARY OF COST OF SERVICE
YEAR 1952

	Consolidated Canadian River Gas Co. & Colorado Interstate Gas Co.	Colorado Interstate Gas Co.	Canadian River Gas Co.
OPERATING REVENUE DEDUCTIONS			
Gas Purchased for Resale	(1)	$ 2,112,950.70	$
Operating Expenses			
Natural Gas Production	$ 321,619.38		199,728.32
Natural Gas Transmission	701,949.17	870,554.30	321,869.98
Natural Gas Distribution	66,737.01	50,947.11	-
Administrative & General Expenses	(2)	103,517.22	143,688.63
Total Operating Expenses	$ 1,090,305.56	$ 425,018.63	$ 665,286.93
Depreciation			
Natural Gas Production	66,888.96	-	66,888.96
Natural Gas Transmission	314,887.94	240,152.54(3)	74,735.40
Natural Gas Distribution	5,573.00	5,573.00	-
Natural Gas General	33,022.20	20,659.43	12,362.77
Gas Plant Held for Future Use (Transmission)	-	-	-
Total Depreciation	$ 420,372.10	$ 266,384.97	$ 153,987.13
Depletion			
Natural Gas Production	44,865.27	-	44,865.27
Total Depletion	$ 44,865.27	-	$ 44,865.27

Notes: (1) Eliminated in consolidation.
(2) Allocated to production, transmission, and distribution.
(3) Gas purchased Inter Company for use is not eliminated in consolidation.

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	Consolidated Canadian River Gas Co. & Colorado Interstate Gas Co.	Colorado Interstate Gas Co.	Canadian River Gas Co.
Taxes			
Federal Income	$ 457,929.15	$ 391,526.13	$ 66,403.02
State of Colorado Income	27,514.12	27,514.12	-
State of Texas Gross Receipts	34,220.09	-	34,220.09
Property	236,704.04	176,869.51	59,834.53
Labor	21,437.77	11,304.71	10,133.06
Corporate and Miscellaneous	12,283.63	7,733.30	4,550.33
Total Taxes	$ 790,088.80	$ 614,947.77	$ 175,141.03
Non-Recurring Expenses	267.79	45.19	222.60
TOTAL OPERATING REVENUE DEDUCTIONS	$ 2,345,899.52	$ 3,419,347.26	$ 1,039,502.96
EXPLORATION AND DEVELOPMENT COSTS			
Delay Rentals	10,401.58	-	10,401.58
Non-Productive Well Drilling	29,293.73	-	29,293.73
Abandoned Leases	1,878.18	-	1,878.18
TOTAL EXPLORATION AND DEVELOPMENT COSTS	$ 41,573.49	-	$ 41,573.49
RENT FROM COMPANY DWELLINGS (Transmission Revenues)	(16,913.12)	(8,787.00)	(8,126.12)
MISCELLANEOUS GAS ROYALTIES (Production Revenues)	(256.69)	-	(256.69)

(Continued on next page)

	Consolidated Canadian River Gas Co. & Colorado Interstate Gas Co.	Colorado Interstate Gas Co.	Canadian River Gas Co.
RETURN AT 6% ON NET BOOK COST ADJUSTED OF GAS PLANT IN SERVICE			
Natural Gas Production	$ 320,426.08	-	$ 320,426.08
Natural Gas Transmission	671,015.71	$ 518,003.00	153,012.71
Natural Gas Distribution	7,111.59	7,111.59	-
Natural Gas General	22,413.21	14,487.31	7,925.90
TOTAL RETURN ON PLANT	$ 1,020,966.59	$ 539,601.90	$ 481,364.69
RETURN AT 6% ON WORKING CAPITAL			
Natural Gas Production	$ 8,120.33	-	8,120.33
Natural Gas Transmission	6,843.55	5,919.58	923.97
Natural Gas Distribution	624.32	624.32	
TOTAL RETURN ON WORKING CAPITAL	$ 15,588.20	$ 6,543.90	$ 9,044.30
TOTAL COST OF SERVICE	$ 3,406,857.99	$ 3,956,706.06	$ 1,563,102.63

			(3)	(4)	(5)	(6)
1	**TRANSMISSION SALES**					
2	Direct Industrial Sales					
3	Colorado Fuel & Iron Corp.	Pueblo, Colo.	-	-	19,571,830	19,571,830
4	American Crystal Sugar Co.	Rocky Ford, Colo.	-	-	1,169,109	1,169,109
5	Atchison, Topeka & Santa Fe R.R.	La Junta, Colo.	-	-	1,267,654	1,267,654
6	Colorado Portland Cement Co.	Portland, Colo.	-	-	5,102,132	5,102,132
7	The Girdler Corp.	Thatcher, Colo.	-	-	941	941
8	Total Direct Industrial Sales		-	-	27,111,666	27,111,666
9	Sales to Public Authorities					
10	U. S. Dept. of Interior	Thatcher, Colo.	1,650	-		1,650
11	Veterans Administration	Fort Lyon, Colo.	672,736	-		672,736
12	Total Sales to Public Authorities		674,386	-		674,386
13	Sales to Other Gas Utilities					
14	Arkansas Valley Nat. Gas Co.	Fort Lyon, Colo.	2,667	156	-	2,823
15		Fountain Valley, Colo.	-	(1,579)	48,808	47,229
16		Fowler, Colo.	18,894	(509)	1,384	19,769
17		Las Animas, Colo.	65,485	2,479	4,663	72,627
18		Manzanola, Colo.	6,770	184	4,267	11,221
19		Ordway, Colo.	14,892	70	12,934	27,896
20		Sugar City, Colo.	2,224	219	-	2,443
21	Total Arkansas Valley Nat. Gas Co.		110,932	1,020	72,056	184,008
22	Citizens Utilities Co.	La Junta, Colo.	142,181	28,237	60,621	230,939
23		Rocky Ford, Colo.	113,044	18,297	21,991	153,329
24		Adjustments	(208)	1,384	(738)	438
25	Total Citizens Utilities Co.		255,014	47,918	81,774	384,706
26	City of Colorado Springs	Colorado Springs, Colo.	993,964	*	1,385,964	2,379,928
27	Colorado Wyoming Gas Co.		3,203,393	*	4,814,916	8,018,309
28	Pueblo Gas & Fuel Co.	Pueblo, Colo.	947,175	*	372,845	1,320,020
29	Public Service Co. of Colo.	Aurora, Colo.	70,049	*	-	70,049
30		Denver, Colo.	12,113,208	*	5,979,672	18,092,880
31		Englewood, Colo.	216,825	*	-	216,825
32		Fitzsimmons Hospital	25,861	*	935,730	961,591
33		Littleton, Colo.	63,830	*	11,174	75,004
34		Sullivan, Colo.	660	*	5,581	6,241
35		U. S. Army Air School, Denver, Colo.	4,157	*	-	4,157
36	Total Public Service Co. of Colo.		12,494,590	*	6,932,157	19,426,747
37	Total Sales to Other Gas Utilities		18,054,006		13,659,712	31,713,718
38	Sales to Associated Gas Utilities					
39	Clayton Gas Co.	Clayton, N. M.	144,081	13,979	125,707	283,767
40	Amarillo Oil Co. (Special)	Hartley, Tex.	12,040	1,881	2,569	16,490
41		Dalhart, Tex.	345,742	38,602	735,951	1,120,295
42		Texline, Tex.	17,759	1,430	8,380	27,569
43	Total Associated Gas Utilities		519,622	55,892	872,607	1,448,121
44	Interdepartmental Sales					
45	Gas Used in Company Operations	Compressor Stations	-	-	1,286,413	1,286,413
46		Company Dwellings	81,522	-	-	81,522
47		Dehydration Plant	-	-	7,096	7,096
48	Total Interdepartmental Sales		81,522	-	1,293,509	1,375,031
49	TOTAL TRANSMISSION SALES - (DENVER LINE)		19,305,428		42,937,194	62,322,922
50	**PRODUCTION SYSTEM SALES**					
51	Sales to Other Gas Utilities					
52	Natural Gas Pipeline of America	Fritch Sta., Tex.				60,322,266
53	Sales to Associated Gas Utilities					
54	Amarillo Oil Co. (At the Wells)	Contract "B"				15,179,005
55	" " "	Contract "C"				526
56	" " "	Special Channing, Texas				32,211
57	Total Associated Gas Utilities					15,211,742
58	Interdepartmental Sales					
59	Gas Used in Company Operations	Compressor Station				3,640
60		Gasoline Plant				994,429
61		Field Operations				413,259
62		Company Dwellings				2,803
63	Total Interdepartmental Sales					1,422,131
64	TOTAL PRODUCTION SYSTEM SALES					76,956,139
65	TOTAL TRANSMISSION & PRODUCTION SYSTEM SALES					139,279,061

* Gas Lost is included in Domestic and Commercial Classification.

TABLE I

2317
Exhibit No. 22

CANADIAN RIVER GAS CO. AND COLORADO INTERSTATE GAS CO.

CONSOLIDATED STATEMENT OF GAS HANDLED FOR THREE YEARS - 1937, 1938, 1939

(All Figures on Uniform Base of 14.65# Sq. In. Absolute)

(1)		Three-year Total (2)
(1)	GAS DISBURSEMENTS	
(2)	Total Transmission and Production System Sales	139,279,061
(3)	Free Gas to Lessors	25,967
(4)	Leakage and Unaccounted For	(3,428,314)*
(5)	Total Disbursements	135,876,714
(6)	GAS RECEIPTS	
(7)	Gas Produced	135,876,714
(8)	Gas Purchased	-
(9)	Total Receipts	135,876,714

* Includes 49,568 M.C.F. gas delivered in exchange and 6,354 M.C.F. as an adjustment.

Exhibit No. 228

TABLE 2

2349

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY

SUMMARY OF COST OF SERVICE

TOTAL 3 YEARS - 1937, 1938 & 1939

	Cost
OPERATING REVENUE DEDUCTIONS	
Operating Expenses	
Natural Gas Production	$ 910,424.37
Natural Gas Transmission	2,004,639.51
Natural Gas Distribution	194,893.80
Total Operating Expenses	3,109,957.68
Depreciation	
Natural Gas Production	196,271.01
Natural Gas Transmission	932,691.53
Natural Gas Distribution	16,313.57
Natural Gas General	94,416.14
Gas Plant Held for Future Use (Transmission)	605.82
Total Depreciation	1,240,298.07
Depletion	
Natural Gas Production	120,387.52
Taxes	
Federal Income	1,235,001.62
State of Colorado Income	54,183.80
State of Texas Gross Receipts	100,122.45
Property	688,904.75
Labor	58,002.80
Corporate and Miscellaneous	35,309.36
Total Taxes	2,171,524.78
Non-Recurring Expenses	12,869.42
TOTAL OPERATING REVENUE DEDUCTIONS	$6,655,037.47
EXPLORATION AND DEVELOPMENT COSTS	
Delay Rentals	48,695.84
Non-Productive Well Drilling	29,293.73
Abandoned Leases	2,552.48
TOTAL EXPLORATION AND DEVELOPMENT COSTS	$ 80,542.05

Exhibit No. 898

TABLE 3 (Continued)

	Cost
RENT FROM COMPANY DWELLINGS (Transmission Revenues)	(47,392.06)
MISCELLANEOUS GAS ROYALTIES (Production Revenues)	(764.87)
RETURN AT 6% ON NET BOOK COST - ADJUSTED OF GAS PLANT IN SERVICE	
Natural Gas Production	943,646.20
Natural Gas Transmission	2,035,989.98
Natural Gas Distribution	21,765.34
Natural Gas General	67,680.82
TOTAL RETURN ON PLANT	3,069,082.14
RETURN AT 6% ON WORKING CAPITAL	
Natural Gas Production	24,380.99
Natural Gas Transmission	20,530.65
Natural Gas Distribution	1,872.96
TOTAL RETURN ON WORKING CAPITAL	46,784.60
TOTAL COST OF SERVICE	$9,803,269.33

Exhibit No.

TABLE

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
SUMMARY OF COST OF GAS AT WELL HEAD
TOTAL 3 YEARS 1937, 1938 and 1939.

Account (1)		Cost (2)	Percent (3)
Operation:	Gas Wells Labor, Supplies and Expense	$ 21,046.23	.71
	Measuring Stations Labor, Supplies and Expense	38,865.35	1.31
Maintenance:	Gas Wells Equipment	35,601.61	1.20
	Measuring Station Equipment	23,161.54	.78
	Drilling and Cleaning Tools	1,254.58	.04
Miscellaneous:	Gas Well Royalties	1,015,189.61	34.24
	General Expenses (Allocated)	253,006.29	8.54
Three-Year Accrual for:	Depletion & Depreciation of Leaseholds & Gas Well Intangible Costs	120,257.52	4.07
	Depreciation of Gas Well Tangible Costs	58,251.22	1.98
	Depreciation of Drilling and Cleaning Equipment	4,260.37	.16
	Depreciation of Field Measuring Stations	7,345.60	.25
	Proportion of Depreciation of General and Undistributed Plant	18,905.56	.63
Three-Year Federal Income Taxes on:	Leaseholds and Gas Wells Intangible Costs	252,566.15	8.55
	Gas Well Tangible Costs	44,611.72	1.51
	Drilling and Cleaning Equipment	206.70	.01
	Field Measuring Stations	3,528.65	.12
	Proportion of General and Undistributed Plant	4,851.77	.16
Three-Year Accrual for Ad Valorem Taxes:	Leaseholds and Gas Well Intangible Costs	72,547.34	2.45
	Gas Well Tangible Costs	12,799.01	.43
	Drilling and Cleaning Equipment	89.30	---
	Field Measuring Stations	1,012.36	.03
	Proportion of General and Undistributed Plant	1,455.38	.05
Three-Year Accrual for:	Texas Gross Receipts Tax	100,122.45	3.38
	Corporate Taxes	8,575.37	.32
	Labor Taxes	17,925.67	.62
Exploration and Development Costs:	Delay Rentals	48,695.84	1.66
	Non-Productive Well Drilling	29,295.73	1.00
	Abandoned Leases	2,552.48	.10
Return on:	Leaseholds and Gas Well Intangible Costs	606,850.61	20.49
	Gas Well Tangible Costs	106,885.90	3.62
	Drilling and Cleaning Equipment	495.24	.02
	Field Measuring Stations	8,454.31	.28
	Proportion of General & Undistributed Plant	12,155.95	.41
	Proportion of Working Capital	14,987.04	.50
Non-Recurring Expenses:		12,869.42	.43
Miscellaneous Gas Royalties		(764.87)	(.03)
	Total Cost of Gas at Well Head	$2,957,999.38	100.00
	M.C.F. of Gas Produced Available for Sale	139,279,061	
	Average Cost per M.C.F.	$.02124	
Gas Disposed of as Follows:			
	Amarillo Oil Co. Contract "B"	15,179,005 MCF	$ 322,570.69
	" " " Contract "C"	526	11.17
	" " " Special Channing, Texas	32,211	684.10
	Delivered to Gathering System	124,067,319	2,634,933.42
	Total	139,279,061 MCF	$ 2,957,999.38

Exhibit No. 228

TABLE 5

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
SUMMARY OF COST OF PRODUCTION SYSTEM GATHERING
TOTAL 3 YEARS 1937, 1938 and 1939

ACCOUNT (1)			COST (2)	PERCENT (3)
Operation:	Field Lines Labor, Supplies & Expense		51,247.60	10.41
	Field Compressing Station Labor, Supplies & Expense		9,119.26	1.85
Maintenance:	Other Production and Gathering Structures		343.38	.07
	Field Line Equipment		20,944.73	4.27
	Abandonment of Lines		1,620.40	.33
	Field Compressing Station Structures		64.71	.01
	Field Compressing Station Equipment		736.43	.15
Miscellaneous:	General Expenses (Allocated)		18,732.27	3.81
Three-Year Accrual for Depreciation:		Of Field Lines	88,183.52	17.91
		Of Field Compressor Station	2,215.05	.45
		Of Proportion of General and Undistributed Plant	5,014.34	1.02
Three-Year Federal Income Taxes:		Field Lines	74,449.76	15.14
		Field Compressor Station	998.24	.20
		Proportion of General and Undistributed Plant	1,285.88	.26
Three-Year Accrual for Ad Valorem Taxes:		Field Lines	21,359.48	4.33
		Field Compressor Station	286.39	.06
		Proportion of General and Undistributed Plant	386.27	.08
Three-Year Accrual for:	Corporate Taxes		2,273.93	.47
Three-Year Accrual for:	Labor Taxes		1,322.46	.26
Return on:	Field Lines		178,375.32	36.24
Return on:	Field Compressor Station		2,391.70	.49
Return on:	Proportion of General & Undistributed Property		3,225.80	.65
Return on:	Proportion of Working Capital		7,619.97	1.54
	Total Cost of Gathering		492,196.89	100.00

M.C.F. of Gas Gathered 124,067,319
Average Cost per M.C.F. $.00396

Exhibit No. 228

TABLE 6

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
SUMMARY OF COSTS OF RESIDUALS REFINING
TOTAL THREE YEARS, 1937, 1938 and 1939

	Account (1)		Residuals Produced (2)	Expenses (3)	Net Cost (4)
1	Joint Operation of Texoma Natural Gas Co. Gasoline Plant at Fritch, Texas		$(573,946.33)	$247,590.62	$(326,355.71)
2	M.C.F. delivered for treatment	60,322,266			
3	Average Cost per M.C.F.	($.0054)			
4	Operation of Respondents Gasoline Plant at Bivins Station				
5	Residuals Produced		(511,104.52)		
6	Residuals Operating Expenses			251,794.97	
7	General Expenses (Allocated)			56,021.23	
8	Three-year Accrual for Depreciation on Gasoline Plant			35,085.25	
9	Three-year Accrual for Proportion of Depreciation of General and Undistributed Plant			1,092.13	
10	Three-year Accrual for Federal Income Taxes on Gasoline Plant			17,193.06	
11	Three-year Accrual for Proportion of Federal Income Taxes on General and Undistributed Plant			280.95	
12	Three-year Accrual for Ad Valorem Taxes on Gasoline Plant			4,932.65	
13	Three-year Accrual for Proportion of Ad Valorem Taxes on General and Undistributed Plant			84.13	
14	Three-year Accrual for Federal Tax on Transportation of Natural Gasoline			265.98	
15	Three-year Accrual for Federal Tax on Recording of Natural Gasoline			220.58	
16	Three-year Accrual for Labor Taxes on Gasoline Plant			3,972.63	
17	Three-year Accrual for Corporate Taxes on Gasoline Plant			494.48	
18	Three-year Return on Net Adjusted Book Cost of Gasoline Plant			41,193.12	
19	Three-year Return on Proportion of Net Adjusted Book Cost of General and Undistributed Plant			702.58	
20	Three-year Return on Proportion of Working Capital			1,783.98	
21	Total Operation of Respondents Gasoline Plant at Bivins Station		(511,104.52)	415,117.72	(95,986.80)
22	M.C.F. delivered for treatment	62,322,922			
23	Average Cost per M.C.F.	($.0015)			
24	Income from the Extraction of Natural Gasoline by the Cannon Gasoline Plant for gas delivered to the Amarillo Oil Co. at well head				(48,655.79)
	M.C.F. delivered for treatment	15,179,005			
	Average Cost per M.C.F.	($.0032)			
	Total Cost of Residuals Refining				$(470,998.30)

Note: Operating expenses include charges for shrinkage of gas and for fuel gas used in the operation.

Exhibit No. 228

TABLE 7

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY

SUMMARY OF COST OF TRANSMISSION

TOTAL THREE YEARS, 1937, 1938 and 1939

Line	(1)	Percent (2)	Cost (3)	Volumetric Costs (4)	Capacity Costs (5)	Rental of Leased Facilities Costs (6)
1.	Operation of Transmission Lines (Including Dehydration Plant)	3.65	$ 239,633.91		$ 239,633.91	
2.	Operation of Compressing System (Labor and Supervision)	4.55	299,076.33	$ 149,538.16	149,538.17	
3.	Operation of Compressing System Supplies and Expenses	1.92	126,282.99	126,282.99		
4.	Maintenance of Transmission System (Including Abandonment of Lines and Dehydration Plant)	3.28	215,432.58		215,432.58	
5.	Maintenance of Compressing System Structures	.26	16,832.68		16,832.68	
6.	Maintenance of Compressing System Equipment	1.78	117,149.24	117,149.24		
7.	Miscellaneous - Joint Expenses Rental of Leased Facilities	10.06	661,012.02			$ 661,012.02
8.	Miscellaneous - Bivins Camp Expense	.49	32,310.89		32,310.89	
9.	Miscellaneous - General Expenses - Transmission System (Allocated)	1.99	130,675.18		130,675.18	
10.	Miscellaneous - General Expenses - Compressing System (Allocated)	2.53	166,233.69		166,233.69	
11.	Three-year Accrual for Depreciation of Transmission Plant (Except Bivins Camp)	14.00	919,319.45	*142,176.80	777,142.65	
12.	" " " Depreciation of Bivins Camp	.21	13,977.90		13,977.90	
13.	" " " Proportion of Depreciation of General and Undistributed Plant	1.04	68,284.13		68,284.13	
14.	" " " Federal Income Tax on Transmission Plant (except Bivins Camp)	12.12	795,374.89	397,687.44	397,687.45	
15.	" " " " " " " " Proportion of General & Undistributed Plant	.31	20,252.64		20,252.64	
16.	" " " " " " " " Bivins Camp	.16	10,277.57		10,277.57	
17.	" " " Colorado State Income Tax on Transmission Plant	.79	52,014.96	26,007.48	26,007.48	
18.	" " " " " " " " " Proportion of General and Undistributed Plant	.02	1,426.59		1,426.59	
19.	" " " Ad Valorem Taxes on Transmission Plant (Except Bivins Camp)	8.35	548,395.11		548,395.11	
20.	" " " " " " " " Bivins Camp	.05	2,948.61		2,948.61	
21.	" " " " " " " " Proportion of General and Undistributed Plant	.22	14,510.85		14,510.85	
22.	" " " " " " " " Gas Plant Held for Future Use (Transmission Plant)	.02	1,030.29		1,030.29	
23.	" " " Corporate Taxes	.35	23,233.77		23,233.77	
24.	" " " Labor Taxes	.48	31,691.68		31,691.68	
25.	Return on Net Adjusted Book Cost of Transmission Plant (Except Bivins Camp)	30.64	2,011,365.80	1,005,682.90	1,005,682.90	
26.	" " " " " " " " Bivins Camp	.37	24,624.18		24,624.18	
27.	" " " " " " " " Proportion of General and Undistributed Plant	.77	50,740.68		50,740.68	
28.	" " Proportion of Working Capital	.31	20,530.65		20,530.65	
29.	Rent From Company Dwellings	(.72)	(47,392.06)		(47,392.06)	
30.	Total Cost of Transmission	100.00	$6,567,247.20	$1,964,525.01	$3,941,710.17	$661,012.02
31.	Average Cost per year				$1,313,903.39	$220,337.34

*Note: Accruals for Depreciation of Compressing Station Equipment

Volume of gas transmitted 62,322,922 M.C.F.

Average Volumetric Costs per M.C.F. transmitted $.031522

Exhibit No. 228

TABLE 8

CANADIAN RIVER GAS COMPANY AND COLORADO INTERSTATE GAS COMPANY
SUMMARY OF COST OF DISTRIBUTION
TOTAL THREE YEARS - 1937, 1938 and 1939

	Account (1)	Percent (2)	Total Cost (3)	Allocated Equally Per Customer (4)	Allocated on Basis of Adjusted Book Cost of Plant as at 12-31-39 (5)
1	Distribution Operating and Maintenance Expense	59.12	151,842.92	31,033.76	120,809.16
2	General Expenses (Allocated)	16.76	43,050.88	8,835.54	34,217.34
3	Three year accrual for Depreciation of Distribution Plant	6.35	16,313.57		16,313.57
4	Three year accrual for Proportion of Depreciation of General and Undistributed Plant	.44	1,121.96		1,121.96
5	Three year Federal Income Taxes on Distribution Plant	3.30	8,478.60		8,478.60
6	Three year Federal Income Taxes on Proportion of General & Undistributed Plant	.13	343.08		343.08
7	Three year Accrual for Colorado State Income Tax on Distribution Plant	.28	714.11		714.11
8	Three year Accrual for Colorado State Income Tax on Proportion of General & Undist. Plant	.01	28.14		28.14
9	Three year Accrual for Ad Valorem Taxes on Distributed Plant	2.66	6,828.52		6,828.52
10	Three year Accrual for Ad Valorem Taxes on Proportion of General & Undistributed Plant	.10	269.06		269.06
11	Three year Accrual for Corporate Taxes	.10	247.25		247.25
12	Three year Accrual for Labor Taxes	1.20	3,090.16	632.12	2,458.04
13	Return on Adjusted Net Book Cost of Distribution Plant	8.48	21,765.34		21,765.34
14	Return on Proportion of General & Undistributed Plant	.34	857.61		857.61
15	Return on Proportion of Working Capital	.73	1,872.96		1,872.96
16	Total Cost of Distribution	100.00	256,824.16	40,499.42	216,324.74

COLORADO WYOMING GAS CO.

TABLE 9

TOTAL VOLUME OF GAS SALES DELIVERIES DURING THREE CALENDAR YEARS 1937, 1938, 1939
(All figures in M.C.F. at uniform base of 14.65# Sq. In. absolute)

EXHIBIT 228

Name of Customer (1)	Location of Service (2)	Domestic and Commercial (3)	Gas Lost* (4)	Industrial (5)	Total (6)
Residential Sales - Right-of-way Customers	(In Colo.)	10,245	-	-	10,245
Commercial Sales - Green Gables Country Club	Denver	6,767	-	-	6,767
Direct Industrial Sales					
Amerada Petroleum Co.	Cheyenne, Wyo.			35,102	35,102
Adolph Coors	Golden, Colo.	-	-	32,692	32,692
Board of Water Commissioners of Denver	Marston Lk. Colo.	-	-	24,779	24,779
Colorado Portland Cement Co.	LaPorte, Colo.	-	-	2,284,217	2,284,217
Continental Oil Co.	Wellington Fld. Colo.	-	-	12,799	12,799
Denver Pressed Brick Co.	Loveland, Colo.	-	-	107,271	107,271
Great Western Sugar Co.	Johnst'n, Colo.	-	-	847,785	847,785
Golden Fire Brick Co.	Golden, Colo.	-	-	185,141	185,141
Kuner Empson Co.	Brighton, Colo.	-	-	92,771	92,771
Producer's Canning Co.	Ft. Collins, Colo.	-	-	1,804	1,804
Public Service Co. of Colorado	Valmont Plant near Boulder, Colo.	-	-	30,224	30,224
International Metal Foundation	Denver, Colo.	-	-	3,367	3,367
Thomas Bate & Sons	Denver, Colo.	-	-	68	68
Total Direct Industrial Sales		-	-	3,658,020	3,658,020
Sales to U.S. War Department					
Ft. Logan	Ft. Logan, Colo.	-	-	21,879	21,879
Ft. Warren	Ft. Warren, Wyo.	-	-	45,839	45,839
Total War Department Sales		-	-	67,718	67,718
Sales to Non-Associated Gas Utilities					
Greeley Gas & Fuel Co.	Greeley, Colo.	361,745	*	52,256	414,001
Highway Gas Co.	Loveland, Colo.	20,396	*	-	20,396
Total Non-Associated Gas Utilities Sales		382,141	*	52,256	434,397
Sales to Associated Gas Utilities					
Cheyenne Light, Fuel & Power Co.	Cheyenne, Wyo.	1,057,006	*	149,586	1,206,592
Public Service Co. of Colorado	Denver Fringe	176,611	*	294,224	470,835
	Golden, Colo.	112,852	*	227,237	340,089
	Boulder, Colo.	407,547	*	29,142	436,689
	Brighton, Colo.	63,272	*	4,620	67,892
	Ft. Lupton, Colo.	24,482	*	-	24,482
	Longmont, Colo.	96,745	*	3,567	100,312
	Berthoud, Colo.	13,418	*	-	13,418
	Johnstown, Colo.	20,323	*	-	20,323
	Loveland, Colo.	86,031	*	19,608	105,639
	Ft. Collins, Colo.	739,590	*	279,099	1,018,689
Total Associated Gas Utilities Sales		2,797,877	*	1,007,083	3,804,960
Unbilled Revenue Change - Net	Various Points, Colo. and Wyo.	8,026	*	1,404	9,430
TOTAL GAS SALES		3,205,056	*	4,786,481	7,991,537

*Gas Lost included in Domestic and Commercial Classificatio

COLORADO WYOMING GAS COMPANY

STATEMENT OF GAS HANDLED - THREE YEARS - 1937, 1938, 1939

(ALL FIGURES ON UNIFORM BASE OF 14.65# Sq. In. Absolute)

	Particulars (1)	Location of Purchase (2)	Three-year Total (3)
(1)	**GAS DISBURSEMENTS**		
(2)	Net Transmission System Sales		7,982,107
(3)	Unbilled Revenue Adjustment		9,430
(4)	Total Sales		7,991,537
(5)	Gas Used in Company Operations		95,103
(6)	Leakage and Unaccounted For		90,828
(7)	Total Disbursements		8,177,468
(8)	**GAS RECEIPTS**		
(9)	Gas Purchased		
(10)	Colorado Interstate Gas Co.		
(11)	Resale to Others		7,822,948
(12)	Unbilled Revenue Change-Net		9,430
(13)	Use in Company Operations		95,103
(14)	System Losses		90,828
(15)	Total Colorado Interstate Gas Co.	Arapahoe Sta.	8,018,309
(16)	Goodstein Pipeline Co.	Berthoud Field	
(17)	Resale to Others		155,686
(18)	Ed Mosher	Berthoud Field	
(19)	Resale to Others		3,191
(20)	Ft. Collins Producing Co.	Wellington Field	
(21)	Resale to Others		282
(22)	Total Receipts		8,177,468

EXHIBIT 228

TABLE 20

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EXHIBIT 228

Table 11

COLORADO WYOMING GAS COMPANY

SUMMARY OF COST OF SERVICE

THREE YEARS - 1937, 1938 & 1939

OPERATING REVENUE DEDUCTIONS	
Gas Purchased for Resale	1,377,107.84
Operating Expenses	
Natural Gas Transmission)	
Natural Gas Distribution)	125,425.36
General and Administrative	78,038.40
Total Operating Expenses	203,463.76
Depreciation	
Natural Gas Transmission	106,384.80
Natural Gas Distribution	4,501.06
Natural Gas General	2,813.46
Gas Plant Held for Future Use (Transmission)	118.35
Total Depreciation	113,817.66
Taxes	168,626.94
Non Recurring Expenses	3,011.29
TOTAL OPERATING REVENUE DEDUCTIONS	1,866,027.49
RETURN AT 6% ON NET BOOK COST-ADJUSTED OF GAS PLANT IN SERVICE	
Natural Gas Transmission	231,296.77
Natural Gas Distribution	6,462.68
Natural Gas General & Intangible Plant	1,173.73
TOTAL RETURN ON PLANT	238,933.18
RETURN AT 6%ON WORKING CAPITAL	
Natural Gas Transmission	1,363.95
TOTAL RETURN ON WORKING CAPITAL	1,363.95
TOTAL COST OF SERVICE	2,106,324.62
ADJUSTMENT IN COST OF GAS PURCHASED FOR RESALE	
Less Gas Purchased for Resale Above	1,377,107.84
Plus Gas Purchased for Resale Adjusted	Not determined
TOTAL COST OF SERVICE	Not determined

EXHIBIT 228

TABLE 12

COLORADO-WYOMING GAS COMPANY
SUMMARY OF COST OF TRANSMISSION
THREE YEARS, 1937-1938-1939

Line	Account (1)	Percent (2)	Cost (3)	Volumetric Costs (4)	Capacity Costs (5)
1.	Transmission Lines Operations	2.73	$ 18,402.63		$ 18,402.63
2.	Compressing Station Operation - Labor and Supervision	7.07	47,681.33	$ 23,840.66	23,840.67
3.	Compressing Station Operation - Fuels, Supplies, Expense	2.39	16,124.99	16,124.99	
4.	Transmission Lines Maintenance	2.13	14,313.04		14,313.04
5.	Compressor Station Maintenance	.82	5,586.31	5,586.31	
6.	Proportion of General Expense	9.37	63,218.13		63,218.13
7.	Annual Accrual for Depreciation of Transmission Plant (except Compressing Station)	13.41	90,497.03		90,497.03
8.	" " " " " " Compressing Stations	2.37	16,006.12	12,004.59*	4,001.53
9.	Proportion of Annual Accrual for Depreciation of General Plant	.40	2,737.50		2,737.50
10.	Transmission Plant Property Taxes	11.14	75,152.75		75,152.75
11.	Proportion of General and Intangible Property Taxes	.06	369.77		369.77
12.	Payroll Taxes	.50	3,392.49		3,392.49
13.	Miscellaneous Taxes	.96	6,487.30		6,487.30
14.	Federal Income Taxes on Transmission Plant	10.45	70,464.40	35,232.20	35,232.20
15.	State of Colorado Income Taxes	1.05	7,112.28	3,556.14	3,556.14
16.	Proportion of Federal Income Taxes on General and Intangible Plant	.05	347.92		347.92
17.	" " State of Colorado Income Taxes on General and Intangible Plant	.01	35.13		35.13
18.	Return on Transmission Plant	34.28	231,296.77	115,648.38	115,648.39
19.	" " Proportion of General and Intangible Plant	.17	1,142.04		1,142.04
20.	" " Working Capital	.20	1,363.95		1,363.95
21.	Non-recurring Expenses	.44	3,011.29		3,011.29
22.	Total Cost of Transmission	100.00	$674,743.17	$211,993.27	$462,749.90
23.	Average Cost per year				$154,249.97

* 75 Percent of Compressing Station Accruals being accruals for compressing station equipment

NOTE: Transmission lines operations include $2,568.46 transportation expense on industrial gas sold to Denver Pressed Brick Company, included in general system transmission costs. No special consideration need therefore be given to the service to such customer.

Volume of gas transmitted, M.C.F. 7,991,537
Average Volumetric Costs per M.C.F. trans. $.026553

COLORADO-WYOMING GAS COMPANY
SUMMARY OF COST OF DISTRIBUTION
THREE YEARS, 1937-1938-1939

(1)	Percent (2)	Cost (3)	Equally Per Customer (4)	Adjusted Book Cost of Plant (5)
1. Measuring Stations Operations	40.11	$21,850.76	$21,850.76	
2. " " Maintenance	2.69	1,466.30		$1,466.30
3. Proportion of General Expenses	27.21	14,820.27	13,894.00	926.27
4. Annual Accrual for Depreciation of Distribution Plant	8.26	4,501.05		4,501.05
5. Proportion of Annual Accrual for Depreciation of General Plant	0.14	75.96		75.96
6. Distribution Plant Property Taxes	3.84	2,092.52		2,092.52
7. Proportion of General and Intangible Plant Property Taxes	0.02	10.26		10.26
8. Payroll Taxes	1.48	803.90	753.66	50.24
9. Miscellaneous Taxes	0.33	180.02		180.02
10. Federal Income Tax on Distribution Plant	3.61	1,968.85		1,968.85
11. State of Colorado Income Taxes	0.36	198.73		198.73
12. Proportion of Federal Income Taxes on General and Intangible Plant	0.02	9.65		9.65
13. Proportion of State of Colorado Income Taxes on General and Intangible Plant	-	.97		.97
14. Return on Distribution Plant	11.87	6,462.68		6,462.68
15. Return on Proportion of General and Intangible Plant	.06	31.69		31.69
16. Total Cost of Distribution	100.00	$54,473.61	$36,498.42	$17,975.19

Note: General Expenses and Payroll Taxes allocated in proportion to direct expenses.

EXHIBIT 228

TABLE 13

2373

[Testimony of WILLIAM H. LYON]

Direct Examination.

By Mr. Lange:

Q. Will you state your name, please?

A. William H. Lyon.

Q. What is your professional occupation, Mr. Lyon?

A. Senior gas Engineer in the Division of Gas Engineering of the Federal Power Commission.

Q. How long have you been so employed?

A. Since December 1938.

Q. In connection with that employment I will ask you, Mr. Lyon, whether you have previously been engaged in similar occupations?

A. I have been a gas engineer for a natural gas company.

Q. Have you prepared a statement showing your qualifications in that particular character of work?

A. I have.

Q. Will you proceed to read that, please?

A. "Formal Education: Completed grade and high schools in Mississippi. Attended the Mississippi State College in the School of Engineering and graduated in 1929 with the degree of Bachelor of Science with Honors in Mechanical Enigneering. Graduate of the LaSalle Extension University correspondence course in Higher Accountancy in 1931. Also completed a special post graduate coaching course in Public Utility Accounting Problems offered by correspondence by the LaSalle Extension University.

Experience in Natural Gas Industry: Immediately upon graduating from college in 1929, I entered the employ of the Arkansas Natural Gas Corporation as Cadet or Junior Engineer, at Shreveport, Louisiana, taking the Cadet Engineering Training Course offered by that Company. During the training period I was assigned to the operating departments of various subsidiary companies of that Company, and was engaged in an intensive training course involving all of the branches of business conducted by the group of companies.

The principal business of those companies has been the production, transportation and distribution of natural gas,

and the production, transportation, refining and marketing of petroleum and its products in the States of Arkansas, Louisiana and Texas. The group of companies owned oil and gas producing properties, oil pipe line systems, gas pipe lines, oil refineries, gasoline extraction plants, natural gas distribution systems, and marketing af gasoline and other petroleum products. This training course covered the major portion of these properties either directly or through association with others.

Upon leaving this training course I was assigned to the general offices of the company in Shreveport, Louisiana, as an engineering assistant to one of the executive officers of the corporation. Subsequent to this, the company placed me in the general office Rate and Valuation Department as Valuation and Rate Engineer for the group of companies. The number of employees under my supervision in the office varied with the amount of work in progress, but in latter years generally ranged from 10 to 15 persons. During my employment in this capacity it was a part of my duties to prepare numerous engineering studies and reports covering the operations and property of the following companies:

Arkansas Natural Gas Corporation
Arkansas Louisiana Gas Company
Arkansas Fuel Oil Company
Arkansas Pipeline Corporation
Arkansas Louisiana Pipeline Company
Reserve Natural Gas Company of Louisiana
Southern Cities Distributing Company
Public Utilities Corporation of Arkansas
Little Rock Gas & Fuel Company
Bethany Oil & Gas Company
Natural Gas & Fuel Corporation
Louisiana Oil Corporation
Louisiana Oil Refining Corporation.

These duties also included the preparation of inventories and appraisals of oil and gas producing properties, oil pipeline systems, gas pipe-line systems, oil refineries, natural gasoline extraction plants, propane and butane extraction plants, wholesale and retail gasoline and petroleum marketing facilities, gasoline filling stations, bulk stations, natural gas distributing systems, and similar properties.

During this time I also prepared estimates of the cost of construction of natural gas property and upon completion of the construction made comparisons of the estimates with the actual expenditures. I have prepared detail analyses of costs of construction of some fifteen hundred miles of natural gas and oil pipelines of diameters from 2" to 20" and a number of oil pipe-line pump stations and natural gas compressing stations.

During the period of my employment by the Arkansas Natural Gas Corporation or subsidiary companies, the group of companies expended upwards of forty million dollars for construction purposes, all of which I was in some respect concerned with, for the work previously mentioned was related to the operations of all of the companies. During the construction of the Stuttgart Arkansas gas distribution plant in 1929, I acted as an assistant to the superintendent of construction and was in direct and active charge of the material records, time-keeping, and payrolls for the construction crew of approximately 150 men. I assisted in the field work in connection with a survey of a natural gas distribution plant for the purpose of determining the amount of leakage and unaccounted for gas and prepared reports indicating the cost of reducing leakage and determined the savings resulting therefrom. While in the Rate and Valuation Department of the companies, my duties also included the preparation of depletion, depreciation and amortization studies of natural gas production, transmission and distribution property. I also prepared engineering studies relative to the service life of natural gas property, the causes of removal of natural gas property from service and compiled data relative to the rates of replacement of natural gas pipe lines due to physical deterioration and other causes. During 1936 and 1937 I initiated and directed the preparation of engineering studies

for the purpose of determining the necessary annual accruals for depletion, depreciation and amortization of the property of the group of companies previously mentioned and, together with independent engineers retained by the company, made recommendations to the management thereupon. The property involved in this study was in excess of 100 million dollars. During 1935 I was responsible for the compilation of engineering reports submitted by an oil pipe-line subsidiary, for filing with the Interstate Commerce Commission under that Commission's Depreciation Order.

As rate engineer for the Arkansas Natural Gas Corporation and its subsidiary companies, it was my responsibility to prepare engineering reports in connection with the formulation of natural gas rates and rate structures of the group of companies. For this purpose, I prepared statistical analyses of the frequency and distribution of various sizes of gas bills and of the annual and monthly gas consumption per customer for various classes of customers in a number of gas plants. I prepared reports of the characteristics of various types of gas loads involving study of the relation of temperature or degree day deficiency to space heating loads, made analyses of coincidental demands on gas pipeline systems, studies of diversity factors and load factors both on pipe-line systems and distribution plants.

I have prepared complete studies of the cost of rendering gas service including allocation studies necessary in determining the cost of service to individual customers. Such studies involved determination and detailing of incremental costs, determination of average system costs, limits of common cost zones, the study of the causes and source of the costs and bases for allocating the costs to various classes and kinds of gas service. One of these studies was presented in the Federal District Court for the Western District of Arkansas on behalf of the Arkansas Louisiana Gas Company in a natural gas rate litigation involving the City of Texarkana, Arkansas. The method of allocation presented was used by the special master hearing the case, was followed by the Judge in the Federal District Court, and was upheld in the Court of Appeals and in the United States Supreme Court.

Recent rate changes involving the installation of promotional type gas rates in some 18 cities and communities in the State of Arkansas, including the Cities of Little Rock and Pine Bluff, Arkansas, were the result of studies made by me in cooperation with the Department of Public Utilities for the State of Arkansas.

It has been a part of my duties to appear before regulatory bodies in connection with investigations being made into the operations of the companies with which I was connected, and attend hearings and present engineering evidence for the purpose of establishing natural gas rates. I have also appeared before representatives of the Bureau of Valuation of the Interstate Commerce Commission in connection with the determination by that Commission of the valuation of an oil pipe-line system of one of the companies.

I have also appeared in the Federal Court of the Westerrn District of Louisiana in a case involving the determination of the fair value of industrial property.

During the course of my employment with this group of companies, there was initiated under my direction a system of continuous engineering property records for the natural gas property of the companies, the total property for which the records were established being approximately 50 million dollars.

In 1935-1936 I prepared special engineering reports for the use of the management in connection with the reorganization of the Louisiana Oil Refining Company under Section 77-B of the Bankruptcy Act.

I entered the employ of the Federal Power Commission in 1938 as Senior Gas Engineer, soon after the passing of the Natural Gas Act and have been continuously thus employed since that time. A part of my duties consist of engineering studies and investigations of the operations of a number of natural gas companies. Reference to the Dockets which have been set by the Commission indicates the scope of this work since that time.

As Senior Engineer in the Washington office of the Commission, it has been my additional responsibility to act in

the place of the Chief of the Division of Gas Engineering of the Commission, who directs the work of all of the gas engineers in the employ of the Commission, during his absence. These general responsibilities have widened the field of my duties, necessitating some measure of familiarity with the operations of practically every interstate natural gas pipeline company under the jurisdiction of the Commission."

Q. Have you completed the reading of your written statement of qualifications, Mr. Lyon?

A. I have.

Q. You stated that you are presently employed by the Federal Power Commission as a gas engineer?

A. That is correct.

Q. In connection with that employment, have you had occasion to prepare and did you prepare any study or exhibits on the subject of cost of service in connection with this present proceeding?

A. Yes, I have.

Q. I will ask you whether this is the exhibit that you prepared?

A. That is correct.

Mr. Lange: Mr. Examiner, this exhibit has an appendix. I think it might be practical to, in the same fashion that this appendix be an "A" number of the exhibit.

The Trial Examiner: Very well, Mr. Lange. Did you state the title of the document?

Mr. Lange: "Allocation of cost of Service for the Year 1939, Canadian River Gas Company and Colorado Interstate Gas Company."

Will the reporter please mark the exhibit for identification?

The Trial Examiner: It will be marked for identification as Exhibit 226.

(Exhibit 226, Witness Lyon, marked for identification.)

The Trial Examiner: And the appendage thereto?

Mr. Lange: The index will be 226-A, the appendage.

The Trial Examiner: Is that an index or is it an appendix?

Mr. Lange: It is an appendix.

The Trial Examiner: It will be marked for identification as Exhibit 226-A.

(Exhibit 226-A, Witness Lyon, marked for identification.)

By Mr. Lange:

Q. Mr. Lyon, did you in connection with the preparation of that exhibit also prepare a written statement describing the nature and contents of the exhibit?

A. I have.

Q. Will you please read that written statement into the record?

Mr. Spencer: I presume, Mr. Examiner, it is unnecessary to renew my usual statement about reading.

The Trial Examiner: We will have that understanding, Mr. Spencer.

Mr. Lange: Yes, that will be definitely understood.

Mr. Spencer: Thank you.

Mr. Lange: All right, Mr. Lyon, you may proceed to read your written statement.

The Witness: "This exhibit entitled "Canadian River Gas Company and Colorado Interstate Gas Company, Allocation of Cost of Service, Year 1939" has been compiled and is presented to show the cost to the Canadian River Gas Company and Colorado Interstate Gas Company, combined, of supplying natural gas to its customers, and to determine by allocation and apportionment the amount of the total aggregate costs experienced by these two companies during the year 1939, attributable to the gas service rendered to each of the groups served from these same facilities. The necessity for an exhibit such as this arises by reason of the fact that the several customers of these companies jointly use the same gas plant and depend for gas service upon the same pipeline facilities and gas supply.

Table 1, entitled "Summary of Cost of Service and Comparison with Revenues," reflects in columns 3 to 10, in-

clusive, the total cost of service ($3,406,857.99) as summarized in Table 4 as to the customer or groups of customers designated (column 1), at the several delivery points (column 2), and shows in column 11 the adjusted operating revenues (total $6,036,276.35) received, as to each customer, and credits for gas utilized in operations, on deliveries of gas during the year 1939.

Amounts in column 3 represent the allocation of cost for all gas produced at well heads, the description of the total cost ($1,051,721.34) being shown in Table 5. In this latter table is developed the unit cost per mcf of $0.02196 (actually $0.021956777) on 47,899,622 mcf of gas produced and made available for sale during 1939. The amounts in Table 1, column 3, relating to the respective customers or groups of customers are derived by multiplying the deliveries in mcf as shown in Table 2, column 6, by the unit cost ($0.021956777) per mcf developed in Table 5.

Amounts in Table 1, column 4, represent the cost of production system gathering of gas, the description of the cost ($170,628.03) being shown in Table 6. In this latter table is developed the unit cost per mcf of $.00396 (actually $.003959818) on 43,089,864 mcf of gas gathered, which exceludes 4,809,758 mcf of gas of the total gas produced, covering direct well head deliveries to Amarillo Oil Company. The amounts in Table 1, column 4, relating to the respective customers or groups of customers are derived by multiplying the deliveries in mcf as shown in Table 2, column 6, excluding deliveries to Amarillo Oil Company, by the unit cost ($.003959818) per mcf developed in Table 6.

Amounts in Table 1, column 5, represent the results from production system residuals refining (gasoline extraction) operations, effecting a credit of $169,144.37 to cost of service, as detailed in Table 7. $118,508.69 and $15,056.24 of the total credit amount shown in Table 1, column 6, are direct allocations to Natural Gas Pipeline Company of America (line 53) and Amarillo Oil Company (line 55) respectively; these amounts relate exclusively to these customers. The remainder of the total credit amount ($35,579.44) is allocated in Table 1, column 6, solely to customers on the

Denver Line, lines 1 to 50 inclusive, by multiplying the deliveries in mcf as shown in Table 2, column 6, lines 1 to 51 inclusive, by the unit cost, $.00163 (actually $.0016299207) per mcf developed in Table 7, line 23.

Amounts in Table 1, columns 6, 7, and 8, constitute the cost of gas transmission totaling $2,265,650.63, the details of which are contained in Table 8. The amounts in Table 8 are further separated to show those costs allocable on the basis of: (1) mcf sales deliveries shown in column 4, "Volumetric Costs," (2) maximum daily deliveries shown in column 5, and (3) rental of leased facilities shown in column 6.

Amounts in Table 1, column 6, to [illegible] $673,427.50, related to the respective customers; ar[illegible]rived by multiplying the sales deliveries in mcf as sh[illegible]n in Table 2, column 6, by the unit cost, $.030850 (actually $.03085021676) per mcf, developed in Table 8.

Amounts in Table 1, column 7, totaling $611,641.80, related to the respective customers, are derived first by application of the percent (44.917%) developed in Table 2, column 7, line 51, to the total ($1,361,715.60) shown in Table 8, column 5, line 30, the product being $611,641.80, the transmission cost of service allocable to customers on the basis of system maximum day deliveries. Secondly, the unit cost per mcf involved in this allocation amounts to $14.33423482, obtained upon division of the total cost of service, $611,641.80, by the total, 42,670 mcf, shown in Table 2, column 7, line 51. The unit cost thus developed was applied to the mcf system maximum daily delivery shown for each of the customers in Table 2, column 7, lines 11 to 45 inclusive, to obtain the amounts shown in Table 1, column 7, lines 10 to 44 inclusive.

Amounts in Table 1, column 8, totaling $750,073.80, related to the respective customers, are derived first by application of the percent (55.083%) developed in Table 2, column 8, line 51, to the total ($1,361,715.60) shown in Table 8, column 5, line 30, the product being $750,073.80, the transmission cost of service allocable to industrial customers on the basis of individual maximum day deliveries. Secondly the unit cost per mcf involved in this allocation

amounts to $10.62171715, obtained by division of the total cost of service, $750,073.80, by the total 70,617 mcf, shown in Table 2, column 10, line 51. The unit cost thus developed was applied to the mcf individual maximum daily delivery shown for each of the customers in Table 2, column 10, lines 9 to 45 inclusive, to obtain the amounts shown in Table 1, column 8, lines 1 to 44 inclusive.

In Table 1, line 53, between columns 7 and 8, is shown the amount of $230,507.53, described in Table 8, column 6, line 7, as the joint expenses rental of leased facilities. This entire amount is applicable to deliveries to Natural Gas Pipeline Company of America.

Amounts in Table 1, column 9, represent the cost of distribution, totaling $88,002.36, the details of which are contained in Table 9. The amounts in Table 9 are further separated to show first those costs allocable equally per customer in column 4, and secondly those costs allocable upon the ratio of adjusted book cost of plant at December 31, 1939, in column 5; while the second page of Table 9 shows the proportionate allocations in columns 4 and 5 to the respective locations of service and reflected accordingly in Table 1, column 9.

Amounts in Table 1, column 10, are the totals of respective amounts in columns 3 to 9 inclusive, the sources of which have been explained in the preceding paragraphs."

By Mr. Lange:

Q. Mr. Lyon, have you completed the reading of your written statement in connection with that exhibit?

A. I have.

Q. Mr. Lyon, did you in connection with your assignment in this particular proceeding prepare another exhibit on allocation of cost of service in connection with the Colorado-Wyoming Gas Company?

A. I have.

Q. Is this the exhibit I now show you?

A. That is correct.

Mr. Lange: Will the reporter please mark that for identification?

The Trial Examiner: It will be marked for identification as Exhibit 227.

(Exhibit 227, Witness Lyon, marked for identification.)

Mr. Spencer: There is no appendix to this one?

Mr. Lange: No appendix to this one, Mr. Spencer.

Q. Mr. Lyon, in connection with this particular exhibit, did you also prepare a written statement explaining its contents?

A. I did.

Q. Will you please read that statement into the record?

A. "This exhibit entitled "Colorado-Wyoming Gas Company, Allocation of Cost of Service, Year 1939" has been compiled and is presented to show the cost to Colorado-Wyoming Gas Company of supplying natural gas to its customers, after adjusting the cost of gas purchased from the Colorado Interstate Gas Company to that determined in the previous exhibit No. 226, entitled "Canadian River Gas Company and Colorado Interstate Gas Company, Allocation of Cost of Service, Year 1939." This exhibit also determines by allocation and apportionment the amount of such total costs during the year 1939 attributable to the gas service rendered to each of the groups that were served from its facilities. The necessity for an exhibit such as this arises by reason of the fact that the several customers of this company jointly use the same gas plant and depend for gas service upon the same pipeline facilities and gas supply.

Table 1, entitled "Summary of Cost of Service and Comparison with Revenues," reflects in columns 3 to 10 inclusive, the total cost of service ($599,153.84) summarized in Table 4, as to the customer or groups of customers designated (column 1), at the several delivery points (column 2), and shows in column 11 the adjusted operating revenues (total $828,941.30) received, as to each customer, on deliveries of gas during the year 1939.

Amounts in Table 1, columns 3 to 5 inclusive, represent the allocation of the cost for all gas purchased for resale, a total amount of $358,385.63; as detailed in Table 5. In Table 1, the total of column 3 is $158,847.03, as shown in

the "Recapitulation of Cost," in Table 5; and this amount has been allocated to customers and groups of customers by application of the unit cost per mcf ($158,847.03 ÷ 2,839,717 = $.0559376268) to the respective mcf sales deliveries of gas shown in Table 2, column 6.

In Table 1, the total of column 4, $407,540.98, is *detained* in Table 5, as $106,532.03 on line 5, plus 53.89% of $1,872.24 on line 8 ($1,008.95). The sum thereof has been allocated to customers and groups of customers by application of the unit cost per mcf ($107,540.98 ÷ 7014 = 15.3323324) to the respective mcf maximum day deliveries of gas shown in Table 2, column 7.

In Table 1 the total of column 5 is $91,997.62, as detailed in Table 5, $91,134.33 on line 6 plus 46.11% of $1,872.24 on line 8 ($863.29); which sum has been allocated to customers or groups of customers by application of the unit cost per mcf ($91,997.62 ÷ 10,512 = $8.75167179) to the respective mcf individual maximum day deliveries shown in Table 2, column 11.

In Table 1 the total of column 6, $70,599.44, volumetric transmission cost of service, as detailed in table 6, column 4, has been allocated to customers and groups of customers by application of the unit cost per mcf shown in the latter table, $.024861 (actually $.02386143513) to the respective mcf sales deliveries of gas shown in Table 2, column 6.

In Table 1 the total of columns 7 and 8 is $149,920.91, being the capacity transmission cost of service, as detailed in Table 6, column 5. The total of column 7 in Table 1, $75,201.83, represents 50.161% of $149,920.91, using the ratio shown at the bottom of column 7 in Table 2, and was allocated to customers and groups of customers by application of the unit cost per mcf (75,201.83 ÷ 7,014 = $10.72167522) to the maximum day deliveries shown in Table 2, column 7. The total of column 8 in Table 1, $74,719.08, represents 49.839% of $149,920.91, using the ratio shown at the bottom of column 10 in Table 2, and was allocated to customers and groups of customers by application of the unit cost per mcf ($74,719.08 ÷ 10,512 = $7.107979452) to the respective individual maximum day deliveries shown in Table 2, column 11.

In Table 1 the total of column 9, $20,247.86, is the distribution cost of service as detailed in Table 7, first page; whereas the second page of this statement shows the allocation to customers.

The amounts shown in Table 1, column 10, are totals of the respective amounts in columns 3 to 9 inclusive, the total of which is $599,153.84, the aggregate cost of service set forth in Table 4."

Q. Have you completed the reading of your written statement in connection with this exhibit, Mr. Lyon?

A. I have.

Q. Now, Mr. Lyon, in connection with your cost of service study that you have prepared and particularly with reference to the previously named and numbered exhibits, 226 and 227, I will ask you whether you have prepared a summary of such cost of service for the years 1937, 1938 and 1939 as applying to Canadian River Gas Company, Colorado Interstate Gas Company, as well as Colorado-Wyoming Gas Company?

A. Yes, I have.

Q. As I understand it, this summary that you have so prepared is not an essential part nor is it necessary to the consideration of the aforementioned two exhibits, 226 and 227?

A. That is correct, it is not essential.

Q. And it was prepared by you primarily for the purpose of giving a spread over the three years named?

A. That is correct.

Q. And will you indicate briefly what your purpose was in preparing such summary?

A. There is included in this exhibit two parts. The first part applies to the combined Canadian River Gas Company and Colorado Interstate Gas Company. The second part applies to the Colorado-Wyoming Gas Company. The two parts are wholly separate.

Q. And included in the instrument purely for mechanical purposes for brevity, but they do not necessarily appear in a combined instrument?

A. That is correct.

Q. Now, is there any other statement you wish to make with reference to that?

A. The first page in this exhibit is entitled "Written Statement."

Q. Will you please read that into the record?

A. "This exhibit has been compiled and is represented to show for the consolidated Canadian River Gas Company and Colorado Interstate Gas Company System, and for the Colorado-Wyoming Gas Company System the total cost of service of each functional division determined in the same manner as was done in other exhibits for the single year 1939."

Q. Now, the two exhibits you are referring to are Exhibits 226 and 227?

A. That is correct.

Mr. Lange: I have overlooked. I want this instrument identified by the reporter.

The Trial Examiner: It will be marked for identification as Exhibit 228.

(Exhibit 228, Witness Lyon, marked for identification.)

By Mr. Lange:

Q. This is the summary exhibit that I am now showing you that has just been identified by the stenographer as Exhibit 228?

A. That is correct.

Q. Now, if you will complete the reading of that written statement appearing on the title page, Mr. Lyon.

A. "This exhibit is presented for the purpose of showing the fact that the unit costs, resulting from the operations of these companies for the year 1939, also approximate the average for the three years 1937, 1938, and 1939. The following tabulation shows in summary form a comparison of costs determined from the operations of these companies for the year 1939, as compared with similar costs for the three-year period:

"Canadian River Gas Company and Colorado Interstate Gas Company.

	Average for Years 1937, 1938, 1939	Year 1939
Cost of Gas at the Wellhead	.02124	$ .02196
Cost of Production System Gathering	.00396	.00396
Cost of Residuals Refining (Amarillo Oil Co.)	(.0032)	(.0031)
Cost of Residuals Refining (Denver Line)	(0015)	(.0016)
Cost of Residuals Refining (Chicago Line)	(.0054)	(.0057)
Cost of Transmission—Volumetric Costs	.031522	.03085
Cost of Transmission—Capacity Costs	1,313,903.39	1,361,715.60
Rental of Leased Facilities—Cost	220,337.34	230,507.53
Cost of Distribution	85,608.05	88,002.36

"Colorado-Wyoming Gas Company

	Average for Years 1937, 1938, 1939	Year 1939
Cost of Transmission—Volumetric Costs	.026553	$ .024861
Cost of Transmission—Capacity Costs	154,249.97	149,920.91
Cost of Distribution	18,157.87	20,247.86

"All statements made in connection with the preceding exhibits, relating to the year 1939 as to methods of compilation, sources of information, and allocations, apply with equal force to the tables in this exhibit."

Q. That completes the written statement on the title page of the exhibit, Mr. Lyon?

A. That is correct.

Q. I have one question to ask you with reference to Exhibit 227. Turn to Exhibit 227, Table 5, Mr. Lyon, the page entitled "Colorado Wyoming Gas Company, Summary of Cost of Gas Purchased for Resale, for the year 1939." In what sense do you use the word "resale" on that table, as well as anywhere else in the exhibit?

A. The use of the words "gas purchased for resale" means all of the gas purchased by this company for resale, regardless of whether it is direct to customers or to distribution plants for redistribution and resale.

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* * * * *

Q. I am assuming that you had to do with all of these things that you mentioned here. You made a study of the load factors, both on pipe line systems and distribution plants. What is the significance of the load factor?

A. You mean you want me to define load factor?

Q. You can if you wish. I mean the significance of making a study of it. I mean, why do you do it? Why do you bother with it?

A. Load factor is the ratio of the average load over a designated period to the peak load occurring in that period.

Mr. Lange: What are you reading from?

The Witness: The Federal Power Commission Glossary of Important Power and Rate Terms, Abbreviations, and units of Measurement.

By Mr. Dougherty:

Q. That would apply whether it is a daily load factor or monthly or yearly load factor?

A. The qualifying term hourly, daily or yearly, is a limited definition of the general term "load factor."

Q. Why bother with load factor? What is the significance of it in the natural gas business and in the studies you have made of the Arkansas-Louisiana?

A. The load factor of gas deliveries is a matter of consequence in determining the cost of rendering the service.

Q. That is, a customer that takes gas on a load factor of 100 per cent can be served with less expense by a gas company than if that load factor is fifty per cent?

A. That is a very broad statement. Generally I would say it would be true.

Q. As you say, load factor has to do with the cost of service?

A. That is correct.

Q. And a poor load factor means you have to provide adequate facilities to furnish the peak, during the average periods that full facilities are not being utilized?

A. If you were speaking of a pipe line system with one company as its customer, delivering gas at one plant.

Q. That is what I am talking about. That is the significance of the load factor, if you had a lateral running to one industrial customer?

A. When you mention lateral, you presuppose there are additional other customers connected to the same pipe line being served from the same source of supply?

Q. That may be so, but on your whole pipe line if you have a 100 per cent load factor you have greater expense of service than if your load factor is 50 per cent?

A. I am afraid your question is broad. I can limit them because the matter of diversity is a matter of consequence and diversity affects load factor.

Q. I am talking about one customer. I will assume, to help you out, that there is no diversity and that all customers on the line have the same load factor and all go up and down at the same time. That makes it simple, doesn't it?

A. Yes.

Q. So with that condition 100 per cent load factor business could be served at a lesser cost than 50 per cent load factor business?

A. I believe so, yes, without application to any specific conditions.

Q. So that in general that is the significance of load factor, not only in your studies or in any studies, it has to do with the cost of service?

A. Principally.

Q. Now, your question of diversity, how did you apply that in your study you made for Arkansas-Louisiana?

A. The diversity of the various classes of service, of course, are a matter of interest to the management. They attempt to improve the load factor of the system.

Q. By what you term a diversity factor you can better your load factor?

A. Yes.

Q. For example, if on your system you have a certain percentage during the day when there is idle capacity and you get some piece of business during that period of the day to fill it up, that brings diversity of load into your picture, doesn't it?

A. I am afraid I don't understand that question.

Q. Instead of putting it on a per-day basis, let's put it on a yearly basis. Suppose in the summertime on your gas system when your domestic load is down you have a certain amount of capacity in your transmission and compressor system, and you want to get some other type of business.

A. You are seeking additional load for the system?

Q. Yes.

A. Of course, the capacity is not then being utilized for carrying of gas and if you have a customer that can take gas during those periods, then you have capacity which you can sell if you have an available supply.

Q. Isn't that where the point of diversity comes in, you are getting a different kind of load to fill in different periods when the principal and basic load is not utilizing the system?

A. I speak of diversity generally as related to groups of the same class of service and you are speaking of diversity, as I gather, by different classes of service.

Q. That is load on the pipe line—

A. Domestic service is a class of service and there is a certain amount of diversity between domestic customers using gas, we will say, for cooking and water heating. It is a very very fine diversity but when you speak of diversity between summer and winter that would be generally the diversity between two classes of service.

Q. As applied to a long distance transportation system, that is the factor of diversity that is important there, rather than whether everybody cooks their breakfasts at the same hour in the morning?

A. I wouldn't want to say what the most important factor was in transmission systems for diversity.

Q. You can apply the diversity factor to the thing I mentioned, that is, difference of characteristics of load as between different classes of customers and classes of service that come on at different times in the year.

A. Will you please read that question back?

(The question referred to was read by the reporter as set forth above.)

The Witness: I am sorry, but I don't follow you.

Mr. Dougherty: Strike it out.

Q. You mentioned having made some studies on the cost of rendering service and say that these studies involved the determination of incremental costs. What do you mean by that?

A. The incremental cost is the additional expenses or costs incurred to existing facilities—strike that.

Incremental costs are the additional costs to those already being incurred.

Q. The additional costs which you say are incremental costs are incurred by reason of what?

A. I was giving a broad definition. The incremental costs could be of any nature incurred in addition to similar costs already being incurred.

Q. Why do you make the study?

A. Why?

Q. Why do you make the study of incremental costs? What is the purpose?

A. To determine additional expenses.

Q. Of what?

A. For any purpose.

Q. What purpose? Enumerate some purpose. You don't do it as a mathematical pleasure, do you? You must have some reason as a gas engineer for doing it.

A. You mean as applied to natural gas production?

Q. No, any type of natural gas business, any feature of it.

A. Natural gas production?

Q. Natural gas production, gathering or production.

A. We will take production. The incremental cost of natural gas production would be the additional cost of producing additional quantities of gas beyond those now being produced.

Q. What is the purpose of trying to find that out when you make a study so that you might know, or is there some practical reason for it?

A. Well, the purpose generally, I would state, of expanding the markets of the production of gas.

Q. I assume you made some of the studies on the Arkansas-Louisiana system? That is what you say?

A. Natural gas production?

Q. I don't know. You say here—

A. I believe I have made some studies on gas production that would include incremental costs, yes.

Q. Wouldn't that type of a study be made if natural gas companies produced gas with adequate facilities had an opportunity to sell additional quantities, say, to some other than existing customers?

A. Of course if you had facilities that are adequate, you have no incremental cost.

Q. I wasn't quite finished with my question.

And that you wanted to find out whether you could supply this additional customer gas at a price which that customer was willing to pay, then you would determine how much additional cost might be involved; and having made that determination, that is what you would call the incremental cost involved in serving this additional customer?

A. I don't follow that question.

Q. Suppose you are in the natural gas business and want to take gas from the Panhandle field to any place you might select and you come to the Canadian River Gas Company and say, "I want to buy 50 million feet a day." Is that clear?

A. No, it isn't. Are you already taking gas from the Panhandle field?

Q. You are not, no. You are a brand new man in the gas business.

A. And I desire to secure a supply of gas in the Panhandle field?

Q. That is right. You come to the Canadian River Gas Company and say that you want 50 million feet a day and that you are willing to pay a certain number of cents for it. Then the rate engineer or somebody for the Canadian River Gas Company would determine how much additional costs would be involved in supplying you with that 50 million feet a day. They would consider all of the existing facilities, what they were, what the capacity was, how many, if any, additional wells would be drilled, what additional op-

erating expenses, and so forth, would be. Would that then be the determination of incremental costs with respect to your proposed purchase of gas from Canadian River Gas Company?

A. It would be an incremental cost to the Canadian River Gas Company.

Q. That is right. That is correct?

A. As I understand it, and I believe I do.

Q. That is the way I understand it so we are in agreement.

What about the use of incremental costs on the sale from pipe lines; for example, to a large industry in Louisiana or Arkansas off the Arkansas-Louisiana system that would take substantial quantities of gas but were unwilling to pay a very high price for it. How would you determine the question of incremental costs involved in serving that large industrial customer?

A. If they were not willing to pay the cost, then the determination of cost would be of no consequence.

Q. I didn't say whether the price they were willing to pay would be the cost or not, but they give the amount or furnish the company with the number of cents they are willing to pay. How would you go about determining the incremental costs that might be involved in serving that customer?

A. You determine the additional expense that the company would be put to in addition to those expenses it is now incurring to attach this customer, but the study would be hypothetical and of no value if the customer were not willing to pay the cost.

Q. That is the incremental cost and something plus. That is what you mean?

A. It would be hypothetical if the customer were not willing to pay the cost of service of that system.

Q. Let me get that clear. If the particular system in question did have sufficient capacity to serve this industrial customer because of the characteristics of its already existing load without having to put in any additional pipe line capacity, but it of course has to buy its gas—Just for the sake of illustration, suppose that that pipe line company has to pay 10 cents per Mcf. for its gas and it has to make no additional compressor installations, it has to

make no additional pipe line installations except as involved in connecting up the customer in the metering station; let's assume for the sake of this example that those additional expenses amount to 2 cents per Mcf. on the basis of the period of the contract—that would bring us to 12 cents, wouldn't it?

A. That is correct.

Q. That would be what you would call your cost of service—

A. No.

Q. Let me finish. —on the incremental basis?

A. That would be the incremental base but it would be grossly discriminatory to the existing customers.

Q. That would be the incremental cost—

A. It would be the additional expense which the customer was put to and would not represent the cost of service to that customer.

Q. I am not arguing that. You answer my questions. If we get to arguing it will take too long.

Mr. Lange: I think he can answer your question.

Mr. Dougherty: He was starting into a dissertation of what his opinion was about it.

Mr. Lange: I think he has the right to explain what he means by his answer. I don't think his answer was argumentative.

Mr. Dougherty: He was explaining something that I hadn't asked him about.

Mr. Lange: I think it was very pertinent for him to explain what he meant by his answer.

Mr. Dougherty: We were talking about incremental costs—

The Trial Examiner: I think the difficulty that appeared was that Mr. Lyon sort of anticipated the question Mr. Dougherty was asking and didn't wait until Mr. Dougherty finished his question.

Mr. Dougherty: That question won't be asked until 11:00 o'clock this morning.

Mr. Lange: Mr. Lyon wanted to finish his answer.

The Trial Examiner: He will be given an opportunity to complete his answer.

By Mr. Dougherty:

Q. Mr. Lyon, you have very properly stated in your application you made studies involving the determining of incremental costs and I know you are amply qualified to do that. I am just trying to get for the record what sort of a study it was. Will we agree what I mentioned will be a statement of incremental costs to the pipe line company involved in serving that customer?

A. To the facilities already installed, yes.

Q. Under the circumstances, couldn't we say that 12 cents is the incremental cost involved in serving that customer? Just be fair about it.

A. I think so as I understood your question.

Q. If that pipe line company or if the industrial customers were willing to pay 15 cents, the pipe line company would be making three cents over and above its incremental cost, wouldn't it?

A. That would be correct, yes.

Q. That is what you mean by incremental costs.

When you get to the determination of average system costs—that is what you have done in this report, isn't it? I have reference to Exhibit 226.

A. Those costs are averages, yes. I wouldn't say they were average system costs.

Q. I will take that up in detail with each system later. Except for transmission, I believe you agree they are average system costs?

A. It is an average cost of the gas at the wellhead and is an average cost of the gathering—

Q. If the word "system" means the production system or gathering system, that is the system cost?

A. That is correct.

Q. Going back to the question I asked you about incremental costs in determining it, then after we had connected this new industrial customer—we will say it is a great national defense industry in Colorado—in determining the average system cost you would average that—your theory would be to forget the incremental cost feature of it?

A. I think the incremental cost feature should be forgotten.

Q. You don't believe in it in the first instance?

A. I believe incremental costs are for use only for the purpose of determining increased business and in determining the cost of service itself it is necessary to consider the existing load as well as the additional load.

Q. You also say that you made studies on limits of common zones. What do you mean by that?

A. A common zone is a territory or area in which average costs may be applied without discrimination.

Q. In connection with the Arkansas-Louisiana system, do they have all their property segregated into cost zones, that is, a number of them?

A. I don't understand that. A cost zone is an engineering study. The facilities are constructed and are in place in certain positions.

Q. To illustrate what I have in mind, I will put it on this basis: If you got on a streetcar where they had an average factor over the whole system, whether you rode two blocks or two miles you would pay the same fare; where a streetcar company has a zone system, then, when you ride within one zone you pay one fare, and if you go beyond that zone you pay two fares. In connection with the Arkansas-Louisiana Gas Company where they have town border rates in effect, do they have different distances or zones within which zone the same town border rates apply?

A. They do not have town border rates to presently-owned plants. Prior to the formation of the present corporation they did have a city gate rate and that gate rate was uniform.

Q. Over the whole state of Arkansas?

A. There were some exceptions but generally speaking it was uniform. I believe there were some exceptions with respect to those customers—those plants, which they served wholesale.

Q. When you use the term "common zone" you take a zone and then average the cost within that zone? Is that what you mean by common zone?

A. You are not only averaging it but the premise is that you may average it without discrimination.

Q. Yes, that is what I mean. For example, take the Colorado Interstate Gas Company. Suppose it desired to make Colorado Springs and Denver a common zone; then you would average those zones and because you had already

assumed it would be a common zone you would conclude there was no discrimination?

A. That is correct.

Q. Or if we wanted to make Denver a separate zone, Colorado Springs a separate zone, and Pueblo a separate zone, each one would be considered separately?

A. The premise would be that they were not a common zone territory or a common zone.

Q. As I understand the way you have treated the Colorado Interstate Gas Company, you have considered it as one common zone?

A. I have treated it as a single project, a single enterprise.

Q. That would be one common cost zone?

A. The construction of the operation of the various parts are so interwoven that it is not reasonable to segregate—

Q. All I am asking you is this: Isn't it true you have considered the Colorado Interstate Gas Company as one common zone? You have not divided it into more than one common cost zone?

A. The transmission system, that is correct.

Q. You have treated it just as it was a pool and everything was coming out with common averaging of costs with load factor—I mean demand day involved?

A. I have treated the transmission system as a single enterprise and have applied the common costs as the basis of determination to all points of delivery in that system.

Q. Now, you speak of a cost study that was submitted in a rate case involving the City of Texarkana. Do you have a copy of the study as you submitted it?

A. I do not.

Q. Could you get me one?

A. I would have to go to the court records to obtain one.

Q. You don't have one in your personal files?

A. No, I don't keep records of those things.

Q. With respect to Exhibit No. 226, you have shown in there—take Table 1 for example, under Production Expense, Cost of Gas At Wellhead, Item 3, the basis for that as I take it is Statement 5, that is, the total on Statement 5, Canadian River's $1,051,721.34 is the same?

A. The figure $1,051,721.34 shown on Line 37, Table 5, is the sum of Lines 1 to 36, inclusive, being all of the figures on that table. In addition to the adjusted expenses determined by the Examiners of the Commission, this exhibit includes, as an element of the cost of service, an amount calculated at 6 per cent per annum on the average net adjusted book cost of gas plant in service during the year 1939 as Return on Property In Service; and an additional amount calculated at 6 per cent per annum on the amount of Working Capital, determined in the exhibits submitted by Examiners of the Commission. These amounts for return are likewise included without prejudice as to the proper amounts which may be allowed and have been adopted in this exhibit for the purpose of presenting a complete statement of the cost of service.

Q. You have answered more than I have asked you but let's get back to the operating expense figures as applied to the cost of gas at the wellhead.

The breakdown that you have on Table 5 is not found in any previous exhibit, is it?

A. Yes.

Q. In that form?

A. Not in the same form.

Q. That is what I asked you. I said that the breakdown as you have it on Table 5 is not found on any other exhibit, is that right?

A. There is no new information in here. I may have summed or totaled two figures together in an accounting report.

Q. Will you tell me what exhibit I can find the replica of Table 5?

A. You mean an exact duplicate?

Q. Yes, that is what I asked you.

A. There is no exhibit as far as I know.

Q. Table 4 has the dollars the total dollars which you have taken from Mr. Smith's Exhibit 185?

A. That is not a replica of Mr. Smith's exhibit either.

Q. I did not ask you that. I said that it has the figures which you took from Exhibit 185.

A. That is correct, the same way Table 5 has the figures that were taken—

United States Circuit Court of Appeals

TENTH CIRCUIT.

No. 2550.

COLORADO INTERSTATE GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

No. 2551.

CANADIAN RIVER GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; PUBLIC SERVICE COMPANY OF COLORADO; and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

ON PETITION TO REVIEW AND SET ASIDE ORDERS OF THE FEDERAL POWER COMMISSION.

FILED SEPTEMBER 9, 1942.

VOLUME 5—Pages 2401-3096

[Testimony of Witness Lyon (Continued.)]

Q. The figures on Table 4 are contained in haec verba in Mr. Smith's exhibit?

A. I don't understand that.

Q. I see on Table 4, Exhibit 226, Total Operating Expenses, $1,090.305.56.

Mr. Smith's Exhibit 185, Schedule 3—I see on Line 3, Operating Expenses, $1,090,305.56. That is where you get it, isn't it?

A. I would have to check on that exhibit and see.

Q. I will show it to you.

A. That figure is reflected as you state, and it is likewise reflected in Column 2, Line 2, Schedule 7, Sheet 1 of 1 in Exhibit 185.

Q. All you have there is the detail rather than the ultimate. The ultimate is what I asked you about.

So with respect to the items under the heading of Depreciation, Depletion, Taxes and Non-recurring Expenses on Table 4 in your exhibit, those are all found, those same identical figures are found in Mr. Smith's Exhibit No. 185?

A. The source of the information in this exhibit has not been limited to that one exhibit but by the incorporation of figures from several exhibits which have been submitted by the accounting Examiners.

Q. Well, the figures on Table 4, the consolidated figures, only found in Exhibit 185. The other exhibits with respect to either the Canadian River Gas Company or the Colorado Interstate Gas Company—

A. That is correct, they are the detailed figures supporting the consolidated exhibit.

Q. The only place you find the consolidated figures which you have used in any other exhibit is Exhibit No. 185?

A. Consolidated figures, that is correct.

Q. That is what you are using, consolidated figures on Table 4, isn't that right. Aren't those consolidated?

A. That is correct.

Q. The same thing is true of all figures on Table 4, that first sheet, down through "Total Exploration and Development Costs"?

A. I believe so. I think you will find those figures on Table 4. It will be necessary to go to the individual reports, however, because I would not be certain of that.

Q. On the second sheet of Table 4 where you have Rent for Company Dwellings and Miscellaneous Gas Royalties, what is the source of those two? I couldn't find them and that is the reason I am asking you about them.

A. It will be noticed that the amount of operating expenses reported by Examiners of the Commission have been reduced in two instances. One is the treatment given to rents derived from gas plant in service in the form of income from dwellings occupied by employes which has been classified as a credit to or reduction from transmission expenses rather than as operating revenues.

The other is the crediting of a small amount of royalty received by the company by virtue of realization of the sale price of a lease to production expenses instead of to revenues.

These two adjustments of minor consequence have been made solely for the purpose of simplifying the presentation of this exhibit to make possible a direct comparison of the total costs of the companies with their gas service revenues.

Q. Did you make those yourself? That is, these two adjustments which you have just read about from your typed memorandum you have in front of you?

A. Yes.

Q. They are not found in any other exhibits than that?

A. The amounts are found in the accounting exhibits. I transferred them from revenues to a deduction from expenses.

Q. That is, they were included in the accounting exhibits as other revenues, I suppose, than revenues from the sale of gas. Can you tell me where they are?

A. They are operating revenues as I recall the title.

Q. Can you tell me where they are? I haven't been able to find them, Mr. Lyon.

A. You will find the amount of $256.69 on Schedule B-17, Sheet 2 of 2, Page 102 of the exhibit "Canadian River Gas Company Income Accounts and Supplemental Data, Including Examiner's Reclassifications and Adjustments."

Mr. Lange: What exhibit number is that?

The Witness: Exhibit No. 168.

Mr. Dougherty: Tell me that reference again. I don't have it. I didn't catch it when you read it.

The Witness: Will you read the answer back, Mr. Reporter?

(The record referred to was read by the reporter as set forth above.)

Mr. Dougherty: What about the other item there of company dwellings?

The Witness: On the same sheet the sum of the preceding figure of $8,126.12 plus $8,787 is found on Sheet 1 of 2, Schedule B-17, Page 71, Exhibit 140, entitled "Colorado Interstate Gas Company Income Accounts and Supplemental Data Including Examiner's Reclassifications and Adjustments" will equal the $16,913.12, the first amount on the second Page of Table 4 of this exhibit.

By Mr. Dougherty:

Q. What you have done in effect, then, Mr. Lyon, is instead of treating those items as miscellaneous income or income that was not connected with the sale of gas, is so treat them and credit them against these expenses?

A. I would state that in this way, that the amounts reflected in the accounting Examiner's exhibits for this minor royalty, together with the rents from company dwellings, have been deducted from the operating expenses of the company rather than treating them as operating revenues where they are properly classified, for the reason I have already given.

Q. They weren't classified as revenues from the sale of gas by Mr. McKinstry or by Mr. Early.

A. They are classified by them as a part of the total operating revenues.

Q. But not from the sale of gas. It is other miscellaneous income. Isn't that what they are included as?

A. The title on the royalties of $256.59 is "Miscellaneous Gas Revenues." The title on the other item is "Rent from Company Dwellings, Bunk Houses, Etc.", a part of the operating revenues.

Q. Now, turning to Table 5, Mr. Lyon, will you tell me in what manner you have segregated these specific dollar figures that are under the heading of cost in Column 2 from the figures which were given you by the other Examiners from their exhibits?

A. Suppose we take the first line of that table: "Operations—gas wells, labor, supplies and expenses." The Uniform System of Accounts of the Commission classifies the operations into a major functional division of gas production. For the purposes of this exhibit it was necessary to segregate the cost of production into three parts: cost of gas at the wellhead, shown on Table 5; cost of production system, gathering, shown on Table 6; and cost of residuals refining, shown on Table 7.

Accounting Exhibit 185, Page 9, which is Schedule No. 8, Sheet 1 of 4, shows gas wells, labor, Line 2, in the amount of $2,208.51 and supplies and expenses, Line 3, in amount $1,289.08. It likewise shows supervision, Line 1, amount $14,005.46 and other labor, $1,694.24, and supplies and expenses, Line 9, $5,576.60, and undistributed auto expenses, Line 12, amount $3,029.70.

In order to distribute the supervision, other labor, supplies and expenses and undistributed auto expenses to the correct accounts, there has been added to this gas wells, labor, $2,536.32 and to this supplies and expenses, $2,085.44.

The sum of the amounts on Line 2, $2,208.51, Line 3, $1,289.08, and these apportioned amounts, is the $8,118.35 reflected as the first item in Table 5.

Q. Well, your proportion of the supervision and undistributed auto expense was made on what basis between the production ending at the well mouth and the gathering?

A. Operation and supervision and other operation labor is reallocated on the basis of itemized labor in proportion to amounts thereof. Other production and gathering equipment is reallocated on the basis of itemized maintenance in proportion to the amounts thereof.

Q. That is, you took the actual correct dollars that you found in labor and supplies and then allocated your division as you found that ratio?

A. In the same proportion. That allocation was neces-

sary because of the fact that the accounts undistributed auto expense and supervision and other labor supplies and expenses must of necessity be distributed in order to allocate the whole cost of operations.

Q. There is no separations of the actual time or expense of those things as spent on gathering facilities and operations as distinguished from the well itself?

A. So far as I know that is correct. I have not audited the books but have taken the accounting reports as they were presented.

Q. Well, what is the reason for using the dollars involved in maintenance as a basis for allocating some of your expenses and using the dollars of labor supplies and expenses for other types of allocations?

A. Usually supervision labor would be allocated in proportion to direct labor, but the supervision is in proportion to the direct expenditures for the direct labor.

Q. That supervision has to do with maintenance, I suppose, as well, doesn't it?

A. No, that supervision which I have allocated is solely operation supervision. There is no segregation of labor from materials and supplies in the maintenance account and the supervision labor was distributed over the direct operation labor.

Q. Now, so far as you could, I suppose gas well royalties shown in Line 6 on Table 5 were actual as paid by the company?

A. They are the amounts reported in the accounting Examiners' exhibits and I have used them for that reason.

Q. I shouldn't limit myself to that because I understand you made no independent investigation of the figures having to do with the costs of operation of the company?

A. I have made no independent investigation of the accounting exhibits. I am familiar with the accounting exhibits and have used them as correct.

Q. You didn't go back of that to the company's books to make any investigation of your own?

A. No, I didn't.

Q. These exhibits as prepared by Examiners of the Federal Power Commission as being the figures that you should use in making your study embodied in Exhibit 226?

A. They were handed to me and I used them because I thought they were the figures that should be used.

Q. Why?

A. Because they are the reports of the Examiners of the Federal Power Commission and I believe they are competent to do that work.

Q. Why would you use those as against any other reports, because they are on your side?

A. No.

Mr. Lange: Well, I believe that isn't a fair statement.

Mr. Dougherty: Well, I think he is assuming something in that statement that he can't prove and I want to see if he can. He hasn't made any examination of anything else and he doesn't know whether they are right or not.

Q. Did you examine any other reports than these?

A. No other accounting reports.

Q. What other reports did you examine?

A. I have had some engineering compilations of gas volumes prepared by the engineers from the records of the company.

Q. You didn't examine any accounting reports by witnesses who testified on behalf of the company in this case?

A. Not for the purpose of preparing these exhibits.

Q. But even without examining them, you think they are not worthy of use?

A. I wouldn't pass on them without seeing them.

Q. Why didn't you think it was necessary to find out and see and look at them? They were available here in court.

A. I didn't feel it was necessary to examine all of the exhibits that have been presented in this case in order to prepare this exhibit.

Q. You were seeking to get all the facts, weren't you?

A. Yes.

Q. And you just decided in your own mind that the facts contained in the Federal Power Commission exhibits were the only facts worthy of consideration?

A. I think they are all the facts that I needed in order to compile this exhibit. I didn't go any further.

Q. Do you think they are any more worthy than any other facts put in other exhibits in this case?

A. I couldn't pass an opinion without investigating.

Q. Isn't this a fact, Mr. Lyon, that you were handed these

exhibits, or they were given to you upon your request as being the exhibits of the Federal Power Commission Examiners which they had put in, and you were to base your study entirely on those figures?

A. I had no instructions to that effect.

Q. Isn't that what happened? You didn't want to base them on any other figures, did you?

A. I could have based them on anything I cared to.

Q. But you didn't care to base them on anything else because you wanted to take the Federal Power Commission's side of this, didn't you?

A. I tried to determine as accurately as I could and I feel that the reports of the Examiners are corect.

Q. How do you know they are correct when you made no investigation of anything else or the books themselves?

A. I believe they are competent to do the work.

Q. I am not disputing that. How do you know the accounting officers of the company aren't competent?

A. I won't pass any opinion on their competency.

Q. You just started down the line this far and the first group of accounting exhibits you took were the Power Commission exhibits and you said, "I'm satisfied with those boys. They are competent. They are okay with me," and you say, "That's as far as I'll go, I'll take that."

A. I believe that statement is substantially correct. I feel that the exhibits are complete and are accurate for the purposes that I needed them.

Q. You do not sponsor them as being accurate based on your own work?

A. The accounting exhibits?

Q. Yes.

A. I do not sponsor them. I believe they are correct.

Q. You are accepting them as correct?

A. That's right.

Q. If it turns out that they are not correct, a lot of your computations are false, then?

A. Some of them may or may not affect this exhibit, depending upon the error.

Q. If there is an error in their depletion and accrued depreciation, that would have a very serious effect, wouldn't it, whether too high or too low?

A. Depending upon the degree of error, but any error

in those would result consequently in an error in this report.

Q. You would have to make all of the corrections that would be required in your report?

A. Correct.

Q. So your report on the basis of facts stands entirely on these other exhibits?

A. Correct. As I stated before, it is not the purpose of this exhibit to introduce any new information but depends on those exhibits for the source.

Q. What it amounts to is a compilation on the figures you found of what you call costs as represented by those figures in those accounting exhibits?

A. Yes.

The Trial Examiner: We will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Dougherty:

Q. Mr. Lyon, in just a general way, how did you make your distribution—

A. May I interrupt you just a second. Just before the recess I was making a statement and I wanted to supplement that by saying with the addition of the amount of return, the statement was as to the source of these figures and I wanted to indicate that the amount of the return in these exhibits are not reflected in the accountants' reports.

Q. As I understand that, you just took 6 per cent as an example to use as a figure and you are not pretending to testify as to the rate of return?

A. That is correct.

Q. You might have taken 5 or 4 or 7 or 8 per cent?

A. That is correct. And if the other amounts are considered, the effect of it would be very easy—can be very easily seen by referring to Table 4 (continued).

Mr. Lange: You mean if other rates of interest were applied?

The Witness: That is correct. By dividing the return

shown on that table in the amount of $1,020,966.59 by 6, you would have the amount for one per cent of return and the amount of return would be increased depending upon the chosen rate.

By Mr. Dougherty:

Q. Yes. Now, still referring to Table 5, you have made certain allocations on taxes. Now, with respect to advalorem taxes, are those direct taxes as reflected in the accounting exhibits which you use as your basis, or did you have to make some allocation?

A. The Accruals for advalorem taxes have been allocated to the functional divisions of each company upon the basis of the proportion of the net adjusted book costs of plant as of December 31, 1939. The advalorem taxes of the Canadian River Gas Company being especially related to the property of that company have been allocated on the basis of its plant and the advalorem taxes of the Colorado Interstate Gas Company being specially related to the property of that company have been allocated upon the basis of its plant.

Q. This statement from which you have read the various answers, is that something you have prepared as an explanatory guide as to the method you have used, or did somebody else prepare it for you?

A. I have some notes here having to do with this which saves going through my working papers.

Q. You didn't answer the question. Did you prepare it or did somebody else?

A. I prepared it solely.

Q. Then you have made direct application of the advalorem taxes wherever it was possible to do so; that is, where the accounting exhibit showed, for example, the advalorem taxes applied to certain property included in your gas well-head cost you would take those exact figures?

A. The accounting exhibits do not reflect the advalorem taxes by functional divisions of property.

Q. But you had to allocate them.

A. Of necessity.

Q. On what basis?

A. As I have stated, on the net adjusted book cost of the plant as at December 31, 1939.

Q. That is on a dollar basis—dollars as indicated in the book costs?

A. Yes, you may label it dollars or property.

Q. Now you speak of the net adjusted book cost. What is meant by that?

A. I believe those terms are used in the accountant's exhibits and they have been defined, I would believe, in those exhibits.

Q. Why did you take that rather than what they show as the original book costs of the property?

A. Because I believe that—you are speaking now of advalorem taxes?

Q. Well, I am speaking—you say you adjusted them on the basis of the net book cost of these property items.

A. Yes.

Q. Why did you take the net book cost instead of what we might call the gross book cost or the original cost as shown in those exhibits?

A Because the net adjusted book cost gives effect to the property—gives effect to the property as it existed in 1939 more closely than the original cost.

Q. That is, you took the depreciation which the Examiners have accrued in their exhibits as representing the actual depreciation of the property?

A. You are now referring to what the Examiners have in their exhibits, or are you referring to the fact that I have used the net adjusted book cost as reflected in the Examiners' exhibits?

Q. Is the net adjusted book cost that you use arrived at by the Examiners?

A. Yes.

Q. Taking the original cost and then deducting what they have computed as the depreciation reserves against that property as of 1939?

A. I would like to check the wording of the accountants' exhibits. I believe that the terminology that they used—

Q. All you did is to go to the net book cost and take that?

A. That's right, as reflected in the accountants' exhibits.

Q. Is that reflected with respect to each item of property rather than as a gross amount?

A. I believe the net adjusted book cost is reflected by property accounts.

Q. My recollection, Mr. Lyon, was that in determining the depreciation as computed by the Examiners that it was in a lump sum and I did not understand that they had, for example, applied that particularly to gas well tangible costs or drilling and cleaning equipment, field, measuring stations, and so forth.

A. That could be determined upon an inspection of the exhibit. I would be glad to check that and read the net adjusted book cost figures which I have used in this allocation.

Q. I wish you would, because I have never—I don't recall that in any of the exhibits either of Mr. Luttring or of Mr. Early that they have made an allocation or determination of the depreciation against each separate group of property. As I recall the exhibits, they were gross amounts.

Mr. Lange: Do you have Exhibit 176 there, Mr. Dougherty?

Mr. Dougherty: No, I don't. Is that where it is?

Q. Do you have any notation there as to the exhibit from which you got your net adjusted book costs for the purpose of making this allocation?

A. The numbers weren't assigned at the time these working papers were compiled. I can do that in just a minute if you will give me the number of the exhibit.

Q. I have been handed Exhibit No. 176 which is entitled "Annual and Accrued Depletion and Depreciation of Gas Plant Accounts and Examiner's Adjustments" by Kenneth L. Smith and Carl E. Luttring.

A. In Exhibit 176, Page 20, Schedule 2, Column 3, Line 29, the net book cost—production plant—in amount of $3,488,980.92 for leaseholds and gas well intangible costs plus gas well intangible costs on the same line in the next column in the amount of $615,536.01, plus $2,852.00 on the same line in Column 5—I'm sorry. Will you strike that? That is superfluous.

Q. Mr. Lyon, I don't care about your making a detailed computation. All I was interested in was the principle you followed.

A. The advalorem taxes for the Canadian River Gas Company have been distributed in accordance with the net adjusted book cost of the property.

Q. Now, your Federal income tax, was that distributed on a property basis?

A. Federal income tax?

Q. Yes.

A. The accruals for the Federal income taxes for both companies have been allocated uniformly to the operations of the several functional divisions on the basis of the proportion of the net adjusted book cost of gas plant in service in each functional division as at December 31, 1939. This procedure results in the allocation of this item uniformly upon the same basis as the return and does not consider the existing differences between costs of service and revenues. It is apparent in allocating this item of expense to those customers whose revenues are to remain undisturbed, the apportionment of income taxes should be based on net income derived, utilizing actual revenues rather than an apportionment distributed uniformly with a determined amount of return for income taxes being based on net income are due in proportion to the amount of net return earned measured by revenues collected rather than upon cost of service as set forth in this exhibit.

Upon determination of the income taxes appropriate for the year 1939 the allocation thereof would be in accordance with the net income which should have been enjoyed in the light of these determinations. It is also necessary to bear in mind that there are some deductions in determination of taxable income which are to be taken into consideration, such as in the payments which are to be distributed in accordance with the property rather than cost of service.

Q. What you have actually done, as I take it from the first part of the written statement which you just read, is to take the actual income tax paid and distribute it on a property basis.

A. If I change the word "paid," these are the taxes accrued applicable to the business for the year 1939. The payments are made, I understand, about March of the following year.

Q. That is an appropriate correction, but it was the actual income taxes accrued by the companies rather than any new computation that you made.

A. That is correct.

Q. Now, when you get through with your various alloca-

tions and allocations of the costs, as you call them, then you divide that by the total amount of gas produced from the wells and get this average cost per Mcf.?

A. I may make one amendment. That is not the total amount produced. It is the total amount produced available for sale. The gas produced and given to the lessors as a part of the consideration for the leasehold has been deducted so those costs are distributed uniformly over the Mcf. of gas produced available for sale at the wellhead.

Q. That is a very small amount?

A. That's correct.

Q. Now, while you have used the word "costs," in using that word you are not meaning to imply that these figures are represented on the books of Canadian River Gas Company or Colorado Interstate Gas Company in every instance, nor do they necessarily reflect the expenditures made by those companies?

A. They reflect the data presented in the accounting Examiners' reports.

Q. And to the extent that those Examiners' reports do not reflect the actual expenditures made or the actual expenses recorded on the company's books, so to the same extent your exhibit would not reflect either of those two things?

A. May I answer your question this way, and if it is satisfactory, that I think that the accountant's exhibit reflects the correct cost on the books. If they do not reflect the correct cost or if they do not reflect what is on the books of the company, then this is not the cost.

Q. You found in your examination of the accounting exhibits that certain adjustments had been made from the operating expenses and other items as reflected on the company's books?

A. The accountants have made a number of entries, some of them are called reclassification entries and those auditors' adjustments are naturally not reflected on the books at the time this examination was made by the accounting Examiners.

Q. And there is a difference in the amount of depletion and depreciation that the company's books accrue or that are accrued on the company's books and the amount that the Examiners have set up in their exhibits?

A. I would have to check that in detail to see.

Q. You made no examination to compare what the costs reflected on the company's books were and what difference, if any, there was between those and the costs as reflected in the accounting exhibits of the Federal Power Commission Examiners?

A. No, I have made no examination of the books. I believe that the auditors' adjustments are journal entries which are reflected in their exhibits.

A. All that I want to bring out is that in using the word "cost," you were using it as identifying the dollar figures of operating expenses, etc., as shown on the accounting exhibits?

A. That is correct.

Q. There are certain items of expenses and also certain items in the property accounts that were marked by the Examiners as being suspended for the further consideration of the Commission. How did you handle those? Did you just accept the treatment as there given or did you include them or exclude them, or what?

A. The amounts included in these exhibits are the adjusted amounts determined by the accounting Examiners and set forth in the exhibits and include amounts suspended subject to final disposition as may be directed by the Commission.

Q. Now, having gotten this average cost of gas at the wellhead, you applied that to the volume which various customers, shown on Table 1 of your exhibit, took during the year 1939?

A. Yes.

Q. Now, I take it that you gave no consideration to the question of load factor of the various deliveries of gas which Canadian River Gas Company makes; that is, as between deliveries made to Bivins for the Denver line, as we call it, and deliveries that are taken at the wellhead for the Amarillo Oil Company and deliveries that are made to the Fritch compressor station of Texoma Natural Gas Company.

A. No, no effect was given to load factor in this allocation.

Q. Are you cognizant of the fact that the load factor of deliveries made to Fritch for the Chicago line, that that load factor is 95 per cent or better?

A. I believe that the load factor of the deliveries to the Fritch station is a little higher than the load factor of the Denver line.

Q. Well, isn't it substantially higher? I gave you the figure of 95 per cent.

A. It sounds a little high to me This general system Denver line is around somewhere between 60 and 70 per cent.

Q. That's right, you are correct about that.

A. And the Chicago line during 1939 was a little higher than that. I don't know whether it approaches 95 per cent or not. That could be very easily checked from my record, if you care to have it.

Q. You have no independent recollection of what the load factor is?

A. I know generally it is in excess of that of the Denver line but I don't have the exact calculation. I can check it.

Q. But you gave no consideration to that fact in determining what the cost of the gas was as delivered to the Denver line and what it was as delivered to the Fritch station?

A. I have given considerable consideration, but I have given no effect.

Q. Well, in making your computations you eliminated it entirely?

A. I have given it no effect.

Q. No effect to it, and you treated all the gas that was produced from the wells as all being produced under the same circumstances without trying to make any classifications on the basis of maximum monthly or daily demand?

A I have found that the production plant to the wellhead of the Canadian River Gas Company provides the source of gas handled by these companies constituting a single plant producing gas from a common supply, namely, acreage owned and operated in the western part of the Texas Panhandle field.

This allocation consequently treats it as a single unit for the production of gas.

Q. Did you read the testimony or examine some of the exhibits in this case which show that there are certain wells that, if not all the time, substantially all the time deliver their gas into gathering lines that go over to the Fritch

station and others that deliver their gas to the gathering lines that go to Bivins station?

A. I am informed of that. That is not from the exhibits, however.

Q. Now, the poorer load factor that would exist in a demand on the field would require additional wells to supply the maximum demand of such load factor, would it not?

A. You mean as applied to the year 1939?

Q. That is, it is your understanding or your judgment that you need no more wells to supply a quantity of gas on the 60 per cent load factor than you do to supply that same quantity on a 100 per cent load factor?

A. Are you speaking generally?

Q. I am speaking under the circumstances under which this operates. You know there is a 25 per cent open flow limitation in Texas?

A. Yes, I so understand. That is a monthly limitation, I understand.

Q. Quite so, but you have given no consideration to monthly maximums, have you—or at least you have given no effect to them?

A. That is correct, no effect.

Q. Now, if the deliveries that go to Fritch are substantially the same quantities all year around and having in mind there is a monthly 25 per cent limitation on open flow, wouldn't it take a lesser amount of facilities to supply that than if the same annual quantities of gas were delivered and the load factor was 60 per cent?

A. You are asking me now a hypothetical question as to whether—

Q. Yes.

A. —the number of wells, and so forth and so on

Q. That's right.

A. There are too many factors involved there. You do not know what the open flow capacity of a well is until you drill it. The number of wells required would be dependent upon the open flow you secured.

Q. I am assuming you are not drilling any more wells than you need to supply the market. You have said in your previous statement that that load factor is an important thing to be considered in determining cost of service.

A. It is in transmitting facilities.

Q. You don't believe it is in field facilities?

A. No.

Q. You think that you can supply a poor load factor with no more wells than is required to supply the same annual quantities of gas with a 100 per cent load factor?

A. I am not able to relate a general statement to these particular properties for this reason, that a gas well is drilled to recover a volume of gas. It is not drilled for the purpose of providing capacity. It is drilled sometimes at a date earlier than it would otherwise be drilled in order to provide capacity in lieu of installing booster stations in the field, but you can increase your rates of withdrawal by installing your booster stations, so the question of capacity in production facilities is not of importance.

Q. You can't increase your rate of withdrawal over 25 per cent of the open flow, however, Mr. Lyon.

A. That's correct, but you always have considerable in excess of that as an operating situation.

Q. That is your assumption. Did you go to the field to make an examination to determine what the situation was?

A. You mean, have I determined that the open flows of this system are adequate to handle their peak loads? They are handling it.

Q. That's right. You don't know how much in excess of that?

A. I don't. The geologists will have something to say on that, if they haven't.

Q. You say that they aren't drilled to provide capacity to meet peak loads, is that your contention?

A. Solely. They aren't drilled solely to provide capacity; they are drilled to recover gas.

Q. Don't you have to recover gas many times to meet peak loads?

A. You have to recover it in advance or through wells drilled in advance of their ordinary drilling date in order to provide capacity if your facilities are so heavily loaded that you are taxing the production facilities to that extent.

Q. Many times, isn't it so, Mr. Lyon, that wells are needed by a gas production company purely to supply peak loads and that if their load factor were better they wouldn't need so many wells.

A. That would presuppose that the company had spent those sums in order to provide a capacity without regard to the volume that those wells would produce, and generally the wells are drilled for the purpose of increasing the recovery from that acreage.

If you have drilled wells so close together that it is your purpose to increase the flowing ability, from that acreage rather than to recover the gas, I would say the field is overdeveloped.

Q. You don't recognize, then, any such necessity of drilling wells solely for the purpose of meeting peak demands of the customers? You are just considering it on a volume basis, namely, an annual volume basis and if you have got enough wells to meet that annual volume, that is all, then, you shouldn't use any additional wells that are used solely in the wintertime to meet peaks?

A. You are speaking generally of the Canadian River Gas Company?

Q. I am speaking in general first.

A. I would say generally it could happen in a field of extreme—I would say it could happen. I wouldn't give the exact conditions that you might drill a well for capacity. I think there are none of the Canadian River Gas Company of that character.

Q. As a matter of fact, there are many gas companies in the United States that have many wells that aren't brought into play except during peak times of demand, isn't that so?

A. Do you mean that the wells are turned off during periods of less than peak demand?

Q. Yes, all summer long, shut off, and not brought into the line until winter comes and peak demands come on.

A. I question the usefulness of that property, then.

Q. What would you do to meet your peak demands, then?

A. I would say they are very badly depreciated.

Q. You would turn your customers off when your peak days come, in operating your gas property?

A. No.

Q. Well, how would you meet it?

A. I would say that those wells—I repeat my same state-

ment that I would question the *used* and usefulness of those properties. They are badly depreciated.

Q. What other way can you supply the gas on peak demands than to have wells available from which you can take the gas?

A. Install booster stations and take additional supplies from the additional wells.

Q. Not if you have reached the extent to which you can take gas from those wells.

A. That is not the situation.

Q. Not if you are taking all of the gas you can out of your existing wells.

A. That is hypothetical.

Q. Well, let's take the Canadian River Gas Company. If at any single time the demand on that system would be more than the 25 per cent open flow would permit in any month, wouldn't they have to drill wells if the use of that well was to meet the peak demand one month a year? Where would they get the gas?

A. I don't believe they would drill a well for that capacity. I believe they would buy the gas. It is a question of economics.

Q. Suppose no gas was available?

A. That is again hypothetical.

Q. I think you are being just as hypothetical because I don't know how you are going to meet peak demands and that is what customers need on cold days, is gas.

A. Well, I can only repeat again the same point, that you drill wells to recover gas and that you drill them earlier than you would sometimes otherwise drill them in order to provide capacity today, that you can substitute for that for additional compressing facilities in the field and postpone the drilling of that well. If you drill that well today strictly for reasons of capacity without intent to recover a volume of gas from that to make that well an economically sound investment, then I question the prudence of the drilling of it.

Q. Of course, your booster station situation would apply only if you have not exceeded the amount of gas you can take from the wells under the existing limitations.

A. This peak, by the way, is a monthly peak, again.

Q. Oh, yes. Isn't that true, that your booster stations do you no good unles you can get the gas out of the wells?

A. That is correct.

Q. Well, at any rate, we are in agreement that you have given no effect to the poor load factor of the gas that goes to the Denver line in making this computation.

A. That is correct.

Q. Now, are you familiar with the fact that the contract under which the Canadian River Gas Company sells gas to the Colorado Interstate Gas Company gives a prior right to gas that goes into the Denver line over the sales that might be made for delivery at Fritch?

A. I am not sure that that is in that particular contract. I know that it is in the Chicago Natural Gas Pipeline contract.

Q. It is recognized?

A. That is correct.

Q. If the time ever comes when the available gas supplies are not sufficient to meet all markets of the Canadian River Gas Company that the deliveries to Fritch would have to be shut down prior to any shutting off of the deliveries to the Denver line?

A. That clause in that contract, if the condition were to take place, might be exercised. I don't know. That would be a matter to be decided at that time. You will notice that there are other clauses in the same contract that completely negate the effect of that.

Q. You are familiar with the fact that the Amarillo Gas Company for the gas which it takes in the field for its market south of the Canadian River property has the first right on all production of Canadian River?

A. That is a usual occurrence in developing a project of the magnitude of this production plant, that those obligations that have been incurred in the earlier development of the project must be cared for before the project can be taken care of.

Q. And you have given no effect to those various priorities as they exist with respect to the field in your determination?

A. I say, any question of priority of the Amarillo Oil Company is of no consequence.

Q. At the present time?

A. That's correct.

Q. And that is true with respect to Fritch at the same

time; that is, adequate gas is available to meet all the demands now?

A. And I will call your attention to an additional section, I believe No. 3, of that Natural Gas Pipeline Company of America contract that in effect prohibits the Canadian River Gas Company from disposing of more than 18,250,000 Mcf. per year in addition to the requirements of the Denver line, and the Amarillo contract in effect blocking those reserves for their future use.

Q. Well, that would be in addition to sales that have never been made yet, but that doesn't effect the prior right that the Denver line has.

A. I think my statement will stand. If you don't understand my statement I can clarify it further.

Q. That provision you just read recognizes still the prior right of the Denver line?

A. But it also recognizes the fact that in order to insure for itself a dependable supply of gas the Natural Gas Pipeline Company of America has required that the Canadian River not dispose of more than that volume of gas in excess of what it had contracted for. If the reserves of the company at the time of the negotiation of that contract were adequate for the life of the contract and leave 18,250,000, then that clause is of no consequence. The supply of gas to the Natural Gas Pipeline Company of America is as firm as any of the other supplies.

Q. That is so, but I say, it has no limitation on the amount of gas that goes into the Denver line.

A. No limitation except market requirements.

Q. Now, when you get your next compilation, I assume you have used the same principles in making your allocations and setting down your various items here on Table 6 as you have discussed with respect to Table 5?

A. Yes, the same principles and methods.

Q. Now, again, you have given no effect to the difference in maximum monthly demand which is made by the Denver line on the gathering system as compared with the maximum monthly demand which the Chicago gas line demands.

A. That is again on a uniform volumetric base.

Q. And given no effect to the fact that there is a different load factor between the Denver line and the Chicago line?

A. No effect.

Q. You just treated all the same gas, that is, all in a lump sum?

A. This is a gathering system for the purpose of delivering gas out of the common supply.

Q. You have made no attempt to specifically allocate any portion of the gathering system to the Chicago gas or the Denver line gas?

A. No effect.

Q. You haven't done it here. You have made no allocation?

A. I have made no allocation, segregation of the property specifically devoted to the service of either of those markets.

Q. Now, with respect to the residual refining which is gasoline plant expense, you have taken whatever net return there is from the Bivins gasoline plant and credited that against the gas that goes in there?

A. Into the Denver line, yes.

Q. Into the Denver line, and you have done the same thing with respect to the Chicago line gas?

A. Credited it to the cost of production of the gas that is delivered to the Fritch station.

Q. That amount that you have—the $18,508.69 in Line 53 on Table 1, that is the Canadian River's share, I take it, of the total results of operation of the Texoma gasoline plant?

A. Yes, that is the figure as reported in the accounting Examiner's report.

Q. Now, let me get to the question of transmission expense which you have set forth on Table 8. I take it you have assigned certain basic costs which you put under the head of capacity costs which would be incurred if the minimum amount or a normal amount of gas were going through the line and you have put under the Column 4 which is headed "Volumetric Costs" these additional costs that are a result from increases in the amount of gas that is put through the system. Is that generally the principle?

A. Suppose I give you a clear definition.

Q. All right.

A. It has been found that the costs of these two companies after being classified as to functional divisions of

operation should be further segregated into three general classes which may be defined as follows:

1. Volumetric costs are costs incurred predominately in proportion to the volume of gas handled, irrespective of the rate of delivery.

2. Capacity costs are costs of a consistently recurring nature which vary with the rate of gas delivery and are independent of the operating load factor. The customer costs are costs incurred to render special service to known customers, attributable only to the service rendered to such customers. Such costs are further of a nature that there is little or no relationship or mutual benefit with other customers connected to the same pipe line facilities.

Q. Now, excuse me, Mr. Lyon, the last sentence you read, that relates to transmission or are you getting over to distribution?

A. You are correct, it does not relate to transmission. Distribution may be deleted if you care to.

Q. Let's just take the transmission until we get through with that. Now, how do you make your division of some of these items? For example, on Table 8, Line 2, you have split that total cost of operation of the compressing system 50-50 there.

A. Yes.

Q. Upon what theory or basis was that done?

A. My opinion based on my experience and knowledge of the gas industry.

Q. That is, about half of the labor and supervision in operating the stations is related to the volumes that go through it?

A. That is correct, and further, I might state that the general reason for that is that a station that is shut down but available for use carries a skeleton crew which is generally about half of the crew that is necessary to operate the station's full load.

Q. Is that in accordance with your experience with the Arkansas-Louisiana company?

A. Generally, yes. I would say that as applied to that particular company probably more than fifty per cent of the costs could be classed as volumetric costs. By skillful operation they would be able to reduce operating expenses on stations not in use more than fifty per cent.

Q. You mentioned that this was based on your experience in the natural gas industry. I was not aware that you had any more experience except with the Arkansas-Natural system.

A. As far as experience in the employment of a natural gas company, that is correct, but in the past two years I think I have visited a number of compressor stations and discussed matters relating to natural gas compression with a number of engineers.

Q. That is, in the course of your duties for the Power Commission you have made inquiries?

A. That is correct. I might add that it is my understanding that that is substantially corroborated by the testimony of Mr. Rhodes in this case in his estimate at one point.

Q. Now, then, there are a number of items there you have divided 50-50, and is that on the same theory that you have just indicated?

A. The item on Line 3, operating of compressing station system supplies and equipment has been allocated to volumetric costs. This item is practically all composed of cost of fuel, lubricating oil, waste and supplies, and that is related to the operation of the facilities and to the volume of the gas pumped. I think it is appropriately classed a volumetric cost.

The item on line 6, maintenance of compressing station equipment, has been classed as a volumetric cost because I believe that that maintenance is proportionate to the volume. A portion of item on line 11 has, as indicated in the footnote, covers accruals for depreciation of compressing station equipment, and I believe that that is appropriately related to volumetric costs.

The Federal and State income taxes that went into the return are allocated 50 per cent to volumetric cost and 50 per cent to capacity costs, based upon my judgment and opinion as to where those costs appropriately rest.

Q. Well, that is again on the basis of skeleton construction operation, just about like you said a while ago?

A. No, not the return and income taxes.

Q. What is that?

A. I believe that the risk of return for transmission facilities should be distributed in accordance with the volume of gas handled and I have placed 50 per cent of the return as constituting the risk element in transmission into a volumetric cost.

Q. So if no gas were handled at all, you would have a return figure there of 50 per cent of the property?

A. No, I have a return at half the rate.

Q. It would work out the same, wouldn't it?

A. If it were a question of mathematics, but my position is the facilities installed ready for use but not used carry one rate, and facilities installed and used carry another rate, and that 50 per cent constitutes the risk.

Q. Now, in making this computation on volumetric cost, you again get to an average figure representing a little better than three cents, which is the cost of transmitting each thousand cubic feet of gas through the system from Bivins station up to Denver?

A. That is correct.

Q. I want to ask you with reference to this Exhibit No. 138 which was prepared by Mr. O'Connor, the flow chart showing where the gas comes in where it goes out—you are familiar with that?

A. Yes, that is Mr. O'Connor's map.

Q. Here is the delivery, say at Dalhart, Texas, which is a few miles away from Bivins. For every thousand cubic feet which is taken out of the line at Dalhart you apply that volumetric factor of three cents plus?

A. Yes, I have.

Q. So that for every thousand cubic feet of gas taken out at Denver you would again apply that three cents?

A. That is correct.

Q. So that even though the Dalhart gas uses just a small portion of the system, it pays just as much of the volumetric cost as the gas that comes out at Denver?

A. You say "use." I think the Dalhart delivery is a part of the general system and it uses the general system, that transmission system, and the costs involved in serving Dalhart are so interwoven with the general system of costs it is not possible to segregate a portion of the facilities through which that gas flows and attribute that to the service at Dalhart.

Q. You, of course, recognize that the gas going to Dalhart only flows that far?

A. It flows that far.

Q. And it never gets up here north of Pueblo where the line is reduced to 20 inches?

A. That is correct, that flow of gas doesn't flow that far.

Q. If you cut this line off at about where the lateral goes into the Arkansas Valley, still Dalhart would get its gas?

A. If you cut that line off you wouldn't have gas to Dalhart.

Q. The utilization of property is what I am speaking of. Suppose this line ran 2,000 miles, running to Chicago and Detroit, you would then still charge Dalhart the same rate?

A. That would be hypothetical. I am—

Q. Let's take the Panhandle Eastern. Do you know that line?

A. Generally. I am not familiar with its markets.

Q. You have been with the Federal Power Commission two years and you know it is a prominent line, don't you?

A. I understand its market is in Detroit.

Q. From the Texas Panhandle field to Detroit is about 1200 miles or more?

A. Approximately. I believe it is a little longer than that.

Q. Under your theory you charge the same volume rate to a small town in Missouri that gets its gas from the line as you would charge Detroit?

A. Not necessarily. Upon determining the cost used in this exhibit—

Q. Just a minute. What is the difference between the application of your principle of a line 1200 miles long and one that is 450 miles long?

A. That is what I am trying to answer you. Upon determining the cost used in this exhibit, careful consideration has been given to recognized methods of cost determination and costing procedure, customs in the trade, and the special engineering features inherent in the construction and operation of this particular property. Proper effect has been given in each determination to the principle of cost procedure that it be directly related to the particu-

lar property being considered, to the manner in which the property has actually been constructed, and to the manner in which the property is actually operated. It has also been borne in mind that the method adopted should be stable and susceptible to continuous application, and that it should not be allowed a distortion in cost resulting from transient disturbances in operating conditions or an expedient operating procedure to result in an erroneous allocation to one group of customers to the benefit or detriment to another group.

A careful study has been made of the gas service rendered by these companies, the geographical location of the various markets, the composition and character of loads served, the cyclic seasonal nature of the requirements of gas for certain uses such as space heating, the service requirements of the various classes of customers and other relevant factors having a bearing upon the determination of the cost of rendering gas service. A careful study has also been made of the source of the gas supply, the geographical location of the supply with reference to the various markets, the extent of the market area served and the density of the demand in various territories. The general history of the construction of the property, its operations and the development of its markets have also been studied and considered in the preparation of this exhibit. I think the method I followed is correct.

Q. I know you think that, but as I don't think so, that is the occasion of this dissertation. Actually, this 20-inch line —I will refer to it as that—serves mainly Colorado Springs, Denver, and the Colorado-Wyoming Gas Company?

A. That is correct. The load center of the system is located—the volumetric load center on an annual basis is located for the two consolidated companies at a point approximately half-way between Denver and Pueblo or near Colorado Springs.

Q. Well, starting at Denver, that portion of the line which runs down, say as far as Pueblo, actually—I will take the Devine station located on this map, Exhibit 138, the pipe from Denver to Devine station serving Colorado Portland Cement Company, Fountain Valley School, Colorado Springs, Denver—that is the Denver area, and the Colorado-Wyoming Gas Company, and no other gas goes

through there except that that goes to the customers, isn't that correct?

A. I don't agree with the use of the word "serves." The gas flows through there. The gas moves through there. As to the question of service, I think that the line south of that point is just as much involved in the service of those customers as the line north of that point. It is necessary to have both. It is linked into a chain to serve the whole system.

Q. I am not saying the line south of Devine doesn't serve the customers north of Devine. Let's start at the other end. Maybe it will work better.

When you start at Bivins and go through the 22-inch line, all of the gas that goes to Denver, of course, flows through that?

A. That is correct.

Q. And, therefore, uses all of it?

A. That is correct.

Q. You are accordingly making Denver pay a portion of the volumetric cost of transporting gas through that whole 22-inch line in your computation, a part of the costs that Denver pays are built up with the expense of moving the gas through the 22-inch line or system?

A. That is correct. The same thing applies for the other customers served from the same transmission line.

Q. When you get to where the Colorado Fuel and Iron Corporation takes over, gas which flows to that company does not flow from there north to Denver?

A. That is correct.

Q. Your method of computing volumetric costs makes the Colorado Fuel and Iron Corporation pay just as much of the volumetric costs involved in taking gas there at Pueblo as it costs in Denver?

A. I have totaled the cost of the entire line and divided the volume from the line. I do not segregate the cost north of Pueblo and the cost south of Pueblo. I take the total costs and total volume—

Q. I understand that. Isn't it a fact that gas that goes to the Colorado Fuel and Iron Corporation is by your method sharing a part of the volumetric cost engaged in transporting the gas from that point north up to Denver?

A. The premise for that would be that I by allocating

costs uniformly, allocate portions of that cost uniformly. That conclusion is not to be drawn from this exhibit.

Q. That is what happened, however?

A. That would be your assumption.

Q. As a matter of fact, your proposition is that all of the line is a composite thing and everything serves everything else and the volumetric cost ought to be uniform for every customer. What I am pointing out, Mr. Lyon, is as the result of that in dollars that gas delivered to the Colorado Fuel and Iron Corporation is bearing its proportionate share of the volumetric cost in operating the 20-inch line north to Denver. That is the result, isn't it?

A. That is a point of view. I don't necessarily state that this average cost which is built up of seven items is to be uniformly assessed.

Q. You have done it in your Table 1.

A. I say that the total of those expenses is to be uniformly assessed.

Q. But what you did on Table 1 was uniformly assessed.

A. I uniformly assessed a portion of the total.

Q. You broke your total down uniformly among your component parts?

A. I sum up the component parts to a total and apply the average cost to it as an average point of service.

Q. It is all the same. You come out mathematically the same?

A. Yes, mathematically.

Q. If instead of using this as one system if we blocked it out and took this 22-inch portion of the line and determined the volumetric portion there and prescribed that to every thousand cubic feet of gas that flows through it, and if we came on up the line, and when we got to the 20-inch line we made that same determination and applied those volumetric costs only to that portion of gas which flows to that portion of the line, we come out with a different volume unit cost applied to these different customers, don't we?

A. If you applied costs in a manner different than what I have in this exhibit—

Q. I mean if we applied it in the manner I stated by allocating the cost of the line to the gas that flows through that line.

A. That is correct, you would.

Q. We have a higher volume cost to apply for the Denver gas than we would have for the Colorado Fuel and Iron Corporation or that we would have for the gas that goes into the laterals in the Arkansas Valley?

A. Your cost would be cumulative, that is correct.

Q. So that the result of your system of doing this is in effect to build up the cost of service of this direct sale gas which the company sells, isn't it, and reduce the cost of serving the gas that goes all through the line clear to the end of it and is sold for resale purposes only?

A. I don't follow your direct sales and resales.

Q. You know what this company sells to customers for use, do you not?

A. It sells to distributing plants and it sells directly to users.

Q. You are familiar with the provision of the Natural Gas Act that talks about gas that is sold for resale for various purposes?

A. I think I am generally familiar with the Act.

Q. Didn't you ever read it?

A. Yes.

Q. Will you for the purpose of this discussion—when I say "direct sale gas," I mean gas the pipe line company sells for consumption, and when I say "resale gas," I mean gas that it sells to distributing companies, for example, the City of Colorado Springs for resale or distribution.

You are familiar with the fact that all of the direct sale gas the pipe line company sells for consumption, the main part of it is delivered at Pueblo or south of Pueblo, and then to the Colorado Portland Cement Company just north of Pueblo?

A. The largest customers served in that territory by the Colorado Interstate Gas Company is a direct industrial sale.

Q. So following your plan of allocating or determining volumetric cost on a system basis you arrive at a greater number of dollars to be applied to the volumetric cost of this direct sale gas of the company than would be under the plan I mentioned.

A. Just fractionally, yes, because of the fact that the oad center on the volumetric base is north of that industrial delivery.

Q. Using the plan I have mentioned to you, it would be a greater portion of that volumetric cost going against the Colorado-Wyoming and Denver than actually is assessed against it under your plan?

A. Greater, that is correct.

Q. So that as I say, the result of your method is to tend to increase your computed cost of gas that this pipe line sells to these industries for consumption and to correspondingly reduce that that goes all the way through the line and comes out at Denver?

A. I give no consideration as to whether the delivery is made to an industry or to a distribution plant or if it is resale gas or direct consumption. It is a factor, of course, under the method you have outlined that the farther the gas flows the more costs there are to accumulate. Under the method I have followed the geographical distribution of the load within that common cost zone is of no consequence.

Q. How far would you extend a pipe line before you would change your method? What is the limit of your distance?

A. I would have to see the pipe line.

Q. When you make your computation on your maximum demand you still through this average theory—that is the next group you have there—under capacity costs after having arrived at what might be called the unit capacity cost, you have again applied that uniformly over the whole pipe line without giving any consideration to the distance the gas moves?

A. It is not quite as simple as you have illustrated it, but it is in principle correct. It is a uniform basis.

Q. Yes.

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Q. Mr. Lyon, referring to your Table 8 and the dollars which you show at the bottom of Column 5 for capacity cost, my understanding is that you have made an allocation of those costs to the various different points by using the data contained in Columns 7, 8 and 10, Table 27.

A. That is correct.

Q. Am I correct in understanding that the total deliveries shown in Column 9 which are then divided between domestic, commercial, and gas lost; and Column 7, domestic, commercial gas lost; and Column 8, represent the actual peak delivery day of the Colorado Interstate Gas Company, or, rather, the Denver line, I should say, during 1939?

A. The information in this exhibit relating to the annual volumes of gas handled, the maximum daily gas requirements of each customer or group of customers, and coincident maximum daily requirements for each class of service have been secured from the books and records of the respondent companies by engineers of the Commission. In some instances the respondents' records have not reflected the actual daily requirements, the shortest period for which volumes were reflected varying for different groups of customers. It has been necessary, therefore, to determine the daily demands in such instances by engineering estimate.

In all instances where daily meter readings were available, such readings have been used. Where weekly or monthly data constituted the shortest interval of time, it was necessary to estimate the daily volumes by engineering estimate based on information relative to the character of service and probable requirements of such customers or groups of customers on the particular day under consideration.

In those instances where it was necessary to estimate the demand of certain small communities, they have been determined at an amount approximating the average daily demand for the week for which readings were available, modified to the extent that indications of weather in the period and type of user necessitated.

In those instances where it was necessary to estimate the demands of industrial users within the distribution plants served by these two companies, the demands have been determined from the number of working days in the month.

Where it was necessary to estimate the demands of small industrial users served directly from the pipe line, they have been estimated at approximately the average daily demand computed from the number of calendar days in the weekly or monthly period for which readings were available.

Q. Then this figure at the bottom of 94,998,000 cubic feet would not then represent the actual peak day deliveries made during 1939 but does represent as much actual data as you had and then some computation is made?

A. With respect to Column 9?

Q. Yes.

A. It was necessary to make certain estimates. The estimates, however, in Column 9 are inconsequential in proportion to the total volume.

Q. With respect to the figures in Column 7, are those taken from the records of the company as stated here, or have estimates been made as to some of those figures?

A. There are estimates in Column 7. In fact, I would say that the bulk of Column 7 was of necessity estimated and the estimate, of course, affects the determinations in Column 8.

For instance, the delivery to the City of Denver at the town border is reflected in that exhibit as 36,104 Mcf. The distribution between domestic and commercial, gas lost, is in one class and industrial in another class, which were determined by engineering estimates.

Q. Did you get from the Public Service Company the total of their metering readings of large industrial customers on that day?

A. No, we made inquiry but were not able to secure sufficient information to make the determination any more accurate than an estimate in the first instance. The figures for the industrial demand was secured through the local engineers here for certain of the customers. The remainder of the customers would of necessity be estimated and I thought for the purpose of this exhibit it would be reasonably accurate to make one estimate.

Q. Did you make this estimate or did the engineers here at the Denver office of the Federal Power Commission make it?

A. It was made under my supervision. I believe for the City of Denver I made the estimate myself, as I recall it.

Q. In that figure of 8,734 Mcf., did you take certain daily averages of deliveries to industrial customers based upon previous months in arriving at your 8,734 Mcf.?

A. No previous month. The estimate was based upon the

deliveries in the particular month in which the peak occurred. In this instance it was February 1939, so the records of the Colorado Interstate Gas Company reflecting the volume of industrial gas in the month of February 1939 were the principal data used in that estimate.

Q. Now, do I understand that the 36,104 Mcf. which is shown as the delivery to Denver, is that the maximum day for Denver during February 9, or is that the actual total delivered at the town border on February 9?

A. That is the delivery to the city of Denver on the day of Thursday, February 9, 1939, the day on which the system delivered the maximum amount of gas.

Q. So that February 9 was the system's peak delivery day?

A. That is correct.

Q. Then you had the information of the total delivered to each customer from the pipe line on that day?

A. Yes, there were a few instances, however, in the very small consumers who had excess pressure chart displacement meters that are read once a week.

Q. Those would be smaller customers?

A. That is correct.

Q. The estimates relating to the division of Column 9 into Columns 8 and 7?

A. The bulk of the estimating.

Q. In using the word "coincidental," you mean those were the actual peaks as occurring, that is, forgetting the estimate part of it, on that very day?

A. Yes, coincidental.

Q. You have in Column 10 a different set of figures which column is headed "Individual Maximum Day Delivery to Industrial Customers."

A. That is correct.

Q. I take it that represents a group of non coincidental peak deliveries?

A. That is correct.

Q. How would you get those deliveries for industrial gas to these various utility companies?

A. Those figures in Column 10, which are the individual maximum day deliveries to industrial customers, served in the distribution plants which are supplied at wholesale by

this company; were determined, as I previously stated, by the determination based upon the month in which—

Q. You took the month of February and took out the average daily deliveries for the month of February for the delivery of average industrial gas?

A. The month in which the maximum demand for this class of service occurred has been determined from a study of the aggregate monthly deliveries to that community. The determination was then made of the maximum daily requirements for this class of service in the particular month which indicated the maximum average daily delivery.

Q. Well, the figures in Column 10 may or may not be in the month of February?

A. That is correct. Some of them are coincidental with the system peak and some of them are not, and the section would show that.

Q. I note that you have no similar column with respect to domestic and commercial, and gas lost. Why is that?

A. The transmission system peak day delivery of these companies is consistently recurring and coincident with the maximum demand of the domestic and commercial customers. The dominating effect of the weather upon the requirements of gas for heating purposes by this class of service, and the almost simultaneous changes in temperature in the several markets served, together with the immediate effect of this demand upon the transmission system, makes the determination of this responsibility readily ascertainable.

The demand responsibility for domestic, commercial and lost gas, therefore, has been determined by their coincident demand on the day of the system peak.

Q. As a matter of fact, you don't know whether the day of February 9 was the peak day for domestic, commercial and gas lost for each of these customers indicated on Table 2?

A. I believe that it is to such a degree of accuracy that it is suitable for the purpose of cost allocation.

Q. You have a great number of miles difference between some of the areas served and others, so if you did have a variation of temperature, for example, at Denver and at Pueblo, and a different degree date deficiency, you might, therefore, get a diversity of peak day?

A. I do not agree. For instance, in December 1940, the

most recent peak, I believe the mean daily temperature in Pueblo was between 1 or 2 degrees within what it was in Denver.

Q. Well, you would agree with my assumption that if the temperatures were different in the two places, then you would get a different effect?

A. I am afraid we are confusing temperature with load. If the temperatures change simultaneously, the loads change simultaneously and there is no diversity. The severity of the weather, of course, is dependent upon the elevation, the latitude and the location with respect to bodies of water and things of that sort, but if the cold wave moves steadily at, say, 20 miles per hour which is the general wind velocity during the winter seasons, it would move 200 miles in 10 hours and the space of 10 hours would involve this entire system.

Q. So your assumption does depend on that and you have to look to the records to know whether the weather condition had uniformly held true. I appreciate you are very definite about it in your mind, but I assume that if the record showed you were wrong you wouldn't dispute it?

A. There are a number of minor factors, but none which I believe would be of consequence in using the figures for the purpose of allocating capacity costs.

Q. What was the purpose of determining the non coincidental peak day for the industrial customers? Can't you answer that without looking at your notes, Mr. Lyon?

A. Yes, I am trying to phrase it to make it clear. I am trying to use these technical words and they are confusing unless you get the specific word you want to use.

After the capacity costs have been allocated between the two classes of service, domestic, commercial, and loss of gas on the one hand and industrial on the other, it is my judgment and my conclusion that the proportionate amount of those capacity costs that should be allocated to each group of industries or industry is served at one point, should be determined by the responsibility that the system incurs without regard to the month in which it happened.

The peak demand for industrial service is not controlled or determined as it is for domestic and commercial gas by the weather, and the uncontrolled diversity in that group of customers is a matter to be considered.

Q. That is, it is the maximum obligation that the pipe line has to the industrial customers which you think should be considered rather than the actual delivery on the peak day, the single day that you take?

A. On the day of the system peak,

Q. Yes, system peak. That is, I say, the maximum obligation which would really be represented by the most gas that they took in any one day during the year.

A. That's correct.

Q. That is what the line is obligated to serve whenever called upon and it is that obligation that you use in this column rather than the actual deliveries on the system peak day?

A. The difference between the use of the peak responsibility (and peak responsibility means the deliveries coincident with the system maximum delivery is, as I stated, due to the fact that the factors involved in serving the industrial customers are not present, or, rather, are not similar—are not the same as those in serving the domestic and commercial customers.

Q. That domestic and commercial customer demand depends a great deal on degree day deficiencies.

A. Well, the maximum demand depends to a considerable extent on the severity of the weather.

Q. Whereas, with industrial customers it depends on the capacity of which the plant is running and that may be greater in the summer than it is in the wintertime; that is, the use of the gas?

A. Will you read the question, please?

(The question referred to was read by the reporter as set forth above.)

By Mr. Dougherty:

Q. The industrial plant, I mean, not our plant.

A. I am sorry, I don't understand.

Q. Well, take the American Crystal Sugar Company. Do you have the month in which this maximum individual day occurred there in your notes?

A. Yes. For that particular customer it occurred on November 17, 1938.

Q. Well, that illustrates what I was attempting to phrase,

namely, that customer peak depends on the operation of the sugar plant when they reached the maximum. They had no reference to the weather.

A. That's correct.

Q. Do you think, then, that to prepare a similar set of figures; that is, of non coincidental peaks for the domestic and commercial gas lost would come so close to the actual coincidental peaks that the deviation would be very slight?

A. I wouldn't get that, but I will state this, that if you took into account the effect of such a determination in a study of this sort that it would not seriously change the determination.

Q. The amount of dollars which you—I say, the amount of dollars which you have ascribed to all of the direct industrial sales made from the pipe line on Table 1 under the heading of "Capacity Costs," which you have jumped there as $498,795.84, is the result of computations based upon the ratios in Column 10 on Table 2, I take it?

A. Yes.

Q. Now, did you make any computation on the basis of the coincidental system peak for industrial gas under Column 8 on Table 2, to see whether or not that would give you a greater or a lesser amount than the $498,795.84?

A. I have made some test checks.

Q. Well, doesn't your use of—

A. —which show that that would be approximately $494,000.

Q. Well, your figures check with mine, Mr. Lyon, so the result of the use of Column 10 gives a few thousand dollars more cost against the direct industrial sales than if you used the figures in Column 8.

A. There is very little difference. The method which results in the answer that I just gave of $494,000 would be an allocation based solely on peak responsibility and I believe that the method which I have presented here, although a little more complicated, is a more refined and accurate determination of the costs.

Q. But it does result in a greater capacity cost against the direct industrial sales than the alternative method or the other method would of some $4,000?

A. About one per cent of the capacity cost which is around .4 of 1 per cent on the total cost.

Q. Now, in making up this statement on Table 2 I note you lump all industrial gas together. Did you take into consideration and give any effect to the different classes of industrial gas that are sold to different classes of customers that use it?

A. In this exhibit the allocation of capacity cost to classes of services and the individual customers have been made upon the basis of a participation of each class of customer in the system peak demand with regard to priorities of service, an examination of the industrial contracts indicate that the majority of them contain shut-off clauses which would permit the companies to reduce industrial demand at times of peak if desirable from an operating standpoint. To the extent that reductions are actually made in the future it would be appropriate to reduce the allocated capacity assessment against the class and the individual industry affected during the year.

During the year 1939 I have given no effect to any curtailment of service by reason of insufficient pipe line facilities. Since that time it is my understanding that the system has reached a new maximum peak but has likewise installed additional compressing facilities and increased the transmission system capacity and it is my understanding that they have not severely curtailed their service as yet. When and if that occurs in fact—when it occurs in fact there are grounds for relieving an industry of some portion of its capacity costs.

Q. You, however, do not recognize any reduction that should be made on the basis of the right of shut-off. You require the shut-off to be exercised before you give any effect to the different priorities in the different classes of gas?

A. I believe it should be either exercised in fact or imminent. A dormant clause in a contract which is not exercised and may not be exercised for the life of the contract is a speculative matter.

Q. The prior right that the domestic gas has which assures it that under no circumstances will there be any curtailment of the domestic gas should be given no effect in such a study under your method?

A. In speaking generally I couldn't answer, but speaking specifically for this company I am firmly convinced that

no effect should be given for the reason that this company has installed additional compressing facilities in lieu of shutting off the industries.

Q. That is the basis you work on, instead of determining affirmatively the value which the domestic gas has, it being assured that it would not be curtailed, you work at it negatively and more or less charge industrial gas with its lack of priority in the event there is actually a shut-off?

A. I am afraid you misunderstand. I do not consider value in cost allocation. I consider cost alone, not what the service is worth.

Q. What's the difference in value and what the service is worth? Isn't that what value means, what something is worth?

A. Value is what it was worth, but the value may not be what it cost. Value is not synonymous with cost.

Q. I thought you were using what it was worth as synonymous with cost.

A. No, this is a cost allocation.

Q. And in making that cost allocation it is your opinion that no consideration should be given to priorities between different classes of gas unless some actual use has been made of those?

A. No, I didn't state that. I said it was imminent.

Q. Or was imminent. I will modify my question to that extent. I note you have made studies on allocating cost to various classes and kinds of gas service, and what you have just said I suppose represents the type of study or the type of principle you would use in the study in determining the allocation of the cost to various classes and kinds of gas service.

A. This study is related to this system.

Q. Have you made any assumption in making this study as to whether or not this investigation concerns itself with all of the gas which is sold; that is, with the prices of all of the gas which the pipe line sells?

A. The revenues derived from the sale of gas have been added to this exhibit only for comparative purposes. This study is a determination of the cost of service without regard to the revenue being collected.

Q. Well, that wasn't just what I meant. I meant, were you in determining what you call the cost of service on these

various classes of gas to various customers, are you making any assumption that the Power Commission is investigating the reasonableness of the prices charged to all of those customers or only to some of them, or what assumption are you making?

A. I am making no assumption.

Q. This is without reference to the question of reasonableness of rates with respect to the different classes of customers?

A. That is correct.

Q. Did you give any consideration to the question of dividing your study so that it would show on the one hand the costs incurred in selling the direct industrial gas which you call direct industrial sales and on the other hand the cost involved and selling gas to the utilities in the city of Colorado Springs for resale?

A. I have determined those costs as a part of this exhibit.

Q. You, however, have not classified the gas as between the resale gas and the direct sale gas because what you—

A. No, I believe that at the time I introduced this exhibit on direct examination I indicated that when I used the words "industrial gas," that that was the class of consumption and that when I said, "gas purchased for resale," or "gas sold," that it was the entire volume.

Q. You do understand that industrial gas which you have shown here on Table 2 starting with Line 16 on down through Line 45, I guess, represents sales to industrial customers by the various utilities and that those industrial customers are not customers of the Colorado Interstate Gas Company?

A. Well, that wouldn't be a definition of what you consider a customer. I would say that gas is being delivered at the city gate.

Q. Well, it is your understanding, for example, that any of the gas under Column 5 under the heading "Industrial," starting with Line 16 on down through to Line 39 represents gas sold by the pipe line to industries for which the pipe line collects directly from the industries?

A. No.

Q. It is your understanding, then, that all of that is gas

that is sold at the city gate to these various named utility companies?

A. Correct. The class consumption has been the basis of this grouping here and this is for the purpose of determining the responsibility of the pipe line. The responsibilities of the distribution plant are carried back and borne by the pipe line system.

Q. You have included, then, under the industrial gas which the utilities sell all of the small firm industrial gas that is not subject to interruption without earmarking it?

A. That presupposes that there are industrial sales that do not have shut-off clauses and I haven't checked each of the industrial contracts to see which of them do not contain shut-off clauses.

Q. Well, if there are small consumers in the various communities that use gas for different types of industrial use but in small quantities and buy it under a rate schedule which does not contain an interruptable clause, that gas is likewise included under Column 5 in Table 2?

A. Yes, this classification of service has been an attempt to classify the industrial gas.

Q. So there with respect to gas that the utilities sell to industries you have made no determination as to that that is interruptable and have not considered priorities of service there?

A. As between industrial customers, no, there are no priorities considered as between industries.

Q. Now, on Table 9, which I take it represents the cost of measuring stations, does that in principle represent anything else?

A. That is the cost of distribution. One of the major functional divisions of operations of the company as set out. As in the accounting Examiner's report as particularly related to Canadian River Gas Company and Colorado Interstate Gas Company practically all of that expense is measurement stations at points of sale.

Q. Are there any expenses of laterals included in the figures on Table 9?

A. Not to my knowledge.

Q. Now, will you explain on the second page of Table 9 the basis of allocating equal number of dollars to each delivery point?

A. You will note on the first table of Table 9 that the total cost—Line 16, Column 3—in amount of $88,002.36, has been allocated into two classes. Those costs which are allocable equally to each customer and those allocated on the basis of the adjusted book cost of the plant as at 12-31-39. Those costs which have been *occurred* more generally in proportion to the capacity of the facilities and property involved have been allocated in proportion to the adjusted book costs of the property at each point of service as at December 31, 1939 and those costs which are generally incurred equally per customer have been allocated equally to each point of delivery. Included in those costs allocated equally per customer, are office expenses maintenance of office equipment. The proportion of general expenses and proportion of labor taxes applicable to those two classified direct costs in the accounting Examiner's reports—the office expenses are $11,037.14, and maintenance of office equipment $327.70, the total of which is the $11,364.84 shown in the exhibit. The remaining distribution costs such as maintenance and operation of field measuring stations and so forth are all included in Column 5 which is allocated on the basis of adjusted book cost of plant as at December 31, 1939.

Q. Now, you have taken, then, this $15,138.62 which is roughly the general office expense of some other items and just divided that by the figure 27 and allocated the equal amount to each of the delivery points?

A. That is correct.

Q. You made no study of the time actually consumed in the office as between the various accounts?

A. No, I have not. That degree of refinement would be practicable if we were to carry an allocation study to its ultimate conclusion. That would necessitate an examination of the vouchers and conferences and I doubt whether the resulting answers would be any more accurate than the determinations I have made in this exhibit.

Q. Well, that results, for example, in following that method as shown on Table 1 for selling gas to the United States Department of Interior for the helium plant at Thatcher for $440, costing $1,373.04? Do you think we should write to Mr. Ickes and ask for an increase in our rate?

A. I am not prepared to state how you should conduct

your business but it should be borne in mind that a cost allocation if carried to its ultimate conclusion and refinement would necessitate a burdensome investigation far beyond the usefulness of the report.

Q. Now, as a matter of fact, if no gas were sold to that plant at Thatcher there would be no decrease in the expenses which you have set forth in Table 9? I will take that back when I say "no decrease." I mean with respect to office expense which you have allocated equally per customer.

That is, in small operations of that sort its elimination would not make any difference in the amount of work that would have to be done in the office?

A. It should, otherwise, if carried to its conclusion, if you had no business you would still have those expenses.

Q. Do you think we could lay off one clerk then, for example, if that billing of one bill a month to the United States Department of Interior were eliminated?

A. I don't know. He should have additional time to do other work if not engaged in billing.

Q. As a practical matter it wouldn't make much difference, would it?

A. As a practical matter?

Q. Yes.

A. I don't know as I could answer that directly, because the construction would be placed that Sullivan would be in the same position, Santa Fe next; the third one would be next, and after you had taken them all out you would have the same expense and no customers.

Q. It could be carried to ridiculous extreme, but I wasn't asking you the additional questions. Maybe you haven't had the experince of operating that—

A. Yes, I have, and I know you wouldn't hire one man for each new customer or you wouldn't discharge a man for each customer lost, but your expenses are proportionate to the business you are doing.

Q. Now, when you get through on Table 1 you get at what is an average figure under your heading of total cost, column 10, for the gas sold each customer, do you not? I don't mean an average figure, I mean a total figure for all of the gas sold which is arrived at by considering the average cost as incurred by the company.

A. Will you read that back, please?

(The record referred to was read by the reporter as set forth above.)

The Witness: There are so many averages involved there that I will answer it this way; that the total cost is the result of the application of each average—I will state that Column 10 is the result of the application of average costs within the various functional divisions to the various customers and that those costs after being summed up result in the total cost to that particular point of service and as shown in Column 10 Table 1.

By Mr. Dougherty:

Q. You use so many averages because there are so many average computations in here, Mr. Lyon?

A. That is correct.

Q. Now, do I understand it is your position that in arriving at the price at which this company should sell this gas it should do it in the manner which you have made this study; and the figures in Column 10 represent what ought to be charged by it irrespective of the class of gas or the use to which it is put, or the load factor, or any other characteristic of the business?

A. I have not made the statement that the total cost in Column 10 is the price that should be charged. The determination on the rate is a matter separate and apart from the determination of cost, and it might be appropriate to add here that these determinations provided helpful information by showing the degree of refinement practicable—

Q. This morning we were discussing incremental cost and I thought you said to base costs on incremental cost would be discriminatory and that they should be based on average costs as you have indicated in this study.

A. Base prices?

Q. Yes.

A. I determine costs on incremental costs.

Q. Where does discrimination enter into it in the question of the determination of the cost?

A. Because the new customer is equally entitled to service that a customer gets who exists on the pipe line.

Q. Does discrimination result except through the charg-

ing and payment of money at a different rate or on a different basis by one customer from another?

A. The discrimination results in the application of incremental costs to the new customer and the costs for the facility presently installed to the old customer. When the new customer is attached, he is attached by reason of the fact that the system is already in existence. When he becomes attached he should bear his fair share of the costs of business.

Q. Well, the discrimination can only result if he gets on and actually pays some money; it doesn't result by just making a study like this.

A. I am sorry, but I don't understand that.

Q. The mere determintion of what it would cost to serve a customer on an incremental base doesn't result in discrimination, does it, unless he actually buys gas at that price?

A. I am sorry. I don't understand you. If you mean a customer is not connected and not being served—

Q. I mean just this: Do you conceive of the fact that discrimination between customers can result unless they are actually buying gas and paying prices for it?

A. For discrimination to exist to the customer being served—if you have no customer, then you have no discrimination.

Q. So I take it your judgment is that to enter into a contract to sell gas at a price which is based on your incremental cost, that it does result in discrimination if it is sold at that price?

A. That would be a definition of what constituted unreasonable discrimination.

Q. I thought that was what you said this morning and I was trying to get straight in my mind what you meant.

A. In my opinion that would constitute unreasonable discrimination?

Q. No.

A. I couldn't venture an opinion on that.

Q. Whether or not in your opinion gas was sold at a price which was computed on incremental cost bases that would result in discrimination, that is what I meant.

A. Yes, I believe it would.

Q. And if it should turn out the price at which this industry we discussed early this morning would buy the ga-

would be less than the average cost computed after the customer would be connected, then of course you shouldn't sell it?

A. No.

Q. Even though to sell it you might make some profit?

A. No, I didn't say that.

The determination of this cost, if you recall, includes an amount of return; the amount of return you are allocating is based upon what I have shown here. The amount of return that you collect may depend upon a number of other matters. This is a determination of cost. If you do not collect the full cost, that is a fact, you don't; if you collect more than the cost, it is likewise the fact you do; as to whether you collect more or less than cost, that is a question of determination of fact and that is what I am trying to show here; as to whether your failure to collect full cost from one customer or not, that is a matter of consideration in these proceedings, and I believe it will be determined as to what extent that amount is to be considered.

Q. Then, do I understand that in making these computations and showing total costs here under Column 10 you are not putting forward these figures as being prices or dollars at which gas should be sold to these customers by the Colorado Interstate Gas Company?

A. I am not fixing rates; I am determining costs as one of the elements to be considered in fixing rates.

Q. What is the purpose of setting up this column showing revenue actually collected?

A. As I stated, it was for comparative purposes so that a ready reference could be made between total cost as *determine* in this exhibit, and revenues as reported in the accounting Examiner's exhibits.

Q. Do I understand that you do not put forward the proposition that all gas should be sold at an average price to all customers for all purposes by this pipe line?

A. What do you mean by being sold? Do you mean those are the rates that should be collected?

Q. Yes.

A. I have determined the cost that should be assessed, that should be allocated to each of those.

Q. By so determining you are not expressing an opinion

that all gas served should be sold at the same average rate to all customers for all purposes?

A. I am sorry, but I believe that is the same point, that I am not fixing rates, but I believe a determination of cost of service is something to be considered while fixing rates.

Q. Am I correct in assuming, then, that you are not making this study as an expression of your opinion that the same average price should be charged for every thousand cubic feet of gas sold each customer?

A. No, I am not expressing an opinion as to whether this cost of service should be the sole measure of revenues.

Q. In connection with the allocation of transmission cost, there was one question I forgot to ask you about before lunch. You have treated the compressors as an integral part of the transmission system, I take it?

A. Yes.

Q. For example, this compressor that is up here at the Devine station which is used for the compressing of gas that is pumped north up towards Denver, you include that in your lump sum computation, the costs of which are distributed against all gas that is delivered from the line?

A. Yes.

Q. That is true whether it is gas that comes out at some other point or is compressed in the Devine station?

A. That is correct. The operation of the line has been directed toward the end of securing overall economy and efficiency without regard to the effect that location of facilities or operating procedures might have any particular customer.

Q. The fact that the gas going to Denver is compressed four times doesn't result in any greater charge against the gas delivered at Denver under your method than the gas that is compressed only once?

A. That is correct.

(Vol. LXXXI, pp. 12020-12048.)

* * * * *

The Trial Examiner: Do you have anything further, Mr. Dougherty?

Mr. Dougherty: I have no questions. I have asked Mr. Lange if I might have the working papers on which the maximum demand day was computed for Colorado Inter-

state Gas Company in Exhibit 226, and I have also requested it for the memorandum. That need not hold him up. I may not have any questions, and if so we can do it in Washington.

Mr. McCreery: The working papers and the memorandum will be left here when he leaves tonight?

Mr. Lange: Yes.

Mr. McCreery: So that they will be available to us as well?

Mr. Lange: They will be available.

The Trial Examiner: Very well. I understand, however, that Mr. Lyon is to be excused from the hearing?

Mr. Lange: Well, now, there is this thing about the exhibits themselves: Mr. Dougherty made the statement that if he did want to direct some further cross examination he would do it in Washington. We didn't want these exhibits to hang fire. In other words, we wanted to see that the offer on those exhibits was made.

Mr. Dougherty: Well, you can offer them and I can probably look that stuff over and let you know. I don't believe that it will be necessary to have him here to help on the exhibits in any way, Mr. Lange.

Mr. Lange: Very well on that, because we didn't want the exhibits to hang fire.

The Trial Examiner: Of course the exhibits have not as yet been offered.

Mr. Lange: We were just coming to the point where I wanted to make the offer.

The Trial Examiner: I understand Mr. Dougherty to indicate that it will not be necessary to hold up action on the exhibits.

Mr. Dougherty: No.

The Trial Examiner: In view of his request:

Mr. Dougherty: No.

Mr. Lange: We want to offer them at this time, Mr. Examiner.

Mr. Dougherty: I object to the Exhibits 226 and 226-A.

Mr. McCreery: I object to 227 and I would like to put in the record some formal objections to that exhibit, if the Examiner please. Of course I am not prepared to read them into the record at this time, which can be done, say, Monday.

The Trial Examiner: Well, supposing we take them up then. I don't think, Mr. Lange, it will be necessary to hold Mr. Lyon. Supposing we take these exhibits up, we'll say on Monday.

Mr. Dougherty: That's all right.

Mr. Lange: All three. Did anybody have any objection to 228?

Mr. McCreery: Yes, 228 similarly.

The Trial Examiner: We'll take them all up on Monday, and Mr. Lyon, you are excused from the hearing.

(Vol. LXXXI, pp. 12147-12149.)

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36. Colorado Interstate's Apportioned Costs, Under Basic Contract Terms, Between Resale Gas and Direct Sale Gas to Colorado Interstate at Clayton Junction, as Computed by the Company.

These costs, as computed by the Company, apportioned between resale gas and direct sale gas in accordance with the principles developed in Exhibit 316, abstracted under Title 35 supra, are shown in Exhibit 318 (witness Lusk) and that exhibit, and the testimony relating thereto, is included in Canadian's record hereinafter and adopted by this company. These costs for the years 1928 to 1947 are shown in Statement 1 of Exhibit 318 as follows:

Canadian River Gas Company.

Apportioned Costs of Gas Under Basic Contract Terms Between Resale Gas and Direct Sale Gas Deliveries

To Colorado Interstate Gas Company, at Clayton Junction, New Mexico.

Summary by Years—1928 to 1947 Inclusive (A)

Year	Resale Gas	Direct Sale Gas	Total
(1)	(2)	(3)	(4)
1928(B)	$ 123,266	$ 105,650	$ 228,916
1929	483,635	379,429	863,064
1930	956,310	646,666	1,602,976
1931	1,041,655	646,762	1,688,417
1932	902,561	504,860	1,407,421
1933	871,014	477,082	1,348,096
1934	763,112	485,517	1,248,629
1935	706,233	402,846	1,109,079
1936	708,623	465,774	1,174,397
1937	762,301	439,856	1,202,157
1938	817,456	390,354	1,207,810
1939	823,932	435,497	1,259,429
1940	894,520	462,201	1,356,721
1941	885,198	427,550	1,312,748
1942	874,827	405,642	1,280,469
1943	899,824	398,326	1,298,150
1944	885,135	385,442	1,270,577
1945	870,354	373,371	1,243,725
1946	858,444	371,651	1,230,095
1947	1,151,046	565,428	1,716,474

Notes: (A) From Statement No. 2 attached.

(B) 7 mos.

37. Colorado Interstate's Apportioned Costs, on a Regulatory Rate Basis and Under the Assumption That the Supply of and Markets for Gas Continue Beyond 1948, the End of the Project Term, and Until the End of 1956, Between Resale Gas and Direct Sale Gas to Colorado Interstate at Clayton Junction, as Computed by the Company.

These costs, as computed by the Company, apportioned between resale gas and direct sale gas in accordance with the principles developed in Exhibit 316, abstracted under Title 35 supra, are shown in Exhibit 317 (witness Lusk) and that exhibit, and the testimony relating thereto, is included in Canadian's record hereinafter and adopted by this company. Such costs are shown by Statement 1, Exhibit 317, as follows:

Canadian River Gas Company.

Apportioned Revenues Required from Gas on a Regulatory Basis (A) Between Resale Gas and Direct Sale Gas Deliveries.

To Colorado Interstate Gas Company, at Clayton Junction, New Mexico.

Summary by Years—1939 to 1947, Inclusive.

Year	Resale Gas	Direct Sale Gas	Total
(1)	(2)	(3)	(4)
1939	$ 920,265	$ 446,153	$1,366,418
1940	1,051,028	510,927	1,561,955
1941	1,104,761	504,625	1,609,386
1942	1,096,698	482,165	1,578,863
1943	1,165,938	488,910	1,654,848
1944	1,205,216	489,657	1,694,873
1945	1,239,457	488,045	1,727,502
1946	1,288,770	510,559	1,799,329
1947	1,816,663	842,830	2,659,493

Note: (A) Includes an allowance of 8 per cent return on a depleted and depreciated original cost rate base at January 1, 1939 plus additions thereafter at cost, and provision for depletion, depreciation and amortization by sinking fund method with compound interest at a rate of 2¾ per cent per annum.

38. Colorado Interstate's Net Operating Earnings After Income and Capital Stock Tax of Colorado Interstate from the Denver Line Under Its Contracts, 1928 to 1947 Inclusive, Apportioned Between Resale Gas and Direct Sale Gas on the Basis of Priority Use of Facilities, Applicable to Depreciation, Amortization and a Return on the Original Cost of Its Property, Plus Working Capital.

In Exhibit 320 (Vol. CII, p. 15981) the witness Lusk presents for the respondent the data showing the facts stated in the caption. In this exhibit, he applies to the cost of operation and net operating earnings applicable to all gas sold to all customers, the method of cost apportionment described in Exhibit 316 abstracted under Title 35 supra, and determines, by the application of those principles, the apportioned costs and earnings as between resale and direct sale gas.

As to cost of gas at Clayton, he uses the cost determined in Exhibit 318 and abstracted under Title 36 supra.

He then takes the revenues, expenses and net operating earnings applicable to all gas sold to all customers, the evidence of which is contained in Exhibits 170 and 170-B and related exhibits, all of which have been abstracted supra, and apportions them between the resale and direct sale gas, year by year. His method is illustrated by the computation for the year 1939 included as Statement 3 in this Exhibit 320, as follows:

Colorado Interstate Gas Company (Statement No. 3)

Apportioned Revenues, Expenses and Net Operating Earnings Applicable to Depreciation and Amortization Between Resale and Direct Sale Gas

Computed on Basis of Contracts, Year 1939

Item No.	Description	Basis of Apportionment Exh. No. 316 Statement No.	Apportionment of Annual Revenue and Expense				
			Total Expense	To Resale Gas		To Direct Sale Gas	
				Per Cent	Amount	Per Cent	Amount
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Revenues	(A)	$4,309,232		$2,938,383		$1,370,849
	Operating Costs and Expenses:						
2	Transmission Lines	11(C)	109,138	82.51%	90,050	17.49%	19,088
	Compressor Stations—						
3	Clayton	12(B)	36,163	72.80	26,327	27.20	9,836
4	Canyon	12(B)	50,619	72.80	36,851	27.20	13,768
5	Devine	12(B)	28,864	94.40	27,248	5.60	1,616
6	Meters and Metering	Page 29	49,236	60.00	29,542	40.00	19,694
7	Total Operating System		$ 274,020	76.64%	$ 210,018	23.36%	$ 64,002
8	Telephone System	Item No. 7	10,225	76.64	7,836	23.36	2,389
9	General Expense and Land Dept.	Item No. 7	88,623	76.64	67,921	23.36	20,702
10	Rate Case Expense	Item No. 7	43,000	76.64	32,955	23.36	10,045
11	Revenues from Rents, etc.	Item No. 7	—8,787	76.64	—6,734	23.36	—2,053
12	Total Net Operating Expense		$ 407,081	76.64%	$ 311,996	23.36%	$ 95,085

13 Operating Taxes	(B)	192,101	81.76	157,062	18.24	35,039
14 Total Operating Expenses & Taxes		$ 599,182	78.28%	$ 469,058	21.72%	$ 130,124
15 Cost of gas at Clayton	Exh. No.	1,259,429	65.42	823,932	34.58	435.497
16 Total Costs before Income Taxes		$1,858,611	69.57%	$1,292,990	30.43%	$ 565,621
17 Net Income before Income Taxes		$2,450,621	67.14%	$1,645,393	32.86%	$ 805,228
18 Income and Capital Stock Taxes	(C)	340,771	62.93	214,447	37.07	126,324
19 Total Net Earnings		$2,109,850	67.82%	$1,430,946	32.18%	$ 678,904
20 Amount Required for 8% Return	(D)	1,109,140	79.85	885,605	20.15	223,535
21 Available for Depreciation and Amortization		$1,000,710		$ 545,341		$ 455,369

Note: (A) On basis of Contract Prices.
(B) Item No. 10 Statement No. 4 attached.
(C) On basis of Taxable Net Income.
(D) Item No. 17 Statement No. 4 attached.

Lusk then takes the original cost of the property of the Denver Line, including contracts, and using the same principles of apportionment derived in Exhibit 316, Title 35 supra, he apportions the cost year by year between resale and direct sale gas. His method is illustrated by that for January 1, 1939 contained in Statement 4 of his Exhibit 320 as follows:

Colorado Interstate Gas Company — Statement No. 4.

Apportioned Original Cost of Denver Line Property Between Resale and Direct Sale Gas

As of January 1, 1939

Item No.	Description	Basis of Apportionment Exh. No. 316 Statement No.	Amount to be Apportioned Per Exhibit No. 76	Apportionment of Original Cost			
				To Resale Gas		To Direct Sale Gas	
				Per Cent	Amount	Per Cent	Amount
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Transmission Lines	11C	$ 9,765,138	82.51%	$ 8,057,215	17.49%	$ 1,707,923
2	Maintenance Camps, etc.	11C	82,699	82.51	68,235	17.49	14,464
	Compressor Stations:						
3	Clayton	12B	574,522	72.8	418,252	27.2	156,270
4	Canyon	12B	752,529	72.8	547,841	27.2	204,688
5	Devine	12B	424,080	94.4	400,332	5.6	23,748
6	Measuring Stations	Exh. No. 164	169,696	76.61	130,005	23.39	39,691
7	Total Operating Systems		$11,768,664	81.76%	$ 9,621,880	18.24%	$ 2,146,784
8	Telephone System	Item No. 7	152,820	81.76%	$ 124,946	18.24%	$ 27,874
9	Other General Property	Item No. 7	131,162	81.76	107,238	18.24	23,924
10	Total		$12,052,646	81.76%	$ 9,854,064	18.24%	$ 2,198,582
11	Cost of Gas Purchase Contract	(A)	$ 1,102,000	52.78%	$ 581,600	47.22%	$ 520,400
	Cost of Gas Sales Contracts:						
12	P.S. of Colorado and Pueblo E. & S. Co.	(B)	352,941	100.0	352,941		
13	City of Colorado Springs	(C)	236,667	78.46	185,689	21.54	50,978
14	Total Original Cost of property		$13,744,254	79.85%	$10,974,294	20.15%	$ 2,769,960
	Working Capital:						
15	Expense Items	(D)	$ 67,400	78.28%	$ 52,761	21.72%	$ 14,639
16	Materials and Supplies	Item No. 10	52,600	81.76	43,006	18.24	9,594
17	Total Original Cost Rate Base		$13,864,254	79.85%	$11,070,061	20.15%	$ 2,794,193

Notes: (A) On basis gas purchased for resale and Direct Sales.
(B) All Resale.
(C) On basis of revenues received from sale of gas.
(D) On basis of item No. 12 of Statement No. 3 attached.

He states as to apportionment of depreciation and amortization:

> "In Exhibits Nos. 170 and 170-B the earnings remaining after the deduction of an amount required for an 8 per cent return were designated as available for depreciation and amortization. No provision was made for replacing any property. Depreciation or amortization is similarly derived herein as being the net earnings available for depreciation and amortization after providing for an amount required for an 8 per cent return. No apportionment of Depreciation or Amortization is required on that basis, and the remaining amount is obtained by simple differences of other apportioned amounts and the contract revenues, from resale and direct sale gas." (Exhibit 320, pp. 1 and 2.)

As to apportionment of return, he states:

> "Return is appropriately apportioned to each class of business pro rata with the total amount of property so apportioned, namely, the property ratio as described in the apportionment exhibit." (Exhibit 320, p. 2.)

And as to the apportionment of state and Federal taxes, he states:

> "The total amount of Federal taxes as determined and set forth herein arises from all classes of business of Colorado Interstate Gas Company. The amounts of these taxes are appropriately apportioned to each class of business in proportion to the respective taxable net incomes arising from each class of business.
>
> "State income taxes are similarly appropriately apportioned to each class of business in proportion to the respective taxable incomes arising from each class of business." (Exhibit 320, p. 2.)

Applying these methods for each of the years 1928 to 1947 inclusive, as illustrated by his computations for 1939, he derived an apportionment of all items of income, expense and property for each of said years and set them forth in Statement 2, Exhibit 320. These results are summarized in his Statement 1 as follows:

Colorado Interstate Gas Company

Apportioned Net Operating Earnings Applicable to Depreciation, Amortization and Return Between Resale and Direct Sale Gas Deliveries from the Denver Pipe Line

Computed on Basis of Contracts—Summary 1928 to 1947, Inclusive

Year	Original Cost Rate Base		Net Earnings Available for Return Depreciation and Amortization		Amount Required for an 8 Per Cent Return		Net Earnings Available for Depreciation and Amortization	
	Resale	Direct Sale	Resale	Direct Sale	Resale	Direct Sale	Resale	Direct Sale
(1)	(2)	(3)	(5)	(6)	(8)	(9)	(11)	(12)
1928(A)	$ 8,422,775	$2,527,270(B)	$ 233,875	$205,266	$393,060(B)	$117,939(B)	$—159,185	$ 87,327
1929	8,626,902	2,587,846	825,332	593,571	690,152	207,028	135,180	386,543
1930	9,274,731	2,546,648	861,164	344,761	741,978	203,732	119,186	141,029
1931	10,056,818	2,502,909	984,179	221,412	804,545	200,233	179,634	21,179
1932	10,379,029	2,735,908	1,196,501	235,829	830,322	218,873	366,179	16,956
1933	10,608,166	2,641,597	850,522	330,868	848,653	211,328	1,869	119,540
1934	10,450,451	2,782,094	885,418	360,534	836,036	222,568	49,382	137,966
1935	10,503,188	2,816,976	1,114,392	430,830	840,255	225,358	304,137	205,472
1936	10,423,519	3,064,886	1,321,142	712,556	833,881	245,191	487,261	467,365
1937	10,606.701	2,936,153	1,520,942	676,465	848,536	234,892	672,406	441,573
1938	11,183,737	2,531,382	1,400,518	504,069	894,699	202,527	505,819	301,542
1939	11,070,061	2,794,193	1,430,946	678,904	885,605	223,535	545,341	455,369

1940	11,077,574	2,822,176	1,458,662	524,653	886,206	225,774	572,456	298,879
1941	11,345,932	2,672,554	1,539,350	601,173	907,675	213,804	631,675	387,369
1942	11,400,284	2,626,202	1,603,211	603,592	912,023	210,096	691,188	393,496
1943	11,655,120	2,593,692	1,646,273	572,687	932,410	207,495	713,863	365,192
1944	11,694,513	2,555,299	1,714,746	570,909	935,561	204,424	779,185	366,485
1945	11,735,032	2,516,780	1,778,122	566,409	938,803	201,342	839,319	365,067
1946	11,735,833	2,516,979	1,741,705	566,839	938,867	201,358	802,838	355,481
1947	12,210,637	2,941,175	1,669,822	474,833	976,851	235,294	692,971	239,539
Total							$8,930,704	$5,553,369

Note; (A) 7 Months.

(B) Apportioned on basis of January 1, 1929 property ratio.
Columns 4, 7, 10 and 13, showing totals, are omitted to save space. Column 4 shows totals by years of figures contained in Columns 2 and 3, and Columns 7, 10 and 13 show the totals by years of the two preceding columns in each case.

Lusk then compares Column 2 of Statement 1, showing the original cost rate base year by year and ending with the accumulated amount of $12,210,637 for 1947, with Column 11 showing the net earnings available for depreciation and amortization for each year and totaling for the whole period $8,930,704, and states:

> "It is seen that the amount available for depreciation and amortization from resale gas sales (after allowing for return) of $8,930,704, is not sufficient to fully cover the apportioned original cost at January 1, 1947 of $12,082,252 ($12,210,637) apportioned to that class of business, within the 19½ year period designated. That the total available for depreciation and amortization is as large as shown, is attributable solely to the fact that as previously mentioned that direct sale gas has been charged with a portion of the base operating costs required for resale gas alone, thereby increasing the revenues from resale gas." (Exhibit 320, p. 9.)

Under present rates Lusk estimates that there will be in January 1, 1947 a deficit in the amount necessary to depreciate and amortize the property of $3,279,933, being the difference between $12,210,637 and $8,930,704 (Statement 1, Exhibit 320).

The deficit or deficiency in this amount is arrived at on the following assumptions:

> First, that the present prices or rates for gas will continue and that the revenues of the company will hold up as shown in Exhibits 56 and 43 as abstracted under Title 15 supra.
>
> Second, that the cost of gas as shown by Exhibit 318 as abstracted under Title 36 supra, will remain the same.
>
> Third, that other operating expenses and operating taxes as shown by Exhibits 76 and 135 abstracted under Title 23, and which are the same as shown in Exhibit 285 supra, will not increase over the estimates therein made.
>
> Fourth, that the Federal and state income taxes and capital stock taxes based on present laws (1940) and as

abstracted and computed herein, will not be increased (Vol. XLVIII, p. 6620).

On being cross-examined with respect to Exhibit 320 and the related Exhibits 317, 318 and 319, he stated that such exhibits were not contrary to the previous exhibits which compared costs and revenues from all gas with costs and revenues applicable to a Denver Line for resale gas only, but that they presented a "different method of apportionment" which showed different results.

"Q. Then, which of the two are you relying upon?

"A. For the purpose of this hearing and for the purpose of showing factual data we rely upon both." (Vol. CII, p. 15998.)

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39. Colorado Interstate's Estimated Revenues of Colorado Interstate from the Denver Line Determined on a Regulatory Basis and Under the Assumption That the Supply of and Markets for Gas Continue Beyond 1948, the End of the Project Term, and Until the End of 1956, Apportioned Between Resale Gas and Direct Sale Gas on the Basis of Priority Use of Facilities.

In Exhibit 319 (Vol. CII, p. 15971) the witness Lusk presents for the respondent the data showing the facts stated in the caption. In this exhibit he also takes the methods of cost apportionment described in Exhibit 316, abstracted under Title 35 supra, and applies them to the total required revenue on a regulatory rate basis of Colorado Interstate from all gas sold to all customers and thereby apportions such revenue as between resale and direct sale gas. As to the cost of gas at Clayton, he uses the cost determined in Exhibit 317, abstracted under Title 37 supra.

He then takes the revenues, expenses and net operating earnings applicable to all gas sold to all customers, as shown in Exhibit 285 and related exhibits, all of which have been abstracted supra, and by application of the principles of apportionment contained in Exhibit 316, Title 35 supra, he apportions them between the resale and direct sale gas year by year. His method is illustrated by the computation for the year 1939 included as Statement 3 in this Exhibit 319 as follows:

Colorado Interstate Gas Company

Apportioned Required Revenues and Expenses of the Denver Line Between Resale and Direct Sale Gas
Year 1939

Item No.	Description	Basis of Apportionment Exh. No. 316 Statement No.	Apportionment of Annual Costs and Expenses				
			Total to be Apportioned	To Resale Gas		To Direct Sale Gas	
				Per Cent	Amount	Per Cent	Amount
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Operating Costs and Expenses (Ex. No. 135)						
1	Transmission Lines	11C	$ 109,138	82.51%	$ 90,050	17.49%	$ 19,088
2	Compresser Stations						
3	Clayton	12B	36,163	72.80	26,327	27.20	9,836
4	Canyon	12B	50,619	72.80	36,851	27.20	13,768
5	Devine	12B	28,864	94.40	27,248	5.60	1,616
6	Meters and Metering	Page 29	49,236	60.00	29,542	40.00	19,694
7	Total Operating System		$ 274,020	76.64%	$ 210,018	23.36%	$ 64,002
8	Telephone System	Item No. 7	10,225	76.64	7,836	23.36	2,389
9	General Expense and Land Dept.	Item No. 7	88,623	76.64	67,921	23.36	20,702
10	Rate Case Expense	Item No. 7	43,000	76.64	32,955	23.36	10,045
11	Revenues from Rents, etc.	Item No. 7	—8,787	76.64	—6,734	23.36	—2,053

12 Total Net Operating Expenses		$ 407,081	76.64%	$ 311,996	23.36%	$ 95,085	
13 Operating Taxes	4(A)	192,101	81.83	157,196	18.17	34,905	
14 Total Operating Expense and Taxes		$ 599,182	78.31%	$ 469,192	21.69%	$ 129,990	
15 Cost of Gas at Clayton (Exhibit No. 317)		1,366,418		920,265		446,153	
16 Amortization Charges	4(B)	576,253(C)	80.44	463,538	19.56	112,715	
17 Total Costs before Income Taxes		$2,541,853		$1,852,995		$ 688,858	
18 Federal and State Income and Capital Stock Taxes	(D)	311,099	59.87	186,255	40.13	124,844	
19 Return on Investment at 8 per cent	4(E)	990,902	80.43	796,993	19.57	193,909	
20 Required Revenue		$3,843,854		$2,836,243		$1,007,611	

Notes: (A) Statement No. 4 attached, Item No. 11.
(B) Statement No. 4 attached, Item No. 15.
(C) As in Exhibit No. 285 less $24,119 apportioned to Chicago Gas.
(D) On Basis of Taxable Net Incomes.
(E) Statement No. 4 attached, Item No. 18.

Lusk then takes the depleted original cost (Exhibit 285 abstracted supra) and the cost of contracts as depleted or amortized, and as abstracted supra, and apportions on the basis developed in Exhibit 316, abstracted under Title 35 supra, such cost as between resale gas and direct sale gas for each year. His method is illustrated by that for January 1, 1939 contained in Statement 4 in this Exhibit 319 as follows:

Colorado Interstate Gas Company

Apportioned Depreciated Original Cost Rate Base Between Resale Gas and Direct Sale Gas
January 1, 1939

Item No.	Description	Basis of Apportionment Exh. No. 316 Statement No.	Total to be Apportioned (Exh. No. 285)	Apportionment of Depreciated Original Cost			
				To Resale Gas		To Direct Sale Gas	
				Per Cent	Amount	Per Cent	Amount
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Transmission Lines	11C	$ 9,301,573	82.51%	$7,674,728	17.49%	$1,626,845
2	Maintenance Camps, etc.	11C	67,726	82.51	55,881	17.49	11,845
	Compressor Stations and Camps at Stations:						
3	Clayton	12B	506,405	72.80	368,663	27.20	137,742
4	Canyon	12B	663,980	72.80	483,377	27.20	180,603
5	Devine	12B	374,244	94.40	353,286	5.60	20,958
6	Total Camp Stations		$ 1,544,629	78.03%	$1,205,326	21.97%	$ 339,303
7	Measuring Stations	(B)	153,306		120,332		32,974
8	Total Operating Departments		$11,067,234	81.83%	$9,056,267	18.17%	$2,010,967
9	Telephone System	Item No. 8	129,084	81.83	105,629	18.17	23,455
10	Other General Property	Item No. 8	92,737	81.83	75,887	18.17	16,850
11	Total		$11,289,055	81.83%	$9,237,783	18.17%	$2,051,272
12	Gas Purchase Contract	(E)	677,620A	52.78	357,626	47.22	319,994
	Gas Sales Contracts						
13	P.S.C. of Colo. & Pueblo G. & F. Co.	Page 35	167,649	100.00	167,649	.....	.....
14	City of Colo. Springs	(C)	131,949	78.46	103,527	21.54	28,422
15	Total		$12,266,273	80.44%	$9,866,585	19.56%	$2,399,688
	Working Capital—						
16	Material and Supplies	Item No. 11	52,600	81.83	43,043	18.17	9,557
17	Operating Expense and Cash	3(D)	67,400	78.31	52,781	21.69	14,619
18	Total		$12,386,273A	80.43%	$9,962,409	19.57%	$2,423,864

Notes: (A) As shown in Exhibit No. 285, exclusive of $552,180 Value of Gas Purchase Contract apportioned to Chicago gas.
(B) To Resale Gas as used in Exhibit No. 286.
(C) On basis of Revenues from Gas Sales to Colorado Springs.
(D) Statement No. 3 attached, Item No. 14.
(E) On basis of Volumes of Gas sold from Denver Line by C.I.G. Co.

As to amortization or depreciation, he referred to Exhibit 285 where a sinking fund method was described. He stated that no provision was made for replacing any property except facilities such as automobiles and trucks. He then concludes that the amortization or depreciation costs applicable to the property are appropriately apportioned pro rata with the apportionment of the property itself (Exhibit 319, p. 1).

As to return he states that that is appropriately apportioned to each class of business pro rata with the total amount of property so apportioned; that is, the property ratio as described in the apportionment exhibit (Exhibit 319, p. 2).

As to the apportionment of Federal and state taxes, he states:

> "The total amount of Federal taxes as set forth herein arises from all classes of business of Colorado Interstate Gas Company. The amounts of these taxes are appropriately apportioned to each class of business in proportion to the respective taxable net incomes arising from each class of business.
>
> "State income taxes are similarly appropriately apportioned to each class of business in proportion to the respective taxable incomes arising from each class of business." (Exhibit 319, p. 2.)

Applying these methods for each of the years 1939 to 1947 inclusive, as illustrated by his computation for 1939, he derived an apportionment of all items of income, expense and property for each of said years and set them forth in Statement 2, Exhibit 319. These results are summarized in his Statement 1, as follows:

Colorado Interstate Gas Company.

Apportioned Revenues Required from Denver Line Gas on a Regulatory Rate Basis (A) Between Resale Gas and Direct Sale Gas.

Summary and Comparison with Contract, 1939 to 1947, Inclusive.

Year	Revenues at Contract Prices (B)			Apportioned Revenues Required for an 8 Per Cent Return (C)			Contract Revenues in Addition to Apportioned Revenues Required for 8 Per Cent Return		
	Resale	Direct Sale	Total	Resale	Direct Sale	Total	Resale	Direct Sale	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1939	$ 2,998,383	$ 1,370,849	$ 4,309,232	$ 2,836,243	$ 1,007,611	$ 3,843,854	$ 102,140	$ 363,238	$ 465,378
1940	3,202,643	1,276,525	4,479,168	3,084,785	1,087,578	4,172,363	117,858	188,947	306,805
1941	3,424,257	1,389,266	4,813,523	3,259,127	1,106,278	4,365,405	165,130	282,988	448,118
1942	3,566,052	1,392,016	4,958,068	3,346,599	1,102,936	4,449,535	219,453	289,080	508,533
1943	3,693,267	1,340,566	5,033,833	3,482,033	1,086,312	4,568,345	211,234	254,254	465,488
1944	3,827,743	1,343,316	5,171,059	3,577,064	1,092,036	4,669,100	250,679	251,280	501,959
1945	3,982,174	1,346,066	5,328,240	3,696,350	1,099,507	4,795,857	285,824	246,559	532,383
1946	3,982,174	1,346,066	5,328,240	3,763,590	1,121,275	4,884,865	218,584	224,791	443,375
1947	3,982,174	1,346,066	5,328,240	4,061,204	1,350,446	5,411,650	—79,030(D)	—4,380(D)	—83,410(D)
Total	$32,598,867	$12,150,736	$44,749,603	$31,106,995	$10,053,979	$41,160,974	$1,491,872	$2,096,757	$3,588,629

Note: (A) Includes an 8 per cent return on a depreciated original cost rate base at January 1, 1939, plus additions thereafter at cost, and provision for depreciation and amortization by a sinking fund method with compound interest at a rate of 2¾ per cent per annum.

(B) From Exhibit No. 56, by W. R. Beardsley.

(C) From Statement No. 2 attached.

(D) Deficiency of Contract Revenues.

After comparing the revenues estimated to 1947 on the basis of present contracts with those derived by this method of apportionment, he stated:

"The above additional revenues from resale gas of about $166,000 annually arises from (A) charging direct sale gas with

A Portion of Base Operating Costs required for resale gas alone, as previously mentioned $512,777

And (B) An actual Deficiency in Resale Gas Revenues to meet its base operating costs as shown in Exhibit No. 286 ..... $347,014

(C) which results in Revenues, on the basis of the Apportionment used herein, in addition to the revenues on Contract prices of ..... $165,763"

This balance in this amount depends on the following assumptions:

First, that the present prices or rates for gas will continue and that the revenues of the company will hold up as shown in Exhibits 56 and 43 as abstracted under Title 15 supra.

Second, that the cost of gas as shown by Exhibit 317 as abstracted under Title 37 supra, will remain the same.

Third, that other operating expenses and operating taxes as shown by Exhibits 76 and 135 as abstracted under Title 23 and which are the same as shown in Exhibit 285 supra, will not increase over the estimates therein made.

Fourth, that the Federal and state income taxes and capital stock taxes based on present laws (1940) and as abstracted and computed herein, will not be increased (Vol. XLVIII, p. 6620).

Fifth, that the company can remain in business and be able to use its property beyond 1948 and until the end of 1956, and that, accordingly, annual depreciation

and amortization expense will not have to be increased so as to retire or recover said property or the investment therein by 1948 instead of 1956.

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40. **Colorado Interstate's Estimated Revenues of Colorado Interstate from the Denver Line, 1939 to 1947 Inclusive, Determined on a Regulatory Basis and Under the Assumption That Supply of and Markets for Gas Continue Beyond 1948, the End of the Project Term, and Until the End of 1956, Based on Market Value of Gas at Bivins, Plus Transmission Cost to Clayton Junction.**

Evidence as to the facts stated in the caption is contained in Exhibit 321 (witness Lusk, Vol. CII, p. 16011). Statement 2 of this exhibit reflects the market value of natural gas in its natural state at Bivins in the amount of 7c per Mcf. The testimony of the witness Ford (Vol. XC, p. 13676-682), and the other evidence showing this market price, is abstracted in Canadian's brief and adopted by this respondent. Statement 2 of Exhibit 321 also reflects the transmission cost of such gas between Bivins and Clayton and the evidence on that subject is also abstracted in Canadian's brief and adopted by this respondent. The total cost of gas for each of the years to this respondent at Clayton is summarized as follows:

1939	$1,891,022	1944	$2,355,481
1940	2,043,286	1945	2,415,251
1941	2,176,464	1946	2,447,015
1942	2,211,063	1947	2,486,168
1943	2,293,108		

Based on the foregoing costs of Gas, Statement 3 of Exhibit 321 shows the following revenues required by Colorado Interstate for the years 1939 to 1947 inclusive:

Colorado Interstate Gas Company.

Required Revenues on a Regulatory Rate Basis from All Gas Sales from the Denver Line Based on a Cost of Gas at Clayton Junction Resulting from a Price of Gas at Bivins Intake of 7c per Mcf. (16.4 lb.).

1939 to 1947, Inclusive.

Item No.	Description	1939	1940	1941	1942	1943	1944	1945	1946	1947
1	Cost of Gas at Clayton Junction	$1,891,022	$2,043,286	$2,176,464	$2,211,063	$2,293,108	$2,355,481	$2,415,251	$2,447,015	$2,486,168
2	Operating Expenses and Taxes Exhibit No. 285; Statement 2	599,182	612,300	634,700	646,800	680,100	649,200	661,500	674,200	685,500
3	Income and Capital Stock Taxes (A)	219,040	309,733	360,721	391,825	386,656	421,918	451,806	463,990	449,100
4	Total Operating Expenses & Taxes	$2,709,244	$2,965,319	$3,171,885	$3,249,688	$3,359,864	$3,426,599	$3,528,557	$3,585,205	$3,620,768
5	Depreciation and Amortization (A)	576,253	576,253	576,253	576,253	576,253	576,253	576,253	576,253	600,372
6	Amount Required for 8 Per Cent Return (A)	990,902	993,742	1,003,241	1,003,881	1,021,667	1,021,747	1,021,907	1,021,987	1,066,241
7	Total Revenues Required	$4,276,399	$4,535,314	$4,751,379	$4,829,822	$4,957,784	$5,024,599	$5,126,717	$5,183,445	$5,287,381

Note: (A) Denver Line only after Apportionment of a part of Gas Purchase Contract to Chicago Gas Exhibit No. 318.

Statement 1 of Exhibit 321 then makes a comparison between the foregoing required revenues and the revenues now being received under present prices or rates, as follows:

Colorado Interstate Gas Co.

Comparison of Contract Revenues from All Gas with Required Revenues Based on 7c Cost of Gas at Bivins Suction and 8 Per Cent Return on All Gas.

1939 to 1947, Inclusive.

Year	Contract Revenues Exhibit No. 285 Statement 1	Revenues Required 7c Gas 8% Return	Contract Revenues Additional + Deficiency —
(1)	(2)	(3)	(4)
1939	$ 4,309,232	$ 4,276,399	$+ 32,833
1940	4,479,168	4,535,314	— 56,146
1941	4,813,523	4,751,379	+ 62,144
1942	4,958,068	4,829,822	+128,246
1943	5,033,833	4,957,784	+ 76,049
1944	5,171,059	5,024,599	+146,460
1945	5,328,240	5,126,717	+201,523
1946	5,328,240	5,183,445	+144,795
1947	5,328,240	5,287,381	+ 40,859
Total	$44,749,602	$43,972,840	$+776,763
Yearly Average			$ 86,307

The average yearly balance of $86,307 developed by this method or test depends upon the following assumptions:

First, that the present prices or rates for the gas will continue and that the revenues of the company will hold up as shown in Exhibits 56 and 43 and as abstracted under Title 15 supra.

Second that the cost of gas as shown in Statement 2 of Exhibit 321 will obtain.

Third, that the operating expenses and operating taxes as shown by Exhibits 76 and 135, and as abstracted under Title 23 and which are the same as those shown in Exhibit 285, will not increase over the estimates therein made.

Fourth, that the Federal and state income taxes and capital stock taxes based on present laws (1940) and as computed thereon will not be increased (Vol. XLVIII, p. 6620).

Fifth, that the company can remain in business and be able to use its property beyond 1948 and until the end of 1956, and that, accordingly, annual depreciation and amortization expense will not have to be increased so as to retire or recover said property or the investment therein by 1948 instead of 1956.

Further Testimony of the Company's WITNESS, LUSK.

Q. Mr. Lusk, the four exhibits that have just been identified as Exhibits Nos. 317, 318, 319 and 320 were prepared by you, were they not?

A. All of the exhibits were prepared under my direction.

Q. Under your direction and supervision?

A. Yes, sir.

Q. And all four of those exhibits are predicated upon the method of apportioning costs to the producing and gathering facilities of Canadian River Gas Company and the Denver Line between resale gas and direct sale gas, 1928 to 1947, inclusive, as set forth in the Exhibit No. 316 prepared and submitted in evidence in this case by Mr. Rhodes?

A. The apportionment factors in Mr. Rhodes' Exhibit No. 316 were used in apportioning the costs which were taken from other exhibits.

Q. Then, Mr. Lusk, in addition to the use which you made of Mr. Rhodes' figures, what figures did you supply?

A. The only figures that I supplied was in the case of Exhibit No. 317. The Canadian River Gas Company costs of operation as shown in the written statement on page 1 are taken from Exhibit No. 276.

Q. That was your Exhibit No. 276, was it not?

A. Yes, sir.

Q. And the apportionment of amortization was taken from Exhibit No. 276?

A. Yes, sir.

Q. Was the apportionment of return computed by you?

A. Yes, sir.

Q. Upon what basis?

A. Return was computed upon the basis of Mr. Rhodes' determination of the various factors entering into the determination of resale and direct sale gas on a property basis.

Q. And the apportionment of Federal taxes was made by you?

A. Yes, sir. That is a recomputation.

Q. That relates to your Exhibit No. 276?

A. Yes, sir. The total amount of income taxes in Exhibit No. 276 is the same; that is, for both resale and direct sale gas. Those figures in the apportionment of the taxes between resale and direct sale gas are based upon Mr. Rhodes' apportionment.

Q. Are those the only items that you supplied over and above the figures that Mr. Rhodes set forth in his exhibit?

A. Yes, sir. There are three items that Mr. Rhodes did not touch upon—the return to be enjoyed under the resale gas and the direct sale gas, under the apportionment he makes, and the Federal income taxes, and the amortization and depreciation.

Q. In that Exhibit No. 317 where do you set forth the investment or the determination of the company's original cost figures upon which you predicate the return?

A. That is on statement 6 of Exhibit No. 317 for production and on statement 7 of the gathering statement, and statement No. 8 of the transmission system, including the gasoline plant and the compressor system.

Q. Are those figures that are set forth the same as those which you utilized previously?

A. Yes, sir. At the head of statement 6 you will find "Total to be apportioned Exhibit 276".

Q. It is taken from that Exhibit No. 276?

A. Yes, sir.

Q. And similarly on Statement 7.

A. Yes.

Q. And on Statement 8?

A. Yes, sir.

Q. And the operating expenses that are utilized by you are taken from your previous exhibit?

A. Yes, sir.

Q. Where is that taken from?

A. That is taken also from Exhibit No. 276, Statements 3, 4 and 5. Statement 3 is the production system, and column 3 shows the total to be apportioned in Exhibit No. 276, Statement No. 2; the gathering system, statement No. 4, total to be apportioned in Exhibit No. 276, statement 3; the transmission system, including gasoline plant and the compressing station on Statement 5, as taken from Exhibit No. 276, Statement 4.

Q. Turning to the last page of your written statement in Exhibit No. 317, Mr. Lusk, will you please explain briefly what you had in mind in the last column, headed "Reduction due to apportioning of part of base cost of resale gas to direct sale gas"?

A. On the basis of Mr. Rhodes' apportionment, as shown in Exhibit No. 316, as applied to Exhibit No. 276, covering the operating expenses of the Canadian River Gas Company and the rate of return on the property of the Canadian River Gas Company and all of the Federal income taxes and the amortization and the depreciation under the regulatory rate basis, page 6 of Exhibit No. 317 indicates that the required revenues of Exhibit No. 277, Statement No. 1, were in excess for the years in question, 1939 to 1947, by the amounts shown in column 3. In other words, the apportionment exhibit reduces the required revenues shown in Exhibit No. 277 by the amounts shown in Column 3, which indicates that the average from 1939 to 1947 was $239,000, as shown in the last paragraph of page 6.

Q. In excess of the apportioned required revenues under the method of apportioning in Exhibit No. 277?

A. Yes, sir.

Q. At what rate? Is that 8 per cent?

A. Yes, sir.

Q. And on Statement No. 1 of the Exhibit in Note A you have the recitation that this includes an allowance of 8 per cent return on a depleted and depreciated original cost rate base at January 1, 1939. That is the original cost rate base as computed by you in your exhibit?

A. That is computed by Mr. Roberts in his exhibit.

Q. What exhibit of Mr. Roberts is that?

A. I believe that is Exhibit No. 272. Well, they are exhibits 272 and 273.

Q. The other Canadian River Gas Company exhibit is Exhibit No. 318 and is computed on the basis of taking into consideration the provisions of the contract?

A. That is computed under the contract. The only difference between Exhibits 318 and 317 is that in exhibit No. 317 there is an 8 per cent return used and the sinking fund method of depreciation, and in Exhibit 318 the amortization of the debt is taken into consideration instead of the amortization of the property.

Q. Is that referred to on the second to the last page of your written statement in Exhibit No. 318? Are the first column figures the amount required under the contract?

A. No. In Exhibit No. 167 the resale gas is shown for the years 1928 through to 1947 in the first column and in the apportionment exhibit, that is, this Exhibit No. 318, is shown in the second column, and the reduction due to the apportionment of part of the resale gas, Exhibit No. 318, is shown in column 3. There, again, the apportionment exhibit, following Mr. Rhodes' Exhibit No. 316, indicates that in the years 1928 to 1947 there will be approximately $155,000 annual difference or excess between the cost of gas as stated in Exhibit No. 167 and the apportionment cost of gas under this exhibit No. 318.

Q. I notice in the sentence beginning at the bottom of that page, the second to the last of your written statement in Exhibit No. 318, you say:

"In that way direct sale gas, under the apportionment method used herein, bears a portion of the base cost of operation required for resale gas alone, in addition to its own incremental costs."

Were you there employing the method set forth by Mr. Rhodes in his exhibit?"

A. Yes, sir. And the significance of the last sentence, "In that way direct sale gas" is that in a prior exhibit under the resale gas alone, the line designed for resale gas alone was primarily the base cost. Under this exhibit the direct sale would bear an addition to its incremental cost.

Q. In that respect this exhibit is contrary to the previous exhibit that you set up covering these costs?

A. No; I would not say that it is contrary. It is a different method of apportionment.

Q. And, of course, it shows different results?

A. It shows a different result.

Q. Then, which of the two are you relying upon?

A. For the purpose of this hearing and for the purpose of showing factual data we rely upon both.

Q. Although they do not show the same results?

A. No; they do not show the same results. The annual average, so far as resale gas alone is concerned, as indicated on page 7, is approximately $155,000 a year reduction in resale and consequent addition to the cost of direct sale gas.

Q. What was that comparable amount in your previous exhibit?

A. On page 7 of Exhibit No. 318, in Statement 167, the estimated cost of resale gas alone averaged $1,060,000 per year, and under Mr. Rhodes' method of apportionment the resale gas delivered at Clayton Junction averaged $905,000 a year.

Q. $904,809?

A. Yes. I was reading round figures.

Q. As shown in column 2?

A. That is correct.

Q. And it gives that average resulting difference of $155,203 per year?

A. Per year?

Q. That is a yearly average?

A. Yes.

Q. As shown on that page?

A. That is correct.

Q. In Exhibit No. 318 you similarly utilized the methods and figures as set forth in previous exhibits, such as on Statement No. 6 of the Exhibit, column 3, leaseholds, and you set up the total original cost as per exhibit No. 183 as $5,361,720?

A. That is correct.

Q. That is as it appears in Exhibit No. 183?

A. Yes, sir.

Q. And similarly as to the gathering?

A. That is correct. The gathering is on statement No. 7.

That is also taken from Exhibit No. 183 and from Exhibit No. 183-A which shows the adjustment.

On the transmission system, including the gasoline plant and the compressor station, that is taken from Exhibit No. 164.

No; pardon me. It is No. 183.

Q. Statement 7?

A. Statement 8.

Q. Statement 8 is your transmission line?

A. That is correct. That is what I was speaking of.

Q. That is taken from Exhibit No. 67?

A. Yes, sir.

Q. And wherever in these exhibits you used the phrase "original cost" you employ it in these exhibits in the same manner as you employed it in your previous exhibits?

A. That is correct.

Q. In this exhibit No. 318 which items do you add to those set forth by Mr. Rhodes in his exhibit No. 316?

A. The only items that I take care of in Exhibit No. 318 are the Federal taxes and the amortization of the debt and the apportionment of the interest.

Q. I don't seem to have the exhibit noted in the blank appearing at page 3 of your written statement, in the center of the page.

A. That should be "exhibit 316".

Mr. Rhodes: A written statement?

Q. That is right. Those are the only items which you have supplied over and above the figures of Mr. Rhodes?

A. Yes, sir; the three items.

Q. Is your method of treatment of those three items the same as that in Exhibit No. 317?

A. Except the interest on the debt and the amortization of the debt and the Federal taxes. The gross sum does not change.

Q. This Exhibit No. 318 carries out the contract terms?

A. That is right.

Q. Of course, in each instance in Exhibits 317 through 320 all figures beyond 1940 are estimates?

A. That is correct.

Q. Is 1940 actual?

A. No; 1940 is an estimate. Everything beyond 1939 is an estimate.

Q. Everything beyond 1939 is an estimate?

A. That is correct.

Q. Exhibit 319 is an exhibit as to Colorado Interstate Gas Company prepared similar to Exhibit 317 for Canadian River Gas Company?

A. Yes, sir. It takes the cost of gas delivered at Clayton, separated between resale and direct sale gas, and carries it through. The only change between Exhibit 319 and the previous exhibit, Nos. 285, is the cost of gas at Clayton and the corresponding change in the computation of Federal income taxes. With the cost of gas either higher or lower it affects the computation of income taxes. Everything else is the same as per exhibit No. 285.

Q. The table on page 5 of Exhibit 319 is one that is similar to that in previous exhibits showing required revenues Exhibit No. 286 and the apportioned revenues required, and then the last column of reduction in revenues?

A. That is correct. So far as resale gas is concerned, on page 5 of the written statement the required revenues in Exhibit No. 286 are set forth in column 1 and the apportioned revenues required for an 8 per cent return based upon Mr. Rhodes' apportionment is shown in column 2. The excess is shown in column 3.

Q. That is the excess over an 8 per cent return?

A. That is correct.

Q. Is that page 7 of your written statement?

A. No; that is page 5. That shows the resale gas.

Q. The figures in the table on page 5 other than the 1939 figures are all estimates, of course?

A. That is correct.

Q. The 1939 basing figures are actual?

A. That is correct.

Q. On page 6 will you please explain that table in the center of the page which shows contract revenues in addition to revenues required for an 8 per cent return?

A. That indicates that for the nine years 1939 to 1947 the revenues required for an 8 per cent return divided into the classes of business show an annual average of $398,737. From the wording on page 6 showing the sum-

mary, "The contract revenues in addition to these revenues required for an 8 per cent return, for both resale and direct sale gas, shown in columns Nos. 8 to 10 inclusive may be briefly summarized as follows".

Q. Oh yes; there is a table similar to that in the other two exhibits.

A. Yes, sir.

Q. In other words the amount of $165,764 under the last column is the revenue in excess of that under an 8 per cent return?

A. That is correct.

Q. The annual average?

A. Yes; for nine years.

Q. Why is that 1947 estimate a deficit?

A. That is because in 1947 the deliveries to the Natural Gas Pipe Line Company of America has been eliminated, and that makes for a higher cost of gas to the Colorado Interstate Gas Company for deliveries at Clayton.

Q. This elimination for 1947 is carrying forward the same elimination that has appeared in previous exhibits?

A. Yes, sir.

Q. What exhibit was that? Do you recall that?

A. That is Exhibit No. 286 on resale gas and I believe it is Exhibit No. 285 for all gas. It is a combination of exhibits Nos. 285 and 286.

Q. And your investment on which you compute the return is taken from the previous exhibit No. 285, is it?

A. Yes.

Q. Shown in statement 4 on this exhibit?

A. That is right.

Q. In statement 4 under "note A" that refers to item 12.

A. Yes, sir.

Q. As shown in Exhibit No. 285, exclusive of $552,180 value of gas purchase contract apportioned to Chicago gas. What is that?

A. That is approximately 42 per cent of the two million dollars gas purchase contract; that is depleted.

Q. With respect to your exhibit No. 320, that, again, utilizes the contract, as it did in Exhibit 318, Canadian River Gas Company?

A. In so far as it affects the cost of gas delivered at Clayton Junction.

Q. At Clayton Junction?

A. Yes, sir. That is the only change.

Q. In Exhibit No. 320 what items do you supply over and above those which you take from Mr. Rhodes' exhibit No. 316?

A. The depreciation and amortization, return, and Federal and state taxes. Those are the only three items that I treat that Mr. Rhodes does not treat.

Q. Upon what basis do you treat those items?

A. The basic contract, so far as cost of gas is affected of the Canadian River Gas Company, is the amortization of the debt under the contract terms; and the return is taken care of as the basic contract, and the Federal taxes and state income taxes are affected more or less by the change in cost of gas at Clayton.

Q. Then, of course, you apportioned the return between the two classes, resale gas and direct sale gas, which, of course, is not in accordance with the contract. There is no apportionment in the contract.

A. No; there is no distinction between the two classes of gas in the contract itself as such.

Q. How did you treat apportionment of return in your Exhibit No. 330 under the contract?

A. That is 8 per cent.

Q. In your exhibit No. 320 you do not show an apportionment of return or, rather, show the basis of your apportionment of return in your written statement, do you?

A. No, sir. In the written statement it is covered by the paragraph stating that Mr. Rhodes did not treat of a rate of return and Federal income taxes and amortization of debt.

Q. Where is that referred to in your written statement?

A. On page 2 of Exhibit No. 320 in paragraph 3.

Q. Now, Mr. Lusk, will you please turn to Exhibit No. 320, page 6 of your written statement? That is the page on which there is the table. Will you please explain that table?

A. On page 6 of Exhibit No. 320 the first column of the table shows the operating costs and required return as indicated by Exhibits Nos. 172 and 172-A, amounting to an annual average of $2,836,713 over a 20-year period. The apportioned operating cost and required return, statement

No. 2 attached, that is, the required return under the apportionment taken care of in Exhibit No. 320, amounts to $2,438,013, or a reduction in operating costs and required return from resale gas of $398,700.

Q. Annual average?

A. Yes, sir.

Q. In that respect your computation in this exhibit No. 320 differs from your previous exhibit?

A. The annual average difference between this exhibit and exhibits Nos. 172 and 172-A as referred to, resale gas alone, is $398,700.

Q. I notice in your exhibits Nos. 318 and 320 in both instances you set up these comparative tables for a 20-year period, from 1928 through 1947?

A. That is correct.

Q. In your exhibit Nos. 317 and 319 your tables of comparison set forth there are only for the periods 1939 and estimated through 1947?

A. That is correct. In Exhibit 317 and Exhibit 319, the regulatory rate basis period begins on January 1, 1939 and extends through to 1947.

Q. Do any of the figures in any of your four exhibits go beyond 1947?

A. No, sir.

Q. Nor do any of the figures in Mr. Rhodes' Exhibit No. 316 present any estimate beyond 1947?

A. With the exception of the life of the field and the amortization of the Canadian River property carried through to 1956.

Q. Where is that in Mr. Rhodes' exhibit?

A. It is not in Mr. Rhodes' exhibit. But all of these estimates in all of these last exhibits are predicated upon the 1956 termination of the commercial supply of gas.

Q. In the preparation of these four exhibits, Nos. 317, 318, 319 and 320, you made no independent determination of your own as to the purpose that prompted the construction of the Denver Pipe Line, did you?

A. No, sir.

Q. Nor did you relate any of these figures in the four exhibits to the actual facts in connection with operations of the Denver Line in so far as no distinction is made on the company's books as to apportioning resale gas and direct sale gas?

A. No, sir. The company does not atempt to differentiate between resale gas and direct sale gas so far as cost of gas is concerned. They do separate the revenues.

Q. Nor does the contract between Canadian River Gas Company and Colorado Interstate Gas Company have any provision with reference to classifying the operations as between resale and direct sale gas?

A. No specific provisions that I know of.

Q. And there is no provision that you know of in that contract anywhere that attempts to set up the cost of gas on resale as distinguished from cost of direct sale gas?

A. No, sir; none that I know of.

(Vol. CII-(2), pp. 15992-16009.)

* * * * *

Q. Mr. Lusk, in your cross examination upon questioning by Mr. Lange, I think you said that the basis of all four of these exhibits, Nos. 317, 318, 319, and 320, was the economic life of the field to 1956. I call your attention to the fact that in one of the Canadian River Gas Company exhibits, Exhibit No. 318, it is based upon the contracts that extend to 1948, and also one of the Colorado Interstate Gas Company exhibits, No. 320, is also based upon the contracts that it has, both for the purchase of gas and sale of gas through 1948.

With that in mind, was your answer correct, Mr. Lusk?

A. Yes; I was in error when I mentioned the four exhibits. It should be Exhibits 317 and 319, the two exhibits that refer to the regulatory rate basis only.

Q. Those two exhibits with respect to the economic life of the field being fixed at 1956 have to do with the amounts of amortization that would be required each year for that number of years?

A. That is correct.

Q. And they are analogous to preceding exhibits that related to required revenues on a regulatory basis for all gas and then for resale gas on the Denver line for that resale gas only?

A. That is correct.

Q. Mr. R. A. Ford in his testimony given in the hearing at Denver stated that the fair-market price of gas at Bivins would be 7 cents. Have you prepared a brief computation

relating to all gas sold to Colorado Interstate Gas Company by Canadian River Gas Company, showing what difference there would be, if any, using 7 cents as the cost of all gas at Bivins and then adding to that the subsequent required cost for transmission expenses from Bivins up to Clayton, and then the required expenses of the Colorado Interstate Gas Company for all gas delivered from the Denver Line by Colorado Interstate Gas Company?

A. Yes, sir.

Mr. Dougherty: May we have this statement to which Mr. Lusk has just referred marked for identification as Exhibit No. 321?

The Trial Examiner: It will be so marked.

(The document referred to was marked for identification Exhibit No. 321, Witness Lusk.)

By Mr. Dougherty:

Q. Mr. Lusk, you have shown in statement No. 1 of this document which has just been marked for identification as Exhibit No. 321, three columns of figures covering the year 1939 through 1946.

A. Yes, sir.

Q. Will you please explain the significance of those columns, referring, as you need to, to supporting figures on statements 2 and 3?

A. On statement No. 1 of Exhibit No. 321, column 1 shows the contract revenues as indicated by Exhibit No. 285, statement No. 1, as being the revenues from all gas, from 1939 to 1947, inclusive.

Q. Those were the revenues required by Colorado Interstate Gas Company on regulatory basis, including an 8 per cent return?

A. Yes, sir.

Q. I am in error there. I mean those are the revenues shown as being the revenues that would be collected under the contract prices.

A. That is correct.

Q. Which Colorado Interstate Gas Company has?

A. That is correct.

Q. What is your next column, column 3?

A. Column 2, the revenues required with cost of gas at the Bivins intake at 7 cents, as testified to by Mr. R. A.

Ford during the hearings at Denver and with an 8 per cent return, the only difference being the cost of gas at the Bivins intake is computed at 7 cents.

Now, as to column 3—

Q. You are not using the numbers that are shown there. Those have column numbers at the top. Where you used the term "Column 2" it should have been "Column 3," as shown on the exhibit?

A. That is correct.

In column 4 is the addition or deficiency between columns 2 and 3. For the 9-year period it indicates the amount is $776,763, or an average of $86,307 a year plus.

Q. As I understand it, that shows that if you computed the cost of gas at Bivins at 7 cents and then added to that the other corresponding costs that would be required, including an 8 per cent return, the amount so required on that basis is less than the actual amounts that are shown in Exhibit No. 285 as were collected in 1939 and anticipated to be collected in the succeeding years through 1947?

A. That is correct.

Q. So that on that 7-cent basis, in order to get an 8 per cent return there would need be collected only the $776,763 less than the actual estimated as would be collected under the contract prices?

A. That is correct.

Q. You have statements Nos. 2 and 3 that show the detail. Will you please explain those briefly?

A. Statement No. 2, item No. 1, shows the gas deliveries at the Bivins station input as given in Exhibit No. 164, statement No. 10; that is, the m. c. f. beginning in 1939 and extending through 1947.

Line 2 is the cost of gas as testified to by Mr. R. A. Ford at 7 cents, that is, the 7 cents times the m. c. f. which gives the corresponding dollars.

The transmission cost of the Canadian River Gas Company from the Bivins intake north to Clayton Junction is shown by Exhibit No. 276, statement No. 4.

Line 4 shows the total Canadian River Gas Company *delivered* at Clayton Junction with the exception that the total amount is multiplied by 97.70 per cent, which is also shown by Exhibit No. 276, statement No. 4.

The remaining 2.3 per cent is the delivery to the Amarillo Oil Company along the Canadian River transmission line at Dalhart, Texline and Hartley.

Line 6 shows the amount of the 7-cent computed cost after taking into consideration the 97.70 per cent as applied to the Colorado Interstate Gas Company deliveries at Clayton.

Statement 3 carries that cost of gas in as item No. 1, and item No. 2 is the operating expenses and taxes as shown by Exhibit No. 285, statement No. 2.

The income and capital stock taxes have been recomputed on the 7-cent cost of gas basis.

Line 4 on statement 3 shows the total operating expenses and taxes.

Line 5 shows the depreciation and amortization, which does not change from the old exhibit, after apportioning the part of the gas purchase contract to Chicago gas.

Line 6 is the amount required for an 8 per cent return.

Line 7 shows the total revenues required as brought forward to statement No. 1.

Q. This note "A" on statement 3 refers to an exhibit which has not been filled in. What should that be?

A. That is one of these last exhibits, that is Exhibit No. 319.

Q. Then that reference to the exhibit number in note "A" on statement No. 3 should be "Exhibit 319."

A. That is correct.

Q. That is, the various figures shown opposite line 6 can be found in Exhibit No. 319?

A. That is correct.

Mr. Dougherty: That is all.

Recross Examination.

By Mr. Lange:

Q. The 7 cents per m. c. f. set forth as the proposed or estimated cost of gas in your Exhibit 321 is, of course, not actual. Isn't that a figure that Mr. Ford testified to as being, in his opinion, the market value of gas?

A. That is correct.

Q. Neither the Colorado Interstate Gas Company nor the Canadian River Gas Company is paying 7 cents per m.c.f. for any gas?

A. No, sir. They do not purchase any gas, that is, Canadian River Gas Company does not. Colorado Interstate purchases from Canadian River Gas Company.

Q. But this exhibit is being sponsored by Colorado Interstate Gas Company?

A. Yes, sir.

Q. And any reference to a 7-cent figure, particularly on statement 2, item 2, reading "Cost of gas 7 cents per m. c. f." is purely an estimated figure?

A. That is taken directly from Mr. Ford's testimony as to what he contends is the market value of gas at the Bivins intake.

Q. So using the word "cost" in item 2 is different from the word "cost" in the item below item 4; for instance, "cost of gas to C. R. G. Co. at Clayton Junction," that is not predicated upon any estimated 7 cents per m. c. f., is it?

A. It is predicated upon Mr. Ford's testimony as to the market price of gas at Bivins in statement No. 2.

Q. In other words, what it would be if a 7-cents per m. c. f. figure were applied?

A. That is correct.

Q. Going back to statement No. 1 of Exhibit No. 321, the table there sets forth in column 1 contract revenues and revenues required upon an 8 per cent return, applying the 7 cents figure. And in the fourth column wherever a plus figure appears preceding each of those items, does that indicate that that is the amount of revenue returns in excess of an 8 per cent return?

A. Over and above the required revenues as estimated under column 3 of statement No. 1.

Q. And when a minus sign appears—And there is only one in 1940—it shows the deficiency?

A. That is correct.

Q. Of course, that is estimated?

A. 1940 is estimated.

Q. And 1939, the basic, is actual?

A. It is actual on statement No. 1, column 2.

Q. And, of course, all of the subsequent ones are estimated?

A. That is correct.

Q. And that tabulation on statement No. 1 shows a yearly average figure of $86,307?

A. Yes.

Q. That is a plus figure?

A. Yes, sir.

Q. As to statement No. 2 of the exhibit, how did you arrive at the percentages constituting item No. 5?

A. They are taken from exhibit No. 276, statement 4. That is based upon straight m. c. f. allocation.

Q. The differences between 100 per cent and those percentages here shown are made up by loss of gas?

A. They are line deliveries to Dalhart, Texline and Hartley. They are line deliveries after the gas leaves Bivins discharge, before it reaches Clayton Junction for delivery to Colorado Interstate Gas Company. There are line deliveries to Dalhart, Texline and Hartley.

Q. Then I was mistaken. The difference in percentage does not indicate line loss?

A. No.

Q. But actual deliveries?

A. Actual deliveries.

Q. As to statement No. 3 of the exhibit, item No. 1, cost of gas at Clayton Junction in each of the years, that again contemplates the application of the 7 cents per m. c. f.?

A. That is correct. It is taken directly from statement No. 2 of the same exhibit.

Q. As you have stated, Canadian River Gas Company is not, in fact, paying the 7 cents per m. c. f. for any of its gas.

A. Canadian River does not purchase any gas at all.

Q. And, so far as you know, does not contemplate purchasing any gas?

A. Not that I know of. I do not think they contemplate purchasing any gas.

Mr. Lange: That is all.

Redirect Examination.

By Mr. Dougherty:

Q. You mentioned the line deliveries after the gas leaves Bivins to Dalhart, Texline and Hartley. Isn't there line delivery to Clayton Gas Company?

A. Yes.

Q. That is contracted along with these other deliveries?

A. Yes.

Q. While this exhibit on statement No. 1 does show the amount that Colorado Interstate should collect on the basis of using a 7 cents price at Bivins, doesn't the exhibit also show in statement No. 2 the amount that Canadian River Gas Company should collect at Clayton from Colorado Interstate Gas Company on the basis of 7 cents at Bivins?

A. That is correct—using 7 cents, as testified to by Mr. R. A. Ford, plus the transmission and compressage cost as shown by Exhibit No. 276, statement 4, the total as per line 4 would be the amount that Canadian River Gas Company would be entitled to under a 7-cents gas price.

Q. So the exhibit is a combined one for both companies, showing what each would collect; first for the Canadian River at Clayton Junction, and then what Colorado Interstate would collect for all gas on the basis of paying that amount at Clayton Junction?

A. That is right.

Q. To Canadian River?

A. That is correct. Statement 2 is headed Canadian River Gas Company but Statement 3 is headed Colorado Interstate Gas Company, and the summary statement No. 1 is a combination for both and headed "Colorado Interstate Gas Co.," etc.

Q. It does, however, show each company separately before the combination is made on the front sheet?

A. That is correct.

(Vol. CII-(2) pp. 16010-16020.)

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41. Description of Canadian's Production and Gathering Facilities as of December 31, 1939.

The area from which Canadian secures its supply of gas involved in this case is known as the Texas Panhandle Field and, according to the Texas Railroad Commission, contains approximately 1,462,000 acres of proven gas land. This acreage is shown on Thompson's map, Exhibit 187. (Vol. LXVIII, pp. 9976-9981.) Of this acreage witness C. J. Peterson (Vol. LXVIII, pp. 9936, et seq.) and witness J.

D. Thompson, Jr. (Vol. LXVIII, p. 9981) classify approximately 1,035,000 acres as commercial acreage, or best commercial acreage, and approximately 427,000 acres as marginal acreage. These witnesses stated that the commercial or best commercial acreage in that portion with an average initial virgin open flow of above 5,000 Mcf. per well, and a marginal acreage is on the marginal edges of the field, except in central Gray County where it comprises a large part of the field, and is that acreage with an average initial virgin open flow of less than 5,000 Mcf. per well. A number of other maps showing the Texas Panhandle Field, in whole or in part, were introduced in evidence as exhibits.

As of December 31, 1939, Canadian held gas rights under oil and gas leases on approximately 325,000 acres of land in the Texas Panhandle Field in Carson, Hartley, Hutchinson, Moore, Oldham and Potter counties. (Exhibit 47, p. 2; Exhibit 146, p. 62.) On April 27, 1940, Canadian released approximately 10,000 acres of its gas rights (Exhibit 96), leaving it gas rights in approximately 315,000 acres. The location of the Canadian acreage is shown on map in R. J. Wallace Exhibit 181. This map shows the Canadian acreage to be in the westerly end of the Texas Panhandle Field. Exhibit 181 likewise lists and gives detailed data concerning the various leaseholds held by Canadian covering this acreage. The Commission's Exhibit 95 also contains maps showing the location of the Canadian acreage. Commission's Map 95 referred to above shows the general location of a fault line crossing the Texas Panhandle Field. Of the approximate 315,000 acres held under lease by Canadian, approximately 86,000 acres lie, generally speaking, to the south of this fault line and outside the proven area of the field.

A description of the other producing and gathering facilities of Canadian as of December 31, 1939 is contained in Exhibit 89 by Canadian's witness Watson and his testimony with reference thereto. (Vol. XVIII, p. 2524.)

Watson has been in the employ of Canadian since 1928, and up to 1936 he was employed in general engineering work connected with the (Vol. XVIII, p. 2524) production,

transportation and measurement of natural gas. From 1936 to date he has been Assistant General Superintendent of Canadian operations.

He graduated from the University of Colorado in 1923 with the degree of B.S. (M.E.) Prior to that time he had actual field experience in drilling operations, as roustabout and tool dresser. Prior to his going with the Canadian he had experience as driller and drilling contractor in the Texas Panhandle Field, and was employed by the Amarillo Oil Company from September, 1927 to June, 1928, performing duties similar to those since performed for the Canadian.

He is a member of the Production Committee of the Natural Gas Section of the American Gas Association, and has for the last seven years been a member of the General Committee which supervises the Southwestern Gas Measurement Short Course, an extension course conducted by the University of Oklahoma. (Vol. XVIII, p. 2525.)

His description follows:

Canadian produces, and in most instances gathers (Vol. XVIII, p. 2525), natural gas for three customers, Amarillo Oil Company, Clayton Gas Company and Colorado Interstate. Sales to Amarillo Oil Company are made at the well for the Amarillo, Excell, Fritch and Channing local markets. All of the other gas sold by the company is gathered by it and passes through the Bivins compressor station or the Fritch master meter station, located at the opposite ends of the gathering system. In one instance, gas is delivered direct from a well into the gathering system of the Texoma Natural Gas Company and is metered at that point.

The company commenced operations in June, 1928, with 34 producing wells, with aggregate open flow as shown by tests made in 1929, of 893,000 Mcf. per day. The rock pressures of these wells, as reflected by the above tests, then ranged from a minimum of 347 pounds gauge to a maximum of 435 pounds gauge. Additional wells were drilled and acquired from time to time, so that as of December 31, 1939, the company owned and operated 94 gas

wells with an aggregate open flow capacity of 2,071,000 Mcf., and with rock pressures ranging from a minimum of 243 pounds gauge to a maximum of 428 pounds gauge. (Vol. XVIII, pp. 2526, 2527.)

There is attached as Schedule No. 1, to Exhibit 89 "A Chronological Statement of Producing Gas Well Acquisitions and Completions" by the company from June 1, 1928 to December 31, 1939, inclusive, showing as to each well owned and operated by the company as of December 31, 1939, its name, number and date of acquisition or completion, as follows:

Well Name and Number	Date Acquired or Completed by C. R. G. Co.
*Bivins A-2	6/ 1/28
* " A-3	"
* " A-4	"
* " A-5	"
* " B-1	"
* " B-2	"
* " B-3	"
* " B-4	"
* " B-5	"
* " B-6	"
* " C-1	"
* " C-4	"
* " D-3	"
*Ingerton A-1 (See Note 1)	"
*Masterson A-1	"
* " A-2	"
* " B-1	"
* " B-5	"
* " C-1	"
* " C-3	"
* " D-4	"
* " E-2	"
* " F-1	"
* " G-2	"
* " H-1	"
* " I-1	"
* " J-1	"
* " J-2	"

Well Name and Number	Date Acquired or Completed by C. R. G. Co.
*Masterson K-1	6/ 1/28
* " L-1	"
*Poling A-1	"
*Thompson A-1	"
* " A-2	"
*Warrick A-1	"
**Seay A-1	6/13/28
**Crawford A-1	6/29/28
**Bivins E-1	7/ 7/28
**Thompson B-1	7/27/28
**Bivins A-8	7/31/28
**Sneed A-1	9/ 5/28
**Bivins A-7	9/10/28
*Masterson M-1	9/14/28
*Sneed B-1	9/14/28
**Bivins A-6	9/18/28
Bivins A-10	5/17/29
Killgore A-1	5/27/29
Warrick A-2	7/27/29
**Ingerton A-2 (See Note 1)	9/ 6/29
**Bivins A-9	10/ 1/29
Read A-1	10/28/29
CRG Co. Fee A-1	11/11/29
*Johnson A-1	11/19/29
*Sanford A-1	11/19/29
*Sneed D-1	12/27/29
*Sneed D-2 (See Note 2)	12/27/29
Allison A-1	12/28/29
Sneed C-1	4/ 8/30
Masterson N-1	5/24/30
*Dunaway A-1	6/ 7/30
*Bivins F-1	6/19/30
*Bost A-1	7/18/30
*Bost B-1	7/18/30
Bivins A-13	9/15/30
McBride A-1	11/ 4/30
*Bost C-1	1/ 6/31
*Bost D-1	1/ 6/31
**Dunaway B-1	3/24/31
Crawford B-1	5/ 8/31

Well Name and Number	Date Acquired or Completed by C. R. G. Co.
Bost C-2	10/12/31
Dunaway A-2	10/18/32
*Bivins G-1	2/ 1/33
*Bivins H-1	2/ 1/33
*Bivins I-1	7/15/33
Bivins J-1	8/30/33
Bivins A-14	11/ 9/35
Bivins A-16	11/27/35
Masterson A-3	12/12/35
Bivins A-17	1/28/36
Bivins A-15	3/ 4/36
Thompson B-2	4/27/36
*Killgore B-1 (See Note 2)	8/15/36
Bivins A-18	11/ 5/36
Coughlan A-1	12/26/36
Bivins A-19	1/30/37
Bivins A-20	5/ 1/37
Killgore A-2	5/27/37
Bivins A-21	8/22/37
Read A-2	9/30/37
Bivins A-22	12/12/37
Bivins A-23	2/22/38
Bivins A-24	11/29/38
Masterson A-4	2/17/39
Bivins A-25	5/21/39
Masterson B-3	5/31/39
Sneed A-2	7/ 9/39
Masterson B-2	7/24/39
Killgore A-3	11/20/39

*Acquired as a producing gas well.

**Acquired as an incomplete well (date shown is date of completion).

Note 1. Ingerton A-1 and Ingerton A-2 wells were sold in 1935, after they had been classified as sour gas wells by the Texas Railroad Commission.

Note 2. Sneed D-2 well exchanged for Killgore B-1 well—8-15-36.

Note 3. Four wells which were purchased or drilled by the Company and sold to the United States Government in 1929, i. e., Bivins A-1, Bush A-1, Bush B-1 and Fuqua A-2 (Cliffside Helium Structure), have not been included in the above schedule, because these wells were never considered by the Company as a part of its producing facilities.

As of December 31, 1939, the company maintained and operated two drilling units, one portable cleaning-out machine and other miscellaneous tools and equipment used for the drilling, cleaning out and repairing of its gas wells. As of said date the company owned and operated a gathering system in the field consisting of a main 22-inch trunk gathering line running east from Bivins compressor station, and a 14-inch trunk line runing southwest from this station, together with gathering line laterals and extensions to these trunk lines, varying in size from two to 20 inches. The gathering system is interconnected in such a manner as to facilitate the delivery of gas to the various market outlets. The sizes and lengths of the several (p. 2527) gathering lines as reflected by the company's books of account are set forth in the following table: (Ex. 89)

Gathering Lines by Sizes and Lengths of Pipe as of December 31, 1939.

Size Inches	Length Feet	
2 in.	60,164 ft.	11 in.
3	3,918	9
4	169,503	1
5-3/16 (Casing)	1,784	11
6	110,137	0
6⅝ (Casing)	2,196	11
8	133,627	8
10	85,340	9
12	51,839	2
14	26,007	4
16	14,071	1
20	2,030	1
22x5/16	97,242	10
4 (Extra Heavy)	179	6
Total	758,044 ft.	0 in.

With two minor exceptions, gas produced is metered at each well, and also at points where customers receive gas from the main gathering system. Regulators are installed at key wells and key points on the gathering (p. 2529) system to assist in maintaining the required line pressures. These conditions prevailed as of December 31, 1939.

In the operation of the production and gathering system, the company operates certain housing, warehouse and other facilities, a portion of which is located at Bivins station and other portions at two other field camps. One of the field camps consists of two houses, one bunk house, warehouse, garage, material yard and water well, located near the town of Fritch, Texas. The other camp is located near Masterson No. G-2 well, consisting of two houses, one garage and water well.

A telephone system is operated and maintained, which is used for field as well as transmission purposes. This system is operated through switchboards located at the Amarillo office and Bivins station.

The company maintains an office at Amarillo, Texas, for its headquarters for the production, pipe line, meter, land, engineering and field accounting (p. 2530) departments.

The company as of said date owned twelve trucks and pickups, and fifteen automobiles, several of which were used jointly for field and pipe line transmission operations. This equipment was located at Bivins station, Fritch Camp, Masterson No. G-2 Camp and Amarillo.

Witness O'Connor for the Commission, in Exhibit 47, also gave a somewhat detailed description of the producing and gathering facilities.

[It is considered impractical to insert copies of Commission's map (exhibit 95) and Canadian's R. J. Wallace map (exhibit 181) in the printed record.]

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42. Description of Canadian's Portion of the Denver Line as of December 31, 1939.

A description of the Denver Line (as that term is employed in the Companies' evidence) as a whole is contained supra under the title, "13. Description of the facilities of the 'Denver Line' used and useful in the transmission of gas."

Canadian's portion of the transmission line, as segre-

gated by the Companies, extends from the intake of Bivins Station in the State of Texas, to Clayton Junction, State of New Mexico, and is a 22" outside diameter lap-welded steel "Dresser-coupled line * * *, and built with single random length pipe averaging 19 feet per joint," and is in all respects similar to the main line of Colorado Interstate extending from Clayton Junction to the Arkansas River, in the State of Colorado. (Exhibit 231, p. 2.)

The following are laterals taking off Canadian's portion of the Denver Line:

Dalhart, a 6⅝" line outside diameter, and 5,041 feet in length.

Texline, a 2⅜" line outside diameter, and 20,739 feet in length.

Clayton, a 4½" line outside diameter, 8,439 feet in length, and a 3½" line outside diameter, 28,208 feet in length. (Exhibit 65, p. 4.)

The Bivins compressing station, located in Moore county, Texas, approximately 35 miles north of Amarillo, where the gas produced and gathered enters the Denver line, has equipment consisting of three 1,000 HP Worthington gas-engine driven gas compressors, one 600 HP Clark gas-engine driven gas compressor, and appurtenant and auxiliary equipment.

There is at the Bivins station a camp or operators' village, consisting of approximately 40 structures, including dwellings, a hotel, garages, and miscellaneous service buildings. Canadian owns and operates its own telephone system along the pipe line from Bivins station to Clayton Junction, from Bivins station to its operating office at Amarillo, and from Bivins station to various points in the gas field. There is a gasoline extraction plant located at the Bivins station, and on the main line approximately 22 miles from the outlet of Bivins station, there is a dehydration plant which removes excess moisture from the gas (Exhibit 47, p. 3). It also owns personal property, such as automobiles and trucks, which are used in common for the operation of the transmission line and its production and gathering properties.

43. Volumes and Peak Requirements of Gas Produced, Used in Operations and Sold.

Supra, under the title, "15. Volume Sales and Revenues of all Gas and of Resale Gas Only, Colorado Interstate, 1928 to 1939, Inclusive, and as Estimated 1940 to 1947, Inclusive," there is abstracted Exhibit 43 showing the volumes of gas delivered by Canadian to Colorado Interstate and the Revenues derived therefrom from 1928 to 1939, inclusive, and Exhibit 56 showing the estimate of future volumes and revenues from 1940 to 1947, inclusive, by Witness Beardsley, Superintendent of the Meter Department of Colorado Interstate. Reference is also made to Exhibit 59, which was Mr. Beardsley's working papers and which was later changed as to form, but not as to figures, by Ford, Bacon & Davis, and then became Exhibit 56.

Also supra there is abstracted Exhibit 66 covering the evidence applicable to the title, "16. Peak Load Obligations and Line Capacity of the Denver Line as Found Through the Winter 1939-1940 and as Estimated Through 1947 and Estimated Necessary Additional Facilities."

In Exhibit 78, Witness Lusk, for Respondent, gives in Mcf. at 16.4 pounds pressure absolute, the volumes of gas produced, and gas used in its own operations for the years 1928 to 1939 inclusive, which statement we reproduce below, covering gas used in operations, total gas accounted for, gas purchased and exchanged, and total gas produced:

SALES

Year Ended Dec. 31	Colorado Interstate Gas Company: Clayton New Mexico Denver Line (1)	Colorado Interstate Gas Company: Gray Oklahoma Chicago Line (2)	Clayton Gas Co. (3)	Amarillo Oil Co. (4)
1928 (7 Mos.)	2,926,886		(A)	3,097,009
1929	9,775,441		(A)	7,248,678
1930	11,847,757	21,924	(A)	5,888,427
1931	12,511,839	2,082,750	(A)	3,426,430
1932	12,170,499	6,091,573	(A)	1,809,980
1933	11,466,028	5,895,838	28,776	1,885,097
1934	11,982,834	10,779,891	63,188	3,248,503
1935	12,993,828	13,472,288	68,957	4,300,505
1936	16,905,187	16,939,253	73,159	4,482,657
1937	17,836,960	17,850,223	78,553	5,105,813
1938	16,015,373	16,403,983	81,399	4,887,823
1939	18,377,500	18,036,930	93,535	4,635,000

Note: (A) Sales prior to June 30, 1933 made by Colorado Interstate Gas Co.

Note: (B) Includes Free Gas to Lessors.

Field Sales	Total Sales	Used in Operations (B)	Total Gas Accounted for	Gas Purchased and Exchanged	Total Gas Produced
(5)	(6)	(7)	(8)	(9)	(10)
.....	6,023,895	97,687	6,121,582	228,891	5,892,691
72,850	17,096,969	385,008	17,481,977	281,298	17,200,679
122,530	17,880,638	417,480	18,298,118	—145,407	18,443,525
262,949	18,283,968	444,900	18,728,868	130,652	18,598,216
.....	20,072,052	369,401	20,441,453	.....	20,441,453
.....	19,275,739	368,118	19,643,857	.....	19,643,857
.....	26,074,416	347,215	26,421,631	.....	26,421,631
.....	30,835,578	468,093	31,303,671	370,136	30,933,535
.....	38,400,256	582,657	38,982,913	44,279	38,938,634
.....	40,871,549	720,766	41,592,315	—44,279	41,636,594
.....	37,388,578	561,233	37,949,811	.....	37,949,811
.....	41,142,965	648,296	41,791,261	.....	41,791,261

In Exhibit 79 Witness Lusk shows the volumes of gas produced in the months of January and February of each of the years 1928 to 1939, inclusive, which represent the peak month deliveries for the years involved. Whenever the average daily production in February was greater than in January, the production for February is shown as the peak month. The month of December, 1928, was taken as the peak in that year, since operations only began in the summer of that year. This is shown in Mef. at 16.4 pounds pressure absolute, and is set forth below showing average day in peak month, as follows:

Peak Month Deliveries

	Colorado Interstate Gas Co.						
Year	Clayton, New Mexico (Denver Line) (1)	Gray, Oklahoma (Chicago Line) (2)	Clayton Gas Co. (3)	Amarillo Oil Co. (A) (4)	Field Sales (5)	Gas Used in Operations (6)	Total (7)
1928(C)	789,747	.....	(B)	648,657	.....	26,219	1,464,623
1929	832,991	.....	(B)	696,557	.....	33,188	1,562,736
1930	1,449,217	.....	(B)	717,042	13,000	51,517	2,230,776
1931	1,368,457	.....	(B)	565,796	.....	48,939	1,983,192
1932	1,563,388	421,798	(B)	315,622	.....	47,653	2,348,461
1933	1,266,364	480,895	(B)	246,115	.....	40,824	2,034,198
1934	1,230,835	927,714	8,500	336,438	.....	35,971	2,539,458
1935	1,309,917	1,210,561	8,159	491,832	.....	47,418	3,067,887
1936	1,709,770	1,441,332	9,663	523,881	.....	59,256	3,743,903
1937	2,085,294	1,516,958	11,950	596,727	.....	84,618	4,295,547
1938	1,565,042	1,621,131	10,720	526,704	.....	55,338	3,778,935
1939	1,885,314	1,488,752	12,773	541,534	.....	67,099	3,995,472

Notes: (A) Includes deliveries to Channing, Dalhart Texline and Hartley.

(B) Included with deliveries to Colorado Interstate Gas Company at Clayton, New Mexico (Denver Line).

(C) Month of December, 1928 taken as Peak Month

Average Day in Peak Month

Colorado Interstate Gas Co.						
Clayton, New Mexico (Denver Line)	Gray, Oklahoma (Chicago Line)	Clayton Gas Co.	Amarillo Oil Co. (A)	Field Sales	Gas Used in Operations	Total
(8)	(9)	(10)	(11)	(12)	(13)	(14)
25,746	.....	(B)	20,495	.....	846	47,087
29,750	.....	(B)	24,877	.....	1,185	55,812
46,749	.....	(B)	23,130	419	1,662	71,960
44,144	.....	(B)	18,251	.....	1,579	63,974
50,432	14,545	(B)	10,181	.....	1,537	76,695
45,227	15,513	(B)	8,790	.....	1,458	70,988
43,958	33,133	274	12,016	.....	1,285	90,666
42,255	43,234	291	15,866	.....	1,530	103,176
58,958	49,701	333	18,065	.....	2,043	129,100
67,268	48,921	385	19,249	.....	2,730	138,566
50,485	52,295	346	18,811	.....	1,785	123,722
67,333	53,170	456	17,469	.....	2,396	140,824

The estimated annual deliveries, gas used in operations, and peak month, 1940 to 1947, inclusive, are shown in Exhibit 80, Witness Hendee, Respondent's General Manager. The data for future deliveries to Colorado Interstate at Clayton Junction are based upon the estimates of Witness Beardsley, contained in Exhibits 56 and 59, abstracted under Title 15 supra, and the peak month requirements for such deliveries was taken at 12% of the annual volumes. The data for future deliveries to Colorado Interstate at Gray, Oklahoma, for the Chicago Line were obtained from J. G. Dickinson, General Superintendent of Texoma Natural Gas Company, and the data for future deliveries to Amarillo Oil Company and Clayton Gas Company, respectively, were obtained from W. W. Rusk, Assistant General Manager of Amarillo Oil Company. Estimates of gas to be used by the company in its own operations were obtained from W. R. Beardsley, Supervisor of the Meter Department of Colorado Interstate.

The estimated annual deliveries and peak month are shown in an attached statement to Exhibit 80 in Mcf. at 16.4 pounds pressure absolute, as follows:

Year	Clayton, New Mexico (Denver Line)	Gray, Oklahoma (Chicago Line)	Clayton Gas Co.	Amarillo Oil Co.	Used in Operations	Total
Annual Volume.						
1940	18,830,659	17,119,099	94,884	5,825,960	637,000	42,507,602
1941	20,345,148	17,163,824	96,506	6,425,960	675,000	44,706,438
1942	20,807,395	22,089,205	98,128	6,425,960	700,000	50,120,688
1943	20,915,828	24,844,885	99,750	6,425,960	725,000	53,011,423
1944	21,343,807	27,912,670	101,372	6,425,960	750,000	56,533,809
1945	21,767,854	30,015,270	102,994	6,425,960	775,000	59,087,078
1946	21,767,854	23,826,828	102,994	6,425,960	775,000	52,898,636
1947	21,767,854	.....	102,994	6,425,960	775,000	29,071,808
Peak Month						
1940	2,243,602(A)	1,645,204(A)	15,687(A)	711,212(A)	76,440	4,692,145
1941	2,441,420	1,716,382	15,923	798,150	81,000	5,052,875
1942	2,496,890	2,208,921	16,191	798,150	84,000	5,604,152
1943	2,509,900	2,484,490	16,459	798,150	87,000	5,895,999
1944	2,561,260	2,791,267	16,726	798,150	90,000	6,257,403
1945	2,612,140	3,001,527	16,994	798,150	93,000	6,521,811
1946	2,612,140	3,176,467	16,994	798,150	93,000	6,696,751
1947	2,612,140	.....	16,994	798,150	93,000	3,520,284

Note: (A) Actual in 1940.

Canadian's Witness, WILLIAM R. BEARDSLEY, with reference to Exhibit 43, testified as follows: (Vol. VII, pp. 945-946.)

Q. Did you help prepare the original statement which accompanied this exhibit?

A. The written statement that accompanies it?

Q. Yes.

A. I had nothing to do with the written statement which accompanies this exhibit.

Q. Or the engineering testimony given yesterday with regard to the exhibit, description of facilities?

A. I don't believe I did.

Mr. March: That's all. We don't have any objection.

Mr. Brock: I believe the exhibit was admitted?

The Trial Examiner: Yes, it is admitted, Mr. Brock.

(Exhibit 43, Witnesses Lusk and Beardsley, received in evidence.)

* * * * * *

MR. BEARDSLEY further testified with reference to Exhibit 56 as follows: (Vol. VII, Official Transcript, page 955.)

Did you write this written statement which you read into the record?

A. I did.

Q. Who assisted you in writing that?

A. Nobody.

Q. Just what part of this exhibit did you prepare?

A. As I stated before, the estimates of future sales and revenue were taken from information which I supplied.

Q. You just supplied this information to certain other people and they made up these tables?

A. That's right.

Q. And who were these people?

A. Ford, Bacon & Davis.

Q. However, you had made some sort of compilation before you turned these over to Ford, Bacon & Davis?

A. That's right.

Canadian WITNESS, HENDEE, testified as follows: (Vol. VIII, pages 1092, 1093.)

Q. What do you think about forecasting in regard to business cycles?

A. What do I think about it?

Q. Yes, what do you think about it, the accuracy?

A. Well, some of them claim to hit it always and others have fallen by the wayside.

Q. Now, you went over these figures very carefully with Mr. Beardsley, I believe you testified?

A. I think so, yes.

Q. You added to his wealth of experience in forecasting and adopted these figures as your own?

A. Yes, I think so. We have gone over them carefully and used everything that we have to the best of our knowledge and concluded that that is as near as we can get to it.

Q. Why did you predict a decrease in industrial load from 1943—1943 over 1942 and 1941?

A. I don't think that shows in my predictions. Our curves have been rather a steady increase.

Q. Well, are these your estimates here, Exhibit No. 56?

A. No, I don't think I had anything to do with those.

Q. You didn't have anything to do with Exhibit No. 56?

A. No.

Q. You take no responsibility for anything contained therein?

A. It was under my supervision, that's all.

Q. Your experience is that there is going to be a continuous increase, is that right?

A. Generally so, yes.

Q. Did you ever see Exhibit No. 56 before, a copy of it?

A. No, I don't think I ever have in this form.

Q. What do you mean "in this form"?

A. I may have seen the figures but I haven't seen this particular report.

Q. Did they consult you about forecasts this company?

A. Generally, yes.

Q. This is sort of an exception to the rule?

A. Well, this is probably the same figures in another form.

Q. You don't know whether if is or not, though?
A. No, I don't.

Canadian's WITNESS, J. G. DICKINSON, testified as follows: (Vol. LXIV, pages 9197-9206.)

Direct Examination.

By Mr. March:

Q. Please state your name.
A. J. G. Dickinson.
Q. What business are you engaged in?
A. I am General Superintendent of production for Texoma Natural Gas Company.
Q. Are you the same Mr. Dickinson that has been sitting in the court room here the last three or four days?
A. I believe so.
Q. Are you in any way connected with Canadian River Gas Company?
A. No, sir.
Q. Your business here is solely that of an observer?
A. That is right.
Q. Mr. Dickinson, I hand you a copy of a letter here signed by you, addressed to Mr. Robert W. Hendee, dated November 18, 1940, which purports to give the requirements of the Texoma Natural Gas Company on the Canadian River Gas Company for the future. Does that look like the letter you wrote?
A. Yes, I think so.
Q. Are the figures—is that the way you had them?
A. I don't recall the figures but—
Q. Will you state briefly what that shows?
A. This is a designation of quantities of gas which Natural Gas Pipeline Company would require from Canadian River Gas Company to supply markets which would be served by certain extensions which were contemplated.
Q. You say that certain extensions of the Natural Gas Pipeline facilities were contemplated?
A. Yes.
Q. With what certainty do you know that you will require this gas in the future as you have indicated here in this letter from the Canadian River Gas Company?

A. I don't believe I am in a position to testify as to that. Maybe I could best explain this letter by saying that I was advised by Mr. Floyd C. Brown who is vice president and general manager of our company—

Q. Which company is that?

A. The Texoma Natural Gas Company and Natural Gas Pipeline Company.

—that Texoma would be required to furnish certain quantities of gas for additional markets and at the same time he requested that I advise Mr. Hendee that additional quantities would be required from the Canadian River Gas Company—from the Colorado Interstate Gas Company instead of Canadian River Gas Company.

Q. What is Mr. Brown's position? Is he your superior?

A. Yes.

Q. You work under his immediate supervision?

A. No, I work under Mr. Kesinger's immediate supervision.

Q. Who is he?

A. He is general superintendent.

Q. Kesinger works under Mr. Brown's supervision?

A. Yes.

Q. Let's see. You say that you furnished this estimate of future requirements because Mr. Brown told you to?

A. No, I believe it would be more accurate to say that Mr. Hendee asked me to furnish him with the requirements from Colorado Interstate as far as Natural Gas Pipeline Company was concerned, and I requested the information of Mr. Brown.

Q. Well, you asked Mr. Brown to tell you just exactly what the requirements of Texoma Natural Gas Company and Natural Gas Pipeline Company of America would be upon Canadian River Gas Company, is that right?

A. Yes.

Q. So he furnished you with this information in this letter?

A. That's right.

Q. Well, how do you know that these will be the requirements?

A. Well, I am depending upon Mr. Brown's judgment in that matter.

Q. You state here in this letter:

"Confirming my telephonic conversation with you yesterday the following tabulation represents the increased quantities of gas to be furnished pipe line to Chicago and Milwaukee by Canadian River Gas Company."

Now, Mr. Dickinson, do you know whether or not Canadian River Gas Company will be required to furnish the amounts of gas indicated here in this estimate?

A. It is my judgment that they will be, based on the acquirement of knowledge as I outlined just previously.

Q. Then it is not solely the information which you got from Mr. Brown?

A. Not entirely.

Q. If you wrote this letter and state that that is how much gas you are going to require, you merely are relying upon what Mr. Brown said, or did you have some knowledge as to the correctness of these figures yourself?

A. Oh, no, I have no knowledge of the figures outside of the information I got from Mr. Brown.

Q. Did you get all of this information from Mr. Brown, every bit of it?

A. Yes.

Q. So, therefore, you don't know whether or not they are going to need these increased quantities of gas indicated in this letter or not, of your own knowledge—the Texoma Natural Gas Company and the Natural Gas Pipeline Company of America?

A. No, I haven't made a study of market requirements.

Q. As far as you know, they may not need any of it?

A. Oh, I wouldn't say that. I have confidence in Mr. Brown's judgment. I would believe they would probably need all of it.

Q. Let's see how Mr. Brown formulates this judgment. You are the superintendent in charge of production of Texoma Natural Gas Company, is that correct?

A. That's right.

Q. And Texoma Natural Gas Company—what is the relation between Texoma Natural Gas Company and Natural Gas Pipeline Company of America?

A. They are affiliated companies.

Q. They are controlled by identical interests, aren't they?

A. Not exactly.

Q. What is the difference? Wherein are they not controlled by identical interests?

A. Well, I believe that Standard of New Jersey, which does have an interest in Natural Gas Pipeline Company, does not have an interest in Texoma.

Q. That is the only difference in the relationships?

A. I think so.

Q. Are they operated as substantially a single business enterprise?

A. Yes.

Q. Now, when Mr. Brown wants to know whether or not he is going to have to go to some source—strike that, will you?

All of the gas of Natural Gas Pipeline Company of America is furnished by the Texoma Natural Gas Company and the Canadian River Gas Company, is it not?

A. Yes. That is, it is furnished through Colorado Interstate from Canadian River acreage.

Q. Yes.

A. And Texoma acreage.

Q. Those are the only two sources of supply for the Chicago line?

A. Yes.

Q. Well, now, when Mr. Brown wants to know as to whether or not all of that gas could be supplied by you or not, he would have to ask you as production superintendent, would he not?

A. Yes, I think he would ask me.

Q. Well, did he?

A. Yes, I had a conference with Mr. Brown in Chicago in which we discussed the future requirements from Texoma acreage.

Q. What sort of a report did you make to him?

A. I told him that we had ample reserves in the Panhandle field to supply the additional requirements from Texoma over a considerable number of years.

Q. How many years?

A. I don't recall.

Q. Approximately, how many years?

A. I don't remember that, Mr. March.

Q. Would it be fifty years or twenty years?

A. No.

Q. Would it be twenty years?

A. I don't remember.

Q. Would it be five years? You have some idea, now, don't you Mr. Dickinson? What did you mean by a large number of years? What did you have in mind when you said "large number of years"?

A. I think it would be best to express it this way, that on account of the drainage condition in the Panhandle field the life of Texoma leases is limited by the life of the field and Texoma has more reserves than is required for its load and that we could furnish additional gas for the extra markets in addition to our present setup, present requirements.

Q. For a good many years?

A. Yes.

Q. About how many years?

A. Well, I told you I didn't remember.

Q. Well, you have some idea, now, Mr. Dickinson, now, don't you? Just give us approximately.

A. Well, as I remember it was in the neighborhood of ten years, more or less. I don't remember exactly.

Q. Approximately ten years, you thought, that the Texoma Natural Gas Company had sufficient reserves to furnish their present requirements for approximately ten years, is that right?

A. I think so, more or less. I don't remember exactly there.

Q. This drainage thing, I didn't ask anything about drainage—

Mr. Spencer: He's your witness.

By Mr. March:

Q. What do you know about drainage? Are you a geologist?

A. No.

Q. You don't know anything about drainage, then, do you?

A. I made quite a study of the conditions in the Panhandle field.

Q. Are you responsible for the testimony in the Texoma

case that the Texoma Natural Gas Company was losing sixty per cent of their gas by means of drainage?

A. I believe Mr. Peterson testified to that.

Q. Do you think they are losing that much?

A. Yes.

Q. All right, you told Mr.—you wouldn't know the per cent of drainage since you aren't a geologist, would you?

A. No, I have no knowledge as to the percentage. I didn't make that study.

Q. So you had this conference with Mr. Brown and you told Mr. Brown that you had reserves to take care of the present requirements, you thought, for a period of ten years, and what else did you tell him? That doesn't get down to these figures yet.

A. I think that is all. I told him I thought we had sufficient reserves to supply those requirements for ten years, more or less. I don't remember the exact period.

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44. Description of Canadian's Production and Gathering Facilities Additions Estimated for 1940 to 1947, Inclusive.

In Exhibit 94, Witness Watson, Assistant Superintendent of Canadian (Vol. XXI, p. 2891), testified concerning the additional production and gathering facilities required during the period 1940 to 1947, inclusive, to meet the following obligations:

(a) Total annual production, and peak month as estimated and submitted by R. W. Hendee, General Manager of Canadian, in Exhibit 80; also related data pertaining to peak day requirements.

(b) Existing obligations of the company to its lessors with respect to the development and production of the leases involved, and existing statutory requirements relating to production in Texas.

In order to meet such requirements and obligations the witness testified that it would be necessary to drill the following wells:

Year	Number of Wells
1940	4
1941	5
1942	6
1943	8
1944	6
1945	5
1946	6
1947	1
	41

With the exception of the five so-called exploratory wells involved in lease obligations, the above drilling program contemplates the completion of wells which will produce gas in average quantities, and ignores the possibility of dry holes. The program is apportioned over the years, in order to avoid an abnormally large drilling program in any one year, and in order to obtain the benefit of knowledge gained from drilling a few wells for the purpose of most advantageously locating subsequent wells. The well to be drilled in 1947 is to satisfy a lease obligation, since the production estimates indicate a substantial reduction in the total volume of gas required for that year.

While it is planned generally to locate future wells for production capacity, in so far as lease obligations permit, it will be necessary to locate and drill wells for the purpose of extending the company's production facilities into areas which are now undrilled. The obligations to lessors which affect any further drilling or producing program are generally requirements to drill wells in specific areas, to prorate production equitably among the various lessors, and to avoid undue drainage as between lessors.

The future drilling program is based upon an average rock pressure decline of approximately 100 pounds during the period within the general area in which future wells of the company will be drilled. (Vol. XX, p. 2893.)

In estimating the future open flow capacity of the present wells he used the actual performance of each well as determined by official tests of the Texas Railroad Commission in July and August, 1940. As to future wells, he used the average performance obtained from these tests.

Peak month production requirements generally reflect the maximum obligation for which producing facilities must be provided. (Vol. XX, p. 2894; Vol. LXXXVIII, pp. 13283, 13284.) However, the peak day in any year is in excess of the average day in the peak month, and sufficient flow capacity must be available to supply the load on the peak day or days. Gathering facilities required must be measured by peak day requirements. (Vol. XX, p. 2894.)

The four wells required in 1940 resulted in one dry hole. The other three have been or will be equipped with meter and connected with the main gathering system at a total cost of approximately $125,000 for the four wells.

Based on past experience, the cost of cleaning out and reconditioning wells should average not less than $3,300 each, exclusive of casing, and the casing in connection with repair jobs has cost approximately $4,000 per well (p. 2895). In his opinion, in the years 1940 to 1947, inclusive, at least four of these repair jobs will be completed each year at a total cost of $16,400 per year.

Provision must be made for future replacements of equipment now owned and operated for the purpose of drilling and cleaning out wells. The equipment now in use has been in active service for a number of years. He estimated the following new drilling and cleaning-out equipment:

1940—1 120 foot steel derrick without other equipment;

1941—1 complete semi-portable cleaning-out unit with necessary wire lines, tools, power unit, etc.;

1943—1 80 foot steel derrick complete with foundation, bull wheel, calf wheel, band wheel and other derrick equipment.

1945—1 80 foot steel derrick complete; same as above.

Based on present prices, he estimated the cost of the derricks complete at $6,000 each, and the cost of the cleaning-out unit at $10,000. The 120 foot steel derrick without other equipment has been purchased at approximately $1,560.

He estimated the following extension to the present gathering system would be required:

1941—Approximately 11,600′ of 18″ and 7,600′ of 16″ trunk gathering line to parallel existing trunk gathering line between Canadian River Crossing and intake of Compressing Station of Texoma Natural Gas Company at Fritch, including metering station. Four additional lines at Canadian River Crossing, each to be constructed of approximately 3,620′ of 10″ heavy pipe, complete with headers and 2000′ of 18″ line connecting with present river crossing headers.

1942—Lift 1,089′ of 8″ and 16,976′ of 6″ main lateral extending into sour gas area and replace with 18,065′ of 10″ main lateral. Relay 18,065′ of lifted lines as an extension to the above lateral. Lay 18,000′ of new 4″ pipe, connecting Bivins A-9, Bivins A-10 and Bivins A-22 Wells (Bivins A-22 presently unconnected) to above lateral.

Connect Masterson B-5 Well (presently unconnected) into future gathering system at cost of approximately $5,000.

The construction work outlined above for 1941 will be required to take care of increased deliveries for Colorado Interstate at Gray, Oklahoma. The construction work outlined for 1942 is intended primarily to utilize more adequately the company's sour gas wells and reserves, in connection with which it will be necessary to construct a plant at Bivins station for the purpose of treating and purifying such gas by removing the hydrogen sulphide therefrom (p. 2898). It is estimated that a plant of this character would cost approximately $35,000.

The various types of miscellaneous equipment in the operation and maintenance of the gathering system have been in continuous use for ten years or more. New equipment of this kind will be required during the estimated periods as follows:

1941—One 40 h. p. pipe line tractor complete with side boom and winch.

One 105 cu. ft. per minute portable air compressor complete with 2 sets of jack hammers and appurtenances.

1942—One Cleveland Model 110 Ditcher, or equivalent.

1944—One 400 amp. gasoline engine driven portable electric welding generator and necessary equipment.

The items required in 1941 represent additional equipment; other items, replacement (p. 2899).

A new field camp will be required in the vicinity of Plum Creek on the main trunk gathering line, consisting of a house, garage, water well, and other miscellaneous items. It is estimated that the addition of these facilities will be required in 1942 at a cost of approximately $5,000 (p. 2900).

His summary of additional production and gathering facilities required 1940 to 1947, inclusive, is as follows:

Drill four wells.

1940

Clean out and recondition three wells.

One 120 foot steel derrick without other equipment.

1941

Drill five wells.

Clean out and recondition four wells.

One complete semi-portable cleaning-out unit with necessary wire lines, tools, power unit, etc.

Approximately 11,000' of 12" and 7,000' of 16" trunk gathering line to parallel existing trunk gathering line between Canadian River Crossing and intake of Compressing Station of Tyrone Natural Gas Company at Perryton including metering station. Four additional lines at Canadian River Crossing, each to be constructed of approximately 2,000' of 12" heavy pipe, complete with headers and 2,000' of 12" line connecting with present river crossing headers.

One 40 h. p. pipe line tractor complete with side booms and winch.

One 105 cu. ft. per minute portable air compressor complete with 2 sets of jet hammers and appurtenances.

1942

Drill six wells.

Clean out and recondition four wells.

Lift 1,089′ of 8″ and 16,976′ of 6″ main lateral extending into sour gas area and replace with 18,065′ of 10″ main lateral. Relay 18,065′ of lifted lines as an extension of the above lateral.

Lay 18,000′ of new 4″ pipe connecting Bivins A-9, Bivins A-10 and Bivins A-22 to above lateral.

Connect Masterson B-5 Well into gathering system.

Sour gas treating plant.

One Cleveland Model 110 Ditcher, or equivalent.

Plum Creek Camp.

1943

Drill eight wells.

Clean out and recondition four wells.

One 80 foot steel derrick complete with foundation, bull wheel, calf wheel, band wheel and other derrick equipment.

Acetylene generator.

1944

Drill six wells.

Clean out and recondition four wells.

One 400 amp. gasoline engine driven portable electric welding generator and necessary equipment.

1945

Drill five wells.

Clean out and recondition four wells.

One 80 foot steel derrick complete same as in 1943.

1946

Drill six wells.

Clean out and recondition four wells.

1947

Drill one well.

Clean out and recondition four wells.

Said Exhibit 84, in its entirety, is as follows:

Estimate of Additional Production and Gathering System Facilities Required by Canadian River Gas Company, 1940 to 1947, Inclusive.

Written Statement of Max K. Watson.

The additional production and gathering system facilities which will be required by the Canadian River Gas Company (hereinafter called the "Company") for the period 1940 to 1947, inclusive, as outlined hereinafter, are those required to meet the following obligations:

(a) Total annual production and peak month requirements of the Company for the period 1940 to 1947, inclusive, submitted by Mr. R. W. Hendee in Exhibit No. 80; also related data pertaining to peak day requirements; and

(b) Existing obligations of the Company to its lessors with respect to the development and production of the leases involved; and existing statutory requirements relating to the production of natural gas in the State of Texas.

1. Future Wells.

In order to meet the above production requirements and lease obligations during the period specified, it will be necessary for the Company to drill and complete additional wells as follows:

Year	Number of Wells
1940	4
1941	5
1942	6
1943	8
1944	6
1945	5
1946	6
1947	1
	41

With the exception of five so-called exploratory wells involved in lease obligations, the above drilling program con-

templates that the wells to be drilled will be completed as wells capable of producing gas in average quantities, and disregards the possibility of dry holes or non-commercial gas wells. In arranging the program, the period covered has been considered as a whole and the total number of wells required has been to some extent apportioned over the years covered, in order to avoid an abnormally large drilling program in any one year and to obtain the benefit of the knowledge gained from drilling a few wells for the purpose of most advantageously locating subsequent wells. Only one well is included for the year 1947 (to satisfy a lease obligation), since the production estimates submitted indicate a substantial reduction in the total volume of gas required for that year.

As indicated above, the exact location of future wells will be determined as the drilling program proceeds. While it is planned generally to locate future wells for productive capacity, in so far as lease obligations will permit, it will be necessary to locate and drill wells for the purpose of extending the Company's production facilities into areas which are now undrilled. The obligations to lessors which affect any future drilling or producing program are generally—requirements to drill wells in specific areas, to prorate production equitably among the various lessors and to avoid undue drainage as between lessors.

The future drilling program outlined above is based upon an average rock pressure decline of approximately 100= during the period estimated, within the general area in which future wells of the Company will be drilled. This is a judgment figure based upon my observation of the past performance of gas wells of the Company as well as other gas wells in the field; also upon my knowledge of general conditions prevailing in the field.

In estimating the future open flow capacity of present wells, I have used the actual performance of each well as determined by official tests of the Texas Railroad Commission in July and August of 1940. As to future wells, I have used an average performance obtained from the tests of all the Company's wells made by the Commission during the period mentioned above. The Railroad Com-

mission is now using this method in determining gas allowables in the Texas Panhandle Field.

Peak month production requirements generally reflect the maximum obligation for which producing facilities must be provided, because the production allowable of a gas well in the State of Texas (25% of open flow) is based upon monthly totals. However, the peak day in any year is in excess of the average day in the peak month, and sufficient flow capacity must be available to supply the load on such peak day or days. Many wells are not able at all times to deliver more than 25% of their open flow capacity against peak-load field line pressures, and more wells are required for peak days than are indicated by allowables alone. Gathering facilities must always be based upon peak day requirements.

The four wells required for the year 1940 have been drilled; one of which resulted in a dry hole, and three of which have been or will be equipped with a meter and connected to the main gathering system at a total cost of approximately $125,000 for the four wells.

2. Reconditioning of Old Wells.

As in the past, the Company will be required in the future to clean out and recondition wells, which cave in and bridge by reason of the casing having been set too high, the occurrence of shale breaks between producing formations or other causes. Generally, liners have been run in each reconditioned well so that the caving formation could be kept out of the well bore and recurrence of the bridging avoided. It is impossible to estimate the exact number of wells which will require cleaning out and reconditioning from time to time, but an examination of well logs indicates that at least thirty-three of the existing wells are subject to caving and bridging at any time. Based upon past experience, the cost of cleaning out and reconditioning these wells should average not less than $3,300 each, exclusive of casing. In the past approximately 20% of the repair jobs have required casing at an additional cost of approximately $4,000 per well, which would increase the cost of the average repair job to $4,100. During 1940 Thompson B-1 Well was cleaned out and a smaller string

of casing set (due to a leaking production string) at a total cost of approximately $8,800; Bivins A-5 Well was cleaned out and a smaller string of casing set for the same reason at a total cost of approximately $5,900; and Bivins A-25 Well was cleaned out and a liner set at a total cost of approximately $3,300. There are other wells which should be cleaned out and reconditioned at the present time but this work has been deferred. It is my opinion that in each of the years 1941 to 1947, inclusive, at least four of these repair jobs will be completed at a total cost of at least $16,400 per year.

3. Drilling and Cleaning-out Equipment.

The type and quantity of equipment now owned and operated by the Company for the purpose of drilling and cleaning out wells has been generally adequate to carry on this work, but some provision must be made for future replacements, due to deterioration and obsolescence. As equipment is replaced, an improved type will be substituted. For the most part, equipment now on hand has been in active use for a number of years and, in my opinion, it will be necessary to replace substantially all of it in the near future. Accordingly, I estimate that it will be necessary for the Company to acquire new drilling and cleaning-out equipment as follows:

1940—1 120 foot steel derrick without other equipment;

1941—1 complete semi-portable cleaning-out unit with necessary wire lines, tools, power unit, etc.;

1943—1 80 foot steel derrick complete with foundation, bull wheel, calf wheel, band wheel and other derrick equipment.

1945—1 80 foot steel derrick complete as above.

Based upon present prices I estimate that the net cost to the Company of the above complete derricks will be approximately $6,000 each; and that the cost of the cleaning-out unit will be approximately $10,000. The cost of the 120 foot steel derrick without other equipment which has been purchased, was approximately $1,560.

4. Other Gathering Lines.

In addition to the extension of the gathering system provided for in the future drilling program outlined in item 1, above, the following reinforcement of, and extension to, the present gathering system will be required:

1941—Approximately 11,600′ of 18″ and 7,600′ of 16″ trunk gathering line to parallel existing trunk gathering line between Canadian River Crossing and intake of Compressing Station of Texoma Natural Gas Company at Fritch, including metering station. Four additional lines at Canadian River Crossing, each to be constructed of approximately 3,620′ of 10″ heavy pipe, complete with headers and 2000′ of 18″ lines connecting with present river crossing headers.

1942—Lift 1,089′ of 8″ and 16,976′ of 6″ main lateral extending into sour gas area and replace with 18,065′ of 10″ main lateral. Relay 18,065′ of lifted lines as an extension to the above lateral. Lay 18,000′ of new 4″ pipe, connecting Bivins A-9, Bivins A-10 and Bivins A-22 Wells (Bivins A-22 presently unconnected) to above lateral.

Connect Masterson B-5 Well (presently unconnected) into future gathering system at cost of approximately $5,000.

The pipe line construction work outlined above for the year 1941 will be required to take care of increased deliveries for Colorado Interstate Gas Company at Gray, Oklahoma. The pipe line construction work outlined above for the year 1942 is intended primarily to utilize more adequately the Company's sour gas wells and reserves.

5. Sour Gas Treating Plant.

As a part of the Company's program to utilize its sour gas production in the year 1942, as indicated in item 4, above, it will be necessary for the Company in that year to construct a plant at Bivins Station for the purpose of treating and purifying such gas by removing the hydrogen sulphide therefrom, so that it will be suitable for pipeline use. It is estimated that a plant of this character with suf-

ficient capacity to treat the allowable production of the Company's sour gas wells will cost approximately $35,000.

6. Pipe Line Department Equipment.

The Company requires various types of miscellaneous equipment in the operation and maintenance of its gathering system, a substantial portion of which has been in continuous use for a period of ten years or more. The major items of new equipment of this character, which will be required by the Company during the period estimated, are as follows:

1941—One 40 h. p. pipe line tractor complete with side boom and winch.

One 105 cu. ft. per minute portable air compressor complete with 2 sets of jack hammers and appurtenances.

1942—One Cleveland Model 110 Ditcher, or equivalent.

1944—One 400 amp. gasoline engine driven portable electric welding generator and necessary equipment.

The items required in 1941 represent additional equipment; all other items are replacements.

7. Field Camps.

As the number of wells to be drilled and produced in the area between Plum Creek and Canadian River Crossing increases, it will be necessary to construct a new field camp in the vicinity of Plum Creek on the main trunk gathering line, such camp to consist of a house, garage, water well and other miscellaneous items. It is estimated that the addition of these facilities will be required in 1942, and that the cost will be approximately $5,000.

Summary.

Additional Production and Gathering Facilities Required, 1940 to 1947, Inclusive.

1940.

Drill four wells.

Clean out and recondition three wells.

One 120 foot steel derrick without other equipment.

1941.

Drill five wells.

Clean out and recondition four wells.

One complete semi-portable cleaning-out unit with necessary wire lines, tools, power unit, etc.

Approximately 11,600′ of 18″ and 7,600′ of 16″ trunk gathering line to parallel existing trunk gathering line between Canadian River Crossing and intake of Compressing Station of Texoma Natural Gas Company at Fritch, including metering station. Four additional lines at Canadian River Crossing; each to be constructed of approximately 3,620′ of 10″ heavy pipe, complete with headers and 2,000′ of 18″ line connecting with present river crossing headers.

One 40 h. p. pipe line tractor complete with side boom and winch.

One 105 cu. ft. per minute portable air compressor complete with 2 sets of jack hammers and appurtenances.

1942.

Drill six wells.

Clean out and recondition four wells.

Lift 1,089′ of 8″ and 16,976′ of 6″ main lateral extending into sour gas area and replace with 18,065′ of 10″ main lateral. Relay 18,065′ of lifted lines as an extension to the above lateral.

Lay 18,000′ of new 4″ pipe connecting Bivins A-9, Bivins A-10 and Bivins A-22 to above lateral.

Connect Masterson B-5 Well into gathering system.

Sour gas treating plant.

One Cleveland Model 110 Ditcher, or equivalent.

Plum Creek Camp.

1943.

Drill eight wells.

Clean out and recondition four wells.

One 80 foot steel derrick complete with foundation, bull wheel, calf wheel, band wheel and other derrick equipment.

1944.

Drill six wells.

Clean out and recondition four wells.

One 400 amp. gasoline engine driven portable electric welding generator and necessary equipment.

1945.

Drill five wells.

Clean out and recondition four wells.

One 80 foot steel derrick complete same as in 1943.

1946.

Drill six wells.

Clean out and recondition four wells.

1947.

Drill one well.

Clean out and recondition four wells.

Commission WITNESS STEVENS sponsored Exhibit 197.

Stevens' Exhibit 197 constitutes an availability study based upon ninety-seven gas wells that had been completed by the end of the calendar year 1940, and which includes two old wells drilled in prior years and which have not been connected, to-wit, Bivins A-22 and Masterson B-5.

The witness stated that the rock pressure decline of 8.6 pounds which constituted the loss in pressure from 1939 to 1940, would continue at this same rate throughout the period covered by the study.

The witness assumed a maximum yearly demand to all market outlets of 49,000,000 Mcf. on a 14.65 pressure base.

The witness assumed a maximum peak day of 190,000,000 cubic feet on a 14.65 pressure base.

The future open flow capacity at reduced pressures was computed from back pressure curves based upon the 1940 Railroad Commission tests.

Delivery capacity was assumed to be 25% of the total aggregate open flow obtained from time to time during the period covered by the study.

Based upon the above assumptions, the witness concluded the present 97 wells to be sufficient and that no more wells would be required to furnish the demand upon Canadian until 1959.

The witness stated on cross-examination that the only basic data considered by him were the drop in pressures from 1939 to 1940, and the back pressure curve based upon the 1940 midsummer tests. (Vol. LXXXV, p. 12732.)

The witness stated that he had assumed that each well would produce a minimum of 25% of its open flow, which is the maximum it would produce as a matter of law, but also stated that it was conceivable, as a matter of fact, that every well might not be able to produce the maximum volume allocated to it under the law. (Vol. LXXXV, pp. 12735, 12737.)

The witness stated that he gave no consideration to the proration policy of Canadian, whereby it allocated production to its various lessors. (Vol. LXXXV, pp. 12743, 12759.)

He stated that if this proration policy required production on a different basis, it might be necessary for Canadian to either drill more wells or change its system of proration. (Vol. LXXXV, pp. 12744, 12746.) He stated that the proration system employed by Canadian and which is based on acreage did not correspond with the assumptions made as the basis of his study, and that this fact makes the study less practical, and also that it would be impossible for Canadian to correlate its system of proration among its various lessors to his study. (Vol. LXXXV, p. 12749.)

The witness stated that he did not consider any increase in the peak-day demand in excess of 190,000,000 cubic feet on a 14.65 pressure base. (Vol. LXXXV, p. 12764.) (Watson had previously testified that on December 13, 1940, the peak demand upon Canadian was 208,000,000 cubic feet, on a 14.65 pressure base.) (Vol. LXXXV, p. 12769.)

The witness stated that Hendee had estimated an average

peak month of 242,000,000 cubic feet per day on a 14.65 base, but that he did not consider this additional load in his study. (Vol. LXXXV, pp. 12770-12771.) He also stated that this peak month, as estimated by Hendee, would likely result in a peak day of approximately 300,000,000 cubic feet on a 14.65 pressure base. (Vol. LXXXV, p. 12773.) The witness further stated that if he had considered Hendee's estimate of the peak-day demand for the future, this alone would have required 50% more wells than his study indicates. (Vol. LXXXVI, pp. 12947-12949.)

The witness also stated that if he had considered the increase in volume of production as estimated by Hendee, this alone would have required 40% more wells than his study indicates. (Vol. LXXXVI, p. 12950.)

The witness stated that he gave no consideration whatsoever to wells that would be off of production on peak days (Vol. LXXXV, p. 12775), and if he had considered this he might have required still more wells. (Vol. LXXXVI, p. 12951.)

The witness stated that he gave no consideration to the size of pipe lines and pressures that would be necessary on peak days, and that he knew of at least one well that would produce little, if any, gas into the pipe line on the peak days, and that there might be others, but he made no study to determine this fact. (Vol. LXXXV, pp. 12777-12780, 12783.)

The witness stated that he had given no consideration to the fact that some wells might not be able to produce on peak days, because gathering lines might be out of service by reason of freezing or otherwise. (Vol. LXXXV, p. 12787.)

The witness stated that he had given no consideration to the fact that operating difficulties will increase as pressures become lower. (Vol. LXXXV, p. 12787.)

The witness stated that he had given no consideration to the fact that as wells cave in and smaller casing is placed in the wells, such wells will thereafter produce smaller volumes of gas. (Vol. LXXXV, pp. 12788-12789.)

The witness stated that in his Exhibit 182, wherein he

made a study of the volume of gas that would be produced from Canadian wells to a certain abandonment pressure, he had considered surrounding wells which affected the pressures upon the Canadian wells. The consideration of these surrounding wells showed a pressure decline of 15.6 pounds from 1938 to 1939, but that notwithstanding this, he had used a pressure decline of only 8.6 pounds as the basis for his study in Exhibit 197, because he had considered Canadian wells only, and not the surrounding wells. He said he could have used the Canadian wells, only, in his study in Exhibit 182, but used the surrounding wells because of their effect on Canadian wells, and because this practice constituted a more conservative approach to the problem. (Vol. LXXXV, pp. 12804-12823.) He also stated that if he had used the same pressure decline figure in Exhibit 197 that he had used in Exhibit 182, the number of wells required over the period studied in Exhibit 197 would have increased almost 100% on this account alone. (Vol. LXXXVI, pp. 12946-12947).

The witness stated that he had made no allowance in his study for increased production, as estimated by Hendee, and had made no allowance for a correspondingly greater pressure drop as a result of the increase in production. He stated that he had assumed only an annual production of 49,000,000,000 cubic feet on a 14.65 pressure base, and that if the production increased, the pressure loss would be proportionately greater, and the period for which the present wells would be sufficient would be correspondingly shorter. (Vol LXXXV, p. 12824.) He also admitted that Hendee's estimate of future production indicated a larger volume than he had assumed, without any additions whatsoever for the Milwaukee market. (Vol. LXXXV, p. 12826.)

The witness stated that he did not consider wells that would be required to prevent a termination of leases (Vol. LXXXVI, p. 12932), and that he did not take into account wells that would be required in order to comply with legal obligations to develop leases pursuant to the covenants to reasonably develop, or otherwise. (Vol. LXXXVI, pp. 12932-12933.)

The witness stated that his study did not contemplate any

practical operating problems that confronted the producer of natural gas (Vol. LXXXVI, p. 12953), but that his study merely contemplated the volume that the various wells would produce, without any regard to operating conditions confronting the producer from time to time. (Vol. LXXXV, p. 12784.)

Commission Witness Stevens also sponsored Exhibit 252, which is an availability study based upon 55 wells connected, or to be connected, to the Denver Line.

Exhibit 252, including the tables at the end thereof, but excluding the statement of the witness at the beginning thereof and the charts at the end thereof, follows:

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CANADIAN RIVER GAS COMPANY

ANALYSIS OF BACK PRESSURE DATA - CONSTRUCTION OF WEIGHTED AVERAGE RATE OF DECLINE

BASED ON EXISTING WELLS CONNECTED OR TO BE CONNECTED TO DENVER LINE IN 1940 OR SOON THEREAFTER

	Press. 1940 Gauge	G.D.	Pf	"Q" MCF/24 Hr. @ 14.65	Ordinate "Q" Values MCF At 100 M	At 10 M	O.F. in % of Total	Wt. Av. Flow-Pressure Factor At 100 M	At 10 M	"n" Value	Abs. O.F. x Abs. Form. Press.	Wt. Av. O.F. MCF
Carter Co. Quad I												
Wt. Av. Well				8.076	4.529	.734		.111	.018	.7401851		8.076
Total 3 Wells	1218.7	6636	1357.8	24.0			2.448			.7901851	10066	
Arithmetical Av. Well	406.2		452.33	8.15	4.515	.685						
Moore Co. Quad I												
Wt. Av. Well				26.261	18.364	3.310		1.969	.454	.7941463		26.261
Total 4 Wells	1469.1	6218	1613.2	105.39			10.722			.7941463	42364	
Arithmetical Av. Well	367.3		403.3	26.34	18.30	3.13						
Moore Co. Quad II												
Wt. Av. Well				29.127	20.183	3.542		6.040	1.048	.7607063		29.127
Total 10 Wells	3674.0	18965	4062.3	291.05			29.628			.7607063	118840	
Arithmetical Av. Well	367.4		406.23	29.11	20.65	3.135						
Moore Co. Quad III												
Wt. Av. Well				8.376	5.266	.908		.405	.070	.7633011		8.376
Total 9 Wells	3303.6	18122	3870.8	75.65			7.699			.7633011	32103	
Arithmetical Av. Well	330.2		430.1	8.41	5.21	.9						
Potter Co. Quad II												
Wt. Av. Well				14.948	10.455	2.356		1.462	.329	.6470455		14.948
Total 9 Wells	3524.55	14160	3681.5	147.41			15.985			.6470455	57279	
Arithmetical Av. Well	391.62		409.7	16.3	10.45	2.65						
Potter Co. Quad III												
Wt. Av. Well				14.394	8.473	1.271		.278	.047	.8255069		14.394
Total 8 Wells	3149.5	16009	3457.5	115.42			11.543			.8237077	49478	
Arithmetical Av. Well	393.7		432.7	14.18	8.35	1.26						
Total Quadrants 43 Wells												
Wt. Av. Well		1517	404.05									17.892
Total Wells	16529.55	78140	17374.0	769.93							310249	
Arithmetical Av. Well	384.41	1517	404.05	17.44								
Wells to be Added 1940												
Wt. Av. Well				19.019	12.872	2.207		3.047	.523	.7658723		19.019
Total Wells 12 Wells	4530.7	21910	4990.56	456.62			23.675			.7658723	94914	
Arithmetical Av. Well	377.56											
			415.88	19.385	12.875	2.17						
Total Quadrants 55 Wells												
Wt. Av. Well	374.71	1819	412.97	16.043				14.012	2.490	.7503908		18.043
Total Wells 55	21060.25	100060	22364.58	982.55			100.000	14.012	2.490	.7503908	405763	
Arithmetical Av. Well	382.95	1819	406.63	17.86	11.59	2.02	100.000					

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2535

Exhibit No. 252

CANADIAN RIVER GAS COMPANY

ANALYSIS OF BACK PRESSURE DATA - CONSTRUCTION WEIGHTED AVERAGE RATE OF DECLINE

BASED ON EXISTING WELLS CONNECTED UP TO AND CONNECTED TO DENVER LINE IN 1940 OR SOON THEREAFTER

Table 1

Ordinate "Q" Values MCF At 100 M	At 10 M	O.F. in % of Total	Wt. Av. Flow-Pressure Factor At 100 M	At 10 M	Wt. Av. "n" Value	x Abs. Form. Press.	Abs. O.F.	Wt. Av. O.F. MMCF	Wt. Av. Form. Press.	Adopted Press. Factor	Calculated "Q" Values Av. Well Curve At 10 M	At 100 M	Total Gross Curve At 10 M	At 100 M
4.529	.734		.111	.018	.7401851			8.076	455.97	207.91	.734	4.529		
		2.448			.7401851	10966				207.91			2.136	13.482
4.515	.585									201.6			2.056	13.26
18.364	3.310		3.969	.659	.7041463			26.261	402.13	161.71	3.310	18.364		
		10.722			.7041463	42364				161.71			13.279	73.673
18.00	3.13									169.55			12.55	71.4
20.183	3.502		6.040	1.048	.7607063			29.127	402.449	161.97	3.502	20.183		
		20.923			.7607063	118340				161.97			34.351	203.75
20.65	3.133									165.07			31.02	206.45
5.266	.908		.405	.070	.7633011			8.376	428.592	183.69	.908	5.266		
		7.699			.7633011	32123				183.69			8.292	47.56
5.21	.9									185.0			8.06	46.86
10.455	2.356		1.162	.329	.6470955			14.948	416.24	173.76	2.356	10.455		
		15.985			.6470955	57279				173.76			21.669	96.105
10.15	2.25									181.2			20.22	94.0
8.473	1.271		.978	.147	.8235069			14.394	436.24	190.31	1.271	8.473		
		11.543			.8235069	49478				190.31			10.024	66.766
8.36	1.26									181.6			10.08	67.92
								17.892	414.50	171.81				
						310249				171.81				
12.872	2.207		3.047	.523	.7658723			19.019	408.2	166.48	2.207	12.872		
		23.675			.7658723	91914				166.48			26.992	157.44
12.575	2.17									172.75			26.045	154.91
			14.012	2.490	.7503008			18.143	412.97	170.94	2.160	12.155		
		100.000	14.012	2.490	.7503008	405763				170.94			116.980	658.29
11.69	2.02	100.000								169.35			110.46	651.64

CANADIAN RIVER GAS COMPANY

FORECAST OF DECLINE OF AVAILABILITY - WELLS CONNECTED OR TO BE CONNECTED TO DENVER LINE 1940, OR SOON T

14.65#

Year	Years from 1940	Av. Pressure Gauge	Denver Line Anticipated Annual Req. Cc. Estimate	Corresponding Prod. of Wells Supplying Denver Line 55 Wells Billions Cu. Ft.	Annual Press. Loss @ 4.13758 Bill./lb.	Corresponding Weighted Av. Pressures Well Head	Well Head Abs.	Form. Press. (1.06515)
1	2	3	4	5	6	7	8	9
Mid Year 1939		390.27						
Mid Year 1940		382.95			(2.3# to End 1940)	374.71	387.71	412.97
End Year 1940		380.05	22.209			371.81	384.81	409.88
1941	1	372.37	23.945	31.780	7.68	364.13	377.13	401.70
1942	2	364.69	23.952	31.787	7.68	356.45	369.45	393.52
1943	3	356.84	24.642	32.477	7.85	348.6	361.6	385.16
1944	4	348.87	25.150	32.985	7.97	340.63	353.63	376.67
1945	5	340.78	25.653	33.488	8.09	332.54	345.54	368.05
1946	6	332.69	25.653	33.488	8.09	324.45	337.45	359.4
1947	7	324.60	25.653	33.488	8.09	316.30	329.36	350.82
1948	8	316.51	25.653	33.488	8.09	308.27	321.27	342.20
1949	9	308.42	25.653	33.488	8.09	300.18	313.18	333.58
1950	10	300.33	25.653	33.488	8.09	292.09	305.09	324.97
1951	11	292.24	25.653	33.488	8.09	284.00	297.00	316.35
1952	12	284.15	25.653	33.488	8.09	275.91	288.90	307.72
1953	13	276.06	25.653	33.488	8.09	267.82	280.28	298.54
1954	14	267.97	25.653	33.488	8.09	259.73	272.73	290.50
1955	15	259.88	25.653	33.488	8.09	251.64	264.64	281.88
1956	16	251.79	25.653	33.488	8.09	243.55	256.55	273.26
1957	17	243.70	25.653	33.488	8.09	235.46	248.46	264.65
1959	18	235.61	25.653	33.488	8.09	227.37	240.37	256.03

Note: Col. 5 includes Denver line requirements and other production of wells involved. The difference between this figure and Col. 4 goes to Amarillo and Chicago during other times. Production of these wells is necessarily considered in order to obtain pressure loss and pressure for future years, at which availability is to be observed with reference to the assumed 130 MM. maximum 24 Hr. demand.

Exhibit No. 252

Table II

CANADIAN RIVER GAS COMPANY

DECLINE OF AVAILABILITY - WELLS CONNECTED OR TO BE CONNECTED TO DENVER LINE 1940, OR SOON THEREAFTER

14.65#

Denver Line Anticipated Annual Req. Cc. Estimate	Corresponding Prod. of Wells Supplying Denver Line 55 Wells Billions Cu. Ft.	Annual Press. Loss @ 4.13758 Bill./lb.	Corresponding Weighted Av. Pressures Well Head	Well Head Abs.	Form. Press. (1.06515)	Adopted Pressure Factor M	Total Capacity MMCF	Availability at 25% MMCF
4	5	6	7	8	9	10	11	12
		(2.9# to End 1940)	374.71	387.71	412.97	170.54	982.55	245.64
22.209			371.81	384.81	409.88	168.00	970	242.50
23.945	31.780	7.68	364.13	377.13	401.70	161.36	940	235.00
23.952	31.787	7.68	356.45	369.45	393.52	154.86	910	227.50
24.642	32.477	7.85	348.6	361.6	385.16	148.35	880	220.00
25.150	32.985	7.97	340.63	353.63	376.67	141.88	850	212.50
25.653	33.488	8.09	332.54	345.54	368.05	135.46	820	205.00
25.653	33.488	8.09	324.45	337.45	359.4	129.17	790	197.50
25.653	33.488	8.09	316.30	329.36	350.82	123.07	760	190.00
25.653	33.488	8.09	308.27	321.27	342.20	117.1	735	183.75
25.653	33.488	8.09	300.18	313.18	333.58	111.28	710	177.50
25.653	33.488	8.09	292.09	305.09	324.97	105.61	680	170.00
25.653	33.488	8.09	284.00	297.00	316.35	100.08	655	163.75
25.653	33.488	8.09	275.91	288.90	307.72	94.69	630	157.50
25.653	33.488	8.09	267.82	280.28	298.54	89.13	600	150.00
25.653	33.488	8.09	259.73	272.73	290.50	84.39	575	143.75
25.653	33.488	8.09	251.64	264.64	281.88	79.46	550	137.50
25.653	33.488	8.09	243.55	256.55	273.26	74.67	530	132.50
25.653	33.488	8.09	235.46	248.46	264.65	70.04	500	125.00
25.653	33.488	8.09	227.37	240.37	256.03	65.55	480	120.00

equirements and other production of wells involved. The difference between this figure
nd Chicago during other times. Production of these wells is necessarily considered in
and pressure for future years, at which availability is to be observed with reference
m 24 Hr. demand.

Note: Data is for End of Year, Dec. 31

CANADIAN RIVER GAS COMPANY

SUMMARY - AVAILABILITY STUDY OPERATION CONDITIONS DURING MAXIMUM 24-HR. DEMAND OF 130 M.M.C.F.

BASIS OF EXISTING WELLS CONNECTED TO DENVER LINE 1440 OR TO BE CONNECTED SOON THEREAFTER, 250# ASSUMED AS SUCTION AT BIVINS STA.

11.65

Lease & Well No.		Production Mft. Based on Capacity x Abs. Form. Press. 1962 1	25% of Capacity 1962 2	25% of Capacity 1947 3	Excess of 25% of Capacity over Production 1962 4	Excess of 25% of Capacity over Production 1947 5	Prod. Rate of Capacity 1962 6	Prod. Rate of Capacity 1947 7	Work. Press. R.P. Relation at Prod. Rate (%) 1962 8	Work. Press. R.P. Relation at Prod. Rate (%) 1947 9	Gauge Working Pressure at Well for Production Rate 1962 10	Gauge Working Pressure at Well for Production Rate 1947 11	Pipe Line Press. Requirement at Well 12	Excess of Available over Pipe Line Pre 1962 13
At Bivins Sta.					(1-2)	(1-3)					(8) x 356.45# ÷ 8.21#	(9) x 316.3# ÷ 8.21#	250.00	10-12
Bivins	A-21	3.778	5.625	4.250	1.847	.472	16.79	22.22	95.2	92.7	347.58	301.45	251.04	96.54
Masterson	A-5	3.465	5.625	4.825	2.145	1.360	15.47	17.95	95.7	94.7	349.36	307.78	263.71	85.65
Crawford	A-1	1.061	1.625	1.300	.564	.239	16.32	20.40	95.3	93.6	347.94	304.30	253.18	94.46
Bivins	A-2	1.238	2.350	1.913	1.112	.675	13.17	16.18	96.5	95.5	352.21	310.31	255.46	96.75
"	A-25	2.653	3.400	3.425	1.247	.672	17.01	19.95	95.1	93.7	347.22	304.61	266.63	80.59
"	A-4	.212	.410	.330	.198	.118	12.93	16.06	96.7	94.5	352.93	307.14	258.50	94.43
"	A-14	4.078	6.025	4.325	1.947	.847	16.90	20.70	95.3	93.5	347.94	303.98	275.75	72.19
"	B-1	3.274	4.750	4.150	1.476	.876	17.23	19.72	95.0	94.0	346.87	305.56	270.61	76.26
Gray	A-1	.857	1.300	1.050	.443	.193	16.48	20.40	95.2	93.6	347.58	304.30	258.91	88.67
Bivins	A-24	2.725	4.125	3.400	1.400	.675	16.52	20.03	95.3	93.7	347.94	304.61	261.81	86.13
Killgore	B-1	.579	.925	.780	.346	.201	15.65	18.56	95.7	94.1	349.36	306.83	261.52	87.84
"	A-1	1.895	3.350	2.900	1.455	1.005	14.14	16.34	96.3	95.3	351.50	309.67	263.75	87.75
"	A-3	.607	1.287	1.130	.600	.413	13.34	15.61	96.5	95.7	352.21	310.94	262.91	89.30
"	A-2	1.914	3.000	2.475	1.086	.561	15.95	19.33	95.5	94.2	348.63	306.19	268.63	80.00
Bivins	A-5	1.949	2.980	2.475	1.031	.526	16.38	19.69	95.3	94.0	348.94	305.56	258.93	90.01
"	A-15	.895	1.362	1.139	.467	.244	16.42	19.67	95.3	94.0	347.94	305.56	262.12	85.82
"	A-6	.597	.912	.700	.315	.103	16.36	21.32	95.3	93.7	347.94	304.61	261.21	86.73
"	A-17	.210	.337	.285	.097	.045	17.78	21.05	94.8	93.4	346.15	303.26	261.64	84.51
"	A-7	2.527	3.200	2.675	.873	.348	18.18	21.75	94.5	93.2	345.09	302.40	262.35	82.74
"	A-10	.246	.337	.258	.091	.0412	18.22	23.88	94.5	92.0	345.09	299.24	277.91	67.18
"	A-22	.450	.565	.465	.115	.015	19.91	21.19	93.8	93.0	342.59	299.24	283.19	59.40
"	A-8	.940	1.200	.990	.260	.050	19.58	23.80	94.0	92.0	343.30	299.24	284.77	58.53
"	A-9	1.375	1.750	1.388	.375	.013	19.64	24.77	94.0	91.6	343.30	297.97	286.77	56.53
Thompson	B-3	9.254	16.625	13.750	7.371	4.496	13.92	16.83	96.3	95.2	351.50	309.36	253.57 (6") 277.79 (4")	97.93 (6") 73.71 (4")
Masterson	J-1	.904	1.713	1.375	.809	.471	13.20	16.44	96.5	94.5	352.21	307.14	254.75	97.46
Crawford	B-1	1.018	1.488	1.213	.470	.195	17.11	20.99	95.1	93.4	347.22	303.66	276.42	70.80
Coughlan	A-1	1.430	2.113	1.750	.683	.320	16.92	20.42	95.1	93.6	347.22	304.30	278.37	68.85
Thompson	B-1	.210	.410	.365	.200	.125	13.64	16.44	96.4	95.3	351.86	309.67	259.04	92.82
"	A-3	4.385	8.250	7.325	3.865	2.940	13.29	14.97	96.5	95.9	352.21	311.57	262.89 (6") 274.71 (4")	89.32 (6") 77.50 (4")
"	A-1	8.890	18.000	14.750	9.110	5.860	12.35	15.07	96.8	95.9	353.28	311.57	266.83 (6") 295.42 (4")	86.45 (6") 57.86 (4")
"	A-2	11.404	21.250	18.250	9.846	6.846	13.42	15.62	96.6	95.7	352.57	310.94	266.87	85.70
"	B-2	2.891	5.200	4.850	2.309	1.959	13.90	14.90	96.3	95.9	351.50	311.57	266.82	84.68
Sneed	A-1	2.234	4.125	3.325	1.891	1.091	13.54	16.80	96.5	95.2	352.21	309.36	263.01	89.20
Masterson	K-1	.798	1.288	1.040	.490	.242	15.50	19.23	95.7	94.0	349.36	305.56	253.57	95.79
Sneed	D-1	2.412	4.500	3.500	2.088	1.088	13.40	17.23	96.5	95.0	352.21	308.73	255.09	97.12
"	C-1	1.677	3.000	2.375	1.323	.698	13.98	17.65	96.8	94.8	353.28	308.09	263.85	89.43
"	A-2	4.101	7.800	6.450	3.699	2.349	13.14	15.90	96.6	95.5	352.57	310.31	262.45	90.12
Masterson	K-1	.457	.863	.713	.406	.256	13.29	16.04	96.5	95.5	352.21	310.31	253.91	98.30
Read	A-2	5.486	10.625	9.125	5.139	3.639	12.91	15.03	96.6	95.9	352.57	311.57	254.40	98.17
Masterson	A-4	5.952	11.000	9.000	5.048	3.048	13.53	16.53	96.5	95.3	352.21	309.67	259.65	92.56
"	B-5	.670	.938	.700	.268	.030	17.87	23.93	94.7	92.0	345.80	299.24	256.37	89.43
"	A-1	.958	1.875	1.500	.917	.542	12.77	15.97	96.7	95.5	352.93	310.31	254.65	98.33
Fee	A-1	2.825	5.375	4.500	2.550	1.675	13.14	15.69	96.6	95.7	352.57	310.94	258.36	94.21
Read	A-1	1.192	2.325	1.900	1.133	.708	12.82	15.68	96.7	95.7	352.93	310.94	255.71	97.22
Sneed	D-1	.440	1.138	1.013	.748	.573	9.26	10.86	98.0	97.5	357.56	316.63	255.21	102.32
Masterson	B-2	2.838	5.375	4.400	2.537	1.562	13.2	16.13	96.5	94.5	352.21	307.14	255.35	96.86
"	A-3	2.557	5.000	3.900	2.443	1.343	12.79	16.39	96.6	95.3	352.57	309.64	256.08	96.55
													(Biv.) 250.00	
Patterson	C-3	.936	1.100	1.125	.498	.219	16.18	20.13	95.5	93.7	348.65	304.61	268.56	80.09
"	D-4	9.687	17.750	15.250	8.113	5.613	13.57	15.80	96.5	95.7	352.21	310.94	276.31	75.90
"	G-2	.453	.825	.663	.372	.210	13.73	17.09	96.4	95.1	351.86	309.04	273.06	78.80
"	H-1	.270	.413	.358	.113	.088	16.36	18.88	95.3	94.3	347.94	307.14	273.35	74.59
"	I-1	3.102	4.875	4.425	1.773	1.223	15.91	17.93	95.5	94.7	348.65	307.78	278.15	70.50
"	L-1	.315	.480	.373	.165	.058	16.43	21.11	95.3	93.8	347.94	304.93	276.96	70.98
"	P-1	.916	.675	.558	.229	.112	16.52	19.39	95.2	94.1	347.58	305.88	277.47	70.11
"	N	2.123	4.200	3.556	1.777	1.133	14.42	17.06	96.1	95.1	350.79	309.04	291.32	59.47
Total 55 Wells		130.000	227.869	190.375	97.869	60.375	14.26	17.07	96.2	95.1	351.14	309.04	264.91	86.23

Note: Values of Col. 15 are minimum.

BAD PRINT

Exhibit No. 252

Year, Dec. 31

CANADIAN RIVER GAS COMPANY

SUMMARY - AVAILABILITY STUDY OPERATION CONDITIONS DURING MAXIMUM 24-HR. DEMAND OF 130 M.M.C.F.

BASIS OF CALCULATIONS: ALL CONNECTED TO DENVER LINE 1440 OR TO BE CONNECTED SOON THEREAFTER, 250# ASSUMED AS SUCTION AT BIVINS STA.

11.65

Section MM. Open Capacity Norm. Press.	25% of Capacity 1942	25% of Capacity 1947	Excess of 25% of Capacity over Production 1942	Excess of 25% of Capacity over Production 1947	Prod. Rate of Capacity 1942	Prod. Rate of Capacity 1947	Work. Press. R.P. Relation at Prod. Rate (%) 1942	Work. Press. R.P. Relation at Prod. Rate (%) 1947	Gauge Working Pressure at Well for Production Rate 1942	Gauge Working Pressure at Well for Production Rate 1947	Pipe Line Press. Requirement at Well	Excess of Available Working Pressure over Pipe Line Press. Req. at Well 1942	Excess of Available Working Pressure over Pipe Line Press. Req. at Well 1947	Years After 1947 To: Failure of 25% Capacity (Min.)	Years After 1947 To: Failure of Work Press.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
			(1-2)	(1-3)					(8) x 356.45# / 8.2#	(9) x 316.3# / 8.2#	250.00	10-12	11-12	(5) / (4)-(5) ÷ 5	(14) / (13)-(14) ÷ 5
3.778	5.625	4.250	1.847	.472	16.79	22.22	95.2	92.7	347.58	301.45	251.04	96.54	50.41	1.7	5.5
3.465	5.600	4.825	2.135	1.360	15.47	17.95	95.7	94.7	349.36	307.78	263.71	85.65	44.07	8.8	5.3
1.061	1.625	1.300	.564	.239	16.32	20.40	95.3	93.6	347.94	304.30	253.18	94.46	50.82	3.7	5.8
1.238	2.350	1.913	1.112	.675	13.17	16.18	96.5	95.5	352.21	310.31	255.46	96.75	54.85	7.8	6.5
2.653	3.400	3.425	1.247	.672	17.01	19.95	95.1	93.7	347.22	304.61	266.63	80.59	37.98	5.8	4.5
.212	.410	.330	.198	.118	12.93	16.06	96.7	94.5	352.93	307.14	258.50	98.43	48.64	7.3	5.3
4.078	6.025	4.925	1.947	.847	16.30	20.70	95.3	93.5	347.94	303.98	275.75	72.19	28.23	3.7	3.2
3.274	4.750	4.150	1.476	.876	17.23	19.72	95.0	94.0	346.87	305.56	270.61	76.26	34.95	7.3	4.2
.857	1.300	1.050	.443	.193	16.48	20.40	95.2	93.6	347.58	304.30	258.91	88.67	45.39	3.9	5.2
2.725	4.125	3.400	1.400	.675	16.52	20.03	95.3	93.7	347.94	304.61	261.81	86.13	42.80	4.6	4.9
.579	.925	.780	.346	.201	15.65	18.56	95.7	94.4	349.36	306.83	261.52	87.84	45.31	6.9	5.3
1.895	3.350	2.900	1.455	1.005	14.14	16.34	96.3	95.3	351.50	309.67	263.75	87.75	45.92	10.6	5.5
.687	1.267	1.100	.600	.413	13.34	15.61	96.5	95.7	352.21	310.94	262.91	89.30	48.03	11.0	5.8
1.914	3.000	2.475	1.086	.561	15.95	19.33	95.5	94.2	348.63	306.19	268.63	80.00	37.56	5.3	4.4
1.949	2.980	2.475	1.031	.526	16.38	19.69	95.3	94.0	348.94	305.56	258.93	90.01	46.63	5.2	5.4
.895	1.362	1.139	.467	.244	16.42	19.67	95.3	94.0	347.94	305.56	262.12	85.82	43.44	5.5	5.1
.597	.912	.700	.315	.103	16.36	21.32	95.3	93.7	347.91	304.61	261.21	86.73	43.40	2.4	4.9
.240	.337	.285	.097	.045	17.78	21.05	94.8	93.4	346.35	303.26	261.64	84.51	41.62	4.3	4.8
2.527	3.200	2.675	.873	.348	18.18	21.75	94.5	93.2	345.09	302.40	262.35	82.74	40.05	3.3	4.7
.246	.337	.298	.091	.052	18.22	23.88	94.5	92.0	345.09	299.24	277.91	67.18	21.33	1.0	2.3
.450	.565	.465	.115	.015	19.91	21.19	93.8	92.0	342.59	299.24	283.19	59.40	16.15	1.0	1.9
.960	1.200	.990	.240	.050	19.58	23.80	94.0	92.0	343.30	299.24	284.77	58.53	14.47	1.0	1.6
1.375	1.750	1.388	.375	.013	19.64	24.77	94.0	91.6	343.30	297.97	286.77	56.53	11.20	2.0	1.2
9.254	16.625	13.750	7.371	4.496	13.92	16.83	96.3	95.2	351.50	309.36	253.57 (6")	97.93 (6")	55.79 (6")		6.6 (6")
											277.79 (4")	73.71 (4")	31.57 (4")	7.9	3.7 (4")
.904	1.713	1.375	.809	.471	13.20	16.44	96.5	94.5	352.21	307.14	254.75	97.46	52.39	7.0	5.8
1.018	1.488	1.213	.470	.195	17.11	20.99	95.1	93.4	347.22	303.66	276.42	70.80	27.24	3.5	3.1
1.430	2.113	1.750	.683	.320	16.92	20.42	95.1	93.6	347.22	304.30	278.37	68.85	25.93	4.4	3.0
.210	.410	.365	.200	.125	13.64	16.44	96.4	95.3	351.86	309.67	259.04	92.82	50.63	8.3	6.0
4.385	8.250	7.325	3.865	2.940	13.29	14.97	96.5	95.9	352.21	311.57	262.89 (6")	89.32 (6")	48.68 (6")	15.9	6.0 (6")
											274.71 (4")	77.50 (4")	36.86 (4")		4.5 (4")
8.890	18.000	14.750	9.110	5.860	12.35	15.07	96.8	95.9	353.28	311.57	266.83 (6")	86.45 (6")	44.74 (6")	9.7	5.4 (6")
											295.42 (4")	57.86 (4")	16.15 (4")		1.9 (4")
11.404	21.250	18.250	9.846	6.846	13.42	15.62	96.6	95.7	352.57	310.94	266.87	85.70	44.07	11.4	5.3
2.891	5.200	4.850	2.309	1.959	13.90	14.90	96.3	95.9	351.50	311.57	266.82	84.68	44.74	28.0	5.5
2.234	4.125	3.325	1.891	1.091	13.54	16.80	96.5	95.2	352.21	309.36	263.01	89.20	46.35	6.8	5.4
.798	1.288	1.040	.490	.242	15.50	19.23	95.7	94.0	349.36	305.56	253.57	95.79	51.99	4.8	6.1
2.112	4.500	3.500	2.088	1.088	13.40	17.23	96.5	95.0	352.21	308.73	255.09	97.12	53.64	5.4	6.1
1.677	3.000	2.375	1.323	.698	13.98	17.65	96.8	94.8	353.28	308.09	263.85	89.43	44.24	6.1	4.9
4.101	7.800	6.450	3.699	2.349	13.14	15.90	96.6	95.5	352.57	310.31	262.45	90.12	47.86	8.7	5.6
.457	.863	.713	.406	.256	13.25	16.04	96.5	95.5	352.21	310.31	253.91	98.30	56.40	8.5	6.7
5.486	10.625	9.125	5.139	3.639	12.91	15.03	96.6	95.9	352.57	311.57	254.40	98.17	57.17	12.1	7.1
5.952	11.000	9.000	5.048	3.048	13.53	16.53	96.5	95.3	352.21	309.67	259.65	92.56	50.02	7.6	5.9
.670	.938	.700	.268	.030	17.87	23.93	94.7	92.0	345.80	299.24	256.37	89.43	42.87	.6	5.0
.958	1.875	1.500	.917	.542	12.77	15.97	96.7	95.5	352.93	310.31	254.65	98.33	55.71	7.2	6.5
2.825	5.375	4.500	2.550	1.675	13.14	15.69	96.6	95.7	352.57	310.94	258.36	94.21	52.58	9.5	6.3
1.192	2.325	1.900	1.133	.708	12.82	15.68	96.7	95.7	352.93	310.94	255.71	97.22	55.23	8.7	6.6
.440	1.138	1.013	.698	.573	9.26	10.86	96.0	97.5	357.56	316.63	255.21	102.32	61.39	36.4	6.8
2.838	5.375	4.400	2.537	1.562	13.2	16.13	96.5	94.5	352.21	307.14	255.35	96.86	51.79	8.0	5.7
2.557	5.000	3.900	2.443	1.343	12.79	16.39	96.6	95.3	352.57	309.64	256.02	96.55	53.62	6.1	6.2
											(Biv.) 250.00				
.906	1.100	1.125	.491	.219	16.18	20.13	95.5	93.7	348.65	304.61	268.56	80.09	36.05	5.0	4.1
9.647	17.750	15.250	8.113	5.613	13.57	15.80	96.5	95.7	352.21	310.94	276.31	75.90	34.63	11.2	4.2
.453	.825	.663	.372	.210	13.73	17.09	96.4	95.1	351.86	309.04	273.06	78.80	35.98	6.5	4.3
.270	.413	.358	.143	.088	16.36	18.88	95.3	94.3	347.94	307.14	273.35	74.59	33.79	8.0	4.2
3.102	4.875	4.425	1.773	1.223	15.91	17.93	95.5	94.7	348.65	307.78	278.15	70.50	29.63	11.4	3.6
.315	.480	.373	.165	.058	16.41	21.14	95.3	93.8	347.94	304.93	276.96	70.98	27.97	2.7	3.3
.416	.675	.558	.229	.112	16.72	19.39	95.2	94.1	347.58	305.88	277.47	70.11	28.41	4.8	3.4
2.123	4.200	3.556	1.777	1.133	17.42	17.06	96.1	95.1	350.79	309.04	291.32	59.47	17.72	8.8	2.1
150.000	227.869	190.375	97.889	60.375	14.26	17.07	96.2	95.1	351.14	309.04	264.91	86.23	44.13	8.0	5.24

are minimum.

In connection with Exhibit 252 MR. STEVENS testified on direct examination, in part, as follows: (Vol. LXXXVI, pp. 12976-12993.)

A: "Availability Study—Mid-Year 1940. Wells and Lines Supplying Denver Line, Connected or To Be Connected in 1940 or Soon Thereafter.

The availability study of existing wells and the study of lines supplying the Denver line has been carried out to determine:

1. The amount of capacity now available from wells connected or to be connected in 1940 or shortly thereafter. The wells, numbering 55, include 43 wells connected December 31, 1939 and other wells to be added in 1940 or shortly thereafter as follows:

(a) Three old wells, Bivins A-9 and A-22, and Masterson B-5. These wells were previously unconnected to the Denver line. These wells are described by the company as about to be connected to the system and directly available to the Denver line.

(b) Six old wells, Masterson B-2, A-3, A-1, Fee A-1, Read A-1, and Sneed D-1. The gas from these wells is to be made available to the Denver line by placement of a main line gate on F-1 22" at a point just east of where Masterson A-3 is connected to that line. Gas from these wells previously went to the Chicago market, and under 24-hour demand conditions gas from these wells will be available to the Denver line, as stated by a company representative. As this study is of conditions of maximum 24-hour demand, these wells are necessarily included.

(c) Three new wells drilled in 1940, connected in that year or soon to be connected. The wells taken as serving the Denver line were those *shose* production was entirely or almost entirely diverted to the Denver line in 1939 and 1940, and whose entire capacity can be assumed to be available under conditions of maximum 24-hour demand. In addition there are included the new wells of 1940 and the old wells newly available to the Denver line as described under (a) and (b).

2. The amount of capacity available from the 55 wells at

future dates, at pressures expected to exist at those future dates. The year 1947 is taken concluding the period directly in question, in accordance with the time basis adopted by the company, and with respect to certain claims made by the company.

3. The approximate dates at which additional wells are necessary to supply the maximum 24-hour demand of the Denver line.

4. The operating conditions of field lines as to pressure, and of wells as to working pressure, for the flow involved during the maximum 24-hour demand. These conditions will be determined primarily with respect to 1942 and 1947.

5. Whether additions to compressing capacity are necessary under flow conditions of the maximum 24-hour demand.

The principal assumptions on which this study is based are as follows:

1. Maximum 24-hour demand of 130 MMCF on wells supplying the Denver line. This is in excess of the demand stated by any company witness in the testimony. Therefore, this assumed volume of flow imposes working conditions on wells, lines and compressing equipment in excess of probability and makes any results derived for those factors definitely conservative.

2. Suction pressure of 250 pounds at Bivins station. Imposing this condition as suction pressure at Bivins likewise imposes operating conditions at the wells which are regarded as stringent for the obvious reason that to maintain the comparable well working pressure, the rock pressure must be at a correspondingly higher pressure. The stringent assumptions made thus far are in line with the adopted point of view of being conservative with respect to the company interest and on these conservative assumptions working to well conditions and well requirements. By 'conservative with respect to company interest' it is meant that it is not the point of view of this study merely to show a result contrary to that shown by the company, but to set up a producing condition which is equal or conservatively greater than that which is likely to be imposed in fact; and to proceed with analysis on the basis of available factual data. The

results of a study from this point of view are hence conservative in that they include a margin of ability to supply, over the demands set up by the assumed conditions. This margin may be expressed in capacity, in pressure, or in time, as will be seen later.

3. The lines serving to gather gas to the Bivins station are assumed to be:

(a) Those lines used for this purpose December 31, 1939.

(b) Lines laid to connect new wells to the system.

(c) Replacement by 10" line of line F-562 6" and 8" and relaying the 6" taken up as an extension westward of the 10" mentioned. (Mr. Watson)

(d) Connection of Bivins A-9, A-10, and A-8 by newly laid 4" line as described by Mr. Watson.

(e) Connection of Masterson B-5 to system by a 6" line. The location of this line was not specified by Mr. Watson. The assumption reasonable to this problem was made, that it connected into the end of F-20 8" near Masterson A-4.

(f) Referring to the north, west, and east laterals lying generally northeast of Bivins station, connected to the Thompson, Sneed and Read wells; Mr. Watson stated that this branch was overloaded during peak days. This is to be expected after observing the size of wells, their probable output and the size of lines. Therefore, an assumption was made to provide relief of F-2 12" by terminating F-10 8" at Snead A-1 and eliminating F-10 6" to the Y at whose extremes are located Snead C-1 and A-2, also eliminating F-527 4" to Snead B-1, also eliminating F-10 6" from Sneed A-2 to Read A-2. These eliminations of line were assumed to be replaced by two lengths of 10" line, one from Sneed B-1 to junction F-1 22" at the point where it angles to the southwest, and the other from Read A-2 south to junction with F-1 22". This assumption as to lines is the only one not contemplated in the testimony. It is held to be justified as an assumption from the point of view of relief of the overloaded line F-2 12" resulting from the capacity of the wells connected to it, and from the point of view of costs of the added 4.6 miles of 10", compared to cost of compres-

sor units. While hindsight is better than foresight in laying out a pipeline system, it is nevertheless difficult to understand why this part of the system was laid out in its present relation. The result is that natural well pressures are unduly lost in friction, which loss in pressure has to be restored artificially by compressors at a cost for their investment and for their operation. This loss is obviated by the assumed short 10" lines. The reduction in friction loss over the present system would delay the installation of compressing units. Hence the cost of the assumed 10" line is directly comparable to the related compressor costs involved. Another result of the assumed 10" line aside from the relief of F-2 12" is to introduce gas from Sneed B-1, C-1, A-1 and Read A-2, into the large line F-1 22" at the nearest possible point. This line because of its size has very little friction loss for the volume of flow involved in the maximum 24-hour demand of 130 MMCF. The assumed 10" lines as described is one solution but not the only one, to relief of F-2 12". Also there is no intention of dictating the company's pipeline construction. However, it is pertinent to the matter of investment that a simple change in the system would utilize natural pressure, use a large 22" line to better operating advantage, and lengthen the period before additional compressor units are necessary.

(g) Referring to the relation of F-1 22" and the parallel line F-19 12", and the fact that they can be used separately or in combination, it is assumed that they can be used separately or in combination, it is assumed that they be used in the manner productive of the minimum friction loss. The assumption therefore made for the pipeline problem is that F-19 12" will run the gas from F-14 10" which can be placed in direct connection and to which are connected the group of Masterson wells southeast of Bivins station.

The flow of line F-537 4" is assumed to be connected to F-1 22", though it could be diverted to F-19 12" with no particular disadvantage.

It should be kept in mind that the pipeline system can be operated in such combination between its parts as to give a *maximum* or minimum pressure drop, and it is to be presumed that the company would use the field system in such

combination as would provide the minimum fraction loss, and thus provide the maximum suction pressure at Bivins station.

The question of additions of compressor capacity and well capacity divides into several problems. The only conditions of the problem which are definite at this point are at the compressor station, where 250 pounds suction is assumed and 130 MMCF is to be handled. While the compressor station is the terminus of conditions of flow in the line and of the wells, it will be considered as the starting point in the problem of availability as it prescribes the conditions to which all the factors of flow are related, both as to the line and as to the wells.

The objectives of the study are accomplished by calculation from basic data and illustrated by curves where possible.

The general plan of this study is to start with 130 MMCF and 250 pounds at the station, and work toward the wells. The obvious result of this progress toward the wells will be an increase in pressure in the lines and a decreasing volume of flow. When the individual well is reached the volume will be that part of 130 MMCF contributed by the well and the pressure result will be the line pressure requirement at the well. Here the problem as to the well divides into two parts, 25% of its capacity must exceed the well's share of the 130 MMCF and the working pressure of the well when producing its share of 130 MMCF must equal or exceed the line pressure requirement calculated to be necessary. As long as this excess of capacity and pressure exists, the well will be effective in contributing its share of the 130 MM both as to capacity and working pressure. These excesses of capacity and working pressure over line pressure requirement will vary between wells. Some will fail in capacity or pressure sooner or later than others. Failure of a given well, in either capacity or pressure, does not mean another well is necessary for the system, as some other wells will easily make up the deficiency. The average condition of all wells should determine whether there is necessity of more well capacity. The excess of capacity and working pressure will be ultimately determined for each well, for the average

and for total wells, as to the years 1942 and 1947 comparable to the times claimed by the company for additions, the end of 1947 being the extreme date contemplated in all the company exhibits.

The flow in a pipeline system is a complexity of variations in pressure and volume from hour to hour, and it would indeed be absurd to say that they were uniform. Consequently it would be absurd to claim that the results of this study are intended to be minutely exact. For the conservatively assumed conditions of the study the results are claimed to be representative and illustrative of the relation of pertinent factors that can be expected within reasonable limits.

Mr. Rhodes states that the requirement of five additional 600-horsepower compressors before end of 1943, one in 1941 and one in 1942 in the present building and three in 1943 in a new building, is predicated on reduction of suction pressure at Bivins to 150 pounds. In this part of the testimony Mr. Rhodes is discussing a hypothetical 20" line. For the present system Mr. Rhodes outlines five more 600-horsepower units before 1947, the difference being merely that of year of installation. Mr. Rhodes explains his selection of 150 pounds suction as 'purely a matter of judgment', also that Mr. Watson arrived at 'the identical conclusion at almost the identical time'. Reference was made to the Monroe and Richland gas Fields, as yardsticks for the anticipated condition in the Panhandle field. This sort of comparison is unjustified and improper, as no two gas fields or oil fields in the history of the two industries have been comparable on so broad a basis. The only valid basis of judgment for the Panhandle field is the conditions in that field alone. If other fields could be imagined to be comparable in all other respects, the volume of gas withdrawals and the size and lengths of line involved in those withdrawals would be the determining factors in the suction pressure at the compressor station. My opinion with respect to suction pressure is that it is not subject to any judgment figure but to calculation on the basis of the physical facts bearing upon it.

Mr. Rhodes states that for his assumed 150 lb. suction, he does not know what the well pressures would be. For

any volume of flow these two factors are inseparable. He states that he gave it no consideration, that it had only an indirect bearing. In my opinion the pressures at the well have a very direct bearing on the matter of suction. My opinion on this matter is that well pressures cannot be ignored, and that they should be determined within at least reasonable limits on the basis of data available to this purpose. Mr. Rhodes states that it is very difficult to maintain a suction pressure of over a third of rock pressure. This is not the case in the Panhandle field as investigation will later disclose. In any event the determination of the relation should be one of calculation rather than unsupported judgment. Mr. Rhodes states he has made no calculations of this nature. He states that the suction pressure at the present time is approximately 250 pounds and that the margin between suction pressure and pressures at the wells has been under too narrow a margin recently. It is not clear how the degree of margin of well pressure over suction pressure is known if the well pressures were not observed, as Mr. Rhodes stated.

In his testimony Mr. Rhodes stated in response to question that he did not go into the problem as far as considering withdrawals from the field. As withdrawals influence the rock pressure and for a given flow from the wells the working pressure at the wells is in a predicatible relation to rock pressure, it is clearly improper to disregard withdrawals. From the wells to the station, the pipeline problem for the flow involved obviously determines the suction pressure at the station. Mr. Rhodes states he *have* 'no specific thought' to the subject of withdrawals. It is my opinion that withdrawals must be considered, also the resulting rock pressures and related working pressures at the well, as against any sort of judgment figure or lack of similiar investigation. Mr. Rhodes later states that he doesn't know when the Bivins suction pressure will reach 150 pounds but that by 1943 he would want to be ready to take care of it. While Mr. Rhodes is at the time discussing a 20" hypothetical line, what he says is applicable in principle to the present 22" line as the difference in time for requirement of any facility is minor in degree. (Pages 3216-3221, and pages 6138-6144.)

The point of importance involved in investigation of suc-

tion pressures is, of course, whether the total of five 600-horsepower units and the accompanying expenditure are necessary as claimed by Mr. Rhodes. My opinion is that the elements of the problem pertinent to decision should be worked out on the basis of contributory factual data and that use of unsupported judgment figures is entirely improper in an engineering problem of this nature. Making the assumption of 150 pounds suction in 1943, Rhodes said he did not know when it would occur but wanted to be ready for it in 1943.

Compressor Requirements—Bivins Station.

The determination of compressor horsepower at Bivins station for the assumed conditions of maximum 24-hour demand is based on the already stated conditions of 250 pounds suction and 400 pounds discharge, for the pumping of 130 MMCF.

The horsepower required to pump 1 MMCF under those conditions is 29.34. Using 30 horsepower per MMCF as the basis of calculation, the pumping of 130 MMCF will require 3900 horsepower for the conditions stated. As 3600 horsepower is now installed at Bivins, only 300 additional horsepower is necessary for the stated conditions. This requirement would be satisfied by the installation of a 600-horsepower unit in the space stated by Mr. Rhodes to be available in the present building, with 300 horsepower in excess of requirements. In the event of finding that a suction greater than 250 pounds is possible at Bivins, the horsepower requirement at Bivins would be less, suggesting the possibility that even the 300 horsepower addition may not be necessary. However, it is not the purpose of this study to impose a narrow margin of capacity over requirements by entirely eliminating an added unit on such possibility.

With respect to the assumed conditions at Bivins, it is my opinion that a maximum of only one 600-horsepower unit is necessary, rather than the five estimated by Mr. Rhodes on the assumption of a 'judgment figure' suction of 150 pounds. The ability of the wells to maintain a suction of 250 pounds at the station constitutes the condition on which the horsepower requirement is predicated, and at this point in the study it has not been discussed. It will be investigated in a

later section. The above conclusion as to compressor requirement may be kept in mind as being dependent on the substantiation of 250 pounds suction at Bivins, this condition being a function of operating conditions in the lines and at the wells.

Well Capacities.

Mr. Watson states that for the period to end of 1947 the drilling program has developed on the basis of the whole period and not with respect to any definite year; that is, he says that by the end of 1947 the company will need a number of wells and he allocates those wells to individual years without specific analysis of the requirements of those years. Mr. Watson states that it would be 'most difficult to determine' whether a well should be drilled to supply the peak day (page 3015). In my opinion the broad basis for allocating the drilling program to individual years is improper as it attempts to introduce investment on a basis which does not inquire into the requirement for the individual year. As to being 'most difficult to determine,' that has not been found to be the case. Mr. Watson's statement indicates that the detailed work was not done to determine the yearly requirement. While considerable work is necessary to arrive at drilling requirements by years, it can be done. In fact, this analysis of future requirements has been made and constitutes a part of this study.

In determining the requirements for 1947 Mr. Watson states he used an average back pressure curve as obtained from Railway Commission tests. This curve was the result of arithmetically averaging the back pressure curves of individual wells as stated by Mr. Watson. I *repeated* this arithmetical averaging process and confirmed that the delivery curve of the average well set up by Mr. Watson was the arithmetical average of the individual well curves.

Mr. Watson continues (pages 3018, 3055) with the statement that the future drilling program is based on the average rock pressure decline of approximately 100 pounds to end of 1947. While Mr. Watson did not go into the mechanics of the use of the average back pressure curve, it is supposable that he read the average open flow corresponding to the pressure factor for the present pressure less the

assumed 100 pound decline. However, the details of the operation were not disclosed, and it was not shown in the evidence that even in 1947 on his basis that any wells were necessary.

Referring to the 100 pound assumed pressure loss to end of 1947, Mr. Watson stated (page 3056) that it was a 'judgment figure' arrived at by considering the whole field, the performance and trend of pressure of specific wells within the company's acreage and throughout the Panhandle field.

It is my opinion that consideration of parts of the field other than their own acreage is improper. The extent of the field is such that areas beyond that occupied by company acreage have no bearing on the future history of the company's wells. The company's wells should be considered in terms of their own performance, not in terms of performance of *distnat* wells.

In answer to question as to whether he considered production in determining pressure loss of 100 pounds to 1947, Mr. Watson replied that that had no bearing on what he was studying, that it had no bearing at all, that (page 3057) he was taking the trend of rock pressure decline and that he did not investigate as to its cause. Mr. Watson later stated (page 3065) that he was still of the opinion that his 'judgment figure' (of 100 pounds pressure loss to 1947) was better than one arrived at considering the company's actual past history. His reason for so concluding was that he expected increased drainage in the future.

It is my opinion that use of 'judgment figure' in selection of the pressure loss is very unsatisfactory as compared with arriving at that loss from consideration of past production. As to have the most direct bearing on pressure. Removal of gas is the simple fact that does cause loss of pressure.

Referring to the arithmetical average back pressure curve which Mr. Watson states he uses, but which use he does not detail, in determining wells necessary before 1947, it is my opinion that this arithmetical average curve is unsatisfactory for forecasting the decline in open flow or ability to deliver gas. The reason for considering this arithmetical average curve unsatisfactory lies in the nature of any arithmetical average; it does not weigh the pertinent factors of

capacity and pressure. Where those factors are diverse in value as they are with respect to the company's wells, they should be weighed in terms of those factors, the result being expressed by *s* straight line curve on log paper. This weighted curve is the weighted rate of decline. This method of deriving a weighted rate of decline is considered superior to the arithmetical method, for the same reason that any weighted average of diverse components of any nature is superior to the arithmetical average of those components. The weighting method involves considerably more work than the arithmetical method. However, its results are considered more applicable to the forecasting of decline in availability and determination of a drilling program, and I have worked out its application to the existing wells connected to or to be connected to the Denver line.

In my opinion the matter of production is inseparable from pressure loss, and pressure loss from wells to the compressor station is inseparable from station suction pressure.

It is my opinion that whenever possible, all available factual data bearing on pertinent factors contributory to a solution of the problem of compressr and well additions, should be used. The company witnesses Rhodes and Watson have not done this.

* * * * *

Continuing, MR. STEVENS further testified with reference to Exhibit 252: (Vol. LXXXVI, pp. 13011-13013.)

Referring to the excess of available working pressure over line requirement, the average excess for 1942 and 1947, respectively, is approximately 86 pounds and 44 pounds, and represents the margin of well head working pressure over what is necessary at that point for the conditions of flow of wells totaling 130 MMCF into the lines and with 250 pounds at Bivins station. Having in mind the basic assumption of 250 pounds suction at Bivins, it is indeated that in 1942 and 1947 each well has a margin of both capacity and working pressure. It is also indicated by reason of this excess that 250 pounds suction can be maintained at Bivins station through 1947, that it will not fall to 150 pounds or any point between 150 and 250 pounds before that time. It then follows that no additional compression units are needed

before 1947 except as may be dictated by the requirements of 250 pounds suction and the pumping of 130 MMCF.

In 1942 the available suction pressure at Bivins, of 250 pounds, will be 68.55% of the average rock pressure of 364.69 pounds to be expected at that time. In 1947 it represents 77.02% of the average rock pressure of 324.6 pounds expected to exist at that time.

It is my opinion that the foregoing investigation on the basis of factual data more accurately forecasts the operating condition than Mr. Rhodes' 'judgment figure' of 150 pounds suction pressure for 1943 and his conclusion as to the necessity of additional compressor capacity which is incidental to that judgment figure.

Also Mr. Rhodes' claim that suction pressures of one third or one half or one quarter of average closed in well pressures, said to exist in his experience in other fields, is not applicable to the Panhandle field when investigated with respect to Panhandle wells and company facilities which determine operating pressures.

The fifty-five wells studied in Exhibit 252 include three wells not connected at the time of the hearing, being Bivins A-9 and A-22 and Masterson B-5. It also includes three new wells drilled in 1940, and includes six additional wells made available, or to be made available, by transfer of the main line gate on line F-1 22" to a point a few miles eastward of its former location. (Exhibit 252, p. 1.) The study is based upon a maximum 24-hour demand of the Denver market of 130,000,000 cubic feet on a 14.65 pressure base.

The exhibit (Table III) shows the expected future working pressures and open flows at the end of the calendar years 1942 and 1947. (Exhibit 252, p. 2.) As a basis for the study the witness did not consider the present gathering lines as they now exist and the additions that Watson provided for in his estimate of additional facilities necessary, but Stevens "constructed" in addition to this two additional 10" lines. (There has been no provision made for the cost of these additional lines.) (Exhibit 252, p. 3.) Stevens states that Watson assumed a 100-pound pressure loss by 1947, and that this was based upon the consideration of the

field as a whole and upon the performance and trend of Canadian wells, and contemplated additional drainage in the future. (Exhibit 252, pp. 8-9.) Stevens in his study assumed there would be no change in the future in the present rate of drainage, but based his calculations on the assumption that Canadian would continue to get the same proportion of gas in the future as in the past (Vol. XCVI, pp. 14704-14706), and stated that if he was wrong in this assumption, his calculations would be wrong to some extent. (Vol. XCVI, p. 14705.)

The pressure loss to be expected in the future was determined by considering the entire five-year period from 1935 to the end of the year 1940 (Exhibit 252, p. 12), and, on this basis, Stevens assumed that the pressure loss from the end of 1940 to the end of 1947 would be 55.45 pounds. (Exhibit 252, p. 14.)

Stevens determined, as a result of his calculations, that at the end of 1942 the fifty-five wells, allocated to the Denver line and considered in his study, would be able to produce on peak days at the rate of 227.889 million cubic feet per day, being 97.889 million in excess of the assumed 130,000,000 peak day. (Exhibit 252, p. 14, Columns 1, 2, 3, 4 and 5, Table III.)

Stevens stated on cross-examination that in determining the pressure loss for the future he had considered only the fifty-five wells included in his study (described in Table III, Exhibit 252), and did not consider the entire group of Canadian wells, as he did in Exhibit 197, nor the surrounding wells owned by others, as in Exhibit 182. The record discloses that there are many wells offsetting Canadian wells, which offsetting wells were not considered in determining the pressure losses (Vol. XCVI, p. 14754, et seq.), and that there were many other wells owned by others and located upon acreage entirely surrounded by Canadian acreage, and that these wells were not considered in calculating his pressure loss. (Vol. XCVI, pp. 14764-14767.)

The witness stated that he did not consider any obligation of Canadian to allocate its production among its various lessors, but considered only the ability of the wells to produce. (Vol. XCVI, p. 14812.)

The witness stated that he did not consider the gathering

lines of Canadian as he found them, but his study did contemplate the construction of two additional 10" gathering lines over and above the present lines with the additions suggested by Watson. (Vol. XCVI, pp. 14812-14813.)

The witness stated that he did not consider the demands of the Amarillo market on peak days, but had assumed that this demand would be supplied by other wells, and made no deduction in his calculations for this, although some of the wells under consideration supply the Amarillo market, those wells being set out in the last paragraph of the list of wells shown on Table III of Exhibit 252. (Vol. XCVI, pp. 14816-14819.) The witness stated that 91% of the gas produced by those wells supplied the Denver line. (Vol. XCVI, p. 14816.)

The witness stated that he did not consider any possible demands of the Chicago line upon the fifty-five wells he considered, because he had assumed the block gate on line F-1 22" would remain closed (Vol. XCVI, p. 14820), although he had stated on direct examination that some production from these wells would continue to go to the Chicago market. (Exhibit 252, pp. 1, 12.)

He stated also that he had not considered mechanical difficulties in the production of gas, the salting of the wells, the caving of the wells, or any other stoppages for any reason whatsoever. (Vol. XCVI, pp. 14821-14822.)

He also stated that, on the assumptions made by Mr. Rhodes, the five additional 600 H.P. compressors would be needed at Bivins Station by 1943 (Vol. XCVI, p. 14827), and stated also that he agreed with Rhodes that as field pressures go down, pressures at the compressor stations would also be lower. (Vol. XCVI, p. 14840.)

The witness stated that the working pressure on a well was the pressure obtaining while the well was producing, and that the rock pressure was the pressure obtaining when the well was shut in, and that if the rock pressure was less than the working pressure (as he had calculated it), the well would produce no gas at all. (Vol. XCVI, p. 14726.) This was illustrated by reference to Thompson A-1, Thompson A-2 and other wells, and the witness stated that these particular wells would produce no gas at all on peak days, because the rock pressures would be less than the working

pressures as he had computed them. (Vol. XCVI, pp. 14727-14731.) He stated, however, that these wells constituted extreme cases. He stated further that these wells could produce some gas if a favorable working operation were created, but that he had made no study of the matter from this angle. (Vol. XCVI, p. 14731.)

He stated that his calculations, as shown in Column 2, Table III (Exhibit 252), were based upon the expected performance of an average well at the end of 1942 (Vol. XCVI, p. 14741), and that to determine the rock pressure at the end of 1942, there would be subtracted from the 1940 rock pressure 18.26 pounds, being the expected loss in pressure from mid-year 1940, to the end of the year 1942. (Vol. XCVI, p. 14744.) There was then read into the record the 1940 rock pressures on a number of additional wells. (Vol. XCVI, pp. 14750-14753.) He stated on redirect examination that he had checked all of the wells, and said that the wells named—being twenty-three in all—were the only wells that he had found that "would fall below the line" (that is, wells, the rock pressure of which would be less than the working pressure at the end of 1942.) (Vol. XCVI, pp. 14862-14864.) He stated also that his entire exhibit was constructed upon the assumption of an average drop in pressure of 18.26 pounds for each of the fifty-five wells, although some of the wells might drop more than this, and others not as much (Vol. XCVI, p. 14877), and that although the twenty-three wells referred to (the record shows twenty-two) would not be able to produce any gas on peak days, still the remaining wells would produce enough to more than make up the deficiency. He stated, however, that he had made no calculations to determine whether or not this would be true. (Vol. XCVI, p. 14878.) The twenty-two wells referred to in the record as being incapable of producing any gas on the basis of Stevens' calculations, together with the volume of production assigned to each well (Column 2, Table III, Exhibit 252) are set out as follows:

Name of Well	Production Assigned to Well at end of 1942 (Column 2, Table III)			
Bivins A-2	2.350	Million	Cubic	Feet
Bivins A-4	.410	"	"	"
Killgore A-3	1.287	"	"	"
Thompson B-3	16.625	"	"	"
Masterson J-1	1.713	"	"	"
Thompson B-1	.440	"	"	"
Thompson A-3	8.250	"	"	"
Thompson A-1	18.000	"	"	"
Thompson A-2	21.250	"	"	"
Sneed A-1	4.125	"	"	"
Sneed B-1	4.500	"	"	"
Sneed C-1	3.000	"	"	"
Sneed A-2	7.800	"	"	"
Read A-2	10.625	"	"	"
Masterson A-4	11.000	"	"	"
Masterson A-1	1.875	"	"	"
Fee A-1	5.375	"	"	"
Read A-1	2.325	"	"	"
Sneed D-1	1.188	"	"	"
Masterson B-2	5.375	"	"	"
Masterson A-3	5.000	"	"	"
Masterson H-1 (M-1)	.413	"	"	"
Total	135.511	"	"	"

The above list of wells was assigned a total volume of production equal to 135.511 million cubic feet (Column 2, Table III, Exhibit 158) at the end of 1942, based upon 25% of the open flow expected to obtain at that time. (25% of the open flow is the maximum permitted production in Texas.)

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45. Description of Canadian's Portion of Denver Line Additions, 1940 to 1947, Inclusive.

In Exhibit 66, Witness Rhodes, abstracted supra under the title, "17. Peak Load Obligations and Line Capacity of the Denver Line 1929 to 1940, Inclusive, and as Estimated, 1941 to 1947, Inclusive, and Estimated Additional Necessary Facilities," there is shown the additional compressing station facilities claimed to be required for the

Denver Line. Such additions to Canadian's portion of the line consist of the Dalhart Station, which was constructed early in 1940 with four 600 H. P. units with additional unit to be installed in the early winter of 1940, making a total capacity of 3,000 H. P., and the Bivins Station will have to be extended by the addition of five 600 H. P. units, one to be installed in 1941 in the present building, and the other four units to be installed in a new building in 1942.

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46. Description of Production and Gathering System Required for all Gas Delivered at Clayton Junction, New Mexico, Except Colorado Interstate's Direct Sale Gas, 1928 to 1947, Inclusive.

In Exhibit 89 above abstracted, Witness Watson, Assistant Superintendent of Canadian Company, gave a description of its producing and gathering properties as of December 31, 1939.

In Exhibit 94 abstracted supra, he gave a description of the additional facilities which he estimated would be required, 1940 to 1947, inclusive, to meet the obligations indicated by the estimated annual production and peak month requirements as shown in Exhibit 80 abstracted supra; also related data pertaining to peak day requirements, and to meet the obligations of the company to its lessors and the existing statutory requirements relating to the production of natural gas in Texas.

In Exhibit 121 he dealt with the subject indicated in the foregoing heading. He stated (Vol. XXX, pp. 4112, et seq.) that he had been asked to make a study and report covering production and gathering system facilities which would have been and will be required by Canadian for the period 1928 to 1947, inclusive, assuming annual sales, peak month deliveries and peak day obligations to Colorado Interstate at Clayton Junction, as shown in the exhibit, as follows:

Year	Annual Volume of Sales	Peak Month Deliveries	Peak Day Obligations
1928	962,941	259,150	34,600
1929	3,469,641	385,533	34,600
1930	5,507,000	726,765	47,700
1931	6,672,824	804,337	68,200
1932	7,087,400	916,764	68,200
1933	5,799,435	822,831	68,200
1934	5,990,928	685,073	68,200
1935	6,957,466	732,507	68,200
1936	7,958,802	974,133	68,200
1937	9,136,073	1,153,207	68,200
1938	8,817,872	1,005,148	68,200
1939	9,249,048	1,220,139	68,200
1940	9,955,526	1,357,766	82,200
1941	10,782,845	1,487,102	82,200
1942	11,205,430	1,539,391	82,200
1943	11,583,834	1,580,729	89,500
1944	11,962,148	1,628,292	89,500
1945	12,336,531	1,675,405	89,500
1946	12,336,531	1,675,405	89,500
1947	12,336,531	1,675,405	89,500

The volumes so submitted to him were computed on a 16.4 pounds pressure basis.

The annual volumes for the years 1928 to 1939, inclusive, represent actual deliveries to Colorado Interstate of all gas, except Colorado Interstate's direct sale gas, and the annual volumes for 1940 to 1947, inclusive, are the estimated deliveries for all gas, except Colorado Interstate's direct sale gas, as shown in Exhibit 56, Witness Beardsley. (Abstracted under Title 15 of Colorado Interstate's brief.)

The peak month deliveries at Clayton Junction are taken from Exhibit 99, Witness Rhodes, for Colorado Interstate's requirements for all gas, except Colorado Interstate's direct sale gas. The peak day obligations shown in the table are the full pipe line capacity requirements, including compressor fuel of a Denver pipe line for all gas, except Colorado Interstate's direct sale gas, shown in Exhibit 98, Witness Rhodes. Said Exhibits 98 and 99 are abstracted under Title 14 of Colorado Interstate's brief.

Aside from the above stated deliveries of gas to be made

at Clayton Junction for Colorado Interstate's sale of all gas except its direct sale gas, all production and sales requirements and peak month obligations of Canadian for the purposes of the statement, have been taken exactly as they appear in Exhibits 78 and 79, Witness Lusk, for the years 1928 to 1939, inclusive, and from Exhibit 80 Witness Hendee, for the period 1940 to 1947, inclusive.

He stated that the only material change in production and gathering facilities resulting from the reduction in deliveries to Colorado Interstate at Clayton Junction, is a reduction in the total number of producing gas wells required in each year commencing in 1937. Up until that year all wells drilled would have been required by reason of lease and production obligations, notwithstanding the reduced volume of deliveries to be made at Clayton Junction. He stated that in his opinion the reduced deliveries and peak obligations at Clayton Junction as stated would result in certain changes in the company's drilling program from 1937 to 1947, inclusive, as follows:

Bivins A-19, drilled in 1937, would have been drilled in 1937.

Bivins A-20, drilled in 1937, would have been deferred until 1938.

Killgore A-2, drilled in 1937, would have been drilled in 1937.

Bivins A-21, drilled in 1937, would have been deferred until 1939.

Read A-2, drilled in 1937, would have been drilled in 1937.

Bivins A-22, drilled in 1937, would have been drilled in 1937.

Bivins A-23, drilled in 1938, would have been deferred until 1940.

Bivins A-24, drilled in 1938, would have been deferred until 1941.

Masterson A-4, drilled in 1939, would have been drilled in 1939.

Bivins A-25, drilled in 1939, would have been deferred until 1942.

Bivins A-26, drilled in 1939, would have been drilled in 1939.

Masterson B-3, drilled in 1939, would have been deferred until 1940.

Sneed A-2, drilled in 1939, would have been deferred until 1944.

Masterson B-2, drilled in 1939, would have been deferred until 1941.

Killgore A-3, drilled in 1939, would have been deferred until 1941.

Amarillo No. 1, drilled in 1940, would have been drilled in 1940.

Thompson A-3, drilled in 1940, would have been drilled in 1940.

Thompson B-3, drilled in 1940, would have been drilled in 1940.

Masterson A-5, drilled in 1940, would have been deferred until 1942.

In addition to existing wells, the drilling of which has been deferred to future years as above indicated, it was his opinion that the company would be required to drill and complete thirty new wells for the purpose of meeting its production requirements and lease obligations during the period 1941 to 1947, inclusive.

He summarized the above and stated existing wells and new wells would be drilled during the period 1937 to 1947, inclusive, as follows:

Year	Existing Wells (Drilled 1937 to 1939, Inclusive)	Wells Drilled in 1940	New Wells to be Drilled 1941 to 1947, Inclusive	Total
1937	4	0	0	4
1938	1	0	0	1
1939	3	0	0	3
1940	2	3	0	5
1941	3	0	2	5
1942	1	1	3	5
1943	0	0	8	8
1944	1	0	5	6
1945	0	0	5	5
1946	0	0	6	6
1947	0	0	1	1
	15	4	30	49

The reduction in the volume of deliveries and peak obligations to Colorado Interstate at Clayton Junction does not result in any change in the program submitted by him in Exhibit 94 covering the reconditioning of old wells, drilling and cleaning-out equipment, other gathering lines, sour gas treating plant, pipe line department equipment and field camps required for the years 1940 to 1947, inclusive. Neither would any such reduction in volume of deliveries and peak obligations have resulted in any substantial change in such items of property as were actually provided for in the years 1928 to 1939 inclusive, except that meters and the construction of gathering lines for the wells, the drilling of which has been deferred, would also have been deferred.

Commission's Exhibit 96 is as follows:

(Copied from copy of instrument supplied by Canadian River Gas Co.)

The State of Texas, Counties of Oldham and Hartley.

Know All Men by These Presents.

That, Whereas, heretofore, and as of the 1st day of May, 1939, Miles G. Bivins, individually and as Trustee, Julian L. Bivins, individually and as Trustee, and Mary E. Bivins, all designated as Lessor, made, executed and entered into a contract with Canadian River Gas Company, designated as Lessee, which said contract is recorded in Volume 66, pages 234-258, of the Deed Records of Hartley County, Texas, and Volume 32, pages 234-261, of the Deed Records of Oldham County, Texas, reference to which is here made for all of the terms and provisions thereof; and,

Whereas, said contract, in addition to other matters, provides for the drilling of test wells on certain "undeveloped acreage", which acreage is described as Exhibit "D" in said contract; and,

Whereas, said contract also provides that said "undeveloped acreage" should be divided into six drilling units for the purpose of further testing and exploring the same as in said contract provided; which drilling units have heretofore been designated in accordance with the terms and provisions of said contract, and copy thereof furnished to Lessor hereinabove named; and,

Whereas, Drilling Block #1 of said "undeveloped acreage" covers and includes the following described acreage, to-wit:

Sec.	Portion	County in Which Located	Acreage
	Capitol State Syndicate Sur.—Block #21.		
17	W/2 and SE/4	Hartley	480.00
18	North 480 acres	Hartley	480.00
19	All	Hartley	640.00
29	All	Hartley	365.70
30	All	Hartley	608.00
	Capitol State Syndicate Sur.—Block #20.		
26	All	Hartley & Oldham	597.60
27	All	Hartley & Oldham	640.00
25	All	Oldham	234.40
24	All	Oldham	640.00
	Gunter & Munson Block—#2.		
24	All	Oldham	473.00
23	All	Oldham	640.00
67	All	Oldham	657.00
25	All	Oldham	322.00
26	All	Oldham	325.00
27	All	Oldham	325.00
68	All	Oldham	755.00
64	All	Oldham	640.00
65	All	Oldham	640.00
	East Line & Red River R. R. Survey—Block 9.		
1	All	Oldham	320.00
2	All	Oldham	320.00

aggregating approximately 10,102.70 acres; and,

Whereas, subdivision (ii) of subsection (c) of Section 2 of Article IV of said contract provides that Lessee may relieve itself of the obligation to drill any one or more of the test wells required under subsection (b) of Article IV, "by executing and delivering to Lessor, on or before May 1st of any year, a proper and valid instrument, releasing and surrendering unto Lessor all of its leasehold rights in and to the land embraced in any drilling unit on which no test well has been drilled"; and,

Whereas, no test well has been drilled upon said unit hereinabove described and referred to as Drilling Block #1, and Canadian River Gas Company desires to relieve

itself of the obligation to drill one of said test wells (being the second well required under said contract of May 1, 1939, hereinabove referred to—the well otherwise required to be commenced on or before July 1, 1940, by releasing the acreage included in said Drilling Block #1:

Now, Therefore, in consideration of the premises, Canadian River Gas Company does by these presents remise, release, quit-claim and surrender unto the Lessor above named all of its leasehold rights in and to the lands hereinabove specifically described as being contained in Drilling Block #1.

In Testimony Whereof, witness the execution of this instrument by Canadian River Gas Company, acting by and through one of its Vice-Presidents and attested by one of its Assistant Secretaries, this the 27th day of April, A. D. 1940.

CANADIAN RIVER GAS COMPANY,
By R. E. WERTZ,
Vice-President.

Attest: W. M. WRIGHT, Assistant Secretary.

(Seal)

Approved as to form, CHAS. H. KEFFER.

The State of Texas, County of Potter.

Before Me, the undersigned authority, a Notary Public in and for said County and State, on this day personally appeared R. E. Wertz, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same as the act and deed of Canadian River Gas Company, a corporation, and as the Vice-President thereof, and for the purposes and consideration therein expressed.

Given Under My Hand and Seal of Office, this the 29th day of April, A. D. 1940.

F. E. MILLER,
Notary Public, Potter County, Texas.

Canadian's WITNESS Lusk testified on cross-examination as follows: (Vol. LIV, pp. 7453-7457.)

Q. Well, now, I see in his Exhibit No. 94, "Future Wells," Page 2 of that Exhibit 94, in 1940 he has four wells; 1941, five wells, and so forth. Do these figures in your statement 3 intend to correspond with those or not, or why the difference?

A. Well, Mr. Watson's program, on Page 2, his program calls for 41 wells, five of which are exploratory wells. In the first five years there is one well deducted from his program. He shows 4 minus 1, and I show 3; 5 minus 1, I show 4; 6 minus 1, and I show 5. The exploratory wells are expensed under Mr. Watson's program and these are presumed to be the flush wells that would be drilled in.

Q. That accounts for that difference?

A. Yes. For the five years there is one well deducted from Mr. Watson's program.

Q. So that one exploratory well for each year as set up in his well drilling program in Exhibit 94 is expensed and appears in one of your previous exhibits, does it not, Mr. Lusk, in that fashion?

A. It will appear in Exhibit 170, 172 and—well, there are several other exhibits. The amount is $29,500.

Q. And they also appeared in Mr. Rhodes' projections?

A. Yes, it did.

Q. Under that column of "Dry Holes"?

A. Dry Holes, yes, sir.

Q. And are taken care of in each of those projections?

A. That's correct.

Q. Or expensed?

A. Yes, sir.

Q. That is the reason why you deducted from Mr. Watson's drilling program as set forth in Exhibit 94, one well for each of those years?

A. For the first five years one well has been deducted.

Q. So in 1940 you have a remaining 3 wells as shown on Statement 3 instead of his four, and right on through during that period, during each of those years until you get down to—through 1944?

A. That's correct.

Q. Then you resume his estimate, five wells for 1945, six wells for 1946, and one well for 1947?

A. That's correct. The exploratory program after 1944 is complete.

Q. In other words, all of the wells projected or estimated by Mr. Watson in his Exhibit 94, after you have deducted the exploratory wells, are presumed to be producing wells and you have set them up in these columns?

A. That is correct.

Q. And in setting up the items on Statement 3 for each of those, for the wells during each of those years projected, have you utilized Mr. Watson's estimated cost figures per well?

A. Yes, sir, I have utilized Mr. Watson's estimated cost of $30,000 per well, $22,300 of which is shown in the unit cost column of total drilling and equipment, $750 for the meter, in Line 10, and $6,950 in Line 13 is the cost of new lines. The total of those three is $30,000. That is Mr. Watson's estimate.

Q. And you have projected that through each of the years?

A. At the same unit price, yes, sir.

Q. Now, the other items under "Production System, Reconditioning Old Wells," are those numbers that are indicated under Columns 1940 through 1947, Statement No. 3, are those the same that Mr. Watson estimates?

A. Yes. On Page 5 of Mr. Watson's estimate under the caption "Reconditioning Old Wells," he estimates that these jobs will cost approximately $4,000 per well, and the number he states corresponds with the number shown on Line 3, "Reconditioning Old Wells"—three in 1940; four in 1941, and four in each of the succeeding years.

Q. And you have projected those through 1947?

A. That is correct, yes, sir, based on Mr. Watson's program.

Q. Now, going back to "Gas Well Construction" additional wells, this cost of this Amarillo well, is that expensed?

A. You mean the Amarillo No. 1?

Q. Yes.

A. That cost $49,100 and that is expensed. That doesn't enter into this picture at all.

Q. That enters into your previous computations?

A. That's all under the heading of expense.
Q. In 1940?
A. In 1940.

Canadian's WITNESS WATSON testified on cross-examination as follows: (Vol. XXII, pp. 3065, 3066.)

Q. You are still of the opinion that the judgment figure that you have used on Page 3 is better than just confining yourself to the company's actual past history?
A. Yes, sir
Q. Why?
A. For this reason: We had not suffered appreciable drainage prior to about 1938. If you will look at your rock-pressure map of the Panhandle field, our acreage is the only one with the exception of a smaller part of the Cities Service in which there is practically—not practically, but close to virgin rock pressure, so it is obvious that somebody must supply the gas that has already been withdrawn from the field. Since the pressure is higher on our acreage than where it is being produced, we are going to suffer increased rate of migration.

WITNESS WATSON further testified as follows: (Vol. XXII, pp. 3079-3081.)

Q. Well, in your equitable proration program that you are contemplating, what are you doing about that so-called unoperated acreage that the company has not included in its operated acreage?
A. It is just not operated.
Q. Not operated. Well, in what leases is that acreage embraced—quite a number of them, isn't it?
A. Yes, quite a number of them.
Q. Well, what are you doing about production, are you giving those lessors any relief in production or giving them anything from the effects drainage?
A. It is not operated, therefore, that acreage is not included in the operated acreage.
Q. Why hasn't it been included in the operated acreage?

A. Because it cannot produce gas. It is not developed, not operated. How can you pro rate it if you have no means of prorating it?

Q. Now, these lessors, and they are much smaller leases in that area, aren't they, than in the operated area?

A. Oh not necessarily.

Q. Well, all right, what do you consider in your group of unoperated acreage as small or large leases?

A. I have not—

Q. Well, let's take, for instance, the Sneed lease. That is a 640-acre tract. That is classified by your company as unoperated.

A. There are several—I haven't classified the unoperated acreage. I have classified only the operated acreage. Now, if there is a difference between the total acreage held under lease and that which is operated, I do not have it. There is a difference which does not enter my figures at all.

Q. Now, what is the company's proration program that you say with reference to possible drainage from these so-called unoperated leases?

A. Well, in some instances I do know that the land owner is paid rentals—delayed rentals for the privilege—the company's privilege of not being required to drill on those leases, which I assume is in lieu of producing gas from them, so that his royalty would be a set amount rather than based on proration, and since there is no gas produced from that lease he couldn't enter into the proration picture.

Q. And you have got about 30 some odd leases, haven't you, scattered over that whole field?

A. As I remember there were originally better than 130. Now I don't recall how many there are now operated.

Q. And the compensation that those lessors get from the company, if they are in the category of so-called unoperated acreage class, is the delay rentals that you pay on the leases?

A. I said that there are some that way. Now, I do not know whether every lease is handled that way or not. Possibly there are some of those leases that were procured by other means.

Q. Then, if there is no rental paid on a lease unoper-

ated and there is drainage from that lease, there is no compensation that goes to that lessor at all?

A. If such a lease should exist, which I doubt, that would be the case.

Q. Well, why has there been no drilling on those leases and the company continues to hold them anyway?

A. Because drilling wasn't required.

Q. And those leases, then, don't get any protection under the company's equitable prorations program?

A. I presume they are protected by some other means other than including them in the proration picture.

WATSON further testified: (Vol. XXII, p. 3092.)

Q. And, of course, all of these wells—proposed wells set forth on Page 2 of this proposed program, aside from the so-called exploratory wells, are supposed to be drilled north of this staggered line, if this staggered line correctly reflects the division line?

A. That is correct.

Q. And the history of your connection with the company and its drilling program, you don't strike any dry holes for gas in that area?

A. No, we haven't drilled a dry hole within the area of which we have confined by what we call the limit of production.

Q. And that would be, if this staggered line is correct, it would be north of the extent of that staggered line?

A. The future locations would—I presume that they would be north of that staggered line if that is the limit of our production.

WATSON further testified: (Vol. XXII, pp. 3098-3101.)

Q. But when you got to the year 1947 you just made a provision for this one well ostensively to take care of the drilling requirements under that Bradley Gage lease?

A. Yes, sir. I drilled no wells for production.

Q. And that well, I suppose, you would estimate the minimum cost for that, too, as you have heretofore?

A. It would be the same cost as the other wells.

Q. Approximately what? What did you approximate the minimum cost?

A. I approximated the minimum cost including the pipe line connection and meter as $30,000.

Q. And that would be drilled sometime during 1947—proposed to be?

A. It will be drilled prior to June 1947.

Q. And no provision made for the drilling of any other wells during that time, during 1947?

A. No, sir.

Q. Is this enterprise going to come to an end in 1947?

A. I am supplying production here only in accordance with Mr. Hendee's Exhibit No. 80. As to what will happen after 1947, I haven't considered it. I could add that there was another specific well required in June of 1948, which I haven't taken into account. My estimate was based solely on Mr. Hendee's exhibit.

Q. Which goes through 1947?

A. And stops.

Q. And although it stops right at that point, you have provided an expenditure of some $30,000 sometime during that year?

A. I would have to supply all the gas for 1947 that was necessary and that well would require—that lease would require a well in order to become operative.

Q. Well, of course, there was no more looking into the future from that point on. You wouldn't want to perpetuate a lease at that late hour, would you, for the drilling of a well?

A. I don't know about that. That is what the specific lease states and that's what I presume we will do.

Q. Now, with reference to this map 93, did you indicate on that map the approximate line of division between sour and sweet gas areas, as was indicated on map 13-A?

A. According to that map, Exhibit No. 13-A, it follows the lower Hartley County line and the Oldham and Potter County line north of the location of the fault line to a point in Section 5, E L & R R R R, Block 25. From there it extends northeast and due east to a point in Section 70, F H & T C, Block 44, and from that point it extends due north beyond the limits of the map.

Q. Has there been any extreme variation in the location

of that line recently or since the time of the preparation of this map which has been revised through July 1, 1938?

A. I don't recall any change in that area on the sour gas line. I don't know whether that is the official sour gas line or not.

Q. But that is the way the Canadian River Gas Company considers it?

A. I don't know.

Q. Well, if it is reflected on Exhibit 13-A, the map I was referring to, that is the way it is projected on that map?

A. The map, Exhibit 13-A, as I have described it. We took it off that and put it on Exhibit No. 95.

Q. Now, then, in any of these proposed wells you have set forth on this list on Page 2, eliminating those so-called exploratory wells, would any of those wells in the remaining list be drilled in the sweet gas area, all of them in the sweet gas area?

A. All of them would be drilled in the sweet gas area.

Q. They would?

A. Yes.

MR. PAUL SAPP, Commission Engineer, testified as follows concerning Watson's drilling program: (Vol. C. pp. 15495-15541.)

A. My name is Paul M. Sapp.

Q. Where do you reside, Mr. Sapp?

A. Lakewood, Colorado.

Q. By whom are you presently employed?

A. I am employed by the Federal Power Commission.

Q. How long have you been so employed?

A. Since September 1938.

Q. In what capacity?

A. As Assistant Engineer.

Q. You are employed by the Federal Power Commission in that capacity at the present time?

A. Yes, sir, in the Denver regional office.

Q. During the course of your employment with the Federal Power Commission, did you at any time have occasion to do any work with the present proceedings?

A. Yes, sir, I have done considerable work.

Q. Over what period of time did you do that work?

A. It was from the middle of March 1939.

Q. What was the basic character of that work? Where was it performed?

A. I did field work in Amarillo, Texas; Austin, Texas, and certain other points in Texas, as well as Colorado Springs, Colorado.

Q. Do you have with you a statement showing your qualifications in connection with your professional work?

A. Yes, I do.

Q. Will you please read that into the record?

A. "I am a graduate of the College of Engineering, University of Southern California, with the degree of Bachelor of Science in Civil Engineering. During summer periods and at certain other times while in college, I worked as a roustabout in the oil fields at Signal Hill, Santa Fe Springs, and Huntington Beach."

Q. That is in the state of California?

A. Yes, sir.

Q. Please proceed.

A. "After graduation, I worked for a short period for the California Construction Company in Hollywood doing construction work on reservoirs, retaining walls, sound studios, and other structures.

"Later in 1929 I was employed by the City of Los Angeles in the City Planning Commission as a topographical draftsman and in the same capacity for the Department of Water and Power. My work with the City consisted of preparing maps, plans, and exhibits for use and publication in connection with lands acquired for the city aqueduct and the layout of city streets and zoning.

"In December 1929 I accepted employment as Junior Engineer for the Interstate Commerce Commission, and thereafter until September 1938, I worked for the Bureau of Valuation of the Interstate Commerce Commission in Washington, D. C. During the first five years in Washington I was engaged in preparing exhibits, analyzing maps and records, preparing inventories, making classifications, and compiling reports in connection with railroad and telegraph properties under the jurisdiction of the Commission for rate making, mortgage and other *purposes*.

"During 1934 and 1935 I was assigned to supervise under the direction of the engineer in charge, certain special re-

search problems in transportation, involving statistical studies of the extent and value of public and other lands donated to the railroads and the extent of streets and highways vacated for the benefit of the carriers.

"During 1936, 1937 and part of 1938 I was in charge of preparation of oil pipe line inventories and valuations for the Interstate Commerce Commission so far as these valuations pertained to land and land rights. This work involved the examination of deeds, leases, and other instruments; classification of land and land rights with respect to ownership and use for transportation purposes; coordinating data to be incorporated in valuation reports for rate making purposes with respect to engineering and accounting features; conferring with representatives of the oil pipe line companies; and preparing testimony for presentation in formal hearings before the Interstate Commerce Commission.

"In September 1938 I was transferred from the Interstate Commerce Commission to the Federal Power Commission as an assistant engineer. My work since March 1939 has dealt almost entirely with the properties of Canadian River Gas Company, Colorado Interstate Gas Company and Colorado-Wyoming Gas Company in connection with Dockets G-118, G-121 and G-124.

"Beginning in March 1939 and continuing to the present time, I have made a thorough study of instruments, contracts, and agreements under which Canadian River Gas Company has obtained its gas and oil rights and operates its leases."

Q. In connection with that assignment in these proceedings, have you prepared a written statement pertaining to certain of the leases of Canadian River Gas Company?

A. Yes, sir, I have.

Q. Is this the written statement I now show you?

A. Yes, this is the written statement.

Q. In connection with that written statement, did you prepare an exhibit showing in tabular form certain facts and figures that you compiled also pertaining to those certain leases of the Canadian River Gas Company?

A. Yes, sir.

The Trial Examiner: What is the title of that exhibit, Mr. Lange?

Mr. Lange: It is entitled "Classification by leases of wells alleged by the company in Exhibit No. 94 to be required during the period from 1941 to 1947, inclusive, of Canadian River Gas Company."

The Trial Examiner: Very well. It will be marked for identification as Exhibit No. 291.

(Exhibit 291, Witness Sapp, marked for identification.)

Q. Will you please read the written statement?

A. The tabulation marked for identification as Exhibit No 291, prepared by me, summarizes the claims of Canadian River Gas Company pertaining to additional wells alleged to be required during the period from 1941 to 1947, inclusive, as testified to by Mr. Max K. Watson, Assistant General Superintendent of the company, in Exhibit No. 94 and in the official transcript, pages 3007 and 3096, inclusive.

The classifications *inducated* in columns 7, 8, and 9 in the tabulation, Exhibit 291, are derived from Mr. Watson's testimony. Under cross-examination, on page 3042, Mr. Watson pointed out that as the period progresses up to 1947, the wells required to be drilled under lease obligations will also begin to come under the requirements of peak day demands.

It is my purpose at this time to deal only with the claims advanced by Mr. Watson as to specific drilling requirements in the lease instruments; that is, my testimony pertains only to the alleged specific drilling obligations stated by Mr. Watson to be *explicy* in the lease contracts. For this purpose, I shall refer to certain clauses in the various instruments, which have been marked for identification, bearing on obligations of the company to drill wells. I shall also point out certain facts relating to the renewal of expired or expiring agreements, in order to show what the practice of the company has been in the past on the expiration of leases covering unoperated tracts.

Exploratory Wells

Bivins "A"—Lease 30. It is claimed that one exploratory well is required in each of the years 1941, 1942, 1943, and 1944 under the terms of the Bivins Consolidation Agreement of May 1, 1939. Quoting the agreement, Article II, Section 3:

"Drilling Obligations. Except as to any well or wells which may be required under the provisions of Section 4 of this Article, Lessee shall not be required to drill any well or wells upon the lands embraced in the Consolidated Lease for the purpose of giving Lessor's acreage the maximum allowable of Lessee's market for gas produced in the Panhandle Gas field to which Lessor may be entitled under any proration order entered by the Railroad Commission of Texas, or any other purpose; it being understood and agreed that the income payments guaranteed by Lessee to Lessor under Section 2 of this Article shall constitute full liquidated damages and payment for Lessee's failure, or election not to drill."

Quoting Article II, Section 4:

"Drainage. Lessee shall at all times drill, operate and produce such wells upon the premises embraced in the Consolidated Lease as may be reasonably necessary to prevent undue internal drainage by Lessee as between lands embraced in the Consolidated Lease and all other lands operated by Lessee. In addition thereto, Lessee shall use its best efforts to drill, operate and produce such wells upon lands embraced in the Consolidated Lease so as to prevent undue drainage by others from such lands."

Article IV, "Undeveloped Acreage," provides in Section 2 (a) for the division of approximately 60,000 acres, referred to as "undeveloped" acreage, into six drilling units of approximately 10,000 acres each. Section 2 (b) deals with the drilling of test wells, if the drilling of such wells is undertaken. Quoting from Section 2 (c):

"with the exception of the first test well which must be commenced on or before July 1, 1939, Lessee may relieve itself of the obligation to drill any one or more of the test wells required under sub-section (b) of this Article, by adopting either of the following alternatives:

(i) By paying or tendering, on or before May 1 of any year, to Lessor or for Lessor's credit in the Amarillo National Bank, of Amarillo, Texas (which Bank and its successors shall continue as Lessor's agent and depository for any and all rentals payable under the

terms hereof regardless of any change of ownership in said land or in the gas in said land) the sum of $10,000, which payment shall operate as rental and cover the privilege of deferring commencement of drilling operations for the test well due in such year for the period of that year. In like manner and upon like payments or tenders the commencement of drilling operations for the drilling of a test well or wells as required in such year may be further deferred for like periods successively; provided that the privilege of deferring drilling operations by payment of delay rentals as herein provided shall in no event extend beyond April 30, 1944. Notwithstanding the death of the Lessor or his successors in interest, the payment or tenders of rentals in the manner provided herein shall be binding upon the heirs, devises, executors and administrators of such person.

(ii) By executing and delivering to Lessor, on or before May 1 of any year, a proper and valid instrument, releasing and surrendering unto Lessor all of its leasehold rights in and to the lands embraced in any drilling unit on which no test well has been drilled."

Performing its obligations under the foregoing paragraphs, the company drilled a test well in 1939 on Drilling Unit No. 2. This well, designated on the company's records as Biyins A-26, was a dry hole. By an instrument dated April 27, 1940, the company exercised its option under Article IV, Section 2 (c), Subsection (ii), and released Drilling Unit No. 1 in lieu of drilling another test well. The release instrument has been admitted in evidence as Exhibit No. 96.

Other Wells

Read "A"—Lease 81. It is alleged by Mr. Watson in his testimony that one well is required in 1941, one well in 1943, and one well in 1945, all to comply with lease obligations. This lease covers 4,296.9 acres situated in the proven area of the field.

The lease of March 6, 1928 contains no obligations requiring the drilling of any additional well or wells on this lease, but rentals may be paid to the lessor in lieu of drilling without time limitations. It may be noticed that rentals

are required only as to an undivided ¾ interest in certain tracts. The remaining ¼ interest requires no rentals but was fully cured by the drilling of a well in 1929 and has since been held rent free. Two producing gas wells have been drilled on the lease, which acts to reduce the rentals from $4,296.90 to $3,016.90 per annum. However, the lease contains no obligation requiring the drilling of any additional well or wells.

Thompson "A"—Lease 67. It is alleged by Mr. Watson in his testimony that one well will be required in 1942, one well in 1944, and one well in 1946, to comply with lease obligations. This lease covers 3,840 acres, wholly within the proven limits of the field. Two producing gas wells are located on the lease (Thompson A-1 and Thompson A-2). The lease of August 6, 1919 provided as follows:

> "It is agreed that this lease shall remain in force for a term of 5 years from this date, and as long thereafter as oil or gas, or either of them, is produced from said land by the lessee."

A supplemental agreement of March 19, 1926, paragraph 2, provided that annual rental payments should be made at a rate of $1.00 per acre, except that each producing well would eliminate rentals on 640 acres. The three producing wells now on the lease act to reduce the rentals from $3,840 per annum to $1,920 per annum. The three additional wells proposed by Mr. Watson would eliminate the remaining rental of $1,920 per annum. However, the lease contracts contain no obligations requiring the drilling of any additional well or wells.

E. B. Johnson "A"—Lease 92. It is claimed by Mr. Watson in his testimony that to fulfill lease obligations, one well must be drilled in 1942. However, there is already one well on this lease of 799.1 acres. The instrument itself provides that so long as gas is produced from the land by the lessee, the entire acreage is to be held free of rentals. The lease contains no obligation requiring the drilling of any additional well or wells.

J. C. Johnson—Lease 137. It is claimed by Mr. Watson in his testimony that a well is required in 1943 to fulfill lease obligations. The instrument provides that the lease may be held during its primary term, expiring December

9, 1949, by the payment of delay rentals and without drilling. However, Mr. Watson states in his testimony that it is the purpose of the company to attempt to consolidate the J. C. Johnson lease with the Holtorf lease and the Lubberstedt lease, and to drill one well on the consolidated lease. The Holtorf lease, No. 138, was released by the company on October 9, 1939 and would have expired under its own terms on November 13, 1939 unless drilled on before that date. The Holtorf lease, No. 138, has not been renewed. The Lubberstedt lease, No. 139, will expire January 26, 1944 unless drilled on before that date, but the provisions of the lease do not require that a well be drilled. Therefore, it is the Lubberstedt lease, rather than the J. C. Johnson lease which will expire unless drilled on in 1943. Mr. Watson stated in his testimony that all three leases must be drilled by 1947 if no consolidation is made. The company's records show that the company, as in many other instances, was successful in renewing the J. C. Johnson lease after the cancellation of the former lease on the acreage. The prior lease, No. 137, dated December 7, 1929, for a term of 10 years, was cancelled October 9, 1939. It would have expired December 7, 1939 under its own terms unless drilled on before the latter date. The renewal lease is for a term of 10 years from December 9, 1939.

Crawford—Lease 84. It is claimed by Mr. Watson in his testimony that a well will be required in 1943 under lease obligations. Under provisions in the lease instrument of August 10, 1933, it is a fact that the lease will expire on August 10, 1943 unless a producing well is located on the lease on that date, but the lease contains no obligation requiring the drilling of a well. Records of the company show that a prior lease, dated August 10, 1928, was for a term of five years and that Canadian River Gas Company, in lieu of drilling the lease prior to its expiration date of August 10, 1933, secured a 10-year renewal from August 10, 1933 (covering an acreage restated as 27.1 acres greater than the prior lease).

Crawford—Lease 70. It is claimed by Mr. Watson in his testimony that one well will be required in 1943 under the terms of the lease. The lease land involved covers 815.8 acres held by the payment of annual rentals of $1.00

per acre during the primary term, which expires July 30, 1943. The history of this leased acreage is as follows:

Lease No. 24 and Lease No. 34, 480 acres and 175.8 acres, respectively, were acquired by Amarillo Oil Company from Mountain States Gas Company in 1924, but were never assigned to Canadian River Gas Company.

A lease, designated as No. 70, was secured by Amarillo Oil Company on September 13, 1927, effective July 30, 1928, for a term of five years, covering the same acreage as prior Leases 24 and 34. An additional 160-acre tract was included in the lease by an instrument dated August 10, 1928. The gas rights in Lease No. 70 were assigned to Canadian River Gas Company on September 20, 1928. The company did not drill on the lease before the expiration date of July 30, 1933. Canadian River Gas Company secured a renewal of the lease as of July 30, 1933 for a primary term of five years, but did not drill on the lease before this five-year term expired. Canadian River Gas Company again secured a renewal on the 815.8 acres, effective July 30, 1938, for an additional five-year term. It is claimed by Mr. Watson in his testimony that this lease must be drilled before July 30, 1943. It is important to note the fact that the lease has already been renewed three times, and that the provisions of the present lease do not contain any obligation requiring the company to drill any well or wells.

Baker—Lease 63. It is claimed by Mr. Watson in his testimony that one well will be required to be drilled in 1945 under terms of the lease. The leased land involved covers 583 acres held by annual delay rentals of $0.75 per acre during the primary term of 10 years, which will expire as of December 8, 1945. The history of leases on this acreage since 1925 is as follows:

A lease on a stated acreage of 640 acres was negotiated by John C. Gordon, as lessee, on December 9, 1925, for a primary term of five years. On June 5, 1928, Amarillo Oil Company assigned the gas rights in 480 acres under this lease to Canadian River Gas Company. Prior to the expiration of the primary term a renewal was executed (June 20, 1929, effective December 8, 1930) covering the same described acreage as under the prior lease. The gas rights

in the entire acreage under lease, stated to be 583 acres (on October 25, 1934, effective December 8, 1935) for a primary term of 10 years. It is claimed by Mr. Watson in his testimony that under its contract obligations the lease must be drilled in 1945. It is important to note the fact that the lease has already been renewed at least three times, and that the present lease does not contain any obligations requiring the company to drill any well or wells.

Bradley—Lease 73. It is claimed by Mr. Watson in his testimony that one well will be required to be drilled in 1947 to comply with lease obligations. This lease covers 320 acres held by annual rentals of $1.00 per acre in lieu of drilling. The history of this leased acreage since 1927 is as follows:

A lease on the 320 acres was executed on October 27, 1927 with E. R. Biggs as lessee. Amarillo Oil Company assigned the gas rights to Canadian River Gas Company on September 20, 1928. Prior to expiration, which would have occurred on October 24, 1937, a renewal was executed between the lessor and Amarillo Oil Company for an additional 10-year term from August 23, 1937.

Mr. Watson stated in his testimony that the company proposes to consolidate this lease with Lease No. 72, the Gage lease (which will expire January 31, 1949 unless drilled on), and drill a well on the consolidated lease in 1947. The records show that the Gage lease was renewed in 1939. It is important to note the fact that the Bradley lease has been renewed at least once, and its provisions do not require the company to drill any well or wells."

Q. Mr. Sapp, in connection with the preparation of your written statement and the computation as set forth in Exhibit 291, did you have available and did you make an examination of all of the leases and instruments bearing on the leases throughout the entire history of these various instruments as set forth in your Exhibit 291?

A. At various times I requested of the company two copies of the various lease instruments, going back as far as Canadian River Gas Company had an interest in the leases, examining those instruments.

Q. Did you find in any of those instruments any pro-

vision giving either Canadian River Gas Company or prior lessees the option to renew any one of those leases?

A. So far as the leases which were held as of December 31, 1939 and classified by the company as unoperated, there was no such provision in those leases.

Q. And those are the leases that are set up in your Exhibit No. 291?

A. Yes, sir.

Mr. Lange: I believe that is all.

Cross Examination.

By Mr. Keffer:

Q. Mr. Sapp, you state or have just stated in your written statement that your testimony has to do only with leases referred to by Mr. Watson as requiring wells by certain dates; that is correct, isn't it?

A. Yes, sir.

Q. It has nothing to do with the wells which Mr. Watson said it would be necessary to drill for proration purposes or for peak day demands?

A. I have not covered that point at all in this exhibit.

Q. Now, Mr. Sapp, take the Bivins A lease. You take the position there in effect that the company ought to release that acreage rather than drill it, do you not?

A. No, no, sir, I don't think I would take that stand at all.

Q. You stressed the fact that the company did release one of those blocks at one time without drilling it, didn't you?

A. Yes, sir. That was to point out the provision that was available to the company in the lease.

Q. You had it already set out in the portion of the lease quoted, didn't you? Wasn't it perfectly clear it could do that?

A. It was just put in there to emphasize that point.

Mr. Lange: And that they did in fact exercise the option?

Mr. Keffer: Surely. There is no question but what you can do that.

The Witness: That is the only thing I wanted to point out there, Mr. Keffer. I don't know what the company is going to do; whether it is going to drill or not.

By Mr. Keffer:

Q. Would you take the position that they ought to pay $10,000 and defer the drilling of a well for 12 months?

A. I don't take the position here of trying to point out to the company what it ought to do at all, Mr. Keffer.

Q. What position do you take? What is the purpose of this part of your exhibit.

A. It is simply to point out the provision in the lease which allows the company either to drill on the drilling block in that porticular year or to release that drilling block, and also that this acreage is exploratory acreage or unproven acreage in the field.

Q. Then the lease does provide, as shown upon its face, that if the company doesn't drill a well in some particular year as required by the lease, then as a penalty for its failure to do so it must either pay $10,000 and defer the commencement of that well a year or else release some 10,000 acres.

A. That is true, yes, sir.

Q. That's right, and that is a pretty severe penalty, don't you think, in either event?

A. Well, it might be, if there were some good gas land down there.

Q. Well, you aren't saying it is not good gas land, are you?

A. No, I am not.

Mr. Lange: I think the record speaks for itself on that, Mr. Keffer.

Mr. Keffer: Yes, it does.

Q. As far as you know it could be some of the finest gas land in the world, couldn't it?

A. I wouldn't want to take a chance on it, Mr. Keffer.

Q. I say, so far as you know.

A. That's true.

Q. Now, Mr. Sapp, go over into the Read A lease on Page 4. You say that there is no obligation requiring the drilling of any additional well or wells on that lease.

A. So far as the present situation is concerned, that was the result of my examination, yes, sir.

Q. Now, Mr. Sapp, this may be taking an unfair advant-

ge of you, but you have entered into the field of law in this particular case, and didn't stay with your field of engineering. Have you ever heard of an obligation pertaining to an oil and gas lease as to reasonable development?

A. Yes, sir, I have.

Q. All right, you ignored the obligation of the *ead* lease to reasonably develop, didn't you? You ignored that when you said there was no obligation.

A. I'm not sure without going back and reading that lease again, whether that provision is in the lease.

Q. Well, suppose it isn't in it?

A. Well, if it isn't in the lease, I have just this to say, Mr. Keffer: I have made this examination, not from a legal standpoint. Whatever legal constructions may be put into these leases or read into them, under legal interpretations or by legal minds, I will admit that I have ignored those.

Q. Yet you are drawing legal conclusions here when you say there is no obligation requiring any more wells on that lease, aren't you?

A. So far as I can read the lease, that is a perfectly true statement.

Q. I know you couldn't construe it without entering the field of law, could you, and getting somewhat away from your profession of engineering?

A. I didn't attempt to construe it. I simply read the lease and I put down here what the lease says. As to what it means. Beyond what it says, or less than what it says, I haven't made a legal study to determine.

Q. Well, now, on that particular lease I believe Mr. Watson testified that at least one of those wells independent of the obligation to drill, it would be required to drill—to be drilled anyway, or would be drilled anyway, for production, didn't he?

A. Which year are you speaking of now?

Q. The Read lease.

A. Which year? I have those tabulated by years.

Q. That is apparently for the year 1943.

A. As I read the testimony of Mr. Watson, that was a specific lease obligation as he termed it and not a well to be required for production or proration.

Q. But he had a double-barreled theory, didn't he? He said in either event.

A. Yes, I have covered that in my written statement on Page 1. I'll quote "Mr. Watson points out that as the period progresses up to 1947, the wells required to be drilled under lease obligations will also begin to come under the requirements of peak day demands."

Q. He did make the specific statement on the Read lease that that well would be drilled anyway. He does make the statement: "It will also be necessary or advisable from an operating point of view, since located in an area that probably will give us high potential."

A. That's right.

Q. So he had two reasons for that.

A. Yes.

Q. And assuming that you might be correct, assuming for the sake of argument that you are, that the lease itself didn't require the well, yet it might be required, as Mr. Watson say it is, or advisable, at least from the other viewpoint—

Mr. Lange: Mr. Keffer, I believe he stated at the outset that he wasn't passing judgment on any of Mr. Watson's statements as to proration or production requirements.

Mr. Keffer: I understand, Mr. Lange, yet he does say that here is a well that goes over under the lease requirements, while as a matter of fact it might just as logically be placed in the other category. Do I make myself clear on that?

Mr. Lange: But Mr. Watson took that on himself to assign that as a lease requirement.

Mr. Keffer: No, as a lease requirement, and as a needed well. One just as valid as the other. That's my only point there.

Q. If it went out on his theory because the lease didn't require it, certainly it didn't go out, did it, Mr. Sapp, on Mr. Watson's theory as a requirement independent of lease requirements?

A. I don't know whether it did or not. I haven't made a study of it.

Q. I mean, just taking his statement.

A. Taking Mr. Watson's statement on its face, that would be correct, but I haven't made an examination to determine whether it is correct or not.

Q. What sort of an examination would you have made to determine that?

A. I haven't considered that enough to know at this time.

Q. Well, now, Mr. Sapp, let's turn to the Thompson A lease, No. 67. You say again there that the lease contains no obligation requiring the drilling of any additional well or wells. Now, again, let me ask you if you considered the obligation to reasonably develop the lease?

A. The same answer that I gave on the Read lease applies to this one.

Q. That you did not?

A. That is, that I only read what the lease itself said.

Q. Well now, that lease actually said that the company was obligated to reasonably develop the lease. It said it in so many words, didn't it?

A. I would have to refer to that instrument.

Q. Will you refer to it, please? that Thompson A lease, No. 67, in the contract. You referred to the contract in your statement. Will you read Paragraph 2 of the contract dated March 19, 1926, modifying the Thompson A lease and setting out more specifically the obligations under it?

A. Paragraph 2: "At the end of one year from the date of this instrument—"

Mr. Lange: Give the date of the instrument.

The Witness: It has already been given—March 19, 1926.

Mr. Lange: All right.

The Witness: —"the Panhandle Refining Company, its successors or assigns will designate 640 acres around each producing well, whether oil or gas, and the balance of the land will either be released or the respective owners will pay the lessors an annual rental of $1 per acre upon the same. The starting of each subsequent well to suspend the payment of rentals on an additional 640 acres, but rentals to be resumed in 12 months if the well is not productive, but subject to the duty of the lessee at all times to develop all said land for the production of oil or gas therefrom."

By Mr. Keffer:

Q. All right, and that lease did contain a provision to reasonably develop, didn't it?

Mr. Lange: The provision speaks for itself.

Mr. Keffer: That's right. That's correct.

Q. That is correct, isn't it, Mr. Sapp?

A. It contained that provision, yes.

Q. And you ignored that provision entirely?

A. I didn't ignore it entirely. I don't know whether that lease is not already fully developed.

Q. Well, didn't you just state that it had to have how many wells on it?

Let me ask you this: You needn't check that if it takes any time. The lease does have sections on which delay rentals are being paid in lieu of drilling, doesn't it? Isn't that correct?

A. Yes, sir.

Q. All right, now, as a matter of fact, you are familiar that on a lease of that character that the obligation to reasonably develop does prevail, notwithstanding the delay rental provision?

A. Yes, that provision is in there.

Q. Sir?

A. There is a provision there for the development of the lease, reasonably, that is true.

Q. All right.

Mr. Lange: How many wells does that lease have on it at the present time?

The Witness: It has two wells.

Mr. Lange: Producing gas?

The Witness: Yes.

By Mr. Keffer:

Q. All right, now, we'll go on, Mr. Sapp, to the E. B. Johnson, No. 92—no, by the way, before we leave the Thompson lease, Mr. Watson had also testified that two of those Thompson wells—that is, two of the wells to be drilled on the Thompson A No. 67 lease, would be required anyway, notwithstanding the lease requirements, didn't he?

Mr. Lange: Required for production or for proration?

Mr. Keffer: Production.

The Witness: Yes, that's right.

Mr. Keffer: That's right.

Q. So even if your theory should be the correct one, still if Mr. Watson's testimony is to be taken, the wells should still remain in the program, shouldn't they?

A. If his conclusions are correct, yes, sir.

Q. That's right, and you aren't passing judgment on his conclusions.

A. No, I am not. I might say in that connection; if I could, Mr. Keffer, that that Lease No. 67 has two wells on it, which would mean that each well on an average would cover 1920 acres and that there are parts of the Canadian River acreage which aren't developed nearly to the extent of 1920 acres to the well.

Mr. Lange: Mr. Sapp, I forgot to ask you, isn't there a third well on that acreage producing gas?

Mr. Keffer: I think there is.

The Witness: There was a well drilled recently on that.

By Mr. Keffer;

Q. In 1940?

A. I don't have that at this time because this study is based on December 31, 1939.

Mr. Lange: There was another well drilled in 1940 that was a producer.

The Witness: Yes, sir, and that still further reduces the acreage per well on that lease.

Mr. Lange: So there are three producing gas wells on that acreage?

The Witness: I believe that is correct.

By Mr. Keffer:

Q. Mr. Sapp, there has been introduced in this case a proration schedule which shows that that lease is prorated on one 640-acre tract for each well, doesn't it?

A. I don't quite understand that question.

Q. That is, there is allocated to each producing well on that lease only 640 acres. That is correct, isn't it?

The Trial Examiner: You mean under the provision that Mr. Sapp just read?

Mr. Keffer: Well, it is basically derived from that provision.

Q. Do you know that?

A. You mean—are you referring now to the proration schedule which—

Q. Which Mr. Watson in his testimony also gave to Mr. Lange.

A. I don't have a copy of that proration schedule here.

Q. Have you examined it?

A. Yes, I have.

Q. Doesn't it show just what I have—

A. I am not sure without going back and looking at that, Mr. Keffer.

Q. All right, we'll check that in a moment, but not just now.

Now, Mr. Sapp, you have been around oil fields long enough to know that where you pay rentals on a section of land because it doesn't have a well on it, that it follows from that that the section upon which you pay the rentals is not allocated any production?

A. That is right.

Q. That is necessarily so. All right. Then, regardless of the spacing on Canadian River acreage generally, the very provision of this Thompson lease which you have just read provides for spacing on that lease in effect of a well to every 640 acres, doesn't it?

A. That might follow eventually.

Q. Well, that is what I'm talking about, because there is a penalty as to each 640 acres upon which you do not drill, isn't there, that penalty being that $1 per acre per year rental on each of those sections that does not contain a well?

A. That is in the lease.

Q. Yes, that is in the lease; so you have, then—that is, you can't say that two wells or three wells is full development of that lease at this time, can you?

A. That would depend upon economic conditions as to whether it would be feasible for the company to drill the well or to continue to pay the rentals.

Q. All right—no, that isn't what the lease says. The lease says that they are obligated to reasonably develop, providing it is profitable to the company to do so. Isn't that right? It doesn't go that strong. Just what does it say? I have stated it much too strong.

Mr. Lange: The Examiner will read it.

Mr. Keffer: It is provided that they can market the gas at a profit, or words to that effect. The lease speaks for itself.

Q. Now, that is correct, isn't it?

A. That is what Paragraph 2 purports to show.

Q. The lease provides for a 3/16ths royalty, doesn't it? Your other statement shows that.

A. That's what I was looking for. The Thompson lease No. 67 provides for a 3/16ths royalty, yes.

Q. Have you checked our royalties enough to know that a 3/16ths royalty amounts to more in dollars and cents per acre per year than the $1 delay rental which Mr. Thompson gets on each section that is not drilled?

A. I haven't made that particular computation, no, sir.

Q. You don't know that on 3/16 leases that the royalty considerably exceeds $1 per acre, is that right?

A. I don't believe I ever computed that.

Q. All right, if it did exceed $1 per acre, then that obligation to reasonably develop is a very live one from Mr. Thompson's standpoint, isn't it?

A. It might be. If he would get more money out of it that way than through the rentals, it would be.

Q. If you were Mr. Thompson you would be raising "Hail Columbia," to get more wells on that lease so you would get more money in royalties, wouldn't you? That's just human nature, isn't it?

A. Well, if he could get more money out of it, of course it would be. I don't know how much it would mean to him without making the computation, and you would have to consider also the withdrawals from that acreage to find out what the proration to the acreage would be.

Q. The proration formula will show, which is in evidence—640 acres per well.

Now referring to your E. B. Johnson A lease No. 92, now, you say that Mr. Watson said that was a lease requirement. I think you are in error there, Mr. Sapp.

A. That was a little bit confused there in the record. As far as I could tell, that's what he meant, but it is possible that he might not have meant that.

Q. When he said that he was referring to the J. C. Johnson lease, he says: "No, no, it is on the original Johnson lease, not the J. C. Johnson lease," isn't that right?

A. The record is a little bit confusing there on that point, Mr. Keffer.

Q. Well, I think if you go back there—all right, now, you catch it here. Just look on the record here, Mr. Sapp. Mr. Lange asked Mr. Watson this question:

"Q. Let's segregate the lease obligation out for each year to be applicable.

"A. All right. In 1942 we drilled a well on the Thompson A lease which is a lease obligation as well as a peak load advantage from an operating point of view.

"Q. That is what year?

"A. In 1942.

"Q. 1942?

"A. Yes.

"Q. All right.

"A. That is the only well which was drilled as a lease obligation, the Thompson A?"

A. That's in 1942?

Q. That's right.

"Q. You mean which will be drilled?

"A. Yes, as a lease obligation in 1942. That is the only well excepting the exploratory well."

So he couldn't have been referring to the E. B. Johnson well as a lease requirement, could he?

A. It is possible that I have misinterpreted that particular point there.

Q. Isn't it rather clear that you did, Mr. Sapp?

A. The thing that confused me on it is where he says: "Not the J. C. Johnson lease," and yet he has a Johnson

lease in there. If he didn't mean the J. C. Johnson lease, there is only one that it could be and that's the E. B. Johnson lease, No. 92. He said he didn't mean the J. C. Johnson lease.

Q. When you go back it is definite that he wasn't counting the E. B. Johnson lease as a lease requirement.

A. I don't know which one he was counting, then, because he said it wasn't the J. C. Johnson lease.

Q. I know he started to say J. C. Johnson and then he changed it to the original lease. He wasn't talking about a lease requirement. He was talking about the four additional wells to be drilled in addition to the lease requirements; and he named one of them on the J. C. Johnson and changed it to the E. B. Johnson lease, and he wasn't talking about lease requirements. Isn't that correct?

A. I am perfectly willing, if Mr. Watson didn't mean the E. B. Johnson 92 lease, I'm perfectly willing to let that stand.

Q. What's wrong about it?

A. Because he says he wasn't talking about the J. C. Johnson lease.

Q. I know, but what was he talking about when he said that, if he wasn't talking about the lease requirements.

A. I think he was talking about the E. B. Johnson lease.

Q. Just above it there it shows that he wasn't talking about wells drilled by virtue of lease requirements when he mentioned the J. C. Johnson lease. That is perfectly obvious isn't it? I'll read it and see if that isn't correct. What he is talking about is the four additional wells in addition to the required wells, isn't it? What are you looking for?

A. A copy of Exhibit 95, the original exhibit Mr. Watson put in.

Q. 94 or 95? I think this is the one.

A. Yes, Exhibit 94 is the one I was looking for. I have a copy of that here now.

In 1942 Mr. Watson said that he had six wells to be drilled.

Q. That's right.

A. He said that one of these was the exploratory well.

Q. That's right.

A. He said that there were two wells on the Bivins lease 30 to be drilled for production and proration and one well on the Masterson. That accounted for four of the six.

Q. That's right. He also mentioned that there was one well to be drilled on the Thompson Lease No. 67, which was a specific lease obligation.

A. That's right. That acounted for five wells, and there was one well left to be accounted for.

Q. That's right. That's the E. B. Johnson well.

A. That is the E. B. Johnson well which under—

Q. But required for what? as a lease requirement? That's what you said. There is no argument about that. He said the E. B. Johnson well would be drilled that year, but didn't say it was a lease requirement, which is what you say. Now, isn't that correct?

A. Now, I am going to have to go back and read all of this testimony.

Q. I have already got it marked for you.

Mr. Lange: There may be other relevant testimony applicable.

The Witness: It is confusing here.

By Mr. Keffer:

Q. What is conflicting about it in your mind?

A. Because some place back here he said that there were two wells to be drilled under specific lease obligations. Now, I am going to have to go back and read all of this if you want to find that.

Q. Well, they are right here. I will show you that. I'll get it for you.

A. That's aside from the exploratory well.

Q. Oh, no.

A. Well, that's the way I read it.

Q. Well, let's see. We've got it right here.

A. I'd be glad to be cleared up on the point, if I'm wrong.

Q. All right, begin right here. That's on Page 3043 at Line 14. Now begin reading there. You've got it all right there.

A. All right.

Q. If you will read over here where I showed you, Mr.

Sapp, you will get the whole story. I hadn't noticed, but here right on your own records you say Page 3044.

A. Well, I say, it appeared to me to be confusing and I think that—I couldn't see when I was studying this thing how Mr. Watson could have meant that lease, and yet in order to cover the point I wanted to put it down.

Q. Since you have refreshed your memory on it, it appears that he didn't have that listed as a lease requirement.

A. Reading it in the light of what you said, I think that's right.

Q. Not what I said, but just reading the record.

Mr. Lange: Well, the record will speak for itself.

Mr. Keffer: All right.

Q. You did read the record, didn't you?

A. Yes.

Q. You find nothing in there where he referred to it as a lease requirement, is that correct?

A. I don't think he intended it to be a lease requirement.

Q. You didn't find anything in there where he called it a lease requirement, did you?

A. Well, it's a little bit confusing, but I think that's right.

Q. All right, that's good enough.

Now, Mr. Sapp, we go on with the remainder of these leases and to save time I won't take them up one at a time, but I am referring to the J. C. Johnson Lease No. 137, the Crawford Lease No. 84, the Crawford Lease No. 70, the Baker Lease No. 63 and the Bradley Lease No. 73. Now, every one of these leases will expire if they are not drilled in the years which Mr. Watson says they must be drilled, is that correct? You state that in your statement.

A. I don't think I stated exactly that, Mr. Keffer.

Q. All right, then, go ahead and tell me what will happen if those wells aren't drilled.

A. Of course, the lease will—of course it will expire.

Q. All those leases will.

A. All those leases will expire unless they are drilled by the time that is provided for in the lease, unless the release is renewed.

Q. All right, and Mr. Watson has correctly set up the years in which they must be drilled, is that correct?

The Trial Examiner: That is, in order to prevent the expiration?

Mr. Keffer: That's right, in order to prevent the expiration, that's right.

The Witness: I'm not sure but what Mr. Watson has put the time up on some of those because of those consolidations.

By Mr. Keffer:

Q. Well, why Mr. Watson provided for one well on, say, three or four leases, by virtue of a consolidation agreement in the leases, he necessarily had to put the well up prior to the earliest expiration date of those three or four leases.

A. Yes, he would have to do that, yes, sir.

Q. That's right, and that's the only exception, then, to the statement I have just made?

A. With that exception, I think that's correct, after checking it over.

Q. All right. Now, Mr. Sapp, are you—you are not a star-gazer, are you? You can't look at the stars and tell us what is going to happen, can you?

A. No, I can only look at the past.

Mr. Lange: He is not a geologist, either, Mr. Keffer.

By Mr. Keffer:

Q. Now, Mr. Sapp, do you know what attitude of mind Mr. Crawford, Mr. Read, Mr. Johnson, Mr. Baker, or Mr. Bradley, or any of the rest of them are going to have around 1943-1947 about renewing those leases?

A. No, I certainly don't.

Q. Do you have any idea they are going to be willing to renew them in the absence of drilling?

A. I don't know whether they are going to or not. I only know they have been willing to in the past.

Q. Mr. Sapp, you know of no one under the high Heaven can tell whether it is going to be possible to renew those leases, don't you?

A. I can only judge the future by what has happened in the past.

Q. How are you going to judge a thing like that that happened in the past?

A. When a thing happens three or four times in the past, I think it is at least possible it might happen once more in the future.

Q. It is possible, yes, but is it probable in a thing like this?

A. I think it might be even probable.

Q. Let's think of some of the things that may obtain. You know when a fellow has land that is underlaid with gas, he likes to have a well on that, doesn't he? He likes to get royalties, does he not?

A. Providing he can obtain more income from it that way than he can through his rents.

Q. Now, in the past it has been true that he can get as much income on rentals at a dollar an acre as from royalties on Canadian River acreage, isn't that true? Isn't that right?

A. I believe there have been times in the past where that is true.

Q. That is right, but we have reached the point where that doesn't appear to be true for the future, haven't we?

A. I don't know whether we have or not.

Q. Yes, you do. If you spent two years on this, you had better have done something or the Federal Power Commission might wonder what they are paying you for.

A. I think I have done something.

Mr. Lange: He said that he didn't study that production or proration.

By Mr. Keffer:

Q. As a matter of fact, if production for the future appears that it will be greater; that is, royalties on the production appears to be greater than a dollar per acre delay rental, there might be some difficulty to renew those leases the next time, don't you think so?

A. I don't know whether that point has been reached or not, Mr. Keffer.

Q. Assuming it has been reached, that would increase your difficulties when it came to obtain a renewal, wouldn't it?

A. If by drilling a well and if by producing gas from the land the income would be more than the income from rentals, of course the lessor would be more interested in having his property developed.

Q. Then as we go on with more drilling in the field and as gas leases become harder and harder to get, somebody else might decide they wanted the leases and offer a pretty substantial bonus, isn't that possible?

A. I think it is conceivable.

Q. Isn't it more or less a history of all gas fields?

A. That might apply to some of those leases, Mr. Keffer, the ones that are bordering on the north edge of the acreage. I can see some leases where other companies might have difficulty in getting in.

Q. How do you mean, difficulty in getting in?

A. Well, the Gage and Bradley leases are completely surrounded by other Canadian River acreages and I think it might be difficult for another producing company to come in there and lease that land.

Q. Could Canadian River keep them out?

A. They might be able to keep them out.

Q. How?

A. They might be able to prevent them from obtaining rights of way.

Q. How could they do that?

A. Because they have all of the adjacent lands under lease.

Q. That doesn't prevent the land owners from giving a surface right of way for a pipe line, does it?

Mr. Lange: It all depends upon what the provisions are in the leases.

By Mr. Keffer:

Q. You have checked the instruments. There is not a thing on earth that would prevent that, is there?

A. There are some provisions which might affect that in some of the leases. I would like to refer to the instruments to see what they state before I answered that.

Q. Other companies have gotten in, haven't they. Do you see this little white spot I see on the map? (Exhibit 95)

A. Yes.

Q. Here is another one (indicating).

A. It was some time ago they got in there.

Q. If they got in once, according to your theory, they can do it again?

A. I would have to stretch my theory a little.

Q. Here is a little white dot here (indicating).

A. The Panhandle Eastern has some wells down there.

Q. Here is another one they got into here, isn't that right?

A. Yes, there is a well in that tract.

Q. Here is another one where they got in here (indicating).

A. Down by the river, yes.

Q. Here is another one where they got in (indicating).

A. Those wells had quite a time.

Q. They got in all right, didn't they?

A. For all I know, they might have been in there.

Q. Here is another one where they got in (indicating).

A. It is in there.

Q. Here is another one where they got in, isn't it (indicating)?

A. Yes.

Q. And they had to cross the Canadian River lands to get in there, didn't they? Didn't they have to cross Canadian River's leases?

A. Yes, that is right.

Q. And it doesn't seem to have impeded them particularly, does it?

A. I would have to know what the history was on that.

Q. Mr. Sapp, are you predicating your position with respect to the Bradley and Gage leases, the fact that no other company would lease them or bid for them, because they are completely surrounded by Canadian River acreage? Is that your position?

A. I didn't say they wouldn't, but I said it might be difficult for other companies to get in.

Q. Practically all of your exhibit is on that order, isn't it?

A. No, sir, not all of it.

Q. What part of it isn't on that order?

A. The full purport of this exhibit was to show that

the obligations to drill wells which the testimony appeared to show didn't exist in the instruments.

Q. What obligations did Mr. Watson say did exist that you found didn't exist?

A. Every one I pointed out.

Q. Mr. Sapp, are you making that statement in all seriousness?

A. Yes, sir, I am.

Q. Mr. Watson stated that all of those leases we are referring to, seven or eight of them, would expire if they were not drilled, didn't he?

A. Yes, sir.

Q. That is the truth, isn't it?

A. Unless they are renewed.

Q. Well, there is your "might." That is what we are talking about. You are taking the position they might not expire because you might renew them. That is all under high Heaven you have said, isn't it?

A. (No response.)

Q. You can answer that. Answer me. That is all you have said, isn't it?

A. I have showed they have been renewed in the past.

Q. Answer my question. You say they might not expire in the future and in the absence of drilling because you might be able to renew them. That is all you have said, isn't it?

A. (No response.)

Q. You can say no if it isn't.

A. I don't think that covers my testimony to a full extent.

Q. All right. You state it if you will as to what the extent is.

A. I put down here a list of four wells which are exploratory wells that the company doesn't have to drill.

Q. Did Mr. Watson say that they had to drill them? He said they would have to drill them or terminate the leases or pay $10,000 for each well, didn't he?

A. If he didn't mean to say so—I don't say that he necessarily meant to say so. He left the impression the company was obligated to drill those wells.

Q. I think not, but the record speaks for itself because

the lease has been in the record all the time and always did speak for itself as far as that is concerned.

A. As for the other ones, my testimony goes just as far as my written statement says it does.

Q. Your written statement says just what I said it said?

A. I admit I can't read into the future. I don't know what the lessors are going to do, but I can only show what has happened in the past and that is all I intended to show.

Mr. Keffer: I think that's all.

Redirect Examination.

By Mr. Lange:

Q. Your examination of the past history of those leases showed they would be renewed a number of times without any wells having been drilled?

A. Yes, some of them as many as three or four times.

Q. And in each of the previous leases the similar provisions obtained, if a well were not drilled to perpetuate the lease, the lease would expire at the end of the five-year or three-year period, or whatever it was?

A. That is generally true.

Q. No well was drilled on any one lease?

A. No, sir.

Q. And they were renewed?

A. They were renewed.

Mr. Lange: That is all.

Recross Examination.

By Mr. Keffer:

Q. But you are not testifying now that they are going to be renewed or it would be possible to renew them when the next expiration date comes up?

A. Of course I am not going to testify as to what is going to happen in the future.

Q. And if they could be renewed, you don't know what it would cost to renew them, do you?

A. No, I don't know that either.

Mr. Keffer: That is all.

Mr. Lange: You do know what it has cost in the past to renew them, don't you?

The Witness: Yes, sir.

Commission's Exhibit 291 is as follows:

Federal Power Commission
Bureau of Engineering
Division of Gas Engineering

EXHIBIT NO. 291

WITNESS

DATE

Canadian River Gas Company

CLASSIFICATION BY LEASES OF WELLS ALLEGED BY THE COMPANY IN EXHIBIT NO. 94 TO BE REQUIRED DURING THE PERIOD FROM 1941 TO 1947, INCLUSIVE(A)

Item No.	Transcript Page No.	Year Wells Proposed	Lease Number	Name of Lease		Exhibit Number Assigned To Lease	Wells Required to Be Drilled to Fulfill Specific Lease Obligations		Wells Required to Be Drilled for Production and Proration
							Exploratory	Other	
(1)	(2)	(3)	(4)	(5)		(6)	(7)	(8)	(9)
		1941							
1	3007		81	Read	A	153		1	
2	3007		30	Bivins	A	147	1		2
3	3007		58	Masterson	B	148			1
		1942							
4	3014		30	Bivins	A	147	1		2
5	3043-44		58	Masterson	B	148			1
6	3044		67	Thompson	A	156		1	
7	3044		92	E. B. Johnson	A	157		1	
		1943							
8	3083-84		137	J. C. Johnson)		158)			
9	" "		138	Holtorf)		(B))		1	
10	" "		139	Lubberstedt)		158)			
11	3086		81	Read	A	153		1	
12	3087		84	Crawford		151		1	
13	3087		70	Crawford		151		1	
14	3090		30	Bivins	A	147	1		2
15	3090		58	Masterson	B	148			1
		1944							
16	3093		67	Thompson	A	156		1	
17	3094		30	Bivins	A	147	1		2
18	3094		69	Killgore	A	149			1
19	3094		58	Masterson	B	148			1
		1945							
20	3095		81	Read	A	153		1	
21	3095		63	Baker		158		1	
22	3095		30	Bivins	A	147			2
23	3095		58	Masterson	B	148			1
		1946							
24	3096		67	Thompson	A	156		1	
25	3096		30	Bivins	A	147			3
26	3096		58	Masterson	B	148			2
		1947							
27	3096		72	Gage)		158)		1	
28	"		73	Bradley)		158)			
	TOTAL NUMBER OF WELLS ALLEGED TO BE REQUIRED, 1941-1947 (37 WELLS)						4	12	22

(A) Classification derived from testimony of Max A. Watson on transcript pages indicated in column (2).

(B) No Holtorf lease in effect December 31, 1939.

47. Original Cost of Canadian's Properties at December 31, 1928, to December 31, 1939, Inclusive, and as Estimated 1940 to 1947, Inclusive. Section A.

For Canadian there was introduced and received in evidence (Vol. LIV, p. 7477) through the witness, William A. Lusk, Accountant, whose identity and qualifications are stated supra in another portion of this Record, Exhibit 183, entitled:

> "Canadian River Gas Company Original Cost of Production and Gathering Facilities at December 31, 1928 to December 31, 1939, Inclusive."

This Exhibit is prefaced by the written statement of Mr. Lusk appearing in the Record in Vol. LIII, pp. 7408, et seq. This Exhibit 183 contains six statements, numbered 1 to 6. Statement numbered 1 is a summary statement, and the other statements are the supporting statements or schedules.

This Exhibit 183 is based on the books of Canadian and reflects book entries, except as to special items explained by Mr. Lusk, as hereinafter stated, and is as follows, to-wit:

Canadian River Gas Company

Original Cost of Production and Gathering Facilities

At December 31, 1928 to 1939, Inclusive

Line No.	Account No. (Company)	Description	1928	1929	1930	1931	1932	1933
	Production System							
1	205	Leaseholds	$4,835,066	$4,766,735	$5,271,756	$5,352,827	$5,381,673	$5,398,266
2	211; 212	Gas Well Construction and Equipment	2,333,076	2,193,633	2,727,183	2,839,302	2,817,744	2,916,116
3	216	Drilling and Cleaning Equipment	-	18,013	21,684	24,113	21,048	39,842
4	209; 215; 218	Field Measuring System	34,196	30,583	32,389	43,954	45,204	45,869
5		Total	$7,202,338	$7,008,964	$8,053,012	$8,260,196	$8,265,669	$8,400,093
6		Adjustment for General Construction Cost Applicable to Net Property Additions	-	1,521	55,374	65,591	65,604	71,566
7		Total Original Cost	$7,202,338	$7,010,485	$8,108,386	$8,325,787	$8,331,273	$8,471,659
8		General Property (Allocated) (A)	36,672	36,077	35,706	39,126	40,303	41,296
9		Adjustment for General Construction Cost Applicable to Net Property Additions	-	-6	-18	30	46	87
10		Total General Property	$ 36,672	$ 36,071	$ 35,688	$ 39,156	$ 40,349	$ 41,383
11		Total Production System	$7,239,010	$7,046,556	$8,144,074	$8,364,943	$8,371,622	$8,513,042
	Gathering System							
12	206; 213; 214 221; 224	Gathering System	$1,006,268	$ 885,954	$ 922,189	$ 982,578	$1,027,468	$1,042,055
13		Adjustment for General Construction Cost Applicable to Net Property Additions	-	-	1,631	801	1,321	1,466
14		Total Original Cost	$1,006,268	$ 885,954	$ 923,820	$ 983,379	$1,028,789	$1,043,521
15		General Property (Allocated) (A)	29,891	29,837	30,425	33,023	33,940	34,337
16		Adjustment for General Construction Cost Applicable to Net Property Additions	-	-2	25	36	63	79
		Total General Property	$ 29,891	$ 29,835	$ 30,450	$ 33,059	$ 34,003	$ 34,416
17		Total Gathering System	$1,036,159	$ 915,789	$ 954,270	$1,016,438	$1,062,792	$1,077,937
18		Total Original Cost of Production and and Gathering System Property	$8,275,169	$7,962,345	$9,098,344	$9,381,381	$9,434,414	$9,590,979

Note: (A) Forward from Statement No. 3 attached

Exhibit No. 183

Statement No. 1

Canadian River Gas Company

Original Cost of Production and Gathering Facilities

At December 31, 1928 to 1939, Inclusive

1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
$4,835,066	$4,766,735	$5,271,756	$5,352,827	$5,381,673	$5,398,266	$5,403,068	$5,362,589	$5,305,263	$5,308,609	$5,328,673	$5,619,486
2,333,076	2,193,633	2,727,183	2,839,302	2,817,744	2,916,116	2,920,234	2,829,437	2,998,600	3,143,194	3,243,528	3,370,879
-	18,013	21,684	24,113	21,048	39,842	23,453	27,873	21,860	21,015	24,244	24,680
34,196	30,583	32,989	43,954	45,204	45,869	45,362	51,383	56,034	59,253	59,195	61,027
$7,202,338	$7,008,964	$8,053,012	$8,260,196	$8,265,669	$8,400,093	$8,392,117	$8,271,282	$8,381,757	$8,532,071	$8,655,640	$9,076,042
-	1,521	55,374	65,591	65,604	71,566	71,211	65,774	70,746	77,490	83,071	101,989
$7,202,338	$7,010,485	$8,108,386	$8,325,787	$8,331,273	$8,471,659	$8,463,328	$8,337,056	$8,452,503	$8,609,561	$8,738,711	$9,178,031
36,672	36,077	35,706	39,126	40,303	41,296	41,121	42,816	43,974	47,731	57,878	59,621
-	-6	-18	30	46	87	72	145	191	365	803	878
$ 36,672	$ 36,071	$ 35,688	$ 39,156	$ 40,349	$ 41,383	$ 41,193	$ 42,961	$ 44,165	$ 48,096	$ 58,681	$ 60,499
$7,239,010	$7,046,556	$8,144,074	$8,364,943	$8,371,622	$8,513,042	$8,504,521	$8,380,017	$8,496,668	$8,657,657	$8,797,392	$9,238,530
$1,006,268	$ 885,954	$ 922,189	$ 982,578	$1,027,468	$1,042,055	$1,039,916	$1,166,699	$1,178,767	$1,266,770	$1,284,256	$1,318,717
-	-	1,631	801	1,321	1,466	1,370	7,075	7,617	11,597	12,363	13,915
$1,006,268	$ 885,954	$ 923,820	$ 983,379	$1,028,789	$1,043,521	$1,041,286	$1,173,774	$1,186,384	$1,278,367	$1,296,619	$1,332,632
29,891	29,837	30,425	33,023	33,940	34,337	34,568	35,327	36,009	41,070	46,872	48,749
-	-2	25	36	63	79	86	119	148	378	632	714
$ 29,891	$ 29,835	$ 30,450	$ 33,059	$ 34,003	$ 34,416	$ 34,654	$ 35,446	$ 36,157	$ 41,448	$ 47,504	$ 49,463
$1,036,159	$ 915,789	$ 954,270	$1,016,438	$1,062,792	$1,077,937	$1,075,940	$1,209,220	$1,222,541	$1,319,815	$1,344,123	$1,382,095
$8,275,169	$7,962,345	$9,098,344	$9,381,381	$9,434,414	$9,590,979	$9,580,461	$9,589,237	$9,719,209	$9,977,472	$10,141,515	$10,620,625

Note: (A) Forward from Statement No. 3 attached

Canadian River Gas Company

Original Cost of All Properties by Systems

At December 31, 1928 to 1939, Inclusive

Item No.	Description	1928	1929	1930	1931	1932	1933	1934
	Book Costs Adjusted							
1	Production	$ 7,202,338	$ 7,008,964	$ 8,053,012	$ 8,260,196	$ 8,265,669	$ 8,400,093	$ 8,392,117
2	Gathering	1,006,268	885,954	922,189	982,578	1,027,468	1,042,055	1,039,916
3	Transmission	3,511,831	3,599,341	3,678,902	3,682,626	3,687,107	3,729,774	3,761,548
4	Total	$11,720,437	$11,494,259	$12,654,103	$12,925,400	$12,980,244	$13,171,922	$13,193,581
	General Property:							
5	Production	36,672	36,077	35,706	39,126	40,303	41,296	41,121
6	Gathering	29,891	29,837	30,425	33,023	33,940	34,337	34,568
7	Transmission	116,687	117,034	120,795	130,123	133,445	134,152	135,222
8	Total	$ 183,250	$ 182,948	$ 186,926	$ 202,272	$ 207,688	$ 209,785	$ 210,911
9	Total Book Cost	$11,903,687	$11,677,207	$12,841,029	$13,127,672	$13,187,932	$13,381,707	$13,404,492
	Adjustment for General Construction Cost Applicable to Net Property Additions							
10	Production	-	1,521	55,374	65,591	65,604	71,566	71,211
11	Gathering	-	-	1,631	801	1,321	1,466	1,370
12	Transmission	-	3,894	5,141	4,333	4,260	4,306	5,731
13	Total	-	$ 5,415	$ 62,146	$ 70,725	$ 71,185	$ 77,338	$ 78,312
	General Property:							
14	Production	-	-6	-18	30	46	87	72
15	Gathering	-	-2	25	36	63	79	86
16	Transmission	-	-6	-33	155	276	314	372
17	Total	-	$ -14	$ -26	$ 221	$ 385	$ 480	$ 530
18	Total Adjustment	-	$ 5,401	$ 62,120	$ 70,946	$ 71,570	$ 77,818	$ 78,842
	Total Original Cost of Canadian River Gas Company Property							
19	Production	$ 7,239,010	$ 7,046,556	$ 8,144,074	$ 8,364,943	$ 8,371,622	$ 8,513,042	$ 8,504,521
20	Gathering	1,036,159	915,789	954,270	1,016,438	1,062,792	1,077,937	1,075,940
21	Transmission	3,628,518	3,720,263	3,804,805	3,817,237	3,825,088	3,868,546	3,902,873
22	Total	$11,903,687	$11,682,608	$12,903,149	$13,198,618	$13,259,502	$13,459,525	$13,483,334

Statement No. 2

Canadian River Gas Company

Original Cost of All Properties by Systems

At December 31, 1928 to 1939, Inclusive

1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
$ 7,008,964	$ 8,053,012	$ 8,260,196	$ 8,265,669	$ 8,400,093	$ 8,392,117	$ 8,271,282	$ 8,381,757	$ 8,532,071	$ 8,655,640	$ 9,076,042
885,954	922,189	982,578	1,027,468	1,042,055	1,039,916	1,166,699	1,178,767	1,266,770	1,284,256	1,318,717
3,599,341	3,678,902	3,682,626	3,687,107	3,729,774	3,761,548	3,705,991	3,711,720	3,731,434	3,822,242	3,829,731
$11,494,259	$12,654,103	$12,925,400	$12,980,244	$13,171,922	$13,193,581	$13,143,972	$13,272,244	$13,530,275	$13,762,138	$14,224,490
36,077	35,706	39,126	40,303	41,296	41,121	42,816	43,974	47,731	57,878	59,621
29,837	30,425	33,023	33,940	34,337	34,568	35,327	36,009	41,070	46,872	48,749
117,034	120,795	130,123	133,445	134,152	135,222	137,053	139,017	161,573	179,289	186,229
$ 182,948	$ 186,926	$ 202,272	$ 207,688	$ 209,785	$ 210,911	$ 215,196	$ 219,000	$ 250,374	$ 284,039	$ 295,299
$11,677,207	$12,841,029	$13,127,672	$13,187,932	$13,381,707	$13,404,492	$13,359,168	$13,491,244	$13,780,649	$14,046,177	$14,519,789
1,521	55,374	65,591	65,604	71,566	71,211	65,774	70,746	77,490	83,071	101,989
-	1,631	801	1,321	1,466	1,370	7,075	7,617	11,597	12,363	13,915
3,894	5,141	4,333	4,260	4,306	5,731	3,231	3,489	4,376	8,463	8,800
$ 5,415	$ 62,146	$ 70,725	$ 71,185	$ 77,338	$ 78,312	$ 76,080	$ 81,852	$ 93,463	$ 103,897	$ 124,704
-6	-18	30	46	87	72	145	191	365	803	878
-2	25	36	63	79	86	119	148	378	632	714
-6	-33	155	276	314	372	459	555	1,563	2,386	2,736
$ -14	$ -26	$ 221	$ 385	$ 480	$ 530	$ 723	$ 894	$ 2,306	$ 3,821	$ 4,328
$ 5,401	$ 62,120	$ 70,946	$ 71,570	$ 77,818	$ 78,842	$ 76,803	$ 82,746	$ 95,769	$ 107,718	$ 129,032
$ 7,046,556	$ 8,144,074	$ 8,364,943	$ 8,371,622	$ 8,513,042	$ 8,504,521	$ 8,380,017	$ 8,496,668	$ 8,657,657	$ 8,797,392	$ 9,238,530
915,789	954,270	1,016,438	1,062,792	1,077,937	1,075,940	1,209,220	1,222,541	1,319,815	1,344,123	1,382,095
3,720,263	3,804,805	3,817,237	3,825,088	3,868,546	3,902,873	3,846,734	3,854,781	3,898,946	4,012,380	4,028,196
$11,682,608	$12,903,149	$13,198,618	$13,259,502	$13,459,525	$13,483,334	$13,435,971	$13,573,990	$13,876,418	$14,153,895	$14,648,821

Canadian River Gas Company

Allocation of Original Cost of General Properties to Systems

December 31, 1928 to 1939 Inclusive

Item No.	Account No. Company	Description	Basis of Allocation Per Cent	1928	1929	1930	1931	1932	1933
General Property									
1	223; 227	Bivins Camp	-	$117,428	$118,786	$124,358	$133,864	$137,320	$137,366
2	247; 248; 249 250; 256; 257	Other General Property	-	29,683	28,989	26,682	32,529	34,605	37,208
3	253	Automobiles and Trucks	-	36,139	35,173	35,886	35,879	35,763	35,211
4		Total		$183,250	$182,948	$186,926	$202,272	$207,688	$209,785
Transmission System Allocation (Exhibit No. 67)									
5		Bivins Camp	76.33 (A)	89,633	90,669	94,923	102,178	104,816	104,852
6		Other General Property	35.50 (B)	10,538	10,291	9,472	11,548	12,285	13,209
7		Automobiles and Trucks	45.70 (C)	16,516	16,074	16,400	16,397	16,344	16,091
8		Total		$116,687	$117,034	$120,795	$130,123	$133,445	$134,152
Allocated to Production System									
9		Bivins Camp	7.53 (A)	8,842	8,945	9,364	10,080	10,340	10,344
10		Other General Property	46.30 (B)	13,743	13,422	12,354	15,060	16,022	17,227
11		Automobiles and Trucks	38.98 (C)	14,087	13,710	13,988	13,986	13,941	13,725
12		Total		$ 36,672	$ 36,077	$ 35,706	$ 39,126	$ 40,303	$ 41,296
Allocated to Gathering System									
13		Bivins Camp	16.14 (A)	18,953	19,172	20,071	21,606	22,163	22,171
14		Other General Property	18.20 (B)	5,402	5,276	4,856	5,920	6,298	6,772
15		Automobiles and Trucks	15.32 (C)	5,536	5,389	5,498	5,497	5,479	5,394
16		Total		$ 29,891	$ 29,837	$ 30,425	$ 33,023	$ 33,940	$ 34,337

Note: (A) Percentages as developed on Statement No. 4 attached
(B) Percentages as developed on Statement No. 6 attached
(C) Percentages as developed on Statement No. 5 attached

Exhibit No. 183

Statement No. 3

Canadian River Gas Company

Allocation of Original Cost of General Properties to Systems

December 31, 1928 to 1939 Inclusive

ls of cation Cent	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
-	$117,428	$118,786	$124,358	$133,864	$137,320	$137,366	$139,637	$140,341	$142,063	$169,259	$183,023	$192,057
-	29,683	28,989	26,682	32,529	34,605	37,208	38,575	41,950	44,914	45,996	64,488	67,164
-	36,139	35,173	35,886	35,879	35,763	35,211	32,699	32,905	32,023	35,119	36,528	36,078
	$183,250	$182,948	$186,926	$202,272	$207,688	$209,785	$210,911	$215,196	$219,000	$250,374	$284,039	$295,299
33 (A)	89,633	90,669	94,923	102,178	104,816	104,852	106,585	107,122	108,437	129,195	139,702	146,597
50 (B)	10,538	10,291	9,472	11,548	12,285	13,209	13,694	14,893	15,945	16,329	22,894	23,844
70 (C)	16,516	16,074	16,400	16,397	16,344	16,091	14,943	15,038	14,635	16,049	16,693	16,488
	$116,687	$117,034	$120,795	$130,123	$133,445	$134,152	$135,222	$137,053	$139,017	$161,573	$179,289	$186,929
53 (A)	8,842	8,945	9,364	10,060	10,340	10,344	10,515	10,567	10,697	12,745	13,781	14,461
30 (B)	13,743	13,422	12,354	15,060	16,022	17,227	17,860	19,423	20,795	21,296	29,358	31,097
98 (C)	14,087	13,710	13,988	13,986	13,941	13,725	12,746	12,826	12,482	13,690	14,239	14,063
	$ 36,672	$ 36,077	$ 35,706	$ 39,126	$ 40,303	$ 41,296	$ 41,121	$ 42,816	$ 43,974	$ 47,731	$ 57,878	$ 59,621
14 (A)	18,953	19,172	20,071	21,306	22,163	22,171	22,538	22,651	22,929	27,319	29,540	30,998
20 (B)	5,402	5,276	4,856	5,920	6,298	6,772	7,021	7,635	8,174	8,371	11,736	12,224
32 (C)	5,536	5,389	5,498	5,497	5,479	5,394	5,009	5,041	4,906	5,380	5,596	5,527
	$ 29,891	$ 29,837	$ 30,425	$ 33,023	$ 33,940	$ 34,337	$ 34,568	$ 35,327	$ 36,009	$ 41,070	$ 46,872	$ 48,749

Note: (A) Percentages as developed on Statement No. 4 attached
(B) Percentages as developed on Statement No. 6 attached
(C) Percentages as developed on Statement No. 5 attached

Exhibit No. 183

Statement No. 4

Canadian River Gas Company

Basis of Allocation of Book Costs of Bivins Camp Properties

Distribution of House Occupants' Pay Roll Time (A)

House No.	Transmission (A)	Production			Gathering	Total
		Production	Field Measuring	Total		
1	100%	-	-	-	-	100%
2	50	-	-	-	-	50
3	40	60%	-	60%	-	100
4	100	-	-	-	-	100
5	-	-	-	-	100%	100
6	15	-	-	-	23	38
7	80	10	-	10	10	100
8	100	-	-	-	-	100
9	100	-	-	-	-	100
10	-	-	-	-	100	100
11	100	-	-	-	-	100
12	100	-	-	-	-	100
13	66-2/3	-	-	-	-	66-2/3
14	100	-	-	-	-	100
15	100	-	-	-	-	100
18	100	-	-	-	-	100
20	100	-	-	-	-	100
21	-	-	-	-	100	100
22	100	-	-	-	-	100
25	100	-	-	-	-	100
26	100	-	-	-	-	100
28	100	-	-	-	-	100
29	100	-	-	-	-	100
31	-	-	-	-	100	100
32	100	-	-	-	-	100
34	-	-	100%	100	-	100
35	100	-	-	-	-	100
36	100	-	-	-	-	100
37	100	-	-	-	-	100
38	-	-	50	50	50	100
39	100	-	-	-	-	100
41	80	10	-	10	10	100
Distribution of Occupancy:						
Total (Per cent)	2,331.67%	-	-	230%	493%	3,054.67%
Per cent of Total	76.33%	-	-	7.53%	16.14%	100.00%

Note: (A) As shown in Statement No. 4 of Exhibit No. 67 by W. A. Lusk

Exhibit No. 183

Statement No. 5

Canadian River Gas Company

Basis of Allocation of Book Costs of Automobiles and Trucks

Division of Property Investment at December 31, 1938

Item No.	Property Description	Transmission	Production	Gathering	Total
1	Production	-	3,203,211	-	3,203,211
2	Gathering	-	-	1,235,651	1,235,651
3	Transmission	3,635,540	-	-	3,635,540
4	Bivins Camp (A)	135,200	13,337	28,588	177,125
	Production and Gathering Property Division:				
5	Amount	-	3,216,548	1,264,239	4,480,787
6	Per Cent of Total	-	71.79%	28.21%	100.0%
	Total Property Division:				
7	Amount	3,770,740	3,216,548	1,264,239	8,251,527
8	Per Cent of Total	45.70%	38.98%	15.32%	100.0%

Note (A) Distributed in Accordance with Statement No. 4 attached

Exhibit No. 183

Statement No. 6

Canadian River Gas Company

Basis of Distribution of Book Costs of Other General Properties

Distribution of Investment in General Properties at December 31, 1938

Item No.	Account No. (Company)	Property Description	Basis of Distribution	Transmission	Production	Gathering	Total
1	247-E	General Office Structures Bivins Station Office	(A)	$ 1,276	$ 1,089	$ 428	$ 2,793
	248-E	Other General Structures,					
2		Bivins Station	(A)	9,392	8,011	3,149	20,552
3		Dalhart Tool Shed	Direct	166	-	-	166
4		Fritch Camp	(B)	-	5,985	2,352	8,337
5		Masterson Camp	(B)	-	2,668	1,049	3,717
6	249-E	General Office Equipment Furniture and Fixtures	(A)	5,174	4,413	1,735	11,322
	250-E	General Store Equipment					
7		Bivins Pipe Rack, etc.	(A)	2,425	2,069	813	5,307
8		Dalhart Pipe Rack	Direct	476	-	-	476
9		Fritch Pipe Rack	(B)	-	239	94	333
10	256-E	General Tools and Implements	(A)	3,216	2,743	1,078	7,037
	257-E	Other General Equipment					
11		Bivins Station	(A)	237	202	79	518
12		Fritch Camp	(B)	-	1,025	403	1,428
13		Masterson Camp	(B)	-	725	285	1,010
	Distribution of Investment						
14		Amount		22,362	29,169	11,465	62,996
15		Percents of Total		35.50%	46.30%	18.20%	100.0%

Note: (A) Distributed on Basis of all Property as developed on Statement No. 5 attached
(B) Distributed on Basis of Production and Gathering Property as developed on Statement No. 5 attached

In explanation of this Exhibit 183 and the six statements or schedules constituting the exhibit, Lusk testified (Vol. LIII, p. 7408, et seq.) that the exhibit shows the original cost of the properties owned by the Canadian River Gas Company situated south of the intake of Bivins which constitute generally the producing and gathering systems of the company. The cost shown on Statement 1 by Items 1 to 4, inclusive, and by Item 12 is the cost recorded on the books at the close of the respective years shown on the statement. Undistributed construction accounts have been spread to primary construction accounts by the several system groups of property as shown on the company's statement entitled, "Comparison of Fixed Capital and Notes Issued." Bivins Camp, general garage equipment consisting of automobiles and trucks, and other general property owned by Canadian River are used jointly in the production, gathering and transmission of gas. Statement 3 shows the portions of these investments allocated to each system, and Statement 1 shows the portion of these investments allocated to the production and gathering systems. Bivins Camp is allocated on a house occupancy basis into three general groups or systems shown in detail on Statement 4 which corresponds to the company distribution of each house occupant's payroll time. Autos and trucks also used by the several systems are allocated on a division of property at December 31, 1938, as shown by Statement 5. The other general property consists of general office structures, other general structures, general office equipment, general stores equipment and general tools, implements and equipment, which are also allocated to the different systems, the allocation being based on a property distribution at December 31, 1938, as shown by Statement 6. In the items, "Adjustment for General Construction Cost Applicable to Net Property Additions," there has been added incremental cost of engineering expense, corporate and administrative expense and interest. The total of these incremental costs has been applied to net book additions of fixed capital. The adoption of these general construction costs requires corresponding adjustments to operating expenses.

With further reference to Exhibit 183 Mr. Lusk testified that the words, "original cost," as used in this exhibit mean original cost to the Canadian and what that company

paid for these properties, as reflected on its books (Vol. LIII, p. 7412); that balance sheet audits have been made each year since 1935 by Arthur Young and Company, Tulsa, Oklahoma, certified public accountants. The transmission system of the Canadian is covered by Exhibit 67 and the allocation of general property to the three systems, transmission, gathering and production, and the percentages used in this Exhibit 183 and the principles of allocation are the same as used in Exhibit 67. (Vol. LIII, p. 7414.)

On cross-examination (Vol. LIII, p. 7415, et seq.) Lusk testified that "original cost," as reflected in Exhibit 183, is original cost to the Canadian, the company which now owns and operates the property, and that in construing or defining that phrase, "original cost," he has not related it to the definition of original cost, as contained in the FPC uniform system of accounts for natural gas companies.

In preparing this exhibit he was definitely and primarily concerned with the cost to the Canadian, as reflected by its books, and not cost to its predecessors. (Vol. LIII, p. 7421.) This exhibit reflects the book cost of the property and is the actual dollars paid for the property by the Canadian. (Vol. LIII, p. 7422.)

Up until about the middle of the year 1940 the company books had reflected upon them an account entitled, "Appreciation Account." (Vol. LIII, p. 7423.) That account was strictly confined to leaseholds (Vol. LIII, p. 7424) but was eliminated in 1940. The "Appreciation Account," while on the books, represented the difference between the purchase price paid by Canadian to Amarillo Oil Company for gas leaseholds in 1928 and the cost of such leaseholds to Amarillo Oil Company, as reflected on its books at the time of the transfer. This account showed so-called appreciation on operated leases at December 31, 1938, of $3,094,179.85 and on unoperated leases of $27,270.85. (Vol. LIII, p. 7427.) The amounts set forth in this "Appreciation Account" for each of the years 1928 to 1938, both inclusive, are shown in Volume LIV, p. 7452. The account was closed out at the end of 1939, and the amounts in that account were charged to the leasehold account included in Item 1, Exhibit 183. (Vol. LIV, p. 7453.)

The elimination of this leasehold appreciation account appearing on the company books for the years 1928 to 1938,

inclusive, and the removal of the amounts contained in that account to the leasehold account has not resulted in any entries in the surplus account whatsoever. The surplus account was not affected. If the Canadian had not actually paid $5,000,000 for the leaseholds and wells and if the so-called appreciation represented a writeup, it would be reflected in the surplus account. (Vol. LIV, p. 7473.) From Lusk's examination of the books and records of the company, it is disclosed without question that the company did pay the $5,000,000 for the leaseholds and wells involved. The "Appreciation Account" from what he could learn in going through the records of the company was set up purely for income tax purposes. (Vol. LIV, p. 7474.) The Southwestern Development Company and all its subsidiary companies, including Canadian, filed consolidated income tax returns with the Bureau of Internal Revenue. In 1928 when the actual transfer of the physical properties was made to Canadian, the Internal Revenue Department ruled that Southwestern Developemnt Company was not subject or liable for tax on the so-called entries between the book values of Amarillo Oil Company and the selling price, and naturally would not allow Canadian to deplete and depreciate on that so-called excess. The Bureau of Internal Revenue did not assess any tax on the profit from that sale. While Mr. Lusk had not seen the tax returns themselves, he stated his opinion as to the reason why no tax had been assessed on that profit was because on a consolidated return profits and losses between companies included in the consolidated returns would be eliminated. (Vol. LIV, pp. 7475, 7476.)

(The evidence relating to the payment of the $5,000,000 for the leaseholds and wells and related matters is fully abstracted elsewhere.)

With further reference to other items in Statement No. 1, Exhibit 183, Witness Lusk testified that Item No. 2, "Gas Well Construction and Equipment," is in accordance with the books of the company, shows cost to the company per books with one adjustment only in the gas well account appearing in every year from 1928 to 1939, which was taken out as a credit against gas wells and applied against leases; otherwise, the figures are per books for gas wells. (Vol. LIII, p. 7428.)

Item 3, "Drilling and Cleaning Equipment," is per books

unadjusted, and Item 4, "Field Measuring System," is also per books unadjusted.

The general property (allocated) items numbered 8 and 15 have been explained above.

As to Item 6 (Vol. LIII, p. 7429) and also Item 13 (Vol. LIII, p. 7434), "Adjustment for General Construction Cost Applicable to Net Property Additions," Mr. Lusk testified that it is the application of 3½% engineering and general and administrative overhead, plus 1% for interest on all of the net property additions from 1929 to 1939, and the amounts shown in Lines 6 and 13 are cumulative amounts. (Vol. LIII, p. 7429.) Mr. Lusk stated these items should have been capitalized because under the old Pennsylvania Code of Accounts and also in the new FPC Code of Accounts, and in all of the codes in existence referring to gas companies, a proportionate amount of engineering, administrative, general and all other expenses incident to construction and a reasonable amount of interest can be charged to construction. (Vol. LIII, p. 7430.) He determined 3½% to be a reasonable percentage, this being primarily his job. He stated he thinks he has followed the FPC's uniform system of accounts, page 42, paragraph 6, and particularly Paragraph B, in arriving at this percentage for engineering, general and administrative amounts and an overall 1% for interest; that such percentages are not arbitrary or unreasonable and are based upon the incremental cost for a five-year period (Vol. LIII, p. 7433); that he did not resort to the time sheets employed in the operations, but took the overall operations and the overall maintenance cost and all other expenses that are subject to administrative supervision and necessary clerical and legal assistance and found an overall per cent. (Vol. LIII, p. 7433.)

MR. LUSK, in the course of his testimony, testified as follows: (Vol. LIII, pp. 7408-7434.)

(Exhibit 183, Witness Lusk, marked for identification.)

By Mr. Spencer:

Q. Have you included in this exhibit a written statement?

A. Yes, sir.

Q. Will you read that into the record, please?

A. "This exhibit shows the original cost of the properties owned by Canadian River Gas Company situated south of the intake of Bivins which constitute generally the producing and gathering systems of the company.

"The costs shown on Statement No. 1 by Items Nos. 1 to 4, inclusive and by item 12 are the costs recorded on the books at the close of each year of 1928 to 1939, inclusive. Undistributed construction accounts have been spread to primary construction accounts by the several system groups of property as shown on the company statement entitled 'Comparison of Fixed Capital and Notes Issued.' Undistributed costs are constant each year except for minor changes in 1928 and 1929.

"Allocation of General Property

"Bivins camp, general garage equipment consisting of automobiles and trucks, and other general property described later in more detail, owned by Canadian River, are used jointly in the production, gathering and transmission of gas. The portions of these investments allocated to each system as later described, are shown on Statement 3.

"Bivins camp is allocated on a house occupancy basis into the three general groups or systems as shown on Statement 4, which corresponds to the company distribution of each house occupant's payroll time.

"Autos and trucks also used by the several systems are allocated on a division of property at December 31, 1938 as shown on Statement 5.

"The other general property consists of general office structures, other general structures, general office equipment, general stores equipment and general tools, implements and equipment. The portions allocated to each system are based on the property distribution at December 31, 1938 as shown on Statement 6.

"Adjustments for General Construction Costs

"There has been added incremental costs of engineering expense, corporate and administrative expense and interest, which are fully described and detailed in the memorandum prepared by Ford, Bacon & Davis, Inc., entitled 'Items Charged to Expense on the Books of the Canadian River

Gas Company during the period 1930 to 1939, inclusive, which should have been capitalized,' dated April 15, 1940. The total of these incremental costs have been applied to net book additions of fixed capital. The addition of these general construction costs to fixed capital requires corresponding adjustments to operating expenses.

"All Properties Owned.

"For convenience the original cost of all property owned by Canadian River Gas Company has been summarized on Statement No. 2 by systems. The details of the transmission system costs were presented in Exhibit No. 67."

Q. Now, attached to that written statement you have six separate schedules or statements.

A. There are six statements incorporated in this exhibit.

Q. Will you go through there, starting with Statement 1, and briefly describe the nature of each statement?

A. Statement 1 shows the original cost of production and gathering facilities at the end of each year from 1928 to 1939. It begins with the production system accounts, 205, leaseholds; 211 and 212, gas well construction and equipment; 216, drilling and cleaning equipment; 209, 215 and 218, field measuring system.

In addition to that on Line 6 there is an adjustment for general construction costs applicable to net property additions. Line 7 shows the total original cost of the system as per books with the adjustment for general construction costs in Line 6.

Line 8 on Statement 1 is the allocation of general property which is taken from Statement 3 shown in the Exhibit.

Line 9 is the adjustment for general construction cost applicable to net property additions which is covered in the text and also in the memorandum of April 1940 that was submitted to the Federal Power Commission.

Q. I don't know as I would go into such detail, Mr. Lusk, because I am sure Mr. Lange is going to ask you the same thing over again.

A. I will shorten it.

Mr. Lange: Go ahead and ask him the questions

Mr. Spencer: All right.

Q. Please continue.

A. Line 11 is the total production system property. Beginning with Line 12 it is the gathering system. Line 14 is the original cost of the books and Line 5 is the general property allocated; Line 16 shows the adjustment for general construction applicable to the general property, and I skipped Line 13 which is the general cost applicable to the gathering system property.

Line 17 is the total gathering system property, and Line 18 is the total original cost of the production and gathering system property.

Q. By the way, you might put in there, Mr. Lusk, what you mean by the words "original cost" as used in this study.

A. This is the original cost to the Canadian River Gas Company. It is what the Canadian River Gas Company paid for these properties.

Q. As reflected on its books?

A. Yes.

Q. By the way, I don't believe I asked you heretofore, but I will ask you the question now:

To what extent do the books and accounts of Canadian River Gas Company receive an audit by certified public accountants?

A. Arthur Young and Company certify the balance sheet of the Canadian River Gas Company each year.

Q. Have they done that for a number of years?

A. Since about 1935.

Q. You have access to their certified statements?

A. I have read their report and certified statements.

The Trial Examiner: What is the name of that company?

The Witness: Arthur Young & Company in Tulsa, Oklahoma.

By Mr. Spencer:

Q. All right, now, take Statement 2, Mr. Lusk.

A. Statement No. 2 shows all of the property of the Canadian River Gas Company, production, gathering, and

transmission. The transmission was covered in Exhibit 67 as part of the Denver line from the Bivins intake north. This statement is merely to tie in all of the property accounts of the Canadian River Gas Company.

Q. In one place?

A. In one place.

Q. Therefore, you do not have to combine Exhibit 67 and this exhibit in order to get the total?

A. No, sir, there is no necessity of jumping from one exhibit to another as it is all in Statement 2.

Q. All right.

A. Statement 3 shows all of the general property and the allocation of the general property to the three systems, transmission, gathering and production, and the percentages used on Statement 3 are shown on Statements 4, 5 and 6, under Notes A, B and C.

Q. For your basis of allocation there of percentages, does that involve the same principles that you used or employed in Exhibit 67?

A. Yes, sir. The only difference in this statement here is that we have separated the production and gathering system from Exhibit 67 which was termed south of Bivins.

Q. I see.

A. Statement No. 4 is the allocation of the Bivins camp properties on a house occupants' payroll time the same as we have done in Exhibit 67.

Statement No. 5 is also distributed, using the same method used in Exhibit 67, and this Statement No. 5 is the same as Statement No. 5 in Exhibit 67.

Statement No. 6 is the distribution of investment in general properties, general office structures at the Bivins station, and the other general structures; general office equipment, store equipment, general tools, and implements, and other general equipment as shown on the books of the company. This is all distributed on a property basis.

Mr. Spencer: That is all.

Cross Examination.

By Mr. Lange:

Q. Now, Mr. Lusk, this Exhibit 183 was prepared by you and I note on the first page of the written statement you state: "This exhibit shows the original cost of the

properties owned by Canadian River Gas Company situated south of the intake of Bivins which constitutes generally the producing and gathering systems of the company."

Is that right?

A. That is right.

Q. And constitutes all of the producing and gathering system properties of the company?

A. Including the leases, yes, sir.

Mr. Spencer: Except for the summary or recapitulation you make in Statement 2?

The Witness: I cover that next. That is for convenience, doing it that way so that you will not have to jump between Exhibit 67 and Exhibit 183.

By Mr. Lange:

Q. Now, then, you state that original cost as reflected in this exhibit is what you deemed to be original cost of the properties to Canadian River Gas Company?

A. That is correct.

Q. Is that the way you interpret that original cost as employed in this exhibit?

A. That is my interpretation of the term "original cost." That is the original cost to the company that now owns and operates the property.

Q. In construing that phrase or defining it, as you have, have you related that in any way to the definition of original cost as in the Uniform System of Accounts for natural gas companies?

A. No.

Q. Of course, you know that definition reads:

"Original cost as applied to gas plant means the cost of the property to the person first devoting that to the public service." You are familiar with that definition?

A. Yes.

Q. What is your opinion with reference to that phrase as being applicable in this instance?

A. I don't subscribe to that doctrine.

Q. You don't?

A. No, because I don't believe in it.

Q. As an accountant, don't you believe in it?

A. An accountant is entitled to his own opinion and he doesn't have to subscribe to any doctrine.

Q. You say accountants don't subscribe to that? Why?

A. Just for the reason that I don't believe in it.

Q. You don't believe in it?

A. No.

Q. You don't have any particular views about it otherwise justifying that opinion?

A. Yes, I do. In the first place "when first devoted to the public service," I don't think in this particular case it has any bearing on it because no one knows when it was actually devoted to public service.

Q. Well, why wouldn't it be possible for anyone to know those facts?

A. I don't think it is. The mere fact gas was distributed in the early days of 1920 to a pipe line doesn't necessarily mean that that gas was devoted to public service.

Q. Well, what in your opinion does the phrase "public service" apply to?

A. That is what I don't know. What is public service?

Q. You have no opinion as to how you interpret the words "public service"?

A. No. Public service is a public service. Now, a gas company or electric company or telephone company may be devoted to public service; that is, they are granted the right to serve the public.

Q. You wouldn't say that it requires some particular legislative action, either of the city, state or Federal Government, to make it necessary for the property to be devoted to public service?

A. Oh, yes. The companies ordinarily obtain a franchise to distribute their commodity to the public. Canadian River Gas Company has no franchises.

Q. You don't mean to say it is necessary to have a franchise before property can be dedicated to the public service or be used in the public service?

A. That may or may not be true. As far as the legal phraseology or the legal entanglements around a franchise, I don't know very much about that.

Q. Isn't it your opinion that property could possibly be devoted to the public service in the absence of any franchise at all?

A. It is doubtful.

Q. It is doubtful?

A. Yes.

Q. You say that it would be doubtful whether the property could reasonably be devoted to the public service unless there was a franchise?

A. That would be my construction of it.

Q. Well, supposing a company were to serve an unincorporated community that was never either in its county subdivisions, or in its municipal organization had never gotten to the point where it was either incorporated or had any kind of legal unit and there were a group of houses where people lived, stores or other places where possible gas consumers lived, resided or had their places of business, and a transmission line traversed that vicinity and those people desired to use gas and the company served them. It wouldn't be necessary to have a franchise there? No one could issue a franchise.

A. Except the County Commissioners, they might.

Q. Suppose no requirements were made by the County Commissioners for a franchise for such use?

A. The company then would be selling gas off the line, what we call high-line deliveries.

Q. You wouldn't say that gas served to those consumers there, that that wouldn't be a public use made of the gas?

A. No, I wouldn't. The company could shut that gas off at a moment's notice. I know they would.

Q. Even after putting in facilities, connected it up and served them?

A. No, they wouldn't put the facilities in. The consumers would build the line and tap off the main line.

Q. In other words, the consumers—taken for granted the consumers build the tap to the main line, the consumers all pay for their own facilities and the company would serve those consumers—there may be quite a large group of them—and either for residences, for residential use, hot water heating, for fuel, for commercial use and serve them for some time. You say that they could cut them off?

Mr. Spencer: Mr. Examiner, I have let this go on for a long time thinking maybe it would stop, but he has said he has not used the definition of original cost contained in the Uniform System of Accounts of the Commission which includes the phrase "dedicated to a public use." He has not considered that in his original cost. He so stated. He is not a lawyer and the question of whether property is

devoted to public use or not is purely a legal question depending on all the facts involved; and particularly since he has not used any such system in preparing his study, I do not see why we need to encumber the record with Mr. Lusk's opinions which may not be very good on purely legal problems.

Mr. Lange: I was just pursuing it; predicated on the basis of what the Uniform System of Accounts has to say as to how it defines original cost, and the devotion to a public service.

Mr. Spencer: He has not used it.

Mr. Lange: As an accounting matter and interrogating him as to his opinion as to the application of that in the—

The Trial Examiner: I think you are going a little beyond the accounting part of it, Mr. Lange. It is very interesting and I have enjoyed Mr. Lusk's discussion of our Uniform System of Accounts.

Mr. Lusk: I will not pursue that any further. I really wanted to see what his views are with reference both as to the term "original cost" as well as devoted to a public service.

The Trial Examiner: Very well. However, I think Mr. Lusk has stated quite definitely the use of his term "original cost" here in the manner in which he has used it.

Mr. Lange: Yes, sir.

Q. Then going back to this particular exhibit 183, Mr. Lusk, you stated in connection with this particular property covered by this particular exhibit that it was not possible to determine when it was devoted to a public service.

A. I did not make any study of that for the purposes of this exhibit.

Q. Oh, you did not?

A. No.

Q. In other words, even before you prepared this exhibit you were definitely of the opinion that it was not possible to determine the time at which the property was devoted to the public use?

A. No, I wouldn't say that. When I prepared this exhibit I was definitely and primarily concerned with the

cost to the Canadian River Gas Company, not its predecessors.

Q. You were primarily concerned with determining what the cost was to Canadian River Gas Company as reflected by its books?

A. Exactly.

Q. Then this exhibit where you set forth the items of the several properties, particularly the beginning of Statement 1 of the exhibit, "Production System and Gathering System," for each of the years and in each of the columns as set forth in that Statement No. 1, that reflects the book costs on the books? the book costs of the property?

A. It is the book cost of the property and it is the actual dollars paid for this property by the Canadian River Gas Company.

Q. By the Canadian River Gas Company?

A. Yes, sir.

Q. So then when you make the statement in your written statement and also in the exhibit in other places, labeling this as original cost, you in fact mean that that is the cost as appearing on the books of Canadian River Gas Company?

A. That is the original cost to Canadian River Gas Company.

Q. As reflected on the books of Canadian River Gas Company?

A. As reflected on the books, yes, sir.

Q. And you don't intend to give that phrase "original cost" any other implication or meaning?

A. It does not purport to mean anything else except what the Canadian River Gas Company paid for the properties.

Q. Now, in connection with the preparation of this as well as any of the other accounting exhibits in this proceeding by you, what information did you have before you as to the accounts that is designated "Appreciation Account" on the Canadian River Gas Company's books?

Mr. Spencer: May I interject there, Mr. Lange? I will say for the record now that Mr. Lusk at my request has made a complete study of original costs of the properties of Amarillo Oil Company which were transferred to Canadian River Gas Company at its inception and he will have an exhibit here on that subject in which your appreciation will be brought out. I would prefer to have you cross examine on that subject at that time.

Mr. Lange: I just wanted to ask this question about it and then we won't pursue it any further in view of Mr. Spencer's statement:

Q. Canadian River Gas Company's books do have reflected upon them an account entitled "Appreciation Account"?

A. Not now.

Q. Well, when did they have it and when did they cease having it?

A. That appreciation account was carried, as far as the leasehold was concerned, up to about 1939—or about the middle of 1940.

Q. About the middle of 1940?

A. Yes, sir.

Q. And that account was confined to leaseholds?

A. Strictly.

Q. Strictly?

A. Yes, sir.

Q. And in your exhibit that you will present you will also—or, will there be anything in that with reference to what the appreciation account on leaseholds as it had appeared on Canadian River Gas Company's books show?

Mr. Spencer: Well, if it is not in there we will supply any deficiencies to tie into this one so as to make it complete for you for that purpose.

Mr. Lange: Very well.

Q. Now, you stated that since 1940 there has been no such account on the books of Canadian River Gas Company?

A. That is correct. As a matter of fact, the general accounts of Canadian River Gas Company now have eliminated the term "appreciation of leaseholds" and they are all "leaseholds" now. The account is known as "leaseholds."

Q. Why was that change made?

A. Apparently for convenience—

Mr. Spencer: If you know, Mr. Lusk.

The Witness: Well, I don't know. Were you going to ask a question?

By Mr. Lange:

Q. At whose instance was it made? Did you have charge of that change, the making of that change?

A. No, sir.

Q. Who did?

A. I couldn't say. It probably came from somebody in New York, I believe.

Q. And did you in connection with your work inquire or have any occasion to ascertain for yourself why that change was made?

A. No, sir, I never paid any attention to it until I saw one of the statements in 1940 and I saw that the appreciation was absorbed in the leasehold account and that was the end of it.

Q. Well, this exhibit, Statement 1, is through December 1939—December 31, 1939?

A. Yes, sir.

Q. Well, at December 31, 1939 that account entitled "Appreciation" referring to leaseholds was still on the company's books?

A. That is correct.

Q. And with that particular title to it, it was entitled "Appreciation" on the company's books as of that time, or do you have your working papers to show how exactly it appeared?

A. I thought I had a 1939 statement, but I don't. It's 1938.

Mr. Spencer: It came off in 1939.

The Witness: I believe I can answer that, Mr. Lange, by making reference to a statement.

By Mr. Lange:

Q. You will make a note of that, then?

A. My recollection was it came off sometime in 1940 but I may be wrong about that.

Q. Do you know what that account contained when it was on the books?

A. Yes.

Q. What was it?

A. It was the difference—it represented the difference between the purchase price to Canadian River Gas Company and the so-called value of the leases as determined by the Amarillo Oil Company at the time of transfer.

Q. What was the actual figures that that account reflected in dollars and cents?

Mr. Spencer: As of what date?

Mr. Lange: Well, let's take it as of December 31st, 1939.

The Witness: Well, the entire leasehold account as I show it here under Account 205, is $5,619,456. That is on Line 1.

Mr. Spencer: Can you give him the so-called amount of "Appreciated"—

By Mr. Lange:

Q. Appreciation?

A. No, I can't in this schedule. I will have to look it up.

Q. You will have to work it up?

A. No, I won't have to work it up, I will have to look it up.

Q. As of December 31, 1938.

Mr. Spencer: Mr. Lange will change the question to December 31, 1938.

By Mr. Lange:

Q. That is right.

A. I can give it to you as of 1938.

Q. Yes.

A. The so-called appreciation on leases operated was $3,094,179.85, and the so-called appreciation on unoperated leases was $27,270.85.

Q. And you will get it for 1939?

A. Yes, sir.

Q. And now I will ask you—these items on Statement 1 of the exhibit following leaseholds, that is, the next one on that Statement 1, "Gas Well Construction and Equipment" throughout each of the years from 1928 to 1939, is that as per books, the cost of those items to Canadian River Gas Company, as per books?

A. Yes, with one adjustment in the gas well account.

Q. With what adjustment?

A. One adjustment in the gas well construction and equipment.

Q. When was that adjustment made?

A. That appears in every year from 1928 to 1939.

Q. And what does that consist of?

A. It is the gas department adjustment account which I have taken out as a credit against gas wells and applied against leases.

Q. And otherwise the figures are as per books for gas wells?

A. In total, yes, sir.

Q. Now, the next item on that statement, the "Drilling and Cleaning Equipment," are those as per books, unadjusted?

A. Yes, sir, unadjusted.

Q. And the fourth, "Field Measuring System," those also are as per books unadjusted?

A. Yes, sir, unadjusted.

Q. Now, these items; that is, "Gas Well Construction and Equipment," "Drilling and Cleaning Equipment," "Field Measuring System," were any of those included in this appreciation account?

A. No, sir.

Q. That appreciation account, then, as I take it, confined itself entirely to gas leaseholds?

A. Entirely.

Q. Now, your general allocation on Statement 1 of the Exhibit, that was taken from Statement 3?

A. Yes, sir.

Q. Just briefly, what method of allocation did you employ in that?

A. Well, on the Bivins camp it was allocated on a house occupancy basis, and on the other general property and on the automobiles and trucks it was allocated on a straight property basis—dollar basis.

Q. Dollar basis?

A. Yes.

Q. Going back to Item 6 of Statement 1, "Adjustment for General Construction Cost Applicable to Net Property Aditions," what is that item?

A. That is the application of 3½ per cent engineering and general and administrative overhead plus one per cent for interest on all of the net property additions from 1929 to 1939, and the amounts shown in Line 6 are cumulative amounts.

Now, all of that was covered very completely in a memorandum submitted to the Federal Power Commission in Washington on April 15, 1940.

Q. Is that what you are referring to in your statement on Page 2?

A. Yes, sir.

Q. Where you have referred to the memorandum entitled "Items charged to Expense on the Books of Canadian River Gas Company during the period 1930 to 1939, inclusive which should have been capitalized"?

A. That is the memorandum I refer to.

Q. Now, then, why do you say those items should have been capitalized?

A. Well, under the old Pennsylvania Code of Accounts and also in the new Federal Power Commission Code of Accounts a proportionate amount of engineering, administrative, general and all other expenses incident to construction and a reasonable amount of interest can be charged to construction. I think all of the codes ever in existence referring to gas companies contains those clauses.

The Trial Examiner: You think that provision of the code is all right, do you, Mr. Lusk?

The Witness: Well, I subscribe to that, yes, sir. There are certain features of the new code that I don't subscribe to.

By Mr. Lange:

Q. Now, what percentages did you employ?

A. Three and a half per cent for engineering, general administrative and an overall one per cent for interest.

Q. What basis did you have for employing each of those percentages?

A. We developed in this memorandum an incremental cost between years of three and a half per cent for corporate and engineering cost and interest during construction of one per cent. That is shown on Page 6 of this memorandum.

Q. Who in the organization determined the percentages that they believed reasonable or applicable under such conditions?

A. Well, it is primarily my job. I made the entire re-

port up in the field, and it was sent to New York to be typed and before it was submitted to the Federal Power Commission it came back to me in the field for approval.

Q. Then you reached that conclusion yourself as to the correctness of those percentages as being applicable here?

A. No, the reasonableness of those percentages.

Q. The reasonableness of those percentages?

A. Yes, sir.

Q. Do you have a copy of the Uniform System of Accounts here, Mr. Lusk?

A. The new Federal Code?

Q. Yes, sir.

A. No, sir.

(The document referred to was passed to the witness.)

By Mr. Lange:

Q. Turn to Page 42, Mr. Lusk, under the instructions of gas plant account.

A. Yes, sir.

Q. Paragraph 6, "Overhead Construction Costs."

"All overhead construction costs, such as engineering, supervision, general office salaries and expenses, construction engineering and supervision by others than the accounting utility, law expenses, insurance, injuries and damages, relief and pensions, taxes, and interest, shall be charged to particular jobs or units on the basis of the amounts of such overheads reasonably applicable thereto, to the end that each job or unit shall bear its equitable proportion of such costs and that the entire cost of the unit, both direct and overhead, shall be deducted from the gas plant accounts at the time the unit of property is retired."

What is your opinion with reference to that?

A. Well, I think I have followed that.

Q. Well, you—

A. That is only the last paragraph there relates to retirements. I am not talking about retirements; I am talking about additions.

Q. That is right. Now let us go further to the sections that are really applicable. Paragraph B, that's the one:

"The instructions contained herein shall not be inter-

preted as permitting the addition to gas plant accounts of arbitrary percentages or amounts to cover assumed overhead costs, but as requiring the assignment to particular jobs and accounts of actual and reasonable overhead costs."

What is your construction of that paragraph?

A. Well, that is exactly what we have done here. We have not assigned any arbitrary or unreasonable costs. It is a pure arithmetical derivation of certain overhead costs between years.

Q. And in what fashion did you arrive at those particular percentages, or what bases did you use to compute them?

A. Well, we took the incremental cost between certain periods—between 1935—the five-year average between 1933 and 1936 and arrive at 3.49.

Q. Did you in arriving at that have available and make use of any of your records as to the time cost—the time sheets employed in the operations?

A. No, I did not resort to that at all. I took the overall operations and the overall maintenance costs and all of the other expenses that are subject to administrative supervision and necessary clerical and legal assistance and found an overall percent.

Q. Did you know exactly the amount of time actually devoted to each of those items on the job?

A. No; if I had known that there wouldn't be any necessity of setting this up. It would have been charged directly to construction at the time.

Q. And that was not available?

A. Not that I know of. There wasn't any overhead or interest added in either of the accounts of Canadian River Gas Company or the Colorado Interstate Gas Company for administrative, legal and other general supervision since 1928.

* * * * * * *

MR. LUSK further testified: (Vol. LIV, pp. 7473-7476.)

By Mr. Spencer:

Q. Now, Mr. Lusk, Mr. Lange has asked you some questions about a so-called leasehold appreciation account appearing on the books of Canadian River Gas Company for

the years 1928 to 1938, inclusive, and you have given the figures applying in such an account, have you not?

A. Yes, sir.

Q. I will ask you if the entries in that particular account resulted in any entries in the surplus account whatsoever?

A. None whatever. The surplus account was not affected.

Q. I take it if the Canadian River Gas Company had not actually paid $5,000,000 for the leaseholds and the so-called appreciation represented a writeup, it would be reflected in your surplus account, would it not?

A. If the Canadian River Gas Company attempted to write the value of any of that property up it would be reflected in the surplus account.

Q. You understand that the account was set up in this way for the purpose of carrying out an agreement with the Bureau of Internal Revenue with respect to income taxes.

Mr. Lange: Whatever he knows as a matter of fact—

Mr. Spencer: I will turn the question around.

Q. What do you understand was the purpose for setting up this particular account in this fashion?

A. When the Canadian River Gas Company purchased several gas and oil leases for the sum of approximately $5,000,000 the accounts were so restated on the books of the Canadian River Gas Company to show a so-called leasehold appreciation account which from what I can learn and from going through some of the old records of the company, was set up purely for tax purposes.

Q. As far as you know—strike that.

From your examination of the books and records of this company, it discloses without question that the company did pay the $5,000,000 for the leaseholds involved?

A. I don't think there is any dispute about that.

Mr. Spencer: That is all.

The Trial Examiner: Do you have any further questions, Mr. Lange?

Mr. Lange: Yes.

Recross Examination.

By Mr. Lange:

Q. You referred to the phrase "set up for tax purposes;" just how would you define that?

A. Well, the reason that was set up for tax purposes, all I can learn in going through some of the old records in 1928, 1929, and '30, was that there were consolidated returns.

Mr. Spencer: What do you mean by consolidated returns?

The Witness: The consolidated return is where several companies consolidated in a group for their tax returns.

By Mr. Lange:

Q. Canadian River Gas Company and Southwestern Development Company?

A. Yes, sir.

Q. And all other subsidiaries of Southwestern Development Company?

A. That is right.

Q. They consolidated their tax returns in the report to the Bureau of Internal Revenue?

A. That is correct.

Q. And in what respect did this item have to do with it?

A. In 1928 when the actual transfer of the physical property was made the Internal Revenue Department allowed the Southwestern Development Company or, ruled, rather, that the Southwestern Development Company was not subject or liable for tax on the so-called entries between the book values and the selling price, so naturally the Internal Revenue Bureau was not going to allow the Canadian River Gas Company to deplete and depreciate on that so-called excess.

Q. Did the Bureau of Internal Revenue assess any tax on that profit from the sale?

A. No.

Q. Do you know why they didn't?

A. No, sir, I don't. It was probably because it was through the medium of consolidated returns. That is the only answer I could give you.

Mr. Spencer: In other words, Mr. Lusk, on a consolidated return profits between companies included in the consolidated returns would be eliminated?

The Witness: That is correct.

Mr. Spencer: And, likewise, the losses?

The Witness: That is correct.

By Mr. Lange:

Q. Of course, you don't know of your own knowledge?
A. No, I haven't seen the tax returns made in those years.

For Federal Power Commission there was identified (Vol. XXXVIII, p. 5148) and received in evidence (Vol. LXXXXI, p. 13854) Exhibit 146, prepared by Witnesses Luttring and Teel. This exhibit was admitted in evidence over the objections of Canadian and Colorado Interstate (Vol. LXXXXI, pp. 13851-13854), which objections were as follows:

Mr. Spencer: The first objection I want to state to all of these exhibits, is in so far as they involve depreciation and depletion taken from Mr. Hammer's calculations and figures in Exhibits 179 and 180, and I want to renew the objections to each one of these exhibits that have been made to Mr. Hammer's exhibits themselves. May that be understood without repeating it each time?

The Trial Examiner: Yes, I think so.

Mr. Spencer: Then this further statement with reference to Exhibit 146 at the moment: In addition to the general jurisdictional objection set forth in the respondent's amended answer filed in these proceedings and also the general jurisdictional objection reserved by the respondent company, at the opening of this hearing, Canadian River Gas Company and Colorado Interstate Gas Company jointly and separately object to the introduction of Exhibit 146 and each separate item therein contained.

The examination of witnesses has shown the date as a whole contained therein is irrelevant and immaterial to the issues in these proceedings and that certain of the data

contained therein and related thereto has not been properly computed or determined for any purpose. Without any way limiting the generality of the above objection, counsel desires specifically to mention the following points:

1. The Natural Gas Act excludes jurisdiction over production and gathering. The data contained in the exhibit which relates to that part of the business of Canadian River can have no bearing upon this proceeding since the Commission is without jurisdiction over that part of the company's operations.

2. The contract of January 3 1928 between Canadian River and Colorado Interstate is the determining factor in fixing the price of gas sold by Canadian River to Colorado Interstate and any consideration by the Commission of original cost data is irrelevant and immaterial because the contract is binding and cannot be legally disregarded by the Commission.

3. As disclosed by the examination of the witnesses who prepared Exhibit No. 146 the same is not prepared pursuant to instructions contained in the Code of Accounts as established by the Federal Power Commission but represents adjustments and reclassifications based entirely upon the personal opinion of the witnesses. The exhibit, therefore, does not properly show or reflect the original cost of the properties of Canadian River as required by the Commission's Code of Accounts.

4. The examination of witnesses has disclosed numerous errors in basic information which is the basis of some of the adjustments made and the lack of knowledge on the part of the witnesses of facts essential to support the changes made by the witnesses. These errors were not separated from the exhibit in such a way as to permit the remaining portions that are unobjectionable.

5. The exhibit is not an accounting analysis based upon accounting principles or upon the Code of Accounts established by the Power Commission but represents the conclusions of the witnesses as to what should be done purely for rate case purposes. Both witnesses have admitted they have no qualifications as rate experts and no previous experience in such matters; therefore, the con-

clusions of the witnesses as expressed in these entries are inadmissible because the witnesses are not qualified to express such opinion.

Mr. Lange: Mr. Examiner, the Commission when it entered its order of investigation in this docket G-114, spelled out I think very clearly what the scope of the investigation is to be. There is no question in my mind but all matters relevant and material to the matters set up in the Commission's order are relevant and material here. I don't believe there is anything in Exhibit 146 that goes beyond that, and I move the admission of the exhibit.

The Trial Examiner: The objection stated by respondent's counsel I might say is an all-embracive one and will require considerable study on the part of the Examiner to determine the merit or demerit of the objection. That will be done in time and the Examiner is inclined to admit the exhibit in evidence at this time and in the event that merit is found in the objection of respondent's counsel, it will be given consideration at the time the proceeding reaches the point of ultimate conclusion.

Therefore, the objection will be overruled and Exhibit 146 will be received.

(Exhibit 146, Witness Luttring, received in evidence.)

On page 64 of this Exhibit 146 "Total Gas Plant Accounts" are stated to be $14,519,788.71, per books as of December 31, 1939. This is exclusive of construction work in progress in the amount of $150,582.36.

These book figures for Gas Plant Account as of December 31, 1939, are in accord with the book figures as shown by Canadian's witness Lusk in Exhibits 67 and 183 supra. However, for reasons assigned in the written statement accompanying the exhibit and in connection with cross-examination, as hereinafter set forth, the amount of $4,596,458.77 was removed from the plant accounts by Luttring and Teel as constituting improper items of cost of plant. These adjustments are eliminations by Luttring and Teel from the gas plant accounts, as shown by the company's books as of December 31, 1939, to arrive at original cost, and consist of the following:

1. The elimination of $121,786.50, representing the alleged excess paid by Canadian to Master Oil and Gas Company (hereinafter referred to as Master) for two leases and two gas wells, over and above the alleged cost of these leases and wells to Master (Entry 200).

2. The elimination of $151,591.23, representing, as stated in the exhibit, "payments for renewals and rentals on leases." (Entry 201.). (This elimination was not allowed by the Commission, and consequently the evidence relating thereto is not set forth in this printed record.)

3. The removal of $128,534.04, which was said to constitute a write-up of the properties at the time Jones and Associates sold their interest in certain properties to Mission Oil Company (hereinafter referred to as Mission), or the alleged excess cost which was shown on the books of the Amarillo Oil Company over and above the cost to Jones and Associates at the time Mission was given 50% of the stock of the Amarillo Oil Company for Mission's interest in this property (Entry 203).

4. The elimination of $439,229.54, claimed to be the profit from the sale of the Cliffside property to the United States Government. (Entries 204 to 210, inclusive.) (This elimination was not allowed by the Commission, and consequently the evidence relating thereto is not set forth in this printed record.)

5. The elimination of $3,120,496.25, representing the alleged excess of cost to Canadian over and above the cost to Amarillo Oil of certain leasehold rights, gas wells and properties (Entry 211).

6. The elimination of $80,952.45 from the gas plant account, and transferred to a plant account called "Gas Plant Held for Future Use," involving two wells thought by the witnesses not properly included in the gas plant account (Entry 225). (This elimination was not allowed by the Commission, and consequently the evidence relating thereto is not set forth in this printed record.)

7. The elimination of $555,867.62, Interest During Construction (Entries 246 to 249, inclusive).

8. The elimination of $1,176.34 from gas plant account and transferred to Other Property (Entries 232 and 243), involving, in the case of Entry 232, land not presently used in gasoline operations, and Entry 243, farm land acquired in connection with rights of way.

Various entries aggregating $3,175.20, and involving charges and credits ranging from an adjustment for well costs charged off to expense in 1923 by Amarillo Oil Company (Entry 229), to a re-allocation of overhead charges in connection with the purchase of the Clayton Lateral in 1933, resulting in an addition to the plant account in the amount above stated.

Commission witnesses, CARL E. LUTTRING and LLOYD G. TEEL, testified as follows: (Vol. XXXVIII, Official Transcript, pp. 5145-5159.)

Q. Please state your name.

A. Carl E. Luttring.

Q. You're presently employed by the Federal Power Commission?

A. That's right.

Q. In what capacity?

A. As a Senior Examiner.

Q. What is your profession?

A. My profession is accounting.

Q. How long have you been employed by the Federal Power Commission in that capacity?

A. Since May 1st, 1939.

Q. Have you since the time of your employment with the Federal Power Commission had occasion to work on any accounting matters in connection with this present proceeding?

A. Yes, sir.

Q. When did you get the assignment?

A. I got that assignment on May 4th, 1939.

Q You got the assignment on May 4th, 1939?

A. Yes, sir.

Q. Since that time, what portion of your time have you devoted to that assignment?

A. All but about four months.

Q. During that period of time while working on this

assignment, have you had occasion to examine the books and records of Canadian River Gas Company?

A. I have.

Q. In connection with such examination and in connection with this assignment, did you prepare an exhibit presenting the gas plant account and examiner's adjustment for Canadian River Gas Company?

A. Yes, sir, I have.

Q. Before I have you identify that, I want to know whether in connection with your work as an accountant, have you prepared a statement showing your qualifications?

A. Yes.

Q. And the work you have been performing?

A. Yes. Do you wish me to read that into the record?

Q. Yes, please read that into the record.

A. During the period from December 1, 1921 to November 30th, 1927, I was associated with Messrs. Haskins & Sells, Certified Public Accountants. The two latter years of this association were spent as a senior accountant on the examination of public utility holding and operating companies.

During the period from December 1, 1927 to August 15, 1935 I was Treasurer of Central States Edison Company, a holding company operating twelve public utility companies which rendered electric, gas and water service. All financial matters and records were under my supervision as well as devising the system by which the records were kept.

During the period from November 15th, 1935 to May 1st, 1939, the date of my association with the Federal Power Commission, I was asociated with Arthur Andersen & Company, Certified Public Accountants, as a senior accountant, and engaged in the examination of both public utility holding and operating companies and others.

Q. You stated that since what month in 1939 you have been engaged in the work on this assignment?

A. May 1939.

Q. And during the time that you did work on this assignment you had occasion to examine the books and records of the company at which of their offices?

A. At Colorado Springs, Colorado.

Q. Colorado Springs, Colorado?

A. Yes.

Q. Now, then, and in the preparation of this exhibit in connection with this assignment, what other books and records, if any, of the company did you have occasion to examine?

A. In the study of original costs it was necessary to examine the books and records of predecessor, or associated companies. Some of those records were located at New York City; Kansas City, Missouri; Independence, Kansas, and Amarillo, Texas.

Q. And you did, in fact, make an examination of those records at those places?

A. At the places I stated yes.

Q. In connection with the preparation of this exhibit?

A. Which is in connection with the work that is in this exhibit.

Mr. Lange: I will have the reporter mark this exhibit for identification.

The Trial Examiner: It will be marked for identification as Exhibit No. 146.

(Exhibit 146, Witness Luttring, marked for identification.)

By Mr. Lange:

Q. Mr. Luttring, I will ask you whether in connection with this work, and particularly in the preparation of this exhibit, any other member of the staff of the Federal Power Commission worked with you or prepared a part of the exhibit; if so, what part?

A. In addition to the work which I directly contributed to this exhibit there was work prepared and contributed by Lloyd G. Teel.

Q. Is he an accountant on the staff of the Federal Power Commission?

A. He is also an accountant on the staff of the Federal Power Commission.

Q. Did you in connection with the preparation of this exhibit also prepare a written statement which gives the substance of the main portions of the exhibit?

A. I have.

Q. Do you have that written statement here?

A. Yes.

Q. Will you please read it for the record?
A. Yes.

"This report sets forth the investment of Canadian River Gas Company in gas plant, as of December 31, 1939. By account classification it shows the value of that plant per the company's books, a series of adjustments made in journal entry form, and the gas plant investment after the application of the adjusting entries. It also shows components of cost of the several classes of plant.

"The adjusting entries forty-eight in number, are given on Pages 1 to 58, inclusive. They are of two kinds: those that reclassify plant by transfers of amounts from one plant account to another, which entries are denoted by the letter 'R' prefixed to the numeral, and those that involve contra accounts other than plant accounts. The purpose of the entries is to adjust plant accounts so that they will more nearly reflect the legitimate original cost of gas plant. The explanation given as a part of each entry states the reason and basis for each adjustment. Entries Nos. 200 to 219, inclusive, which relate to leaseholds and other production cost items, were prepared by Mr. Luttring * * *"

Q. That is yourself?
A. Yes.

"* * * the others were prepared by Mr. Teel.

"Following the adjusting entries, Pages 59, 60, and 61 reflect the suspensions which have been made for Commission's consideration. The suspensions consist of:

"1. Ford, Bacon & Davis, Inc. fees and related charges	$172,778.33
"2. Purchase commissions paid to Standard Oil Company of New Jersey	14,179.63
"Total	$186,957.96

"The reasons for these suspensions are explained on the above-numbered pages (59, 60 and 61) of the report.

"Next in order on Page 62 appears Schedule No. 1. This tabulation shows by plant accounts, grouped according to functions of the property they represent, the following:

the investment per books as of December 31, 1939, the total amount of Examiner's debit and credit adjustments, the adjusted investment accounts as of December 31, 1939, and a list of amounts included in the adjusted investment account which are Suspended for Commission's Consideration. These elements are explainable as follows:

"(a) The investment per book is, with one exception, grouped according to the company's classification. We have classified Field Measuring Stations as Other Field Facilities.

"(b) The Examiner's Adjustments are the total debits and credits for each plant account taken from a recapitulation of the forty-eight adjusting entries shown in Schedule No. 1-A; the difference between total credit adjustments of $5,131,036.24 and total debit adjustments of $4,708,587.14, or $422,449.10, is charged to Miscellaneous Income Deductions ($873,801.03) and credited to Surplus ($396,613.11) and to non-Gas Plant Accounts ($54,738.82) as set forth in Columns 13, 14 and 16, respectively, of Schedule No. 1-A.

"(c) The adjusted Plant Investment (Schedule No. 1, Column 7) is the amount, subject to the suspensions shown in Column 8, that is recommended to the Commission for acceptance as the original cost of the company's property.

"(d) The amount suspended for Commission's consideration, $186,957.96, is shown in Column 8, together with the distribution to the various plant accounts.

"Schedule No. 2, which supports Operated and Unoperated Acreage Leaseholds shown in Schedule No. 1, sets forth in summary fashion the book cost of all leaseholds, the 'Appreciation' set up for those leaseholds ($3,120,496.25) on the books of the company, and the Examiner's Adjustments. Among the leaseholds are leaseholds acquired from Amarillo Oil Company and its predecessors as part of a $5,000,000 transaction, in excess of their original cost. The amount of this 'Appreciation' representing no cost to or expenditure by Amarillo Oil Company or its predecessors, is $3,493,597.65, and by adjustment entry it has been transferred by the Examiner from the Leasehold and certain Income Accounts to the Gas Plant Adjustment Account. The adjustments to this account comprise the major part of the Examiner's adjustments; Leaseholds, Operated and Unoperated, have been reduced by adjustment, $4,253,482.13.

"Schedule Nos. 2-A and 2-B, which support Schedule No. 2, show for Operated and Unoperated Leaseholds, respectively, in dollars, by Lease Number, the balance in the account as of December 31, 1928, Additions, Transfers, Abandonments, and the balance in the account as of December 31, 1939.

"Schedules Nos. 2-C, 2-D, and 2-E show the manner in which the company computed accrued depletion and depreciation to December 31, 1927, for the purpose of adjusting the Reserves for Depletion and Depreciation. The effect of the computations on the Leasehold Account is set forth in Schedule No. 2. The last columns of Schedules Nos. 2-C and 2-D show by leases the makeup of the amount to which the Reserve for Depletion was adjusted ($66,929.97) by the company (cf. Company adjustments, Sheet 2, Schedule No. 2), and similarly, Schedule No. 2-E shows the amount to which the Reserve for Depreciation was adjusted by the company (cf. Company Adjustments, Sheet 2, Schedule No. 2).

"Certain facts relative to the company's Reserves for Depletion and Depreciation need explanation. Canadian River Gas Company acquired most of its leaseholds from Amarillo Oil Company as of May 1, 1927. Nevertheless, Amarillo Oil Company continued to operate certain of the wells and leases purchased from them by Canadian River Gas Company until June 1, 1928. In setting up depletion and depreciation, Canadian River ignored the fact that accruals for those items had been made in 1928 by Amarillo Oil Company and set up in its own expenses $41,960.01 and $50,094.67 for Depletion and Depreciation, respectively. Its accounting for these items has been adjusted in Adjusting Entry No. 248.

"Schedule No. 2-F shows by lease number the operated and unoperated acreage under lease to Canadian River Gas Company and the holders of the oil rights of that acreage. Parcomis Oil and Gas Company has oil rights to 297,594 of the 324,997 acres held under leasehold by Canadian River Gas Company, and the oil rights to the remainder, with the exception of the oil rights to 11,842 acres, which Canadian River retains, are held by seven other companies.

"As Schedule No. 2 and its subschedules support with

details the company's investment in Leaseholds, so do Schedules Nos. 3 to 15, inclusive, and their subschedules support the company's investment in other classes of gas plant shown in Schedule No. 1. These supporting schedules show the investment costs classified by subaccounts, by items of property, such as by each well and line for Gas Wells and Field Lines, and by elements of cost, which, in most instances, are shown as materials, labor, and miscellaneous and overhead.

"Certain adjustments of the Investment in Gas Plant made by the Examiner particularly call for mention or explanation.

"Adjusting Entry No. 203, which transfers the cost of drilling certain wells from Operated Leases to Gas Well Investment, and also transfers the cost of Amarillo Oil Company's acquiring the net assets of Mission Oil Company in excess of original cost from Operated Leases to Gas Plant Adjustment Account, wa prepared from information obtained by means of an examination of the books and records of Mission Oil Company and others at Kansas City, Missouri. Amarillo Oil Company and Mission Oil Company were subject to common ownership and each had an equal interest in the operation of certain wells and leases in the Amarillo gas fields as set forth in an agreement dated November 20, 1918. As of January 16, 1923, the interest of Mission Oil Company was acquired by Amarillo Oil Company in consideration for the issuance of fifty per cent of its capital stock to Mission.

"Adjusting Entries Nos. 204 to 210, inclusive, relate to the adjustment of the company's treatment of the sale to the United States Government of certain helium bearing acreage known as the Cliffside Structure. This series of entries may be combined into the following composite entry:

"Surplus	~~$300,539.22~~	
"Gas Plant Adjustment	187,904.20	
"To operated leases		$439,229.54
"Reserve for depreciation		10,992.50
"Reserve for depletion		38,221.38
	~~$488,443.42~~	$488 443 42

"By these entries Gas Plant Adjustment Account is debited with the excess of the price paid by the Canadian River Gas Company for the acreage sold to the United States Government over a portion of the cost of that acreage as shown on the books of the Amarillo Oil Company, an affiliate, and Operated Leases Account is credited with the recorded profit on the sale, $439,229.54.

"The Examiner's entries reduce the Leasehold Account by the amount of the recorded profit on the transaction, and the Surplus Account by so much of that profit as is reflected in it, and set up the profit made by the affiliated Amarillo Oil Company in selling the Cliffside Structure Leaseholds to Canadian River Gas Company in the Gas Plant Adjustment Account; the credits to the Reserves for Depreciation and Depletion restore to these reserves amounts representing investment in gas well equipment and cost of drilling erroneously charged against them in connection with the sale, in 1930.

"Adjusting Entry No. R-227 eliminates from Gas Well Investment $496,198.55 of estimated costs by transferring them to the Gas Department Adjustment Account. This amount had been reduced on the company's books by actual costs of $5,384.81 as shown on Adjusting Entry No. R-228. The net effect of these two entries, R-227 and R-228, is to clear the Gas Department Adjustment Account as recorded on the Company's books. The actual costs on these wells enter the Gas Well Investment Account by means of Adjusting Entries Nos. 202 and 203.

"Adjusting Entries Nos. R-233, R-234A, R-234B, R-235, R-237, R-238, 251 and 252, carry out recommendations of the Bureau of Engineering of the Federal Power Commission.

"Adjusting Entries Nos. 246, 247, 248 and 249 involve the revision of Interest during Construction, which has been adjusted downward, from $556,897.95 to $1,030.33, for the reason that the amount of Interest during Construction as developed by the company was predicated upon an incorrect construction cost base and period of construction, and did not contain an allowance as an offset against interest charges of the proper amount of revenues received during the period of construction.

"Except for initial construction in 1927 and 1928 the company capitalized no Interest during Construction and the Examiner, following the company's policy in this respect, has likewise made no allowance for Interest during Construction for plant constructed subsequent to the period of initial construction. Interest during Construction, as revised, consists of:

"(a) interest as computed in Schedule No. 13-B3, $460,435.85, less (b) operating revenue from properties acquired from Amarillo Oil Company as of May 1, 1927, $214,552.27, and (c) interest computed on that part of the value of leaseholds acquired from Amarillo Oil Company as of May 1, 1927, that represents 'Appreciation,' $244,853.26.

"Schedules Nos. 13-B1 and 13-B2 present Interest during Construction per books and a comparison of the book figures and the Examiner's revised figures. In making the Interest during Construction computation the Examiner has used the same date for the start of construction as the company has, namely, May 1, 1927, but has used a different date for the end of the construction period, namely, July 1, 1928; the company has used October 1, 1928, as an ending date. The reason why the Examiner used July 1, 1928, as an ending date is that substantial deliveries of gas were made to the three principal customers of the company in June 1928, for the first time, and continued thereafter.

"In this connection, a notation on a Ford, Bacon & Davis voucher (C-20) is important: It reads: 'Capitalize deliveries June 1-18, inclusive, charging same to 226-9. Charge deliveries June 19-30, inclusive, to operations.' Initial deliveries were made to Colorado Fuel and Iron Company on June 19, to Pueblo Gas & Fuel Company on June 21, and to Public Service Company of Colorado on June 23.

"Schedule No. 16, which is supported by Schedules Nos. 16-A, 16-B, and 16-C, is an analysis of construction overheads included in plant accounts as of December 31, 1939, per books. Schedule No. 16-D shows the amount of these overheads, which aggregate $393,940.50, that was charged to each plant account."

Q. Mr. Luttring, I previously asked you in connection with the preparation of this exhibit as to the part that Mr.

Lloyd G. Teel, accountant, prepared. I will now ask you to point out briefly that portion of the exhibit prepared by you as distinguished from that portion prepared by him, all of which is reflected in the contents of the exhibit following the title page.

A. On the first page of contents the Examiner's Entries 200 to 219—

Mr. Keffer: 219?

The Witness: 219. They are shown on Pages 1 to 23.

By Mr. Lange:

Q. Both inclusive?

A. Both inclusive.

—were prepared by me and are in this exhibit. On Page 2 of the contents, Schedule No. 2 to 2-F, inclusive, shown on Pages 68 to 78, inclusive, in this exhibit, they were prepared by me. The rest of the entries and exhibits or schedules were prepared by Lloyd G. Teel.

Commission Witness, Lloyd G. Teel, testified as follows: (Vol. XXXVIII, Official Transcript, pp. 5160-5164.)

By Mr. Lange:

Q. Please state your name.

A. Lloyd G. Teel.

Q. You reside here in Denver?

A. I do.

Q. By whom are you presently employed?

A. The Federal Power Commission.

Q. What is your profession?

A. Accountant

Q. How long have you been employed by the Federal Power Commission in that capacity?

A. Since January 2nd, 1936.

Q. January 2nd, 1936?

A. Yes.

Q. Have you had occasion during the course of that employment to be assigned any work of accounting character having to do with this present investigation?

A. I have.

Q. When did you first get that assignment?

A. October 5, 1939.

Q. October 5, 1939?

A. Yes.

Q. Since that time what portion of your working time have you devoted to that assignment?

A. Oh, I think, I should say practically all of it with the possible exception of two or three weeks spent doing office work.

Q. Practically all of that period of time up to the present with that exception?

A. Yes.

Q. In connection with your work on that assignment, you have heard the testimony of Mr. Carl E. Luttring who just preceded you in this record?

A. I have.

Q. With reference to this exhibit, I will ask you to please state for the record your qualifications in connection with your work as an accountant.

A. After I graduated from high school at Sapulpa, Oklahoma in 1923, I took the higher accountancy course offered by LaSalle Extension University, which I completed. I entered the employ of the Sapulpa State Bank approximately two years after graduating from high school and worked there for four years, the last two of which were devoted largely to auditing and the investigation of other banks then controlled by this bank.

I left the bank in February 1929 to work for the Tide Water Associated Oil Company as an accounting clerk in the Springfield, Missouri office. I stayed there until January, 1931, having been Acting Chief Clerk of the division for the ten months ended December 31, 1930. At that time I went with the Cosden Oil Company as its Western Regional Office Manager, having charge of all sales accounting and certain property records, supervising a staff of six to ten employes. I worked for this company until October 1933, acting as Operating Trustee for certain of its properties in St. Louis, Missouri from June 1932 until that time.

During the interim from October 1933 to February 1934 I worked for Ernst & Ernst, Certified Public Accountants, at St. Louis, Missouri, principally on oil company audits.

In February 1934, I was employed by the Petroleum Ad

ministrative Board at Washington, D. C., as Marketing Expert, being assigned to the study of marketing costs and other related subjects. During the period ended December 1935 I prepared several cost reports for the Board and completed a report on retail marketing costs of gasoline which was later published by the Board. During this period I directed a staff of three to five men in preparation of the various data referred to above.

Since January 1936 I have been employed by the Federal Power Commission as Examiner of Accounts, having been engaged chiefly in the investigation of original cost and investment in licensed hydroelectric projects and utility company properties.

Q. Now, Mr. Teel, you heard the testimony of Mr. Luttring with reference to the preparation of Exhibit No. 146 and with reference to the part of the exhibit that he prepared and the part of the exhibit you prepared; also, his statement referring to the table of contents as to that division. Will you please turn to the table of contents and indicate there the parts of the exhibit that you prepared?

A. On the first page of the table of contents under Examiner's Entries, I prepared Entries 225 to 252, inclusive, and the suspensions for Commission's consideration. I prepared also Schedule 1 and 1-A which are listed on the same page, and the schedules on the next page beginning with No. 3 and continuing through that page and all of the next page.

That completes the schedules which I prepared.

Q. And where do those schedules end?

A. Those schedules end on Page 3 of the contents.

Q. With what schedule number?

A. With Schedule No. 16-D.

Q. So it is all inclusive of those?

A. Yes.

Q. Now, in the preparation of your part of this exhibit, Mr. Teel, what occasion did you have to examine the company's books and records and at what places did you make such examination?

A. Well, the occasion for examining the company's records was in response to an assignment from my chief in the Denver office, and I examined such records of this company at its office in Colorado Springs.

Q. In Colorado Springs?

A. Yes.

Q. Colorado?

A. Colorado Springs, Colorado.

Exhibit 146 is in part as follows:

Docket G-124 Exhibit No. 146

CANADIAN RIVER GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES 1

	Debit	Credit
No. 200		
Gas Plant Adjustment (Account 107) - 1928	$121,786.50	
Operated Leases - 1928		$121,786.50

To remove from operated lease costs and charge gas plant adjustment with the amount by which such costs exceed the original legitimate cost of leases purchased from Master Oil and Gas Company, which company was controlled by Prairie Oil and Gas Company. The amount of cost, as determined from the records of Master Oil and Gas Company to be in excess of original legitimate cost and the leases to which applicable, was computed as follows:

Expenditures of Master Oil and Gas Company considered as original legitimate costs of leases and wells sold to Canadian River Gas Company in November 1928:

Lease costs:		
Bonus paid R. B. Masterson and J. T. Sneed, Jr. on lease dated June 1, 1926 covering land in Moore County, Texas	$ 5,247.20	
Rental of $1.00 per acre paid on 5,084.20 acres for one year from June 1, 1927	5,084.20	
Rental of $1.00 per acre paid on 5,084.20 acres for one year from June 1, 1928	5,084.20	
Rental of $1.00 per acre paid on 320 acres for one year from March 18, 1927	320.00	
Rental of $1.00 per acre paid on 320 acres for one year from March 18, 1928	320.00	
Total lease costs		$ 16,055.60
Well costs:		
Inventory value as at March 12, 1927 of Masterson M-1 well drilled about 1920 and shut in	$53,182.91	
Subsequent expenditures	460.69	
Cost of Sneed B-1 well drilled by Prairie Oil and Gas Company and completed on or about October 31, 1927. This well was drilled in accordance with agreement of July 1926 which provided that Prairie Oil and Gas Company be permitted to own 51% of the outstanding capital stock	41,401.81	
Subsequent expenditures	1,258.54	
Total well costs		96,303.95

No. 200 (Cont'd)

Total original legitimate expenditures		$112,359.55
Amount paid by Canadian River Gas Company in November 1928		235,054.20
Excess of amount paid over original legitimate expenditures		$122,694.65
Amount of excess per acre, based on 5,404.2 acres		$22.70357
Distribution of excess:		
Lease 86-M Masterson, 2,587.2 acres	$ 58,738.68	
Lease 86-B Sneed, 2,777.0 acres	63,047.82	
Total	$121,786.50	
Lease 85 Sneed, 40 acres - Abandoned in 1936	908.15	$122,694.65

Master Oil and Gas Company was incorporated May 4, 1921 but remained inactive until April 1927.

About 1920 a gas well was drilled on land owned by R. B. Masterson and shut in due to lack of market. The funds for the development of this well were provided through a beneficial trust. It appears that Master Oil and Gas Company was formed for the purpose of acquiring the operations and business of the beneficial trust.

About 1925 Prairie Oil and Gas Company, through purchase of property from Shamrock Oil Company, acquired 1,500 shares, par value $50.00 per share, of capital stock of Master Oil and Gas Company, representing 25% of the capital stock authorized.

In July 1926 Prairie Oil and Gas Company proposed to Master Oil and Gas Company and its stockholders the following:

(a) Furnish funds for the benefit of Master Oil and Gas Company for the payment of delinquent franchise taxes due the State of Texas for the years ended April 30 from 1923 to 1927.

(b) R. B. Masterson and J. T. Sneed to execute and deliver, in form acceptable to Prairie Oil and Gas Company, leases on land in Potter County, Texas, for a term of 10 years from June 1, 1926.

(c) Well to be drilled on land leased from J. T. Sneed free of cost to Master Oil and Gas Company and its stockholders.

(d) In consideration of the proposition, Master Oil and Gas Company and its stockholders were to transfer to Prairie Oil and Gas Company a sufficient amount of stock of Master Oil and Gas Company which with the (25) percent then owned would vest ownership and control of (51) percent of the stock of Master Oil and Gas Company in Prairie Oil and Gas Company.

Master Oil and Gas Company was liquidated subsequent to sale of its entire property to Canadian River Gas Company in 1928. Of the liquidation distribution made, 51% was paid to Prairie Oil and Gas Company.

In addition to the control exercised by Prairie Oil and Gas Company through the ownership of 51% of the capital stock, Mr. N. K. Moody held positions in the companies interested in this transaction, as follows:

Master Oil and Gas Company	Director
Amarillo Oil Company	President and Director
Canadian River Gas Company	Director
Southwestern Development Company	Director

Docket G-124

2663-2665

Exhibit No. 146

CANADIAN RIVER GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES 4

		Debit	Credit
	No. 201		
Surplus - Exploration and Development Costs - Delay Rentals		$151,991.23	
Year 1929	$ 1,280.00		
" 1930	-		
" 1931	47,496.53		
" 1932	28,601.00		
" 1933	52,027.46		
" 1934	2,040.50		
" 1935	2.50		
" 1936	-		
" 1937	3,200.00		
" 1938	10,729.00		
" 1939	6,614.29		
	$151,991.23		
Operated Leases			$100,559.03
Unoperated Leases			51,032.20
Surplus - Exploration and Development Costs - Abandoned Leases - 1939			400.00

To charge delay rentals account with amounts included in the plant account at December 31, 1939 representing payments for renewals and rentals on leases made in years as follows:

Year Paid	Lease Number	Operated Leases	Unoperated Leases	Abandoned Leases
1929	63		$ 1,280.00	
1931 (Transferred from unoperated, 1938)	58-B	$ 39,431.71		
"	108-D	1,536.82		
"	6-A	6,528.00		
1932	2		7,680.00	
"	19		2,125.00	
" (Transferred from unoperated, 1937)	68	5,300.00		
"	81-A	6,750.00		
"	90		6,746.00	
1933	137		800.00	
" (Abandoned in 1939)	138			$400.00
"	70		4,079.00	
"	30-A	9,130.00		
"	125	31,880.00		
"	84		5,738.45	
1934	63		2,040.50	
1935	6-A	2.50		
1937	73		3,200.00	
1938	19		2,125.00	
"	47		2,125.00	
"	70		4,079.00	
"	80		2,400.00	
1939	72		3,194.25	
"	84		50.00	
"	137		3,370.00	
Totals		$100,559.03	$51,032.20	$400.00

Reverse adjustment (Auth 5361)

Docket G-124

2667-2669

Exhibit No. 116

CANADIAN RIVER GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

6

	Debit	Credit
No. R-202		
Gas Well Investment - 1928	$54,508.94	
Operated Leases - 1928		$54,508.94

To remove from the cost of operated leases which were acquired by Amarillo Oil Company from Mountain States Gas Company, the amount of the investment in gas wells as shown by an inventory as of April 30, 1924. The costs so removed are charged to gas well investment to offset credits made therein to depreciation and adjustment account as of April 30, 1924. The wells to which the costs are applicable are as follows:

Lease Number Mountain States Gas Co.	Lease Number Canadian River Gas Co.	Well Number	Lessor	Amount
1071	58	H-1	R. B. Masterson	$20,974.69
1077	32	I-1	do.	16,948.99
1088	43	F-1	do.	7,846.25
1089	58	G-2	do.	8,739.01
			Total	$54,508.94

	Debit	Credit
No. 203		
Gas Well Investment	$289,147.77	
Gas Plant Adjustment (Account 107)	128,534.04	
Operated Leases		$417,681.81

To charge gas well investment with amount of expenditures made by Mission Oil Company, et al. and/or Amarillo Oil Company in developing the wells shown hereinafter, also to charge gas plant adjustment with the amount by which the net assets acquired by Amarillo Oil Company from Mission Oil Company exceeds the original cost thereof. The amounts represented by these charges are recorded in operated lease costs and are being removed therefrom.

Lease	Lease No.	Well No.	Development Costs: Labor, Teaming & Freight	Development Costs: Drilling	Development Costs: Total	Gas Plant Adjustment	Total Credited to Operated Leases
Bivins	30	C-1	$ 28,731.14	$ 17,621.59	$ 46,352.73	$ 17,043.94	$ 63,396.67
"	30	D-3	27,507.85	16,868.18	44,376.03	52,958.74	97,334.77
Masterson	58	B-5	24,868.13	15,244.38	40,112.51	91,549.82	131,662.33
"	58	C-1	9,500.00	20,000.00	29,500.00)		
"	58	C-3	46,565.37	28,548.90	75,114.27)	(31,665.91)	72,948.36
"	58	D-4	17,222.59	10,557.96	27,780.55	13,431.41	41,211.96
"	58	E-2	16,063.68	9,848.00	25,911.68	(14,783.96)	11,127.72
	Totals		$170,458.76	$118,689.01	$289,147.77	$128,534.04	$417,681.81

Docket G-124

Exhibit No. 146

CANADIAN RIVER GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

8

No. 203 (Cont'd)

Balance Sheet - January 16, 1923

	Total	Amarillo Oil Company	Mission Oil Company
Assets			
Current assets	$ 8,953.25	$ 6,818.00	$ 2,135.25
Fixed capital:			
Operated leases:			
Gas well equipment	79,780.88	39,890.45	39,890.43
Leaseholds - book cost	8,488.47	4,244.23	4,244.24
Leaseholds - writeup	421,608.61		421,608.61
Unoperated leases	1,803.00	901.50	901.50
Other assets - warehouse supplies, automobiles and furniture	23,762.97	12,185.51	11,577.46
Total	$544,397.18	$ 64,039.69	$480,357.49
Liabilities			
Current liabilities	$ 76,270.91	$ 44,104.42	$ 32,166.49
Reserves:			
Depreciation	20,141.60	20,141.60	
Depletion	106.20	106.20	
Total	$ 96,518.71	$ 64,352.22	$ 32,166.49
Net assets	$447,878.47	$ (312.53)	$448,191.00
Represented by:			
Common capital stock	$ 20,000.00	$ 10,000.00	$ 10,000.00
Surplus:			
Donated	22,700.00	22,700.00	
Capital - excess of net assets acquired	438,191.00		438,191.00
Earned surplus (deficit)	(33,012.53)	(33,012.53)	
Total	$447,878.47	$ (312.53)	$448,191.00

Leaseholds - writeup, as above	$421,608.61
Company adjustment in July 1923	3,926.80
Adjusted leasehold writeup, January 16, 1923	$417,681.81

Docket G-124

Exhibit No. 146

CANADIAN RIVER GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

17

		Debit	Credit
	No. 211		
Gas Plant Adjustment (Account 107)		$3,120,496.25	
	Operated Leases		$3,094,429.85
	Unoperated Leases		26,066.40

To charge Gas Plant Adjustment account with the amount by which the costs of the following operated and unoperated leases, as recorded on the books, exceed the original cost of such leases:

Lease No.	Lease	Operated Leases	Unoperated Leases
2	J. T. Sneed, Jr.		$ 5,120.00
6-A	J. T. Sneed, Jr.	$ 92,245.00	
9-A	D. P. Seay	7,620.00	
19	M. E. Miller		2,656.25
21-B	Terry Thompson	83,640.00	
23-A	L. H. Crawford	19,215.00	
29-A	E. S. Poling	2,000.00	
30-A	Lee Bivins	1,819,335.36	
31-A	R. B. Masterson	348,450.00	
32-I	R. B. Masterson	8,000.00	
43-F	R. B. Masterson	27,857.87	
47	O. H. Cooper		2,656.25
57-A	J. C. Warrick	12,050.24	
58-B	R. B. Masterson	507,011.07	
60-A	R. O. Allison	1,000.00	
61-A	Dave McBride	6,000.00	
63	Nettie L. Baker		6,875.00
64-B	Elizabeth Crawford	21,130.00	
65-J	R. B. Masterson	90,730.00	
67-A	Georgie E. Thompson	42,945.31	
68-A	Thomas M. Coughlan	5,200.00	
70	J. M. Crawford		6,850.00
137	S. P. Johnson		1,908.90
	Total	$3,094,429.85	$26,066.40

Docket G-124

Exhibit No. 146

CANADIAN RIVER GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 225		
100-4	Gas Plant Held for Future Use	$ 80,952.45	
211-212	Gas Well Investment		$ 80,952.45

To transfer to Gas Plant Held for Future Use the cost of 2 gas wells, Bivins A-22 and Masterson B-5, and eliminate such costs from Gas Well Investment Accounts 211-212. The details are as follows:

Well No. and Lease No.	Book Cost	Adjustments No. 203	Adjustments No. R-227	Revised Costs
Bivins A-22 Lease 30	$37,036.08			$37,036.08
Masterson B-5 Lease 58	53,803.86	$40,112.51	($50,000.00)	43,916.37
Totals	$90,839.94	$40,112.51	($50,000.00)	$80,952.45

The Respondent's records show that neither well was connected to the gathering system at December 31, 1939, nor is either well producing as of this date, June 18, 1940. The records do not show any production ever recorded for the Bivins A-22 well which is a sour gas well. Masterson B-5 well, completed in 1920, was connected at one time with Field Line F-806. This line was abandoned in 1934, the meter on it having been pulled in 1929, subsequent to which time no production has been recorded. The attached letter, which is in reply to an inquiry by Examiner Schutte (F.P.C.), outlines the company's position in regard to both wells.

Account Number			Debit	Credit
	No. B-226			
211-212	Gas Well Investment		$ 81,921.21	
	Drilling Costs	$67,400.00		
	Labor, Teaming and Freight	14,521.21		
211-212	Gas Well Investment Depreciation and Adjustment	($81,921.21)		$ 81,921.21

To transfer from D. & A. (Purchased Wells) certain costs reclassified as Drilling and Labor, Teaming and Freight as follows:

Well No.	Drilling	Labor Teaming and Freight	Total
Bivins A-2	$28,100.00	$ 5,656.89	$33,756.89
" B-1	18,400.00	6,143.57	24,543.57
Masterson G-2	20,900.00	2,720.75	23,620.75
Debits	$67,400.00	$14,521.21	
Credit to D. & A.			$81,921.21

Account Number		Debit	Credit
	No. B-227		
	Gas Department Adjustment Account - 1928	$496,198.55	
211	Gas Well Investment - 1928		$496,198.55

To reverse estimated amounts of development costs set up by Amarillo Oil Company as of September 30, 1925 and credited to Gas Department Adjustment account. The wells to which these costs relate are as follows:

Well No.	Lease	Development Costs: Labor Teaming and Freight	Drilling	Total
C-1	Lee Bivins	$ 5,000.00	$ 45,000.00	$ 50,000.00
C-4	Lee Bivins	5,871.46	24,937.58	30,809.04
D-3	Lee Bivins	4,166.50	45,000.00	49,166.50
B-5	R. B. Masterson	5,000.00	45,000.00	50,000.00
C-1	R. B. Masterson	5,000.00	45,000.00	50,000.00
C-3	R. B. Masterson	5,113.45	45,109.56	50,223.01
D-4	R. B. Masterson	5,000.00	45,000.00	50,000.00
E-2	R. B. Masterson	5,000.00	45,000.00	50,000.00
F-1	R. B. Masterson	3,000.00	37,000.00	40,000.00
H-1	R. B. Masterson	3,000.00	35,000.00	38,000.00
I-1	R. B. Masterson	3,000.00	35,000.00	38,000.00
	Total	$49,151.41	$447,047.14	$496,198.55

Account Number		Debit	Credit
	No. R-228		
211	Gas Well Investment - 1928	$5,384.81	
	Gas Department Adjustment Account - 1928		$5,384.81

To remove from Gas Department Adjustment account charges representing development costs (labor, Teaming and Freight) which should be reflected as additions to the following wells:

Well No.	Lease	Amount
A-3	Lee Bivins	$1,709.98
B-2	Lee Bivins	22.67
A-1	R. B. Masterson	458.48
A-1	J. C. Warrick	3,193.68
	Total	$5,384.81

	No. 229		
211	Gas Well Investment	$8,809.04	
107	Gas Plant Adjustment		$8,809.04

To set up costs in developing Bivins C-4 well which were charged by Amarillo Oil Company to its income account in October 1923.

Drilling costs	$6,937.58
Labor, teaming and freight	1,871.46
Total	$8,809.04

	No. 232		
110	Other Physical Property (1935)	$ 615.00	
900	Gasoline Investment Land (1935)		$ 615.00

To transfer land costs from Gasoline Investment Land (Account 900) and charge it to Other Physical Property. This amount represents the cost of 6.15 acres of land at Amarillo located in Section 224, Block 2, A.B. & M. survey, Potter County, Texas as per Memo Voucher C-26 of March 1928. The land was used as a loading rack site until 1935. Voucher M-19 of 1935 shows the retirement of the loading rack. The land is now rented to Amarillo Oil Company for a regulator site at $10.00 per annum.

CANADIAN RIVER GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

40

Account Number			Debit	Credit
	No. E-237			
224	Compressor Station Equipment		$ 930.00	
	.18 Other Misc. Equipment	$930.00		
904	Gasoline Plant Equipment			$ 697.50
	.6 Tanks	($697.50)		
	Reserve for Depreciation (Acct. 224-18)			232.50

To reverse transfer made on Vo. E-19 (20) 1934 which transferred a tank 8'x30'x3/8"x5/16" used for lubricating oil storage from Account 224-18, Compressor Station Equipment to Gasoline Plant Equipment - Tanks. The book entry was treated as a retirement and was effected by depreciation accounting, although it was not taken out of service and in reality was only a book transfer. Further reason for this adjustment is detailed in the attached memo supplied by the Bureau of Engineering.

"MEMORANDUM

"Colorado Springs, Colorado
July 2, 1940

"Subject: Canadian River Gas Company
Recommended Adjustments in Plant Accounts

"Our inspection of Bivins compressing station and gasoline plant in September 1939 showed that the 8' x 30' steel tank charged to the gasoline plant, Account 904-6, Tanks, is used at the compressing station for storage of lubricating oil. Therefore, it is recommended that the recorded cost of this tank, $930.00 be transferred to the compressing station, Account 224-18, Other Miscellaneous Equipment.

"Our examination of the company's books indicates that the tank was originally installed in 1928 and charged to Account 224-18, but that in 1934 the recorded cost was transferred on Voucher E-19-20 to Account 904-6. Our recommendation is to reverse this transfer.

/s/ Lee M. Hill
Lee M. Hill
Engineer"

Account Number		Debit	Credit
	No. 242		
	Surplus (1931)	$ 690.42	
226	Transmission Line Equipment		$ 690.42

To eliminate from Account 226 the recorded cost of 17'10" of 22" x 3/8" pipe charged to plant account on Voucher A-339, 1931. This same pipe in the amount of $690.50 was charged to Account 226 on Voucher M-415, 1930 as the result of the replacement of a like quantity of pipe. It was used in a railroad crossing on the Santa Fe Railroad near Bivins, under Work Order No. 79, and was duplicated in the above charge which was made direct to the property account and not cleared through a work order.

	No. 243		
110	Other Physical Property	$ 561.34	
218-D	Transmission System Land (Right of Way)		$ 561.34

To transfer the cost of the R. E. Stamper farm in Dallam County, Texas (less estimated right-of-way cost) from Account 218-D, Transmission System Land, to Other Physical Property. This farm, comprising 20.0 acres more or less, was purchased in fee for $500.00 and other costs were recorded as $79.34. Rights of way on adjoining property were purchased for approximately 50¢ per rod. The estimate of the Bureau of Engineering (F.P.C.) based on company maps and records is that approximately 39.5 rods of right of way were required to cross this tract of land. Therefore, the amount proposed for transfer to Other Physical Property is developed thus:

Recorded cost of Land	$579.34
Less 36 rods @ 50¢	18.00
Amount transferred	$561.34

Docket G-124

Exhibit No. 146

CANADIAN RIVER GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number			Debit	Credit
	No. E-244			
220-D	Transmission Line Rights of Way		$ 4,149.65	
	Main Line	$4,101.50		
	Clayton Lateral	13.15		
	Texline Lateral	35.00		
226-D	Transmission Line Equipment			$ 4,149.65
	Damages - Main Line	($4,101.50)		
	Clayton Lateral	(13.15)		
	Texline Lateral	(35.00)		

To transfer Damages from Equipment account to Rights of Way. Examination of a substantial amount of these charges indicated that these apply to crop damages and other similar items which are properly chargeable to land and land rights.

	No. 245		
	Surplus - Miscellaneous Income Deductions (1928)	$ 235.00	
255	Telephone System Rights of Way		$ 235.00

To correct error March 1928 (CR-23) and September 1929 (J-302) wherein accounts of Colorado Interstate Gas Company were credited with $250.00 and debited with $15.00 respectively. Both these entries were applicable to Canadian River Gas Company accounts. For details refer to Adjusting Journal Entry No. 203 of the Colorado Interstate Gas Company report.

	No. 246		
107	Gas Plant Adjustment	$556,897.95	
266	Interest during Construction		$556,897.95

To clear Interest Account preparatory to setting up revised Interest as computed by Examiner of Accounts, Federal Power Commission.

	No. 247		
266	Interest during Construction	$460,435.86	
107	Gas Plant Adjustment		$460,435.86

To set up Interest during Construction as revised by Examiner of Accounts, Federal Power Commission.

Docket G-124

Exhibit No. 146

CANADIAN RIVER GAS COMPANY
EXAMINER'S ENTRIES TO ADJUST
INTEREST DURING CONSTRUCTION

48

Account Number		Debit	Credit
	No. 248		
	Surplus - Miscellaneous Income Deductions (1928)	$ 81,250.00	
107	Gas Plant Adjustment Account (1928)	133,302.27	
	Gas Plant - Interest during Construction (1928)		$214,552.27

To credit Gas Plant - Interest during Construction with the income for the period from May 1, 1927 to May 31, 1928 which is shown by the records of Amarillo Oil Company as being earned during that period on the investment which Canadian River Gas Company acquired as of May 1, 1927 from Amarillo Oil Company and recorded on its books as of June 1, 1928.

Canadian River Gas Company recorded by Voucher J-387 in September 1928 an amount of $81,250.00 as representing income earned prior to June 1, 1928 on the properties acquired from Amarillo Oil Company and which amount has been used as a part of the gas rate to Colorado Interstate Gas Company. The entry refers to that part of Section 6 of agreement dated January 3, 1928, covering the sale of gas by Canadian River Gas Company to Amarillo Oil Company, which stipulates that the cost of gas shall include one-eighth (1/8) of the interest accruing on any indenture of first mortgage and deed of collateral trust or bonds.

Applying one-eighth (1/8), as provided in Section 6 of agreement, to bonds in the principal amount of $10,000,000.00, bearing interest at the rate of 6% per annum, resulted in the amount of $81,250.00 for the period May 1, 1927 to May 31, 1928 or at the rate of $6,250.00 per month.

Docket No. 6-[illegible]

No. 3[illegible]

AMARILLO OIL COMPANY

STATEMENT OF NET INCOME FOR THE PERIOD MAY 1, 1927 TO MAY 31, 1928

SHOWING THE NET INCOME APPLICABLE TO CANADIAN RIVER GAS COMPANY.

Description	For Books: Jan. 1 to May 31, 1928	Eight Months Ended Dec. 31, 1927	Thirteen Months Ended May 31, 1928	Applicable to Amarillo Oil Co.	Applicable to Canadian River Gas Company: Amount	Adjustments: Debit	Credit	Adjusted
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Operating Revenues								
Oil sales	$ 1,894.20	$ 5,085.14	$ 6,979.34	$ 6,979.34				
Gas sales - royalties deducted	193,671.57	884,760.54	478,232.11		$478,232.11(1)	$3,825.22		$[illegible]
Gasoline sales - royalties deducted	6,086.15	8,850.45	14,936.60		14,936.60			14,936.60
Miscellaneous	393.18	375.00	768.18	768.18				
Total Operating Revenues	$201,845.10	$899,071.13	$500,916.23	$ 7,747.52	$493,168.71	$3,825.22		$[illegible]
Operating Revenue Deductions								
Well expenses - Oil Department	$ 1,564.84	3,813.29	$ 5,378.13	$ 5,378.13				
Pipe line expenses	3,480.58	6,138.30	9,618.88	9,618.88				
Gas well expenses	1,580.58	2,456.13	4,036.65		$ 4,036.65			4,036.65
Administrative and general expenses	17,622.67	15,531.96	33,154.63		33,154.63			33,154.63
Motor truck expenses	4,225.24	6,102.49	10,327.73		10,327.73			10,327.73
Motor truck earnings	(10,737.64)	(15,131.41)	(25,869.05)		(25,869.05)			(25,869.05)
Warehouse expenses	2,549.58	4,564.43	7,114.01		7,114.01			7,114.01
Warehouse earnings	(36.15)	(5,966.19)	(6,002.34)		(6,002.34)			(6,002.34)
Depletion - Oil Department	705.34	1,456.00	2,161.34	2,161.34				
Depletion - Gas Department	21,167.30	31,045.90	52,213.20		52,213.20		(1) $1,460.62	17,744.58
Depreciation - Oil Department	3,595.11	5,646.49	9,241.60	9,241.60				
Depreciation - Gas Department	19,921.57	32,903.06	52,824.63		52,824.63		(2) 33,750.25	19,074.38
Depreciation - Miscellaneous	3,416.61	6,949.28	10,365.89		10,365.89			10,365.89
Loss on auto equipment sold	1,327.69	66.58	1,394.27		1,394.27			1,394.27
State of Texas - suit		2,500.00	2,500.00	2,500.00				
Taxes (Other than income)	4,907.20	7,426.96	12,334.16		12,334.16	(3) 3,200.00		9,134.16
Total Operating Deductions	$ 75,261.52	$105,535.27	$180,796.79	$28,900.55	$151,896.78	$71,390.87		$ 80,496.91
Delay Rentals	$ 58,089.36	71,503.46	129,592.81		129,592.81			129,592.81
Total Deductions	$133,350.41	$197,041.73	$330,389.14	$28,900.55	$301,489.59	$71,390.87		$230,098.72
Net Utility Income	$ 68,494.69	$202,029.40	$170,527.09	($21,153.03)	$191,674.12	$3,825.22	$71,390.87	$209,217.77
Other Income								
Water line earnings	$ 4,277.68	$ 3,025.60	$ 7,303.28	$ 7,303.28				
Water line expenses	(1,963.61)	(2,917.30)	(4,880.91)	(4,880.91)				
Discount on purchases	4,427.05	877.45	5,304.50		$ 5,304.50			5,304.50
Interest received from associated companies	26,137.46	1,048.40	27,185.86	27,185.86				
Total Other Income	$ 32,918.57	$ 2,034.15	$ 34,952.72	$29,608.23	5,304.50			$ 5,304.50

2699
Exhibit No. 16

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Docket G-124

No. 218 (Cont'd)

AMARILLO OIL COMPANY
STATEMENT OF NET INCOME FOR THE PERIOD MAY 1, 1927 TO MAY 31, 1928
SHOWING THE NET INCOME APPLICABLE TO CANADIAN RIVER GAS COMPANY

Description	Per Books			Applicable to Amarillo Oil Co.	Applicable to Canadian River Gas Company			
	Jan. 1 to May 31, 1928	Eight Months Ended Dec. 31, 1927	Thirteen Months Ended May 31, 1928		Amount	Adjustments Debit	Adjustments Credit	Adjusted
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Gross Income	$101,413.26	$104,060.55	$205,473.81	$ 8,495.19	$196,978.62	$53,825.22	$71,398.87	$214,552.27
Income Deductions								
Interest on bonds	$ 1,895.85	$ 15,166.66	$ 17,062.51	$17,062.51				
Interest and exchange	2,027.77		2,027.77	2,027.77				
Amortization of bond discount	1,848.64	3,152.00	5,000.64	5,000.64				
Premium on bonds retired	12,190.08		12,190.08	12,190.08				
Interest on current debt		35,301.60	35,301.60	35,301.60				
Total	$ 17,962.34	$ 53,620.26	$ 71,582.60	$71,582.60				
Net Income	$ 83,450.92	$ 50,440.29	$133,891.21	($63,087.41)	$196,978.62	$53,825.22	$71,398.87	$214,552.27

Exhibit No. 146

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AMARILLO OIL COMPANY
JOURNAL ENTRIES ADJUSTING INCOME
FOR PERIOD MAY 1, 1927 TO MAY 31, 1928

			Debit	Credit
(1)				
Reserve for Depletion			$ 34,468.62	
Depletion Expense				$ 34,468.62
To adjust depletion expense so that provi-				
ion applicable to income of Canadian River				
s Company covers period May 1 to December 31,				
27. Canadian River Gas Company took up				
pletion for entire year of 1928.				
limination of 1928 provision				
account taken up by Canadian				
River Gas Company		$21,167.30		
ar 1927 lease cost				
depletion	$22,044.45			
ar 1927 development				
cost depletion	4,572.44			
Total	$26,616.89			
rtion for May to Dec.				
(eight months) 2/3	17,744.58			
r Books	31,045.90	13,301.32		
		$34,468.62		
(2)				
Reserve for Depreciation			$ 33,730.25	
Depreciation Expense				$ 33,730.25
To adjust depreciation expense so that				
rovision applicable to Canadian River Gas				
ompany covers period May 1 to December 31,				
927. Canadian River Gas Company took up				
epreciation for entire year of 1928.				
limination of 1928 provision				
account taken up by Canadian				
River Gas Company		$ 19,921.57		
ear 1927 depreciation based on				
basis accepted by Revenue				
Agent	$28,641.58			
rtion applicable to May				
to Dec. (eight months)				
2/3	19,094.38			
er Books	32,903.06	13,808.68		
Total		$ 33,730.25		

This is the best this can be photographed because it is very tightly bound.

AMARILLO OIL COMPANY
JOURNAL ENTRIES ADJUSTING INCOME
FOR PERIOD MAY 1, 1927 TO MAY 31, 1928

	Debit	Credit
(3)		
Tax Expense - Amarillo Oil Company	$ 3,200.00	
Tax Expense - Canadian River Gas Company		$ 3,200.00
To credit income applicable to Canadian er Gas Company with taxes applicable to rillo Oil Company remaining operations.		
The taxes paid for the year 1929 by rillo Oil Company amounted to $3,287.51		
(4)		
Gas Sales	$ 53,825.22	
Revenue applicable to Investment of Amarillo Oil Company in Pipe Line		$ 53,825.22

Expenses		
Pipe line expenses	$ 9,618.88	
Depreciation		
8 mos. 1927, 2/3 x $19,280.20	12,853.46	
5 mos. 1928, 5/12 x 19,990.05	8,329.20	
6% on average investment of $383,728.00	23,023.68	
	$53,825.22	

This is the best this can be photographed because it is very tightly bound.

Docket G-124

Exhibit No. 146

CANADIAN RIVER GAS COMPANY
EXAMINER'S ENTRIES TO ADJUST
INTEREST DURING CONSTRUCTION

53

Account Number		Debit	Credit
	No. 249		
107	Gas Plant Adjustment	$244,853.26	
266	Interest during Construction		$244,853.26

To eliminate from Interest during Construction the interest capitalized on leasehold appreciation contained in the original $5,000,000.00 acquisition of property from Amarillo Oil Company. The appreciation is eliminated from recorded lease and other costs by the following Adjusting Journal Entries:

J.E. No. 203	Appreciation in the Mission Oil Company acquisition by Amarillo Oil Company	$ 128,534.04
J.E. No. 205	Appreciation in the leases in the Cliffside Structures sold to U.S.Government	187,904.20
J.E. No. 211	Appreciation in operated and unoperated leases per books as of December 31, 1939	3,120,496.25
J.E. No. 216	Appreciation in leases abandoned from 1929 to 1939	25,005.75
J.E. No. 217	Appreciation in the Ingerton Lease #27, sold in 1935	34,595.00
	Appreciation transferred to Gas Plant Adjustment	$3,496,535.24

Interest Computation on Appreciation Transferred

Amount $3,496,535.24
1-day's interest based on 6% rate, 365-day year 574.7729 .
Period concerned, May 1, 1927 to July 1, 1928 = 1 year and 61 days or 426 days
Interest eliminated = 426 x $574.7729 or $244,853.26

Docket G-124

Exhibit No. 146

CANADIAN RIVER GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 250-A		
	Surplus - Miscellaneous Income Deductions (1933)	$ 10,233.36	
220-D	Transmission Line Right of Way (Clayton Lateral)	89.08	
222-M	Measuring Station Structures (Clayton Lateral)	3.19	
225-M	Measuring Station Equipment (Clayton Lateral)		$ 23.39
226-D	Transmission Line Equipment (Clayton Lateral)		10,302.24

To take up Examiner's Entry No. 209 (Colorado Interstate Gas Company) which reallocated original construction overheads of that company on a dollar basis in lieu of the original distribution which was made on a mileage basis within the transmission system. This entry adjusts the overheads contained in the transfer price of the Clayton lateral properties as shown by Colorado Interstate Voucher F-12, 1933.

Account Number	Amount of Original Transfer	Amount per Examiner's Entry No.209	Net Adjustment
220-D	$ 1,606.50	$ 1,695.58	$ 89.08
226-D	38,433.00	28,130.76	(10,302.24)
218-M	100.00	100.00	
222-M	342.28	345.47	3.19
225-M	1,265.10	1,241.71	(23.39)
Totals	$41,746.88	$31,513.52	($10,233.36)

This is the best this can be photographed because it is very tightly bound.

CANADIAN RIVER GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 250-B		
226-D	Transmission Line Equipment	$ 5,714.89	
	Clayton Lateral $5,714.89		
	Reserve for Depreciation (Transmission Line Equipment)		$ 5,714.89
	Clayton Lateral ($5,714.89)		

To adjust retirement made in 1938 of the 2" part of the Clayton Lateral. This adjustment is necessary because the retirement of overheads was made on a mileage basis (Voucher M-19,1938) whereas the Examiner's Entry No. 209 of Colorado Interstate Gas Company adjusted such overheads by reallocating all that company's overheads on a dollar basis in lieu of the basis used originally. The details of this adjustment are as follows:

Direct Costs of Clayton Lateral (Account 226) at December 31, 1929	$15,645.99	
Direct Costs Retired during 1938	7,731.01	
Retirement of Direct Costs percent to total =	49.41%	
According to Entry No. 209 (Colorado Interstate Gas Company) the total overheads in Clayton Lateral costs were	2,123.09	
Applying the percent above of 49.41 x $2,123.09 =	1,049.02	
In 1938 the company retired 56.1736% of the original overheads of $12,041.08 or	6,763.91	

The excess retirement is $6,763.91 minus $1,049.02 or $5,714.89 as shown above in the adjustment.

Docket G-124

Exhibit No. 11c

CANADIAN RIVER GAS COMPANY
EXAMINER'S ADJUSTING ENTRIES

Account Number		Debit	Credit
	No. 252		
215-M	Field Measuring Station Equipment	$ 15.33	
257-E	Other General Equipment	846.89	
	Reserve for Depreciation (Field Measuring Station Equipment)	55.45	
225-M	Measuring Station Equipment		$ 917.67

To transfer certain items of equipment to other accounts as recommended by attached memorandum from Bureau of Engineering. See posting memoranda below:

	Description	Location	Acct.225	Acct.215	Acct.257	Reserve for Depreciation
(1)	1 - 50" Manometer	Clayton	($ 18.58)		$ 18.58	
(2)	1 Pressure Gauge	Texline	(70.78)			
	do.	F-820		$70.78		
(3)	1 - 3½" Dial Test Gauge	Dalhart	(12.22)			
	1 Pocket Test Gauge	Dalhart	(18.30)		30.40	
	18 - 0 to 100# Spring Gauges	Dalhart	(27.00)			
	1 - 50" Manometer	Dalhart	(22.88)			
(4)	1 Portable Temp. Gauge	Bivins	(58.66)			
	1 Crosby Gauge Tester	Bivins	(125.91)		747.91	
	1 Acme Specific Gravity Balance	Bivins	(266.34)			
	1 Calorimeter	Bivins	(297.00)			
(5)	1 - 10" Recording Thermometer	F-401		(55.45)		$55.45
	Totals		($917.67)	$15.33	$846.89	$55.45

This is the best this can be photographed because it is very tightly bound.

No. 251 (Cont'd)

COPY

MEMORANDUM

Colorado Springs, Colorado
July 13, 1940

Subject: Canadian River Gas Company
Recommended Adjustments in Plant Accounts

At the time of our inspection of the property of Canadian River Gas Company in August and September 1939, certain measuring station equipment recorded on the company's books was not found in place. On October 7, 1939 a letter describing this equipment and requesting information concerning its present location was addressed to the company. After considering the company's reply of July 9, 1940, it is recommended that the following adjustments be made:

1) Clayton Measuring Station

1 - 50" Manometer	$18.58

This item, carried in Account 225-M, should be transferred to Account 257, General Equipment.

2) Texline Measuring Station

1 - 8" 24-hour 50# Volume-pressure Gauge	$70.78

This item, carried in Account 225-M, should be transferred to Account 215-M, Field Line F-820.

3) Dalhart Measuring Station

1 - 3½" Dial Test Gauge	$12.22
1 - Pocket Test Gauge	18.30
18 - 0 to 100# Springe Gauges	27.00
1 - 50" Manometer	22.88

The above listed equipment, carried in Account 225-M, should be transferred to Account 257, General Equipment.

4) Main Line Measuring Station (Bivins Outlet)

1 - Portable Temperature Gauge	$ 58.66
1 - Crosby Gauge Tester	125.91
1 - Acme Specific Gravity Balance	266.34
1 - Calorimeter	297.00

The above listed equipment, carried in Account 225-M, should be transferred to Account 257, General Equipment.

5) Chicago Measuring Station

1 - 10" Recording Thermometer	$55.45

This has been lost and should be retired with no salvage.

/s/ Lee M. Hill
Lee M. Hill
Engineer

INVESTMENT IN GAS PLANT PER BOOKS AND AS ADJUSTED
AS OF DECEMBER 31, 1959

Account Number (1)	Description (2)	Per Books Quantity (3)	Per Books Amount (4)	Examiner's Adjustments Debit (5)	Examiner's Adjustments Cred't (6)	Adjusted Amounts (7)	Suspended for Commission's Consideration (8)
	PRODUCTION SYSTEM						
205	Operated Acreage - Leaseholds	319,665.44	$ 5,722,261.05		$4,176,383.53	$ 1,545,877.52	
205	Unoperated Acreage - Leaseholds	5,332.14	135,241.69		77,098.60	58,143.09	
	Total	324,997.58	$ 5,857,502.74		$4,253,482.13	$ 1,604,020.61	
211-212	Gas Wells						
212	Well Pipe	369,443'2"	$ 780,803.77		$ 14,450.77	$ 766,353.00	
212	Line Pipe	1,670'7"	379.66			379.66	
212	Other Equipment		53,958.14		583.92	53,374.22	
211	Construction		2,413,769.48		204,265.75	2,209,503.73	
	Total		$ 3,248,911.05		$ 219,300.44	$ 3,029,610.61	
	Gas Department Adjustment		$ (490,813.74)	$ 490,813.74			
216	Drilling and Cleaning Equipment		$ 24,679.54			$ 24,679.54	
	Field Lines						
214-B	Pipe	758,044'9"	$ 802,494.27			$ 802,494.27	
214-B	Fittings		89,660.81			89,660.81	
214-B	Total Equipment		$ 892,155.08			$ 892,155.08	($49,097.80
213-B	Construction		345,373.36		$ 7,768.15	337,605.21	(
206-B	Rights of Way		13,512.51	$ 7,901.15		21,413.66	(
	Total Field Lines		$ 1,251,040.95	$ 7,901.15	$ 7,768.15	$ 1,251,173.95	$49,097.80
	Other Field Facilities						
209-M	Field Measuring Station Structures		$ 9,301.40			$ 9,301.40	$ 238.89
215-M	Field Measuring Station Equipment		49,857.88	$ 15.33		49,853.21	1,412.61
221-B	Field Compressor Station Structures		3,308.84			3,308.84	11.94
224-B	Field Compressor Station Equipment		15,762.02			15,762.02	663.14
	Total		$ 78,210.14	$ 15.33		$ 78,225.47	$ 2,326.58
	Gasoline Investment						
900	Land (Amarillo)	6.15 acres	$ 615.00		$ 615.00		
902	Rights of Way	487 rods	212.13			$ 212.13	
903	Structures		48,545.21			48,545.21	$ 1,899.95
904	Equipment		293,112.72	$ 1,986.37		295,099.09	11,580.66
905	Delivery Line (3" Pipe)	6,748'11"	2,792.48			2,792.48	
906	Loading Rack (Excell)		3,802.16			3,802.16	
	Total		$ 349,189.70	$ 1,986.37	$ 615.00	$ 350,481.07	$13,480.61
	Total Production System		$10,318,640.38	$ 500,716.59	$4,481,165.72	$ 6,338,191.25	$64,904.99

Exhibit No. 146

2717

62

Account Number (1)	Description (2)	Per Books Quantity (3)	Per Books Amount (4)	Examiner's Adjustments Debit (5)	Examiner's Adjustments Credit (6)	Adjusted Amounts (7)	Suspended For Commission's Consideration (8)
	TRANSMISSION SYSTEM						
	Mains and Laterals						
218-D	Land	20 acres	$ 579.34		$ 561.34	$ 18.00	
220-D	Rights of Way		31,826.56	$ 24,566.28		56,392.84	
226-D	Equipment:						
	Pipe	522,179'7"	$ 1,714,491.14		$ 690.42	$ 1,713,800.72	
	Couplings, Valves, Fittings and Sundry Materials		263,647.90			263,647.90	
	Construction Costs		468,919.43		31,613.55	437,305.88	$ 75,413.81
	Total, Account 226-D		$ 2,477,058.47		$ 32,303.97	$ 2,444,754.50	$ 75,413.81
	Total Mains and Laterals		$ 2,509,464.37	$ 24,566.28	$ 32,865.31	$ 2,501,165.34	$ 75,413.81
	Dehydration Plant						
218-D	Land	10 acres	$ 441.22			$ 441.22	
223-D	Structures		6,193.62			6,193.62	
227-D	Equipment		35,138.83			35,138.83	
	Total Dehydration Plant		$ 41,773.67			$ 41,773.67	
	Main Compressor Station (Bivins)						
218-C	Land	61 acres	$ 1,515.66			$ 1,515.66	$ -
221-C	Structures		95,060.65	$ 3,710.00		98,770.65	5,940.47
224-C	Equipment		539,441.11		$ 5,953.38	533,487.73	24,533.37
	Total Main Compressor Station		$ 636,017.42	$ 3,710.00	$ 5,953.38	$ 633,774.04	$ 30,473.84
	Measuring Stations						
218-M	Land	5.51 acres	$ 503.75			$ 503.75	$ -
222-M	Structures		6,045.90	$ 3.19		6,049.09	253.55
225-M	Equipment		15,615.29	396.01	$ 3,137.07	12,874.23	448.36
	Total Measuring Stations		$ 22,164.94	$ 399.20	$ 3,137.07	$ 19,427.07	$ 701.91
	Bivins Camp Investment						
218-BC	Land	17.2 acres	$ 826.25			$ 826.25	$ -
223-BC	Structures		163,246.08			163,246.08	6,395.78
227-BC	Equipment		22,086.27	$ 93.50		22,179.77	-
	Total Bivins Camp Investment		$ 186,158.60	$ 93.50		$ 186,252.10	$ 6,395.78
	Total Transmission System		$ 3,395,579.00	$ 28,768.98	$ 41,955.76	$ 3,382,392.22	$112,985.34
	UNDISTRIBUTED FIXED CAPITAL						
200	Organization Expense		$ 387.45			$ 387.45	$ -
203	Other Undistributed Fixed Capital		8,843.16			8,843.16	8,362.24
	General Construction Items			$ 2,196.01		2,196.01	-
262	Law Expenditures during Construction		53,091.59		$ 51,812.14	1,279.45	-
266	Interest during Construction		556,897.95		555,867.62	1,030.33	-
	Total Undistributed Fixed Capital		$ 619,220.15	$ 2,196.01	$ 607,679.76	$ 13,736.40	$ 8,362.24

Exhibit No. 146

2219

Docket G-124

Schedule N . 1
Sheet 3 of 3

CANADIAN RIVER GAS COMPANY
INVESTMENT IN GAS PLANT PER BOOKS AND AS ADJUSTED
AS OF DECEMBER 31, 1939

Account Number (1)	Description (2)	Per Books Quantity (3)	Per Books Amount (4)	Examiner's Adjustments Debit (5)	Examiner's Adjustments Credit (6)	Adjusted Amounts (7)	Suspended for Commission's Consideration (8)
	GENERAL PROPERTY						
247-E	Office Structures		$ 2,793.03			$ 2,793.03	$ -
248-E	Other Structures		33,588.04			33,588.04	58.67
249-E	General Office Equipment		11,735.27			11,735.27	-
250-E	General Store Equipment		6,154.19			6,154.19	72.01
255-E	Telephone System - Equipment		73,081.00			73,081.00	574.51
255	Telephone System - Rights of Way		11,518.14	$ 2,049.00	$ 235.00	13,332.14	
256-E	General Tools and Implements		8,350.86			8,350.86	
257-E	Other General Equipment		3,050.25	846.89		3,897.14	
253	General Garage Equipment (Autos, etc.)		36,078.40			36,078.40	
	Total General Property		$ 186,349.18	$ 2,895.89	$ 235.00	$ 189,010.07	$ 705.39
	TOTAL GAS PLANT ACCOUNTS		$14,519,788.71	$ 534,577.47	$5,131,036.24	$ 9,923,329.94	$186,957.96
	MISCELLANEOUS						
100-4	Gas Plant Held for Future Use						
	Gas Well Investment (211-212)			$ 80,952.45		$ 80,952.45	
107	Gas Plant Adjustments			4,091,880.88		4,091,880.88	
110	Other Physical Property			1,176.34		1,176.34	
	Construction in Progress		$ 150,582.36			150,582.36	
	TOTAL		$14,670,371.07	$4,708,587.14	$5,131,036.24	$14,247,921.97	$186,957.96

27.21
Exhibit No. 146

64

Exhibit G-124

CANADIAN RIVER GAS COMPANY
SUMMARY OF PLANT ACCOUNT ADJUSTMENTS

Miner's Entry No.	Description	Leases		Gas Well Investment (211-212)	Transmission Rights of Way (220-D)	Compressor Station Equipment (224-C)	Transmission Line Equipment (226-D)	Interest during Construction (266)	Gasoline Plant Equipment (904)	Gas Plant Adjustment (107)	Surplus	
		Operated	Unoperated								Year	Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
200	Elimination of writeups in Master Oil and Gas property	($ 121,786.50)								$ 121,786.50		
201	Elimination of Delay Rentals from Lease Costs	(100,559.03)	($ 51,032.20)								1929 to 1939	$151,591.23
202	Reclassification of Mountain States Gas Co. Leases and Wells	(54,508.94)		$ 54,508.94								
203	Elimination of writeups in Mission Oil Company property	(417,681.81)		289,147.77						128,534.04		
204	Adjustment to reflect the profit in sale of Cliffside Structure to U.S. Government	(782,082.67)										
205	do.	310,304.64								187,904.20	1929	(498,208.84)
206	do.	4,399.73									(1930	(4,287.24)
											(1931	(112.49)
206	do.	49,213.88										
207	do.	(28,327.24)									(1929	28,553.91
											(1929	(226.67)
208	do.	4,722.50									1929	(4,722.50)
210	do.	2,539.62									1930	(2,539.62)
211	Elimination of Appreciation re Amarillo Oil Company Leases	(3,094,429.85)	(26,066.40)							3,120,496.25		
212	Reclassification of Law Expenses during Construction	51,812.14										
213	Reclassification between years of Certain Lease Costs		(138,427.32									
			((138,427.32)									
214	Not Used											
215	do.											
216	Adjusting Appreciation on Abandoned Leases									25,006.75	1929 to 1939	(25,006.75)
217	Adjusting Appreciation on Ingerton Lease #27 sold in 1935									34,595.00	1935	(34,595.00)
218	Adjustment re Parcomis Oil and Gas Company re Ingerton Lease sale									7,875.00	1935	(7,875.00)
219	Adjustment of Notes Receivable re Ingerton Lease sale									(124.44)	1935	(829.67
												((705.13)
220	Not Used											
221	do.											
222	do.											
223	do.											
224	do.											
225	Elimination of 2 unconnected wells from Gas Plant in Service			(80,962.48)								

Exhibit No. 146

Subschedule No. 1-A
Sheet 1 of 3

CANADIAN RIVER GAS COMPANY
SUMMARY OF PLANT ACCOUNT ADJUSTMENTS

a a a a a	Unoperated	Gas Well Investment (211-212)	Transmission Rights of Way (220-D)	Compressor Station Equipment (224-C)	Transmission Line Equipment (226-D)	Interest during Construction (286)	Gasoline Plant Equipment (904)	Gas Plant Adjustment (107)	Surplus Year	Surplus Amount	Miscellaneous Income Deductions	Miscellaneous Description	Miscellaneous Amount
	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
50)								$ 121,786.50					
03)	($ 51,032.20)								1929 to 1939	$151,691.25			
94)		$ 54,508.94											
81)		239,147.77						128,534.04					
67)											$782,082.67		
64								187,904.20	1929	(498,208.84)			
73									(1930	(4,287.24)			
									(1931	(112.49)			
88												(Reserve for Depreciation (1930)	($ 10,992.50)
												(Reserve for Depletion (1930)	(38,221.38)
24)									(1929	28,553.91			
									(1929	(226.67)			
50									1929	(4,722.50)			
62									1930	(2,539.62)			
85)	(26,066.40)							3,120,496.25					
14												Law Expenses during Construction	(51,812.14)
	(138,427.32												
	((138,427.32)												
								25,006.75	1929 to 1939	(25,006.75)			
								34,595.00	1935	(34,595.00)			
								7,875.00	1935	(7,875.00)			
								(124.44)	1935	(829.57			
										((705.13)			
		(80,952.45)										Gas Plant held for future use	80,952.45

CANADIAN RIVER GAS COMPANY
SUMMARY OF PLANT ACCOUNT ADJUSTMENTS

Explainer's Entry No.	Description	Leases Operated	Leases Unoperated	Gas Well Investment (211-212)	Transmission Rights of Way (220-D)	Compressor Station Equipment (224-C)	Transmission Line Equipment (226-D)	Interest during Construction (286)	Gasoline Plant Equipment (904)	Gas Plant Adjustment (107)	Surplus Year	Surplus Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
226	Reclassification of Certain Well Costs			($ 81,921.21								
				((81,921.21)								
227	Reclassification of Gas Department Adjustment			(496,198.55)								
228	do.			5,384.81								
229	To set up certain development costs of Rivins C-4 Well (Amarillo)			8,809.04						($ 8,809.04)		
230	Reclassification of Survey Costs				$20,201.53		($20,201.53)					
231	Reclassification of Right of Way Costs				(2,182.00)							
232	Elimination from Gas Plant in Service of Gasoline System Land											
233	Reclassification of Gasoline Equipment								($ 56.07			
									((56.07)			
234-A	Reclassification of Cooling Tower and Heat Exchangers					$20,704.18			(20,704.18)			
234-B	do.					(24,088.68)			24,088.68			
235	Reclassification of Measuring Equipment					(93.50)						
236	Reclassification of 2 Water Pumps					304.62			(304.62)			
237	Reclassification of Oil Storage Tank					930 00			(697.50)			
238	Reclassification of Measuring Equipment								(396.01)			
239	Reclassification of Overhead Traveling Crane					(3,710.00)						
240	Reclassification of Clearing Costs				2,675.02		(2,675.02)					
241	Elimination of Duplicate Right-of-Way Charge				(367.00)							
242	Elimination of Duplicate Charge for 176'10" of 22" Pipe						(690.42)				1931	$ 690.42
243	Elimination of Excess Land (Stamper Farm)											
244	Reclassification of Damage Costs				4,149.65		(4,149.65)					
245	Adjusting Telephone Right-of-Way Cost											
246	To Adjust Interest during Construction							($556,897.95)		556,897.95		

CANADIAN RIVER GAS COMPANY
SUMMARY OF PLANT ACCOUNT ADJUSTMENTS

Leases Operated (3)	Leases Unoperated (4)	Gas Well Investment (211-212) (5)	Transmission Rights of Way (220-D) (6)	Compressor Station Equipment (224-C) (7)	Transmission Line Equipment (226-D) (8)	Interest during Construction (266) (9)	Gasoline Plant Equipment (904) (10)	Gas Plant Adjustment (107) (11)	Surplus Year (12)	Surplus Amount (13)	Miscellaneous Income Deductions (14)	Miscellaneous Description (15)	Miscellaneous Amount (16)
		($ 81,921.21											
		((81,921.21)											
		(496,198.55)											
		5,384.81										Gas Department Adjustment	$496,198.55
												do.	(5,384.81)
		8,809.04						($ 8,809.04)					
			$20,201.53		($20,201.53)							(Gathering System Rights of Way	
												((Acct. 206-B)	7,768.15
												(Field Line Construction	
												((Acct. 213-B)	(7,768.15)
			(2,182.00)									(Gathering System Rights of Way	
												((Acct. 206-B)	133.00
												(Telephone System Right of Way	
												((Acct. 255)	2,049.00
												(Other Physical Property	
												((Acct. 110)	615.00
												(Gasoline System Land (Acct. 900)	(615.00)
							($ 56.07						
							((56.07)						
			$20,704.18				(20,704.18)						
			(24,088.68)				24,088.68						
			(93.50)									Bivins Camp (Yard Gas Lines	
												#227-13)	93.50
			304.82				(304.82)						
			930 00				(697.50)					Reserve for Depreciation	
												(Acct. 224-18)	(232.50)
							(396.01)					Measuring Station Equipment	
												(Acct. 225-M)	396.01
			(3,710.00)									Main Compressor Station Structures	
												(Acct. 221-C-A)	3,710.00
			2,675.02		(2,675.02)								
			(367.00)									Reserve for Depreciation (Trans-	
												mission Line Right of Way)	367.00
					(690.42)				1931	$ 690.42			
												(Other Physical Property (Acct. 110)	561.34
												(Transmission System Land	
												((Acct. 218-D)	(561.34)
			4,149.65		(4,149.65)								
											235.00	Telephone System Right of Way	
												(Acct. 255)	(235.00)
					($556,897.95)			556,897.95					

CANADIAN RIVER GAS COMPANY
SUMMARY OF PLANT ACCOUNT ADJUSTMENTS

Examiner's Entry No.	Description	Leases Operated	Leases Unoperated	Gas Well Investment (211-212)	Transmission Rights of Way (220-D)	Compressor Station Equipment (324-C)	Transmission Line Equipment (226-D)	Interest during Construction (286)	Gasoline Plant Equipment (904)	Gas Plant Adjustment (107)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
247	To Adjust Interest During Construction							$460,435.86		($460,435.86)
248	do.							(214,852.27)		133,302.27
249	do.							(244,853.26)		244,853.26
250-A	Reallocation Clayton Lateral Overheads				$ 89.08		($10,302.24)			
250-B	Adjustment of Overhead Retirements - Clayton Lateral						5,714.89			
251	Adjustments due to Field Inspection (F.P.C. Engineers)									
252	do.									
	Totals	($4,176,383.53)	($77,098.60)	($219,500.44)	$24,566.28	($ 5,953.39)	($32,303.97)	($555,867.62)	$ 1,996.37	$4,091,880.86

Exhibit No. 146

Subschedule No. 1-A
Sheet 3 of 3

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CANADIAN RIVER GAS COMPANY
SUMMARY OF PLANT ACCOUNT ADJUSTMENTS

Leases		Gas Well Investment	Transmission Rights of Way	Compressor Station Equipment	Transmission Line Equipment	Interest during Construction	Gasoline Plant Equipment	Gas Plant Adjustment	Surplus		Miscellaneous Income	Miscellaneous	
Operated	Unoperated	(211-212)	(220-D)	(824-C)	(226-D)	(266)	(904)	(107)	Year	Amount	Deductions	Description	Amount
(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
						$460,435.86		($460,435.86)					
						(214,552.27)		133,302.27			$ 81,250.00	Included as Operating Revenue in Income Statement	
						(244,853.26)		244,853.26					
			$ 89.08		($10,302.24)						10,233.56	(Measuring Station Structures (Acct. 222-M)	$ 3.19
												(Measuring Station Equipment (Acct. 225-M)	(23.89)
					5,714.89							Reserve for Depreciation (Acct. 226-D)	(5,714.89)
												(Field Measuring Station Equipment (215-M)	15.33
												(Other General Equipment (257-E)	846.89
												(Reserve for Depreciation (Acct. 215-M)	55.45
												(Measuring Station Equipment (Acct. 226-M)	(917.67)
												(Undistributed Fixed Capital (General Construction)	2,196.01
												(Measuring Station Equipment (Acct. 225-M)	(2,196.01)
($4,176,383.63)	($77,098.60)	($219,300.44)	$24,566.28	($ 5,953.38)	($32,303.97)	($565,867.62)	$ 1,966.37	$4,091,880.88		($396,613.11)	$873,801.03		$471,286.09

SUMMARY OF COST OF LEASEHOLDS
1928 TO 1939

Particulars (1)	Leaseholds Operated (2)	Unoperated (3)	Appreciation (4)	Total (5)
Amarillo Oil Company:				
Book value of leases as of January 16, 1923 acquired from individuals	$ 8,488.47	$ 1,803.00		$ 10,291.47
Acquired from:				
Mission Oil Company	417,681.81			417,681.81
Mountain States Gas Company	267,033.85	134,173.03		401,206.88
1927 payment to settle litigation re Masterson lease 26-H	106,462.18			106,462.18
Panhandle Pipe Line Company (See company adjustments)		160.00		160.00
Individuals	20,538.34	37,159.70		57,698.04
Leases transferred	15,067.03	(15,067.03)		
Appreciation set up by J.E. J-205 as of June 1, 1928			$2,755,916.95	2,755,916.95
Total cost of leases as recorded by J.E. 205	$ 835,271.68	$ 158,228.70	$2,755,916.95	3,749,417.33
Appreciation set up by J.E. M-35 in December 1928 to reflect the assumption of the following accounts:				
Gas Department Adjustment 490,587.07				
Reserve for Depletion, December 31, 1927 148,184.52				
Reserve for Depreciation, December 31, 1927 96,387.96				
Channing Warehouse Stock 2,336.33				
C. W. Walters - Bonus Suspense 184.82				
Total cost of leases acquired from Amarillo Oil Company as recorded (See subsequent company adjustments shown below)			737,680.70	737,680.70
	$ 835,271.68	158,228.70	$3,493,597.65	4,487,098.03
Leases purchased by Amarillo Oil Company for Canadian River Gas Company from:				
Prairie Oil and Gas Company		70,632.00		70,632.00
Oil, Gas and Pool Company	20,203.95	59,796.05		80,000.00
Individuals	48,622.62	278,266.60		326,889.22
Leases transferred	67,393.08	(67,393.08)		
Purchase of lease:				
Master Oil and Gas Company	133,290.08	8,133.33		141,423.41
Balance December 31, 1928	$1,104,781.41	507,663.60	$3,493,597.65	$5,106,042.66

Exhibit No. 146

27729

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SUMMARY OF COST OF LEASEHOLDS
1928 TO 1939

Particulars (1)	Leaseholds Operated (2)	Leaseholds Unoperated (3)	Appreciation (4)	Total (5)
Company adjustments:				
Amount designated "Cost of obtaining leases" charged to expense by J.E. M-467 in 1928. It was disallowed as an income-tax deduction and therefore restored to lease costs on J.E. B-336 and P-340 in 1930	$ 31,913.34	$ 3,444.95		$ 35,358.29
	(6.00)	8.12		2.12
Adjustment of cost of obtaining leases To reflect Panhandle Pipe Line Company lease at its book cost	18,240.00		$ (18,240.00)	
To set up the inventory value of the following wells which was not included in J.E. J-205:				
Well No. / Inventory / Previously Recorded / To adjust				
Bivins B-3 $29,012.43 / $ 8,948.68 / $20,063.75				
Warrick A-1 27,763.05 / 8,028.29 / 19,734.76			(39,798.51)	(39,798.51)
To adjust reserves as of December 31, 1927:				
	Reserve for Depletion	Reserve for Depreciation		
Recorded J.E. M-35	$118,184.52	$ 96,387.96		
Adjusted amount	66,929.99	110,084.57		
To adjust	$ 81,254.55	$(13,696.61)	(67,557.94)	(67,557.94)
Total company adjustments	$ 50,147.34	$ 3,453.07	$ (125,596.45)	$ (71,996.04)
Balance December 31, 1928, as adjusted by company	$1,154,928.75	$ 511,116.67	$3,368,001.20	$5,034,046.62
Lease transactions, 1929-1939:				
Leases acquired	866,672.38	173,741.10		1,040,413.48
Leases transferred	488,687.36	(488,687.36)		
Leases abandoned		(138,427.32)	(25,005.75)	(163,433.07)
Leases sold:				
United States Government (Cliffside Structure)	(18,233.57)		(187,904.20)	(206,137.77)
R. A. Burnett (Ingerton lease)	(12,389.41)		(34,595.00)	(46,984.41)
Bonus renewals and delay rentals charged to plant accounts	100,559.03	51,432.20		151,991.23
Royalty interests acquired (mineral rights in fee)	47,606.66			47,606.66
Balance December 31, 1939, per books	$2,627,831.20	$ 109,175.29	$3,120,496.25	$5,857,502.74

Exhibit No. 146

27331

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Sheet 3 of 3

CANADIAN RIVER GAS COMPANY
SUMMARY OF COST OF LEASEHOLDS
1928 TO 1939

Particulars (1)	Leaseholds Operated (2)	Leaseholds Unoperated (3)	Leaseholds Appreciation (4)	Total (5)
Balance December 31, 1939, per books (Forwarded)	$2,627,831.20	$ 109,175.29	$3,120,496.25	$5,857,502.74
Adjustments - Federal Power Commission Examiner:				
J.E. 200 Profit on leases purchased from Master Oil and Gas Company removed to Gas Plant Adjustment account	$ (121,786.50)			$ (121,786.50)
J.E. 201 Bonus renewals and rentals removed to Delay Rentals, Income account	(100,559.03)	$ (51,032.20)		(151,591.23)
J.E. R-202 Tangible well costs removed to Gas Well Investment	(54,508.94)			(54,508.94)
J.E. 203 Development cost of wells removed to Gas Well Investment and write-up of cost of leases removed to Gas Plant Adjustment account	(417,681.81)			(417,681.81)
J.E. 204 to 210 Profit on leases in Cliffside Structure sold to U.S. Government	(439,229.54)			(439,229.54)
J.E. 211 Appreciation in cost of leases removed to Gas Plant Adjustment account			$(3,120,496.25)	(3,120,496.25)
Total	$(1,133,765.82)	$ (51,032.20)	$(3,120,496.25)	$(4,305,294.27)
J.E. R-212 Law expenditures paid in 1928 for examining and curing title to leases acquired	$ 51,812.14			$ 51,812.14
Total	$(1,081,953.68)	$ (51,032.20)	$(3,120,496.25)	$(4,253,482.13)
Adjusted balance, December 31, 1939	$1,545,877.52	$ 58,143.09		$1,604,020.61

Exhibit No. 116

2733

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Exhibit 6-12b

Schedule No. 6a4
Sheet 1 of 2

CANADIAN RIVER GAS COMPANY
OPERATED LEASES AT DECEMBER 31, 1998 AND 1999
AND SUMMARY OF CHANGES DURING INTERIM
For Books

Lease Number	Lease	Balance Dec. 31, 1998	Additions: Cost of Obtaining Leases	Additions: Other	Transferred from Unoperated Leases	Leases Sold	Rental Removals	Adjustments	Consolidations	Balance Dec. 31, 1999	Adjusting Entries: Debit	Adjusting Entries: Credit	Adjusted Balance Dec. 31, 1999
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
6-4	J. T. Reed, Jr.	$ 11,293.93	$ 554.08				$ 6,550.50			$ 18,378.51		(201) $ 6,550.50	$ 11,828.01
9-4	D. F. Gray	3,880.80	55.00							3,880.80			3,880.80
11-4	Pegue Land and Cattle Co.	5,566.15				$ (5,566.15)				-			-
18-8	Lee Divine	4,765.77	288.15						$ (4,993.98)	-			-
21-8	Terry Thompson	15,786.85	774.47	$ 27.00						16,587.72			16,587.72
22-8	Lee Divine	7,389.31	541.35	3.75		(1,127.62)			(6,806.99)	-			-
23-4	L. E. Crawford	6,750.54	126.67	3100						8,900.21			8,900.21
25	W. E. Bush	5,315.88				(5,315.88)				-			-
26-8	E. E. Masterson	143,894.30	284.08						(143,478.18)	-			-
27-4	W. E. Ingerton	12,156.99	803.72	88.75		(12,589.43)				-			-
29-4	E. S. Poling	1,195.11	8.15							1,203.26			1,203.26
30-4	Lee Divine	105,990.79	19,544.78	266,057.95	$ 225.54	(4,896.12)			358,341.89	745,864.83		(201) 9,150.00	
												(203) 160,751.44	572,963.39
31-4	E. E. Masterson	65,116.13	3,008.69	144.50						68,299.32			68,299.32
38-1	do.	16,658.02	16.30	.75						16,675.07		(208) 16,946.99	25,786.08
43-9	do.	10,088.10	86.76	2,000.38	44,986.19				(6,899.82)				
									10,650.04	60,872.25		(202) 7,786.25	53,086.00
44-6	do.	22,494.15	63.82	58.43	(665.88)				(11,521.06)				
									(10,650.04)	-			
53	Lee Divine	169,347.76	1,399.91	99,464.71					(264,802.38)	-			
54-C	E. E. Masterson	74,976.00	969.56	48,885.13					(124,144.69)	-			
55-8	do.	48,131.69	558.32	2,771.75					(45,461.56)	-			
56-8	do.	11,576.00	126.67	7,004.50					(18,527.17)	-			
57-4	J. C. Harrish	4,809.00	814.16	63.85						4,513.50			4,513.50
58-8	E. E. Masterson	195,439.09	1,752.59	78,732.84	2,188.10)		39,431.71		372,110.27	813,813.27		(201) 39,431.71)	
					184,150.93)							(202) 29,713.70)	687,717.49
												(205) 256,950.37)	
60-4	E. C. Allison			35.67	1,160.19					1,195.86			1,195.86
61-4	Dove McBride			756.05	6,041.11					6,797.16			6,797.16
64-8	Elizabeth Crawford			99.86	11,039.70					11,078.96			11,078.96
65-J	E. E. Masterson	6,995.19	670.95	15.00				$ 18,260.00		25,919.12			25,919.12
67-4	Georgia E. Thompson	20,538.54	599.86	86,237.15						107,175.75			107,175.75
68	Thomas M. Coughlan				14,308.16		5,300.00			19,608.16		(201) 5,300.00	14,308.16
69-4	C. L. Ellgore			6.85	98,036.88				6,563.54	44,406.07			44,406.07
72-E	E. E. Masterson	2,222.50	107.46						(2,329.95)	-			-
74	W. E. Bush	1,950.00				(1,950.00)				-			-
75-L	E. E. Masterson	41,911.04	296.10	1.50	(2,171.81))								
					(51,886.55))				(8,750.30)	-			-
76	do.		12.22		1,688.85)								
					(1,441.07))					-			-
77	do.		4.07		546.96)								
					(547.03))					-			-
81-4	E. E. Reed			776.00	75,000.00		6,750.00			82,526.00		(201) 6,750.00	75,776.00

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Schedule No. B-4
Sheet 2 of 2

CANADIAN RIVER GAS COMPANY
OPERATED LEASES AT DECEMBER 31, 1938 AND 1939
AND SUMMARY OF CHANGES DURING INTERIM
For Books

Lease Number (1)	Lease (2)	Balance Dec. 31, 1938 (3)	Additions: Cost of Obtaining Leases (4)	Additions: Other (5)	Transferred from Unoperated Leases (6)	Leases Sold (7)	Bonus Renewals (8)	Adjustments (9)	Consolidations (10)	Balance Dec. 31, 1939 (11)	Adjusting Entries: Debit (12)	Adjusting Entries: Credit (13)	Adjusted Balance Dec. 31, 1939 (14)
									($ 51,099.60)	-			
82-J	Elvina Estate			$ 47,656.66	$135,073.07		$ 41,010.00		(172,640.13)	$ 65,883.00		(200) $ 58,758.68	$ 7,124.32
86-E	E. B. Masterson	$ 44,741.33		1,141.87						70,707.08		(200) 63,047.82	7,659.26
86-G	J. T. Smead, Jr.	68,548.75		2,158.33					(4,612.80)	-			
88	E. B. Masterson				4,612.80				(6,405.54)	-			8,618.43
91-E	do.			7,225.34	(800.00)					8,618.46			80,105.97
98-A	E. B. Johnson			80,105.97						80,105.97			10,169.21
99-A	J. M. Sanford			5,676.01	8,004.00)					10,169.21			
107-C	J. T. Smead, Jr.				(1,220.80))					-	(201)	1,556.82	4,886.71
				11,190.25			$ 5,972.00)		(6,363.54)	6,363.53			
108-D	do.						(4,455.18))		(17,586.00)	-			18,350.43
				17,586.00						18,350.43			6,061.62
113-F	Lee Elvins			18,350.43					(3,000.00)	6,061.62			54,075.67
114-A	Hattie V. Dunaway			9,061.62					3,000.00	54,075.67			5,698.37
116-A	John Q. Scot			51,075.67						5,698.37			22,460.65
117-B	do.			5,698.37						22,460.65			22,460.67
118-B	Hattie V. Dunaway			22,460.65						22,460.67			
119-C	John Q. Scot			22,460.67					(5,752.87)	-			
120-D	do.			5,752.87					(5,752.88)	-			
122-G	Lee Elvins			5,752.88					(1,607.85)	-			140,768.13
125-H	do.			1,607.85					172,640.13	172,640.13		(201) 31,880.00	
126-I	do.			8.00					6,363.54)				
135	(Fee "A"								(6,363.54))				
136-E	(C. L. Kilgore										(205) $310,304.64	(204) 782,082.67	
											(208) 4,399.73	(207) 28,387.84	(439,289.54)
	Profit on leases in the "Cliffside Structure" sold to U. S. Government										(200) 49,213.88		
											(209) 4,782.50		
											(210) 2,599.62		
	Legal fees and expenses paid in 1938 for examining and curing title to leases acquired										(212) 51,812.14		51,812.14
	Total	$1,104,781.41	$ 31,907.34	$914,279.04	$188,687.36	($ 30,622.98)	$100,559.01	$ 18,240.00		$2,627,831.80	$822,992.51	$1,504,946.19	$1,546,877.58

Exhibit No. 146

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Exhibit 6-1146

Sheet 1 of 2

CANADIAN RIVER GAS COMPANY
UNOPERATED LEASES AT DECEMBER 31, 1939 AND 1939
AND SUMMARY OF CHARGES DURING INTERIM

Year 1940

Lease Number	Lease	Balance Dec. 31, 1938	Additions: Cost of Obtaining Leases	Additions: Other	Transferred to Operated Leases	Abandoned	Bonus Removals and Delay Rentals	Balance Dec. 31, 1939	Adjusting Entries: Debit	Adjusting Entries: Credit	Adjusted Balance Dec. 31, 1939
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	August Silcoombeck	$ 5,373.97	$ 16.29	$ 4.21	$ (4,994.47)		$ 1,200.00	-			
2	J. T. Snead, Jr.	3,905.76	66.19	2,407.85		$ (1,275.80)	9,600.00)				
							(1,920.00))	$ 12,783.00	(201)	$ 7,680.00	$ 5,103.00
4	E. B. Masterson	1,332.56	10.19		(1,342.75)			-			
10	do.	6.01	8.15		(14.16)			-			
13	J. T. Snead, Jr.	1,943.52		8,004.00	(8,004.00)	(1,943.52))					
					1,220.80	(1,220.80))					
						(687.07)		-			
17	Lee Bivins	883.00	4.07				4,250.00	8,048.79	(201)	4,250.00	3,798.79
19	E. E. Miller	3,736.42	21.64	40.73				-			
20	Lee Bivins	5,782.27	16.29			(5,798.56)		-			
28	E. B. Masterson	2,052.02	16.29		(2,068.31)			-			
33	Lee Bivi s	221.50	2.04		(225.54)			-			
35	C. J. Ransom	1,552.00	16.30	27.58	(2,775.88)		1,200.00	-			
36	Anthony Walters	3,996.37	33.88	28.42	(4,058.67)			-			
37	E. B. Masterson	6,130.38	16.28	.39	(6,147.05)			-			
38	do.	10,795.37	49.10	.39	(10,844.86)			-			
39	do.	12,211.12	33.02	.38	(12,244.52)			-			
40	do.	10,647.59	28.52	2,000.38	(12,676.49)			-			
41	do.	12,180.27	32.59	.38	(12,213.24)			-			
42	do.	11,378.24	20.55	1,000.38	(12,399.17)			-			
45	do.	8,148.03	32.59	.38	(8,181.00)			-			
46	do.	8,606.90	20.37	2,000.38	(10,627.65)			-			
47	G. H. Cooper	3,718.75	22.64	11.15			2,125.00	5,876.54	(201)	2,125.00	3,751.54
48	C. L. Kilgore	6,127.25	69.24			(6,196.49)		-			
49	E. B. Masterson	1,604.70	8.15		(1,612.85)			-			
51	do.	2,115.55	12.22		(2,127.77)			-			
52	do.	832.35	4.07		(836.42)			-			
60-A	E. O. Allison	1,150.00	10.19		(1,160.19)			-			
61-A	Dave J. McBride	6,000.00	61.11		(6,061.11)			-			
62	Jessie M. Wright	3,260.00	53.46			(3,313.46)	6,574.60)				
							(6,574.60))	-			
63	Hettie L. Baker	3,840.00	48.89	33.00			3,320.50	7,242.39	(201)	3,320.50	3,921.89
64-B	J. M. Crawford	10,887.70	148.00		(11,035.70)			-			
66	Johannd Gary & Jos. Davies	4,800.00	32.59		(4,832.59)			-			
68	Thomas M. Coughlan	6,000.00	48.89	32.21	(14,508.96)		4,100.00)				
					7,427.06		(5,500.00))	-			
69-A	C. L. Kilgore	70,632.00	1,918.42		(72,550.42))			-			
					54,514.14)	(54,514.14)					
70	J. M. Crawford	10,356.57	8.12	40.85			8,158.00	18543.54	(201)	8,158.00	10,385.54
72	S. M. Gage	4,000.00		10.00			194.25	7,204.25	(201)	3,194.25	4,010.00
73	M. Bradley	4,000.00		2.00			3,200.00	7,202.00	(201)	3,200.00	4,002.00
78	E. B. Masterson	10,000.00	36.67	500.00	(10,536.67)			-			
79	W. H. Taylor	2,400.00				(2,400.00)		-			
80	Mary G. Cooper	3,000.00		287.56			2,400.00	5,687.56	(201)	2,400.00	3,287.56
81-A	E. B. Read	75,000.00			(75,000.00)			-			

2739
Exhibit No. 1146
13

SUMMARY OF INTANGIBLE WELL COSTS
AS AT DECEMBER 31, 1927
AND DEPLETION ACCRUED THEREON

Lease		Intangible Well Costs: Estimated Development Cost	Depletable Intangible Costs: Cost in Gas Department Adjustment Account	Depletable Intangible Costs: Cost in Gas Well Investment	Total	Gas Produced M.C.F.	Recoverable Gas Reserves M.C.F.	Accrued Depletion
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lee Bivins	A		$1,709.96	$177,628.63	$179,338.61	1,848,068	438,875,725	$ 9,391.01
Lee Bivins	B		22.67	96,128.89	96,151.56	1,201,089	50,607,789	2,715.18
Lee Bivins	C	$ 80,809.04		(3,027.39)	77,781.65	3,925,349	12,907,015	(612.34)
Lee Bivins	D	49,166.50		(6,678.98)	42,487.52	1,887,738	7,804,141	(882.99)
W. H. Bush	A		226.67	41,122.80	41,350.47	51,350	18,680,265	69.44
Fuqua Land and Cattle Co. (Dry hole)	A			38,227.66	38,227.66	-	-	-
R.B. Masterson	A		456.46	72,734.20	74,198.66		(5)	-
R.B. Masterson	B	50,000.00		(5,628.22)	44,371.78	804,641	73,826,513	(28.94)
R.B. Masterson	C	100,223.01		2,571.31	102,794.32	4,143,456	14,510,682	414.22
R.B. Masterson	D	50,000.00		928.36	50,928.36	7,794,169	112,820,086	34.47
R.B. Masterson	E	50,000.00		2,248.15	52,248.15	101,869	(4)	81.46
R.B. Masterson	F	40,000.00		(13,194.07)	26,805.93	101,389	824,945	(1,644.12)
R.B. Masterson	G			31,329.28	31,329.28	148,815	5,204,296	1,280.08
R.B. Masterson	H	38,000.00		(15,933.88)	22,066.12	108,142	2,472,448	(636.09)
R.B. Masterson	I	38,000.00		(17,877.93)	20,122.07	109,634	5,825,847	(347.80)
Terry Thompson	A			9,079.68	9,079.68	-	(5)	-
J.C. Warrick	A		5,195.68		5,195.68			-
Total		(1)$496,198.56	(2)$6,611.48	$412,668.51	$914,478.54	22,198,729	741,129,467	$10,139.54

Notes:

(1) Estimated development costs were reflected in gas well investment as of September 30, 1925 which costs were credited to Gas Department Adjustment account.

(2) In the Gas Department Adjustment account were recorded certain intangible costs which should have been reflected in Gas Well Investment.

(3) Lease acquired by Amarillo Oil Company from Mountain States Gas Company with well completed in 1924. No gas produced from this lease until 1928.

(4) Estimated recoverable reserve transferred to R. B. Masterson D lease.

(5) One-half interest in Thompson A lease purchased in 1926 by Amarillo Oil Company with one completed well. Gas was first produced from this lease in 1928.

Docket G-124

Subschedule No. 2-D
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
SUMMARY OF OPERATED LEASE COSTS
AS AT DECEMBER 31, 1927
AND DEPLETION ACCRUED THEREON

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Lease		Depletable Lease Cost	Gas Produced M.C.F.	Estimated Recoverable Gas Reserves M.C.F.	Accrued Depletion
(1)		(2)	(3)	(4)	(5)
Lee Bivins	A	$105,091.71	1,848,068	438,575,725	$ 440.98
Lee Bivins	B	4,765.77	1,201,089	50,607,759	109.64
Lee Bivins	C	64,468.06	3,923,349	12,907,013	14,817.91
Lee Bivins	D	98,979.70	1,887,738	7,504,141	17,100.07
W. H. Bush	A	5,315.88	31,350	18,650,263	11.80
Puqua Land and Cattle Co. (Dry hole)	A	5,546.15	-	-	-
R.B. Masterson	A	65,148.13	-	(1)	-
R.B. Masterson	B	134,639.03	804,641	73,526,313	1,452.10
R.B. Masterson	C	74,576.00	4,143,456	14,510,682	15,624.31
R.B. Masterson	D	42,131.49	7,794,169	112,820,038	2,312.40
R.B. Masterson	E	11,376.00	101,889	(2)	416.96
R.B. Masterson	F	3,936.06	101,389	824,943	430.70
R.B. Masterson	G	8,642.24	148,815	3,204,295	383.58
R.B. Masterson	H	143,254.10	103,142	2,472,448	2,860.10
R.B. Masterson	I	42,658.02	109,634	5,525,847	829.88
Terry Thompson	A	200.00	-	(3)	-
Total		$810,728.34	22,198,729	741,129,467	$56,790.43

Notes:

(1) Lease acquired by Amarillo Oil Company from Mountain States Gas Company with well completed in 1924. Gas was first produced from this lease in 1928.

(2) Estimated recoverable reserve transferred to R. B. Masterson D lease.

(3) One-half interest in Thompson A lease purchased in 1926 by Amarillo Oil Company with one completed well. Gas was first produced from this lease in 1928.

2747

Exhibit No. 46

Docket G-124

Subschedule No. 2-E
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
SUMMARY OF DEPRECIABLE WELL COSTS
AS AT DECEMBER 31, 1927
AND DEPRECIATION ACCRUED THEREON

77

Lease		December 31, 1927 Depreciable Cost	Accrued Depreciation
(1)		(2)	(3)
Lee Bivins	A	$ 63,179.45	$ 12,998.67
Lee Bivins	B	40,864.78	11,300.73
Lee Bivins	C and D	30,033.20	23,638.89
W. H. Bush	A	14,035.57	3,508.97
Fuqua Land and Cattle Co.	A	25,264.36	1,263.22
R.B. Masterson	A	31,916.74	7,107.03
R.B. Masterson	B	9,425.92	2,339.96
R.B. Masterson	C	17,126.44	31,932.08
R.B. Masterson	D	5,860.67	1,465.18
R.B. Masterson	E	3,523.72	880.33
R.B. Masterson	F	10,927.39	2,731.84
R.B. Masterson	G	20,647.80	2,575.53
R.B. Masterson	H	14,121.22	3,530.30
R.B. Masterson	I	16,430.50	4,107.63
Terry Thompson	A	3,871.57	704.21
Total		$307,231.33	$110,084.57

The accrued depreciation as shown by the records of the company as of December 31, 1927 was computed in the following manner:

Additions			Accrued
Year Acquired	Amount	Rate	Depreciation
1924 and prior	$151,389.63	10%	$ 81,639.05
1925	92,323.69	10%	23,080.92
1926	21,886.86	10%	3,283.04
1927	41,631.15	10%	2,081.56
	$307,231.33		$110,084.57

Docket G-126

Schedule No. 3
Sheet 1 of 3

CANADIAN RIVER GAS COMPANY
SUMMARY OF GAS WELLS AS OF DECEMBER 31, 1939
AFTER EXAMINER'S ADJUSTMENTS

Well Name	Well Number	Lease Number	Date of First Marketing	Total Per Books	Examiner's Adjustments Debit	Examiner's Adjustments Credit	Adjusted Total	Casing	Other Equipment	Labor, Teaming and Freight	Drilling	Miscellaneous	Depreciation and Adjustments
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Allison	A-1	60	2/13/30	$ 28,147.89			$ 28,147.89	$ 6,761.61	$ 718.51	$ 2,444.31	$ 13,415.58	$ 2,971.01	$ 1,836.33
Divine	A-2	30	11/ 9/24	64,213.56	$ 33,756.89	$ 33,756.89	64,213.56	13,801.99	539.97	5,699.52	28,100.00	58.69	16,050.39
"	A-3	30	Feb. 1926	28,838.54	1,709.98		30,548.52	7,958.14	731.10	7,017.42	17,135.98		(2,273.72)
"	A-4	30	May 1928	41,477.57			41,477.57	2,737.30	366.76	6,762.66	31,219.00	60.69	331.16
"	A-5	30	8/14/29	36,085.34			36,085.34	13,605.90	404.10	5,867.07	15,882.00	58.68	207.59
"	A-6	30	10/28/35	37,378.33			37,378.33	10,646.97	499.17	4,430.94	17,985.75	536.19	3,280.31
"	A-7	30	10/19/35	53,599.80			53,599.80	16,134.51	697.81	6,176.56	21,001.78	4,307.97	5,281.17
"	A-8	30	8/11/29	42,571.78			42,571.78	13,368.13	888.35	5,621.85	21,888.75	972.06	493.84
"	A-9	30	1/ 1/29	50,168.74			50,168.74	17,892.25	865.99	6,305.60	22,700.86	733.86	1,671.40
"	A-10	30	4/ 8/30	39,393.07			39,393.07	9,513.51	448.94	4,215.72	19,464.00	3,432.78	2,318.12
"	A-13	30	3/28/36	35,446.70			35,446.70	6,475.10	740.84	2,475.36	17,175.32	4,957.69	3,622.39
"	A-14	30	11/20/35	22,848.75			22,848.75	4,231.46	558.38	2,318.04	10,108.00	674.51	4,958.37
"	A-15	30	3/28/36	29,578.41			29,578.41	6,088.23	553.84	2,610.98	15,203.16	538.19	4,664.01
"	A-16	30	1/17/36	20,184.95			20,184.95	3,395.15	473.05	1,734.98	10,209.50	651.46	3,760.81
"	A-17	30	1/17/36	28,280.81			28,280.81	5,650.82	366.98	1,995.84	18,767.80	987.93	1,112.70
"	A-18	30	Dec. 1936	21,014.22			21,014.22	3,968.32	402.98	2,310.29	10,430.92	338.46	3,563.38
"	A-19	30	2/24/37	19,771.93			19,771.93	3,951.83	403.38	2,880.64	10,067.73	646.07	1,885.86
"	A-20	30	4/ 8/37	26,805.40			26,805.40	8,367.83	608.59	2,613.47	12,809.50	783.83	2,823.58
"	A-21	30	9/10/37	24,914.56			24,914.56	5,076.36	518.13	413.59	14,612.18	771.75	1,522.55
"	A-22	30	None	37,056.08		37,056.08							
"	A-23	30	7/20/38	43,157.85			43,157.85	12,449.69	510.93	5,511.50	21,384.00	856.34	2,484.79
"	A-24	30	12/ 8/38	21,357.54			21,357.54	4,853.51	484.57	1,975.60	12,078.83	592.11	1,492.92
"	A-25	30	7/11/39	23,607.88			23,607.88	5,623.05	588.16	1,824.01	13,462.50	532.91	1,636.95
"	B-1	(30) 18	12/ 7/24	53,134.49	24,543.67	24,543.57	53,134.49	9,879.99	698.09	7,260.74	18,558.65	256.42	16,486.60
"	B-2	(30) 18	9/ 9/25	59,465.52	22.67		59,487.99	13,133.43	619.14	8,468.03	32,584.72	72.09	4,610.58
"	B-3	(30) 18	June 1926	30,488.54			30,488.54	11,788.87	591.04	2,375.05	12,986.85	2.00	2,815.33
"	B-4	(30) 18	12/18/28	28,075.34			28,075.34	8,068.44	576.07	3,008.44	16,580.00	855.27	(320.05)
"	B-5	(30) 18	10/20/28	51,618.79			51,618.79	13,035.57	968.84	16,050.10	14,870.00	96.53	7,197.75
"	B-6	(30) 18	11/29/28	29,290.89			29,290.89	8,077.38	787.61	5,967.89	13,510.00	66.26	881.85
"	C-1	(30) 53	9/28/22	56,240.51	46,352.73	50,000.00	52,593.24	6,027.47	510.53	28,731.14	17,681.99	58.69	(356.18)
"	C-4	(30) 53	1/ 6/24	37,872.06	8,809.04	30,809.04	15,872.06	6,894.16	488.72	2,131.96	6,937.52	58.69	(553.34)
"	D-3	(30) 53	6/20/23	57,137.74	44,376.03	49,166.50	52,347.27	12,868.88	584.54	27,516.85	16,868.18	50.80	(4,889.98)
"	B-1	(30) 82	9/11/28	28,361.38			28,361.38	7,648.44	977.81	3,321.31	13,132.02	1,021.28	2,266.46
"	F-1	(30) 115	8/12/31	36,696.17			36,696.17	10,086.11	529.51	5.50	51.00	(1) 24,796.40	1,267.65
"	G-1	(30) 122	4/ 6/33	19,195.21			19,195.21	3,889.32	579.61	4,119.47	10,200.00	610.90	(4.09)
"	B-1	(30) 125	4/ 6/33	19,698.79			19,698.79	3,782.97	361.95	4,143.73	10,800.00	610.14	
"	I-1	(30) 124	Aug. 1933	16,399.27			16,399.27	6,188.96	532.55	417.54	9,000.00		(39.78)
"	J-1	(30) 82	Apr. 1933	16,262.54			16,262.54	9,271.38	955.82	6,149.46	20,879.08	2,401.34	6,884.86
Best	A-1	116	12/ 8/30	30,303.48			30,303.48	6,382.19	480.98			(1) 23,543.17	17.20
"	B-1	117	8/25/31	30,079.83			30,079.83	11,405.00	207.01	6.16		(1) 15,491.82	(30.16)
"	C-1	119	9/28/31	33,954.62			33,954.62	10,040.67	676.84	4,000.00	16,125.00	757.12	2,354.99
"	C-2	119	11/24/31	19,805.66			19,805.66	3,634.04	447.01	1,137.97	11,848.00	2,094.76	643.88
"	D-1	120	6/24/32	30,785.99			30,785.99	3,689.30	195.49	6,000.00	16,200.00	3,098.34	1,602.86
Coughlan	A-1	68	1/28/37	22,246.09			22,246.09	6,154.64	502.71	2,176.86	10,695.50	761.43	1,953.95
Crawford	A-1	23	9/1 /28	38,508.30			38,508.30	16,089.72	688.31	3,865.34	16,501.07	93.28	1,370.58
"	B-1	64	10/14/31	41,665.44			41,665.44	8,212.06	460.10	11,168.19	19,684.00	6,970.07	1,151.02

Exhibit No. 116
27 19
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Schedule No. 3
Sheet 3 of 3

CANADIAN RIVER GAS COMPANY
SUMMARY OF GAS WELLS AS OF DECEMBER 31, 1959
AFTER EXAMINER'S ADJUSTMENTS

Well Name	Well Number	Lease Number	Date of First Marketing	Total Per Books	Examiner's Adjustments Debit	Examiner's Adjustments Credit	Adjusted Total	Casing	Other Equipment	Labor, Teaming and Freight	Drilling	Miscellaneous	Depreciation and Adjustments
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Thompson	B-2	21	6/19/36	$ 24,981.15			$ 24,981.15	$ 4,829.65	$ 542.27	$ 1,791.18	$ 15,123.00	$ 660.76	$ 2,034.89
Warrick	A-1	57	Sept. 1935	27,757.56	$ 3,193.68		30,951.24	8,653.32	723.80	3,309.99	13,892.85	2.52	4,369.16
"	A-2	57	7/ 7/50	26,875.69			26,875.69	8,196.51	1,100.86	4,405.75	12,144.07	122.82	586.88
Total				$3,218,911.05	$439,771.77	$659,072.21	$3,029,610.61	$766,732.66	$53,374.22	$500,697.51	$1,328,527.89	$164,681.46	$215,596.88

Notes:

(1) Contains drilling costs and labor, teaming and freight. No breakdown available on Respondent's records.

(2) Development costs contained in lease costs. Not segregated here since Respondent's records do not contain necessary information.

Exhibit No. 116

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2753

Docket G-124

Schedule No. 13
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
SUMMARY OF UNDISTRIBUTED FIXED CAPITAL
AS OF DECEMBER 31, 1939

Account Number (1)	Description (2)	Per Books Amount (3)	Examiner's Adjustments Debit (4)	Examiner's Adjustments Credit (5)	Adjusted Totals (6)
200	Organization Expense	$ 387.45			$ 387.45
203	Other Undistributed Fixed Capital (1)	8,843.16			8,843.16
	General Construction (Entry 252)		$ 2,196.01		2,196.01
262	Law Expenses during Construction	53,091.59		$ 51,812.14	1,279.45
266	Interest during Construction	556,897.95	$460,435.86	1,016,303.48	1,030.33
	Totals	$619,220.15	$462,631.87	$1,068,115.62	$13,736.40

Note: (1) This item consists principally of pre-construction engineering and design charges. See Schedule 8, Sheet 2 of the Colorado Interstate Gas Company report for explanatory details of this item which was apportioned between the two companies, 75% to Colorado Interstate and 25% to Canadian.

Exhibit No. 136

2755

AS OF DECEMBER 31, 1939

Date (1)	Reference No. (2)	Particulars (3)	Total Per Books (4)	Examiner's Adjustments Debit (5)	Examiner's Adjustments Credit (6)	Totals Adjusted (7)
Jan. 1928	A-3 Memo	Colorado Interstate Gas Company. For payment by it to Standard Oil Company (New Jersey) covering "Expenses of F. Andrews and E. P. Hall trip to Galveston, Texas, and Colorado Springs, Colorado, November 11 to December 27, 1927." Total $652.20, whereof there was charged to this account	$ 507.04			$ 507.04
June 1928	P-15 Memo	Colorado Interstate Gas Company. For payment by it to Andrews, Streetman, Logue and Mobley, Houston, Texas. For legal work done in connection with Amarillo-Denver gas project to date (June 8, 1928) $50,000.00 Expenses incurred - books, maps, abstract work, etc. 994.08	50,994.08		$50,994.08	
July 1928	G-40 Memo	Amarillo Oil Company for payment by it to The Prairie Oil and Gas Company, Independence, Kansas, for legal services of Mr. Loftus (Amarillo office) for the month of June 1928. 3-1/2 days attending to title requirement work in connection with Denver project	23.33			23.33
July 1928	G-12	Amarillo Oil Company for payment by it to The Prairie Oil and Gas Company, Independence, Kansas, for traveling and miscellaneous expenses of Mr. T. J. Flannelly, April 14 to 28, in connection with Denver project	596.69			596.69
Sept. 1928	J-535	Andrews, Streetman, Logue and Mobley, Houston, Texas. Recording fees in several Texas counties $696.15; traveling expenses $60.00; telegrams $48.21; express on abstracts, etc. $2.96; printing $3.00; postage $7.75	816.06		816.06	
Oct. 1928	K-324	Allocation of The Prairie Oil and Gas Company bill No. 69026 of July 31, 1928, paid on Vr. K320, October 1928, covering: "Proportion of the expenditures from the James A. Carroll Commissioner Suspense Account, Amarillo, for the six months' period, ending June 30, 1928."	153.39			153.39
		Total Law Expenditures during Construction as of December 31, 1939	$53,091.59		$51,812.14	$1,279.45

Exhibit No. 146

27257

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2759

Exhibit No. 46

Docket G-124

Subschedule No. 13-B
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
INTEREST DURING CONSTRUCTION

138

Description	Amount
(1)	(2)
Interest Capitalized per Respondent's Books	$556,897.95
Interest during Construction as Revised (F.P.C.)	1,030.33
Net Adjustment	$555, 867.62

Refer to Subschedule No. 13-B1 for details of interest per books
Refer to Subschedule No. 13-B2 for details of interest per books adjusted (Memo only).
Refer to Subschedule No. 13-B3 for details of interest as revised by Examiner and adjustments.

PER BOOKS DECEMBER 31, 1939

Date (1)	Reference (2)	Particulars (3)		Total Per Books (4)
Dec. 1927	M-27 (F.B.& D. Inc.)	Recording interest charged by Interstate Natural Gas Company, Monroe, Louisiana, on expenditures from June 6 to September 30, 1927, for the account of Ford, Bacon & Davis, Inc. (Amarillo-Denver line), aggregating $78,761.92. Interest computed on the individual expenditures from the date made to December 12, 1927		$ 1,631.93
Jan. 1928	A-18 (F.B.& D. Inc.)	Recording interest charged by Interstate Natural Gas Company, Monroe, Louisiana, on advances to W. H. Womble and H. F. Benson, special accounts, and paid for by New York office		
		Benson $45,134.55 from 9/30 to 12/16/27	$571.34	
Jan. 1928	A-18 (F.B.& D. Inc.)	Womble $ 8,636.46 from 11/30 to 12/16/27	22.72	594.06
		Transfer or allocation of 3/4 of charges as above to Colorado Interstate Gas Company.		
Aug. 1928	H-237	$1,631.95 / $594.06 x 3/4 =		(1,669.49)
		Amarillo Oil Company. Covering charges by Southwestern Development Company as "To charge you with amount paid Colorado Interstate Gas Company, Covering interest charged by Standard Oil Company (New Jersey) on moneys advanced by them for the account of Amarillo Oil Company." Total advance recorded on statement as $78,761.87 and interest charge as $256.91. Canadian River Gas Company portions of		
Sept. 1928	J-386	above: Advances $44,548.32 and interest as		146.44
		Amarillo Oil Company. For interest on prepaid lease rentals to May 31, 1928, applicable to a total of $69,128.15 on component parts thereof for various periods at the rate of 6% per annum		
Sept. 1928	J-387	Amarillo Oil Company. For interest, May 1, 1927 to May 31, 1928 @ 6% on expenditures for drilling new wells. Total of such expenditures $684,229.41. Interest	$ 22,288.78	364.45
		Interest May 1, 1927 to May 31, 1928 @ 6% on expenditures for cost of new leases, lease renewals, etc. Total of such expenditures, $263,455.40. Interest	4,238.85	
		Less interest @ 6% on $290,000.00 received in April 1928	(2,366.82)	
		Interest May 1, 1927 to May 31, 1928 @ 6% on expenditures for cost of procuring new leases, renewals, curing titles, etc. Total of expenditures $36,630.64. Interest	894.99	

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DETAIL OF INTEREST DURING CONSTRUCTION
PER BOOKS DECEMBER 31, 1929

Date (1)	Reference (2)	Particulars (3)		Total Per Books (4)
		Interest May 1, 1927 to May 31, 1928 @ 5% on unexpired rentals paid in advance. Total amount to which applicable $77,340.24	$ 394.53	
		Interest (from various dates in 1927 to December 8, 1927) as paid on loans and bonds by Southwestern Development Company and subsidiaries, prior to the date the first $2,500,000.00 of Canadian River Gas Company funds were available, or December 8, 1927. This includes interest for 221 days on $1,791,750.00 Southwestern Development Company bonds retired; interest on its interest coupons No. 5, due 2/1/27, and No. 6, due 8/1/27, payment of which were defaulted and interest on money advanced to Southwestern Development Company to purchase coupons 5 and 6 as above	128,319.67	$153,768.21
Oct.	1928	K-828	Contra-credit "Interest Accrued on Funded Debt." Transfer from Interest Expense, covering Interest on Funded Debt from date of issue to October 1, 1928, in accordance with letter from Mr. J. B. Lane, dated 11/30/28. This represents interest for approximately four months on $8,470,000.00 of Canadian River Gas Company bonds.		169,399.97
Oct.	1928	K-832	Correction of entry per Vr. F-15, June 1928, by which the accrued interest on the $8,470,000.00 bonds from June 1, 1928, to June 27, 1928, date of sale, was charged to Colorado Interstate Gas Company and credited to "Interest on Funded Debt." The entry per Vr. K-832, as above, transfers the credit from "Interest on Funded Debt" to "Interest during Construction." This entry to offset in part the charge of $169,399.97 per Vr. K-832 above. 26/30 of $42,350.00 (1 month's interest).		(36,705.33)
Oct.	1928	K-834	Colorado Interstate Gas Company. Taking into account interest on funds advanced by Colorado Interstate Gas Company, interest being calculated to September 30, 1928, per statement from its New York office, and contained in its private files		265,764.66

Exhibit No. 146

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CANADIAN RIVER GAS COMPANY
DETAIL OF INTEREST DURING CONSTRUCTION
PER BOOKS DECEMBER 31, 1939

Date (1)	Reference (2)	Particulars (3)		Total Per Books (4)
Oct. 1928	K-407	Colorado Interstate Gas Company. Interest on September advances		
		Sept. 8 $ 575,000.00 for 23 days		
		13 450,000.00 for 18 "		
		14 765,000.00 for 17 "		
		18 104,000.00 for 13 "		
		$1,894,000.00		
			$465.21	
		Less amount charged on Vr. K-281	193.27	$ 271.94
Nov. 1928	L-403	Correction. Cancelling charge for interest on unexpired lease rentals		(394.83)
Nov. 1928	L-416	Correction. Cancelling charge on September Vr. J-386		(364.45)
Dec. 1928	M-465	Transfer and correction. Interest from June 1 to December 31, 1928 on moneys expended by Amarillo Oil Company for Canadian River Gas Company during the period May 1, 1927 to May 31, 1928.	$3,734.04	
		Reinstating charge cancelled by Vr. L-416 above	364.45	4,098.49
		Total Interest during Construction (Per Books)		$556,897.95

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Docket G-124 Sheet 1 of 1

CANADIAN RIVER GAS COMPANY

COMPARISON OF INTEREST DURING CONSTRUCTION, PER BOOKS, AND AS COMPUTED BY F.P.C. EXAMINER TO OCTOBER 1, 1928

Description (1)	Principal Amounts Considered (2)	Period From (3)	Period To (4)	Interest Calculation (F.P.C.) (5)	Interest Per Books (6)
Properties originally purchased from Amarillo Oil Company as of May 1, 1927	$5,000,000.00	May 1, 1927	Oct. 1, 1928	$425,753.42	
Expenditures by Amarillo Oil Company per its statement for drilling of wells, acquisition of leases, prepayment of lease rentals, etc.	1,053,603.09	May 1, 1927	Oct. 1, 1928	29,993.64	
Construction by Ford, Bacon & Davis, Inc., per trial balance of August 31, 1928:					
1. Direct	$3,539,585.66	Nov. 1927	Oct. 1, 1928	$118,792.73	
2. General construction accounts distributed in August 1928 between Colorado Interstate Gas Company and Canadian River Gas Company	826,726.14	Nov. 1927	Oct. 1, 1928	25,786.95	
Total Ford, Bacon & Davis construction and interest	$4,366,311.80			$144,579.68	
Construction direct by Canadian River Gas Company:					
1. From Property Suspense account	$ 257,464.57	June 1928	Oct. 1, 1928	$ 3,295.26	
2. From Leaseholds, Account 205	80,988.54	July 1928	Oct. 1, 1928	238.24	
3. From Incomplete Wells, Account 103	173,979.56	June 1928	Oct. 1, 1928	1,747.81	
Total for Canadian River Gas Company	$ 512,422.67			$ 5,281.31	
Interest during construction per books (See Subschedule No. 13-B1)		May 1, 1927	Oct. 1, 1928		$556,897.95
Total interest as computed (F.P.C.) and as recorded by Respondent				$605,608.05	$556,897.95

Note: For comparative purposes; not used as basis for Examiner's adjustments. See Subschedule No. 13-B3 for revised interest calculation.

Exhibit No. 146

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Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
INTEREST DURING CONSTRUCTION
AS REVISED BY F.P.C. EXAMINER
FOR PERIOD MAY 1, 1927 TO JULY 1, 1928

See Sub-schedule No.	Description (1)	Principal Amounts Considered (2)	Period From (3)	Period To (4)	Interest Calculation (5)
13-B3-1	Properties originally purchased from Amarillo Oil Company as of May 1, 1927	$5,000,000.00	May 1, 1927	July 1, 1928	$350,136.99
13-B3-2	Expenditures by Amarillo Oil Company per its statement for drilling of wells, acquisition of leases, prepayment of lease rentals, etc.	1,053,603.09	May 1, 1927	July 1, 1928	29,183.86
	Construction by Ford, Bacon & Davis, Inc., per their books:				
13-B3-3a	A. Direct construction per trial balance of June 30, 1928	$3,022,505.30	Nov. 1927	July 1, 1928	$ 66,764.05
13-B3-3b	B. General construction accounts distributed in August 1928 between Colorado Interstate Gas Company and Canadian River Gas Company, which originated prior to June 30, 1928	804,464.67	Nov. 1927	July 1, 1928	13,368.03
13-B3-3c	C. Revenues from commissary at Bivins Camp	(14,283.61)	Feb. 1928	July 1, 1928	(148.44)
13-B3-3d	D. Sundry accounts receivable (G. A. Woods, Special, and others)	14,274.45	Nov. 1927	July 1, 1928	689.25
	Total for Ford, Bacon & Davis, Inc. (at June 30, 1928)	$3,826,945.81			$ 80,672.89
13-B3-4	Construction direct by Canadian River Gas Company:				
	A. From Property Suspense account	$ 128,062.45	June 1, 1928	July 1, 1928	$ 315.77
	B. From Incomplete Wells, Account 103	51,243.27	June 1, 1928	July 1, 1928	126.35
	Total for Canadian River Gas Company	$ 179,305.72			$ 442.12
	Total interest revised, before adjustments				$160,435.86
	Examiner's Adjustments				
No. 248	Operating revenue from properties acquired from Amarillo Oil Company as of May 1, 1927		$214,552.27		
No. 249	Appreciation on leaseholds acquired from Amarillo Oil Company as of May 1, 1927		244,853.26		(169,405.53)
	Interest during construction after adjustments				$ 1,030.33

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Subschedule No. 13-B3-1
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
INTEREST DURING CONSTRUCTION
PROPERTIES ORIGINALLY PURCHASED FROM AMARILLO OIL COMPANY
ON MAY 1, 1927

Voucher Reference (1)	Account Number (2)	Account Description (3)	Principal Amount Considered (4)	One Day's Interest 6% Rate 365-Day Year (5)	Period From (6)	Period To (7)	Number of Days (8)	Interest Calculation (9)
F-42-1928	205-A	Leaseholds	$3,749,417.33					
	210-A	Buildings	2,754.73					
	211-A	Gas Well Construction	943,450.92					
	212-A	Gas Well Equipment	260,886.92					
	209-B	Measuring Station Structures	125.65					
	210-B	Other Structures	35.00					
	215-B	Measuring Station Equipment	4,758.29					
		Warehouse Material	31,428.74					
		Automobiles	5,439.42					
	121	Material and Supplies	1,703.00					
		Total	$5,000,000.00	$821.9178	May 1, 1927	July 1, 1928	426	$350,136.99

Exhibit No. 146
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Subschedule No. 13-B3-2
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
INTEREST DURING CONSTRUCTION
EXPENDITURES BY AMARILLO OIL COMPANY PER ITS STATEMENT
FOR DRILLING OF WELLS, ACQUISITION OF LEASES, ETC.

Voucher Reference (1)	Description (2)	Per Amarillo Oil Co. Statement Amount (3)	6% Interest to 5/31/28 (4)	One Day's Interest 6% Rate 365-Day Year (5)	Additional Interest to July 1, 1928 Days (6)	Additional Interest to July 1, 1928 Amount (7)	Total Interest (Col. 4 + Col. 7) (8)
F-42-1928	Drilling of new wells	$ 684,229.41	$22,288.78	$112.4761	30	$3,374.28	$25,663.06
J-387-1928	Acquiring new leases, renewals, etc.	263,455.40	4,238.85	43.3077	30	1,299.23	5,538.08
M-465-1928	Expenses of curing titles, procuring leases, etc.	36,630.64	894.90	6.0215	30	180.65	1,075.55
	Unexpired rentals paid in advance	69,287.64	364.45	11.3898	30	341.68	706.13
	Subtotal	$1,053,603.09	$27,786.98			$5,195.84	$32,982.82
	Credits						
	Money received from U. S. Government April 30, 1928, re: Helium Deal	(225,000.00)	(1,143.41)	36.9863	30	(1,109.59)	(2,253.00)
	Money received and used in purchase of Emerald and Deischer leases, February 6, 1928	(65,000.00)	(1,225.41)	10.6849	30	(320.55)	(1,545.96)
	Total	$ 763,603.09	$25,418.16			$3,765.70	$29,183.86

Exhibit No. 146

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Subschedule No. 13-B3-3a
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
INTEREST DURING CONSTRUCTION
FORD, BACON & DAVIS DIRECT CONSTRUCTION PER TRIAL BALANCE
OF JUNE 30, 1928

Source: Ford, Bacon & Davis, Inc. General Ledger (1)					One Day's Interest 6% Rate 365-Day Year	Interest Calculation to July 1, 1928	
Date (1)	Reference (2)	Description (3)	Amount (4)	Total (5)	(6)	No. of Days (7)	Amount (8)
				$ 108,992.58	$ 17.9166	228	$ 4,084.99
Nov. 1927	VR P-4			646,728.87	106.3116	197½	20,996.54
Dec. 1927	VR P-8			577,670.54	94.9595	166½	15,810.76
Jan. 1928	VR P-14						
Feb. 1928	VR P-21		$565,385.61				
" "	Memo B-39		83.27	565,468.88	92.9538	136½	12,688.19
Mar. 1928	VR P-29		$445,626.93				
" "	CR	Misc. Cash Receipts	(259.76)	445,367.17	73.2110	106½	7,796.97
Apr. 1928	VR P-37		$257,366.03				
" "	CR	Misc. Cash Receipts	(119.00)	257,247.03	42.2872	76½	3,234.97
May 1928	VR P-46		$222,359.60				
" "	CR	Misc. Cash Receipts	(273.48)	222,086.12	36.5073	45½	1,661.08
June 1928	VR P-55		$199,559.18				
" "	CR	Misc. Cash Receipts	(615.07)	198,944.11	32.7031	15	490.55
		Total		$3,022,505.30			$66,764.05

Note: (1) VR signifies Voucher Register.
CR signifies Cash Receipts Book.

Exhibit No. 146

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Docket G-124

Subschedule No. 13-83-3b
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
INTEREST DURING CONSTRUCTION
GENERAL CONSTRUCTION ACCOUNTS DISTRIBUTED IN AUGUST 1928
WHICH ORIGINATED PRIOR TO JUNE 30, 1928

Month of Origin	Account 255 - Telephone Equipment		Accounts 258 to 267 (Note 1)		(G.A.) Operation & Maintenance Autos & Trucks		(G.M.) Materials and Supplies		Total (Col. 3 + 5 + 7 + 9)	Gas Day's Interest 6% Rate	Interest Calculation	
	Total Monthly Additions	To Canadian River Gas Co.	Total	To Canadian River Gas Co.	Total	To Canadian River Gas Co.	Total	To Canadian River Gas Co.		365-Day Year	Days	Amount
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Nov. 1927			$ 6,320.72	$ 1,580.18	$ 29.94	$ 4.19			$ 1,584.37	$ .0604	228	$ 99.37
Dec. "			9,010.85	1,849.73	629.15	88.08	$ 5,245.67	$ 576.17	2,513.98	.1133	197½	81.63
Jan. 1928	$43,210.34	$11,882.84	8,430.92	2,339.50	595.16	83.32	45,908.43	10,746.87	25,052.53	4.1182	166½	685.68
Feb. "	22,755.57	6,257.78	4,750.88	1,187.72	1,391.58	194.82	379,280.74	273,515.61	281,155.93	46.2174	136½	6,308.68
Mar. "	11,984.21	3,295.66	4,575.15	1,143.79	1,626.97	227.78	494,783.88	255,012.46	259,679.69	42.6871	106½	4,546.18
Apr. "	15,378.74	4,229.15	6,780.91	1,683.73	1,142.38	159.93	61,947.91	64,805.78	70,878.59	11.6513	76	885.50
May "	22,856.48	6,120.53	6,117.66	1,529.42	2,145.45	342.36	118,646.63	71,313.75	79,306.06	13.0366	46½	593.17
June "	31,351.52	8,621.67	52,867.74	51,462.50	4,119.97	576.80	(116,965.86)	23,622.55	84,283.52	13.8548	15	207.82
Totals		$40,407.63		$62,776.57		$1,677.28		$699,593.19	$804,464.67			$13,368.05

Note: (1) Includes Accounts 258, 259, 260, 261, 262, 263, 264, 266 and 267, all General Overhead Accounts.

Exhibit No. 147

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Exhibit No. 146

Docket G-124 Subschedule No. 13-B3-3c

CANADIAN RIVER GAS COMPANY
INTEREST DURING CONSTRUCTION
REVENUES FROM COMMISSARY AT BIVINS CAMP

Date	Amount	One Day's Interest 6% Rate 365-Day Year	Interest Calculation Days	Interest Calculation Amount
(1)	(2)	(3)	(4)	(5)
Feb. 1928	$ 977.55	$ .1607	136½	$ 21.94
Mar. "	2,515.05	.4134	106½	44.02
Apr. "	3,612.28	.5938	76	45.13
May "	3,916.68	.6438	45½	29.29
June "	3,267.05	.5370	15	8.06
	Interest credit on revenues from commissary			$148.44

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Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
INTEREST DURING CONSTRUCTION
SUNDRY ACCOUNTS RECEIVABLE

Date (1)	Description (2)	Amount (3)	Total for Interest Calculation (4)	One Day's Interest 6% Rate 365-Day Year (5)	Interest Calculation Days (6)	Interest Calculation Amount (7)
Nov. 1927	Advanced - G. A. Woods, Special Account	$ 1,000.00	$ 1,000.00	$ .1644	228	$ 37.48
Dec. 1927	" do.	1,500.00	1,500.00	.2466	197½	48.70
Jan. 1928	" do.	$13,500.00				
" "	Disbursed do.	(1,294.61)	12,205.39	2.0064	166½	334.07
Feb. 1928	Advanced do.	$15,000.00				
" "	Disbursed do.	(20,642.56)	(5,642.56)	(.9275)	136½	(126.60)
Mar. 1928	Advanced do.	$20,000.00				
" "	Disbursed do.	(21,570.69)	(1,570.69)	(.2582)	106½	(27.50)
Apr. 1928	Advanced do.	$40,000.00				
" "	Disbursed do.	(9,105.49)	30,894.51	5.0785	76	385.97
May 1928	Advanced do.	$30,546.63				
" "	Disbursed do.	(32,619.06)	(2,072.43)	(.3407)	45½	(15.50)
June 1928	Advanced do.	$30,000.00				
" "	Disbursed do.	(21,066.56)	8,933.44	1.4685	15	22.08
	Subtotal					$658.70
	Other Accounts Receivable	$ 3,528.35	$ 3,118.54		Various	30.55
	Total					$689.25

Exhibit No. 146

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Exhibit No. 146

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Subschedule No. 13-B3-4
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
INTEREST DURING CONSTRUCTION
CONSTRUCTION BY CANADIAN RIVER GAS COMPANY

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Date	Description	Amount	One Day's Interest 6% Rate 365-Day Year	Interest Calculation Days	Interest Calculation Amount
(1)	(2)	(3)	(4)	(5)	(6)
June 1928	Property Suspense Account	$128,062.45	$21.0514	15	$315.77
June 1928	Incomplete Wells, Account 103	51,243.27	8.4236	15	126.35
	Total				$442.12

On cross-examination Commission Witness Luttring testified: (Vol. XXXVIII; pp. 5167-5258.)

By Mr. Spencer:

Q. Mr. Luttring, I didn't hear your direct testimony with respect to Exhibit No. 146, but I understand you testified that you first became employed by the Federal Power Commission on May 1, 1939.

A. That is correct.

Q. And since that time you have devoted practically all of your time to matters involved in these proceedings except for about four months?

A. That is correct.

Q. When you first came with the Commission, what was the first thing you undertook?

A. The very first thing I undertook was the examination of Canadian River Gas Company in accordance with instructions which we got from Washington.

Q. All right, I'll come back to that in a minute. I understood you also testified that you had had no previous experience or employment with companies engaged in the producing and transporting and distributing of natural gas?

A. I was Treasurer of Central States Edison Company. We did have some small natural gas companies.

Q. Have you testified about that before? I don't want to cover the ground twice here.

A. No, I haven't.

Q. Go ahead, then.

A. We did have two small natural gas companies. There was some production. There was a small amount of transmission and distribution.

Q. Now, the name of the parent company was what?

A. Central States Edison Company.

Q. Where is that located?

A. That is now in Jersey City, New Jersey.

Q. At what time were you employed by that company?

A. 1927 until 1935.

Q. 1935—it is a holding company?

A. It is a holding company.

Q. Does it also operate?

A. No, sir, strictly a holding company.

Q. Strictly a holding company, and what is the character

of the corporations in which it owns stocks? I mean the nature of their operations and business.

A. It serves electricity, water, natural gas and manufactured gas.

Q. Now, coming specifically to those subsidiaries of the parent company that were engaged in the producing, transporting or distribution of natural gas, what was the name of the first company you mentioned?

A. I didn't mention any, but Sedan Gas Company.

Q. Located where?

A. Sedan, Kansas.

Q. Engaged in what nature of business?

A. Natural gas production and distribution. The transmission—or, rather, the field was right near the town so that the transmission was only of a very short distance.

Q. What is the population of Sedan, Kansas?

A. Well, it is in the neighborhood of 2500.

Q. A relatively small operation?

A. That's right.

Q. What did you have to do for that particular company?

A. I had supervision of all the accounting records and financial matters and devising any records necessary to get the operating results of that company.

Q. When you say you had supervision, do you mean that somebody else kept the books and records, someone else did the auditing, but as treasurer of the corporation, all of those functions were under your department?

A. That is right.

Q. You didn't audit the books of the Sedan Gas Company?

A. I did.

Q. You audited them personally?

A. Not all the time, but I have audited them.

Q. Was your experience with the Sedan company confined to the books and records of account of the company or did you get over into the field of operations?

A. I only got into the field of operations through, you might say, emergencies. In case some of the officials of the company were absent from the office, I would be given instructions as to what to do.

Q. During the seven years you were employed by the parent company, how much of that time would you say was

devoted to the business of Sedan Gas Company? I don't mean days and hours—

A. I'll put it in this way: Only in proportion that the size of the gas company was to the rest of our picture.

Q. What was the proportion?

A. I'd say probably five per cent.

Q. And was there another subsidiary engaged in the natural gas business?

A. We also had one in Collinsville, Skiatook and Sperry, Oklahoma.

Q. What was the name of that company?

A. Sperry Gas Company, Collinsville Gas Company and Skiatook Gas Company.

Q. Oh, three of them?

A. They operated in those respective three towns.

Q. Did they also get their natural gas from fields within the vicinity—

A. Fields adjacent to those towns.

Q. That's right. They are also small gas operations?

A. That is right.

Q. Smaller towns than Sedan, is that correct?

A. I think Collinsville, if I remember correctly, is about the size of Sedan.

Q. Was your relationship and experience with those companies about the same as you have outlined for the Sedan Gas Company?

A. That is right.

Q. Would you say that your experience with these four companies qualified you in any respect with respect to the operating end of the natural gas business?

A. No, sir.

Q. Are there any other connections or affiliations you had with the companies engaged in the natural gas business?

A. That is all the natural gas that we had in our company.

Q. And you had no experience in the natural gas business with any other employer?

A. No, sir.

Q. Immediately preceding your employment by the Commission, where were you employed?

A. Arthur Anderson & Company, Certified Public Accountants, Chicago.

Q. I guess you have already testified to that.

Now, you said a while ago when you first came with the Commission you received an assignment to do certain work in connection with the books and records of account of Canadian River Gas Company?

A. That is right.

Q. And that in that connection there were certain instructions received from Washington?

A. That is right.

Q. Written or oral instructions?

A. Written instructions.

Q. Do you have a copy of them?

A. I do not have them with me. I can get them.

Q. I wish you would get those instructions, please. Will you do that?

A. Yes, I will.

Q. And in the meantime, just briefly tell me what the instructions were so we can go ahead.

A. Well, the instructions, briefly, covered an investigation of Canadian River Gas Company and Colorado Interstate Gas Company for the purpose of ascertaining the original cost of the investment in gas plant of those companies and determining the proper income for a number of years of those companies.

In the investigation of the plant account we were instructed to commence with the inception of the company.

Q. Meaning Canadian River Gas Company and Colorado Interstate Gas Company?

A. That is right.

Q. Have you finished?

A. Yes.

Q. Were those instructions general instructions to this regional office in Denver or were they specific instructions to you or to some other employe of the Commission?

A. They were instructions given to the regional office, and copies of those instructions were furnished to the various men interested in the investigation.

Q. I take it that so far as you were concerned, the primary purpose of the investigation and the instructions pertaining thereto was to arrive at proper original cost of the plants of these two companies, is that correct?

A. That is true. That is what I would do in any investigation of that type.

Q. Now, did your instructions give you a definition of original cost?

A. I don't think they do, but my accounting experience has taught me what it is.

Q. Well, now, you teach me, then, and tell me what original cost is, if you please.

A. On Page 5 of the Uniform System of Accounts prescribed for natural gas companies—

Q. Just a minute, please. All right, proceed.

A. Page 5, Definition No. 29: "Original cost as applied to gas plant means the cost of such property to the person devoting it to public service."

Q. May I interrupt you there?

A. Yes, sir.

Q. You have read to me a definition of the Commission, not your own definition, is that correct?

A. My definition would be the same thing.

Q. And is this the definition that you have applied to your work in Exhibit No. 146, Mr. Luttring?

A. That is the definition on which I based my work. The term "original cost" is primarily used in connection with acquistions of properties. The company's own construction cost is original cost. That is the distinction between the term as used here.

Q. In other words, we might have two original costs?

A. That is true, and still be—

Q. And what you are looking for is the first one?

A. That is true, we are looking for the first cost. We are looking for the first cost in order to get the correct depreciation base.

Q. Is that the only purpose?

A. That is the chief purpose.

Q. What other purpose would there be?

A. There will be in an arm's length deal a cost in addition to your first cost, which probably makes up your original cost. Now, that cost is placed into Account 100.5 which you will find on Page 17 of this classification of accounts.

Q. Yes.

A. Do you wish me to read that in to the record?

Q. I think it is sufficient just to refer to it.

A. I want to bring out that this so-called intangible or cost in addition to the structural cost—

Q. I want you to go right ahead and do whatever necessary to make your answer complete.

A. On Page 17 of the Uniform System of Accounts prescribed for natural gas companies, Account No. 100.5: "Gas Plant Acquisition Adjustments;

"(A) This account shall include the difference between (a) the cost to the accounting utility of gas plant acquired as an operating unit or system by purchase, merger, consolidation, liquidation, or otherwise, and (b) the original cost, estimated if not known, of such property, less the amount or amounts which may be credited to the depreciation and amortization and depletion reserves of the accounting utility at the time of acquisition with respect to such property. The account shall be so subdivided, when practicable, as to show the amounts applicable to gas plant in service, gas plant leased to others, and gas plant held for future use."

Now, in that account as shown there, is to be entered any amount which is in excess of the so-called first cost and that amount will be disposed of as the Commission may approve or direct.

Q. Well, we can come to that a little later when we get into the detail of your exhibit.

A. All right.

Q. Now, still on this subject of original cost, some place in your statement here you have used the expression, I believe, "legitimate original cost." Is that a different kind of original cost than is defined on Page 5?

A. No, and if it serves our purpose for discussion any better, I think we could just as well use the word "proper." In other words, in a plant account we have included only costs which we deem proper.

Q. Well, if you are going to follow this definition that has just been read into the record, why do you need any adjective to qualify the original cost?

A. We don't. The term is used in the Natural Gas Act itself and that is the only reason I can see for using it in our text or in our work.

Q. I see. Any original cost that would comply with the

definition you have read into the record would be proper and it would also be legitimate?

A. That is right.

Q. And the use of the word "legitimate" or "proper" would have no special significance in your statement?

A. None other than what I have just explained.

Q. You stated that a part of your instructions covered investigation of the proper income of these companies, or perhaps I didn't quite get it clear what you meant.

A. That is correct.

Q. In discussing proper income, will you please go into that in a little more detail?

A. I might say this, that I did not take part in the compilation of the net income for the companies—

Q. It is not covered by this exhibit?

A. That is right. If it—

Q. You don't need to answer it, then. It had nothing to do with this exhibit or the preparation of it?

A. No, sir.

Q. Oh, there is one other thing I wanted to ask about. What is your understanding of the phrase "devoted to public service?"

A. We—

Q. Let me finish. When would you say that the property is first devoted to the public service?

A. That phrase applies only to companies who were never under the jurisdiction of any regulatory body. It may be a situation where such companies do sell their properties to someone who is serving the public. They are very much in a minority.

Q. Let's forget the company for a moment. Let's think about the property itself, "the property itself being devoted to the public service," what does that mean to you?

A. Any property

Mr. Lange: Of course, Mr. Examiner, the witness can state what use is made of the property, what its functional use is, and then as to whether or not such property is devoted to the public service as contemplated by the Act would be a matter for the reviewing authorities to determine. He can explain in detail as to what use that property is put to, what its function is, but it strikes me that when you go one

step further and say as to whether or not that is devoted to the public service, that is a conclusion, a legal conclusion.

Mr. Spencer: Mr. Examiner, he has participated in the compilation of a very extensive study here for the purpose of determining original cost of our properties. As the result of his investigation he has made some very substantial adjustments in arriving at the original cost of the properties of the Canadian River Gas Company; he has said that he followed the definition of the Commission with respect to original cost. That definition states very clearly "original cost as applied to gas plant means the cost of such property to the person first devoting it to a public service."

Now, if he is going to make adjustments here in our original cost figures he must at some point determine when a property is devoted to the public service, and in a very preliminary way I would like to know what the phrase means to him because he had to use it or he couldn't have arrived at these computations.

The Trial Examiner: I understand that Mr. Lange specifically objected to the type of the question.

Mr. Lange: I objected to the last part of the question as being purely a conclusion. Whatever the sum and substance is as to whether it is devoted to the public use or not is a legal conclusion.

The Trial Examiner: I think the witness can state his understanding.

The Witness: The phrase "property first devoted to the public service" did not apply to any of our instances in relation to the respondent companies. I explained before that that in order to come under that phrase it must be a company that was not under any regulatory body at all.

By Mr. Spencer:

Q. I am not clear, Mr. Luttring, and I may be a little dense as to why the phrase doesn't apply to our situation.

A. All right, we may have a company who hasn't had any dealings at all with the public. Its product was sold entirely, we will say, to some particular industry. Now, for some reason or other that industry, or, rather, that gas—

we will say that project discontinues doing business with this industry and then starts to serve the public.

Q. Did I understand you to say that up to the time these properties were transferred to Canadian River Gas Company the predecessor companies had not been subject to regulation and the properties were not devoted to a public use?

Mr. Lange: Wait a minute. Please repeat that question, Mr. Reporter.

(The record referred to was read by the reporter as set forth above.)

Mr. Lange: That, of course, Mr. Examiner, brings into the picture a purely legal conclusion and goes right back again to the use that the particular properties have been put to, the functions of them, the character and use made of them.

The Trial Examiner: Well, I think perhaps that is true, Mr. Lange, however, the Examiner is going to be very liberal in this cross examination. The Examiner heretofore has been very liberal with cross examination by Commission's counsel and I think we would progress a lot faster if these objections were, I might say, limited to really serious matters. I can't see that a question of that nature—

Mr. Lange: As to whether this witness would know what the statutes of a particular state were that applied—

The Trial Examiner: He stated—

Mr. Spencer: That they did not apply.

The Trial Examiner: The witness so stated. I don't naturally think that the witness should be examined on matters of a legal nature; however, the witness made a direct response, I believe, to a former question which resulted in the last question of Mr. Spencer.

Mr. Spencer, has he answered the last question?

Mr. Spencer: I asked the question and I don't believe it has been answered.

The Witness: It will have to be restated.

(The question referred to was read by the reporter, as follows:

"Q. Did I understand you to say that up to the time these properties were transferred to Canadian River Gas Company the predecessor companies had not been subject to regulation and the properties were not devoted to a public use?")

The Trial Examiner: Mr. Reporter, go back to the previous question and answer—

The Witness: I don't know how to answer this question here. There are too many parts to it.

The Trial Examiner: Let's go back—do you want to restate the question, Mr. Spencer?

Mr. Spencer: No, I don't want to change the question.

The Trial Examiner: Let's go back, Mr. Reporter, to several of Mr. Spencer's questions prior to this last question and Mr. Luttring's answer.

(The record referred to was read by the reporter as follows:

"Q. I am not clear, Mr. Luttring, and I may be a little dense as to why the phrase doesn't apply to our situation.

"A. All right, we may have a company who hasn't had any dealings at all with the public. Its product was sold entirely we will say, to some particular industry. Now for some reason or other that industry, or, rather, that gas —we will say that project discontinues doing business with this industry and then starts to serve the public.

"Q. Did I understand you to say that up to the time these properties were transferred to Canadian River Gas Company the predecessor companies had not been subject to regulation and the properties were not devoted to a public use?")

Mr. Lange: Of course, that question includes several different statements. If it is admissible at all, it certainly should be required to be broken down into separate parts. I still think that the objection is good, but even if the Examiner holds it is admissible, it ought to be broken down.

The Trial Examiner: I think the question is absolutely predicated on a statement made by the witness. Now the

witness will be afforded ample opportunity to explain what he meant.

The Witness: Well, as to being under the jurisdiction of any regulatory body, I don't know, but I do know that the predecessor companies whose properties were transferred or acquired by Canadian River Gas Company were devoted to public use. That information I could get through the income account.

Mr. Spencer: Will you read that last answer, please—Had you finished the answer?

The Witness: Yes.

Mr. Spencer: Will you read that last answer, please?

(The answer referred to was read by the reporter, as follows:

"A. Well, as to being under the jurisdiction of any regulatory body, I don't know, but I do know that the predecessor companies whose properties were transferred or acquired by Canadian River Gas Company were devoted to public use. That information I could get through the income account."

By Mr. Spencer:

Q. How many predecessor companies do we have, Mr. Luttring, that are involved in these adjustments that you made or recommended, and will you just name them?

A. Amarillo Oil Company, Mission Oil Company, Mountain States Gas Company—Master Oil & Gas Company—that is all I can recollect right now.

Q. Do you go back and get original cost of properties of Producers and Refiners Corporation in this study?

A. Yes. In the case of Mountain States Gas Company it was necessary to refer back to the records of Producers & Refiners Corporation. Such records were located in New York City.

Q. Should that company's name be added to this list?

A. No, I don't think so.

Q. Will you go back and get the original cost of any individuals, or partnerships?

A. Yes. A. R. Jones—

Q. And associates?

A. A. R. Jones and Associates.

Q. That is all right.

Should A. R. Jones and Associates be added to this list?

A. Yes, that should be.

Q. I think that is all of them as I recollect, Mr. Luttring. Now—

The Trial Examiner: Mr. Luttring, I am not just clear on this Producers & Refiners Corporation. I believe you stated that you would go back and ascertain the original cost. Did you mean that? Then you mentioned some other company.

The Witness: Well, Mountain States Gas Company is the successor whose books I actually examined.

The Trial Examiner: That is, the successor company of Producers & Refiners Corporation?

The Witness: Yes, it is a successor of Producers & Refiners Corporation; to the extent of certain assets that were transferred to it, it was the Producers & Refiners Corporation.

By Mr. Spencer:

Q. You mean it is a successor to Producers & Refiners Corporation. Instead of that you mean it is a successor?

A. I think you are right.

Q. And probably the reason that you haven't included Producers & Refiners Corporation—we will come to that later—is that the original cost to Mountain States Gas Company and Producers & Refiners Corporation are substantially identical?

A. It was one and the same thing, yes. If I remember correctly, the records of Mountain States Gas Company should have been reflected on their own books but Producers & Refiners Corporation handled all of the financial matters for Mountain States Gas Company and therefore had the original records in their files.

Mr. Spencer: Mr. Examiner, did you have any further questions?

The Trial Examiner: I think that is clear now.

By Mr. Spencer:

Q. Now, going back to the answer that I asked to have read and reread a while ago, do I understand you to say that certain of these properties which finally found their way into Canadian River Gas Company were owned and operated by A. R. Jones and Associates?

A. That is correct.

Q. They were devoted to a public use?

A. That is correct.

Q. Now, in what manner were the properties devoted to a public use by A. R. Jones and Associates?

A. The gas that was produced from those wells was sold to consumers in the town of Amarillo, Texas.

Q. At the time A. R. Jones owned it?

A. Yes, sir.

Q. We will come back to that a little later. I guess perhaps it would be a little more orderly to take up each one as we come to it.

I understand, Mr. Luttring, there are forty-eight adjusting entries given on Pages 1 to 58, inclusive, of Exhibit No. 146, is that correct?

A. Did you say 48?

Q. Yes, I take that out of your statement.

A. Oh, yes, adjusting entries, that is right.

Q. And those adjusting entries commence on Page 1 with the Entry 200?

A. That is correct.

Mr. Spencer: Mr. Examiner, I should have said Page 1 of the contents.

Q. Which one of those entries starting with 200 are you responsible for, Mr. Luttring?

A. I am responsible for all entries from 200 to 219, inclusive.

Q. I am just trying to understand this. Would that be nineteen entries out of the total of forty-eight that you are responsible for?

A. That is right. Some of my work is indirectly reflected in other parts of this report but we have subdivided it for convenience between Mr. Teel and myself.

Q. Let's turn to Page 1 of Exhibit No. 146 which deals with your adjusting Entry No. 200. You have a detailed

explanation of this entry here. Can you tell the Examiner in a few words what the entry is about? Then we will go further into the details of it.

A. The entry covers purchase by Canadian River Gas Company of certain wells and leases from Master Oil & Gas Company. In the purchase price I considered there was an element of profit because of the transactions not being at arm's length. That profit which I determined was removed from the cost of operated leases and charged to gas plant adjustment account.

The Trial Examiner: That is in the sum of $121,086.50?

The Witness: That is in the sum of $121,086.50.

By Mr. Spencer:

Q. In other words, you went back and found out what in your opinion constituted the original cost of these leases to Master Oil & Gas Company and found that the price received by Master Oil & Gas Company from Canadian River Gas Company was in excess of that cost by $121,000 plus?

A. That is correct.

Q. Well, now, what two leases do we have involved here? Let's start with leases.

A. The Masterson M-1 and Sneed—or, rather, Masterson M and Sneed B leases.

Q. Masterson M and Sneed B?

A. Yes. The number in each case is 86.

Q. The number in each case is 86?

A. Yes.

Q. Is that the Canadian River lease number?

A. That is Canadian River Gas Company lease number.

Q. And whose letter prefixes are "M" and "B"?

A. Canadian River Gas Company.

Q. We'll start with Masterson M. When was that lease originally issued?

A. Well, I don't know when the original lease was issued.

Q. Well, don't you think we ought to follow this lease back? We might find some other transactions where there would be absence of arm's length dealings. I don't mean carried back to the Indians, but we ought to go back to the initial lease or at least it seems to me follow it up and see what happened to it.

A. The records prior to the incorporation of Master Oil & Gas Company were not available. Now, the lease to which you refer had a well drilled on it about 1920 and was shut in and any cost related to that well was not reflected on the books of Master Oil & Gas Company until about 1926.

Q. Well, let's not get down to that point just yet. I'm trying to find out if you know to whom the lease was originally issued and when.

A. You mean the very original lease?

Q. Certainly, the original lease.

A. Well, I don't know.

Q. That is a matter of record in the County Clerk's office of Potter County, State of Texas?

A. I might add that—

Q. Wait a minute. All right, go ahead. Excuse me. Go ahead.

A. I might add that our Bureau of Engineering had the responsibility of examining the leases.

Q. As a matter of fact, I guess the lease is in Moore County and not Potter County, is that correct?

A. The lease is in Moore County.

Q. Well, when did—strike that.

Well, do you know who was the predecessor in interest so far as this lease is concerned of Master Oil & Gas Company?

A. Well, the predecessor of Master Oil & Gas Company was, as I recall it, a form of beneficial trust.

Q. I think that is correct, Mr. Luttring, and do you know the nature of that trust and who the beneficiaries were?

A. Well, I believe Shamrock Oil was one of them. I'm not positive about that, but the records I believe did indicate who the beneficial owners were.

Q. Did the trust—we'll call it the trust—get this lease or these leases from the original lessor?

A. Well, I'll have to answer the same way I did previously because I didn't examine the leases.

Q. And do you know what the trust paid to the original lessors for the predecessor's interest in the leases?

A. The records that were made available to me didn't indicate those costs.

Q. Whose records are you referring to now?
A. This beneficial trust and Master Oil & Gas Company.
Q. Did you see any records of the trust itself?
A. There were some records; yes.
Q. But no records which showed—
A. No records that I would consider dependable.
Q. No records you considered dependable?
A. No, sir.
Q. So you don't know what sums, if any, were paid by the trust or the beneficiaries of the trust for the assignment of the leases in the first instance?
A. No, sir.
Q. Well, how did the oil and gas company come into being, then? How did that happen?
A. I think it is pretty well stated in the explanation here, isn't it?
Q. I think that is enough so far as it goes, but who were the incorporators?
A. Who were they?
Q. Yes.
A. I can get it from my papers.
Q. Well, look that up for me, will you please, and as you state here, the Master Oil & Gas Company was incorporated May 4th, 1921. When did they acquire the Masterson M lease?
A. I considered they acquired the Masterson M Lease as of June 1st, 1926, the date in which Master Oil & Gas Company first made a payment for that lease.
Q. June 1st, 1926?
A. June 1st, 1926.
Q. Is that the date of the assignment of the lease to Master Oil & Gas Company?
A. That is the date—I don't think it was an assignment I think it was a new lease.
Q. Do you think it was a new lease?
A. Yes. I'll look up the fact, if you so desire.
Q. In order to get the new lease they had to do something about the old lease, which was done, is that so?
A. Yes.
Q. You made no particular effort, shall I say, to go back and find out what the costs of this Masterson M lease might have been to the predecessors of Master Oil & Gas Company?

A. I made an effort, but the records, as I stated previously, were very unreliable; so I accepted the inventory of the gas wells and intangible costs which Master Oil & Gas Company reflected on its books for the well. That was on the Masterson 86-M lease and formerly owned by its beneficial trust.

Q. Well, that figure you take was an appraisal, was it not?

A. I deemed that the cost they set up was reasonable in the light of the experience which I had on other gas companies.

Q. No, but the figure you got was an appraisal, it wasn't an original cost. Am I not correct?

A. Strictly, yes.

Q. All right. And it doesn't conform to this definition here: "Original cost as applied to Gas Plant means the cost of such property to the person first devoting it to public service."

A. I deemed the amount set up on Master Oil & Gas Company fair and reasonable from the best available records that were presented to me.

Q. But it was not an original cost figure?

A. It is not original cost.

Q. All right, now, you assumed that this property became the property of Master Oil & Gas Company June 1, 1926 because that was the date on which they made some payment, is that correct?

A. That is the date on which they paid a bonus to R. B. Masterson and J. T. Sneed. It was a combination lease, I believe.

Q. But, now we're speaking of Masterson M. There was a well on the lease at that time, was there not?

A. Yes, that is the well that I have been talking about.

Q. Yes. There was a well on it. Did you know when that well was drilled?

A. The record indicated the well was drilled in 1920.

Q. Well, then, after they drilled the well what did they do with it?

A. They shut it in.

Q. And it was shut in how long?

A. It was shut in until acquired by Canadian River Gas Company.

Q. Now, that was when?

A. Canadian River Gas Company acquired it in the latter part of 1928.

Q. Now, all the time the well was shut in from 1920 to 1928, do I gather from your previous testimony that the well was devoted to public use?

A. No, sir.

Q. Who is the original lessee of the Sneed B lease, do you know that?

A. I do not.

Q. Nor the date of the original lease?

A. No, sir.

Q. This Sneed B lease was likewise at one time the property of this beneficial trust that you mentioned?

A. I am not positive about that.

Q. Who were these people in this beneficial trust? Did I ask you that before?

A. Yes, you did.

Q. You don't know that. From whom did Master Oil & Gas Company acquire the Sneed B lease?

A. From J. T. Sneed on June 1st, 1926.

Q. The same date?

A. That's right.

Q. And you fixed that date at that time because Master Oil & Gas Company then paid a bonus to Masterson and Sneed for the purpose of getting a new lease and wiping out the possible defaults, and so forth, is that correct?

A. The results indicated there was considerable confusion as to the rights of the persons interested in that property. The outcome of it was that R. B. Masterson and J. T. Sneed granted a lease to Master Oil & Gas Company on June 1st, 1926 which seemed to straighten out that whole affair.

Q. Do you know that Mr. Masterson and Mr. Sneed were members of the syndicate or members of the beneficial trust?

A. I don't know, but Masterson was a stockholder, I am sure, in Master Oil & Gas Company.

Q. Do you know the significance of the name "Master Oil & Gas Company"?

A. Well, I imagine it has some relation.

Q. Was there a well on the Sneed B lease?

A. There wasn't any well on Sneed B lease.

Q. When it was—

A. When it was first acquired by Master Oil & Gas Company.

Q. All right, now, we come down to June 1st, 1926, and you at that point set up what you term original cost for the first time on Master Oil & Gas Company, is that correct?

A. That is right.

Q. And then you pick off the books and records of Master Oil & Gas Company an appraisal of the well on the Masterson M, an appraisal in the form of a well account with inventory?

A. That is right.

Q. And you find that reasonable and you add that to the bonus payments that you previously allow?

A. That's right, as shown on Page 1 of this journal entry.

Q. Oh, that's right, and you also allow certain rentals that were paid from time to time?

A. That's right.

Q. Sneed B lease had a well completed on it in October of 1927?

A. That is correct.

Q. And what do you allow for original cost of that well?

A. I allow $42,660.35.

Q. That's the two items at the bottom of Page 1 under the debit column?

A. That's right.

Q. Now, is that the cost as reflected on the books of Master Oil & Gas Company?

A. That is correct.

Q. You made no adjustment in that figure?

A. No, sir. In fact, I don't think you'll find any adjustments whatever in these figures.

Q. I don't believe they are, Mr. Luttring.

A. No they are the same as they appear on the books of Master Oil & Gas Company with the exception of probably some intangibles they had on their books which aren't reflected in here.

Q. All right, let's talk about those intangibles.

What are those intangibles?

A. I'm not concerned with them.

Q. What was that?

A. I wasn't concerned with them. I have them in my papers.

Q. What they were? Well, let's go at this a little differently. Are these two leases all the properties and assets of the Master Oil & Gas Company?

A. Those are the only assets which they sold to Canadian River Gas Company.

Q. Well, going back to my question, did these two leases constitute all of the assets and properties of Master Oil & Gas Company?

A. From original cost—

Q. I'll help you. At the time of the transfer to Canadian River Gas Company and for quite a period prior to that time.

A. Well, I'll put it this way: It is not all the assets reflected on the books of Master Oil & Gas Company but it was the only assets with which I was concerned in this proceeding.

Q. Well, have you got in your working papers what the other assets were?

A. Yes, I have.

Q. And what the intangibles were?

A. Yes, I have a complete transcript of the accounts from the time the company started until it dissolved.

Q. Well, if you bring that back with you, please, I'd like to examine that.

The Trial Examiner: Do you have that with you this morning, Mr. Luttring?

The Witness: Yes, we have it here in the trunk.

Mr. Spencer: Well, we can get it out after while.

Mr. Lange: Do you wish to have it now, Mr. Spencer?

Mr. Spencer: No, not right now.

Q. This well on the Sneed lease, completed in October of 1927, when was the first gas sold from that well?

A. Well, I can give you the information but somebody else has prepared it.

Q. Well, isn't it a fact that—

A. I'll say I can't say that—the gas was produced sometime near or shortly after it was acquired by Canadian River Gas Company.

Q. I think that is correct. Do you know if it is a fact that the Master Oil & Gas Company never produced any gas from the well?

A. Yes, I do. I might add that that is my reason for treating rentals as a part of the original cost.

Q. In this instance?

A. I beg your pardon?

Q. In this instance?

A. In this instance.

Q. What would you say was the nature of the business of Master Oil & Gas Company?

A. I don't have a copy of the charter.

Q. No, but as you have investigated it from its records and studied it.

A. Personally I wasn't able to determine just—

Q. Well, they held oil and gas leases, didn't they?

A. Only in this instance.

Q. Well, wouldn't that be a part of their business?

A. Well, I just can't say what the character of their business would be when a company drills a well and then shuts it in for a period of five years or longer and drills another well and it still doesn't sell any of the gas.

Q. I can see your difficulty. Well, it wasn't a very active company?

A. There may have been some intent, but I wasn't able to determine what that is.

Q. As far as the books reflect, it had no activities except in connection with these oil and gas leases in the Texas Panhandle field, is that true?

A. That is true.

Q. And that's about the only business they had and they weren't very active at that time, is that correct?

A. That is all the business they had.

Q. All of it. All right. Now, when did the Prairie Oil & Gas Company first acquire an interest in the Master Oil & Gas Company?

A. I didn't get your question.

Q. When did the Prairie Oil and Gas Company first acquire a stock interest in the Master Oil & Gas Company?

A. In 1925 Prairie Oil & Gas Company acquired an interest in Master Oil & Gas Company.

Q. And do you know the circumstances under which it acquired such interest?

A. None other than if you are relating to Shamrock Oil Company.

Q. Yes, that's right. Well, I'll ask you this: Was not this stock acquired from Prairie Oil & Gas Company through Shamrock Oil & Gas Company along with a lot of other—

A. Along with a lot of other assets and securities, probably of one kind or another.

Q. This was just one of a number of things that the Prairie Oil & Gas Company got at that time from Shamrock, is that right?

A. That's the way I understand the transaction.

Q. And that was in 1925. When do the records indicate that the Prairie first commenced taking any interest in the Master Oil & Gas Company business?

A. In July 1926 Prairie Oil & Gas Company made a proposal to Master Oil & Gas Company.

Q. What was the nature of that proposal?

A. On Page 2 of Journal Entry No. 200, at the bottom of the page, there is:

"(a) Furnish funds for the benefit of Master Oil & Gas Company for the payment of delinquent franchise taxes due the State of Texas for the years ended April 30th from 1923 to 1927.

"(b) R. B. Masterson and J. T. Sneed to execute and deliver, in form acceptable to Prairie Oil & Gas Company leases on land in Potter County, Texas, for a term of ten years from June 1st, 1926.

"(c) Well to be drilled on land leased from J. T. Sneed free of cost to Master Oil & Gas Company and its stockholders.

"(d) In consideration of the proposition, Master Oil & Gas Company and its stockholders were to transfer to Prairie Oil & Gas Company a sufficient amount of stock of Master Oil & Gas Company which with the (25) per cent then owned would vest ownership and control of (51) per

cent of the stock of Master Oil & Gas Company in Prairie Oil & Gas Company:"

Q. That is stated there in the form of a proposal. That was carried out substantially in accordance with the terms of the proposal?

A. Yes, sir.

Q. Prairie did drill the well?

A. I beg your pardon?

Q. Prairie did drill the well?

A. Yes, they did.

Q. That is the well that was completed in October of 1937?

A. That is the correct date.

Q. At that time we find that the Master Oil & Gas Company with two wells shut in and no market, the stockholders commenced considering ways and means of selling these properties, is that right?

A. I imagine that is the way it is usually done.

Q. Did you read the minutes of the Master Oil & Gas Company?

A. I am pretty sure I did.

Q. Now, the Master Oil & Gas Company made a proposal to Canadian River Gas Company to sell these properties for a certain sum, is that correct?

A. That is correct.

Q. Was that in writing, do you know, Mr. Luttring? Have you got it in here?

A. I have it in my papers. If I remember correctly, the proposal was first made to Amarillo Oil Company; that is, acting as agent for Canadian River Gas Company.

Q. Let's see if I have it. I don't seem to have it. Do you know how the price was arrived at? Oh, first let me ask you: What was the price offered?

A. Well, briefly, the proposal offered the leases, including the wells, at a price based at a certain number of dollars per acre plus rentals from the last rental payment date.

Q. Do you know what the price was per acre that was agreed upon?

A. If I'm not mistaken, I think it's $25.

Q. How many acres did you have involved?

A. About fifty-four hundred—five thousand, four hundred and four and two-tenths acres.

Q. What did they allow for the wells, or were they put in at cost?

A. The price, as I stated, was included in that figure which was determined on a certain number of acres, I believe, times the acreage price.

Q. Do I understand that the wells were included with the acreage at the $25 per acre figure?

A. Yes.

Q. When you say "$25 per acre," you mean $25 per acre without further cost for the two completed wells, is that correct?

A. Well, I'll have to refer to my papers. I can get it in short order.

Mr. Spencer: Well, suppose, Mr. Examiner, if you don't mind, I'd like to recess at this time. Mr. Luttring can get those papers during the recess and we can start again after lunch.

Mr. Lange: Yes, it is agreeable with us.

The Trial Examiner: Would you like to have a little extra time through the luncheon?

Mr. Spencer: Well, I have already asked for so many favors, I don't like to ask for any more. I would appreciate the time.

The Trial Examiner: Well, if it would expedite your cross examination and be of any assistance to you—

Mr. Spencer: I believe it would.

The Trial Examiner: I beg your pardon, Mr. Spencer?

Mr. Spencer: I believe it would, Mr. Examiner.

The Trial Examiner: I'll be glad to take this twenty minutes additional time during the noon recess. I'll be very liberal there.

We will stand in recess until 2:00 o'clock.

(Whereupon, at 12:12 o'clock p. m., a recess was taken until 2:00 o'clock, p. m., of the same day.)

Afternoon Session, 2:00 P. M.

The Trial Examiner: The hearing will be in order.

Whereupon—

CARL E. LUTTRING, the witness on the stand at the time of recess having been previously duly sworn, resumed the stand and testified further as follows:

Mr. Lange: Mr. Examiner, let the record reflect that Mr. Luttring, the witness, has supplied to Mr. Spencer a copy of the general instructions.

The Trial Examiner: Which were requested this morning by Mr. Spencer?

Mr. Spencer: That is correct, Mr. Examiner.

Cross Examination (Continued.)

By Mr. Spencer:

Q. Mr. Luttring, I hand you a copy of a letter addressed to Mr. Harold Tomlin, Examiner in charge, Federal Power Commission, Denver, Colorado under date of April 12, 1939, by Mr. Charles W. Smith, Chief, Bureau of Accounts, Finance and Rates, Federal Power Commission, Washington, D. C., together with certain data attached thereto, and I will ask you if that is a copy of the instructions to which you referred this morning?

A. That is the copy. I might add that that is the copy that was furnished me at the time I started the investigation. It was abstracted from my files during the recess.

Mr. Spencer: Mr. Examiner, I do not know just what use we will desire to make of this document. I would like to ask Commission's counsel if we could obtain a copy of this letter or if this letter could be loaned to us so that we could have a copy of it made.

Mr. Lange: That is agreeable.

Mr. Spencer: Which do you prefer?

Mr. Lange: You can have a copy of it made if you so desire.

The Trial Examiner: Very well.

By Mr. Spencer:

Q. I believe I asked you this morning, Mr. Luttring, if you knew who the incorporators of Master Oil & Gas Company were. Will you look at your working papers and see if you can find the answer to that question now.

A. The original incorporators of Master Oil & Gas Company as they were found by me were R. B. Masterson, C. E. Weymouth, and L. A. Wells.

Q. Are those working papers papers that disclose the authorized capital stock of Master Oil & Gas Company?

A. Yes, they do. The papers state that the original capital of Master Oil & Gas Company was $300,000 divided into 6,000 shares of $50 each.

Q. Do you know the state of incorporation of that Master Oil & Gas Company?

A. It was incorporated in the State of Texas.

Q. Do you have before you a copy of a proposal made by Amarillo Oil Company to acquire the leases of Master Oil & Gas Company that was covered by your Adjusting Entry No. 200 in Exhibit No. 146?

A. I do.

Mr. Spencer: Mr. Examiner, this letter isn't very long. It would suit my purposes if it could be read by the witness rather than to have an exhibit made of it.

Mr. Lange: That is all right with us.

By Mr. Spencer:

Q. Will you read that letter into the record—first let me ask you this: Where did you obtain the letter?

A. I obtained the letter from the files of Master Oil & Gas Company located at Independence, Kansas.

Q. Will you read the letter into the record, starting with the heading?

A. "Amarillo Oil Company, Amarillo, Texas.

"September 14, 1928.
"Master Oil & Gas Company,
Amarillo, Texas.

"Gentlemen:

"Confirming the proposal and offer heretofore that was made the Amarillo Oil Company is desirous of purchasing

the oil and gas leases and lands of the Master Oil & Gas Company, together with personal property situated thereon or used in connection therewith and all rights, privileges and franchises of the Master Oil & Gas Company appertaining thereto, for which the Amarillo Oil Company is willing to pay the sum of $229,650 upon the approval and acceptance of title by its attorneys and the execution of assignments to it covering said leases, lands and properties upon forms prepared and approved by its attorneys. It being understood that should the title of the Master Oil & Gas Company fail or be defective as to any of such acreage and prove unacceptable to its attorneys, the Master Oil & Gas Company will have a reasonable time within which to cure such defects. Should it be impossible to cure such defects, then there shall be deducted from the consideration aforesaid an amount equal to $25 per acre for the acreage included in such defective title.

"It is understood that the total *lesses* and lands owned by the Master Oil & Gas Company is approximately 5364.2 acres. In addition to the consideration above mentioned, the Amarillo Oil Company agrees to reimburse the Master Oil & Gas Company for rental payments made by it upon accepted acreage since the original offer to purchase said acreage, made on April 12, 1928.

"It is also understood that your company has arranged to call a stockholders and directors meeting for the purpose of considering this offer and acting thereon.

"Yours very truly,

AMARILLO OIL COMPANY,
By R. A. FORD,
Assistant Secretary-
Treasurer."

Q. Do you know when Canadian River Gas Company was incorporated?

A. I think the date is already in the record in previous testimony.

Q. If I should tell you it was incorporated in February 1928, would that sound right?

A. That sounds approximately correct.

Q. The date of that letter is what?

A. September 14, 1928.

Q. Did the Canadian River Gas Company take over this proposal on substantially the terms that were set forth in this letter?

A. They took them over at exactly the terms stated in this letter.

Q. Do the records indicate to you that the Amarillo Oil Company in this transaction was acting as an agent or for the account of Canadian River Gas Company?

A. Will you read that, please?

(The question referred to was read by the reporter as set forth above.)

The Witness: They do not.

By Mr. Spencer:

Q. And why?

A. The examination which I made of Amarillo Oil Company's books informed me that the transaction went through their books for the account of Canadian River Gas Company.

Q. That is what I intended to ask.

A. Yes.

Q. Now, you examined such corporate books and records of Master Oil & Gas Company as you could find at Independence, Kansas?

A. I examined the entire records of Master Oil & Gas Company at Independence, Kansas.

Q. And did the stockholders of Master Oil & Gas Company have a meeting to consider this proposal that you have read into the record?

A. The Board of Directors of Master Oil & Gas Company held a special meeting on September 14, 1928.

Q. For what purpose?

A. "For the purpose of considering the offer of Amarillo Oil Company to purchase the oil lands and leases of Master Oil & Gas Company in the state of Texas and all property rights and privileges held or used in connection therewith and that the consideration for said property, to-wit, the sum of $229,650 is a satisfactory and fair consideration therefore; and have met with the approval of the stockholders of this company at the meeting of said stockholders held on this date."

Q. What you are reading from is an excerpt or memorandum taken from the minutes of the Board of Directors meeting held on September 14, 1928?

A. I am quite certain that is the entire substance of the meeting held on that date held by the Board of Directors.

Q. What is confusing to me is that there were apparently two meetings on that date; one with the Board of Directors and one with the stockholders, and this particular proposal, as I understand it, was considered and approved at both meetings. Is that correct?

A. I don't have any—there was a stockholders meeting on that date but I don't have any abstract of those minutes.

Q. Would you say that it is a true statement that the stockholders did approve the transaction on that date from what you have before you?

A. Yes.

Q. Do you know how many stockholders were present at this meeting?

A. No, I do not.

Q. Do you know whether the majority of the stock was represented at the meeting?

A. I don't seem to have that information in my papers.

Q. Do you know whether or not the stock of Master Oil & Gas Company held by the Prairie Oil & Gas Company was represented or participated in the meeting?

A. I do not.

Q. By the way, who composed the Board of Directors of Master Oil & Gas Company on September 14, 1928?

A. I do not have that information.

Q. Do you know how many directors there were?

A. I do not.

Q. Do you know how many representatives of the Prairie Oil & Gas Company were on the Board of Directors at that time?

A. I don't have that information in my papers but—

Q. I don't want you to guess about it, Mr. Luttring.

A. I just want to make a statement here.

Q. All right.

A. I think there has been something introduced in evidence on that matter.

Q. In these proceedings?

A. I think so.

Q. About Master Oil & Gas Company?

A. Well, I don't know whether it has reached Master Oil & Gas Company or not, but the Commission's counsel Mr. March, has introduced considerable evidence regarding corporate relations.

Q. Do you refer to this—

Mr. March: Mr. Luttring, you mean Mr. Schutte, don't you?

The Witness: No, I mean in the cross examination you have done from time to time.

Mr. March: Oh, yes—

By Mr. Spencer:

Q. Do you have reference to this Exhibit No. 141 and Exhibit No. 142 that have been introduced by the Federal Power Commission?

A. Well, this one wouldn't fit over case because this is the status at December 31, 1939.

Q. It wouldn't be this one?

A. No.

Q. Now, at this stockholder's meeting held on September 14, 1928, what other business was transacted?

A. That is all that was transacted at that meeting.

Q. Did not the stockholders consider a proposal to dissolve and wind up the affairs of the company?

A. There was a proposal to dissolve the company taken up in the Board of Directors meeting on April 17, 1928.

Q. When was the corporation dissolved?

A. About August, 1930.

Q. My notes show, Mr. Luttring, that the corporation was dissolved on October 2nd, 1928. I may be in error but I wish you would check that date.

A. It wouldn't have been October 2nd, 1928.

Q. Yes, I think so. Anyway, will you check that date?

A. They didn't get their money until after that date

Q. Well, when do the records show the assignments were made to Canadian River Gas Company covering these leases?

A. That may be, but you said "dissolution."

Q. That is right. Let me give you these dates as I have them and you can check them in your sequence of events to see whether or not you think I am correct or incorrect.

The stockholders meeting to dispose of all of the properties and assets of the company was held on September 14, 1928. I think that is correct, is it not?

A. That is correct.

Q. The company actually dissolved on October 2nd, 1928. Thereafter the directors continued as trustees of the corporation to wind up its affairs; the assignments of the leases to Canadian River Gas Company were actually made on November 9, 1928, but I think the consideration was received some time after that and distributed to the creditors and to the stockholders.

A. That is correct.

Q. That will be in the record and, if you will, check those dates to see whether or not that is a correct sequence of events.

A. I have followed you when stating those dates and they do agree with my papers.

Mr. Spencer: All right, that is fine.

The Trial Examiner: Would the dissolution date be in your papers?

The Witness: He hasn't mentioned it.

Mr. Spencer: The dissolution date was October 2nd, 1928.

The Witness: I can't agree with that date because the money was not given to the Master Oil & Gas Company until subsequently.

Mr. Spencer: That wouldn't make any difference—well, I am talking legal conclusions now. However, you check it, will you not?

The Witness: All right.

By Mr. Spencer:

Q. I think I asked you a question this morning as to how the consideration of $235,054.20 which was paid by Canadian River Gas Company for the Master Oil & Gas Company's assets was arrived at and I think maybe my questions were confusing or your answers were confusing, or both, so will you refer to your working papers and put that in the record as it should be?

A. The price of $229,650 paid by Canadian River Gas Company to Master Oil & Gas Company for leases and Masterson No. 1 and Sneed No. 1 wells on those leases was determined as follows: 5,404.2 acres at $25 per acre, $135,105; cost of wells, $94,545.

In addition to the basic price there was paid for rentals $5,084.20 representing rental for one year at $1 per acre from June 1, 1928, and $320 representing rental of $1 per acre for one year from March 18, 1928.

Q. I think that is correct, Mr. Luttring. Now, the proposal covered acreage that was not actually transferred or assigned to the company, is that correct?

A. Will you read the question, please?

(The question referred to was read by the reporter as set forth above.)

The Witness: I don't quite get what you are talking about.

(Discussion outside the record.)

By Mr. Spencer:

Q. I had in mind that the title on some of the acreage covered by the proposal was not finally approved by counsel for Canadian River Gas Company and Amarillo Oil Company; consequently, that amount of acreage at the rate of $25 per acre was eliminated.

A. There was no acreage rejected.

Q. There was no acreage rejected in this transaction?

A. No, that's true.

Q. Now, on Page 2, Exhibit 146, the first line you say: "Total original legitimate expenditures, $112,359.55." You do not use the word "legitimate" there in the sense that you have thrown out some expenditures that you considered illegitimate?

A. I do not. I merely use it in the sense that they are proper expenditures to be included in the plant account.

Q. What you said in the beginning with reference to the use of "legitimate" or "proper" or any other adjective in connection with the original cost is applicable to the use of the word "legitimate" here?

A. Through the entire exhibit.

Q. And then you deducted that amount which I read, $112,359.55, from the amount of the purchase price paid by Canadian River Gas Company, namely, $235,054.20, and you reached the conclusion that Canadian River Gas Company paid $122,694.65 in excess of the amount paid over original legitimate expenditures, is that correct?

A. That is correct.

Q. Now, in the original cost as you have computed it here, has any allowance been made for overheads that Master Oil & Gas Company may have sustained?

A. There isn't any reflected in this report and there was none reflected on the books.

Q. I take it that such expense of that character as the company may have had was either charged to expense or lost in some process, is that correct?

A. That is correct. However, the amount of transactions that did go to the surplus of Master Oil & Gas Company were of an immaterial amount.

Q. There is no interest on the money employed in this venture included in your original cost, either, I take it?

A. There is not.

Q. In other words, this is just the bare bones cost of what you find, what in your opinion represents original cost of these two leases of the Master Oil & Gas Company?

A. That is true.

The Trial Examiner: Are there any interest charges contained on the books of the Master Oil & Gas Company, Mr. Luttring?

The Witness: I will have to look it up.

Mr. Spencer: Pardon me; read the Examiner's question, please.

(The record referred to was read by the reporter, as set forth above.)

The Witness: I do not find any interest so recorded either in the plant account or the income accounts of Master Oil & Gas Company.

By Mr. Spencer:

Q. While you were in Independence, Kansas in regard to this matter you also had access to the books of Prairie Oil & Gas Company relating to these leases?

A. If I remember correctly, I think it was only necessary to refer to the Prairie Oil & Gas Company records so far as that Sneed No. 1 well was concerned. The purpose of that was to obtain the features that were involved in the construction of the well.

Q. And to verify the cost?

A. Yes.

Q. Did you find on the books and records of the Master Oil & Gas Company the following items of expenses for its account by Prairie Oil & Gas Company which were expensed and not capitalized: Field expenses, $4,225.86; general expense, $2,650.26?

A. No, I did not note such items in the income accounts of Master Oil & Gas Company.

Q. What do you mean by that answer? That you weren't interested in that character of item?

A. The surplus account at the end of 1927 for Master Oil and Gas Company resulted in a deficit of $5,758.68. Net loss for the year 1928 was $1,235.85. Now, that was the extent of the income accounts of Master Oil & Gas Company. From that it cannot necessarily be concluded, but it does indicate that there wasn't a great deal of items that did go in with the income account.

Q. Now, assume that you had found these two items in the income account of Master Oil & Gas Company. What disposition would you have made of them?

A. I most likely would have included them in the plant account.

Q. Did you have no way in your working papers to identify these two items?

A. I don't think I do.

Q. Your working papers are available with respect to the income account as you found it?

A. Well, I don't know whether I have a complete analysis on it or not. I have quite a number of things in here which do relate to it.

Mr. Spencer: Well, I think we can probably short-cut that by having one of our boys look at your working papers to see if we can identify it in your working papers. We can do that later.

The Trial Examiner: Very well.

By Mr. Spencer:

Q. When I spoke about overheads, I of course include supervision and general administrative charges. You understand that that is what I had reference to?

A. Oh, yes.

Q. Now, will you tell me again why you eliminate from the original cost of these two leases as paid by the Canadian River Gas Company, the sum of $122,694.65?

A. I didn't eliminate that much from there. I eliminated $121,786.50.

Q. I beg your pardon. That's correct.

Using that figure in my question, then—

A. This transaction wasn't considered as being at arm's length. It was a transaction in which there was an official and corporate relation as shown on Page 3 of this adjusting entry.

Q. What do you have in mind when you use the term "arm's length"?

A. Any company or official corporate relation denotes that it is more or less a transfer of property rather than a sale. That is, if a party is acting both as a buyer and seller it is not likely that he can make a fair deal.

Q. It is not likely that he can. Do you mean that?

A. Well, I would say that he can't do it.

Q. Would you say that it is impossible to have an arm's length transaction between a buyer and a seller where the same stockholder controls both the buyer and seller?

A. I would say it is impossible.

Q. You would say that it is impossible?

A. Yes, sir.

Q. You do not think that it would be possible to provide outside safeguards to assure the fairness of the price and other terms and conditions of the sale?

A. Will you repeat that?

(The record referred to was read by the reporter as set forth above.)

The Witness: I don't believe that I understand your question.

By Mr. Spencer:

Q. Well, let me state it to you another way:

Let us assume that we have a buyer and a seller in the relationship that I stated a moment ago. They do have an interlocking common stock ownership; nevertheless, the transfer of the property is advisable and they call in a third party to determine the fair value of the property and the fairness of the price and the fairness of the terms and conditions, and having the decision of a third party in these respects they make a deal.

A. That still would not alter the situation.

Q. You still think that if there was any profit involved it would have to be eliminated?

A. Yes. It is merely a transfer of property between interests owned by the same party, and in such case it should be transferred at cost between those companies.

Q. Well, let's pursue that a little bit. Prairie Oil & Gas Company own 51 per cent of Master Oil & Gas Company, and they had about 25 or 30 individuals living around Amarillo, ranchers and others, that own the other 49 per cent. It it true that by reason of the ownership of 51 per cent by Prairie Oil & Gas Company that there is no means under which the other 49 per cent could receive the fair value of their property?

A. Well, there probably is in that case, but—

Q. I beg your pardon, is or is not?

A. Is, in that instance.

Q. Well, that's the case we have here

A. But in addition to Prairie Oil & Gas Company owning 51 per cent of the stock of Master Oil & Gas Company it was also interested in the company who finally purchased this property and in the agreements that were signed there was a common officer who executed the papers.

Q. I think that is admitted, Mr. Luttring. However, if Canadian River Gas Company wanted the property and needed the property and paid no more than its fair value as determined by proper safeguards, what would be wrong about it?

A. Well, if you consider fair value as original cost in this case then I see nothing wrong about it.

Q. Well, let's go to that a minute. You couldn't find the cost of a well here, the original cost, so you found an

appraisal figure which you thought was fair and you used it. Now, why didn't you go over and appraise the acreage? It's just as consistent, isn't it?

A. There is no need of appraising the acreage because in this instance which we are now discussing there was a new lease taken by Master Oil & Gas Company and we were only interested from the first bonus that was paid on that lease.

Q. Do you know what the fair value of acreage was in the Texas Panhandle field at that time for leases similarly situated?

A. I don't know what the fair value was at that time and I don't know now.

Q. You aren't prepared to say that $25 per acre is an unreasonable or exorbitant price for the acreage involved in this transaction?

A. I am not in position to say what the fair value of that acreage is.

Q. There is one other thing I wanted to ask you about: Going back to this morning, I believe you testified that Prairie Oil & Gas Company originally acquired 25 per cent of the issued and outstanding stock of Master Oil & Gas Company in 1925, is that correct?

A. That is correct.

Q. And that this particular capital stock was acquired with a number of other properties from Shamrock Oil & Gas Company, is that correct?

A. That is correct.

Q. Do you know that the purchase price for all of those properties including this stock, 25 per cent of the issued stock in Master Oil & Gas Company, was $2,300,000?

A. I don't remember the amount. I did, however, see the voucher that you referred to.

Q. Well, it was a substantial sum?

A. Yes, it was.

Q. Do you know what value, if any, was assigned to this stock by Prairie Oil & Gas Company?

A. I wasn't concerned with what value they assigned to that stock.

Q. Do you know whether this transaction finally was concluded at a profit or at a loss so far as the Prairie Oil & Gas Company was concerned? I mean the entire transaction.

A. That I do not know. I didn't examine the records of Prairie Oil & Gas Company to that extent.

Q. The reason I ask you that is because I understood you to say some place in your testimony this morning that one of the reasons impelling you to take out this sum of $121,786.50 represented an improper profit to the Prairie Oil & Gas Company. Am I wrong about that?

A. I think you have stated it incorrectly. I don't believe I stated it that way. I don't think I said who the profit was improperly received by.

Q. Well, the Prairie Oil & Gas Company is the fly in the ointment here, if it didn't make an improper profit in the transaction, certainly you wouldn't want to preclude the other stockholders from making the profit. Is that not correct?

A. I don't think that is quite correct. I am taking out of the plant account the entire profit on this transaction and I don't assign it to any particular stockholder or recipient.

Q. You don't know that that represents a profit so far as the Master Oil & Gas Company is concerned, do you?

A. I am not concerned as to whether it is or not.

Q. Well, you are calling it a profit. Profit on what basis? Let's not get—

A. It is a profit to the extent that it exceeds the original cost as reflected on the books of Master Oil & Gas Company.

Q. I like the word "excess" better than the word "profit." Which is the better?

A. I think I use excess. I don't know.

Q. Yes, you did, because I think as a matter of fact the books and records of the Master Oil & Gas Company show that they made no profits; isn't that correct?

A. The way the books of Master Oil & Gas Company were kept, it probably would reflect that no profit was made.

Mr. Spencer: I think that is all on this particular item, Mr. Examiner. If we could have a recess for five minutes or so we could proceed then, Mr. Examiner.

The Trial Examiner: Very well, we will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Spencer:

Q. I have just a few more questions, Mr. Luttring, about your adjusting entry No. 200, Exhibit No. 146. On Page 1 you start off with lease cost, bonus paid R. B. Masterson and J. T. Sneed, Jr., on lease dated June 1, 1926, covering lands in Moore County, Texas, $5,247.20. I take it that that is the first cost you allow these lessees with the exception of the value of the Masterson M-1, which you set up, is that right?

A. That is right

Q. And any previous cost that Master Oil & Gas Company or anyone else may have had with respect to these leases are not allowed here?

A. They are not included in this journal entry.

Q. Do you know what safeguards were utilized by Canadian River Gas Company to make certain that it was not paying more than a fair price for these leases and wells?

A. (Pause.)

Q. I am asking you if you know.

A. I can answer it only in a general way.

Q. All right. Answer it any way you choose.

A. Canadian River Gas Company had a considerable amount of acreage and had numerous wells previous to the time they made this purchase. The cost of those wells which they owned in some instances were slightly higher than the cost of the two wells that are shown on Page 1, and in some instances the costs were much lower, which would give a person investigating the records a reasonable idea of the cost of those wells.

Q. I think maybe you misunderstand my question or I didn't state it very plainly. Let me put it to you this way:

Who provided the money with which to pay the purchase price for these leases and wells?

A. Well, all I can say is that the money was paid by Canadian River Gas Company, who they got their funds from to make that payment—

Q. I don't intend to ask you anything about that. If you don't know, just say so.

Are you familiar with the contract between Canadian River Gas Company and Colorado Interstate Gas Company—

A. I am not.

Q. —covering the purchase and sale of gas and the conditions under which Canadian River Gas Company may acquire acreage and leases and the provisions for providing funds for that, etc.?

A. I am not thoroughly familiar with that.

Q. All right, now, we have involved here a transaction covering the sale and disposition of all of the assets of Master Oil & Gas Company and its dissolution. In other words, it is a winding up, a liquidation. Is that a fair interpretation of what the transaction was?

A. That is it exactly.

Q. Now, assuming there was some law in the State of Texas which required eighty per cent, or two-thirds of all of the issued and outstanding capital stock in the Master Oil & Gas Company to approve the sale of all of its assets and to dissolve it, would you still say that 51 per cent of the stock controlled in that situation?

A. Yes.

Q. Why?

A. Well, because there couldn't be much done with the property unless the 51 per cent consented in some form or other.

Q. Isn't it likewise true there could have been no sale or disposition without sufficient other stock to make up the two-thirds or the eighty per cent, whichever might be the case?

A. Will you read the question, please?

(The question referred to was read by the reporter as set forth above.)

The Witness: In this instance I don't think it would have been difficult.

By Mr. Spencer:

Q. That isn't quite what I am asking you about. I am asking you if 51 per cent of the stock controls the situation

which requires the affirmative vote of two-thirds or eighty per cent of the stock.

A. Read the question again, will you?

(The question referred to was read by the reporter as set forth above.)

The Witness: It would still control the prospective sale. No sale can be made unless they have the consent of 51 per cent.

By Mr. Spencer:

Q. I think that is correct.

Now, to apply that another way, if you needed one per cent to make up two-thirds or eighty per cent, the one per cent would likewise control, is that not likewise correct?

A. That could be possible.

Q. Well, it would be precisely correct, would it not? You couldn't put it over without that one per cent, could you?

A. Technically it is correct but there are always means found to get that one per cent.

Mr. Spencer: I am not going to follow you into that.

All right, one more question and then I think I will be through for the time being.

Q. Let's assume that the cost of these leases and wells of the Master Oil & Gas Company—I am speaking of the original legitimate, proper, or whatever you want to call it—was $300,000, and they sold them to Canadian River Gas Company for $235,000 plus, and you were called upon to determine the original cost for the purpose of this proceeding, would you in that event come in here with $300,000 or $235,000 plus?

A. The net of the transaction would be reflected in your plant account; the original or first cost of the property would be reflected in their property accounts, and any difference between that and what you paid would be reflected in this Account 100.5.

Q. Well, is it in or out of the plant account, that is, the excess over $235,000?

A. Well, the excess is in and out there.

Q. Where do we wind up?

A. Well, you get the amount that you paid for the property. The entry itself is reflected in two accounts.

Q. We would be permitted to set up only the amount that we paid in a plant account in the event it was less than the original cost of the selling company, is that correct?

A. That is correct.

Q. Why doesn't this proposition work both ways?

A. Well, this last case that you have cited was one, I assume, that was an arm's length deal.

Q. Yes, let's assume that.

A. That is the difference between this transaction and the one that you just cited.

Q. Let's assume it wasn't an arm's length deal and it was just the same—let's assume it was the same kind of a deal we have here; only the cost to Master Oil & Gas Company as you find it is $300,000 and not $112,000 plus?

A. This is not an arm's length deal, is that correct?

Q. I am not going to reach that conclusion. Let's assume it is the same kind of a deal we have here.

A. Will you state that last part again?

(The record referred to was read by the reporter, as follows:

"Q. Let's assume it wasn't an arm's length deal and it was just the same—let's assume it was the same kind of a deal we have here; only the cost to Master Oil & Gas Company as you find it is $300,000 and not $112,000 plus?

"A. This is not an arm's length deal, is that correct?

"Q. I am not going to reach that conclusion. Let's assume it is the same kind of a deal we have here.")

The Trial Examiner: Mr. Spencer, your hypothetical question is that the cost of the Master Oil & Gas Company would be $300,000?

Mr. Spencer: Right.

The Trial Examiner: And the price paid to the Master Oil & Gas Company by the Canadian River Gas Company would be the same?

Mr. Spencer: That is correct.

I am asking the question because I want to see how the rule works, the definition works, in respect to these transactions.

The Witness: In that particular case, gas plants adjustment account would be credited with the difference between original cost and the price paid for that particular equipment.

By Mr. Spencer:

Q. What is the effect of putting the difference down in the gas plant adjustment account so far as Canadian River Gas Company is concerned, and its future income?

A. On Page 17, Uniform System of Accounts prescribed for natural gas companies, Account No. 107, Gas Plant Adjustments, is explained as follows:

"A. This account shall include the difference between the original cost, estimated if not known, and the book cost of gas plant, at the effective date of this system of accounts, to the extent that such difference is not properly includible in Account 100.5, Gas Plant Acquisition Adjustments. Write-ups of gas plant prior to the effective date of this system of accounts shall be recorded herein.

"B. The amounts included in this account shall be classified in such manner as to show the nature of each amount included herein and shall be disposed of as the Commission may approve or direct."

Q. Well, of course, in the assumed case I have here we had no write-up?

A. No, in this case you received a credit that was really to the benefit of the company.

Q. Well, I don't think it is necessary to take any more time on that right now.

Turn to Page 4, Exhibit No. 146, Adjusting Entry No. 201, which has a note at the bottom stating: "To charge delay rentals account with amounts included in the plant account at December 31st, 1939, representing payments for *renuals* and rentals on leases made in years as follows:"

Then it goes into detail. Can you amplify that explanation a little bit, Mr. Luttring, so as to give us a little clearer view as to what you are attempting to do in this particular entry?

A. Well, it may help if I am permitted to read the explanation of Account No. 510, Delayed Rentals in the Classification of Accounts.

Q. Let me ask you some questions about it first:

What is the basis for the adjustments that you make in Entry No. 201?

A. The basis is the cost shown by the company's books.

Q. I am thinking more of principles than theories and books.

A. Well, the principle goes back to a requirement of the classification of accounts—

Q. That is the answer I wanted. Go ahead and read it in.

A. On Page 82 of the Uniform System of Accounts, Account No. 510, Delay Rentals, is explained as follows:

"A. This account shall be charged with the amount of rents paid periodically on natural gas lands in order to hold natural gas land and land rights for the purpose of obtaining a supply of gas in the future.

"B. Include also in this account the cost of obtaining natural gas leases for a period of one year or less."

That is sufficient, I think.

Q. Now, in making this adjustment you have followed the instructions just read from the Uniform System of Accounts of the Federal Power Commission?

A. That is correct.

Q. Now, do these instructions apply to entries of this character subsequent to the date of the Uniform System of Accounts becoming effective or are these instructions retroactive?

A. (Pause.)

Q. Let me ask you—

A. Just a minute. I want to think it out.

Q. Excuse me.

A. The classification would not be retroactive in all instances but since we had an opportunity to open up the company's surplus account we did make the transfer of delay rentals from the plant account to the income account on a retroactive basis.

Q. When did the Uniform System of Accounts become effective?

A. January 1, 1940.

Q. Do I understand you correctly in this, that commencing in the year 1929 and ending in the year 1939 in

adjusting entry No. 201, you have applied the principles in the instructions just read into the record retroactively so far as the accounts of Canadian River Gas Company are concerned?

A. That is true.

Q. That is to say that during all of this period from 1929 to 1939, inclusive, there wasn't any obligation upon the company, from the Federal Power Commission, or otherwise, to make these entries in the manner you think they now should have been made?

A. I don't think there would be if it had not been for a rate proceeding.

Q. Do you think the accounting of the company with respect to these items was in error at the time the entries were made?

A. No, I don't think they were in error. There was two schools of thought in handling that type of an item. The more conservative companies charge that type of item to income account, other companies capitalize it.

Q. There was some accepted basis in accounting practice then for the entries as they were made by Canadian River Gas Company at the time?

A. That is right.

Q. What you are doing here is exercising a hind-sight judgment so far as our accounts are concerned?

A. That is true.

Q. All right, what do you understand by the term "delay rental"?

A. A delay rental is an amount paid to the lessor or assignor and an assignee, or an assigner, granting the privilege of deferring the drilling of wells. These amounts are usually paid annually.

Q. It is a provision in the lease?

A. That is correct.

Q. Made by whom? I think you said "paid to him," but not by whom.

A. It is paid by the person holding the lease.

Q. Or the lessee or the operator, as the case may be?

A. Yes, sir.

Q. What do you understand by the term "bonus" in connection with oil and gas leases?

A. The word which?

Q. Bonus.

A. A bonus is similar to a rental payment except that it is paid at the time the lease is executed. It usually covers the first year's rental period of the lease.

Q. Have you got any bonuses in this list on Page 5?

A. There may be some in there.

Q. All right.

A. I use the word "renewals" and "rentals" on leases.

Q. There might be a provision in a lease requiring payment of a bonus without any relationship whatsoever to the deference of drilling obligations, is that not right?

A. That is possible.

Q. And in that instance it would not conform to your definition of "delay rentals," would it?

A. It would still be an expense incurred for the purpose of holding that piece of property.

Q. I know, but in adjusting entry No. 201 you are dealing with delay rentals and I am trying to confine ourselves to that, and to make certain that we understand each other about it. If your definition of delay rentals is not sufficiently broad to cover what you have in mind here, then I would suggest that you re-define it so as to cover the whole scope of what you have in mind because I am going to question you on that basis when we come to the several items.

A. Do you wish to distinguish bonuses and rentals?

Q. I want to make certain that we understand what we have involved here in these adjustments; delay rentals, as I understand it; bonuses, as I understand it; guaranteed royalty obligations, as I understand it, or whether you have a different conception of what delay rentals are. You have a heading entitled "Delay Rentals" and I can't start until I know what you mean by "delay rentals."

A. Adjusting Entry No. 201 represents not only delay rentals but renewal bonuses paid from 1929 to 1939 on leases that are still active at December 31st, 1939, all of which we removed from operated and unoperated leases and charged the income account.

Q. Well, the term "delay rentals" as we understand it in oil and gas parlance is too limited for what you have done in this entry. Am I correct?

A. Well, it may be. I don't know.

Q. What do you understand by "guaranteed royalties" as distinguished from "delay rentals" or "bonuses"?

A. The guaranteed rentals doesn't enter into this account.

Q. No guaranteed royalties?

A. Guaranteed royalty is not included—would not be included in this account.

Q. It would not?

A. No, sir.

Q. Now, turning to Page 5, can you identify these leases for me as we go down the list? You have them identified by lease number, which I, of course, ought to know. If you could give me the name of the lessor it would help me; that is, if you have it in your working papers.

A. If you will refer to Schedule 2-A, Page 71, you will find the delay rentals and bonuses that were removed from the operated leases, and on Page—

Q. Before you leave that page, Page 71, Mr. Luttring, how would I find them? Guide me a little here. I would follow this until I found Lease No. 63?

A. Well, if you will go to Column 8, your first item there is J. T. Sneed Lease No. 6-A. Now, if you go to Sheet 5 and look down your lease column number you will find in 1931 $6,528, and in 1935 there is $2.50.

Q. Yes, that is right. I follow that. And on Page 71 I don't see any 63.

A. Well, 63 is unoperated lease. It would be on a schedule following the operated leases.

Q. Oh, I see.

A. Beginning on Page 73.

Q. 73, I see. That's right. I think I can follow that, Mr. Luttring.

Now, have you examined these leases involved in this entry?

A. The leases were not examined by me. They were examined by our Bureau of Engineering.

Q. Your information as to what the lease contains with respect to provisions covering delay rentals, bonuses, were obtained from someone else?

A. Yes. Any information that we would need on that particular point would be obtained from the Commission engineers.

Q. Well, what function did you have here—just to put down the figures on somebody else's conclusions as to what certain amounts of money have been paid for?

A. Well, they were mostly developed from facts shown by the records of the company and such information as we needed from the Bureau of Engineering.

Q. Well, the best source of information as to the character of the payment, what it was made for, would be the lease itself, would it not?

A. That is true.

Q. Do you have copies of the leases involved in this entry?

A. I have reviewed some of the records of the Bureau of Engineering.

Q. Well, take the first one, the first item on Page 5, Lease No. 63, $1,280, paid in the year 1929. Just go through and explain that transaction. All I want to know is what you did about that item and your reason for it.

A. Lease No. 63 showed a charge to the unoperated lease account in 1929—

Q. I beg your pardon? I didn't get that.

(The record referred to was read by the reporter, as set forth above.)

The Witness: (Continuing) —applicable to Lease No. 63 of $1,280. In 1934 the same lease was charged with $2,450. Not having any further facts than what is shown in the exhibit, I would assume that the payment made in 1929 is a renewal bonus and also the payment made in 1934 was a renewal bonus.

Q. Well, now, Mr. Luttring, I don't want you to assume that it was a renewal bonus paid in 1929 or a renewal bonus paid in 1934. I would like to know—to find out for the record here exactly what it was paid for. Otherwise, we aren't going to get very far.

A. It isn't definitely indicated in the exhibit but I can get it from my working papers.

Q. All right, will you examine your working papers with respect to that item and see what you have?

A. I'll have to do a little further digging, if you wish to wait.

The Trial Examiner: Do you think you can find it there, Mr. Luttring?

The Witness: They aren't clearly distinguished here.

Mr. Spencer: Well, Mr. Examiner, I want to inquire along the same lines with respect to all of these items. It might save time if I deferred that part of it until he does have an opportunity to find his working papers on it.

The Trial Examiner: You mean that portion of your cross examination?

Mr. Spencer: Yes. I could proceed to the next item, perhaps.

The Trial Examiner: Do you have them there, Mr. Luttring?

The Witness: It will take a little time. I may have to dig out individual papers for each lease.

The Trial Examiner: Very well. I think, then, under that situation it probably would be advisable to defer that until he has had an opportunity to find them.

By Mr. Spencer:

Q. In that connection, Mr. Luttring, I want to know with respect to each item whether the payments made represents delay rental, bonus, renewal or otherwise; whether it represents guaranteed royalty payment, and I would like the very best information that you have for classifying the payments as such, whatever there may be. In the absence of a study of the lease themselves, why, I'll take the best you can do in that respect.

Now, we'll go to Page 6—

The Trial Examiner: Mr. Spencer, before you go to 202, Mr. Luttring, did you state what the net effect of your adjustment here is, your Adjustment 201?

The Witness: The net effect is that surplus of the company will be reduced by $151,991.23—will apply to the years we have detailed in that entry.

By Mr. Spencer:

Q. The surplus will be reduced and the—
A. The contra account less investment will be reduced.
Q. Will be reduced likewise?
A. By the same amount.
Q. Have you made any attempt here later—or, I presume

perhaps in some other exhibit to allocate the surplus charges to the year in which they are applicable?

A. The purpose of us showing these years as we have in the journal entries was to enable us to classify those adjustments in the years to which they apply.

Mr. Spencer: Did you have any further questions, Mr. Examiner?

The Trial Examiner: Yes, that's all right.

By Mr. Spencer:

Q. Page 6, Adjusting Entry No. R-202. I assume in this case the letter "R" indicates that it is merely a reclassification?

A. That is true.

Q. You have taken out of operated leases acquired from Amarillo Oil Company and the Mountain States Gas Company the amount of investment in gas wells which you think should be more properly classified in gas well investment account?

A. That is correct.

Q. Otherwise, no change is made in the figures?

A. No effect to the plant account as such. I'll give you a little further history about the transaction if you would like to have it.

Mr. Spencer: Maybe the Examiner would like to hear it. Go ahead.

The Witness: The Mountain States Gas Company purchased four wells, the cost of which is detailed in Entry No. R-202. The price paid for these wells was an overall price; that is, covering both the leases and the well construction costs. The entire purchase price was charged to operating lease account and no part of it was charged to the well construction costs.

Now, on April 30, 1924, the Mountain States Gas Company inventoried the well construction costs and recorded those costs in their gas well accounts and made an offsetting credit in the same accounts for the amount of the inventory, thereby making the transaction nil. What we have done in this journal entry is to reflect the cost related to the well as shown by the inventories of April 30, 1924, and taken the amount represented by those costs out of operated lease account.

Q. That would conform to the Uniform System of Accounts?

A. No, you wouldn't find that in there.

Q. You wouldn't find that in there?

A. No, sir.

Q. Has the company been in error in the way that it has handled it, or do you think that what you have suggested here is just a better accounting practice?

A. It makes the records more correct because there is an element of depreciation particularly in your structural costs.

Q. Now let's turn to Page 7, Adjusting Entry 203. This is not a reclassification?

A. It is partly a reclassification and partly an adjustment.

Q. Well, let me read this and see if I understand it.

Well, can you explain in a little simpler language what this transaction is about?

A. Yes. We refer to Page 4 in the written statement.

Q. Of the written statement?

A. Yes, sir. The very last paragraph.

Q. Well, let's break it up in parts. The first part of it relates to a transfer of the cost of drilling, certain wells and operated leases to gas well investment.

A. That is correct.

Q. To that extent it is a reclassification the same as we had in Adjusting Entry No. R-202?

A. That is correct.

Q. What amount is involved in that?

A. $289,147.77.

Q. Now, the explanation with respect to that much of this entry is substantially the same as the explanation you made with respect to No. R-202?

A. That is right.

Q. Now, you have left $128,534.04. That's a different animal. It is an adjustment. It represents a transfer of cost to Amarillo Oil Company acquiring the net assets of Mission Oil Company in excess of the original cost of operated leases to gas plant adjustment account.

Now we are dealing only with wells, well costs here and not lease costs or both?

A. No, we are dealing only with gas well costs.

Q. Gas well costs. The wells we are talking about, the wells drilled on Lease No. 30 and Lease No. 58, altogether seven wells?

A. That is correct.

Q. Those wells, I take it, were acquired from the Mission Oil Company by Amarillo Oil Company?

A. That is correct.

Q. Who drilled the wells?

A. The wells were drilled by A. R. Jones and Associates, in accordance with an agreement dated November 20, 1918.

Q. An agreement with whom?

A. Amarillo Oil Company.

Q. Now, whose cost is reflected here—A. R. Jones' cost or Mission Oil Company's cost, or whose cost?

A. I have reflected the combined costs of Amarillo Oil Company, Mission Oil Company and A. R. Jones and Associates. The cost I have reflected represents the original costs of these wells.

Q. When you get through building up the original costs of A. R. Jones, Mission Oil Company and the Amarillo Oil Company, do you find that that cost is less than the cost reflected on the books of Amarillo Oil Company?

A. We found that the costs were less by $128,534.04.

Q. How does that come about? Did Amarillo Oil Company buy these wells?

A. When Mission Oil Company consolidated their fifty per cent interest in these wells with the fifty per cent iffterest owned by Amarillo Oil Company, they wrote up their accounts by the amount of $128,534.04.

Q. Who wrote up the accounts?

A. They were written up on the books of Amarillo Oil Company.

Q. Now, I'm afraid that you and I together aren't very clear to the Examiner just how this whole thing arose. Can you go back and in sort of an historical manner from your notes outline to the Examiner just what took place here? Otherwise, my questions and your answers may be somewhat—

A. Do you want a further explanation?

Q. I think we ought to have a little clearer explanation of the transactions that took place here, Mr. Luttring. I don't know whether you have the notes to do it with or whether I better go on the witness-stand and do it, but it

isn't going to be clear unless we have an explanation here some place as to just what took place.

Let me start with questions.

A. Supposing I read what is in this written statement. I think that covers it pretty well.

The Trial Examiner: Page 4?

The Witness: Starting with the very last sentence on Page 4.

Mr. Spencer: I don't think there is any necessity to read it again.

Q. When was Amarillo Oil Company incorporated?

A. About 1917.

Q. Who incorporated it?

A. Masterson and Bivins and a few other local people at Amarillo, Texas.

Q. What was the amount of its authorized capital stock?

A. Ten thousand dollars.

Q. In what state was it incorporated?

A. Texas.

Q. What leases—oil and gas leases did it commence business with?

A. Masterson and Bivins and several others of which they later disposed.

Q. Undeveloped leases?

A. They were undeveloped at the time they acquired them.

Q. The corporation was formed by local ranchers and cattle men and others in the vicinity of Amarillo?

A. I don't know the position of Masterson and Bivins and other people before they got in the gas business, but they were the original incorporators of the company.

Q. Were there any producing wells in the Panhandle field at that time?

A. I am not prepared to answer other than to state that I have been informed that the wells which were originally developed by Amarillo Oil Company were some of the very first wells drilled in that field.

Q. Do you know the date the discovery well was drilled in the field?

A. I do not.

Q. Now, you have testified that in 1918 Mr. A. R. Jones came along and made an agreement with the Amarillo Oil Company to drill certain wells on the oil and gas leases of the Amarillo Oil Company, is that correct?

A. That's correct, and all of the wells were drilled on Masterson lease.

Q. And in consideration of the drilling of those wells, what was Mr. A. R. Jones and Associates to receive?

A. Jones was given fifty per cent interest in the leases.

Q. In the leases themselves?

A. Yes, which Amarillo Oil Company owned at the time of the agreement.

Q. So that at the conclusion of the drilling of the wells, the wells with the leases themselves would be owned fifty per cent by Amarillo Oil Company and fifty per cent by A. R. Jones and Associates, is that correct?

A. If you will say fifty per cent of the income, I think that is correct.

Q. We were getting along pretty well up to that point. There were assignments of undivided fifty per cent interest in the leases, is that correct?

A. That is correct.

Q. All right. Did Mr. Jones agree to drill the wells free of cost to the Amarillo Oil Company? Is that correct?

A. I don't think the agreement read quite that way. He agreed to drill five wells for this fifty per cent interest in the leases.

Q. Well, didn't he agree to pay the cost of drilling the wells?

A. He agreed to put up the money, yes.

Q. He did put up the money, did he not?

A. Yes, sir.

Q. Now, those five wells let's identify those. On Page 7 —five wells that he proceeded to drill, in order to receive an undivided fifty per cent interest in the leases of the Amarillo Oil Company. Will you identify those five wells on Page 7 of your Exhibit 146?

A. They were all Masterson leases—or Masterson wells. There were no wells drilled on the Bivins lease under that agreement.

Q. That is to say, Masterson Lease No. 58, Well Nos. B-5, C-1, C-3, D-4 and E-2?

A. That is correct.

Q. That's correct. Now, that accounts for the five wells that you have got here. Now, in addition to the five wells, Mr. Luttring, that Mr. Jones agreed to drill for an undivided fifty per cent interest in these leases, he also drilled two other wells, is that correct?

A. That is correct, on which the Mission Oil Company and the Amarillo Oil Company were supposed to put up an equal amount of funds.

Q. In other words, these two other wells were drilled for the joint account of the two parties?

A. That is correct.

Q. Now, those two wells, can you identify those on Page 7 of Exhibit 146?

A. Bivins Lease No. 30, Well No. C-1, and D-3.

Q. Just a minute, please.

Now, this may be a typographical error, Mr. Luttring; but Bivins Lease No. 30 came up from Producers and Refiners Corporation and not from Mission Oil Company, Jones and Associates, or the Amarillo Oil Company?

A. Well, those wells now are under—that is the present lease number, see.

Q. Oh, I see. This is the present consolidated lease number?

A. That's correct.

Mr. Lange: Right there, for clarity, the well C-1, the first C-1, would be Bivins C-1 and the other one would be Masterson C-1. That would be their names, wouldn't it, at present? Of course, both of them are C-1 wells, in order to identify them. The first one would be identified as Bivins C-1?

The Witness: That is correct.

Mr. Lange: And the other one would be identified as Masterson C-1?

The Witness: I understood that was clear, wasn't it?

Mr. Spencer: Yes, that is correct. In other words, two wells numbered C-1 on different leases.

Mr. Lange: Yes.

By Mr. Spencer:

Q. Now let's go back to the five wells that Mr. Jones and his associates drilled for an undivided one-half interest in these leases. Where did you go to check the original cost of drilling those wells?

A. I went directly to the books of A. R. Jones and Associates and Mission Oil Company, located at Kansas City, Missouri.

Q. By the way, before we get ahead of our story, these five wells—the first five wells were drilled during what period, so we can keep our dates straight?

A. About 1918 to 1920.

The Trial Examiner: During that period, you mean, Mr. Luttring?

The Witness: That's correct.

By Mr. Spencer:

Q. And the other two wells were drilled when?

A. Around 1921 and 1922.

Q. Now, the original cost of drilling the five wells you found from the books and records of A. R. Jones and Associates at Kansas City, Missouri, is that correct?

A. That is correct, and the books of Mission Oil Company.

Q. Well, I don't want to get into the Mission Oil Company yet, if we don't have to.

A. All right.

Q. Now, I want to cover A. R. Jones and his cost and the cost to his associates. Perhaps I can't do that with the schedule that you have set up here on Page 7. That is a composite figure that you have here?

A. That is true. It is the result of figures from three companies.

Q. I see.

A. That is, A. R. Jones and Associates sold their interest to Mission Oil Company.

Q. What date?

A. July, 1922, and they had further additions, then in 1923, on January 15th when they consolidated their interest with Amarillo Oil Company who owned the other fifty per cent.

Q. In other words, at that time the A. R. Jones and the Mission Oil Company interests turned in their undivided

half interest in the leases for half of the issued and outstanding capital stock of the Amarillo Oil Company?

A. That is correct.

Q. They became stockholders of Amarillo Oil Company in substitution for their half interest in these leases?

A. That is right.

Q. Well, how can I find in these costs, these well costs that you have built up here, what the cost to Mr. A. R. Jones was and what the Mission cost was and the Amarillo Oil Company cost was?

A. Only by reference to my papers.

Q. Your working papers?

A. That is correct.

* * * * *

MR. LUTTRING further testified on cross-examination: (Vol. XXXIX, pp. 5288-5328.)

Q. Mr. Luttring, at the conclusion of our hearing on Friday evening I think we were discussing your adjusting entry No. 203, Exhibit No. 146; is that correct?

A. That is correct.

Q. You stated that in 1918, A. R. Jones & Associates entered into an agreement with Amarillo Oil Company to drill five wells upon the leases held by Amarillo Oil Company—

A. That is correct.

Q. —in which they would have an undivided one-half interest in such leases?

A. That is correct.

Q. Do you have a copy of that agreement with you, Mr. Luttring?

A. Yes, sir, I do.

(Discussion outside the record.)

By Mr. Spencer:

Q. You have located it?

A. Yes, sir.

Mr. Spencer: I would like to have this agreement marked for identification, Mr. Examiner.

The Trial Examiner: What is the description of the instrument, Mr. Spencer?

Mr. Spencer: It is an agreement dated November 20, 1918,

between Albert R. Jones, Harry W. Jones, and E. W. Goebel on the one hand, and Amarillo Oil Company on the other hand.

The Trial Examiner: It will be marked for identification as Exhibit No. 160.

(Exhibit 160, Witness Luttring, marked for identification.)

By Mr. Spencer:

Q. Does that document disclose who the associates of Mr. A. R. Jones were, Mr. Luttring?

A. Yes, it does.

Q. And they were whom?

A. Harry W. Jones and E. W. Goebel.

Q. Do you know what business Mr. Jones and his associates were engaged in at that time?

A. Mr. Jones and his associates at that time were interested in an oil refinery located, I believe, at Kansas City, Missouri. They were—

Q. That is correct.

A. —also interested in some other gas property or oil property—I am not sure which it is.

Q. Now, did Mr. Jones and his associates help drill the five wells in accordance with their understanding in this agreement?

A. I didn't get your question.

Mr. Spencer: Read the question, please.

(The question referred to was read by the reporter, as set forth above.)

The Witness: That is correct.

By Mr. Spencer:

Q. And these five wells, I believe you have previously identified are the five wells listed under Lease No. Masterson 58 in the schedule on Page 7, Exhibit No. 146?

A. That is correct.

Q. Do you know the locations of these wells?

A. I could locate them on a map.

Q. Do you know the dates of commencement of each well?

A. I have seen a date for it and I have the date in my record.

Q. Do you know the dates of completion?

A. I beg your pardon—I have the dates of completion in my papers but I do not know the date the gas was first taken from them.

Q. If you could find them rather readily, I would like for you to read the dates of completion of them.

A. All right. The dates of completion of the following wells were as follows:

Masterson C-1, December 8, 1918; Masterson E-2, August 19, 1919; Masterson C-3, September 23rd, 1919—this well was deepened on June 30, 1922—Masterson D-4, November 29, 1919; Masterson B-5, July 15, 1920.

Q. Do you also have there the depths of these wells?

A. Yes.

Mr. Spencer: Well, I don't think that is necessary.

Q. Now, in addition to the five wells that were drilled by Mr. Jones and his associates pursuant to this agreement in 1918, Mr. Jones and his associates also drilled two additional wells for the joint account of Amarillo Oil Company and Mr. Jones and his associates?

A. No, that is not correct. They also drilled three wells, one of which was completed dry.

Q. They drilled three wells for the joint account?

A. Yes, sir.

Q. The two wells listed on Page 7 in your schedule designated Bivins C-1 and Bivins D-3 are two of the wells drilled for the joint account?

A. That is correct.

Q. And the third well, which you say was drilled for the joint account, is not here?

A. It is not in these papers.

Q. It is not in these papers?

A. No.

Q. And the number of the well is what?

A. Bivins No. 2. It was never given any other symbol because it never produced any gas.

Mr. Keffer: What number was that?

The Witness: Bivins No. 2.

By Mr. Spencer:

Q. Do you have the date of commencement on the two Bivins wells shown in this schedule?

The Trial Examiner: You mean the commencement of drilling, Mr. Spencer?

Mr. Spencer: Yes, sir.

The Witness: Bivins C-1, August 1, 1919; Bivins D-3, May 23, 1922—

The Trial Examiner: Is that the commencement date?

The Witness: Yes, sir.

By Mr. Spencer:

Q. Will you give me the date again, please?

A. May 23, 1922.

Q. Aren't we getting a little confused? I am talking only about Mr. A. R. Jones and his associates and this last well that you have mentioned, was not drilled for the joint account of A. R. Jones and Associates and the Amarillo Oil Company, was it?

A. Well, we do confuse the matter because the first five wells were all drilled on the Masterson lease. The money for doing that work was entirely furnished by A. R. Jones and his associates. This other work was done on a joint basis between Amarillo Oil Company and/or the Mission Oil Company.

Q. I think that is correct, if you include the Mission Oil Company in it. I don't think it is correct to say, however—

A. There is a lapover in there. I may not have this just as fine as you would like it.

Q. Did you give me the dates of completion on those wells? (Examining document) No, you didn't. Put in the dates of completion, too, on those two wells.

A. The following wells were completed on the dates as follows: Bivins C-1, February 19, 1920; Bivins D-3, December 2, 1922.

Q. Now, the dry hole which you have designated as Bivins—identified as Bivins B-2—

A. I didn't identify that; that is identified in the company's records.

Q. It is just Bivins 2?

A. It was completed—

Q. When was it commenced?

A. It was commenced on May 25, 1920.

Q. And it was completed when?

A. April 21st, 1921.

Q. I assume you mean that it was abandoned?

A. It was completed dry.

Q. Now, going to your schedule on Page 7, which has the heading "Development Cost," am I correct in presuming that those development costs are stated as of January 16, 1923?

A. That is correct.

Q. Now, excluding the well that was a dry hole, have you attempted here to allocate a cost of A. R. Jones & Associates, Mission Oil Company, and Amarillo Oil Company to certain specific wells as of January 16, 1923?

A. That is correct.

Q. Now, what kind of records did you find were maintained by A. R. Jones & Associates?

A. The records that were kept by A. R. Jones & Associates, so far as the dollar amount of expenditures were concerned, were in good order; so far as getting the usual facts used for the gas business, the items were not identified in very good order.

Q. What would you say about his classification of expenditures? Did he make any?

A. He made no classification of the expenditures. The expenditures were all entered in one account without making any distribution of those items.

Q. In order to arrive at your calculations, you were called upon to exercise some judgment in classifying his accounts?

A. I was not particularly interested in the classification that he made of the expenditures. I was more interested in getting the total original cost and all I needed to get was the dollar amount of expenditures.

Q. Would you say you could go to the books kept by Mr. A. R. Jones & Associates at that time and identify the expenditures that went into specific wells?

A. No, sir, I could not.

Q. Now, what kind of books and records did the Mission Oil Company keep?

A. The Mission Oil Company kept records quite similar to those now kept by Canadian River Gas Company in connection with the gas wells. In other words, they were what I would consider good records.

Q. You couldn't identify the expenditures with certain specific wells or properties?

A. In the books of the Mission Oil Company you could identify the expenditures.

Q. However, the Mission Oil Company never did complete any wells on these properties?

A. Well, from the dates I just gave, I would have to say that they didn't.

Q. I think that is correct. They participated in the wells, but—

A. Yes, I think there were some wells under construction but I am just relying on my memory for that.

Q. Let's go to the books and records of account of the Amarillo Oil Company reflecting its business and activities up to January 16, 1923. I believe you have already testified what the Amarillo Oil Company was incorporated at that time?

A. 1917.

Q. 1917?

A. Yes.

Q. Did the Amarillo Oil Company drill any wells between the dates of its incorporation and January 16, 1923—I mean, did they as an operator drill any wells on their own leases?

A. Well, Amarillo Oil Company actually drilled the first Masterson lease which—

Q. The first Masterson well?

A. Yes, they drilled the first Masterson well, which I have identified and is identified on the books as Masterson C-1.

Q. What is the other name for that well as it is commonly known on the records of the company?

A. The original name was Hapgood. That was the name of the individual who had the drilling contract for that well.

Q. The Amarillo Oil Company entered into a contract with a party by the name of Hapgood to drill the Masterson C-1?

A. That is right.

Q. I believe you have already testied that the well was completed in 1918?

A. Yes.

Q. Was it completed by Mr. Hapgood?

A. Hapgood, I was informed, did not complete the well.

and it was considered as one of the five wells completed by A. R. Jones & Associates.

Q. Mr. Jones did conduct the drilling operation that completed the well?

A. I wasn't specifically able to find any charges identified with that well in the course of the examination of A. R. Jones & Associates' books; however, Mr. Jones did tell me he did some work on it.

Q. And what form did the expenditures made by Amarillo Oil Company upon this well take?

A. By "form" what do you mean?

Q. Well, I will ask you a leading question: I assume that the Amarillo Oil Company paid the contractor some amount for the drilling of the well, didn't he? By "contractor," I mean Mr. Hapgood.

A. I know that Amarillo Oil Company paid Mr. Hapgood $20,000 in the way of drilling costs.

Q. Is that all of the original cost for that well that you credited to Amarillo Oil Company?

A. That is all that—no.

Q. I am speaking only of the Amarillo Oil Company.

A. I also show that Amarillo Oil Company paid Hapgood $9500 for the repurchase of a half-interest which they gave him in certain leases.

Q. Didn't Mr. Jones buy a quarter of Mr. Hapgood's interest for $9500? I believe that is the figure, isn't it?

A. Yes. Jones and Associates also paid a half of the half interest which Hapgood owned in certain acreage on which Well No. C-1 was located.

Q. Now, I will ask you this question: What kind of records did you find were kept and maintained by Amarillo Oil Company from the date of its incorporation down to January 16, 1923?

A. The records as a whole kept by Amarillo Oil Company from the inception of the company to January 15, 1923, were very poor and very inefficiently kept. However, there was a sufficient amount of information there, and that together with the information that I could get from A. R. Jones & Associates and the records of the Mission Oil Company, enabled me to determine quite accurately what the expenditures were that Amarillo Oil Company made.

Q. Would you be prepared to say that you found all of

the expenditures that had been made by the Amarillo Oil Company in connection with the acquisition and development of these properties?

A. I wouldn't say that I probably found all of them, but I am reasonably sure that what I have found will give a reasonably accurate result.

Q. What do you mean by "reasonably accurate result"?

A. I mean that the property that is involved in this proceedings is in the neighborhood of $20,000,000, and that if they were two or three thousand dollars off, I wasn't going to spend a great deal of time worrying about it.

Q. Well, suppose that you dropped out twenty or thirty thousand—strike that.

Suppose there were expenditures amounting to $20,000 or $30,000 which were not included here, would you think that of any importance in the final result of this proceeding?

A. It would be from your standpoint.

Q. Now, looking at this schedule on Page 7, Exhibit No. 146, do you intend to convey the impression that this division of cost on a well basis represents the true expenditures made with respect to each of these wells?

A. They are the true intangible costs with respect to the wells shown in this journal entry.

Q. Do you know, for instance, with respect to Masterson B-5, that $24,868.13 was expended for labor, teaming, and freight?

A. I do not, but the total of the labor, teaming, and freight column in the amount of $170,458.76 does represent all of the development costs applicable to the seven wells shown in that journal entry. That is the result of a proration that I made, based on the drilling charges, which I could get actually allocated to each well.

Q. What you mean to say is that you think the total for labor, teaming, and freight for the seven wells is correct but that the allocation of the total to individual wells is the result of estimates or proration you made?

A. Proration.

Q. On what basis did you prorate it?

A. It was based on the drilling charges. In other words, I was able to get the drilling charges allocated to their respective wells.

Q. Well, did your allocation take into consideration the depth of the well?

A. No. I might state this: The company has any number of similar situations in its well account. This is nothing unusual.

Q. You are purporting to set up here original costs allocated to specific wells and I want the record to be clear as to the basis of making that determintaion. You did the same thing with reference to drilling, would you say, in allocating as between wells or prorating between wells?

A. No, I found the actual drilling cost.

Q. Well, now, that is where I am confused. A. R. Jones had certain drilling costs; if I understand your testimony correctly, you could not take A. R. Jones' books and records and allocate his drilling costs to specific wells—

A. It so happened the drilling cost bills were so supported and explained in such a manner that the charges could be distributed by wells.

Q. On the drilling?

A. On the drilling charges.

Q. Now, with the exception of the drilling that was done on the Hapgood wells, by Amarillo Oil Company, A. R. Jones drilled all of these wells? I guess that is right?

A. (Pause.)

Q. A. R. Jones drilled all of the wells except the drilling done on the Hapgood well?

A. That is right.

Q. You were satisfied with your allocation of drilling cost of these wells as you found it on the books of A. R. Jones & Associates?

A. Yes, sir.

Q. You prorated the rest of the expenditures to labor, teaming, and freight, in proportion to drilling charges that you found?

A. Based on the drilling charges, yes.

Q. All right, now, you had a dry hole here which isn't shown but which was also drilled by A. R. Jones & Associates. How did you allocate drilling and other cost to that well?

A. I don't know. I have got all of the stuff in my papers and the figure I used was the result of summarizing all of the charges that I found against that well.

Q. How much did you take out of original cost for this dry hole?

A. I excluded my figure of $51,839.04.

The Trial Examiner: For that dry hole?

The Witness: For that dry hole, yes.

By Mr. Spencer:

Q. How much allocating or prorating did you do to get that figure?

A. I don't believe I did any.

Mr. Spencer: I would like to know the facts about that particular point; if it is ready and available.

The Witness: We will have to go through a lot of papers in order to get the facts.

Mr. Spencer: Suppose you make a note of it and get me the facts with reference to the component part of the $51,839.40 which you have taken out for the Bivins two dry holes and the basis that you used for any allocations, or prorations which might be involved.

Q. Now, this schedule covers only the development cost as of January 16, 1923?

A. That is correct.

Q. It wouldn't cover other costs that would be attached to the leasehold?

A. It does not cover the tangible costs which are related to these particular wells.

Q. Now, after you got through examining the books and records of A. R. Jones & Associates, Mission Oil Company, and the Amarillo Oil Company, what was the total amount of original cost which your determined was properly shown for these leasehold properties as of January 16, 1923?

A. "My examination of the records of Mission Oil Company, at Kansas City, Missouri disclosed the actual legitimate expenditures made in accordance with agreement dated November 20, 1918 for the development of certain wells in the Amarillo oil and gas field. The records also disclosed the actual expenditures which were made to develop wells in addition to those specified in the agreement. Actual well costs as disclosed by the books of Mission Oil Company

were combined with the actual well costs as disclosed by the books of Amarillo Oil Company, and the total gas well investment resulting therefrom amounted to $368,928.65, representing intangible costs of $289,147.77 and tangible costs of $79,780.88. The gas well investment as shown by the books of Amarillo Oil Company as of January 16, 1923 amounted to $501,389.49, which was reduced in July 1923 to $497,462.69 by an adjustment in the amount of $3,926.80. The difference between the actual well costs as disclosed by the records and the costs set up as at January 16, 1923, the effective date of combining the assets, amounted to $128,534.04."

Q. What are you reading from?

A. That is some information I built up that covers the situation pretty well.

Q. This total—The total figures that you read, $368,928.65, would not include any leasehold costs?

A. It does not include any leasehold costs.

Q. Now, can you take the total figure of $368,928.65 and split that as between the three parties that contributed to it; namely, A. R. Jones & Associates, Mission Oil Company, and Amarillo Oil Company?

A. If I wanted to spend probably the rest of my life, I could do it. I was able to get the total amount of expenditures which each one of these companies spent on these wells that we have under discussion as of January 16, 1923, and an inventory was taken of the intangible equipment in those wells.

Q. Who took that?

A. Well, it was taken by Amarillo Oil Company or someone interested in it.

Q. I didn't understand you—

A. The tangible—

Q. Excuse me.

A. The tangible cost that was determined by that inventory was deducted by me from the total amount of these expenditures and the difference therein represented the intangible development costs. It is the same practice that has been used by the company in many other instances.

Q. You start with an inventory here and arrive at your figures by a process of differences; that is what you have to do?

A. No, that is not true. I had previous information

about the inventory because I had worked on the books of Amarillo Oil Company prior to my examination of Mission Oil Company and A. R. Jones & Associates. Now, then, having the information that there was an inventory taken as of that date, there was no need of me worrying a great deal about the accuracy in the distribution of the expenditures on these other companies.

Q. Now, you cannot take your total figure of $368,928.65 and break that down as between the three parties that contributed to it?

A. I could do it if I—

Q. Can you now?

A. No, I cannot—yes, I can give you the expenditure by each party but I can't give you the features that were involved in these expenditures.

Q. You mean you could give it to me in totals?

A. Yes, I could do that.

Q. Have you got that information available?

A. It will probably take me some time to dig it out.

Mr. Lange: You might make a note of that.

The Witness: If he wants it I will get it.

Mr. Spencer: I don't want you to work the rest of your life on this job. If this can be done without too much effort, I would like to have it.

The Trial Examiner: What you mean, Mr. Luttring, is that you could give him the total amount?

The Witness: Yes, the total amount that was spent by each company.

The Trial Examiner: But you couldn't in turn break down each total amount, is that it?

The Witness: Not within any degree of accuracy. I wasn't particularly interested in that. I wanted to get the total number of dollars legitimately expended on these projects.

Mr. Spencer: The point of my inquiry, Mr. Examiner, is this: He has arrived at a total figure for the three contributors of $368,000 plus; that is what they put into the property according to his findings, and he can't take that

figure and tell us exactly where every dollar of that went. As I understand his answers to my questions, he goes up here to another point of an inventory taken in 1923 and worked back by a process of elimination to arrive at these figures shown on Page 7. That is the reason I am trying to see how far he could go to break down the direct charges.

The Witness: If you will give me about fifteen minutes, I think I can give you all the kind of figures you will want on it.

Mr. Spencer: We might take a little recess.

The Trial Examiner: Perhaps if you would like to have it in the record at this point, it would be best to do that.

Mr. Lange: That is all right.

The Trial Examiner: Very well. We will stand in recess for fifteen minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Spencer:

Q. Now, Mr. Luttring, will you take your total original cost figure of $365,928.65 as of January 16, 1923, and break the total down as between A. R. Jones & Associates, Mission Oil Company, and Amarillo Oil Company, respectively?

A. The total expenditures for development of wells by A. R. Jones & Associates includes an amount of expenses incurred in the operation of gas wells of an indeterminable amount, $275,506.03; the total expenditures by Mission Oil Company, $25,113.08, a total of—

Q. The Amarillo Oil Company next.

A. The Amarillo Oil Company, $96,545.39.

Q. What is the total of those items?

A. Just one moment, please:

Now, those figures include the cost related to Bivins No. 2 dry hole on A. R. Jones & Associates and Mission Oil Company's books in the amount of $28,238.57. Deducting the dry hole cost, the total of the expenditures amounted to $368,928.65.

Q. What did you mean when you said that the figure

which you gave for A. R. Jones & Associates contains an indeterminate amount of operating expenses?

A. Well, I mean that they had started selling gas and the costs of operation during that time were included in this one property account. It was difficult to determine definitely the amount of such expenses.

Q. Well, in this schedule appearing on Page 7 of Exhibit No. 146, have you taken out anything to reflect the indeterminate operating expenses you mentioned?

A. I gave the company the benefit of the doubt.

Q. You took out nothing?

A. No, sir.

Q. What did you do with the revenues?

A. The revenues are out of these figures, out of the account.

Q. By deducting the A. R. Jones cost as you find the information of the Bivins No. 2 well which was a dry hole, you arrived at the total figure we had at the outset?

A. That is correct.

Q. Now, what did you do with Amarillo Oil Company's portion of the dry hole cost?

A. Amarillo Oil Company's portion was automatically dropped out because it was charged to surplus on their books.

Q. In other words, it didn't appear in the well account on the balance sheet of the Amarillo Oil Company?

A. That is right.

Q. All right. Now, can you take these last figures which you have given me and classify those? Do you understand my question?

A. No, I don't. It is not quite clear.

Q. All right, take the figure of $275,506.03 which represents the expenditures by A. R. Jones & Associates and break that down into labor, teaming, and freight, drilling, and tangible well costs as to each of the wells shown on this schedule, Page 7, Exhibit 146.

A. I can give you the classification as I made it; however, if six different persons went down there to distribute that property, they would probably get six different answers. There were so many of the expenditures which could not be accurately classified so that the results you would get would almost be meaningless.

Q. And the answer that you get or the answer that you have would be likewise different from the answer shown in the schedule on Page 7, is that not right?

A. Only in so far as the classification of the expenditures are concerned—

Q. That is what I am talking about—

A. —and not in the total of the expenditures.

Q. But the allocations to wells and different classes of property would be undoubtedly different than those shown in this schedule?

A. That is right.

Q. In making this sketch schedule on Page 7 you have relied largely upon a setup of well accounts, other property accounts, which were made in 1923 by a Mr. Iliff?

A. Will you read the question again, please?

(The question referred to was read by the reporter, as set forth above.)

The Witness: I relied very little upon Mr. Iliff's figures.

By Mr. Spencer:

Q. Well, you examined the accounting books and records of Amarillo Oil Company, did you not?

A. That is true.

Q. Now, turning to Page 8 of your exhibit, which has a heading "Balance Sheet of January 16, 1923," wasn't that setup taken from the books and records of Amarillo Oil Company?

A. The balance sheet was taken from the best available information on the books of Amarillo Oil Company and was reconstructed by this individual, Mr. Iliff.

Q. Well, the books and records of Amarillo Oil Company were reconstructed upon the setup recommended by Mr. Iliff, is that correct?

A. That is true.

Q. And you have used that setup as your base or starting point for your schedule on Page 7, isn't that right?

A. That is correct, yes.

Q. I don't mean to say that your schedule is entirely that, but you start from that point and use your other figures to arrive at a net deduction here?

A. These were the first reliable figures that were found relating to the Amarillo Oil Company.

Q. All right. Well, now, as long as we are on that, let's turn to Page 8 for a moment—one more question.

Did you agree with Mr. Iliff's classification of these accounts as of January 16, 1923?

A. No, I did not.

Q. You did not agree with them?

A. That was my reason for making this adjustment on Page 7.

Q. Did you agree with him except for the adjustments which you have recommended on Page 7?

A. Generally, yes.

Q. Now turn to Page 8. Explain what this data on Page 8 is and the purpose you had in mind for including it at this particular point in your exhibit.

A. This page is placed in here to show the cost that was set up for leaseholds as it was originally recorded on January 16, 1923. The account that we are specifically referring to here amounts to $421,608.61. At the bottom of the page is a summary showing from that figure is deducted an adjustment made by the company in July 1923, which adjustment relates to that item and after applying that adjustment, there is an adjusted leasehold writeup as of January 16, 1923, of $417,801.81.

Q. You have used the word there, Mr. Luttring, which also appears on page 8; to-wit, the word "writeup." In connection with the leasehold account which is stated here as $421,608.61, the same item appears on the bottom of the page, third line from the bottom. Is it true that the $421,608.61 represents a writeup of leasehold values on the books of Amarillo Oil Company?

A. We are speaking only of the leasehold account as it was actually written up by $421,608.61.

Q. What becomes of approximately $290,000 that you allow on these leaseholds?

A. I said that so far as speaking only of the leasehold account it was actually a writeup; that is, to call it "leasehold," was in error.

Q. You mean to say that by the word "writeup" that a portion of it in your opinion represents values in excess of cost?

A. That is correct.

Q. That portion would be what?

A. On Page 7 the total of the development cost in the amount of $289,147.77 represents actual costs, which are included in that figure.

Q. And that is not a writeup to that extent?

A. That proportion is not a writeup.

Q. And the difference between that figure and the figure shown on Page 8, in your opinion, should be classified as a writeup?

A. That is correct.

Q. Now, going back a little further under the heading of "Liabilities," you have depreciation and depletion taken out as shown on the books of Amarillo Oil Company amounting to approximately $20,250, is that correct?

A. That is correct.

Q. And that is deducted from the original cost of these properties to Amarillo Oil Company?

A. It all depends upon what you mean by deductions.

Q. You do not show any similar item for depreciation or depletion under the column headed "Mission Oil Company"?

A. We do not show any depletion or depreciation for the Mission Oil Company—

Q. They owned a half interest—

A. —which I think is to the benefit of the company.

Q. Do these items of depreciation shown there in this exhibit operate as deductions from plant account of Canadian River Gas Company, these depreciation items shown here?

A. We have carried those depreciation items right through into Canadian River Gas Company.

Q. Are you—you picked those up later?

A. Yes, sir. You understand that we are talking about depreciation reserve there?

Q. Yes, sir. I want to take you to the dry hole you have eliminated from this schedule on Page 7. That dry hole was drilled pursuant to contract, was it?

A. It was drilled under a contract, yes. If I remember correctly, Greenlees-Dick Drilling Company did the work.

Q. Was the well drilled to explore and develop these properties?

A. No more so than a Bivins C-1 and D-1 wells; how-

ever, I believe that I saw some records showing that this well was drilled deeper than some of those other wells.

Q. Well, it—

A. And to that extent it might have been exploratory

Q. Would you know of any other purpose for which the well might be drilled except to explore and develop the lease upon which it was located?

A. It may have been drilled to determine the fault line of the field.

Q. Could that purpose be classified as development?

A. Expense.

Q. On what lease was this well located?

A. Bivins No. 2?

Q. Yes.

A. It was in Section 2, Block 20, G & M. I don't have the county here—

Q. That is sufficient—

A. —but I rather think it is in the same neighborhood as C-1 and D-3.

Q. That is sufficient on the location. I wondered if you had the lease number there so that we could identify the lease.

Let me ask you this question: Do you know whether or not the well was drilled to comply with the lease obligation?

A. I did not examine the lease.

Q. Now, I believe you have a note there that I want further information about and that is the cost of this particular well. How was the cost of this particular well determined by you?

A. I have that.

Mr. Lange: You have a definite note on that?

The Witness: Yes, I have it written down.

By Mr. Spencer:

Q. Tell me, now—

A. May I add this: This dry hole was completed after Amarillo Oil Company had made sales of gas.

Mr. Spencer: Wait a minute. We'll come to that in just a little bit. All right, I'll ask you that question: Why do you eliminate this Bivins 2 dry hole from your schedule of original cost on Page 7 of Exhibit 146?

A. First because it was drilled after the so-called development period and the company had actually engaged in operations, and since they had engaged in actual operation it becomes a charge to the exploration expense account.

Q. All right, now, what is the development period of Amarillo Oil Company as you have determined it for the purposes of this schedule on Page 7? What is that period? When does it start and when does it end?

A. The development period would end in December 1920.

Q. And would start when?

A. I wish to change that date. I'll make it October 1920. That was the month in which the gas was first sold.

Q. We'll come to that in a little bit.

A. I beg your pardon?

Q. We'll come to that in just a moment. I want to find out about the development period first. You say it ended October 1920. It commenced when?

A. It commenced at the time they started to drill the Hapgood well.

Q. Sometime in 1918?

A. 1918.

Q. Now, have you got a definition of what constitutes the development period for the purpose of making the determinations such as you have made here?

A. I think what I have already described pretty well states what I determined as the development period to be.

Q. Well, then, am I correct in assuming that from your standpoint the development period is over on the first date the gas is marketed?

A. That is correct.

Q. Is that your conclusion or do you have some other authority for that statement?

A. That is my conclusion. They did sell some gas prior to that time for other drilling operations, but I haven't considered that in determining the end of the development period.

Q. Well, you can point to nothing in this Uniform System of Accounts promulgated by the Federal Power Commission which supports you in your conclusion that the development period for an entire property ceases on the day the gas is first marketed from such property?

A. That conclusion is my own.

Q. Now, do you reach that conclusion by employing what you have learned in accounting or do you go outside of the field of accounting to arrive at that determination?

A. In this instance I relied mostly on accounting. I did have additional knowledge of the fact that they did sell gas—

Q. That is admitted, Mr. Luttring, they did sell gas. I am trying to explore with you your ideas about the effect of selling gas.

Mr. Lange: Mr. Spencer, if I may interrupt, I think the witness was going to state to whom gas was sold and he didn't finish that.

Mr. Spencer: I'll cover that in just a little bit here.

Mr. Lange: I see.

Mr. Spencer: If I forget, you remind me of it.

Mr. Lange: All right.

The Witness: I may say this, that I also had knowledge that the first five wells drilled gave ample production to serve a customer to which they later sold the gas.

By Mr. Spencer:

Q. Well, now, do you think a potential gas supply also serves to end what you have called the development period for a company?

A. It would have some bearing in the case.

Q. Well, where do you get that from? your accounting experience, or from the Uniform System of Accounts and the Federal Power Commission, or what other source?

A. Well, I just used my own judgment.

Q. Doesn't the determination of this particular question have something to do with rate making?

A. No, I don't think so.

Q. In other words, if we weren't involved in a rate proceeding, you would have done precisely the same things that you have done here if you were auditing the books of the company?

A. Yes, sir.

Q. You would have written off a dry hole. You would have made no attempt to capitalize it?

A. Under the same conditions I would have done exactly the same as the company had done in this instance.

Q. Would you consider yourself to be a rate expert?

A. No, I do not.

Q. Then, what you have done here with respect to determining the development period at the time, at the end of which the company was precluded from capitalizing dry holes, has been based upon your own judgment?

A. That is correct, in this instance.

Q. In this instance. That's all I'm talking about.

A. Yes.

Q. Now, let's get to the sales of gas that you have mentioned. You said you made your determination based upon the sale of gas by Amarillo Oil Company, I assume you meant in October of 1920?

A. That's right.

Q. And to whom was the sale made?

A. Some of the early bills or records showed that the sales were made to Amarillo Gas Company. Later on the sales were made to Panhandle Pipe Line Company.

Q. Well, in the first instance they were made to Amarillo Gas Company?

A. That is correct.

Q. In October of 1920. Was that pursuant to some contract?

A. I don't know what the agreement was.

The Trial Examiner: Was the Amarillo Gas Company a distribution company?

By Mr. Spencer:

Q. Do you know the nature of the business of the Amarillo Gas Company?

A. It distributes gas in the town of Amarillo, Texas.

Q. Where was the sale made in October 1920?

A. By that do you mean—

Q. The point of delivery.

A. I don't know.

Q. Do you know whether or not Amarillo Oil Company had any pipe line system of any character in 1920?

A. Amarillo Oil Company did not own any pipe line at that time.

Q. So if it were going to deliver the gas it probably wouldn't deliver it from any pipe line, is that not correct?

A. Yes, there would have to be a pipe line of some sort.

Q. Did they have any facilities to deliver the gas at any

—did they have any facilities with which to deliver gas except the well head?

A. Not up to January 15, 1923, if that's the date you refer to.

Q. What wells furnished this gas to the Amarillo Oil Company?

The Trial Examiner: You said "Amarillo Oil Company." Did you mean "Amarillo Gas Company"?

Mr. Spencer: Amarillo Gas Company. Thank you.

The Witness: The wells that furnished the gas are Masterson No. 1; Masterson No. 2; Masterson No. 3 and Masterson No. 4.

By Mr. Spencer:

Q. 1, 2, 3 and 4, and Masterson 5, Bivins C-1 and Bivins D-3, were not involved in those sales, is that correct?

A. Not in the early sales.

Q. Not in the early sales.

A. Bivins did not start to sell gas until I think it was about 1923.

Q. You have used the phrase here that we have discussed heretofore "devoted to a public use." I think it is found in the Code of Accounts. Do you consider the sale of gas at the well of such significance as to devote the well and the lease on which it is located to a public use?

A. If the gas was ultimately used by consumers, I would.

Mr. Lange: And your reason for that conclusion?

By Mr. Spencer:

Q. And what is your reason for that conclusion?

A. Oh, the reason is that we are chiefly interested in whether the gas goes to the consuming public or not.

Q. Do you think that anyone that sells anything to a public utility thereby devotes their property to a public use?

Mr. Lange: I think that, of course, is getting a little beyond this impale. I think he can give him—or, rather, ask the witness in what facts he determined the public use as far as these properties are concerned, but going beyond the pale of this investigation entirely, I don't know whether that would be a fair question to ask.

Mr. Spencer: I'll withdraw that question. I'll ask him this one:

Q. You have stated that in your opinion, if the company sells gas at the well which is ultimately distributed to public consumption, that that operation or transaction in your opinion would devote the well and the leasehold upon which it is located to public use. I am not misunderstanding you about that. Is that right?

A. Not necessarily. Are you assuming that the parties in this transaction are different parties?

Q. I am making no assumptions at all. If you want to qualify your answer, the record is open. I understood you to say that in your opinion under the conditions you named the property would be devoted to a public use. Now, if you want to amplify that, I'll suggest that you do that.

A. Read that question back there.

(The record referred to was read by the reporter, as set forth above.)

The Witness: Yes, it would be my opinion that the well would be property devoted to public use.

By Mr. Spencer:

Q. All right. I'm a coal dealer and I sell coal to an artificial gas plant. The artificial gas is ultimately distributed for public consumption. Is my coal property, my business, devoted to public use?

A. That is an entirely different situation. The public has no control over your coal fields.

Q. What control does the public have over my gas wells in 1920?

A. Well, through a regulatory body in most states.

Q. Oh, do you now testify that there was some regulatory body in the State of Texas that could regulate the control of the gas well—the gas leasehold operations in 1920 as public utilities?

A. I don't mean to testify—if they didn't have one, I think they should have.

Q. Oh, my goodness. Well, when you start making determinations as to what constitutes devoting a property to a public use, Mr. Luttring, you are getting into the field of rate making, are we not?

A. Yes.

Q. And you have already testified that you weren't a rate expert?

A. That is correct.

Q. Your particular function here is an accounting function?

A. My particular function is to make a study of original costs as it applies to this particular proceedings.

Q. Is there anything in the Code of Accounts of the Federal Power Commission which specifies when a gas well—a gas leasehold shall be considered to be devoted to a public use?

A. I have never seen any in the classification.

Q. So that all of these determinations on that particular subject are the result of your own judgment?

A. It is my own judgment.

Q. Turn to Page 81 of your exhibit, please. Will you go down there on this schedule of gas wells as of December 31, 1939 until you find the Masterson C-3 well on Lease 58 and there you and Mr. Teel have made a determination as to when gas was first marketed from this well and the date that you find there is April 24th, 1923, and you have just testified here that it commenced marketing gas on Masterson C-1 well in 1920.

A. Well, I have a letter from Mr. Jones' file that says that—

Q. Well, let's see the letter.

Mr. Spencer: May I talk to him off the record here?

The Trial Examiner: Certainly.

(Discussion outside the record.)

Mr. Spencer: Well, Mr. Examiner, there is an apparent discrepancy in the data which I have read from Page 81 and Mr. Luttring's testimony, and I would suggest that he check that and we can find out whichever is correct. Will you make a note of that, too, Mr. Luttring?

Mr. Lange: Make a note of that to check that later.

By Mr. Spencer:

Q. Have you got any data there on the quantity of gas that was marketed in October, 1920?

A. Yes, I have the entire gas production of Amarillo Oil Company in our working papers from the time that they

started to sell gas up to the time that the properties were transferred to Canadian River Gas Company.

Q. Your only basis for ending the so-called development period and limiting the time during which the company might capitalize the dry hole is based on the proposition that it commenced to sell gas in October 1920 to another company which distributed that gas to consumers in the city of Amarillo?

A. That is correct.

Q. Well, do you know what disposition the Amarillo Gas Company made of the gas? Do you have that in your working papers, too?

A. No, I do not.

Q. You are not able to say, then, whether they sold the gas that they purchased to industrial consumers, commercial consumers, or domestic?

A. Only through such information as I probably noticed in my examination.

Q. Was there any corporate or other relationship between Amarillo Oil Company and Amarillo Gas Company in 1920? Do you know?

A. I do not know.

Q. So the development period had ended in October 1920 and this well, Bivins 2, being a dry hole and having been drilled subsequent to that date, is excluded from your schedule on Page 7?

A. That is correct.

Q. Suppose, Mr. Luttring, that in the Bivins C-1, which you do include in your schedule on Page 7, had got into some casing difficulties after they had drilled down five hundred feet and they skidded the rig a hundred feet and started drilling again and then completed the gas producer. What would you have done with the cost of drilling the first five hundred feet where they encountered casing difficulties?

A. I would let it go into the cost of the second well.

Q. You would let it go into the cost of the second well?

A. Yes, sir.

Q. Well, now, let's see, the Bivins 2, we got down there and we got into plenty of difficulty and we took that rig over and we drilled the Bivins 7, not very far from that. That's a little longer skid but we're over there with the rig and everything. Is that a different situation?

A. You drilled an entirely different well.

Q. Well, we drilled a different well in the first instance that I mentioned to you. It is a different hole. I am starting two holes in both cases here, and in the first case you say I am all right, it goes into the well account.

A. In the first case, if you start a well and for some reason you have to stop it, that is, through an act of God, those charges I would permit to be included in the cost of a second well if that second well were drilled somewhere in the neighborhood of that first one.

Q. Well, as a matter of fact, this well turned out badly, Bivins No. 2, and they did move the rig and start another well. It wasn't a hundred feet, but it was in the vicinity of the other well. That is, it was a continuous drilling operation as far as your rig is concerned; is it not the same as it was in the first case I mentioned to you?

A. If those charges are in Bivins No. 2 and a well was completed dry, why, I would charge them to exploration costs.

* * * * *

Continuing, MR. LUTTRING further testified: (Vol. XXXIX, pp. 5329-5359.)

Q. We had this morning, Mr. Luttring, two requests, I think, for additional information. Are you prepared to do that now or do you desire to do it later?

A. I have the information regarding the Masterson C-3 well. I was in error in stating that Masterson C-3 well was one of the wells from which the original production was taken to furnish gas to the city of Amarillo.

Q. Well, now, as you gave it in your testimony you said Masterson 1, 2, 3 and 4, as I recall.

A. That is correct.

Q. And you should eliminate—

A. And you should eliminate the 3.

Q. Leaving Masterson 1, 2 and 4?

A. That is correct.

Q. All right, and the other request that you made a note about?

A. The other one was on costs on that Bivins No. 2, dry hole.

Q. Yes, sir.

A. I haven't got all that compiled for you.

Q. Do you wish to furnish that later?

A. Yes.

Q. That's perfectly all right.

A. I'd prefer, if you wish, to get together with you on it.

Q. All right, we can do that, then.

Now, you gave this morning "April 23rd, 1922" as the commencement date and "December 2nd, 1922" as the completion date of the Bivins 2 dry hole.

A. No, those were the dates for Bivins D-3.

Q. Then I am in error. Will you give me again, then, the date of commencement and the date of completion of the Bivins 2 dry hole?

A. The date of commencement of drilling Bivins No. 2 well was May 25th, 1920 and the date of completion was April 21st, 1921.

Q. That conforms to my figures. I was in error.

A. That well, consequently, was drilled down to 3640 feet.

Q. I don't think there are any further questions regarding the commencement and completion date, except that the well had been commenced and expenditures had been made on the well prior to the date which you fix as the end of the development period.

A. The dates I have here were taken from some log records that were in Jones' files.

Mr. Spencer: Read the question.

(The question referred to was read by the reporter, as set forth above.)

The Witness: That may be true, as I just stated. These statements I have given you are the dates shown on log records that were in Jones' files.

By Mr. Spencer:

Q. Well, the end of the development period as you fix it is October 1920.

A. That is correct.

Q. And this well was commenced in May of 1920 according to the records of the company.

A. That's right. This well wasn't under that original agreement.

Q. I am not sure that it was, Mr. Luttring, and I'm not sure that you are correct in that respect, but if you are not correct about it I think it is a result of misinformation

that we gave you at the time you were examining our records about it, so I am not going to cross examine you any further about that point, and whatever we have to say about it will come in in the way of rebuttal to correct the record. I am sure you have in here the information about it that we furnished. We may have been in error in the information we furnished at the time.

Now, you have fixed October 1922 as the end of the development period—1920, I beg your pardon—as the end of the development period because the gas was first marketed from three of these wells at this time which was distributed by Amarillo Gas Company, is that correct?

A. That is correct.

Q. By the way, do you know whether the sale was made to Amarillo Gas Company or some other company?

A. The record shows that the sales were made to Amarillo Gas Company.

Q. Did you see the contract under which the sales were made?

A. I did not see the contracts.

Q. And you have fixed this date of October 1920 as being the time on which these properties were devoted to a public use, as I understood you this morning, for the reasons which you stated?

A. That is correct.

Q. And you arrived at that determination fully on your own judgment?

A. That is right.

Q. And in making that determination as to dedication or devotion to public use, does it embrace or include all of the wells and properties of the Amarillo Oil Company at that time?

A. Yes, it does.

Q. How many wells did they have on that date? Amarillo Oil Company?

A. Six wells.

Q. And what was the open flow capacity of those wells on that date?

A. I am not prepared to answer.

Q. Do you know what the relationship of open flow capacity was to the market demand of Amarillo Gas Company at that time?

A. I do not.

Q. How much acreage—leasehold acreage, did Amarillo Oil Company have at that time—approximately, Mr. Luttring. I don't care for—

A. 25,000 acres.

Mr. Spencer: I think you had better check that figure, Mr. Luttring, as I think you are too low.

The Witness: Well, my records indicate that they might have had about forty-seven thousand acres. I don't have anything specific on it at that particular date.

Mr. Spencer: I think that is still too low, Mr. Luttring, and if you desire you can check it later and we can correct the figure in the record if you want to. I think the initial acquisition of leasehold acreage by Amarillo Oil Company was between seventy and eighty thousand acres.

The Witness: Well, they did sell a lot of acreage.

Mr. Spencer: I believe you will find the company has an excess of forty-seven thousand acres at this time. You can check and if you care to correct it you can do so.

Q. Now, am I correct in stating that—from what you have heretofore testified—that since the properties of Amarillo Oil Company were dedicated to the public use in October 1920 by the sale of gas from its wells which was ultimately distributed in Amarillo, that subsequent to that time in your opinion all of the properties it acquired and all of the wells it drilled were likewise dedicated to a public use?

A. That is correct.

Q. Are you prepared to say at any point in these operations how much other acreage or how many of the wells or how much of the open flow of these wells was used or useful in serving the Amarillo market?

A. No, I do not have that information.

Q. Have you read the Natural Gas Act pursuant to which these proceedings are being conducted?

A. Yes, I have.

Q. Do you find in that Act that Congress has found that properties used in the producing of natural gas are devoted to a public use?

Mr. March: I object to that question on the ground that it is purely a legal question and involves a construction of the Act. The Act speaks for itself and I think the witness is not qualified to make any legal construction of the Act. It is a legal question for a lawyer to do.

Mr. Spencer: I think there is something to what you say, Mr. March, but he has embarked upon a program of finding out when properties are devoted to a public use and if it involves some legal interpretation he is apparently attempting to do it. I am just trying to find out what he knows about it.

Mr. March: We don't object to asking the witness what he did about it or what his conception is of public use. The fact of the business is, the witness has been asked that already, but we object to asking this witness legal questions involving construction of the Federal Power Act. When he used "public use," he was using it in regard to his accounting report and we certainly object to the question. It is obviously a legal question.

The Trial Examiner: The Examiner is rather inclined to sustain the objection.

Mr. Spencer: And all similar questions along that line relating to what the Act has to say?

The Trial Examiner: I think, Mr. Spencer, that to inquire of this witness as to the provisions of the Natural Gas Act is somewhat outside the qualifications of the witnes.

By Mr. Spencer:

Q. Let me ask you this one question on that point, then, Mr. Luttring: I take it from your testimony heretofore given that you arrived at your determination as to the devotion of these properties to public use without reference to anything that was said in the Natural Gas Act?

A. That is correct. As a matter of fact, I arrived at that conclusion in our discussions here this morning.

Q. And the conclusions are entirely yours with respect to these dedications or devotions to public use?

A. That is correct.

Q. Have you ever had occasion to sit as a member of any Board or Commission in a rate hearing case?

A. No, I have not.

Q. Have you had any previous experience in a rate proceeding of this character?

A. No, I have not.

Q. Have you made any particular study of the subject of the properties being imposed with a dedication to public interest by reason of their use?

A. None other than what I have read in connection with my work.

Q. Just what you have read on the subject?

A. Yes, sir.

Q. Was the Bivins 2 dry hole of any value to the company in your opinion?

A. Only in determining the location of the fault line.

Q. Might not the drilling of that well have saved the company other losses in drilling wells at the wrong locations?

A. Well, my answer to the other question would fit this one, too.

Q. Your answer is what?

A. My answer is that it would help determine the fault line of the field.

Q. Therefore, the company did acquire geological information regarding the acreage it held through drilling of the well?

A. Without question.

Q. And that would be of some value to the company?

A. There is no doubt about it.

Q. And if, per chance in your opinion this well which was started in May 1920 had been completed prior to October 1920, would it have been proper to have included it as a capital investment?

A. No, sir, because it was not included in the original agreement to drill those first five holes.

Q. Assuming it wasn't in there—it may develop it was—but assuming it wasn't among the first five wells, in your opinion it would not have been proper to have capitalized the dry hole even though it had been completed during the development period?

A. That is correct.

Q. I understand—

A. If it were one of the wells originally in the first group I would have probably consented to its capitalization.

Q. Isn't any well drilled in a development period prior to the time a company commences regular business operations a proper charge to capital

A. The company had already commenced business before this well was completed dry.

Q. You have found that the sale of gas of sufficient magnitude to be dignified by the term "business" didn't start until October 1920, is that correct?

A. That is correct.

Q. Unless I misunderstood you, if this well had been completed prior to that date as an exploratory well, it would have been proper to capitalize it?

A. That is correct, providing it was in that original group of wells that were drilled on the Masterson lease.

Q. Well, it couldn't have been—

A. Or if this particular well had been a part of that original contract.

Q. Well, let's leave it that way and see how the evidence develops.

Now, Mr. Jones and his associates sold their undivided half interest in the wells and leaseholds of Amarillo Oil Company to the Mission Oil Company on May 1, 1922, is that correct?

A. That is about the right date.

Q. Do you know what price Mr. Jones and his associates received for the half interest?

A. They sold it for $420,000 to Mission Oil Company.

Q. Cash?

A. They issued preferred stock, I believe.

Q. Which was subsequently retired for cash?

A. Perhaps. I didn't go that far into the records of the Mission Oil Company.

Q. Now, assuming that Mr. Jones and his associates did receive $420,000 for their half interest in the property, in his property, does that in any way indicate the value of that half interest?

A. No, it does not.

Q. Why not?

A. In the first place, Jones and the Mission Oil Company are one and the same person; they had already devoted this property, as I stated before, to public use, along with the Amarillo Oil Company, and the original cost thereof would be carried on through.

Q. And when you say that they had devoted their interests in the company to public use, the same as Amarillo Oil Company, you are referring to your previous testimony this morning on that?

A. That is correct.

Q. That is the only manner in which you mean they would dedicate it to a public use?

A. That is right.

Q. When the Mission Oil Company sold its half interest, which was acquired from Mr. Jones and his associates, to the Amarillo Oil Company on January 15, 1923?

A. That is right.

Q. And what did the Amarillo Oil Company pay for that half interest?

A. They paid one-half of their capital stock.

Q. Being how much stock?

A. I think the total capital was $20,000—

Q. No,—

A. —after this deal was consummated of which Mission Oil Company got $10,000.

Q. You mean 20,000 shares at a value of one dollar per share?

A. I don't recall the value per share, but the total authorized capital is $20,000 after the consummation of this deal. Half of that stock was issued to Mission Oil Company.

Q. At the time of the merger of the two half *interest* in Amarillo Oil Company, were there any common stockholders, or, I should say, stockholders in common between Amarillo Oil Company and Mission Oil Company?

A. Well, I don't know that.

Q. Do you know what the market value of the stock of Amarillo Oil Company was on or about January 15, 1923?

A. I am not concerned with it.

Q. That wasn't my question, if you please. Do you know?

A. No, I don't.

Q. Do you have any knowledge of the value of the property of Amarillo Oil Company—

A. No, I don't.

The Trial Examiner: Mr. Luttring, please let him finish his question.

Mr. Spencer: Strike the question and I will start again.

Q. Do you have any knowledge of the market or fair value of the properties of Amarillo Oil Company—

A. I do not.

Q. —on or about January 15, 1923?

A. No, I do not.

Q. One other question: Did the Southwestern Development Company or the Standard Oil Company of New Jersey, or the Cities Service Company, own any stock in Amarillo Oil Company or Mission Oil Company as of January 15, 1923?

A. I don't think they did.

Q. These figures on Page 7 in your schedule, Exhibit No. 146, contain an allowance for interest or overhead?

A. Only what was shown in the expenditures which I have taken off the records of the various companies involved herein.

Q. Well, did you get any interest or overheads from the accounts of A. R. Jones & Associates?

A. There was some in there.

Q. How much?

A. I am not prepared to tell you the amount.

Q. Is it a material amount?

A. It is not a material amount.

Q. Did you get any interest or overhead on the accounts of Mission Oil Company?

A. If there is any, it is not material.

Q. And is the same answer applicable to Amarillo Oil Company?

A. That is true.

Q. The same answer is applicable to all three of them?

A. Yes. I might say in connection with that that I am almost certain that the interest, if any, was charged to the income or surplus accounts of those companies.

Q. That is, it wouldn't find its way into these plant accounts—it didn't find its way into the plant accounts?

A. I never reclassified any of the income accounts or included any part of those items in these figures.

Q. Do you think you should have done that in order to have made a complete audit?

A. No, sir.

Q. Why not?

A. Because I don't feel that it is my responsibility to reclassify those types of items charged to the income accounts of these companies.

Q. You feel that it is up to us?

A. Yes, sir.

Q. Now, Mr. Jones and his associates commenced drilling these wells in 1918, is that correct?

A. That is correct.

Q. And in accordance with your determinations the first sale of gas was about October of 1920. Did Mr. Jones and his associates receive any income from money they had invested in these operations up to that time?

A. They received some income from gas sold to other companies for drilling purposes.

Q. Field sales?

A. That is correct.

Q. The first field sales you find as late as in the year 1920?

A. In October, 1920.

Q. Up to that time neither Mr. Jones or the Amarillo Oil Company had drawn any income from the operations of those wells?

A. No. The income I stated was from the field sales and it was the only income they had up to the time of the sales in October 1920.

Q. Well, the field sales, was that for a material sum? Did it represent a material income?

A. It was about five or six thousand dollars.

Q. When did that start?

A. 1939.

The Trial Examiner: Did you say 1939?

The Witness: I should have said 1919.

There were field sales in the amount of $3,875 received by Amarillo Oil Company and a similar amount received by Jones & Associates.

By Mr. Spencer:

Q. In 1919?

A. In 1919.

In 1920 $1,230.63 was received by Amarillo Oil Company and the same amount received by Jones & Associates.

Q. When you speak of field sales, do I understand you to mean sales in the field primarily used for the purpose of drilling other wells?

A. Yes, that was the term I used.

Q. Now turn to Page 7, please, of your Exhibit No. 146. The first entry you recommend is Gas Well Investment, debit, $289,147.77. That is tantamount to a reclassification, is that correct?

A. That is correct.

Q. That figure you bring up from your total figure under schedule of development cost?

A. That is right.

Q. That is what you are going to recommend be allowed here as original cost for intangible well expense on these particular wells?

A. That is right.

Q. Now, the balance of the cost set up as cost on Amarillo Oil Company's books of $128,534.04, you take out of the plant account and debit to the gas plant adjustment account No. 107?

A. That is correct.

Q. Why don't you charge the amount of $128,534.04 to account No. 100.5, Gas Plant Acquisition Adjustments?

A. Because it is a pure writeup.

Q. A pure writeup?

A. That is correct.

Q. You don't think this represents the difference between cost to Amarillo Oil Company as an operating unit or system by pure merger, liquidation, or otherwise, and the original cost of the property?

A. No, sir, I do not.

Q. You put it down under Account No. 107 because it says down in the last sentence under the lettered paragraph "A", "Writeups of Gas Plant prior to the effective date of this system of accounts shall be recorded herein"?

A. That is right.

Q. If the Amarillo Oil Company had paid to someone else, Jones, Mission, or someone else, the difference of $128,534.04, then you would have included that under Account No. 100.5?

A. Not if someone held half interest in the situation we had there; the transaction would still be the same. You have two parties in this case equally interested in a certain piece of business and all they have done is to combine those businesses.

Q. They combined their interest but one bought something and the other sold something?

A. They both went into business at the same time.

Q. I know, but the Mission Oil Company exchanged a half interest in properties for stock. It sold—

A. Surely, that is the way a lot of deals are made in the public utility business.

Q. It wasn't a merger, was it?

A. They could have written that up here if they would have wished to.

Q. Did you think that Amarillo Oil Company was a public utility at that time?

A. I considered that they devoted their business to a public use.

Q. And, likewise, the Mission Oil Company?

A. That is correct?

Q. Likewise, A. R. Jones & Associates?

A. That is correct.

Q. Now, your determination as to whether or not this particular adjustment should be charged to Account 100.5 or 100.7 represents all of your own judgment in the matter?

A. It is based on the fact I developed in this examination.

Q. The decision is wholly your own?

A. Absolutely.

Q. You weren't told by anybody else where to put it?

A. No, sir.

Q. It was your judgment that that is where it should go?

A. That is correct.

Q. In 100.7, "Gas Plant Adjustments"?

A. That is right.

Q. Because in your opinion the excess here which you

have found represented nothing but a writeup over and above original cost of the parties involved in the transaction?

A. That is correct.

The Trial Examiner: Before you leave that caption, Mr. Spencer, I believe I have a question or so to ask the witness.

Mr. Luttring, in response to a question asked by Mr. Spencer this morning, you stated that you had available the deliveries of natural gas made by these particular wells that were discussed this morning by the Amarillo Oil Company, I believe it was, to the Amarillo Gas Company?

The Witness: You are referring to the production figures?

The Trial Examiner: The deliveries.

The Witness: Yes, I do have.

The Trial Examiner: Do you have them handy so that you can get them?

The Witness: Yes.

The Trial Examiner: I wonder if you would put those in the record for the first five years?

The Witness: The production in M cubic feet—

Mr. Spencer: Excuse me, Mr. Examiner, do you intend that an exhibit be made of this?

The Trial Examiner: No, I just thought that—

You have the totals by year?

The Witness: Yes, sir.

The Trial Examiner: I thought, Mr. Spencer, that I would like to have the totals for the first five years that deliveries were made. I thought he could read it into the record.

Mr. Spencer: If he is going to do that, I want to know where every foot of it went, the volume, and the whole works about this particular compilation. I have no objection to it going in if it is put in in such a manner that we can tell

exactly what gas we are talking about, where it was delivered, to whom it went, and for what purpose it was used.

The Trial Examiner: Well, as I recall, the witness stated that he could go no further than to say that the sales were made to the Amarillo Gas Company. The only purpose for making that inquiry, Mr. Spencer—I don't mind stating it—is to get the picture of the volume of those deliveries in the first five years.

Mr. Spencer: May I suggest this, Mr. Examiner: Mr. Luttring can at his convenience make up a schedule containing that character of information, and we can look at it, and if it is one that answers your purpose and is not objectionable to me, we can put it in as an exhibit. How would that be?

The Trial Examiner: That is perfectly all right.

Mr. Lange: It is all right.

Mr. Spencer: I just don't like to have figures in the record unless we know all about them.

The Witness: Is that all, Mr. Examiner?

The Trial Examiner: Except I believe you stated this morning that your only knowledge of the Amarillo Gas Company was the information you obtained from an examination of the books of the Amarillo Oil Company?

The Witness: That is correct.

The Trial Examiner: You don't know, for example, the year that the Amarillo Gas Company commenced operation?

The Witness: No, I don't.

The Trial Examiner: I think that is all.

Mr. Spencer: I will stipulate that information for the Examiner: I think it was 1906. They operated an artificial plant for a good many years up until the time they commenced getting natural gas from the Panhandle field.

The Trial Examiner: I see. Had they purchased gas, natural gas, prior to the time they purchased this gas from the Amarillo Oil Company?

Mr. Spencer: This is the first purchase for the City of

Amarillo. That is so because the Amarillo Oil Company drilled the first well in the Texas Panhandle field and made the discovery well.

The Trial Examiner: I see.

By Mr. Spencer:

Q. Now turn to the Adjusting Entry No. 201.

A. Yes.

Q. In this entry you take out of our plant account and charge to surplus approximately $152,000 which represents what you have described here as delay rentals, is that correct?

A. That is correct.

Q. And I believe you defined delay rentals as being a rental paid by a lessee or operator to a lessor for the purpose of deferring drilling obligations pursuant to some provision of the lease?

A. That is correct. Making a little further study of this I discovered there were no delay rentals in these figures. They are——

Q. Your heading "Delay Rentals" is a misnomer?

A. Not exactly a misnomer. We have considered that renewal bonuses are in the nature of a delay rental.

Q. "We have considered," meaning what?

A. Meaning I have considered.

Q. That is an editorial "we"?

A. That is a hangover from the accounting profession.

Q. You have concluded that bonuses paid to renewal leases are in the nature of delay rentals and therefore should be treated the same as delay rentals?

A. That is correct.

Q. And that again is solely your own judgment or conclusion?

A. It is my conclusion based on my experience in the business world.

Q. Your experience with oil and gas leases, for instance?

A. To some extent, yes.

Q. Is there anything in the Code of Accounts that says —I am speaking of the Code of Accounts of the Federal Power Commission—consideration paid for the purpose of obtaining a new lease or renewing an old lease shall be treated as delay rentals?

A. It infers that.

Q. Where do you get the inference? Find the place for me.

A. In view of the fact that a lease is renewed—

Q. Now, look here—go ahead. Excuse me.

A. —and a renewal bonus is paid, that particular bonus is in effect a rental since it continues the lease in existence.

Q. What I want is your inference out of the Code of Accounts.

A. In the first place, the renewal bonuses are not a first cost of leases. Therefore, they are not original cost. We have no objection—rather, I have no objection to considering the first cost of the lease as a proper cost in the plant account. Any bonus paid on that same lease in my opinion should be charged to expense account.

Q. Well, let's come back again. Show me where you have gotten your authority for that out of the Code of Accounts.

A. On Page 82, Account 510, "Delay Rentals:"

"A. This account shall be charged with the amount of rents paid periodically on natural gas lands in order to hold natural gas land and land rights for the purpose of obtaining a supply of gas in the future."

Now, the rental bonus is in the form of a rent paid periodically.

Q. Your putting all of that last sentence into the record, that doesn't appear in the part which you quoted?

A. Oh, no, that is my interpretation.

Q. As a matter of fact, what you have quoted from the Code, in no place does there occur the words "renewal bonus," or "bonus renewal," or anything of that character?

A. No, sir.

Q. You have taken the words "delay rentals" and then in your own mind convinced yourself that a bonus paid for the purpose of renewing the lease should fall in the same category as delay rentals, although not specifically mentioned as such in the Code, is that correct?

A. That is correct. I wish to state that in the Uniform Classification of Accounts for gas companies prescribed by the Public Service Commission of Pennsylvania they have

followed the same procedure as I recommended in this entry since 1922.

Mr. Lange: What are you reading from there, Mr. Luttring?

The Witness: A Uniform System of Accounts.

Mr. Lange: What is the date of that?

The Witness: Effective January 1, 1920.

By Mr. Spencer:

Q. What are we attempting to follow here, the Pennsylvania Code or the Federal Power Commission Code?

A. We are attempting to follow good accounting practice.

Q. Good accounting practice?

A. Yes.

Q. Well, now, let's see. I believe you testified on Friday that it would be at least acceptable accounting practice for a company to expense or capitalize delay rentals up to the time this Code was adopted?

A. That was true, but I didn't say that I would accept the practice.

Q. Again we are back to your judgment as to what should be done here?

A. (Pause.)

Q. Did you answer that?

A. That is correct.

Q. As a matter of fact, Mr. Luttring, I think you said that in your opinion the more conservative practice was to expense delay rentals, didn't you?

A. That is correct.

Q. And again, as a matter of fact, it has been the practice of Canadian River Gas Company to expense its delay rentals?

A. Delay rentals, that is correct.

Q. So their practice to that extent conforms precisely to what you think should be adopted as sound accounting practices?

A. That is right.

Q. The only fault you have to find is that there is another kind of charge here called "bonuses for renewals of

leases," which you think, likewise, should have been expensed?

A. That is right.

Q. Now, let me ask you this again? Do you think it would be sound accounting practice to capitalize bonuses paid for renewal of leases?

A. No, I do not think it is a sound practice.

Q. It might be sound practice for the company to have capitalized delay rentals but not bonuses for renewals of leases?

A. (Pause.)

Mr. Spencer: I don't want to confuse you, Mr. Luttring, but I am talking about practices that have gone by and not practices that should be followed since the adoption of this code.

The Witness: You will have to read that question.

(The question referred to was read by the reporter, as set forth above.)

The Witness: It wouldn't be sound practice to capitalize either one.

By Mr. Spencer:

Q. Then I misunderstood you a while ago. I believe you testified that companies had an alternative in the past of capitalizing or expensing delay rentals, and had they followed either course, there was accepted accounting approval for that?

A. I do believe that the capitalization in some companies had been done, but I do not believe in that practice.

Q. Well, now, I think I understand you; that is, you don't approve of it?

A. That is correct.

Q. Let me turn it around this way: Would you say that the company would have been in error had it capitalized this delay rental in the past?

A. In my opinion it is in error.

Q. Was there no alternative? Was there no other method of handling delay rentals?

A. Well, as I pointed out, there are companies who followed the practice of capitalizing renewal bonuses, and if—

Q. And such—

A. —if that is permitted, that can be carried too far. A company can build up a very large account and eventually it can find it has no gas there, or the lease is valueless, and it will have to take a large loss at the time it is abandoned.

Q. The only think I am trying to get at, Mr. Luttring, is that let me say in my opinion there was some sound basis in accounting practice during the period covered by this exhibit for either capitalizing or expensing delay rentals; that is, one company would think one thing and it would be approved by the auditors, and the other would do the opposite and it would be approved by its auditors; is that not correct?

A. It apparently is because it was done in this case.

Q. I think you just agreed with me that the company had never capitalized delay rentals as such?

A. We are speaking of renewal bonuses, aren't we?

Q. Are there any circumstances under which you would think a company would be justified in capitalizing delay rentals?

A. I can think of none.

Q. Turn to Page 1, Exhibit No. 146. Please note Adjusting Entry No. 200, down at the middle of the page. As I get the effect of your entries there, you have allowed capitalization of over a thousand dollars to bonuses and rentals.

A. That company had no income whatever. In the case of Canadian River Gas Company they are an operating company.

Q. Go ahead.

A. They are two different cases.

Q. But I just asked you if there were any conditions—

A. We were speaking about a company that was in operation.

Q. I said any condition under which it would be proper to capitalize delay rentals.

A. You have one there in Entry No. 204.

Q. That is right. Now, what is the difference between this delay rental and the delay rentals that have been incurred from time to time by Canadian River Gas Company?

A. This company had no income and there was no other place to put it.

Q. They could put it into surplus account, couldn't they?

A. They could but they haven't got any income. What good would it do them?

Q. I don't think it would do them much good to capitalize it.

A. It certainly is from a rate standpoint.

* * * * *

MR. LUTTRING further testified on cross-examination: (Vol. XL, pp. 5422-5431.)

Q. Now, Mr. Luttring, I have just a few general questions here about Adjusting Entry No. 201. As I get it, the general effect of the whole adjustment is to reduce operated lease, unoperated lease and surplus accounts by the amount of $151,991.23 and to increase surplus by that amount.

A. No. May I state that for you?

Q. I think maybe you better.

A. We reduce the investment in operated and unoperated leases in the amount of $151,591.23 and we'll decrease surplus by $151,591.23. The item of $400 is already in the income account.

Q. Now, this adjustment and the several items that make up the total are based upon your own judgment as to what should have been done in these particular transactions?

A. That is correct.

Q. Do you consider that this operation you have gone through here is a reclassification of accounts? I see it is not so indicated.

A. Reclassification—this is an adjustment.

Q. Would you consider it to be a reclassification of accounts?

A. No, I consider it to be an adjustment.

Q. The effect of it is a reaccounting so far as the books and records of this company are concerned, is that not true?

A. That is correct.

Q. Now, are you familiar with the order of the Commission requiring natural gas companies subject to the Natural Gas Act to reclassify their accounts prior to—I mean, accounts existing prior to 1940, plant accounts?

A. Read the question.

(The question referred to was read by the reporter, as set forth above.)

The Witness: Yes, I am.

By Mr. Spencer:

Q. And that reclassification is contemplated must be completed by January 1, 1942?

A. That is correct.

Q. Now, do you have a copy of the Uniform System of Accounts there?

A. Yes.

Q. Turn to Page 36 under the heading "Instructions Gas Plants Account, No. 2, Classification of Gas Plant at Effective Date of System of Accounts," and the letter "B" under that heading, and the last sentence in the paragraph numbered "B". I'll read that:

"It is likewise not intended that adjustments shall be made to record in gas plant accounts amounts previously charged to operating expenses in accordance with the Uniform System of Accounts in effect at the time or in accordance with the discretion of the management as exercised under such Uniform System of Accounts."

Are you familiar with that provision?

A. Yes.

Q. Do you agree with that in principle?

A. It does not apply to this particular case.

Q. Do you agree with that in principle?

A. Yes, I do.

Q. Now, the effect of that is to prohibit changes in previous accounting which would have the effect of increasing the invested capital, is that correct?

A. Only so far as it does not apply to strictly accounting errors.

Q. Yes. Now, if it would be improper under the Code to change previous accounting so as to increase the invested capital in the absence of accounting errors, would it likewise not be improper to change previous accounting so as to reduce the invested capital in the absence of accounting errors?

A. Not in my opinion.

Q. It is a one-way street, Mr. Luttring?

A. No, sir. I've handled items both ways in my examination in the study of original cost.

Q. No, I'm talking about the Code. I know you've done

that, Mr. Luttring, but I'm just trying to apply the theories and principles of what you have done to a specific provision of the Commission's Code of Accounts.

A. Well, in this instance I previously testified that I didn't think on this particular account that they had followed good accounting practice.

Q. However, it is the system of accounts that the company itself has followed from the beginning of its operations?

A. That is true.

Q. And I believe you testified yesterday that other companies had followed the same practice with reference to the capitalization of bonuses paid for renewals of leases?

A. I know of some cases where it has been done.

Q. Now, I am just trying to get your ideas about this. Do you know Mr. Charles W. Smith of Washington?

A. I talked with the individual for about five minutes.

Q. You know who he is?

A. Yes, sir.

Q. What position does he occupy with the Commission?

A. He is chief of finance, rates and accounts for the Federal Power Commission.

Q. Now, let us assume for a moment that Mr. Smith had testified in a rate proceeding as follows:

"Past accounting should not be impeached because someone at some other time thinks a different answer is better. Reaccounting of this nature offends the sound principles of accounting. This is obviously so, for otherwise, as indicated by the California Railroad Commission, every time a new face appears on the scene, reaccounting could be had. There would be no surer way of destroying the usefulness of accounting for regulatory purposes."

Now, I would like to ask you if you agree or disagree with the conclusions reached in that statement regarding changes in past accounting.

A. I agree with that statement because it deals merely with the income account.

Q. I haven't said anything about the income account here.

A. Well, the article denotes that it is.

Mr. Spencer: Read the quoted part of the statement that I put in the record, please.

(The record referred to was read by the reporter, as set forth above.)

By Mr. Spencer:

Q. I think you will agree with me that there is no segregation of income or balance sheet accounting indicated in that statement.

A. That's what it means. It is a reaccounting. How else can you get one? It means that you are changing your operating results.

Q. Exactly, but haven't you been doing some reaccounting here in Adjusting Entry No. 201?

A. We are following original cost principles. I am not touching the income account other than to adjust something that is in the property account, the same as I would in any other adjustment that affects the property account so far as original costs are concerned.

Q. Do you mean to say that what I have assumed Mr. Smith said has no relation whatsoever to the character of an operation which you have gone through in Adjusting Entry No. 201?

A. Well, Mr. Smith would never know the condition of this account unless I brought it out.

Q. Well, I'm just talking about general principles of changes in prior accounting.

The Trial Examiner: Read Mr. Spencer's question back, Mr. Reporter.

(The question referred to was read by the reporter, as set forth above.)

The Witness: I don't think that what you have read applies to this adjustment.

By Mr. Spencer:

Q. Why not?

A. What you have read applies to reaccounting of the income account; that is, taking items which have formerly been charged to the income account and at some later date reclassified and brought into property account.

Q. Well, I don't believe the inference you draw is justified, but assume that it does: Then again I ask you about the reverse of that process; that is, the propriety of making changes in previous accounting which have the effect of taking out of capital account items which have been capitalized upon some accepted basis of accounting for the purpose of arriving at our original cost.

A. Well, I feel that I was justified in moving these items in my study of original cost, and I do not feel that it impeaches the prior accounting, because I am reducing surplus. I am not increasing it.

Q. Do you think the company would be justified in going back and capitalizing delay rentals which they have heretofore expensed?

A. I do not.

Q. It seems to me, after you get through with your two answers, that you have a very definite conception of the principles announced here in this statement I have read as being a one-way street, and I don't gather that is intended by the statement. However, I think that's enough on that subject.

Turn to Page 6 of your Exhibit No. 146 Adjusting Entry No. R-202. I think we discussed that briefly before.

A. We have covered that previously.

Q. You explained that that was merely a reclassification?

A. That is all.

Q. I would like you to tell me if you can how you arrived at the figures shown in the last column of your schedule under the heading "Amount" that is to say, the amount applicable to four wells covered, Well No. H-1, I-1, F-1 and G-2.

A. The amounts that you referred to represent inventories as of April 30th, 1924, taken by the company and reflected in its gas well accounts. These amounts were offset in the gas well accounts by a credit to depreciation and adjustment account.

Q. Take the item $20,974.69 which is applicable to Materson H-1 well.

A. Yes, sir.

Q. Does that contain any cost for drilling?

A. Speak a little louder, please.

Q. Does that cost include anything for drilling? Maybe it would clear up what I am driving at, Mr. Luttring—

A. That goes back into the books of Mountain States Gas Company.

Q. All right, let me tell you what I have in mind, which may help you with the question:

According to our records, the amount of $20,974.69 is the amount of depreciation and adjustment against that well.

A. That's correct.

Q. It is a credit, therefore it does not represent the cost of drilling the well or the physical property included in the well; it merely is an item that appears in the depreciation and adjustment account.

A. Well, the contra to it is represented in the features that are in the well account.

Q. You can't take that figure and balance the well account because there is more cost.

A. Oh, yes, you can. They did it on the books and I have got it on my papers.

Q. Will you check that to see if you are correct about it?

A. I am positive about it.

Q. Well, the amount shown in this schedule on Page 6 of your exhibit, Mr. Luttring, represents figures taken out of the depreciation and adjustment account on the books of Mountain States Gas Company.

A. That is the net effect of the transaction. In other words, we clear the credit which is in the depreciation and adjustment account which is a feature of the gas well investment and credit it to operated lease investment.

Q. That's what I was going to ask you. The amounts are all credits?

A. That is correct.

Commission Witness, Lloyd G. Teel, on cross-examination, testified as follows: (Vol. XLI, pp. 5522-5542.)

Q. Mr. Teel, we were discussing when we recessed yesterday the reclassification entry No. 227 on Page 27.

A. I think we had 227 and 228—we passed over to 228.

Q. I believe that is right. We were discussing them together to a degree. All right. Now, with reference spe-

cifically to R-227, I believe you stated yesterday that the figures which you have tabulated there were taken directly from the company's books just as they appeared on the company's books.

A. These figures were procured by Mr. Luttring in his examination of the Amarillo Oil Company's records and I believe that they were transferred as such from the Amarillo records to the Canadian River Gas Company records.

Q They were transferred from the Amarillo records to Canadian River's records?

A. Yes.

Q. All right. Now, Mr. Luttring has shown by Page 7 an entirely different amount for the cost of the wells there, Bivins C-1 and D-3 and Masterson B-5, C-1, C-3, D-4, D-2. The total cost of those wells as shown there are somewhat less than the total cost of those same wells as shown on Page 27; that is correct?

A. Yes, that is right.

Q. All right. Then when Mr. Luttring reached his totals of the cost of those particular wells as shown in Entry No. 203, he didn't in reality take the figures as reflected by the books, did he?

A. No, Entry 203 is an adjusting entry.

Q. That is right. In other words, he figured out to his own satisfaction what that cost should be independently of what the books showed?

A. That is correct.

Q. That is right. Now, you have taken those figures—take Bivins C-1, for example, and again there is a total cost of $50,000, and on Mr. Luttring's entry 203, Page 7, he shows for that well $46,352.73. Now, what have you done with the difference on that?

A. Well, in the first instance the $50,000 reflected on Page 27 for that well is the figure recorded by Amarillo Oil Company in lieu of the knowledge of the actual cost and gives an estimated figure. The contra to that figure was credited to gas department adjustment account.

Q. You say it is an estimated figure. As a matter of fact, that figure was set up—when was that figure set up?

A. According to the information on this entry on Page 27, that figure was set up by Amarillo Oil Company in September 1925.

Q. All right, that was the judgment of the auditors of Amarillo Oil Company at that time as to the cost of that particular well, wasn't it?

A. Well, I really don't know whether it was the judgment of the auditors, engineers, or who did it.

Q. It was somebody's judgment at that time or it wouldn't have been on the books, would it?

A. That is right.

Q. That is right. You come along here sixteen years later and you tear all of that down for what particular purpose?

A. I don't think the entries should have ever been made in the first place—

Q. You don't think what?

A. I don't think—when I say "entry," I refer to Amarillo's entry on their books—in setting up estimated cost in lieu of actual cost that entry should have been made because they set up the entry—when they set up the entry they accomplished nothing in the way of good accounting except to set over in one account a credit figure and then set up in the well account exactly the same amount allocated to the various wells. When they get through the plant account is neither increased or decreased and the figure they charge to the wells represents their idea of what the costs were and they were mostly in round figures.

Q. That is precisely so. Now, why do you come along here fifteen years later and insert a different figure which is an estimate, after all, still estimating, but estimating it sixteen years after the work was done? Don't you think they could estimate it better then than today?

A. Which figures?

Q. The figures you and Mr. Luttring have set for these various wells where they differ from the entries made fifteen years ago by the Amarillo Oil Company, Page 7, Exhibit 146.

A. Those figures I believe have been testified to by Mr. Luttring as not being estimated but secured from the original records of the company who built those wells.

Q. As best he could?

A. From the available records.

Q. That is right. The records didn't give him everything he has inserted in that entry, did they?

A. My understanding—

Q. I understood just to the contrary, that some of his figures were estimated, but the record will speak for itself on that.

A. It was my understanding these figures are supported by the figures which he examined.

Q. All right, turn to Page 80. You show there a schedule that reflects the cost of these various wells that you have determined. Now, obviously, that schedule is haywire, isn't it, Mr. Teel, when you get down to considering the thing and the various parts of it?

A. The schedule on Page 8?

Q. Page 80.

A. I beg your pardon. I thought you said Page 8. I don't understand what you mean by "haywire" in this instance.

Q. All right, it doesn't reflect the facts, and from just a casual glance at it will be evident it doesn't represent the correct situation. The Bivins C-4, now, you run that out and you get an adjusted total cost of $15,872.06 for that well as shown in Column 9.

A. That is right.

Q. You know that isn't a true cost of that well, don't you?

A. No, I don't know that.

Q. You don't know that?

A. As the result of my investigation it indicates that that is the cost of the well.

Q. All right, you see wells all around it costing $50,000, don't you?

A. They are all around on the schedule.

Q. And all around in the field, too.

A. I assume they are.

Q. That's right. Let's be perfectly frank. You know just as well as I do that that well cost more than $15,000, regardless of what the books show and regardless of what your search of the records show, don't you?

A. I would say that is a very low cost for a well.

Q. How is that?

A. I would say that that is a very low cost for a gas well.

Q. Even if the books showed $15,000, and that is all the information you had, and you knew the wells in the area

generally were costing $50,000, you would know something was wrong, wouldn't you?

A. Yes, I would probably raise a question.

Q. Now, the company's records on that well show—what do they show?

A. The company's records as indicated on Page 7—

Q. 27 or 7?

A. I beg your pardon. The respondent company, Canadian River Gas Company's, records show—

Q. All right, look at Page 8. We have there the total per books. What does the company's records show on that?

A. On that particular well?

Q. Yes.

A. $37,372.06.

Q. All right, now, doesn't that sound to you like a much more reasonable figure than your $15,000 you have set up there?

A. Frankly, it does.

Q. And the company made that entry back fifteen years ago and now you and Mr. Luttring come along today, sixteen years later, and substitute fifteen thousand and some odd dollars as an adjusted figure for the $37,000.

A. That is the effect of the entry.

Q. All right, just a few illustrations there. Let's take the Masterson F-1. That's shown on Page 81. What was the drilling cost on that well, Mr. Teel, as shown by your schedule?

A. The adjusted drilling cost—

Q. How's that?

A. The adjusted drilling cost?

Q. No, the drilling cost.

A. As shown on Page 81?

Q. Yes, Column 13.

A. I don't believe there is any.

Q. There isn't any?

A. No.

Q. Well, you know it couldn't be drilled for nothing, don't you?

A. I never heard of any.

Q. Well, I know you didn't either. We're together absolutely on that. When I said that schedule was all

haywire, that was one of the things I had in mind. When you have a schedule there showing a summary of gas wells and not a dime in it for cost of drilling those wells, there is obviously something wrong.

A. I would say there was something wrong.

Q. All right, now, that isn't the only well that doesn't show any drilling cost. That is true of Masterson M-1, I-1—I just happened to catch those—and there may be some others.

The Trial Examiner: Mr. Keffer, I believe you mis-spoke there.

Mr. Keffer: Sir?

The Trial Examiner: I believe you mis-spoke. That is Masterson H-1 and I-1.

Mr. Keffer: That is right. These figures are so small and the light isn't so good right here, it's hard to read them.

The Witness: Well, following along that line, Mr. Keffer, if you will notice in Column 6 of that schedule, footnote 2, and on Page 82 there is a note which reads:

"Development costs contained in lease costs. Not segregated here since respondent's records do not contain necessary information."

By Mr. Keffer:

Q. All right, that's just the very information I'm talking about, Mr. Luttring's costs there. He had to estimate those, didn't he?

A. I don't know that Mr. Luttring estimated that cost.

Q. When he shows total costs of wells and development costs aren't shown, he didn't get it from the books. He was making sort of an auditor's appraisal.

A. The well we were just referring to was Masterson F-1. Mr. Luttring's 203 doesn't contain any figures for that well.

Q. All right, now, the upshot of the whole thing, Mr. Teel, and the only thing really that I have in mind, you did have some figures set up on the company's books as the total costs of certain wells and we will admit that it

was a judgment figure, but made sixteen years ago, shortly after the work was done and represents the best judgment of the company at that time as to the actual cost of those wells.

Now, you and Mr. Luttring come by here sixteen years later without any information as a basis for tearing it down, and you tear it down and break it up and submit a schedule here which shows a far less cost for the drilling of those wells than what the company shows. Now, isn't that just precisely what you have done?

A. Well, not exactly. The figures that Mr. Luttring has presented in his Entry 202 and 203 are based on facts which he obtained from the examination of the records.

Q. All right, you just say in footnote on Page 81 that a lot of the facts were not available.

A. That's true.

Q. Then, why didn't you take the company's figures put in there sixteen years ago? You had nothing to break it down.

A. We thought it best to use the figures we had which we could support.

Q. Who thought it best?

A. I thought it best.

Q. Does the Code of Accounts prescribe anything on that; that you use your judgment as to what you think is best contrary to the books of the company which are examined?

A. I substituted actual cost in lieu of estimated cost to the fullest extent that I could.

Q. That's right, but when you came to the matter of drilling costs and you found nothing set up on the company's books for drilling costs, you said "drilling costs, zero," didn't you?

A. That's true, but also footnoted that the costs were in the plant costs.

Q. But not in the well costs. The drilling cost ought to be charged to the well and not to the lease, shouldn't it?

A. That's right.

Q. And the company did that sixteen years ago, didn't they, in effect?

A. Yes.

Q. That's right. Now, you come along here today and you take it out of the well account and you put it in the lease account, isn't that right?

A. No.

Q. Well, where is it?

A. The drilling cost is, now, and always has been, as far as we could determine, in the company's lease costs and was not disturbed by us because we couldn't identify it and we made no attempt to estimate it.

Q. But now the company, when they acquired a well and a lease, say, for a hundred thousand dollars, they had a cost there of one hundred thousand dollars for that lease and that well; then they set up—they didn't drill the well in many instances—then they set up what they considered from all of the facts that they had available, the reasonable cost of that well and set it in there, Masterson C-1, for example, $50,000. Now, you have come along here sixteen years later and you have reversed that entry; you have set that well up as a cost considerably less than $50,000 and put the rest of it back into the lease account. Now, isn't that the effect of what you have done?

A. No, I don't think that we have added anything to the lease account. The extent of Entry 203 on the Bivins C-1 is to charge to gas well investment the cost which Mr. Luttring found support for which amounts to $46,352.73. That compared with the fifty thousand is a difference of probably $3700. There have been no additions to lease costs in that entry. On the contrary—

Q I may be a little confused on it. Let's take a concrete example. You take that Bivins C-4 we were talking about a while ago, is as good as any. The company's books show cost on that well of $37,000 plus, doesn't it?

A. That's correct.

Q. All right, then, you go on over to your adjustment cost in Column 9 and you have $15,000 plus as the cost of that well, haven't you?

A. That is correct.

Q. All right, now, something happened to that $22,000. Now, didn't you put that over into your lease account, or where did that go?

A. That difference is made up in the cancellation or

offset of the other side of this entry, 227. Now, maybe I can make this entry a little clearer. In the first place, we have on one side of the ledger, on the asset side, a credit balance. Mr. Luttring in his prior entries had developed what we considered the original cost of these wells. At least it was the original cost which was supported by the records, and he had adjusted certain of those costs. He made an adjustment of cost which sets up the costs that he had found on these wells and charged them to the gas well investment. The credit figure was not affected by that transaction. It was carried separate and apart on the company's books simply as gas department adjustment.

Now, in making this Entry 227 and 228, we merely reversed the original entry, not changing the plant accounts in total. That was not affected. We merely canceled the credit figure and charged—by cancelling it we credited the gas well investment and charged the credit figure. It was an offset or a wash entry.

Q. Well, then, the final windup, you have the adjusted total cost of the wells as shown on Pages 80 and 81.

A. That's true.

Q. Which differs in many instances—in some instances at least—from the company's book figure.

A. That's right.

Q. Now, that money was spent. You don't question that, do you?

A. Well, as to the half a million dollars, approximately, concerned in the Entries 227 and 228—.

Q. That's right. I appreciate that.

A. As to whether that was spent, I don't know, because it was conceded that it was an appraisal figure, an estimated figure.

Q. But there was no question but what there was that much money out of pocket. You could check that all right.

A. I have no knowledge to that effect.

Q. You could have checked it, couldn't you? That is, on any one of these companies you had information available which showed the total expenditure. It didn't always show where it went, whether on this well or that well, but it showed the total amount.

A. I think you are right there.

Q. So there isn't any question but that the money was spent. The question is where it was spent.

A. I think that is right.

Q. I don't think there is any question about that.

A. No.

Q. Now, you come over here and go to adjusting those accounts and you get, in many instances, an adjusted figure less than what the company's book figures show. Now, that excess isn't taken out of investment. I thought you were carrying it in leases. You are still carrying it in that gas adjustment account, is that right?

A. That is in the—you see, originally when the entry was made, gas well investment was charged with that amount when the contra was set up in this credit figure. We are merely reversing that which cancels the previous entry.

Q. I just can't understand all those things. I'm trying to get it straight in my mind and I am not getting very far. When our books show the well cost at $50,000 and you say it cost $15,000, now, that's a danger signal to me. I can't run through and tell you what has happened to the rest of that money, but I want to be certain that it has not gone out of the book cost or original cost, and I want to be very certain that it is still identified with that particular well in some manner, and I don't think it is. That last part, I think it loses its identity entirely with respect to any particular well and gets into sort of a general account of some character.

A. Well, this situation is brought about by the method of setting up these well costs.

Mr. Lange: Whose method?

The Witness: The company's method. The accounts as they are reflected on the books have on the asset side, as I stated, a credit balance. Now, when this adjustment is affected, that credit balance which operates to decrease the total amount of assets, has been eliminated. The amount simply is canceled—

By Mr. Keffer:

Q. Let me ask you just a concrete question there: Go back to Bivins C-4 again. Supposing Mr. Lange gets an

idea during the course of this proceeding that he might take that well out of the picture entirely or assign it to some particular market or any one of a half a dozen things in which the investment on that well would be relevant. Now, what would he take out or add to with respect to that particular well—your adjusted figure or our book figure?

A. I say, he would take out the adjusted figure.

Q. He would take out the adjusted figure. All right what would happen to the other $22,000? Is it suspended in mid air somewhere?

A. It has disappeared in the cancellation of the credit account.

Q. You mean we are $22,000 worse off after you have made this audit than we were before?

A. No, in so far as this particular well cost is concerned.

Q. That's the point exactly. As far as this particular well is concerned. Now, if you go to taking well investments and making adjustments of one character or another, then the audit that you have here wouldn't permit you to do that and at the same time consider the entire investment in that well, would it?

A. Read that.

Q. Let me restate it. Your adjusted figure doesn't show the entire investment necessarily in a particular well. For example, Bivins C-1 and many others.

A. I think it does to the extent shown on Schedule C.

Q. Do you think there wasn't any money spent in drilling, or very little money?

A. No, I don't think that.

Q. Then you know that it doesn't show the entire cost, don't you, because it doesn't include some items which you know were incurred?

A. In making this audit we followed the principles of original cost.

Q. You followed what?

A. The principles of original cost, and in so doing we used all of the supporting records which were available to us, which were made available to us. The figures that we have here represent all of the information as far as expendi-

tures are concerned which apply to this particular well after the adjustments.

Q. All right, now, let's go over that Masterson well again—F-1. Go over in Column 13, drilling costs, you show another total.

A. That's true.

Q. Now, that's right, isn't it?

A. To the extent shown on the schedule.

Q. That's right.

A. Yes, sir.

Q. Now, you know that that doesn't represent the book cost of that well, don't you, the original cost of it, I mean?

A. Yes, sir, I know that.

Q. You know that it doesn't?

A. Yes, sir.

Q. Then you say you follow the principles of accounting in determining original cost of these wells. You really haven't have you?

A. Yes, I have. I said to the extent shown by this schedule, and Masterson F-1 is footnoted and says that the development cost of that well is in the lease cost.

Q. All right, what do the principles of accounting provide when you are determining original cost and your records aren't complete? Isn't there something in there about estimating?

A. Estimated figures, yes.

Q. Now, isn't that what the company did sixteen years ago? Didn't they estimate those costs?

A. Those are estimated costs.

Q. Sixteen years ago, weren't they?

A. Yes, that's right.

Q. All right, you come along here sixteen years later and the principles of accounting require you to estimate. You have an estimated figure which you discard entirely, and where the books are incomplete you show nothing; so you didn't follow the principles of accounting on that, did you?

A. The principles of accounting don't require that I make any estimates.

Q. I thought you just said that it did where the records aren't available you estimate those.

A. Those are instructions regarding classification.

Q. I misunderstood you. I thought you said that the principles of accounting said that.

Just one further question and I'm through.

You show on that Masterson F-1 well an adjusted total cost of $5,884.62.

A. That is correct.

Q. Well, you know that is wrong. We all know that is wrong, don't we?

A. It is awfully small.

Q. Your answer, after all, is that that is just the best you could do about it, isn't it?

A. From the available records, yes.

Q. And my question is, since you couldn't work it out, why didn't you leave the figures like they were on the company's books and not get all this mess in here which doesn't mean anything after all?

A. Well, there were certain differences which Mr. Luttring explained in his entries that we couldn't justify as costs.

Q. We are going to get into all sorts of difficulty sooner or later if the investment on particular wells is material, because you can't get it from this audit. You will have some of it on wells and some of it somewhere else and we won't know how much or where it is, but we could have told from the company's books if you hadn't disturbed them.

A. Well, the company's books haven't been disturbed, in fact, only in these exhibits presented.

Q. In your substituting your judgment sixteen years later for the company's judgment, shortly after the work was done.

A. Only so far as our judgment is supported by the company's records.

Q. But the cost you refuse to accept today, is discarded today entirely, sixteen years later, purely as a judgment matter, and contrary to the FPC instructions as you have just stated in the Code of Accounts.

A. Well, there are records which indicate the cost of these wells in many instances.

Q. In many instances, that's right, but in many instances the records were incomplete.

A. Certain of them were.

Q. And on those you refused to take the company's estimates and sixteen years later have broken that down and scattered it through a number of accounts.

A. No, we haven't scattered it through a number of accounts.

Q. Well, at least it isn't reflected on that particular well account.

A. That's true, as adjusted.

Commission WITNESS LUTTRING further testified on cross-examination: (Vol. XLI, pp. 5544-5581.)

By Mr. Spencer:

Q. Mr. Luttring, *you* hand back to you the copies of instructions which you received regarding your work in these proceedings.

A. Yes.

Mr. Spencer: Mr. Examiner, I have had copies made of Mr. Luttring's copy of the instructions and I would like to have one of these copies marked for identification.

The Trial Examiner: It will be marked for identification as Exhibit No. 161, Mr. Spencer.

(Exhibit 161, Witness Luttring, marked for identification.)

Mr. Spencer: Now, subject to check as to accuracy of our copy, I would like to offer Exhibit No. 161 at this time.

Mr. Lange: Very well.

The Trial Examiner: Is there no objection, Mr. Lange?

Mr. Lange: No, no objection.

The Trial Examiner: Exhibit No. 161 will be received.

(Exhibit 161, Witness Luttring, received in evidence.)

By Mr. Spencer:

Q. Mr. Luttring, let's turn to your Entry No. 211, Page

17, Exhibit No. 146. I take it this entry involves adjustments resulting from the transactions in which Canadian River Gas Company paid Amarillo Oil Company $5,000,000 for certain gas leasehold rights and gas wells and properties in the Texas Panhandle field, is that correct?

A. Yes.

Q. In the schedule of leases on Page 17 are the lease numbers shown, the company's lease numbers?

A. That is correct.

Q. And does this list of leases contain all of the leases which were sold to the Canadian River Gas Company by Amarillo Oil Company in the transaction which I mentioned?

A. This particular entry covers the appreciation only on leases that were still in existence at December 31st, 1939.

Q. In other words, any leases included in the original transaction which had been sold and abandoned, or otherwise disposed of by Canadian River Gas Company prior to December 31st, 1939, are eliminated from this schedule?

A. From this entry, yes.

Q. And that would include, for instance, the leases on the Cliffside Structure which we discussed yesterday?

A. That is correct.

Q. Now, the amounts which you have shown opposite each lease represents what, Mr. Luttring?

A. It represents the amount of appreciation which the company recorded against the respective leases which are detailed in this journal entry. The appreciation up until 1939 was recorded in a separate appreciation account. In 1939—

Mr. Lange: Let me interrupt you there. It is on the company's books?

The Witness: On the company's books.

In 1939 they combined the appreciation with the original cost of leases.

By Mr. Spencer:

Q. Now, when we talk about appreciation here, I take it that we are talking about the difference between the cost of these leases to Canadian River Gas Company and the original cost of such leases to Amarillo Oil Company?

A. That is correct.

Q. In the beginning you say that the setup of this so-

called appreciation value or cost is in a separate account?

A. Yes, sir.

Q. Was that done for the purpose of computing income tax returns in connection with these leases?

A. It may have, and it may have also been in connection with determining the inter-company profits.

Q. Why would there be any necessity at that time for determining inter-company profit?

A. Amarillo Oil Company and Canadian River Gas Company are owned one hundred per cent by Southwestern Development Company.

Q. So what?

A. So there is an inter-company profit when you transfer a transaction of this kind from one company to another, both of which are owned by the same parent.

Q. You are talking about an inter-company profit for the purpose of compiling a consolidated balance sheet?

A. Yes, sir.

Q. What is a consolidated balance sheet with respect to a certain group of corporations?

A. It is the combining of the assets and liabilities of companies which belong to a parent company.

Q. And going back to your previous statement about inter-company profit, if the parent company had made a consolidated balance sheet including the assets and liabilities of Amarillo Oil Company and Canadian River Gas Company in that consolidated balance sheet, any appreciated value as we have distinguished it heretofore would have been eliminated on that balance sheet, is that not correct?

A. That is correct.

Q. That is what you have in mind in connection with a determining of inter-company profit?

A. Yes, sir.

Q. Now, that leads to this question: Do you know Canadian River Gas Company has ever been included in a consolidated balance sheet of Southwestern Development Company, the parent company?

A. No, sir.

Q. By "no, sir," you do not know, or that it has not been included?

A. I do know it was included in the consolidated balance sheet for income tax purposes.

Q. That was so required for a certain period during those operations by the income tax law?

A. That was an option given the company.

Q. There was a certain period here during which income taxes were paid on a consolidated basis in accordance with the law existing at that time?

A. Yes, there was a law at that time giving the company the option to consolidate.

Q. You do not know of any other occasion upon which Canadian River Gas Company has been included in a consolidated balance sheet of Southwestern Development Company, do you?

A. No, sir, I do not know that.

Q. Do you know as a matter of fact in all of the figures of Southwestern Development Company and its subsidiaries with the Securities and Exchange Commission under the Public Utilities Holding Act, Canadian River Gas Company have never been included in a consolidated balance sheet?

A. I do not know that.

Q. Do you know that to include Canadian River Gas Company in a consolidated balance sheet of Southwestern Development Company would distort and confuse the entire picture of Southwestern Development Company and its subsidiaries?

A. I do not know anything about that.

Q. Then if we assume that Canadian River Gas Company has never been included in any consolidated balance sheet of Southwestern Development Company and its subsidiaries except for income tax purposes, why would there be any necessity of Canadian River Gas Company determining what you have determined to be inter-company profits?

A. I was interested in making a study of original cost of the property now used by Canadian River Gas Company. In doing that I found there was a writeup of the property that was received by Canadian River Gas Company from Amarillo Oil Company.

Q. Now, you have used the word "writeup." I will have to ask you about the word. I will start that off by asking you if the five million dollars was actually paid by Canadian River Gas Company to Amarillo Oil Company for these leases and other property. I believe you testified here before that it was.

A. Yes, I made sufficient examination so I know where the cash went.

Q. So when you say "writeup," you merely have in

mind excess of cost to Canadian River Gas Company over original cost to Amarillo Oil Company?

A. That is true.

Q. For the purpose of determining original cost to the Canadian River Gas Company, according to your concept of the principles and rules involved?

A. That is right.

Q. Now, the excess as shown on Page 17 under the heading "Operated Leases" and "Unoperated Leases," are those the ones which have been recorded in this separate account which you speak of on the books of Canadian River Gas Company?

A. Yes, these figures are according to the books of the company.

Q. I am able to check all of those, Mr. Luttring, except the last one, No. 137, S. P. Johnson, $1,908.90. Is there any variation from your figure and the book figure?

A. No, sir. I think the answer to it, without referring to the working papers, is that one of the leases were received in exchange for Lease 36 and 35, so there is a transfer in there. If your total amount agrees with mine, the only difference there can be will be with the individual lease.

Q. Your total amount may or may not agree with mine. We have them set up differently. You have included a lot of transactions here by reason of prior disposition and, therefore, we do not check exactly.

A. As we go through there we will accumulate the entire appreciation.

Q. Now, this adjustment entry of yours results in reducing the operated lease—before asking that question, perhaps to complete the line of cross examination I was following, I will ask you this:

These figures shown on Page 17, of course, are exclusive of amounts set up, well investments? In other words, the values shown here are applicable only to the leasehold interest as distinguished from any physical or other properties on the lease?

A. That is true because this figure was entirely separate from any original cost which the company had.

Q. I think that is correct.

Now, going back to my other question which I started, I take it that the effect of this adjustment entry is to reduce

the company's operated lease and unoperated lease investment in the total amount of $3,120,496.25, is that correct?

A. That is correct.

Q. Now, tell me why you considered this adjustment proper.

A. I considered the adjustment proper because the amount shown here is in excess of the original cost which I was able to obtain from the records of Amarillo Oil Company. In this amount it represents a writeup—

Q. Now, every time you use that word I am going to have to ask you why you use it.

A. It is a writeup because Canadian River Gas Company and Amarillo Oil Company were owned one hundred per cent by Southwestern Development Company.

Q. In other words, Canadian River Gas Company actually paid five million dollars in cash for these properties?

A. That is correct.

Q. And what your writeup is, as you term it, is nothing but an excess of cost between Canadian River Gas Company's cost and Amarillo Oil Company's cost?

A. That is right.

Q. Excuse me for interrupting you a while ago.

A. I think I had finished my explanation.

Q. Well, then, if I interpret your answer correctly, the only reason that you would have made this adjustment is because you considered it to be an inter-company profit between two wholly-owned subsidiaries of the same parent company?

A. Yes, sir.

Q. And that is the only basis for this particular entry?

A. That is correct.

Q. Is the entry made solely on your own judgment and opinion as to what should have been done?

A. It is made in accordance with the classification of accounts.

Q. The classification of accounts?

A. Yes.

Q. Will you turn to your Uniform System of Accounts and find that provision or provisions which you are talking about?

A. On Page 17, Account 107.

Mr. Spencer: Excuse me just a moment.

(Conference between counsel.)

By Mr. Spencer:

Q. What was Account No. 107?

A. Account No. 107, "Gas Plant Adjustments."

The last sentence in the first paragraph reads:

"Writeups of gas plant prior to the effective date of this System of Accounts shall be recorded herein."

Q. To arrive at a point where the sentence you have just read is applicable to the transaction covered by your Entry No. 211, we would have to be agreed that the results of this transaction were a writeup?

A. Will you read back the question, please?

The Trial Examiner: In other words, there would have to be a determination there?

Mr. Spencer: Yes.

The Witness: I think I want to get a fuller explanation.

Will you read back that question?

(The question referred to was read by the reporter, as set forth above.)

Mr. Spencer: Let me say it wouldn't necessarily require an agreement between Mr. Luttring and I, but it would involve a determination that the transaction represented a writeup.

The Witness: We wouldn't necessarily have to agree that the excess is a writeup; we would possibly have to agree about the fact that the excess is there.

Now, what disposition we make of it may take a different disposition.

By Mr. Spencer:

Q. But you have testified that you have made this adjustment and tied it into gas plant adjustment account No. 107 because it represents a writeup of gas plant prior to the effective date of this System of Accounts?

A. That is true. What I am trying to bring out is this: If you could prove that excess is an intangible which you

are entitled to in your original cost, then it would not be charged to Account No. 107; if you could not prove that it is a legitimate intangible, then we must charge it to Account No. 107, gas plant adjustments.

Q. All right, but when you make the adjustment to gas plant adjustment account No. 107 you are concluding in your own mind it is a writeup?

A. That is correct. That is the determination that I made.

Q. Now, is there anything else in the Code of Accounts that support you for the purpose of determining the word "writeup"?

A. No; it has been known to me ever since I have been in the accounting field. It is a common term in accounting practice.

Q. Then you have supplied your conclusions and own definition and own interpretation as to what constitutes a writeup, is that correct—a conclusion based upon your own experience?

A. Yes.

Q. Will you put your definition of "writeup" into the record so that I can have it?

A. Writeup, in this instance, is the excess of purchase price paid by Canadian River Gas Company for the properties acquired from Amarillo Oil Company because the Amarillo Oil Company and Canadian River Gas Company were wholly-owned subsidiaries of Southwestern Development Company.

Q. Now, you have given me a definition of the writeup with particular application to the transaction that we have here.

A. Yes. Well, it applies to any transaction to that.

Q. I mean, the word "writeup" is much broader than that particular definition which you have given.

A. Oh, it can be.

Q. Now, if you have a Code of Accounts before you there, on Page 17, referring to Account 100.5 entitled "Gas Plant Acquisition Adjustments," which reads in part as follows:

"This account shall include the difference between (a) the cost to the accounting utility of gas plant acquired as

an operating unit or system by purchase, merger, consolidation, liquidation, or otherwise, and (b) the original cost estimated if not known, of such property, less the amount or amounts which may be credited to the depreciation, and amortization and depletion reserves of the accounting utility at the time of acquisition with respect to such property."

Now, is there any difference in opinion between us as to whether or not the transaction which you are covering in Entry No. 211, didn't represent a purchase or at least some other disposition of gas plant property?

A. I pointed out to you just previously that if you can substantiate that excess as being a good intangible, you would be permitted to put it in Account 100.5, Gas Plant Acquisition Adjustments. Now, I didn't consider this transaction an arm's length deal for the reasons as previously stated. Therefore, it was put into Account 107, Gas Plant Adjustments.

Q. And you did not think that Account 100.5 was the proper place to handle the transaction?

A. Not according to the information which I have regarding this transaction.

Q. Is there anything that I have read from Account 100.5 which says that the provisions of that paragraph shall not be applicable to transactions between affiliated or associated companies? I just want a yes or no answer on that.

A. Well, no, but may I add something?

Q. Now, you can add something.

A. When you use the word "writeups" it does apply to the type of transaction that we are speaking of here and, therefore, it does refer to Account 107, Gas Plant Adjustments.

Q. All right, but there is nothing in the instructions relating to Account 100.5 that makes any distinction or places any limitations upon transactions between associated or affiliated companies?

A. No, sir, other than the burden of proof is upon the utility.

Q. Now, is there anything in Account 100.5 that says where the burden of proof shall be, if any place?

A. It doesn't say that.

Q. All right.

A. You could possibly interpret it to mean that in your Paragraph C. That disposition of the account comes under the approval or direction of the Commission.

Q. Exactly.

A. Yes, sir.

Q. You are undertaking to do it for the Commission here, it appears to me.

A. I am representing the Commission, yes.

Q. You are undertaking to do it for the Commission. Again I will ask you if you are a rate expert.

A. I am not.

Q. All right, now, let's turn to—strike that.

What are the instructions of the Commission in its Uniform System of Accounts relating to the handling of transactions between associated companies?

A. Well, whatever they are, I have applied them so far as they concern the accounts on Pages 16 and 17 of the Classification of Accounts.

Q. Is there anything in these instructions that says that a profit made from the sale of properties by one subsidiary to another subsidiary of the same parent shall per se be thrown out as improper?

A. No, sir.

Q. Isn't it a fact, Mr. Luttring, that with respect to transactions between associated companies all the Commission has attempted to do in its Uniform System of Accounts is to have them set up, earmarked in such a fashion that they can be easily identified for such disposition as the Commission might want to make?

A. The requirement of the Commission is that original cost as developed by those companies—by that I mean first cost plus any legitimate intangibles to which the companies are entitled—must be carried through.

Q. If you had put this excess amount which you show on Page 17 in Account 100.5, the Commission would have had no difficulty in identifying exactly what it was for the purpose of making its determination as to its final disposition?

A. That's right, we would have had very little argument about it

Q. We would have had practically none because it would still be in the plant account?

A. Yes, sir.

Q. Subject to such disposition as the Commission would want to make of it after reading the evidence that you and I are putting in here. You have concluded that, though you have already thrown it down to gas plant adjustment, is that right?

A. That is right.

Q. Or you have concluded, rather, in some subsequent schedules or entries in this Exhibit 146 that these properties and assets involved in this transaction became the properties and assets of Canadian River Gas Company as of May 1, 1927?

A. That is the date we assumed, yes.

Q. Now, Canadian River Gas Company was incorporated when?

A. 1928, the month of February.

Q. That's right. Amarillo Oil Company had been in existence previously?

A. Yes, sir.

Q. The properties were actually transferred about when?

A. The voucher transferring the property was in June, 1928.

Q. And did you examine the documents of convevence to see when they were dated?

A. No, I did not.

Q. Did you find any agreement between Canadian River Gas Company and the Amarillo Oil Company covering the purchase and sale of these properties and assets?

A. No, sir.

Q. There was some reference to it in the minute book of both corporations but no formal contracts, is that right?

A. There was very little regarding the transaction on the minute book of the Amarillo Oil Company. If I remember correctly, I don't think the officers and directors of Amarillo Oil Company were asked what their opinion of this transaction was or what action they desired in the matter.

Q. You don't think so?

A. No, sir.

Q. Did you examine the minute book of the Amarillo Oil Company?

A. Yes, sir.

Q. As a matter of fact, the inception of this transaction was on April 5th, 1927 when Southwestern Development Company and the Standard Oil Company of New Jersey and Cities Service Company entered into what we have termed a memorandum agreement covering the Denver project, is that right?

A. That is right.

Q. Have you read that agreement, Mr. Luttring?

A. I have read that memorandum of stipulations.

Q. And is it a fair statement to make that the determination and the obligation to buy and sell these properties involved in your Entry No. 211 were made at that time?

A. In so far as those three companies may be concerned.

Q. Yes, in so far as they can control the situation.

A. That is correct.

Q. And is it also fair to say that those same parties agreed upon the price to be paid for these properties, to-wit: five million dollars?

A. Read the question, please.

(The question referred to was read by the reporter, as set forth above.)

The Witness: That is right.

By Mr. Spencer:

Q. And, likewise, did they not agree upon all of the other material or substantial terms and provisions of the transaction in that document?

A. Substantially, yes.

Q. I think there were some minor variances?

A. Well, they have been carried out appropriately as the stipulations called for.

Q. And is it also true that the consummation of this transaction pursuant to that agreement was only contingent upon two principal conditions; namely, the obtaining of a natural gas franchise in Denver and approval of titles to the properties of Amarillo Oil Company which it was intended would be conveyed?

A. That is correct.

Q. And after those two conditions had been satisfied

and the five million dollars was paid, the properties were conveyed as you have heretofore testified?

A. That is correct.

Mr. Spencer: May we have a recess at this point?

The Trial Examiner: Very well, we will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

Mr. Lange: Mr. Examiner, I think an error crept into this record. I want the witness to explain a statement made at Page 5425 of yesterday's record.

Do you have your copy of yesterday's record there, Mr. Spencer?

Mr. Spencer: No, I don't.

Mr. Lange: The question is: "No, I'm talking about the Code. I know you've done that, Mr. Luttring, but I'm just trying to apply the theories and principles of what you have done to a specific provision of the Commission's Code of Accounts."

And the answer: "Well, in this instance I previously testified that I didn't think on this particular account that we had followed good accounting practice."

What was your answer there that you meant, Mr. Luttring?

The Witness: I should have said "they."

Mr. Lange: Speaking of "they," whom did you mean?

The Witness: Meaning the Canadian River Gas Company.

Mr. Lange: Was that the obvious answer, or could there have been any other answer there?

The Witness: There could be no other answer.

Mr. Lange: I think at this time I would like to have that—

Mr. Spencer: Mr. Lange, I am willing to stipulate right

now that he may change the answer itself so that it conforms to what he had in mind.

Mr. Lange: All right.

By Mr. Spencer:

Q. Now, Mr. Luttring, let's turn to Page 18 of your Exhibit 146 which has to do with reclassification entry No. 212. The subject matter of this entry is legal expenditures made in connection with examination of titles and other work at the time Canadian River Gas Company was organized.

A. That is correct.

Q. Is the effect of your entry that you are capitalizing those?

A. No, the entry, as you will notice, is a reclassification entry.

Q. Yes.

A. It has no effect on your plant account.

Q. Oh, I see, you are merely transferring it from one position to another?

A. That is right.

Q. And that is done upon the basis of a letter which I wrote to Mr. Schutte under date of November 14, 1939, a copy of which appears at Page 19 of your Exhibit 146.

A. That is correct. If you will recall, the company incurred a considerable amount of expenditures for curing titles and procuring abstracts and, so on, just prior to the time that Canadian River Gas Company acquired the property from Amarillo Oil Company.

Now, I think that this legal fee is in the same category as those other expenses.

Q. It should be identified with the leases?

A. Yes, sir.

Q. All right. Turn to Page 20 which relates to reclassification Entry No. 243. Your note at the bottom of the page reads:

"To eliminate from the depletion base, leases abandoned by debit to the years in which the abandonment was made and by credit to the years in which the leases were acquired."

A. That is right.

Q. You do not agree with the method the company has employed in handling the entries?

A. Yes, we do. To avoid the necessity of making any depletion accrual on your abandoned leases and then charging the leases off against that accrual, since the company has already charged this to their income account, we are merely taking this out as between years in the unoperated lease investment.

Q. The results of your entries recommended here have no effect on the plant account?

A. No, sir, it is a reclassification entry. It is merely reclassifying investment as between years.

Q. There is just this point that is not quite clear to us, Mr. Luttring. Does the company take depletion on unoperated leases?

A. No, sir. The purchase of the lease is made in one year. The abandonment is made in a subsequent year, and when making the abandonment the company charges it to their income account.

Now, in effect it is not in the lease account any longer. Now, all we have done is taken the credit and applied it back against the year in which the purchase was made.

Q. Well, wouldn't it be more accurate or perhaps a little more clear if we used some words other than "depletion base" as you have included it in your note to this entry?

A. Well, as we come to our depletion schedule, why, you will probably get the significance.

Q. As I look at it here, we are talking about a depletion base on unoperated leases which present some incongruity.

A. Well, we haven't considered that you have unoperated leases. That is a classification which the company kept and we have combined the whole lease costs. Is that clear?

Q. You think it will clear up as we proceed through in other—

A. We haven't considered that you have unoperated leases only in so far as the accounts show on the books.

Q. I see. You mean by that that you have considered all of our leases as operated leases?

A. That is correct.

Q. Now, Page 21, Mr. Luttring, Entry No. 216. I assume there is an adjustment and not a reclassification involved in this entry; is that correct?

A. That is an adjustment. However, the adjustment does not affect your plant account.

Q. Why?

A. Because the amounts covered by this journal entry are really moved from your surplus account and charged to gas plant adjustment account 107.

Q. Oh, I see. Now, the amounts you have shown in your schedule there, your note states, represents appreciation on leases, abandoned and charged to cancelled and surrendered lease account in the income account.

A. That is correct.

Q. Now, the balance of the cost of the lease would be disposed of where?

A. In the income account and most likely canceled and surrendered lease expense account.

Q. You left it where it was.

A. Yes, sir.

Q. Why did you find it necessary to recommend or make these entries in connection with leases that have been abandoned and disposed of over a period of time?

A. Because all of these entries of this particular nature relate to the appreciation and is being accumulated in Account 107 so that the total amount of appreciation is finally determined.

Q. Do you think it is good accounting practice to separate the cost of an abandoned lease in that manner; that is, treating part of the costs in this fashion and the other part in another fashion?

A. To be consistent, I do.

Q. You would not do that, however, as a matter of accounting practice unless you were attempting to arrive at your opinion of original cost of the properties involved here?

A. No. If original cost was not involved, this type of transaction would not be necessary.

The Trial Examiner: This type of an entry, Mr. Luttring?

The Witness: Yes.

By Mr. Spencer:

Q. Page 22, Mr. Luttring, adjusting entry No. 217.

I assume this, likewise, involves an adjustment rather than reclassification?

A. That is true. This is exactly similar to Entry No. 216.

Q. Except here you have the amount involved in a well which was sold—of a well and lease which was disposed of rather than abandoned?

A. Yes, but the amount in this journal entry does represent the appreciation which was recorded on the books on that particular lease.

Q. What are you doing with Entry No. 216 and Entry No. 217 and, likewise, 218 which follows, is reaccounting so far as the books of Canadian River Gas Company are concerned, is that not true, for the purpose of arriving at original cost as you conceive it?

A. It is really reaccounting made to a suspense account. In other words, the charge may come back into your surplus account in the same year in which it is taken out.

Q. Now, as I understand the Commission's Code of Accounts here, reaccounting would not be proper unless it involved some patent errors in accounting?

A. This is not reaccounting in the sense that reaccounting transactions are placed into the plant account. This reaccounting went into Account 107, gas plant and adjustments. Therefore, it is not in your plant account.

Q. Exactly, but let me ask you this: Do you think the entries the company has placed upon its books at the time these transactions arose were in error; that is to say, that they did not conform to any accepted accounting practice at that time?

A. Well, they may have been—they may have conformed to a practice, all right, but to carry this thing a step further, the Account No. 107 is under the jurisdiction of the Commission.

Now, the charges that I am suspending there may come back into your surplus account, probably the same year.

Q. How will they get back?

A. I beg your pardon?

Q. How will they get back?

A. By order of the Commission, if they so desire. The Commission may charge their surplus with it.

Q. As far as you are concerned, you have determined the matter that it should come out of the plant account at this time?

A. It was already out of the plant account. It is not a question of being a reaccounting so far as the plant account is concerned.

Q. I see, but at least it should not be left in the account in which the company had it?

A. Not in order to bring out the full amount of the appreciation that was on that original transaction.

Q. Now, when you get through with reclassification entry No. 217—I beg your pardon, on Adjustment Entry 217—you have charged off the entire loss on this sale to—strike that question. Let me ask you another question.

Was the sale of the Ingerton lease made at a profit in excess of cost to the Canadian River Gas Company?

A. It was a loss so far as the determination made by the company.

Q. What was the purchase price? I think you show it down below in Entry No. 218, $52,500, is that correct?

A. That is the sale price.

Q. The sale price?

A. Yes.

Q. Or the purchase price for the purchaser. The cost of the property sold as appearing on the books of Canadian River Gas Company was how much?

A. Well, the costs—

Q. The total cost, if you have it in that manner.

A. The total cost, $137,639.50 plus $825.89 for a note receivable of W. H. and Ida Ingerton, and interest receivable in the amount of $3.68, making a grand total of $138,469.07. Do you want the accrued reserves?

Q. Well, what I want to come to next is the approximate amount of the loss involved in the sale as computed from the figures appearing on the books of the company.

A. The approximate loss as computed by the company is $66,181.90.

Q. Now, in this case we have the sale and disposition of a property at a loss as distinguished from the sale and disposition of a property at a profit as we had yesterday in the case of the Cliffside Structure. To be consistent with

what you did yesterday in connection with the Cliffside Structure, what would you do and what would you recommend be done with a loss of approximately $66,000 involved in this transaction?

A. In the first place, the loss isn't that large after taking out your appreciation, and this transaction took place in 1935, about seven years after the company started operations.

It now becomes a proper charge against your reserve account.

Q. Is that the way you are handling it here?

A. Yes. The facts will be developed when we get to depreciation.

Q. In other words, the balance of the amount of money involved here will come in later in other—

A. That is correct.

Q. Not in this exhibit?

A. No, not this exhibit.

Q. Exhibits to come later?

A. That is correct.

Q. Is that your exhibit?

A. Partly. The best part of it is.

Q. The Cliffside properties were transferred and conveyed in 1929, approximately one year after Canadian River Gas Company commenced its operations, and this property was transferred and sold at a loss approximately seven years after the Canadian River Gas Company commenced its operations. Is that the reason for handling the two transactions differently?

A. That is correct.

Q. Entry No. 218 on the same page, 22, is a part of the same transaction that we have been discussing?

A. That is right.

Q. And you treat that in the same manner?

A. Well, Entry No. 218 is slightly different than Entry No. 217.

Q. Will you explain that, please?

A. Canadian River Gas Company paid fifteen per cent of the sale price of $52,500 to the Parcomis Oil and Gas Company because the Parcomis Oil and Gas Company had some oil rights, or had the oil rights on this lease.

The amount paid Parcomis Oil and Gas Company, in the view we have taken, should not have received this money because they had paid nothing for the oil leases. In other words,—

Q. "They," meaning whom?

A. In other words, Canadian River Gas Company actually only received the difference between $52,500 and $7,875.

Q. You mean they should not have received it? This entry doesn't result in Canadian River Gas Company getting it back, does it?

A. No, they don't get it back in cash.

Q. They get it back in credits to the accounts you have indicated here?

A. That is right. I had set it up because of its relation to Journal Entry No. 217.

Q. Now, Parcomis Oil and Gas Company joined in the conveyence of these leases and properties to the purchaser, did they not?

A. I don't know.

Q. You didn't investigate that?

A. No, sir, I didn't examine the leases.

Q. Were the oil rights under these leases ever conveyed to Canadian River Gas Company—well, under this lease, I'll say.

A. Well, from what I know generally, I don't think they were, but I didn't get that information through the examination of leases.

Q. Well, did the agreement of April 25th, 1927, which we mentioned this morning, cover the purchase and sale of oil rights?

A. No, I don't think it did.

Q. All right, let's go to page—one more question. Generally your reasons for making the adjustment entry No. 218 are those which you have outlined in connection with 217, generally speaking.

A. That is correct.

Q. Now, Page 23, Adjusting Entry No. 219?

A. This also involves the same subject matter as No. 218.

Q. And 217?

A. And 217, that is correct.

Q. Now, why do you feel that these entries are necessary at this time?

A. I thought they were necessary in order to show that Canadian River Gas Company was entitled to all those proceeds. As I previously stated, the Parcomis Oil and Gas Company made no disbursements for the oil lease.

Q. Well, that isn't exactly correct as to disbursements of Parcomis Oil and Gas Company, but I don't see the necessity of going into that. What you have done here is similar to 218?

A. Well, this really won't affect the company any as I see it.

Q. They don't get the money, but you make some adjustments here to throw these things back into certain accounts where you think they ought to be had the transaction been different?

A. Well, supposing—here I credit your surplus account in 1935. I charge gas plant adjustment—

Q. Excuse me. What page are you talking from now?

A. 22.

Q. I was talking on 23, or are you giving your sample—

A. All right, take 23. It's just the same.

Q. Go ahead.

A. In this instance I am charging your surplus account and crediting gas plant adjustment account, 107. Now, if the Commission decides that that credit should be written off against surplus, you get it right back in there: so we are right where we started.

Q. Except for the "if."

A. Well, in this particular one it is a credit, so you aren't bad off either way.

Q. Well, you mean that the $124.24 is a credit?

A. Yes.

Q. Well, I don't sneeze at that amount, either.

A. Well, you have got a bigger credit in your Journal Entry 218, if you like that one better.

Q. Now, that completes the entries which you computed and recommended in this exhibit.

A. That is correct.

Q. Now, you also compiled certain schedules that are included in this Exhibit 146, Mr. Luttring?

A. Yes.

Q. I have lost my notes. I don't know which ones they are. Will you go right on through and pick up the first one?

A. Page 68.

Q. By the way, before you get there, did you have anything to do with these suspensions on Page 59?

A. No, sir.

Q. One more preliminary question: What, if anything, did you have to do with the compiling of the schedules starting on Page 61 and ending on Page 64?

A. Only in so far as any of the figures that I contributed to that schedule.

Q. Did Mr. Teel take your computations and your figures and interpret them in this schedule?

A. Yes, sir, he applied them in this summary.

Q. And his treatment of those figures as to where they should be applied in this schedule is his own, I assume?

A. All of the journal entries, both reclassification and adjusting entries are applied in Columns 5 and 6.

Q. Yes, some of which are yours?

A. I beg your pardon?

Q. Some of which are yours?

A. Yes, some are mine.

Q. Well, we'll come back to that before we wind up here.

The first schedule is Page 68, I believe you said. Now, will you give me a brief description of what that schedule is? I believe it is contained on two pages, Pages 68 and 69, is that correct?

A. And 70.

Q. And 70.

A. Right.

Q. Three pages.

A. That is correct.

Q. All right, now, just a general description of that schedule.

A. Schedule No. 2 attempts to—or, rather, does show the source of the leases acquired by Canadian River Gas Company according to their respective periods, and it shows the original cost of those leases and the appreciation thereon.

Q. As found by you?

A. As found according to the records of the company.

Q. Well, I mean, the appreciation you found, is that the appreciation which—

A. That is the appreciation that was recorded on the company's books.

Q. Well, let's stop there a minute. You made one adjustment here in the original cost of leases to Amarillo Oil Company. In other words, you have gone back to interest preceding Amarillo Oil Company and adjusted those costs so as to one particular group of wells you have adjusted Amarillo Oil Company's cost?

A. There has been no adjustment on original cost of leases other than—

Q. Well, I guess that answers my question.

A. —other than the appreciation shown here.

Q. I guess that answers my question, then. That adjustment on the cost, original costs of Amarillo Oil Company which you made related to well investment and not leasehold costs?

A. That's correct.

Q. All right, then, it wouldn't be in here?

A. No, sir.

Q. All right, we may be talking about the same thing, Mr. Luttring, but as I understood you to testify, you show nothing here except appreciation as it has been set up in separate account on the books of Canadian River Gas Company, is that a correct interpretation of your answer?

A. That is correct.

Q. Well, then, I don't understand that the books of Canadian River Gas Company reflect any so-called appreciation resulting from the sale of the gas, leaseholds and wells of Master Oil and Gas Company to Canadian River Gas Company.

A. Master Oil and Gas Company?

Q. Yes.

A. You couldn't very well have any because the company didn't have any income.

Q. Well, don't you make an adjustment in here on that?

A. On Master Oil and Gas Company?

Q. Yes, in this schedule on Page 70, Sheet 3 of 3, Schedule 2. Do you see what's bothering me?

A. Yes. Well, now, I was confused myself here. Supposing you turn to Page 70.

Q. Yes.

A. You will notice over in your operated and unoperated columns the adjustments for those journal entries which we have discussed heretofore.

Q. That's right, and not all of those appear as appreciation on the books of Canadian River Gas Company by any means.

A. Only that column which is so designated.

Q. I see. All right. Now, would you say—what is the purpose of this particular schedule, Mr. Luttring, in so far as this exhibit is concerned?

A. The only purpose is for convenience of presenting the account in an intelligent manner so that we may be more intelligently able to discuss it here at the hearing.

Q. In other words, you were treating it as a schedule which supports and undoubtedly clarifies some of the other work you have done in connection with adjusting and reclassification entries?

A. Well, for one who may not have been very familiar with the accounts of the company, I do think that this gives a very detailed account of it. In my opinion, it is quite self-explanatory if you have any idea about the company's business.

Q. I think that is correct, with your qualification that you have just added. The only reason I am asking is because other people are going to look at it and wonder what it is about that don't have any familiarity with our business and affairs. I am not quarreling with the schedule in the exhibit.

A. The only thing that I can say is that I have always followed the idea of trying to give the other fellow as good a picture as possible before discussing it.

* * * * *

MR. LUTTRING further testified on cross-examination: (Vol. XLIX, pp. 6692-6714.)

Q. Mr. Luttring, you were on the stand a day or so ago when you were requested by Mr. P. C. Spencer to furnish certain items of information?

A. Yes, sir.

Q. Do you have that material available at this time?

A. Yes, sir.

Cross Examination.

By Mr. Spencer:

Q. Mr. Luttring, during my cross examination of you in connection with Exhibit No. 146, the Examiner made some inquiries with respect to the volume of sales of natural gas by Amarillo Oil Company during the early years covered by your study.

A. That is correct.

Q. And I suggested to the Examiner at that time that we might get together and give him some information on that subject which would be satisfactory to him and in that connection have you supplied me with some figures showing volumes of sales by Amarillo Oil Company during its early years?

A. I have.

Q. According to the figures, then, Mr. Luttring, Amarillo Oil Company commenced marketing gas in October 1920 and its principal customers, in fact, the customer that took substantially all of its gas at that time, was the Panhandle Pipe Line Company.

A. That is correct.

Q. Now, stating volumes in Mcf., your figures show that Amarillo Oil Company delivered to Panhandle Pipe Line Company the following volumes of gas for the years 1920 to 1924, inclusive:

1920, 236,667; 1921, 771,932; 1922, 1,159,005; 1923, 1,246,043; 1924, 1,458,864.

The Trial Examiner: Did you say those were in Mcf.?

Mr. Spencer: I stated at the beginning that I was giving Mcf.

Q. Is that correct, Mr. Luttring?

A. That is correct.

Q. Now, the measurement used in arriving at the total figures as I understand you is the contract pressure base, whatever it may be from time to time?

A. That is correct.

Q. I believe you also heretofore testified that the deliveries were made to Panhandle Pipe Line Company at the well?

A. That is right.

Q. Also that you had no definite knowledge as to the ultimate disposition of this gas by Panhandle Pipe Line Company except that it was distributed by Amarillo Gas Company in the city of Amarillo?

A. That is correct.

Q. Do you know as a matter of fact whether there was any affiliation, corporatewise, between Amarillo Oil Company and Panhandle Pipe Line Company prior to 1924?

A. I do not.

Q. Well, when, according to the notes and knowledge you have gained from the investigation, did Amarillo Oil Company and Panhandle Pipe Line Company become affiliates, corporatewise?

A. They became affiliates and likewise subsidiaries of Southwestern Development Company about July 1924.

Q. I think that is correct.

Now, no other sales of natural gas were made in substantial volumes until 1923 when Amarillo Oil Company commenced supplying the United States Zinc Company smelter near the city of Amarillo, is that correct?

A. That's correct.

Q. Now, your figures show that commencing in 1923 Amarillo Oil Company sold to United States Zinc Company the following volumes of gas, stated in Mcf.:

1923, 712,470; 1924, 1,734,503, is that correct?

A. What was that first figure?

(The figures referred to by the witness were pointed out by Mr. Spencer on memorandum.)

The Witness: That is correct.

By Mr. Spencer:

Q. Now I believe you have heretofore testified that this particular gas was transported by Amarillo Oil Company through its own pipe line and delivered at the smelter to the United States Zinc Company?

A. That is correct.

Q. And the volumes as stated here are in accordance with the pressure base provided in the contract?

A. That is correct.

Q. You have also testified, have you not, that the volumes of gas involved in these sales was used for industrial purposes?

A. I did.

Mr. Spencer: Does that satisfy the record so far as you are concerned?

The Trial Examiner: Yes, I think so, Mr. Spencer.

Were those deliveries to the Zinc Company included in the first amount that you read?

Mr. Spencer: No, they are stated separately in each instance.

Q. Is that not correct, Mr. Luttring?

A. That is correct.

Q. Now, do you have a copy of your Exhibit 146 there?

A. Yes.

Q. Turn to Page 7, Entry No. 203. In cross examination with respect to this entry it developed that you had excluded from the investment figures here a dry hole drilled by Amarillo Oil Company during the early years of its history. I believe it was Bivins 2 and I asked you if you could give me a breakdown of these costs which you had allocated to that dry hole. Do you have that information available?

A. Yes. I furnished that information to you and in reviewing the items which I allocated to this dry hole, there was a disagreement in the amount that I allocated as labor, teaming and freight costs. This amounted to $3,679.27, and I have no objection in removing this amount—or, rather, reducing my adjustment in Journal Entry No. 203, Plant Adjustment Account No. 107, by this amount, and in order to not disturb the prorations which we have already made on the cost shown in this journal entry, I recommend that it be charged to Masterson C-1 well.

Q. Shown in the schedule on Page 7?

A. Shown in the schedule on Page 7.

Q. Well, you say it is not objectionable to you, Mr. Luttring. As a matter of fact, it would be the proper thing to do, would it not, under the circumstances?

A. Well, I think I recommend it in there.

Q. You have recommended that it be done?

A. Yes, sir.

Q. So that the effect of what you are suggesting or recommending at this time with reference to this particular dry hole would be to reduce the plant adjustment by the amount of approximately $3600 which would increase the gas well investments by the same figure?

A. That is correct.

Mr. Spencer: I can appreciate your difficulty in taking that particular sum of money and allocating it to any particular well. If counsel has no objection, I am willing to agree with that allocation in so far as this schedule is concerned without, however, waiving any of my general objections to the whole exhibit.

Mr. Lange: That's right.

The Trial Examiner: I presume with that explanation and with that agreement it won't be necessary to go back through the exhibit and alter those figures?

Mr. Lange: I don't think so.

Mr. Spencer: Well, I am not going to ask that it be done, Mr. Examiner.

One other question with respect to these sales of gas by Amarillo Oil Company during its early existence.

Q. Is it true that during the years 1920 and 1921 all gas sales were made from three wells?

A. That is correct.

Q. And in 1921 the gas sales were made from four wells?

A. From September 1920 to September 1922 all of the gas sold was taken from Masterson wells No. C-1, E-2 and D-4.

Q. I think that is correct. Do you have handy there the same information for 1923?

A. In 1923 gas was produced and sold from Masterson wells No. C-1, C-3, B-5, D-4 and E-2 and also Bivins C-1 and D-3.

Q. All right, now, 1924?

A. In 1924 gas was produced from Masterson wells No. C-1, C-3, B-5, D-4 and E-2, and also from Bivins A-2, B-1, D-3, C-1 and C-4.

Q. I have a difference of two wells in the year 1924; that is two less than you show. However, that will be sufficient from your records on that subject, Mr. Luttring.

A. My production ties up with the dollars exactly, so—

Q. I have no doubt that it does and I am not saying that your designation of wells is incorrect. It may be, but I will check that later. You do not need to do that.

Now turn to page 1 of your Exhibit 146, Entry No. 200. During the course of the cross examination on this entry I asked you if you could identify certain charges to income or expenditures made by the Master Oil & Gas Company which you had not included—which I thought you had not included in your lease costs or well costs here. Now, I believe those figures were: Field expenses, $4225.86; General expenses, $2650.26. Have you any further information with regard to that inquiry at this time?

A. Since my previous testimony I had an opportunity to review my working papers and identify the amounts of $4,225.86 and $2,650.26 for field expenses and general expenses, respectively. At the time I previously testified I thought perhaps there were some items in those figures which I had overlooked and which I may have been able to consider as accounting errors and as such I would have been justified in including them in my original cost of the plant account of Master Oil & Gas Company.

The information which I have in the papers leads me to believe that the nature of the items are such that they would fall under a reaccounting because they appear to be the normal expenses that would be charged to an income account. I do not believe it is my responsibility to reclassify any expenses of this nature.

Q. Then you went far enough with these particular items in your investigation to conclude that there were no accounting errors involved in charging them to expense rather than capital?

A. No, I would not say that I went far enough. I probably made a quick deduction from the general character of the accounts to satisfy myself that they were not the type of items that I would probably capitalize.

Q. Well, that's sufficient on that item so far as I am concerned unless you want to add something, Mr. Luttring.

Now turn to Page 28 of your exhibit, Entry No. 229. I believe that this is an entry that Mr. Teel testified about. Is there some additional explanation with respect to this entry that you would like to make for the record?

A. Yes. The drilling costs and the labor, teaming and freight costs on this particular well represented in this entry are the only drilling and labor, teaming and freight costs which the company has on a producing well charged to their income account.

This, I believe was an accounting error, and for that reason the costs were removed from the income account in Journal Entry No. 229 and restated as gas well investment.

Q. Well, I think that does clarify the record somewhat on that, Mr. Luttring, and I thank you for the explanation.

Now, that is all the items that I have here. Do you have any others?

A. No, I don't.

Q. That I was going to examine you about.

A. I don't think so.

Q. Oh, one other question. Were you able to find any further information concerning the date on which the Master Oil & Gas Company was dissolved?

A. On that point I did not find anything further in my papers. It seems proper to accept the date that you introduced in evidence.

Mr. Spencer: All right.

Mr. Lange: I have some redirect.

Redirect Examination.

By Mr. Lange:

Q. Referring to your Exhibit 146, Mr. Luttring, on cross examination in connection with that exhibit you were interrogated with reference to Entry 211 at Page 17.

A. Yes.

Q. In the course of that cross examination the inquiry was directed as to whether you knew what the disposition was of the five million dollars paid in connection with the lease transfers. Can you explain briefly what you found out about that?

Mr. Spencer: Disposition of the five million dollars by whom, Mr. Lange?

Mr. Lange: By the Amarillo Oil Company.

Mr. Spencer: Oh, yes.

The Witness: Well, I have a transcript of the accounts as they appear on the books of Amarillo Oil Company.

By Mr. Lange:

Q. Do you have that here?
A. Yes, sir.
Q. Will you get that out of your working papers?
A. Yes.
Q. Do you have those now?
A. Yes. Do you wish me to put into the record all of the transactions relating to it?
Q. As the transcript disclosed it, yes.

Mr. Spencer: Before you start, is this a transcript that you have there taken from the books and records of Amarillo Oil Company?

The Witness: That is correct.

Mr. Spencer: All right.

By Mr. Lange:

Q. All right, just explain the history of the proceeding from that transcript taking up the larger items as they appear from that transcript.

A. The five million dollars paid by Canadian River Gas Company for the purchase of properties from Amarillo Oil Company was paid in two instalments. The first instalment of two and a half million dollars was paid on December 8, 1927 and the second was paid on January 13, 1928. This amount was recorded on the books of Amarillo Oil Company as a book entry and charged against Prairie Oil & Gas Company—special account.

Out of the proceeds, Prairie Oil & Gas Company during December 1927 paid obligations of Southwestern Development Company in the amount of $393,943.27 which amount was charged to Southwestern Development Company account on the books of Amarillo Oil Company.

In December 1927 Prairie Oil & Gas Company paid various obligations of Amarillo Oil Company amounting to $625,962.18 which was charged to notes payable account on the books of Amarillo Oil Company. In December 1927 Prairie Oil & Gas Company credited Southwestern Development Company for amounts due it aggregating $1,269,000.

On the books of Amarillo Oil Company this amount was charged to Southwestern Development Company.

In January 1928 funds in the amount of one million dollars were advanced to West Texas Gas Company and on Amarillo Oil Company's books this amount was charged to West Texas Gas Company.

In January 1928 funds were used by Prairie Oil & Gas Company to pay indebtedness of Southwestern Development Company in the amount of $567,316.43. This amount was charged to Southwestern Development Company's account on the books of Amarillo Oil Company.

In January 1928 Prairie Oil & Gas Company advanced $196,000 to the Southwestern Development Company. This amount likewise was charged to Southwestern Development Company on the books of Amarillo Oil Company.

In February 1928 Prairie Oil & Gas Company paid off the first mortgage bonds of Amarillo Oil Company in the amount of $300,000. This amount was charged to first mortgage bond account of Amarillo Oil Company.

Now, that covers most of the large items which I have in there and I think with a very minor exception it almost accounts for the whole five million dollars.

Q. Are there any further explanations that you have of that transaction as to what it represents on the books of the Amarillo Oil Company?

A. I don't quite understand your question.

Q. As to the disposition of the cash in so far as Amarillo Oil Company is concerned?

A. I think that the testimony which I have just read here indicates that all of these transactions are what is called book entries and do not involve the cash of Amarillo Oil Company.

Q. Well, then from those entries did Amarillo Oil Company get any cash out of that?

A. The account indicates that Amarillo Oil Company received in the neighborhood of $310,000 in cash.

Q. Out of the total amount?

A. Out of the total amount of $5,000,000.

Q. Now, referring to Exhibit No. 146 again, let's turn to the entry on Page 48.

A. Yes.

Q. That is Adjusting Entry No. 248.

A. Yes, sir.

Q. In connection with that entry you were interrogated as to the items of property, so-called, that Amarillo Oil Company retained when it made the sale of its leases to Canadian River Gas Company?

A. Yes, I was.

Q. Among those were contracts that Amarillo Oil Company retained?

A. That is correct.

Q. What value, if any, did those contracts recorded on the books of the Amarillo Oil Company have?

A. As of June 30, 1928 there was no value recorded for contract, that is, gas contracts, on the books of Amarillo Oil Company.

Q. You are now referring to the contracts concerning which you were interrogated by Mr. Spencer on cross examination regarding this entry?

A. Yes, sir; that is, as I understand it.

Q. I believe you stated on both direct and cross examination that the supporting schedules on Page 49 of the exhibit immediately following was prepared by you?

A. Yes.

Q. And that you knew the facts and circumstances in connection with the preparation of this entry?

A. Yes.

Q. Have you any explanation you can make at this time with reference to that entry?

A. I have some additional information relating to the item of $81,230 shown in Journal Entry No. 248. In my previous testimony I stated that Canadian River Gas Company paid interest on amounts due Amarillo Oil Company from the period from May 1, 1927 to June 30, 1928, amounting to $79,000 plus.

In reviewing my papers I find that Voucher No. M-14,

December 1928, recorded on the books of Amarillo Oil Company shows that Amarillo Oil Company received $160,272.41 in interest and paid the sum of $81,250, leaving a net amount of $79,022.41. The amount of $81,250 which was deducted in this transaction was classified as interest on the books of Amarillo Oil Company and is the item as related to the amount of $81,250 shown in our Journal Entry No. 248.

Q. Does that complete your answer?

A. Yes.

Mr. Lange: I believe that is all for the present.

Recross Examination.

By Mr. Spencer:

Q. Now, going first, Mr. Luttring, to the payment of five million dollars by Canadian River Gas Company to Amarillo Oil Company for the properties and rights which you have discussed here in your Exhibit 148, you have testified that the purchase price was paid in two instalments of $2,500,000 each; one in December of 1927 and one in January of 1928, is that correct?

A. That is correct.

Q. And you have also testified heretofore that Canadian River Gas Company was incorporated in February of 1928?

A. That is correct.

Q. You have also testified that the basic agreement covering the purchase and sale of these properties at a price of five million dollars was entered into between Southwestern Development Company and Standard Oil Company of New Jersey, and Cities Service Company, in April of 1927?

A. That is correct.

Q. You have also testified that the sale of the properties at a five million dollar consideration was contingent upon approval of titles, is that correct?

A. That is ordinarily true. I don't know whether that provision was in there or not.

Q. You have made an examination of the books and records of the Canadian River Gas Company and Amarillo Oil Company with respect to this transaction, have you not?

A. Yes, I have.

Q. Now, based upon that examination, can you tell me

why the purchase price of five million dollars was paid in the first instance to the Prairie Oil & Gas Company?

A. Well, neither Canadian River Gas Company or Colorado Interstate Gas Company had banking facilities—

Q. Let me fresh your—

A. And—

Q. Excuse me. Go ahead.

A. If I remember the transaction correctly, the money came directly from Standard Oil Company.

Q. Right.

A. Do I need to go any further than that?

Q. I can help you out by asking you some more questions.

Is it not a fact that Amarillo Oil Company needed the money to clean up its title situation and for other purposes; that Canadian River Gas Company had not yet been organized; that the Standard Oil Company of New Jersey agreed that it would advance the five million dollars representing the purchase price of these gas rights and properties, provided it could be paid to the Prairie Oil & Gas Company, which company would remain responsible for the return of the full purchase price in the event Amarillo Oil Company failed to clean up its title situation satisfactorily; and isn't that the reason why it was paid in that manner, and isn't that the reason the money was retained by the Prairie Oil & Gas Company, because it was responsible for the return of those funds to the Standard Oil Company of New Jersey if for any reason the sale was not consummated? Didn't you go far enough in your examination to know that those were the facts?

A. I happen to know something about Prairie Oil & Gas Company and I imagine the reason it was done was because it was a responsible party.

Now, as to anything in writing along those lines, I don't recall anything like that.

Q. Now, you have said here that Amarillo Oil Company received only $300,000 out of the total consideration of five million dollars. I am sure you do not desire to leave any impression in this record that Amarillo Oil Company did not receive by way of cash, credits, or otherwise the full amount of this purchase price.

A. I think you misunderstood my testimony—I read an amount that would cover notes payable—that covered notes payable to Amarillo Oil Company that were paid off in the amount of some $625,000; I read another of $300,000—

Q. If I misunderstood you I can shorten that up quickly by asking you this:

Ultimately the Amarillo Oil Company received by way of credits or otherwise the full amount of the purchase price of five million dollars?

A. Yes.

Now, the only purpose, as I understand it, of putting this in is to show that Prairie Oil & Gas Company handled the cash.

Q. All right, we agree to that. In other words, there was a million dollars advanced to the West Texas Gas Company by Amarillo Oil Company?

A. That is correct.

Q. You are familiar enough with it to know that that amount was paid by West Texas Gas Company to Amarillo Oil Company?

A. In the form of stock.

Q. Not to Amarillo Oil Company?

A. It went through Amarillo Oil Company's books.

Q. That is right. The truth of it is that eventually the bulk of this five million dollar consideration was distributed by Amarillo Oil Company to Southwestern Development Company as a dividend?

A. You have reference to the excess of the amount received over the net assets which they sold?

Q. Yes. That would be the amount shown in their surplus?

A. It was declared as a dividend to Southwestern Development Company.

Q. Now, with respect to your Entry No. 248, Page 4, Exhibit 146, the additional information you have supplied this morning as I understand it is this: that Amarillo Oil Company received interest during this development period which you have indicated in the amount of approximately $160,000, and they paid out interest of $81,250—the latter figure being the figure shown—and the first figure shown in your Journal Entry No. 248?

A. That is correct.

Q. I believe we have covered that before.

The $81,250, no matter what we may call it, represented an additional consideration for gas taken from these properties by Amarillo Oil Company during this period?

A. I believe you can apply that thought to it.

Q. All right, when you get all through, this $81,250 represents the cost of gas to Amarillo Oil Company, is that not a fair statement?

A. Well, according to your interpretation, yes.

Q. I don't want my interpretation; I would like to have your interpretation.

A. I can't interpret the—

Q. Let me ask you this: If there had been no contract between Amarillo Oil Company and Canadian River Gas Company covering the sale of gas to Amarillo Oil Company, and if, consequently, there had been no sales of gas, then am I correct in saying there would have not been any payment of $81,250 by Amarillo Oil Company to Canadian River Gas Company?

A. Will you read that back?

(The question referred to was read by the reporter, as set forth above.)

The Witness: I don't understand the question.

Mr. Spencer: Read it again.

(The question referred to was reread by the reporter as set forth above.)

The Witness: I can't break that question up.

Mr. Lange: Can you break it up for him?

The Trial Examiner: Don't you understand the question, Mr. Luttring?

The Witness: No, I don't.

Mr. Spencer: I will try again.

Q. Isn't this payment of $81,250 related directly to the sale of gas during this period by Canadian River Gas Company in effect to Amarillo Oil Company?

A. Yes.

Q. And if there hadn't been any sales of gas or contracts relating to those two parties, there would have never been the payment of $81,250, would there?

A. No.

Q. And the $81,250 payment made by Amarillo Oil Company is not included on your schedules in Pages 49 and 50 of Exhibit 146?

A. No, because I don't think they should be there.

Q. You don't?

A. No.

Mr. Spencer: All right, we will let the record stand on that.

Redirect Examination.

By Mr. Lange:

Q. Referring back to Entry No. 211, Page 17, do you know of your own knowledge, Mr. Luttring, whether or not Amarillo Oil Company had any authority or exercised any authority in the disposition of that five million dollar amount?

Mr. Spencer: Just do you know?

Mr. Lange: That is what I asked.

Mr. Spencer: I wanted to hold him down.

The Witness: It seems to me that my testimony on that question has been given. The account indicates that they did not have custody of the funds.

By Mr. Lange:

Q. What did you say?

A. I said that Amarillo Oil Company did not have custody of the funds.

Mr. Spencer: That is all of the conclusions you draw, to-wit, the Amarillo Oil Company did not have custody of the funds?

The Witness: That is correct.

Canadian's WITNESS LUSK testified as follows: (Vol. LXXVIII, pp. 11415-11417.)

Q. Now, on Page 15 of your written statement you refer to the matter of the development period of the company. Are you referring there to the Amarillo Oil Company?

A. Yes, to the Amarillo Oil Company.

Q. Well, what, in your opinion, was the time the development period of the Amarillo Oil Company ended?

A. Well, my own thought on the development period of the Amarillo Oil Company's particular leases, the development period ended when the Denver line gas came in.

Q. Well, how do you arrive at that particular point?

A. Well, that is my own thought, that prior to the time of the Denver line gas and the promoters of the Denver line project came in, there was more gas down there than the Amarillo Oil Company knew what to do with. In other words, they had plenty of gas but no place to put it.

Q. You mean there was no place to put all of it. There was a place to put some of it.

A. Very little.

Q. At that time, how much gas was being sold by the Amarillo Oil Company?

A. At the end of—for the year 1927 the total amount sold at 16.4 pounds pressure by the Amarillo Oil Company—

Mr. Spencer: What was the date of this period?

The Witness: This was the year 1927.

From the 23-½ wells that were turned over to the Canadian River Gas Company and being produced from the oil and gas lands that were transferred to the Canadian River Gas Company, there was 5,949,663 Mcf.—approximately six million M.

Q. For the year 1927?

A. 1927.

Q. Whom were those sales to?

A. Principally to the Panhandle Pipe Line Company and the smelter.

Q. The Panhandle Pipe Line Company is the one that transported it to the City of Amarillo?

A. That's correct.

Q. And it sold it to the city gate—sold it at the city gate to the Amarillo Gas Company?

A. I believe that is correct, yes, sir.

Q. And the Amarillo Gas Company distributed it in Amarillo and vicinity?

A. I believe so, yes, sir.

Q. Well, you say that 5,000,000 Mcf.—

A. 6,000,000 M.

Q. That wasn't an amount sufficiently large to say that the development period of the Amarillo Oil Company had been concluded, or was that the point that you say that their development period ended?

A. My record is that a great many of the wells that were productive of gas and were really flush producers were shut in.

Q. Now, what were the sales of gas by the Amarillo Oil Company in 1926? Have you got your total there?

A. Yes. The total production in 1926 on a 16.4 pounds pressure base was 4,658,000 Mcf.

Q. 1925?

A. 3,848,000 Mcf.

Q. And in 1924?

A. 2,892,000 Mcf.

Q. Now let's begin with 1924. Were those sales largely to the Panhandle Pipe Line Company?

A. And the smelter.

Q. To the Panhandle Pipe Line Company and the smelter?

A. That's right.

Q. The same for each of the years?

A. Yes.

* * * * *

MR. LUSK further testified: (Vol. LXXVIII, pp. 11443-11444.)

Q. Now, I believe you gave to Mr. Lange the total production of Amarillo Oil Company for the years 1924 to 1927, inclusive.

A. I did.

Q. Those total sales fall into two categories, sales at

the well to Panhandle and sales to the zinc smelter, is that correct.

A. That is correct.

Q. Now, will you give me the sales for those years on the same pressure base which were made by Amarillo Oil Company to the zinc smelter?

A. From the wells—

Q. Starting in 1924.

A. From the same wells that were transferred to the Canadian River Gas Company as of May 1, 1927, and in relation to the Mcf. figures that I read into the record at the beginning of 1924 and ending with 1927, out of those total—out of the total Mcf. the sales to the smelter—

Q. By whom?

A. Amarillo Oil Company—in 1924 on the same pressure base was 1,368,600 Mcf.

In 1925 it was 1,906,500 Mcf.

In 1926, 2,515,900.

In 1927, 3,508,900.

The Trial Examiner: Were those last two figures both Mcf.?

The Witness: They are all Mcf., yes, sir.

By Mr. Spencer:

Q. I believe you stated heretofore that the sales to the Panhandle Pipe Line Company were made in the field at the well by Amarillo Oil Company?

A. That's correct.

Q. Do you happen to have the figure there of the production from these same wells that you have used here in 1929, after the Denver market was attached?

A. Yes, sir.

Q. Give me that total figure, please.

A. In 1929 the production from those same wells was 12,328,300 Mcf.

Canadian's WITNESS RHODES testified: (Vol. XXXII, pp. 4523-4524.)

Recross Examination.

By Mr. March:

Q. Did your management service include both the management of Canadian River Gas Company and Colorado Interstate Gas Company?

A. It did.

Q. And your relationship with the two companies was identical?

A. Substantially. We consulted different men in connection with some of the policies on Canadian River Gas Company than we did on Colorado Interstate Gas Company but otherwise the relations were substantially the same.

Q. Did you consult Mr. Moody?

A. Yes.

Q. In regard to what company?

A. Primarily the Canadian River Gas Company.

Q. Did you ever consult him in regard to Colorado Interstate Gas Company?

A. Yes, we consulted him as representing one of the big stockholders of Colorado Interstate Gas Company.

Q. Did you consult the stockholders separately or did you consider Standard spoke for that group?

A. They were consulted separately but I think we consulted Mr. Payne rather than Mr. Moody.

Q. In regard to Canadian River Gas Company?

A. In regard to the property as a whole.

Canadian's WITNESS HENDEE testified: (Vol. III, pp. 308-309.)

Direct Examination.

By Mr. Brock:

Q. Mr. Hendee, I believe you have prepared a brief statement in which you disclose your name and your occupation. Will you proceed to read it?

A. (Reading)—"My name is Robert W. Hendee. I am now manager of Canadian River Gas Company and Colorado Interstate Gas Company, and have been since July 15, 1936. About that time the management contracts these two companies had with Ford, Bacon & Davis, Inc. were termi-

nated, and I was employed by the companies. I succeeded Frank J. Trelease, who, as representative of Ford, Bacon & Davis, Inc. had been for some years the manager of the two companies.

* * * * *

MR. HENDEE further testified: (Vol. III, p. 314.)

Q. Where does Mr. Gallagher have offices in New York?
A. 30 Rockefeller Plaza.
Q. The offices of Standard Oil?
A. Yes.
Q. Does Mr. Moody have his offices there too?
A. No, Mr. Moody has his offices in Tulsa, Oklahoma.
Q. He has offices with Standard Oil there in Tulsa?
A. No, there in the Sinclair offices.
Q. The Sinclair offices?
A. Yes.
Q. What do you mean by "Sinclair offices"? Consolidated Oil Corporation or Consolidated Sinclair Corporation or what?
A. They are a group of Sinclair offices. As I know them, Sinclair-Prairie Oil Marketing Company and Sinclair-Prairie Oil Company, quite a group of Sinclair operating companies.

* * * * *

And again in Vol. III, pp. 319 and 320, Mr. Hendee testified:

Q. Yes; I understand that. Who did you report to in your company?
A. To Mr. Lerch and to Mr. Moody afterwards.
Q. Who do you regard as your real boss?
A. I have two bosses. One is just as equal as the other.
Q. Who?
A. Mr. Lerch of Colorado Interstate and Mr. Moody of the Canadian River Gas Company.
Q. Did you ever consult with Mr. Gallagher?
A. I haven't consulted with him once since I took the job.
Q. Do you know whether or not your superiors report to him or not?
A. No, I do not.

The complete testimony of P. C. Spencer and the testimony of Christy Payne, Nelson K. Moody, W. S. Fitzpatrick, and Harry D. Hancock relating to this and connected matters are set forth above in Title 2 of this printed record under the heading, "2. The Agreement Between Southwestern Development Company, Cities Service Company, and Standard Oil Company (N. J.) to Undertake the Project of Constructing the Pipe Line From the Texas Panhandle Field to Denver," and the testimony of Commission witness, Carl H. Sehutte, with reference to the corporate history of Canadian is set forth above in Title 4 under the heading, "4. Incorporation, Objects, Powers, Capitalization, and Financing of Canadian River Gas Company."

Commission Witnesses Luttring and Teel removed from the Gas Plant Account the aggregate sum of $555,867.62 for interest during construction (Entries 246 to 249, inclusive, Ex. 146).

The company's books showed interest during construction capitalized in the amount of $556,897.95. This adjustment reduces interest during construction down to $1,030.33 by a series of adjustments, which in the first place eliminates all of the interest actually paid and capitalized, then recomputes interest during construction on a different basis, and deducts from the recomputed interest earnings claimed to have been made by Amarillo Oil from its operations during the period May 1, 1927, to May 31, 1928, and finally a deduction was made from the recomputed interest claimed to represent interest on the appreciated value "of the leaseholds" (Entries 246 and 249, inclusive).

Commission WITNESS TEEL testified: (Vol. XLI, pp. 5669-5675.)

Q. Now, your Entry No. 246 on Page 47 of Exhibit 146 has to do with interest during construction that was capitalized by the company, Mr. Teel?

A. That is correct.

Q. And your first entry as you say here is for the purpose of clearing the interest account preparatory to setting up revised interest as computed by Examiner of Accounts of the Federal Power Commission?

A. That is correct.

Q. In other words, you take out the full amount of interest capitalized during construction by the company in the first instance and throw it over into what you call gas plant adjustment account 107?

A. That is correct.

Q. And from that point you pick up various items involved in this transaction and distribute them in various and sundry ways in subsequent entries?

A. That's true.

Q. In this exhibit?

A. That is true.

Q. Would you say that throwing it into Account 107 in the first instance is a matter of convenience or is that first operation in accordance with the Code?

A. In this particular case it is a matter of convenience, the idea being to clear the interest account and then to set up the amount which has been computed.

Q. Now, at some subsequent point in your exhibit, I believe you have a schedule which shows the detail of the interest during construction capitalized by the company in the amount of $556,897.95?

A. That's correct. The interest schedules of which there are, I believe, one schedule and seven supporting schedules, appear first on Page 138 of Exhibit 146.

Q. 138?

A. That's correct.

Q. Now, if the Examiner wanted to find the detail of the payment of interest during construction as made by the company and as recorded on the books, he would look where?

A. 13-B-1, which is on Page 139. The notation at the bottom of the page 138 refers to that schedule.

Q. And Sub-schedule No. 13-B-1, commencing on Page 139, shows the details of the company's interest payments during construction which it has capitalized on its books?

A. That is correct.

Q. Commencing in December 1927, and running through to October 1928?

A. The last entry on the interest account, according to the books, is found on Page — well it is a continuation of that schedule, Page 141, and that is dated December 1928.

and is in the nature of an adjustment made by the company.

Q. The periods for which the company capitalized interest, however, terminated October 1, 1928?

A. That is correct.

Q. And the subsequent entries that you show in this account on Page 144 are all in the nature of corrections or transfers?

A. That is correct.

Q. To that account?

A. That is right.

Q. Now, it is clear here that the figures that you show in this Sub-schedule 13-B-1 are taken from the books of the company?

A. Yes.

Q. The description of the items is your description?

A. Yes, in part. That description was based on information on the vouchers of the company.

Q. I see. Now, as to the total amount shown here in this account, to-wit: $556,897.95, is the same amount that you have in your Entry No. 246. I take it there is no question but what the company paid the amount shown for interest, as shown on its books?

A. As shown by its books.

Q. You aren't questioning the fact that the payments were made?

A. No.

Q. Subsequent dealings with this particular amount are in the nature, let us say, of criticism of the way it was recorded on the books of the company?

A. Well, criticism might be used, yes.

Q. Or would you say constructive suggestion as to changes?

A. I would prefer the latter.

Q. All right, but we are clear that you have no question but what the company actually paid this money during the period mentioned for interest?

A. The money was paid by the company during this period as indicated by this schedule.

Q. Now, we get down to your next account, No. 247, and you start over again, don't you, by setting up a new amount in an interest during construction account, and

charging that against the gas plant adjustment account, the amount shown being $460,435.86?

A. That is correct. However, it is credited to the gas plant adjustment account and again charged to interest during construction.

Q. Yes. I should have reversed my expression since it is a debit account. Now, as I understand it, there is no difference between the amounts shown in Entry No. 246 and the amounts shown in 247, except that you have computed the interest during construction for a different period?

A. That is partly true. I have also used a different method, a different formula for computing the entries.

Q. Now, you have a detailed schedule for this amount of $460,435.86 as shown in Entry No. 247.

A. Schedule 13-B-3, which is found on Page 143 of this exhibit, which indicates the component parts of that total, $460,435.86. Under the first column to the left of that schedule is indicated the number of the sub-schedules which details the derivation of the interest which is shown on Column 5 of that schedule.

Q. Well, then, you have in this entry reconstructed the interest during construction charges on a different basis than that pursued by the company?

A. I have reconstructed the interest and used as a basis the construction expenditures which I found on the company's books.

Q. Could we understand how you did that by having you explain the items in sub-schedule No. 13-B-3 on Page 143, or will we have to go to the schedules supporting that sub-schedule?

A. I believe it would be more easily understood if we refer to the sub-schedules which support that. There were so many items concerned in this that it was thought better to break them down rather than have one long schedule made of it. The sub-schedules take up each separate item and indicate the method used.

For instance, Page 144 indicates the amount of interest as computed by me on the original 5,000,000-dollar transaction.

Q. All right, let's go through by sub-schedules support-

ing sub-schedule No. 13-B-3, then. Take the first one on Page 144. There you have allowed interest on five million dollars at the rate of six per cent per annum for the period May 1, 1927 to July 1, 1928, 426 days which results in $350,000. I should say $350,136.99.

A. That's correct.

Q. Now, at first glance it would appear there that you were going to allow interest during construction on the full five million dollars, wouldn't you?

A. That's correct.

Q. But that is an illusion a little later, isn't it?

A. Later on there are certain parts of that eliminated.

Q. But for the moment we are going to be happy. Later on things happen to it. I think that is enough with reference to that one.

The next is expenditures by Amarillo Oil Company per its statement for drilling of wells, acquisition of leases, and so forth. That is the second item on Sub-schedule No. 13-B-3-2.

A. That is located on Page 145.

Q. The supporting schedule for that is located on Page 145?

A. Yes.

Q. Did you make any adjustment in there, or is that just in accordance with the interest statement made up by Amarillo Oil Company and paid subsequently by Canadian River Gas Company for this work?

A. That is right. There are no adjustments in that.

Q. Either here or later, is that right?

A. I think that is probably right.

Mr. Spencer: The reason that I have to watch you is that this thing is tricky. You are in and out. I am not impuning your motives or anything; it is just a little tricky for me to understand sometimes.

The Witness: I'll try to explain any part of it.

By Mr. Spencer:

Q. Now, the next item which is the first item on Sub-schedule No. 13-B-3 is construction by Ford, Bacon & Davis per their books.

A. That is—

Q. A, B, C, and D items, and you arrive at a total of $3,826,945.81, and that is supported by four sub-schedules: 13-B3-3a; 13-B3-3b; 13-B3-3c, and 13-B3-3d. Those appear at Pages—

A. Those start with Page 146 and continue on 147, 148 and 149.

Q. Now, for the moment, you allow interest on these charges as per books during the periods which you describe here on Sub-schedule No. 13-B3?

A. That is correct When you say "allow interest," I assume you mean the figures that I used, the basic figures here, and the interest as computed on this particular schedule?

Q. That is right. There are no changes in those accounts?

A. I don't believe there are any changes made that affect this particular group of accounts. There are no adjustments on that particular group of accounts.

Q. And the last item preceding Examiner's adjustment on Sub-schedule No. 13-B3, is construction by Canadian River Gas Company during the month of June 1928?

A. That is correct.

Q. And I assume that there are no adjustments in that?

A. That is correct, there are no adjustments to that figure.

Q. Then you arrive at the total figure $460,435.86 on Sub-schedule No. 13-B3 which is the same figure that you are using in your Adjusting Entry No. 247.

A. That is correct.

Q. Now, give me the reasons which you had in mind and the purposes to be served in changing the method or manner of computing the company's interest during construction charges as you have done in Entry No. 247. I am only asking for a general answer to that question. I suppose more specific answers will show up later here, but you have proceeded here in certain steps, Mr. Teel, to arrive at a final result, and I wanted to get your ideas behind your second step here which is No. 247, is that not correct?

A. That is correct. The purpose in making this revised computation was brought about by the fact that the company's records did not clearly indicate the connection be-

tween the expenditures on which interest was paid and the properties acquired or construction performed. I think that would refer primarily to the 5,000,000-dollar transaction—I don't mean that either. The schedule—

We'll let that suffice for the moment, but we were unable to identify the payment of interest on the certain bank loans and other sums with the property. The rates of interest varied on the loans which in itself was not damaging, but it was not all computed on the same basis and it was computed on a construction period which was in excess of the actual period of construction.

Q. Well, I think that is apparent that one of the first things that you thought needed correction was the period during which interest during construction was to be computed.

A. That is correct. That was one of the primary considerations.

Q. Well, let's discuss that for just a moment. We might as well put it in here. What was your basis for establishing the period which you have set up as being proper for the capitalization of interest during construction?

A. The basis?

Q. Yes.

A. I'll refer you to the written statement, Page 7.

Q. Page 7 of this exhibit?

A. Page 7, the written statement which Mr. Luttrin read in, in connection with the introduction of this exhibit.

Q. Oh, yes. I have entirely ignored this, I think.

All right. Go ahead.

A. About half-way in the page, the sentence starts:

"Schedule No. 13-B3." The second sentence following that sentence is the one I have in mind:

"In making the interest during construction computation the Examiner has used the same date for the start of construction as the company has, namely, May 1st, 1927, but has used a different date for the end of the construction period, namely, July 1st, 1928; the company has used October 1st, 1928 as an ending date. The reason why the Examiner used July 1st, 1928 as an ending date is that sub-

stantial deliveries of gas were made to the three principal customers of the company in June 1928, for the first time, and continued thereafter. In this connection, a notation on a Ford, Bacon & Davis voucher (G-20) is important. It reads: 'Capitalize deliveries June 1-18, inclusive, charging same to 226-9. Charge deliveries June 19-30, inclusive, to operations.' Initial deliveries were made to Colorado Fuel & Iron Company on June 19th, to Pueblo Gas & Fuel Company on June 21, and to Public Service Company of Colorado on June 23."

That's all of the year 1928.

Q. Of course, the company's construction program was not fully completed as of July 1, 1928?

A. That is correct.

Q. I assume your point is that if the company was going to capitalize interest it would have to credit against that interest the revenues it received during the period following July 1928, is that correct?

A. That is correct.

Q. And as to the commencement date, you have used the same commencement date that appears on the books of account of this company?

A. I believe.

Q. That is the first time a charge appears in that account, or about that time?

A. Yes, May 1, 1927, is that date, and it is referred to several times in the company's records and the interest charges I believe start with that period with that day.

Q. All right, I think that's enough on that.

Now to get back on the different methods that you have employed here in computing interest during construction, it is a fact that the company's account entitled "Interest During Construction" does represent actual expenditures for that purpose?

A. As far as it is indicated by the records, that is true.

Q. Is there any more than one accepted method—and I mean accepted by accounts—for computing interest during construction on a project such as this?

A. Yes, sir.

Q. How many would you say there were?

A. Well, I know one other method which is accepted as a proper accounting practice.

Q. Would you say that the company's method was an accepted method, the one that followed eliminating the difference of opinion regarding the period?

A. I would say that would be acceptable provided that the loans on which interest was paid could be identified with the purchase or acquisition of property acquired or construction performed.

Q. You do not feel that the company's books and records were sufficiently complete in that respect?

A. To support the interest charges for construction of this property, no, I do not think they are.

Q. Now, the method you have used is another method?

A. That is correct.

Q. In other words, is it a fact that your method allows interest on all money employed in the project during the period of construction, whether any interest was actually paid on it or not? Is that a correct statement?

A. That is correct, on construction expenditures.

Q. The company attempted to base its interest during construction on actual payments. You proceed on the theory that the company is entitled during a proper period to interest on moneys invested?

A. During this construction period.

Q. That is what I gather is correct.

A. Yes.

Q. What bank loans did you have in mind that weren't sufficiently explanatory as to rates of interest or other information?

A. I'll probably have to get that from my working papers. I don't see the detail on the statement here that I thought was in this particular schedule. I'll see if I have that here.

Q. Well, maybe I could shorten that up for you.

Can you identify the item you refer to in your Schedule No. 13-B1, commencing on Page 139, identify the item that you have in mind, and perhaps I can help you?

A. The items that I referred to are contained in the interest figure of $128,319.67, which appears on Page 140 of Schedule 13—or of this exhibit. It is on Schedule 13-B1, Page 2, and is identified as interest from various dates in

1927 to December 8th, 1927, as paid on loans and bonds by Southwestern Development Company and subsidiaries prior to the date the first $2,500,000 of Canadian River Gas Company funds were available, on December 8th, 1927.

Q. Those weren't bank loans, were they?

A. There were some references—there were some bank loans, as I remember, in that statement.

Q. Is that the only point at which you found insufficient information to make the accounting practice followed by the company inacceptable?

A. Well, I wouldn't say that was the only point. I think there are some others, and I am not able to identify them right at the moment. I think the ones which I refer to are substantially all in that particular voucher.

Q. Do you think that the lack of information, did I understand you to say, made the company's method inacceptable, or did you mean it merely to be "doubtful"?

A. The point I meant to make was that it was not possible to associate the interest paid with the expenditures made for the account of Canadian River Gas Company.

Q. I don't want to pursue it any further than is necessary. I want to come to this, that if there was any lack of information about what was involved in this transaction, is it my fault that such information was not furnished the Commission or is it the Commission's fault that the Commission did not ask me for more?

A. Well, that I don't think I could answer. The records as examined did not supply—the company's records did not supply the information which was needed and in setting up the revised, or the method which I have used, I find that for the same period of time which the company used that it yields a larger amount of interest.

Q. I think that is true, Mr. Teel. Don't misunderstand me. I merely am stopping here because the record indicates that you couldn't support something here for lack of information, and isn't it a fact that you got all the information that you asked for and even if you had had more information, you would have done what you did do?

A. I am not entirely sure that I would have. If the company's records which were made available to us to examine had tied in definitely with the acquisition of the properties, I don't—

Q. As far as you know, have you got any unanswered inquiries on this subject?

A. As far as I know, there haven't been.

* * * * *

MR. TEEL further testified on cross-examination: (Vol. XLII, pp. 5679-5699.)

Q. Mr. Teel, will you turn to your Entry No. 247, Page 47 of Exhibit 146. Now, that entry represents the amount of interest during construction which you have computed for Canadian River Gas Company during the period May 1, 1927 to July 1, 1928?

A. That is correct.

Q. And based upon your investigation and examination, you have fixed May 1, 1927 to July 1, 1928 as the proper period to be considered as the construction or development period of Canadian River Gas Company?

A. That is correct.

Q. Now, had you used the same method of computing interest during construction but extended the period of construction to October 1, 1928 as the company did on its books, that, of course, would have increased the amount shown for interest during construction?

A. That is correct.

Q. And I believe—have you a schedule which indicates what that amount would be.

A. Yes, that is on Page 142 of this exhibit under Schedule 13-B2, Column 5 of that schedule showing the interest calculation, using my method and the time period of the company; that is, extending the period to October 1.

Column 6 shows the interest as recorded on the books.

Q. Now, will you put in the record right at this point the amount of interest during construction which would have been charged under your method had the construction period been extended to October 1, 1928?

A. On the basis as shown in Entry 247 before adjustments the interest which would have been recorded would have been $605,608.05.

Q. And I take it you put that schedule in merely for informative purposes?

A. That is correct.

Q. You have not adopted or accepted that figure, however, because you do not agree with the period?

A. That is correct.

Q. As being applicable to construction?

A. That is correct.

Q. Now turn to your Entry No. 248 on Page 48 and I take it that this is your first adjustment against the interest during construction which you allow in your Entry No. 247?

A. That is correct.

Q. Now, can you explain in simple language what this adjustment is?

A. This adjustment which credits interest during construction in the amount of $214,552.27 and charges surplus with $81,250, and gas plant adjustment with $133,302.27, represents the earnings of the properties originally purchased from Amarillo Oil Company under their contract dated May 1, 1927. The earnings—

Q. Excuse me. You mean the contract dated April 5th, 1927?

A. That is correct, April 5th. The figure $214,552.27 is the result of the computation made by Mr. Luttring in his examination of the Amarillo Oil Company records and is the earning of those properties for the thirteen-months period from May 1, 1927, to June 1, 1928.

Q. The net result of the entry being that you have reduced interest during construction by an amount of $214,552.27?

A. That is correct.

Q. Representing profits made by the Amarillo Oil Company on the property sold during your period of construction?

A. That is correct.

Q. And that amount is charged to two accounts?

A. That is correct.

Q. $133,302.27 being charged to the gas plant adjustment account 107, and the other item of $81,250 being charged to surplus?

A. That is correct.

Q. The $81,250 is an amount that was paid to Canadian River Gas Company by Amarillo Oil Company for gas during this period?

A. That is correct.

Q. Do we come to that later?

A. I believe that is taken up in the income exhibit of Canadian River Gas Company. It doesn't appear anywhere else in this particular exhibit, however?

Q. It doesn't?

A. No.

Q. Well, I don't want to get too far off the track, but I believe that we better put into the record at this point a little further explanation of the $81,250, unless it is covered in your notes down here sufficiently.

A. The second paragraph on Page 48 under the explanation of Entry No. 248 reads—

Q. You don't need to read it if you think it covers it sufficiently.

A. I think it explains it. That is the basis for the adjustment and the reasons for the charge. That should be amended to include the first paragraph also.

Q. Now, you mention the agreement of January 3rd, 192[illegible] between the Canadian River Gas Company and the Amarillo Oil Company covering the purchase and sale of gas and under the provisions of that contract, I assume the parties provided a method for determining the cost of gas, the purchase price of gas to Amarillo Oil Company up to the time that Colorado Interstate Gas Company commenced taking deliveries.

A. I am not quite familiar with the entire portions of that. I believe this agreement covers the cost of gas to the Amarillo Oil Company and the information I have on it is that which is shown here.

Q. Are you familiar with the agreement dated April 5th, 1927 between Southwestern Development Company and Standard Oil Company of New Jersey and Cities Service Company covering the origin of the so-called Denver property?

A. Yes, I have read that agreement.

Q. Did that agreement also make provision for the purchase price to be paid by Amarillo Oil Company for gas prior to the time that Colorado Interstate Gas Company commenced taking deliveries?

A. I don't recall.

Q. Well, is it not a fact that the $81,250 represents the cost of gas during this period to Amarillo Oil Company?

A. In accordance with Section 6 of the agreement dated January 3, 1928.

Q. And by the same token it then represents a receipt by Canadian River Gas Company for the sale of gas?

A. Yes.

Q. Would it be correct to say that as between those two companies, then, it was not an interest entry?

A. That is correct, between those two companies it was not an interest entry.

Q. Did the agreement which you mention here in the paragraphs on Page 48 to which you have referred and also the agreement of April 5th 1927 which I have mentioned provide that Amarillo Oil Company during this period should receive its gas at cost plus a percentage or fractional part of the interest paid by Canadian River Gas Company on its outstanding indebtedness?

A. I believe that is right.

Q. I assume that the $81,250 paid by Amarillo Oil Company to the Canadian River Gas Company for gas during this period was credited to income at that time and you are in effect here reversing that entry?

A. That is correct.

Q. Now, on what theory do you deduct from the interest during construction account this purported profit made by Amarillo Oil Company during the construction period on properties sold to Canadian River Gas Company?

A. This theory is based on the fact that Amarillo Oil Company operated these properties during this period and that in the prior entry I have set up interest on the total purchase price paid Amarillo Oil Company for these properties.

Following that, if interest is allowed on the purchase price of the properties, then interest should be decreased by the amount of revenue received from those properties during that period.

Q. Did Canadian River Gas Company receive the $214,352.27 profit which you set up here?

A. No, sir.

Q. It never did?

A. It never received that profit.

Q. Do you know of any contract under the terms of which it was entitled to receive this profit?

A. The Canadian River Gas Company?

Q. Yes.

A. No.

Q. Well, go a little further with your theory, then. It is not clear to me yet just why you make this deduction from Canadian River's interest during construction account or for profits which it never realized or received and which it was not entitled to receive under any agreement which you learned about.

A. The properties did belong to the Canadian River Gas Company after May 1, 1927. That is supported by various invoices and vouchers which appear in the company's records which charge Canadian River Gas Company for interest on moneys expended to buy those properties.

Now, if Canadian River Gas Company is charged with interest for moneys expended to acquire those properties, it should also be credited with the profits or revenues which are derived from those properties during this period. This revenue is the revenue after the operating expenses have been deducted and represents income from those properties.

Q. Is it not a fact, however, that the only thing Canadian River Gas Company was entitled to receive from Amarillo Oil Company for gas taken from these properties during the period which you have mentioned was the gas cost plus an apportionment of the interest on Canadian River Gas Company's outstanding indebtedness at that time?

A. The records of the company indicate that the only revenue received during this period by Canadian River Gas Company was the $81,250.

Q. And that is true because Amarillo Oil Company itself paid all the cost for producing the gas and operating the property from which it took gas, is that not correct?

A. That is correct, Amarillo Oil Company did do that.

Q. Canadian River Gas Company had no expense or outlay of funds in connection with those operations, did it?

A. No.

Q. As far as the Contracts are concerned, then, Canadian River Gas Company received from Amarillo Oil Company

every cent to which it was entitled for gas purchased during this period?

A. That is correct.

Q. All right, now, your theory is, as I take it, that certain properties were sold by Amarillo Oil Company to Canadian River Gas Company as of May 1, 1927 and that for a certain period thereafter they were operated by Amarillo Oil Company and Amarillo Oil Company made some profits from operating those properties so sold, which you believe should be credited back to this interest during construction account, although Canadian River Gas Company did not receive or was not entitled to receive such profits, is that correct?

A. I believe it should have been credited back.

Q. Now, the properties sold by Amarillo Oil Company to the Canadian River Gas Company consisted of gas leaseholds, gas rights, gas well and other property connected therewith, is that correct?

A. That is correct.

Q. By the way, let me ask you this: Is this adjustment entry made solely on your judgment?

A. Yes, this entry—Mr. Luttring prepared the supporting schedule found on Pages 49 and 50, and I applied that figure—the theory behind the entry is my judgment supported by our Uniform System of Accounts and other precedents in acounting.

Q. Do you know anything about the business and affairs and operations of the Amarillo Oil Company during this period?

A. I have never examined the records of the Amarillo Oil Company. My knowledge is only that which I acquired from the Canadian River Gas Company records and conversations with my associates.

Q. Do you know as a matter of fact that Amarillo Oil Company has certain contracts and did have certain contracts during this period with others covering the sale of gas?

A. I have heard that they did.

Q. And that the sales shown in the schedule, gas sales shown on Pages 49 and 50, were made pursuant to such contracts?

A. I assume that there were contracts involved. To my

knowledge these are the sales which were reported from—which was acquired from my conversation with Mr. Luttring and examination of the schedule.

Q. And if there were such contracts, then, of course, such contracts would be a part of the properties and assets of Amarillo Oil Company.

A. I assume that would be correct.

Q. And that the price of gas received by Amarillo Oil Company would be pursuant to such contracts?

A. That would appear reasonable, yes.

Q. Now let me ask you this question: Were these contracts sold by Amarillo Oil Company to Canadian River Gas Company.

A. Canadian River Gas Company's records don't reflect any such sale.

Q. Did you find any such contracts ever came into the possession of Canadian River Gas Company?

A. Not to my knowledge.

Q. Then when you say that you are taking out a profit made by Amarillo Oil Company during this period upon property sold to Canadian River Gas Company, you don't mean to say that the contracts upon which such sales were made were a part of those properties and assets sold?

A. No, I have made no reference to contracts.

Q. Well, let me state it the other way: The profits made here which you find by Amarillo Oil Company during this period required not only the properties and assets sold to Canadian River Gas Company but also its contracts with other parties, is that not correct?

A. Well, that could be true.

Q. Well, now, do you think it is fair to include such important properties as contracts and so forth which were not sold, in computing the profit to be applied in this situation?

A. I think it is fair to include the revenues derived from the properties which were sold to Canadian River Gas Company.

Q. All the properties—you mean all the properties? You mean it is fair to include all the properties?

A. The properties which were sold.

Q. You have told me the contracts were not sold.

A. No; I stated I have made no reference to contracts.

To my knowledge, such sale of contracts is not recorded on the Canadian River Gas Company's books.

Q. But it is apparent that the contracts which are properties and assets of Amarillo Oil Company had to be utilized in order to make a profit of $214,552.27 which you show?

A. If such contract were in existence, that would be true.

Q. To that extent you have utilized the property which was not sold?

A. To that extent.

Q. Now, there are other properties of Amarillo Oil Company involved in its operations at this time which you have excluded, to-wit: its gas line; is that not correct?

A. Well, I am not familiar with the Amarillo Oil Company properties. This statement was, as I said, compiled by Mr. Luttring who did examine the books and probably is familiar with the properties of the company. I am not.

Q. That's all right. Mr. Luttring apparently has prepared here nothing but a factual statement, and you have taken that statement and made certain determinations which seems to me required some pretty close reasoning and rather minute investigation on your part into the facts back of it. Otherwise, you would have had no basis upon which to bring the whole amount of this profit over here and deduct it from the interest during construction account of Canadian River Gas Company as you have done.

Well, what you have done, then, is merely to take Mr. Luttring's profit figure as shown on Page 50 of your Exhibit 146, in the amount of $214,552.27, and concluded that the full amount of that should be deducted from Canadian River Gas Company's interest during construction account.

A. I have done that. I was going to say that is the figure which represents the revenues derived from the properties which were sold to Canadian River Gas Company.

Q. Then we come right back again. It represents also revenues derived from the sale of gas by Amarillo Oil Company pursuant to its contracts existing at that time, is that correct?

A. Providing Amarillo Oil Company had those contracts.

Q. And such contracts were not sold to Canadian River Gas Company?

A. That is correct, of my own knowledge.

Q. And were among the properties and assets retained by Amarillo Oil Company, is that right?

A. I think that is right. I am not sure.

Q. Now, you have taken this sum which I mentioned a moment ago and included it in your Entry 248 without any particular examination or investigation of the facts underlying the Amarillo Oil Company's statement of net income for this period appearing on Pages 49 and 50?

A. I have reviewed the statement and noticed certain adjustments appear which eliminate other properties which Amarillo Oil Company did retain as reflected by this statement and concurred with Mr. Luttring.

Q. Well, what I am trying to get at is, to what extent have you investigated the facts?

A. The facts are, I believe, presented on Pages 49 and 50.

Q. Well, Mr. Teel, you are an accountant and you know as well as I do that an accountant doesn't accept figures without going back to check the facts, data and information underlying those figures before reaching a conclusion, isn't that correct?

A. I would accept Mr. Luttring's figures.

Q. That's what I want to come to. You have made no investigation of the facts underlying the figures shown on Page 49 and Page 50?

A. That is right.

Q. And have accepted Mr. Luttring's work in that connection?

A. That is correct.

Q. And you do not know whether or not the Amarillo Oil Company had any contracts covering the purchase and sale of gas at that time or not?

A. Not to my own personal knowledge, no.

Q. And you couldn't say for sure that this represents—that this profit on Page 50 of $214,552.27 is applicable only to the properties and assets sold to Canadian River Gas Company or whether it includes something else?

A. I believe it does—

Q. No, that isn't my question. Do you know?

A. To my own personal knowledge, no, except that this work was prepared by my associate Mr. Luttring, and I have the utmost confidence in those figures.

Q. And if this profit which I have mentioned was paid

upon gas sales contracts which were not included among the properties and assets sold, then your answer would not be correct, would it?

A. I think it would. It still arises from gas which was produced on these properties.

Q. Why, if you are going that far, why do you stop with Amarillo Oil Company? Why don't you go on down the line and get the rest of the profits that might have been made from the sale of this gas?

A. Of course, the fact that Amarillo Oil Company is practically the parent company of Canadian River Gas Company has considerable bearing on this and probably did effect considerable influence in the original agreement concerning the price of this gas.

Q. You say Amarillo Oil Company is in practical effect the parent company of Canadian River Gas Company?

A. That is my understanding.

Q. Who owns all the stock of Amarillo Oil Company?

A. Southwestern Development Company.

Q. Who owns all the stock of Canadian River Gas Company?

A. Amarillo Oil Company.

Q. No, that is wrong.

Mr. March: You mean the Southwestern Development Company?

The Witness: Southwestern Development Company.

By Mr. Spencer:

Q. Then they are merely subsidiaries of the same parent company?

A. That is true.

Q. Did Amarillo Oil Company organize the Canadian River Gas Company?

A. That I am not sure of.

Q. Do you know whether Amarillo Oil Company had anything to do with the organization and incorporation of the Canadian River Gas Company?

A. That I am not sure of.

Q. In this statement on Pages 49 and 50 of Exhibit 146, the gas pipe line of Amarillo Oil Company from the field to the smelter near the city of Amarillo is excluded, is it not?

A. That I don't know.

Q. Well, doesn't it appear here?

A. Not that I know of. If it is, I am not able to identify it.

Q. You are not able to identify that? Well, turn to Page 49 of your exhibit and under the heading of "Adjustments applicable to Canadian River Gas Company," Column 7, go down to the first figure. Do you find an amount there of $53,825.22?

A. That is correct.

Q. And that is preceded by a No. 4 in parenthesis?

A. That is correct.

Q. And what does the figure No. 4 refer to?

A. No. 4 relates to a journal entry which was also prepared by Mr. Luttring, as were the three preceding it, and is located on Page 52.

Q. Now, what is the subject matter of that journal entry?

A. It is my understanding that this refers to natural gasoline extracted from gas at a gasoline plant there.

Q. I think you have a misapprehension there.

A. Yes, I think I do too.

Q. If you will look back on Page 49 under Column 6 you will find an amount of $14,936.60 which is applicable to gasoline sales, is that not correct?

A. That is correct. I was wrong before. That is right.

Q. Now turning back to Page 52, this paragraph numbered 4 in parenthesis says, does it not, it is an adjustment which is made for the purpose of taking out of the profits the revenue applicable to the investment of Amarillo Oil Company in a pipe line, isn't that plain?

A. That is correct.

Q. All right, then, the pipe line properties are out of this picture if the figure which he arrives at is correct.

A. That's right.

Q. Then he did take out the pipe line properties?

A. That is correct.

Q. And without going into too much detail, did he also take out some charges and income resulting from oil sales?

A. Yes, that is true.

Q. You would say that those were attempts to take out properties of Amarillo Oil Company which were not sold to Canadian River Gas Company?

A. That is correct.

Q. Now, I will ask you once more if Amarillo Oil Company had contracts covering the purchase and sale of gas which were utilized by it in making these profits and which were not sold to Canadian River Gas Company, should they not have been excluded, likewise?

A. The value of the contracts—

Q. The results of the contracts. That is what he is doing here with these other things.

A. Oh, I don't think so. I believe that the revenues from this property with such adjustments as would be arrived at which would correctly reflect the actual revenue from these properties should be credited to interest expense of Canadian River Gas Company.

Q. Then why not include the gas pipe line as well? They were utilized in the sale of this gas.

A. Well, the gas pipe line has in effect been included, because that entry on Page 52 reduces the amount of gross revenue by $53,825.22.

Q. Exactly. What he is attempting to do there is to eliminate any profit that might be applicable to the pipe line.

A. Eliminate that from the net earnings as affected by the statement.

Q. Yes, that's right. Well, then, shall we leave the record here that based upon your experience and knowledge as an accountant, Canadian River Gas Company was entitled to all of the benefits of any contracts that Amarillo Oil Company may have had covering the purchase and sale of gas, notwithstanding the fact that they were not among the assets and properties sold to Canadian River Gas Company. Shall we leave it there?

A. I believe that Canadian River Gas Company should have received a credit for the revenues received from these properties which were sold to Canadian River Gas Company.

Q. And you think that there should have been included among the properties the benefits of any contracts that Amarillo Oil Company may have had which were not to become the property of Canadian River Gas Company?

A. I think that the revenues should have consisted of the revenues from the sale of this gas from these properties which were sold to Canadian River Gas Company.

Q. The profit figure shown on Page 50 of $214,552.27

makes no allowance for a return on the investment of Amarillo Oil Company?

A. On the investment of Amarillo Oil Company, the return on the investment of the company is reflected in the revenues which are shown in Column 5 of the schedule appearing on Page 49 during this period.

Q. I think that is correct, but when you arrive at the total figure in Column 9, there is no adjustment there to allow Amarillo Oil Company any return or interest on its investment at all, is there?

A. I see no allowance made for that type of item in this statement.

Q. Entry No. 4 on Page 52, does, however, allow interest, rate of return, or whatever you may want to call it, on the pipe line?

A. That is correct.

Mr. Spencer: Just a minute, Mr. Examiner, I think maybe we ought to switch to Mr. Luttring at this point. I wish to ask him some questions about these schedules on Page 49 and Page 50.

MR. LUTTRING further testified: (Vol. XLII, pp. 5700-5744.)

Q. Mr. Luttring, you have heard Mr. Teel's testimony just preceding with respect to Entry No. 248 and the supporting schedules attached thereto on Pages 49 and 50 of Exhibit 146?

A. I have.

Q. Did you prepare these schedules on Pages 49 and 50?

A. I did. May I state something here, please?

Q. Go right ahead.

A. The books of Canadian River Gas Company recognized income during the period May 1, 1927 to June 1, 1928 on what was considered an unorthodox method. The amount recognized by them was—

Mr. Spencer: Just a minute.

Mr. Lange: Can't he complete his explanation?

Mr. Spencer: Why, I don't know whether he is going to make a speech or what.

Mr. Lange: He is explaining some—

Mr. Spencer: I want to know—

Mr. Lange: It is relevant to a portion of that exhibit.

Mr. Spencer: Well, what portion? Let's break it down and find out just exactly what he is going to talk about and then I can follow him.

Mr. Lange: What is it relevant to?

The Witness: Nothing but what is in here. I just want to get you straight on this thing.

The Trial Examiner: Well, perhaps if Mr. Spencer objects to the witness proceeding, perhaps the best method would be to have Mr. Spencer proceed with the questions and let—

Mr. Spencer: Let's leave it this way, Mr. Luttring, and I'll give you a full opportunity at some point here to put in any explanation you want. Let's start off by finding out what you did in connection with these particular schedules and the purpose of it.

Mr. Lange: Of course, Mr. Examiner, if that explanation that he wants to make is relevant to explain that question that Mr. Spencer asked, I think it should be permitted to be made.

The Trial Examiner: The witness will be allowed, of course, to explain any answer that he desires to make.

Mr. Lange: That's what I understood the witness' purpose was, to be able to explain the nature of his answer.

Mr. Spencer: He hadn't made any answer yet. I hadn't even asked him a question.

Q. Well, these schedules on Pages 49 and 50 were prepared by you?

A. Yes, sir.

Q. The basic figures, I take it, you obtained from the books of the Canadian River Gas Company—the Amarillo Oil Company?

A. From the financial records of the Amarillo Oil Company.

Q. And are all the figures in Columns 2, 3 and 4 as per books?

A. They are.

Q. Is the description under Column 1 of the company's description for the items?

A. I am quite certain that I followed the accounts literally.

Q. That is, you haven't involved here, as far as you can recall, any reclassification of accounts?

A. No, sir. It is my practice to try to follow the accounts as they are shown by the company's records.

Q. All right. Why did you prepare this schedule?

A. Well, on the books of Canadian River Gas Company they reflected an amount of $81,250 as being the revenue during the period May 1, 1927 to June 1, 1928. The purpose of setting up the schedules was more to show that more accurate figures could have been obtained if they had actually been compiled by someone. Now, I don't intend to convey that these figures are absolutely right from the standpoint of meeting the provisions of this contract.

Q. Which contract, Mr. Luttring? Do you mean the agreement of January 3rd, 1928 between Amarillo Oil Company and Canadian River Gas Company?

A. I think that is mentioned in the journal entry, yes.

Q. Let's go to that for just a moment?

A. May I say this, that I heard the discussion. The contract with Amarillo Oil Company—

Q. What discussions are you referring to?

A. About the contracts for the sale of gas which Amarillo Oil Company owned.

Q. Where and between whom?

A. Between the smelter plant—

Q. No, I mean these discussions. I want to identify the discussions you heard.

A. Well, it was regarding the contracts for the sale of gas that the Amarillo Oil Company had.

Q. Do you mean discussions between Mr. Teel and me?

A. That is correct.

Mr. Lange: You are referring to the testimony just had by Mr. Teel and—

The Witness: I wish to say here that the contracts that they had before the sale, they also had after the sale.

Mr. Spencer: Yes, that's right.

Q. What contracts are you referring to, the contracts of Amarillo Oil Company covering its sales of gas?

A. That is correct.

Q. They had them before and they had them after the transfer of these properties to Canadian River Gas Company? In other words, they weren't included.

A. That is right.

Q. I think that is correct, and they did have contracts?

A. Yes.

Q. Long-term contracts?

A. Well, I don't know the length of them.

Q. Just a few more general questions.

Did not the agreement dated April 5th, 1927 between Southwestern Development Company and Standard Oil Company of New Jersey and Cities Service Company make some provision for the basis upon which Amarillo Oil Company should receive gas up until such time as Colorado Interstate Gas Company commenced to take deliveries?

A. Yes, and I think that that is the thing that is not reflected in this statement.

Q. And that was not carried out precisely as it was provided in that contract?

A. That is correct.

Q. In other words, it provided there that the Amarillo Oil Company should pay one-fourth—was it one-fourth?

A. I don't recall the figures.

Q. I think it was one-fourth of the interest on the indebtedness of Canadian River Gas Company. The final settlement was made on the basis of one-eighth.

A. Yes.

Q. Which—

A. Based on the calculation which is shown on—

Q. I think you have explained that. It is on Page 48.

A. That is right.

Q. And that interest was paid by Amarillo Oil Company to Canadian River Gas Company.

A. Yes, that is correct.

Q. And represents a part of Amarillo Oil Company's cost of gas during that period?

A. Yes.

Q. And all of the other costs involved in producing and gathering the gas taken by Amarillo Oil Company during this period were assumed and paid by it?

A. Will you read that to me, please?

(The question referred to was read by the reporter, as set forth above.)

The Witness: You mean to say that Canadian River Gas Company assumed all those?

By Mr. Spencer:

Q. Assumed and paid by it, Amarillo Oil Company.

A. Yes, Amarillo Oil Company did pay them, yes.

Q. That is to say, Canadian River Gas Company did not pay any portion of the operating cost for producing this gas during the construction period which Amarillo Oil Company took?

A. Will your read that, please?

(The question referred to was read by the reporter as set forth above.)

The Witness: That is correct. The costs were not reflected on Canadian River Gas Company's books.

By Mr. Spencer:

Q. Then Amarillo Oil Company purchased and took its gas during this period substantially in accordance with what the parties intended by their agreements, is that not correct?

A. Yes.

Q. Now, going back to Page 49 and 50 of Exhibit 146 which you have prepared, I believe you testified that the figures shown in Columns 2, 3 and 4 were taken from the books of the company?

A. Financial reports and books of the company.

Q. What do you mean when you say the financial reports? What do you mean by that?

A. They put out a monthly financial report which I used as my starting point which was compared with the books.

Q. Did you make an audit to tie those figures back into the books?

A. I compared them with the books to see that the bal-

ances as represented in the statement were those also shown on the books.

Q. That is to say that any figures you obtained out of the financial records, you checked them with the books?

A. That is correct. However, I did not verify the accounts; that is, the contents of the accounts.

Q. You wouldn't say that this is a verified audit of the books and records of Amarillo Oil Company for the period?

A. That is not the intent I want to convey...

Q. Now, when we get over to Column 5, you have a heading there, "Applicable to Amarillo Oil Company," and over Columns 6, 7 and 8 and 9 you have a title, "Applicable to Canadian River Gas Company:" I assume that those five columns represent a split in adjustments of Column 4, is that right?

A. That is correct. It was made from the best available information that I could get.

Q. Now, what do you mean by the title "Applicable to Amarillo Oil Company"?

A. Well, supposing we put it the other way. We were chiefly interested in determining the amount of revenue and expenses that were applicable to the property which Canadian River Gas Company acquired in the purchase as of May 1st, 1927. The balance of it we considered as being applicable to Amarillo Oil Company.

Q. What were the properties and assets sold to Canadian River Gas Company? What did they consist of generally?

A. Everything that Amarillo Oil Company had with the exception of a pipe line and its gas contracts.

Q. Well, you want to include oil rights?

A. And oil rights.

Q. It might be a little more accurate to say, would it not, that Amarillo Oil Company sold to Canadian River Gas Company all of its gas rights and gas wells and other gas properties and retained everything else?

A. All right.

Q. Including its contracts for the sale of gas to its customers and its gas pipe line and its oil rights and oil wells, and so forth?

A. That is as I understand it.

Q. All right, now, I will try to move along down this

schedule here, but there are some items concerning which I need information.

Column 5, the first item under "Applicable to Amarillo Oil Company" is oil sales. That is under the heading "Operating Revenues." You take that out because—

A. Because the oil operations—

Q. It is income not derived—

A. Gas—

Q. —from properties sold to Canadian River Gas Company?

A. That is correct.

Q. The next item under "Operatng Revenues" is gas sales with the royalties deducted, and there you say that the full amount is applicable to Canadian River Gas Company, the amount being $478,232.11.

A. With the exception—

Q. Of the adjustment which follows?

A. That is correct.

Q. Now, is the amount $478,232.11 a gross revenue derived by Amarillo Oil Company from gas sales during this period?

A. That is correct.

Q. Those sales are made pursuant to certain contracts which Amarillo Oil Company had at that time?

A. That is right.

Q. Are you familiar with those contracts, Mr. Luttring, generally?

A. No, I am not.

Q. Have you ever seen the contracts?

A. No, I have not.

Q. Do you know the price at which the gas sold?

A. Yes.

Q. Yes.

A. Yes, I do.

Q. You know that?

A. Yes.

Q. I mean at this time.

A. Yes, I can state it.

Q. Well, state it as you understand it, then we'll see how close you come.

A. Well, the gas sold to Panhandle Pipe Line Company at 8 cents a thousand cubic feet.

Q. Where?

A. By that you mean the delivery point?

Q. Yes, the delivery point.

A. Well, it is some time after it leaves the gasoline plant. I don't just exactly know the point.

Q. The gasoline plant is located where?

A. About two miles outside of town, outside the town of Amarillo, Texas.

Q. It went through the pipe line of what company?

A. Panhandle Pipe Line Company.

Q. Well, the delivery point would hardly be at a point near the city of Amarillo, would it, after it had passed through the pipe line of the purchaser?

A. Well, hardly. I know the Panhandle Pipe Line Company and Amarillo Oil Company both have pipe line. Now, I don't know—it is somewheres near the city—

Q. Well, isn't it correct that during this period the sales made by Amarillo Oil Company to Panhandle Pipe Line Company pursuant to the contract between the parties were made at the well?

A. I think so.

Q. In other words, Panhandle Pipe Line—

A. Well, the important factor is that Amarillo Oil Company did receive eight cents per thousand cubic feet.

Q. I think that is right, but I still want to know where they received it, and I don't want to put words in your mouth, but I think the facts as you know them were that—

A. It would take me some time to look that up.

Q. Well, let's let that go.

Now, Amarillo Oil Company also sold gas to the smelter near the city of Amarillo, is that not correct?

A. That is right.

Q. And where were the deliveries made under that contract?

A. I think they were made right close to the smelter. I believe that gas comes from the Cliffside Structure to that helium plant.

Q. No—was that true at the time or during the period that you have covered by these statements on Pages 49 and 50?

A. I think so.

Q. You mean that during this period covered by your statements on 49 and 50 that helium residue gas or otherwise was being sold by Amarillo Oil Company to the smelter; if so, you will have some adjustment to make here that you haven't made?

A. Just a minute. I'll get the history out.

Q. Maybe it would simplify it if you had in your papers somewhere the first date on which the gas sales were made to the smelter by Amarillo Oil Company from the Cliffside Structure.

A. Well, I think I was wrong about that gas going to the helium plant, because that wasn't in operation in this period.

Q. The helium plant wasn't?

A. That is my understanding, yes. It may have been in operation, but Amarillo Oil Company was not receiving any gas.

Q. A day or so ago you testified, Mr. Luttring, that the production of natural gas from the Bivins A well and Bush A-1 well on the Cliffside Structure commenced December, 1926, is that correct as you recall it?

A. Yes. Will you give me the names of those wells again?

Q. The Bivins A-1 and the Bush A-1.

A. Now, the gas in these wells was sold to a party by the name of J. H. Charles and Gibson Oil Corporation—were the operations removed from the town of Amarillo.

Q. That would not be the smelter. Can you follow on down there and see when gas from those wells was sold to the smelter?

A. Do you want the beginning date?

Q. Yes, from the Cliffside Structure.

A. Well, I don't—

Q. I thought maybe you had a continuous record there with reference to sales.

A. I only go to May 31st, 1928.

Q. Well, there were no sales from the Cliffside wells to the smelter as shown by your records up to May 1928?

A. I don't see any here.

Q. All right, then, would you answer me again as to what other customer Amarillo Oil Company sold gas during this period?

A. The principal customers were the U. S. Zinc Company and Panhandle Pipe Line Company.

Q. And that is—

A. That is miscellaneous sales.

Q. Along the pipe line—miscellaneous sales on the pipe line?

A. Yes. They are inconsequential compared to the two customers.

Q. The sales made to the smelter were made where, or deliveries made to the smelter were made where? I believe you have already testified to that—near the City of Amarillo.

A. Yes.

Q. The gas was transported through the pipe line of Amarillo Oil Company?

A. Yes, sir.

Q. The United States Zinc Company operated the zinc smelter near the city of Amarillo?

A. That is correct.

Q. Do you consider that to be an industrial sale?

A. I would.

Q. Now, what was the price that Amarillo Oil Company received for the gas sold to the smelter under its contract with the smelter at that time?

A. I can't give you the exact price. I have the Mcf. that was sold and the dollars received for it.

Q. You can't give me the price per Mcf.

A. No, sir.

Q. Do you know what the basis of measurement was under the contract?

A Delivered at wells under 15.5-pound absolute pressure, and there was a correction in the pressure base of 4.3 per cent.

Q. You are giving me the pressure base at the wells. The deliveries were made near the smelter, were they not?

A. Well, this information all comes from the invoices, that I am reading, and there is a further correction for Btu. correction. That is the only other one I see.

Q. Your records don't indicate the measurement base for deliveries at the meter located near the smelter?

A. Only so far as I have stated.

Q. Do you know whether or not these two contracts which you have mentioned, to-wit: the contract with Pan-

handle Pipe Line Company and the contract with the smelter are still in existence with certain amendments thereto?

A. Well, I know the plants are there, but I don't know if the contracts are in effect. I know they are getting gas.

Q. You know the smelter is still receiving gas and the—

A. Yes.

Q. —and the Panhandle Pipe Line Company is still purchasing gas from the Amarillo Oil Company?

A. Yes, sir.

Q. Would you consider the two contracts to be assets of Amarillo Oil Company?

A. Well, I consider them belonging to Amarillo Oil Company.

Q. Would you consider them property rights belonging to Amarillo Oil Company?

A. Yes, sir.

Q. Well, I believe you have heretofore testified that the contracts mentioned, the property rights therein, were not included in the sale of properties and assets to Canadian River Gas Company?

A. Yes—will you read that?

(The question referred to was read by the reporter, as set forth above.)

The Witness: That is correct.

By Mr. Spencer:

Q. Now, Amarillo Oil Company would never have realized the sum of $478,232.11 from the sale of gas during this period except by the use of the contracts, is that correct?

A. That is correct.

Q. Had Amarillo Oil Company not had those contracts, neither you nor I could say what their revenue would have been from the sale of gas, is that correct?

A. That is correct.

Q. So to the extent of the contracts, at least, you have utilized property or property rights of Amarillo Oil Company which were not sold to Canadian River Gas Company in arriving at your figure of adjusted net income on Page 50 of $214,552.27?

A. That is correct.

Q. Now, tell me about this adjustment in Column 7 in

the amount of $53,825.22 which you have charged against gas sales for this period, as I take it.

A. Well, in Journal Entry No. 4 on Page 52—

Q. Yes.

A. —our entry there is for the purpose of allowing Amarillo Oil Company a return on their investment in the pipe line during the so-called development period.

Q. I assume your theory is that since the pipe line was not among the properties and assets sold to Canadian River Gas Company, some allowance should be made for the utilization of that particular property before arriving at a profit that was applicable to Canadian River Gas Company?

A. That is correct.

Q. So you took the well—first, you allowed the pipe line expense as it appeared on the books?

A. Yes, and then I added six per cent interest—

Q. Well, next you allow the depreciation as shown on by the books?

A. Yes, that is correct.

Q. Did you make these computations or splits on depreciation interest for the eight months for 1927 and five months of 1928?

A. Yes, sir.

Q. I presume you divided the total figure by the number of months involved?

A. That is correct.

Q. That is all the expense that is applicable to the pipe line that appears on the books?

A. Of Amarillo Oil Company?

Q. Of Amarillo Oil Company.

A. As I classified it.

Q. As you classified the expense?

A. Yes.

Q. Did the Amarillo Oil Company show pipe line earnings on its books?

A. No, it did not.

Q. Do you know how much the pipe line earned during that period?

A. No, I do not.

Q. Do you know that the expense of Amarillo Oil Company during this period applicable to the pipe line were

not in excess of or less than the amount that you have shown on Entry No. 4 on Page 52?

A. No, sir, I do not. I merely did it according to the best judgment that I could.

Q. Those are judgment figures?

A. That is correct.

Q. I assume we couldn't find any particular provision in the Code that would specify just how this was to be done?

A. No, you wouldn't.

Q. Could you find any?

A. No, you wouldn't. I was asked to get certain figures, and this is what I arrived at.

Q. You did the best you could?

A. Yes, sir.

Q. All right, now, the last item to make up a total of $53,825.22, involved in Entry 4 on Page 52 is six per cent on average investment of $383,728 which amounts to $23,023.68. Now, first tell me about the $383,728.

A. That represents the investment which Amarillo Oil Company had in its pipe line.

Q. As shown by its books?

A. Which pipe line was not transferred to Canadian River Gas Company.

Q. As shown by its books?

A. As shown by its books.

Q. And you have taken the average investment of Amarillo Oil Company in pipe line facilities for this period?

A. That is correct. There was very little change in the investment account.

Q. No substantial change?

A. No, sir.

Q. Now, do you know that that figure represents the original cost of the pipe line?

A. It is very close to it.

Q. Did you check that?

A. I was confronted with it in my examination of the records of Amarillo Oil Company. It appeared in the investment account at one time. I think now it is in a separate investment account.

Q. Would you say that you went far enough with your investigation in your audit to determine that it is approximately the original cost of this pipe line to Amarillo Oil Company?

A. I think I could safely say that it is very close to it.

Q. Did it represent the fair value of the pipe line during this period that you have estimated here?

A. Well, I don't like the use of the words "fair value."

Q. Well, we'll use some other words, then, and we'll come back to it.

Does it represent the fair market value of the pipe line in your opinion during the time covered by your schedules on Pages 49 and 50?

A. I don't know what market values were at that time.

Q. The answer is you don't know, isn't it, Mr. Luttring, to that question?

A. It does represent very close to the original cost.

Q. All right, you do not know that the original cost and the market value which Amarillo Oil Company might have received on the sale of the pipe line properties were identical at that time?

A. No, sir, I do not.

Q. You don't know what the market value of the property of the pipe line property was, then?

A. I do not know what the market value was.

Q. One other question: Do you know what the reproduction cost of the pipe line property would have been at that time?

A. No, sir, I do not.

Q. All you have, then, is a cost figure appearing on the books of the company which you believe rather closely identifies the original cost of the pipe line?

A. That is correct.

Mr. Spencer: Perhaps we might take a recess.

The Trial Examiner: We will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Spencer:

Q. Now, referring again, Mr. Luttring, to your Entry 4 on Page 52 of Exhibit 146, you have considered that Amarillo Oil Company was entitled to an allowance for interest or rate of return or at least some compensation on its pipe

line investment in order to arrive at a profit figure which you considered applicable to Canadian River Gas Company in this transaction?

A. That is correct. Now, in addition to the income which I allowed on that investment in Journal Entry No. 4, Amarillo Oil Company also received $79,000 plus of interest from Canadian River Gas Company during that same period.

Q. That is interest on the money that Amarillo Oil Company employed in drilling wells and doing construction work for Canadian River Gas Company during that period?

A. Well, it is not entirely clear whether it is all applicable to that, whether some of it is due to not receiving this payment of five million dollars on the exact date of the contract.

Q. A portion of it might have been paid for delay in paying the purchase price; that is, delay subsequent to May 1, 1927?

A. That is correct.

Q. Well, in any event, any interest received by Amarillo Oil Company had no relation to the pipe line item we are talking about here?

A. No, sir.

Q. All right, now, after you had determined that some allowances would be made in the form of interest or rate of return for pipe line investment, you concluded that six per cent per annum was the appropriate figure, is that correct?

A. No, I made it low instead of too high, I suppose.

Q. In any event, you arrived at six per cent per annum as the figure to be used?

A. That is correct.

Q. Now, tell me why and how you arrived at that particular per cent.

A. I didn't arrive at it, I just took it.

Q. Well, you didn't take it out of the air or out of the bag of figures. You had some reason for it, I am sure.

A. None other than I felt that that would be a fair rate of return.

Q. And why did you so feel?

A. Based on my knowledge of interest rates and their relation to investments.

Q. You are trying to arrive here, not at an interest rate, but a fair rate of return on the pipe line property which is not involved in this transaction, is that not correct?

A. No, I was merely arriving at a figure which would give you a fair income on that piece of property.

Q. That income would represent return on that property, would it not?

A. Represent which?

Q. Return.

A. Yes.

Q. And you wanted the return to be fair, did you not?

A. Yes, sir.

Q. So when we put the two together, we find you were looking for fair rate of return, were you not?

A. Well, the implication is there. However, in order to determine it, I did use a method that is used in determining fair rate of return. Again it is merely a judgment on my part.

Q. Well, then, let's turn it around. I believe you heretofore testified that you have never sat as a commissioner or other official in a rate proceeding?

A. That is correct.

Q. And you do not consider yourself to be a rate expert?

Mr. Lange: Well, now, I think—I would like to know what counsel means by a rate expert.

Mr. Spencer: I mean a man who by experience, knowledge and qualification is eligible to determine what is a fair rate of return for a specific piece of property in a given situation. Is that express enough?

Mr. Lange: Well, if that is what counsel has in mind.

By Mr. Spencer:

Q. Do you consider yourself to be such a person as I have described?

A. No, sir.

Q. Then as a matter of fact you do not know whether or not six per cent represented a fair rate of return to Amarillo Oil Company on its pipe line property from the standpoint of a rate proceeding at that time?

A. I have never taken that stand on this particular point.

Q. Well, the answer is no. You don't know whether it is that kind of an allowance?

A. I don't know.

Q. But you thought it over and considered that some

allowance should be made and finally selected six per cent as the amount?

A. That is correct.

Q. Now, the pipe line was one of the remaining assets of Amarillo Oil Company after it transferred its gas leaseholds and wells and rights and other properties to Canadian River Gas Company?

A. That was the principal asset.

Q. Canadian River Gas Company also had other remaining assets including its gas sales contracts—I mean Amarillo Oil Company?

A. That is correct.

Q. Did you attempt to place any value on its other assets of Amarillo Oil Company?

A. No, sir.

Q. And there is no allowance as interest or rate of return or otherwise for the other properties that were employed by Amarillo Oil Company in carrying on its business and affairs during the period covered by your schedules?

Mr. Lange: What properties, Mr. Spencer?

Mr. Spencer: Read the question, please.

Mr. Lange: You said other properties.

(The question referred to was read by the reporter, as set forth above.)

By Mr. Spencer:

Q. I mean properties and assets including its contracts remaining in the hands of Amarillo Oil Company after it had transferred its gas properties to the Canadian River Gas Company.

A. No, sir, they were not.

Q. Do you consider it appropriate to inquire into and determine the fair value of the properties that I have just described?

A. At no time have I considered fair value. I have been interested only in original cost throughout all of my studies.

Q. You could have done so under the Code, could you not?

A. No, sir.

Q. Now, returning to Page 49, this item of $53,825.22 which is covered by Entry No. 4 on Page 52 is applied as a

deduction to gas sales in so far as they are applicable to Canadian River Gas Company?

A. That is correct.

Q. Now, doesn't that leave this entry $53,825.22 as an open-end entry?

A. It is open in so far as it has not been added to the column headed "Applicable to Amarillo Oil Company."

Q. In other words, it is an open entry because you haven't applied it back into the income of Amarillo Oil Company at any point?

A. Well, I have it in my working papers, but it has not been done so here. Now, if you wish for your own purpose, you can merely add the figure to the column headed "Applicable to Amarillo Oil Company."

Q. Don't you think it would make this statement more complete and perhaps a little better accounting to tie it back in?

A. Well, after all, the primary purpose of the statement is to find out the portions that are applicable to Canadian River Gas Company.

Q. In other words, as you have computed it, Amarillo Oil Company ended up with a deficit of $63,087.41 which is shown opposite the net income figure at the bottom of the schedule on Page 50, whereas if this had been a credit it would have—

A. Reduced that deficit by the amount of $53,825.22.

Q. All right, now, let's go over to the next item, gasoline sales, $14,936.60. You have concluded that that is applicable to Canadian River Gas Company, is that correct?

A. That is correct.

Q. Because it was derived from properties and assets which were sold by Amarillo Oil Company to Canadian River Gas Company, is that correct?

A. Because it is related to the gasoline that is included in your—because it is related to the gas sales which are included in this schedule.

Q. Well, it must be derived from the operation of the properties that were sold to Canadian River Gas Company in order to comply with the methods you had in mind here in computing the property applicable to Canadian River Gas Company, is that not so?

A. That is so.

Q. Now, is it not a fact that the revenues received by

Amarillo Oil Company for gasoline sales had nothing whatsoever to do with the properties and assets sold to Canadian River Gas Company and that Amarillo Oil Company is today and has ever since July 1, 1928 received and retained these same gasoline sales proceeds?

A. That is correct.

Q. Well, then, under what theory, please tell me, could you have concluded that for this particular time it was attached to some right or some property which was conveyed to Canadian River Gas Company.

A. All I know is that the gasoline sales there are related to the gas revenues.

Q. Well, now, tell me, how do these gasoline sales revenues arise?

A. They arise through extracting the gasoline from gas.

Q. Where?

A. In this instance, about two miles outside the city of Amarillo, Texas.

Q. By whom?

A. The Cannon Gasoline Company.

Q. Pursuant to a contract between the parties?

A. I think so.

Q. Which has been in existence for a long time and is still in existence?

A. Yes, sir.

Q. Well, isn't it a fact that this gasoline extraction operation is something that is entirely divorced from field operations or any properties or assets of the Amarillo Oil Company in the Panhandle field?

A. In this instance I think that is true.

Q. Isn't that an operation that is performed after the sale of the gas in the field?

A. I am not sure on that point.

Q. All right, now, on Page 49, Mr. Luttring, down about the middle of the schedule you have an item there which is described as "Depletion—Gas Department." You show a total amount of depletion as reflected on the books of the company during this period of $52,213.20, all of which you consider is applicable to Canadian River Gas Company in Column 6, and then you have an adjustment against that amount in Column 8 of $34,468.62. Will you please explain what you did there and why you did it?

A. If you will look in Column No. 2—

Q. What page, please?

A. Page 49—you will note depletion in the amount of $21,167.30. This amount of depletion was on the books of Amarillo Oil Company during the period January 1 to May 31, 1928, but subsequent to that date it was reversed. The same amount was taken up on the books of Canadian River Gas Company for that period. Therefore, it did not belong in this statement.

Q. Oh, you mean the $21,167.30?

A. Yes, sir.

Q. Does that belong in this statement?

A. It does not belong there because Canadian River Gas Company for the year 1928 took up a full year's depletion.

Q. The amount of your adjustment is $34,468.32?

A. The rest of the explanation is on Page 51 of the journal entry.

Q. Page 51?

A. Yes, sir.

Q. All right, will you explain that, please? This Entry No. 1 on Page 51 also includes the $21,167.30 which you referred to?

A. That is correct.

Q. Now, explain the whole entry.

A. In addition to $21,167.30, the development expense for the year 1927 was prorated for the period from May to December because only the period from May 1st, 1927 to December 31, 1927 is included in this statement. The amount of depletion expense determined on this proration is $17,744.58.

Q. Are you finished?

A. No, just a minute. That figure was based on adjusted figures which the company made subsequent to December 31, 1927.

Q. What company?

A. The Canadian River Gas Company, and it was worked back into Amarillo Oil Company in a subsequent transaction. The amount the company recorded on the books for that same period was $31,045.90, resulting in a difference of $13,301.32. The excess there, plus the amount of $21,167.30, gives you the result of this transaction. I gave Mr. Cartwright some figures last night which will agree with those figures.

Q. Well, we aren't able exactly to follow your entries,

but I don't know that it is necessary to go into any great detail. I want to ask you about this, however: You have prorated the depletion amounts shown on the books of the company in order to arrive at a depletion figure for the purposes of your study on Pages 49 and 50?

A. That is right, which is consistent with the records.

Q. You have divided the total depletion by the number of months involved?

A. That is correct.

Q. To determine the monthly rate of depletion. Now, the only question I want to ask you about that is, do you consider it a good accounting practice for the purpose of determining depletion to divide by the months in order to arrive at the correct amount of depletion for the period that you want?

A. Ordinarily, I wouldn't do it. I would base it on production, but this being a period that occurred some thirteen years ago, it would have occasioned a great deal of work to get that information.

Q. It would be much preferable from the standpoint of accounting practice to base depletion upon actual production rather than to try to get arithmetical averages?

A. That is correct.

Q. Neither you nor I could say that the figures that you have arrived at here representing depletion would conform to the actual depletion of these properties during this period; that is to say, the actual amount of production?

A. Only if the production had been equal in each month.

Q. Which we know is not true?

A. That is correct.

Q. Now, drop down to the next item on Page 49 which is described as "Depreciation—Gas Department." You show a total depreciation charge of $52,824.63 for this period, all of which you consider as being applicable to Canadian River Gas Company in Column 6, and then you follow under Column 8 with an adjustment of $33,730.25, arriving at an adjusted figure in Column 9 of $19,094.38. Will you describe that briefly?

A. The explanation I gave for depletion is exactly the same for depreciation.

Q. This has reference also to your Entry No. 2 on Page 51?

A. That is correct.

Q. And there you have the details as to the adjustments which you made in Column 8 which I just referred to?

A. That is correct.

Q. And again you had to do some computing and some averaging in order to arrive at the figures you needed for this particular period?

A. That is correct.

Q. There again we aren't able to follow your figures, but I don't think that it requires any particular examination.

I notice in Entry No. 2 on Page 51 you have there this statement: "The year 1927 depreciation based on basis accepted by Revenue Agent," $28,641.58. In that instance, did you vary from what the books of the company showed?

A. No, sir. It is a rather involved study in your depreciation account, but it actually represents the figures that are on Canadian River Gas Company's books and it has been worked back into Amarillo Oil Company. Now, there are entries between the companies recording that whole transaction.

Q. Well, that is what is confusing me, Mr. Luttring. In order to arrive at a profit for Amarillo Oil Company which it made in operating the properties, it seems that we go from Amarillo Oil Company—

A. That's a different situation—

Q. Let me finish, please.

A. Okay.

Q. —from Amarillo Oil Company books, and then we go over to Canadian River Gas Company's books and we bring back from here and we take up from there, and finally we arrive at a figure which is applicable to Amarillo Oil Company's operations during an interim period. That is not a figure that appears anywhere on the books of Amarillo Oil Company?

A. Yes it is.

Q. This one—$28,641.58?

A. Yes, sir. You probably won't find it as such. It is an adjusting entry of the depreciation.

Q. Well, I won't find it as such—again, in order to arrive at that figure, you have had to do some computing?

A. To the extent of the proration which I show in that explanation.

Q. All right, now, going down on your schedule to Page

49, we come to the item "Taxes" under the heading "Operating Revenue Deductions" which you say is other than income taxes. Are those ad valorem and other property taxes paid by Amarillo Oil Company during this period?

A. Yes, they are.

Q. I assume you had to do some prorating there in order to arrive at a tax for this particular period?

A. No. The tax bill, according to the explanation of the journal entry for the year 1929, which was the following year, was in the amount of $3,287.51; so I picked a figure that is close to it—

Q. You used a figure which seemed reasonable in the light of a previous figure?

A. Well, a subsequent figure.

Q. A subsequent figure?

A. Yes, after the bulk of the property had been transferred.

Q. All right. Do you think that reasonably reflects the ad valorem and other taxes for this period?

A. That is correct.

Q. Now, did Amarillo Oil Company pay an income tax during this period?

A. I didn't find any so recorded.

Q. Did Amarillo Oil Company make profits during this period?

A. Well, I think this clearly indicates it, doesn't it?

Q. I am not sure whether Amarillo Oil Company as such made any or not. I see you indicate profits, but that's not convincing to me that the profits were in this amount.

I will ask you again—

A. The figures start off with per books.

Q. Well, did Amarillo Oil Company have profits during this period?

A. Yes.

Q. And they would be subject to income tax, would they not?

A. That is correct.

Q. You have included no item in here for income taxes that would have to have been paid or were paid by Amarillo Oil Company on such profits.

A. There are none so shown in this report. I might say at that time Amarillo Oil Company, I believe, was reporting on a consolidated basis.

Q. Oh, would you not think that some allowance should be made for income taxes in this study of yours?

A. Well, if they paid the tax, where is it?

Q. I am asking you.

A. I didn't find any on the records.

Q. You found no income tax that they had paid?

A. No, sir.

Q. As a matter of fact, Amarillo Oil Company made no return, did it, per se?

A. I think they had to make some kind of a return in both—

Q. I am not trying to confuse you. The return was made by Southwestern Development Company, the parent, for itself and all of its subsidiaries, did it not?

A. You mean, the tax return was in Southwestern Development Company's office?

Q. Yes.

A. That is correct.

Q. And made by the parent company for itself and its subsidiaries on a consolidated basis as required at that time?

A. That is correct.

Q. Do you know what tax Southwestern Development Company paid during this period, applicable to the profits accruing to Amarillo Oil Company as you have shown them here?

A. No, sir, we tried to get those statements here but they were not volunteered.

Q. You don't know that?

A. No, sir.

Q. Now you come down to a net—your total income on Page 49, and then you have a heading there entitled "Other Income" which I assume is to be distinguished from what you consider to be utility income, is that correct?

A. Yes.

Q. And all of the items listed under the heading "Other Income" you consider as being applicable to Amarillo Oil Company only except an item there entitled "Discount on Purchases"?

A. That is correct.

Q. Which you show as being applicable to Canadian River Gas Company, and the amount of it is in Column 6—$5,304.50, I think I know what those discounts were, but will you tell me why they are included at this point?

A. The discounts I considered represented amounts received on purchases which were made for the account of Canadian River Gas Company.

Q. By—

A. By Amarillo Oil Company.

Q. Do you mean to say that the Amarillo Oil Company received discounts on purchases for the account of Canadian River Gas Company which were not passed along to Canadian River Gas Company?

A. That is the idea I want to convey.

Q. In other words, Amarillo Oil Company in this instance is holding out on Canadian River Gas Company?

A. To that extent, yes.

Q. Are you sure of that?

A. I am quite sure.

Q. And do you consider that to be a very bad practice?

A. I didn't mention anything about practice on it. I merely threw it over there under that column. I didn't do it from any practice standpoint.

Q. Are you sure that the discounts involved only related to purchases that were made for the account of Canadian River Gas Company and not for some other company?

A. I didn't examine every invoice, but we do know that the majority of purchases made during that period was for the account of Canadian River Gas Company.

Q. Then your entry is based upon the conclusion that most of the purchases made by Amarillo Oil Company at that time were for the account of Canadian River Gas Company; therefore, all of the discounts on purchases which Amarillo Oil Company took into its account should be credited to Canadian River Gas Company, is that correct?

A. That is correct.

Q. All right, and finally on Page 50 we come to a new net income and the end of the story. We have adjusted profit here which you consider to be applicable to Canadian River Gas Company in the amount of $214,552.27. Is that right?

A. According to my determination, yes, sir.

Q. Now, where in this whole schedule on Page 49 and Page 50 is the sum of $81,250 which Amarillo Oil Company paid to Canadian River Gas Company as a part of the cost of the gas taken during this period?

A. In the very beginning of our discussion I explained

to you that the gas purchases under the contract January 3rd, 1928 had not been reflected in here.

Q. Well, it is a fact that Amarillo Oil Company did pay Canadian River Gas Company the sum of $81,250 as a part of its cost of gas during this period, is that not correct?

A. That is correct.

Q. Well, why wouldn't it be proper to reflect that payment in this schedule some place?

A. Because if I took a position on that I would have to take a position on some other figure.

Q. Well, wouldn't you consider that a proper deduction and expense item, the cost of gas? I don't care how many other items might be affected; I think here we are primarily concerned in showing the true profit that was made by Amarillo Oil Company in this transaction, and I don't see how you are going to do it.

A. The effect of it is the same—

Q. Without including the balance of their cost of gas, and by "their," I mean Amarillo Oil Company? Now, the effect of it may be the same, but it seems to me it should be in here.

A. In your Journal Entry 48 you are given credit for it because your profit is reduced by that amount.

Q. All right. But the full cost of gas to Amarillo Oil Company is still not reflected in your schedules on Pages 49 and 50 in the amount of $81,250 paid to Canadian River Gas Company by Amarillo Oil Company, is that not correct?

A. That is correct.

Q. Turn to Page 143 of your Exhibit 146, Sub-schedule No. 13-B3, entitled "Canadian River Gas Company Interest During Construction." Down towards the bottom of that schedule—

A. Just a minute. Do you want to cross examine me on this?

Q. I would like to.

A. Well, I'm not supposed to know anything about this.

Q. Well, let's go along and see how far we can get.

A. As a matter of fact, I haven't seen this schedule until you just started talking about it here.

The Trial Examiner: This is one of Mr. Teel's schedules?

The Witness: Yes, sir.

Mr. Spencer: Well, let's see. You and I are both ac-

countants, and we'll look down at the bottom of that schedule under the Examiner's Adjustment No. 248, and that is the one we have been discussing, "Operating Revenue from Properties Acquired from the Amarillo Oil Company as of May 1, 1927." Doesn't the full amount of $214,552.27 which we have been discussing come out of interest during construction?

The Witness: Yes, sir.

By Mr. Spencer:

Q. And it contributes very substantially to reducing us to interest during construction after adjustment to the magnificant sum of $1,030.33, is that not correct?

A. It is absolutely right.

Q. You mean the computation is correct?

A. Well, whichever way you would like it.

Q. All right, now go back to Entry No. 2, Page 48. Did you make this entry?

A. I supplied the figure of $214,552.27.

Q. Now, you made the statement a minute ago that although you had not put in our full cost of gas, and by "our" I mean Amarillo Oil Company, the schedules on Pages 49 and 50, we have still got credit for the cost of the gas some place else in the amount of $81,250.

I want to see where we get credit for it, if you can show me, in our interest account which we are talking about.

A. I thought you did, but I think I will have to retract my statement.

On cross-examination MR. TEEL further testified: (Vol. XLII, pp. 5745-5799.)

Q. Mr. Teel, as I understand it, you have heretofore testified that in making your Adjustment Entry No. 248 on Page 48 of Exhibit 146, you have based your action upon the work Mr. Luttring has done which appears in the scheduled statements on Pages 49 and 50 of the exhibit?

A. That is correct.

Q. And certain supporting journal entries which were also prepared by Mr. Luttring on Pages 51 and 52?

A. That is correct.

Q. Now turn to Entry No. 249 on Page 53 which is like-

wise an adjustment entry affecting the interest during construction account of Canadian River Gas Company.

A. That is correct.

Q. And this is the final entry that you make?

A. That is correct.

Q. And this account brings it down to approximately $1,000 for that account in a supporting schedule which appears later in the exhibit?

A. That is correct.

Q. Now, in connection with other entries, Mr. Luttring has found what he terms an appreciation in the cost of leaseholds of Canadian River Gas Company, appearing on its books; that is to say, the excess of the cost to Canadian River over and above the original cost of the same leases to Amarillo Oil Company as he finds it to be.

A. That is correct.

Q. Now, the total of the appreciated value—cost of these leases as found by Mr. Luttring, I take it, is the figure shown on Page 53, $3,496,535.24?

A. That is the amount used, yes, sir.

Q. And for the purposes of your Entry No. 249 you have taken out any interest during construction on this amount which I have just read?

A. That is correct. The purpose of this entry is to collect in one place the total appreciation as reflected by Mr. Luttring's Entries 203, 205, 211, 216 and 217, and to then compute the interest on those amounts and to eliminate it from the interest during construction previously set up in Entry No. 247.

Q. You made no investigation into the original cost of these leases to Amarillo Oil Company?

A. I have not.

Q. You have made no separate investigation to determine what appreciation should or should not be set up with respect to the leases acquired by Canadian River Gas Company from Amarillo Oil Company?

A. I have not.

Q. And for the purposes of this entry, you merely have accepted the work and conclusions of Mr. Luttring on this subject?

A. That is correct.

Q. And if Mr. Luttring is wrong in whole or in part in his treatment of this amount which he calls appreciation,

then you would likewise be wrong to that extent in your treatment of interest on such so-called appreciation?

A. That is correct. The interest would be adjusted by the amount applicable.

Q. From the disposition that was made by Mr. Luttring's work on this subject, it would naturally follow that the same results would be applied to what you have done here?

A. That is correct.

Q. And again, you don't question that the interest is paid?

A. The interest was paid.

Q. I think that is all for that item for the present.

Now turn to Page 59 of your Exhibit 146, and you have certain items in the total sum of $186,957.96 which you suspend for consideration of the Commission, is that right?

A. That is correct.

Q. And the details of that total amount are shown in Schedule No. 1 on Page 60?

A. Those amounts are distributed to the plant accounts in Schedule No. 1, starting on Page 62 of this exhibit and extending through Page 64. That is the total of those two amounts.

The detail of the $172,778.33 is presented in the schedule presented on Pages 60 and 61 of this exhibit. The purchase commissions in the amount of $14,179.63 are presented on Sub-schedule No. 16-A, Page 166, of this exhibit.

Q. Yes. I see. Now, the total amount suspended is divided into two general items, the first being Ford, Bacon & Davis, Inc. fees and related charges in the amount of $172,778.33.

A. That is correct.

Q. You don't question that engineering services are necessary in the construction of a project of this character?

A. No. That is not questioned.

Q. You do not question that engineering services were performed by Ford, Bacon & Davis in connection with the construction of this project?

A. No.

Q. I mean by that, services for Canadian River Gas Company.

A. That is correct.

Q. You do not dispute the fact that such services were of value?

A. No.

Q. You do not find that the amount paid for such services and related charges in the amount of $172,778.33 was unreasonable?

A. I make no findings as to whether that is reasonable or unreasonable.

Q. You do not dispute the fact that that sum was paid Ford, Bacon & Davis for such services?

A. No.

Q. By Canadian River Gas Company.

A. No, that is not disputed.

Q. And then you suspend it for the consideration of the Commission for what reason?

A. The reason for which the Ford, Bacon & Davis, Inc. charges have been suspended have been presented in detail on Exhibit No. 139—in Exhibit 139, beginning on Page 48-A.

Q. Excuse me, I didn't get that.

A. Exhibit 139.

Q. Yes, Pages what?

A. And begins on Page 48-A, extending through 48-B and 48-C.

Q. All right, we'll come back to that a little later.

Now, the second item making up the total sum suspended of $186,957.96 described as purchase commissions paid to Standard Oil Company of New Jersey in the amount of $14,179.63—is that correct?

A. That is correct.

Q. Does this amount represent the charges or commissions paid to Standard Oil Company of New Jersey by Canadian River Gas Company in connection with the purchases of pipe and materials and supplies which went into this project during the period of construction?

A. I believe that they do. The records indicated, as shown on voucher information recorded on Page 166, and the explanation on the first voucher B-6 memo, dated February, 1928, reads:

"* * * * also commission (½ per cent) charged by the New York office on purchases made during 1927."

The next voucher reads: "One-half per cent commission on 1928 purchases."

The description seemed to stop at "purchase commissions," not going any further than that; that is, it did not describe the type of equipment or what had been purchased.

Q. Well, do you know or did you find out, as a matter of fact, that such purchases were made for Canadian River Gas Company through the purchasing department of Standard Oil Company of New Jersey?

A. Yes, I was told that by—

Q. Then you do not dispute the fact that services were performed by the purchasing department of the Standard Oil Company of New Jersey for Canadian River Gas Company during the construction period?

A. No, that is not disputed.

Q. And you do not find here that the charges for such services as made by Standard Oil Company of New Jersey were unreasonable?

A. I have made no recommendation as to whether the charges were reasonable or unreasonable. However, the percentage of commission charged is not very large.

Q. It is not large in the usual and ordinary sense for such services?

A. I would say that is right.

Q. Do you know that the Standard Oil Company of New Jersey is a large purchaser of pipe and other materials and equipment going into a pipe line project?

A. Yes.

Q. Do large purchasers of such property enjoy, let us say, the most favorable discounts in the purchase of such property?

A. Well, I think that is the practice of the industry.

Q. Would you say, then, that the services performed by Standard Oil Company of New Jersey to Canadian River Gas Company in this connection were of substantial value to the company?

A. I don't believe I am in a position to state whether they were of substantial value since the facts to the extent of such price reduction which might have obtained is unknown to me and I am not familiar with just what advantages did accrue to Canadian River Gas Company through Standard Oil Company of New Jersey doing this purchasing.

Q. From your experience and knowledge as an accountant, would you say that Canadian River Gas Company for its own account, on its own responsibility, could have acquired

this type of materials and equipment necessary for this pipe line upon as favorable terms as Standard Oil Company of New Jersey?

A. I don't think they could have.

Q. One other question: If you had been shown or it should subsequently develop that the purchasing department of Standard Oil Company of New Jersey made no profit whatsoever in connection with its charges of $14,179.63 involved in these purchases, would you then have questioned the item at all?

A. If that commission represented a actual cost of making that purchase, then it is properly applicable to the original cost of the property.

Q. And that would be likewise true if the charge was less than cost, of course?

A. It would be the company's cost, that is correct.

Q. Now, both of these suspensions—oh, first let me ask you, what do you understand is the effect of suspending items of this character for the consideration of the Commission?

A. These items are set out in order to call the attention of the Commission to them, and all the facts which of our knowledge are related in reference to these items. The determination as to whether this figure shall be included in the company's investment is entirely a matter for the Commission.

Q. Why do you think that we should put a red flag on these two items for the purpose of calling attention to the Commission?

A. I should like to read in connection with that the reason outlined by Mr. Schutte in his Exhibit No. 139 which is equally applicable to this suspension as regards this reference, particularly with regard to the purchase commissions. These are the reasons for which the amount was suspended.

Q. Now, before you start reading, is what you are about to read applicable to both transactions?

A. No, this refers to purchase commissions.

Q. Well, take that one up first.

A. Yes.

Q. Now, what page are you reading from?

A. This is Page 46 of Exhibit 139.

The Trial Examiner: Do you adopt those as your reasons, Mr. Teel?

The Witness: Yes, sir. These are facts which we have uncovered in our examination and the facts which we are setting out and form our reasons for making these suspensions.

Beginning with the paragraph numbered 1 on Page 46 of Exhibit 139 it reads:

"(1) The invoices rendered by Standard Oil Company of New Jersey for purchase commissions do not contain any data showing the actual cost of purchasing services rendered. The amount, if any, of inter-company profit resulting from the performance of such services, included in the respondent's plant accounts, is therefore unknown."

By Mr. Spencer:

Q. Well, stop right there. If that is all of the reasons for suspending the commissions paid to Standard Oil Company of New Jersey of purchases, I would like to take them up separately.

A. Well, Paragraphs 2 and 3 both refer to purchase commissions.

Q. All right, then, proceed.

A. "(2) The engineering and construction contract entered into between the respondent and Ford, Bacon & Davis, Inc. on June 1st, 1928 provided, among other things, that the fees which were to be paid the engineers were to cover purchasing services (Paragraph 2). The contract did, however, reserve to the respondent the right to make such purchases as it deemed advisable.

"(3) Several of the invoices from Standard Oil Company of New Jersey for purchase commissions included charges to both Colorado Interstate Gas Company and Canadian River Gas Company. The charge for commissions on purchases in the year 1927 was arbitrarily split 25 per cent to Canadian River Gas Company and 75 per cent to Colorado Interstate Gas Company. This is the approximate mileage ratio of the main transmission line of the two companies."

That completes the part with reference to purchase commissions.

Q. Now, this sentence appears in the first paragraph which you have read: "The amount, if any, of inter-company profit resulting from the performance of such services, included in the respondent's plant accounts, is therefore unknown."

Now, I take it that some special significance is placed upon the words "inter-company profit" in connection with the entries that you are making as to Canadian River Gas Company.

A. The primary reason for this suspension is as outlined in Paragraph 1, that the actual cost of these services has not been demonstrated by the company's books and records. That, added to the fact that the contract with Ford, Bacon & Davis, Inc. which provided that the contract was to cover purchasing services, would bring up the question as to why purchases were made by Standard Oil Company. If these purchases were made by Standard Oil Company, and that is not questioned, then the next question is, what was the actual cost of such services?

Q. And then is that the last question?

A. I think that is right.

Q. In other words, you have reached your conclusions here independent of the existence or non-existence of any so-called inter-company profit as between Standard Oil Company of New Jersey and Canadian River Gas Company, is that correct?

A. Well, that is a matter which was given some thought. If there is any profit in these purchase commissions between Standard Oil Company of New Jersey and the Canadian River Gas Company, then that profit we feel is not a proper charge to the plant accounts.

Q. And do you feel that way because you think that is an inter-company profit?

A. No, I think there is some question because it may not be inter-company. That is probably not the right word to use, but the companies were associated in this undertaking.

Q. Well, they were engaged in a common enterprise, you mean?

A. That is correct, yes.

Q. Well, I think I can cut my cross examination short if you will answer this question:

Are you for the purposes of this entry—this suspension,

rather, as to purchasing commissions paid to Standard Oil Company of New Jersey as shown on Page 59, considering that the two companies, Standard Oil Company of New Jersey and Canadian River Gas Company, were affiliated?

A. Not necessarily.

Q. Well, I'm trying to find out to what extent affiliation or association or inter-company profits, or what not, had to do with the making of this entry.

A. Well, this entry was made because the books and records of the company did show that the two companies, Standard Oil Company of New Jersey and Canadian River Gas Company, were associated in a common enterprise. That being the case, if one party does the purchasing and charges another company, which is a separate corporate entity, for services rendered by it and the records do not show the evidence as to the actual cost of those services, then we feel that there is a question which should be raised as to whether that is the actual cost of those services.

Q. You mean they were associated in a common enterprise by contracts between various parties?

A. I [illegible] the origin of the Denver project.

Q. That is the only association you were talking about?

A. In connection with this, yes, that is correct.

Q. Now, will you refer me to that part of the Code or your Uniform System of Accounts that covers your instructions on that kind of a transaction?

A. I don't believe the code makes specific instructions to cover that particular point. However, it has been a rather long-standing policy of the Federal Power Commission to eliminate such profits if there be any, or excess.

Q. Now, you mean "excess profits" or what kind of profits?

A. As might accrue from the difference between the actual cost of rendering a service and the amount billed to the company for rendering that service.

Q. Now, is that true as to all purchasing commissions between third parties?

A. Well, whether the parties are third parties, or operating at arm's length—I should say that there would be no question as to the cost of those services—

Q. Do you question that the parties here were dealing at arm's length?

A. The question is here that they were associated in a

common enterprise and one party bills another party for certain services.

Q. Well, are you basing this entry on that general provision in the Code which has something to say about all charges being reasonable and just, or something to that effect?

A. Well, the question here is entirely one of cost.

Q. Of cost?

A. If those costs are determined, if these figures are found by the Commission to be reasonable, I think there will be no further question about it.

Q. And you can't point to me any particular provision in the Code covering a transaction of this character?

A. Not right offhand, I couldn't, no, sir.

Q. You have exercised your judgment, then, in the handling of this entry as an accountant?

A. The judgment of our staff, and that is my judgment, too, as an accountant.

Q. Did somebody else reach this conclusion and did you adopt it, or did you adopt it or reach the conclusion and adopt it in the first instance?

A. Well, I might explain it this way: Mr. Schutte and I worked on these together and we both arrived at the same conclusions.

Q. Who got there first?

A. I don't know whether I could remember that or not.

Q. And you feel that the contractual relations between all parties involved were sufficient to place it in a category where the Standard Oil Company of New Jersey was not permitted to charge in excess of its cost for these services?

A. That is my opinion, yes, sir.

Q. In the second paragraph which you have read on Page 46 of Mr. Schutte's Exhibit No. 139, it refers to engineering and construction contract entered into between Canadian River Gas Company and Ford, Bacon & Davis on June 1, 1928, which provides among other things that the fees paid to the engineers were to cover purchasing services, is that right?

A. That is correct.

Q. That contract is dated thirty days prior to the date which you fix as the end of the construction period, namely, July 1, 1928?

A. That is correct. That is the date of the contract.

However, these fees were paid to Ford, Bacon & Davis back as early as November 1927. Prior to that certain preconstruction charges were paid to them.

Q. Ford, Bacon & Davis commenced the construction of the project about when, do you recall?

A. Ford, Bacon & Davis' construction began—the actual construction, I should say, began sometime in the latter part of 1927. As early as July or August I believe they had survey crews out and had already made substantial investigations in preparation for the beginning of the construction.

Q. To that extent, this contract dated June 1, 1928 operated retroactively?

A. That is correct.

Q. Do you know whether or not Ford, Bacon & Davis performed any purchasing services under that contract?

A. Well, I am sure they did perform certain purchasing services, the extent of which I am not sure about, because there must have been many purchases made in the field which were not made for pipe and couplings and that sort of thing.

Q. And do you know as a matter of fact that as to all of the purchases made by the Standard Oil Company of New Jersey for Canadian River Gas Company, whether the purchases could have been made upon more favorable terms and conditions by Ford, Bacon & Davis?

A. No, I don't know that.

Q. Would you imagine that the purchasing power and privileges of Ford, Bacon & Davis with respect to pipe and pipe line equipment and materials would be as advantageous or favorable as that of the Standard Oil Company of New Jersey?

A. Well, I am not acquainted with Ford, Bacon & Davis' purchasing power, but I shouldn't imagine it would be as big as the Standard Oil Company of New Jersey.

Q. Well, now, let us come to your reason for suspending the other item of $172,778.33 which was paid to Ford, Bacon & Davis for fees and related charges during the construction period as shown on Page 59 of your Exhibit 146.

A. Those reasons are explained on Page 48-A of Mr. Schutte's Exhibit No. 139 and begins with the paragraph numbered 1 on that page extending through Page 48-B, and ending with 48-C.

Q. I think that is sufficient reference without reading it

again. Perhaps I can cross examine from that without reading it at that point.

Mr. Lange: Very well.

By Mr. Spencer:

Q. Did you make this suspension because there was some affiliation, corporate affiliation between Ford, Bacon & Davis and Canadian River Gas Company?

A. As to whether there is a definite corporate relationship between Ford, Bacon & Davis and Canadian River Gas Company is something I don't know.

Q. Well, you didn't make it for that reason, then?

A. The reason for this suspension—

Q. Answer the question, please.

A. No, not for that reason.

Q. All right. Now, if you want to amplify your answer, go ahead.

A. The major point in this suspension is that certain relations as explained in Mr. Schutte's exhibit, have been developed as existing between the Standard Oil Company and Ford, Bacon & Davis and Colorado Interstate Gas Company. Colorado Interstate Gas Company and the Standard Oil Company of New Jersey and Canadian River Gas Company were all associates in the enterprise of the so-called Denver project. If Ford, Bacon & Davis enjoyed a relationship or if there existed a relationship between Ford, Bacon & Davis and those parties, it would accrue to the advantage of the other members of the combine or enterprise. For that reason the fee and charges recorded by Canadian River Gas Company and paid by them have been suspended to determine whether those charges represent reasonable charges; whether they represent charges of original cost, represent the actual cost of those services, to determine whether they are properly includible in the plant accounts.

Q. Well, I am trying to follow your reasoning and not prolong the cross examination. If I understand you correctly, you find that Canadian River Gas Company and Colorado Interstate Gas Company and Ford, Bacon & Davis through various contracts were engaged in a common enterprise here?

A. That is correct.

Q. That their associations through these contracts led at least to contractual affiliation?

A. That is correct.

Q. Now, as to whether or not there was any corporate affiliation as distinguished from contractual affiliation between Canadian River Gas Company and Ford, Bacon & Davis, you have already said you do not know?

A. That is correct.

Q. All right. Now, just a few more questions about this. Now, assuming that Ford, Bacon & Davis and Canadian River Gas Company are associated or affiliated companies, corporatewise, is this the way to handle a transaction of this kind if you are going to follow the instructions of the Code—your Code, I mean?

A. I think so. We are concerned with the actual original cost of the properties and if these two companies were definitely affiliated as in the case you cited, and one company performs services for the other, then that company is entitled to record only the actual cost of those services and not the profit which might accrue to the company billing the services.

Q. Now, there seems to be some difference of opinion between you and me as to the requirements of the Code when related to transactions between affiliated or associated companies. It is my understanding that your Code does not per se prohibit transactions which may give rise to profits between affiliated or associated companies, does it?

A. As far as recording the cost of those services in the plant account, it is all right, but when the inter-company profit is recorded as an investment, I don't think it should be included in a rate base. That is prohibitive because that is not original cost.

Q. Well, now, you point out to me the specific provision of the Code upon which you rely for that last statement.

A. I don't find that statement in the Code. That is reflected by the policy of the Commission for the past several years and is a principle of original cost accounting.

Q. It is not in the Code, but you gather that to be a policy of the Commission?

A. Yes, sir.

Q. Well, then, to that extent your particular treatment of this item is based upon your judgment which in turn is based upon your experience and knowledge of the general practice with respect to these particular transactions?

A. Will you read that, please?

(The question referred to was read by the reporter, as set forth above.)

The Witness: That is correct.

By Mr. Spencer:

Q. Now, with respect to these two items involved in this suspense account of $186,957.96 on Page 59 of your Exhibit 146, you are passing no judgment upon these figures, as I take it?

A. That is correct.

Q. You are merely flagging them or earmarking them for the attention of the Commission?

A. That is correct.

Q. And you do not say whether or not all or any part of this amount should be taken out of your plant accounts?

A. I do not.

Q. Do you think the Commission has enough information here upon which to base judgment in the matter?

Mr. Lange: Of course, that is a matter for the Examiner and the Commission to determine as to whether the evidence is sufficient or insufficient. This witness wouldn't be able to determine that.

The Trial Examiner: I think perhaps that is true, Mr. Lange.

Mr. Spencer: I'll put it another way:

Q. Do you feel that you have given complete information and data with respect to these items in this Exhibit 146?

A. We have presented all the information available.

Q. All right, Mr. Teel, your summary schedule reflecting all of the adjustments which you and Mr. Luttring have made in this Exhibit 146 and their effect upon the company accounts are shown in Schedule No. 1, are they, commencing on Page 62?

A. That is correct. Schedule No. 1 commencing on Page 62 of this exhibit and extending through Page 64.

Q. And the schedules following Page 64; that is, Page 65 to 170, inclusive, are merely supporting schedules?

A. That is correct. The general plan of the report has been to set up in this Schedule No. 1 the entire plant account

of Canadian River Gas Company as shown by the company's books, both as to number, description and amount, the amount being shown in Column 4.

Q. Yes. I don't want a description of that right now.

A. I was going to add that the supporting schedules are so arranged that each schedule—each principal schedule will pick up a group of these accounts as indicated by the totals on the pages 62, 63 and 64, and then it will have sub-schedules supporting that schedule if such detail was thought necessary.

Q. All right, now, I don't want to take a lot of time with these sub-schedules which support your principal schedule, but I would like to run through them and comment wherever it may be necessary on schedules which we have not heretofore discussed or which you or Mr. Luttring have not discussed.

We will take first the schedules on Pages 65 and 66. Briefly, what are those?

A. Well, it so happens that—

Q. And 67.

A. That schedule comprises three pages.

Q. That's right.

A. That is a summary of the adjusting entries which we have been discussing and merely presents those entries numerically with a brief description and distributes them to the accounts affected.

Q. I think that is clear. That is your work?

A. Yes, sir.

Q. Now, Pages 68 to 79, inclusive, I believe have been discussed by Mr. Luttring?

A. That is correct.

Q. Now go to Page 80, 81 and 82, Schedule No. 3.

A. That schedule, which is entitled "Summary of Gas Wells as of December 31, 1939 after Examiner's adjustments," is a summary of the gas well investment accounts of the company showing the amount recorded by the company in the books—in its books, the Examiner's adjustments applied thereto, and the resultant component parts of the total cost.

Q. As you have found them after adjustments?

A. That is correct, that is after adjustment.

Q. Those do not necessarily reflect the cost of these wells as shown by the company's books?

A. Column 6 of that schedule does show the cost as recorded by the company.

Q. I see. I think that was all brought out by Mr. Keffer, perhaps, yesterday.

A. Yes, I believe it was.

Q. Now, Sub-schedule No. 3-A on Page 83, is that your schedule?

A. Yes. That is a schedule of—

Q. How many pages does that cover?

A. Three pages, 83, 84 and 85.

Q. All right.

A. That is a summary of the depreciation and adjustment account—or, rather, analysis of that account, showing the D & A for each well and the Examiner's adjustments thereto and the effect of those adjustments.

Q. Is this data in this particular schedule, No. 3-A—I suppose that forms the basis for some other exhibit to follow, the foundation for it?

A. So far as I know, that is the only place it appears. It is just set out here for informative purposes to indicate the nature and character of the charges in that particular sub-account.

Q. Under Column 10, which is the last column on Sub-schedule No. 3-A, you use the title "Depreciation and Shrinkage Capitalized." What does that caption mean?

A. That refers to the type of charge which is located —was charged to that particular account, and really is shrinkage or depreciation on material and equipment used in the construction of the well.

Q. Well, I understand depreciation—or, I believe I do, but I don't understand what you have in mind by the word "shrinkage."

A. Shrinkage?

Q. Yes.

A. Well, that could be defined probably by referring to a joint of pipe which might have been twisted and split at one *and* and they had to knock off three or four feet. That joint would shrink three or four feet and so would the value of it.

Q. All right, I think that's enough on that.

The next is Sub-schedule 3-B, commencing on Page 86 and ending on Page 88.

A. 88, that is correct.

Q. Just tell me briefly what that is about.

A. That is a summary of the gas well investment as recorded by the company on its books showing the breakdown or the analysis of the account as reflected by the company's records.

Q. And that is all as per company books?

A. That is correct.

Q. Does that include only the wells which the company owned and operated as of December 31, 1939, I take it?

A. That is correct.

Q. All right, that's sufficient on that.

Now, Schedule No. 4, Page 89 and Page 90.

A. That schedule is an analysis of the drilling and cleaning equipment account No. 216 and is the same as reflected by the books of the company.

Q. You merely show that as supporting detail for that account in the schedule?

A. Yes, that is supporting detail for that account in Schedule No. 1.

Q. Yes. Now, Page 92.

A. I believe 91 is the next page, is it not?

Q. Just a moment. This may not be a very important matter, but on Page 90, in your notes you say: "This amount applied to $24,679.54 develops a net value at December 31, 1939 of $2,852."

I assume you are talking about depreciated book cost.

A. That probably conveys an erroneous impression. The word "book" should have been inserted between "net value" to make it read "net book value."

Q. I see. Page 91, Schedule No. 5. What is that about? That is a summary, isn't it?

A. Yes, that is a summary schedule which takes the field lines in the three accounts and shows the total per books, the Examiner's adjustment by accounts and the effect of those adjustments.

Q. And the adjustments in those accounts have been rather inconsequential?

A. That is correct.

Q. All right, now, Sub-schedule No. 5-A on Pages 92 to 101, inclusive.

A. That is correct.

Q. That is the detail of—

A. That is detail of the field line investment by lines showing the—

Q. As summarized in Schedule No. 5?

A. That is correct.

Q. All right, that is sufficient on that.

Schedule No. 6, appearing on Page 102 is a summary of other field facilities?

A. This schedule is a summary of other field facilities which includes field measuring stations and field compressor stations and sets out the recorded investment by accounts; shows the Examiner's adjustment and the effect of those adjustments.

Q. And the adjustments there are immaterial?

A. Yes, they are immaterial.

Q. Sub-Schedule No. 6-A, appearing on Pages 103 to 105, inclusive, is the supporting data for Schedule No. 6?

A. That is correct.

Q. Is that correct?

A. That is correct.

Q. There are also other supporting sub-schedules?

A. On this particular group?

Q. Yes.

A. 6-B is the supporting schedule for the field compressor station.

Q. Yes, I see. And 6-C, Sub-Schedule No. 6-C?

A. Let's see. Oh, I stated that wrong before. 6-B is the supporting schedule for field compressor station structures. 6-C is the supporting schedule for field compressor station equipment. Those are separated because they were two different types of—

Q. Sub-schedule 6-C appears on Page 107 and 108?

A. That is correct.

Q. Is that all of the supporting schedules for Schedule 6?

A. That is correct.

Q Then we start with Schedule No. 7 on Page 109, and that is a summary of the gasoline plant property account?

A. That is correct, showing the amount per books, the Examiner's adjustments, and the effect thereof.

Q. And the adjustments there again are not substantial?

A. Those are not substantial.

Q. Schedule No. 7 is supported by what sub-schedules, and give the page number so as to identify them in the record—Sub-schedule 7-A on Page 110 and Sub-schedule No. 7-B, describe what that is.

A. That schedule is the supporting schedule for gasoline investment land and rights of way, accounts 900 and 902 on the company's books, respectively

Q. I see. And the next one?

A. Sub-schedule No. 7-B which is found on Page 111, is the supporting schedule for Account 903, gasoline plant structures.

Q. All right, the next one?

A. 7-C—Sub-schedule No. 7-C is found on Page 112 and continues through Page 117. That is the supporting schedule for Account 904, gasoline plant equipment.

Q. All right, the next one?

A. Sub-schedule No. 7-D which is found on Page 118, is the supporting schedule for the Account 905 which is the gasoline delivery line, and Account 906 which is the loading rack.

Q. All right, then we come to another main schedule, Schedule No. 8.

A. That is correct.

Q. Appearing on Page 119. That is a summary of the investment in main line and laterals by lines as of December 31, 1939?

A. That is correct. That schedule has its supporting schedules—

Q. Just a moment.

A. I beg your pardon.

Q. The main adjustment there is in connection with the Clayton lateral, I take it?

A. That is correct.

Q. Which we have discussed heretofore?

A. Yes.

Q. All right, now, the supporting schedule, please, Mr. Teel?

A. The Sub-schedule No. 8-A which is found on Page 120 is the supporting schedule of the transmission mains and laterals of Account 226, equipment, and presents a break-

down of the types of equipment and items of construction cost by the and by the main line laterals showing the effect of the Examiner's adjustments thereto.

Q. All right, Mr. Teel.

A. Do you have that?

Q. Yes. The next one. There is only one sub-schedule?

A. That is correct, only one sub-schedule for that.

Q. All right, Schedule No. 9 appearing on Page 121 which is a summary of the dehydration plant, land structures and equipment account. There are no adjustments there, Mr. Teel?

A. No, there are no adjustments. That is the total per books and as adjusted. Those two totals are the same.

Q. And there are how many sub-schedules supporting that schedule?

A. There are two sub-schedules for that schedule, Sub-schedule No. 9-A on Page 122 being the supporting schedule for dehydration plant structures account 223-D. Sub-schedule No. 9-B, which is on Page 123, is the supporting schedule for the dehydration plant equipment account 227-D.

Q. All right, the next schedule is No. 10 appearing on Page 124 and is a summary of the main compressor station account which is the Bivins compressor station?

A. That is correct.

Q. The Examiner's adjustments there about offset each other, is that correct?

A. Yes, that is correct. The only adjustment there of any particular significance is the transfer from compressor station equipment to gasoline plant equipment which was discussed yesterday.

Q. That's right. Now, you have how many sub-schedules supporting that Schedule No. 10?

A. Page 125 shows sub-schedule No. 10-A which supports main compressor station structures.

Q. Yes.

A. Sub-schedule No. 10-B appears on Page 126.

Q. That's right.

A. Which is the supporting schedule for main compressor station equipment.

Q. And then go to Schedule No. 11.

A. That is correct.

Q. On Page 127, which is a summary of the measuring stations account,

A. That is right.

Q. I don't think that requires any further explanation, Mr. Teel, except I wish you would go through the sub-schedules supporting that schedule as you have done heretofore.

A. All right. Sub-schedule No. 11-A which appears on Pages 128, 129, 130 and ending on 131 is a supporting schedule which takes up the various accounts by stations and develops the total cost for each station showing the amounts recorded in that station's cost and of each account that is included therein. There is also reflected the Examiner's adjustments and it develops the adjusted cost of each station.

Q. All right, I think that is clear, Mr. Teel.

Now, Schedule No. 12 appearing on Page 132 is a summary of the Bivins camp property account, is that right?

A. That is correct.

Q. There is a very small adjustment there?

A. Yes, I believe that is for meter—

Q. And this Schedule No. 12 is supported by what sub-schedule?

A. Sub-schedule No. 12-A which appears on Page 133 is the supporting schedule for Account 223, Bivins camp structures. Sub-schedule No. 12-B which appears on Page 134 and 135 is the supporting schedule for Account 227, Bivins camp equipment. These schedules show the amounts per books and any adjustments which have been applied thereto.

Q. Then we come to Schedule No. 13, Page 136, which is a summary of undistributed fixed capital account.

A. That is correct.

Q. There we have these adjustments on interest during construction which we have discussed.

A. That is correct.

Q. That credit in Column 5 appears to be over a million dollars, I presume, because some amount went in and out of there a couple of times?

A. That is because in the original setup of that interest you remember we credited interest with the amount recorded, and then we again credited interest with those adjustments which appear in 248 and 249, I believe.

Q. There is a total out there at the end of that Account

266. I can't quite read it. What is that figure for interest during construction?

A. $1,030.33.

Q. Yes, sir, that's right. Now this Schedule No. 13 is supported by what sub-schedule, Mr. Teel?

A. Sub-schedule No. 13-A is an analysis of law expenditures during construction and supports Account No. 262 as indicated on Page 136. This sub-schedule is found on Page 137 and reflects the total per books as of December '39, and the Examiner's adjustments thereto and the effect of those adjustments.

Q. As I recall, that is involved in reclassification?

A. That is correct. The adjustment is a reclassification.

Q. All right, the next sub-schedule?

A. The next sub-schedule beginning with 13-B and extending through—that is on Page 138, and extending through 13-B3 including the pages numbered 138 to 150 being all supporting schedules to interest during construction which we went over this morning.

Q. I see.

A. Do you want those explained again?

Q. Just let me glance through them and perhaps it won't be necessary to ask you any questions about them. I'll confess to you now that I haven't read everything that is in this report.

Well, I don't have any further questions for the time being on any of those pages, Mr. Teel. Let's go on to Sub-schedule No. 13-C on Pages 151 and 152.

A. 13—Sub-schedule No 13-C is a proposed distribution of undistributed fixed capital to primary accounts as adjusted as of December 31, 1939. That schedule picks up the adjusted totals of the various accounts as reflected on Schedule No. 1, Pages 62 to 64 and distributes to those accounts on a dollar basis with certain exceptions the undistributed fixed capital which is presented on Schedule No. 13 on Page 136.

The basis of apportionment is presented on Page 152 and it should be explained that that schedule is placed in this report for informative purposes, showing a proposed distribution of undistributed fixed capital in order to remove it from the plant account as such, but to still retain it in the plant account in service.

Q. I see. I think that is clear, Mr. Teel. I take it there is still a problem of distributing that amount year by year?

A. Well, that is probably true.

Schedule No. 14, Page 153, is a summary of general property as of December 31, 1939 with your adjustments? It also goes over to Page 154?

A. That is correct. That shows the—

Q. Have you got any further explanation about that?

A. Well, that schedule takes up the so-called general property accounts and shows a brief analysis of those accounts, arriving at the total recorded by the company on its books as of December 31, 1939, the Examiner's adjustments to the various accounts, and the effect of those adjustments.

Q. That Schedule No. 14 is supported by what sub-schedules?

A. Sub-schedule No. 14-A on Page 155 is the supporting schedule for Account 247, general office structures.

Q. All right, the next one?

A. Sub-schedule No. 14-B on Page 156 is the supporting schedule for Account 248, other general structures.

Q. The next one?

A. Sub-schedule No. 14-C on Page 157, is the supporting schedule for Account 249, office equipment.

Q. And the next one?

A. Sub-schedule No. 14-D on Page 158 is the supporting schedule for Account 250, general stores equipment, and shows the recorded cost of those stores per the company's books at the various locations.

Q. I see. And the next sub-schedule, please?

A. Sub-schedule No. 14-E, which is the supporting schedule for Account 253, general garage equipment (autos and trucks) on Page 159. That sets out by units the recorded cost of those vehicles as shown by the company's books.

Q. Suppose that you just go ahead and briefly describe the balance of these sub-schedules and I believe we can save time.

A. Sub-schedule No. 14-F which is the supporting schedule for the telephone system consists of Accounts 255 and 255-E. 255 is the right of way account and 255-E is the equipment account. This schedule reflects the amount recorded in the company's books, the Examiner's adjustments

and the adjusted investment for the various divisions of that telephone system as shown by the company's books, as a geographical division.

Q. Yes.

A. That is Page 160.

Q. Go right ahead.

A. Sub-schedule No. 14-G is the supporting schedule for Account 256, general tools and implements and shows the amount and description of the equipment as recorded on the company's books.

Q. Not the location?

A. Not the location.

Q. All right.

A. Sub-schedule No. 14-H is on Page 162, which is the supporting schedule for Account 257, other general equipment, which shows the recorded investment per the company's books, and also the location of that equipment and the Examiner's adjustments to that account.

Q. That ends the sub-schedules to Schedule No. 14.

A. That is correct.

Q. Now we come to Schedule No. 15 appearing on Pages 163 and 164. What is that, please?

A. That is an analytical schedule which is a supporting schedule for balance sheet account called Construction in Progress. We have also shown that account on Schedule No. 1 of this exhibit, and this schedule which is on Pages 163 and 164 is a brief analysis of sub-accounts of the work order No. 540 for the Dalhart compressor station and for work orders 541 and 542 which are for work on field lines. These figures shown on this schedule are the same as shown on the Company's books as of June 30th, 1940. The amount for that date is also shown along with the amount for December 31, 1939.

Q. However, you do not use the June 30th, 1940 figures in your schedule No. 1?

A. No, the December 1939 figure is used in Schedule No. 1.

Q. I will ask you if you know whether or not this work order No. 540, Dalhart compressor station, has now been closed out substantially?

A. Yes, it was closed out and then reopened. I sup-

pose by now it is probably closed again. It is now on the company's books as plant investment.

Q. Which will be reflected in subsequent statements?

A. That is correct.

Q. Schedule No. 16, appearing on Page 165?

A. Schedule No. 16 is a statement of construction overhead distributed to plant accounts.

Q. Now, is this your distribution of something?

A. The distribution to the—I beg your pardon, do you mean the description of the columns? of the column headings?

Q. No. Your title is "Construction overheads distributed to plant accounts," and I asked you if they were distributions that had been made by you as an Examiner or distributions reflected on the books of the company.

A. These are the company's distributions.

Q. I see. All right, go ahead and explain it a little further, please.

A. Why, the purpose of this schedule is an attempt to gather in one place the items which have been charged to the plant account as construction overheads during the initial construction and later periods, and the type or character of the charges is shown in the column headings from 3 to 9, inclusive.

Column 11 describes certain miscellaneous charges. The captions under Column 1 are those found on the company's books or on Ford, Bacon & Davis' books in which certain of these costs were reflected.

Q. What is the particular purpose for furnishing detailed information of this character as far as this exhibit is concerned?

A. Well, in making any audit of this type, one of the first phases of investigation concerns overheads, both overhead distributed during construction and subsequently, and this schedule is presented merely for information to indicate the amount of overhead which we could identify as having been charged to the property.

Q. I believe your instructions say something about making a study of the particular items?

A. Yes, they refer, I am sure, to overhead items.

Q. You put it in here for the purpose of making your information complete?

A. That is correct.

Q. Would you attempt to distribute these items against the present-day property?

A. Well, the items have already been distributed to the plant accounts and are in the plant accounts now.

Q. Well, you aren't distributing them, then?

A. No, this is no redistribution.

Q. Is there any intention to redistribute or reclassify by the inclusion of this particular schedule in here?

A. No.

Q. It is merely for informative purposes?

A. Correct.

Q. All right, No. 17, Page 166, that is the detail on the purchase commissions which we discussed a short time ago?

A. Isn't that Sub-schedule 16-A?

Q. I can't see. I was guessing.

A. It is Sub-schedule 16-A, and that is the detail of the purchase commissions.

Q. I think you are correct. All right, we have discussed that one.

A. That is correct.

Q. That covers Pages 166 and—

A. That page only.

Q. That page only?

A. That is correct.

Q. Now, I show Sub-schedule 16 here on my copy—

A. Is that Page 167?

Q. On Page 167 there is no letter.

A. That was evidently obliterated. It should be 16-B.

Q. It should be 16-B?

A. That is correct.

The Trial Examiner: Page 167?

The Witness: That is correct.

The Trial Examiner: That should be Sub-schedule No. 16-B.

The Witness: That is correct. That extends over to Page 168, also.

The Trial Examiner: Mr. Reporter, will you correct the original of that exhibit, please?

By Mr. Spencer:

Q. We have discussed the subject matter of this schedule which is a summary of the Ford, Bacon & Davis engineering construction fees capitalized?

A. That is correct.

Q. We have discussed that?

A. Yes, that was discussed under the suspension.

Q. I don't believe we have discussed Sub-schedule No. 16-C appearing on Page 169.

A. No. That schedule was placed in there for informative purposes, and is a summary of Account 259 which is reflected on Page 165 as a part of Schedule No. 16. It is an analysis of the account which I made and is placed in here as a support for that particular account.

Q. It has no other significance?

A. That is correct.

Q. All right, the last one is Sub-schedule No. 16-D on Page 170.

A. That schedule is a distribution of overheads in plant accounts at December 31, 1939 before adjustments, and reflects the Company's distribution of the overheads which are found on Page 165 in Schedule No. 16. The distribution shown here was made by the company and is now recorded in their plant accounts.

Mr. Spencer: Mr. Examiner, if we could have a short recess at this time I believe we could close up with Mr. Teel at the conclusion of the recess in a rather brief time.

The Trial Examiner: Very well, we will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Spencer:

Q. Have you examined the accounts of Canadian River

Gas Company, Mr. Teel, having to do with the purchase of automobiles and trucks? I assume you have.

A. Yes, I have examined those accounts.

Q. And do you find in there that purchases of autos and trucks have been through some larger company that had what we call a fleet user's discount?

A. As I remember, the company did receive a fleet discount in the purchase of their cars.

Q. And who was the fleet user in that case entitled to the discount?

A. I don't remember. I thought it was Canadian River. I don't have that information here. I didn't record it.

Q. You don't know that it was Consolidated Oil Corporation and its subsidiaries?

A. I think I have seen that company's name on some of those records.

Q. And the purchasing department of Consolidated Oil Corporation and its subsidiaries passed that discount back to the company?

A. That discount is reflected in the cost of the car.

Q. Now, applying the same principles that you have used here in connection with the commissions paid Standard Oil Company of New Jersey for purchases made on behalf of Canadian River Gas Company during this period of construction, how do you think those particular discounts should be treated on the books of Canadian River Gas Company?

A. Are you referring to the discounts on other than trucks?

Q. Yes.

A. I think those discounts should be treated as they have been, as a reduction of the original cost of the car or truck, whichever it was.

Q. You don't think they should have been capitalized?

A. No, I do not.

Q. All right. Now, on Page—I am looking for your summary schedule.

A. That is on Page 63.

Q. Page 62?

A. Page 63. I beg your pardon, it is on Page 62.

Q. That is Schedule No. 1 appearing on Page 62, Page 63 and Page 64?

A. That is correct.

Q. Now, that schedule reflects the company's property account as per books and gives effect to the Examiner's adjustments and then arrives at an adjusted amount in Column 7?

A. That is correct.

Q. Which is the total except for certain amounts during—appearing in Column 8, which have been suspended for Commission's consideration?

A. That is correct.

Q. This particular schedule is really a recapitulation of what you have done in all of the other entries, schedules, and so forth, in this exhibit?

A. That is correct. It presents in one schedule a summarization of the results of the audit of the plant accounts.

Q. Now, I wish you would turn to the appendix of the Uniform System of Accounts of the Commission and find that particular part of the appendix which relates to the several accounts being what is known as plant account.

A. The appendix of the Uniform System of Accounts—

Q. I'll see if I can find it.

A. Mr. Spencer, are you referring to Appendix 2, which starts on 159?

Q. I think so. It will be more clear when I tell you the purpose of having you refer to it. I want you to start with Account No. 205 in the schedule shown on Page 62 and tell me to which account as designated by the Commission's Code, one of these accounts shown in Schedule No. 1, should be assigned so that I can see what kind of a plant account we have left according to the Commission's Code by applying your numbers, I mean the Commission's numbers, to the account number of the company as shown here.

A. Well, let me say that in setting up these accounts on Schedule 1, we have attempted—I have attempted no reclassification except to the extent shown in the groups—in the grouping of the four accounts under other field facilities. That was purely of my own invention and was set out there to group those four accounts together. As far as relating the accounts in Schedule 1 to the accounts in the Commission's Code of Accounts beginning on Page 59, that could be done, but it would probably take some little time to do that, but it would have to be from the similarity on the names of the accounts.

Q. You wouldn't want to undertake to do that without further study and investigation?

A. Well, as I said, we attempted no classification of accounts except between what we call production plant and transmission plant. The other classification is that of the companies and is so reflected in this exhibit.

Q. Well, I don't want to ask you to undertake something that would require any additional work on your part or any additional investigation. I thought that perhaps the property classifications shown here would fall into certain classifications shown on the Commission's Code of Accounts without any confusion or difference.

A. I think that it probably would. However, in reclassifying this I wouldn't want to attempt to make a reclassification just from here, saying that this account belongs here and that one there. It would have to be from the similarity of the names. I could start out and say that leaseholds belonging to natural gas production plant—

Q. Account number?

A. Account No. 330.

Q. I don't want to ask you to do it offhand, Mr. Teel. I am not trying to lay any trap for you. If you don't want to do it offhand—

A. I would rather not do it offhand.

Q. Let me ask you this: If Canadian River Gas Company is a natural gas company and under the jurisdiction of the Commission under the Natural Gas Act, the time is coming when the company itself must do something of this character with respect to its properties and its accounts, is that correct?

A. That is true.

Q. In order to comply with the order of the Commission as heretofore promulgated?

A. That is correct.

Mr. Lange: Counsel knows that there is an Order 73 outstanding that—

Mr. Spencer: Well, I am not trying to get Mr. Teel to do the work for us necessarily, but I am trying to find out—intending to find out to what extent the work that he has done here might be in conformity with that order and those instructions.

Q. Well, let me ask you some general questions about it: Perhaps that will suffice.

Turn to Page 64. In the middle of that schedule you have a phrase there entitled "Total Gas Plant Accounts." Do you think that is an accurate description?

A. No.

Q. For the plant facilities and the figures shown as being applicable thereto in totals?

A. No, as I indicated to Mr. Keffer a day or two ago, I think now that caption describing that particular line should have been "Total Gas Plant in Service."

Q. Yes, I remember that, Mr. Teel. As a matter of fact, if you were setting up the total gas plant account in conformity with the instructions contained in the Code, this bottom item, "Construction in Progress" would not be excluded from plant account, would it?

A. No, that would be "Construction in Progress" only as long as it was in progress. When it was completed and the accounts closed, it would automatically be transferred to gas plant in service.

Q. Gas plant adjustments account 107 would not be excluded from the utility plant account, would it?

A. Gas plant adjustment is a separate account from gas plant.

Q. I understand that. The balance sheet—for the balance sheet purposes it would not be separated from the gas plant account, would it?

A. On the balance sheet account?

Q. Yes.

A. Yes, it is a separate account on the balance sheet.

Q. It is still listed under the head "Utility Plant," is it not?

A. I believe that is correct.

Q. The gas plant held for future use is not excluded from the utility plant, is it, as set up on the balance sheet?

A. No, gas plant held for future use is included in Account 100, gas plant.

Q. So that the only item that you have below your total gas plant accounts which would not be included as utility plant on the balance sheet is Account 110, other physical property, is that not correct?

A. Account 110 and 107—no, I beg your pardon. You are correct.

Q. All right. Now, if you purport to show the total gas plant account of this company, don't you think it is misleading not to include these other items which you have shown below "Total Gas Plant Account" and which would be included if we were conforming to the Code with respect to the balance sheet? In other words, isn't it a little misleading to anyone that wants to find out what this company actually has invested in gas plant account?

A. Yes, I think it might be a little misleading. However, the caption—

Q. You have already explained that "Total Gas Plant Accounts" probably should be "Total Gas Plant Account in Service."

A. Yes.

Q. Then you would have reached another total some place below that with a different description if you were revising this?

A. Yes, I probably would.

Mr. Lange: I may mention at this point, Mr. Spencer, that there will be a balance sheet in a separate exhibit presented.

The Witness: Which will indicate the breakdown of gas plant in service and the other divisions shown in the balance sheet accounts of the Code.

Mr. Spencer: Well, that will be all right if the Commission members and others studying this record will look at that and not be misled by the particular description here on Page 64. However, I think we have gone far enough with that.

Q. I just want to ask you one more question, I believe, Mr. Teel.

A final figure which you allow for interest during construction to this company after the various and sundry adjustments you make is approximately $1,000?

A. That is correct.

Q. And the amount shown on the company's books as having been actually expended for interest during that period, which is a different period than you are using, however, is approximately $556,000?

A. That is correct.

Q. So that through your various and sundry adjustments, the company has lost, as a capital item, $550,000—$555,000?

A. That is correct.

Q. And you have left them with $1,000, approximately?

A. That is the effect of the adjustment.

Q. Now, do you know or can you find it in your exhibits there, the total amount of money expended by Canadian River Gas Company in its construction program during the construction period?

A. Expended by Canadian River Gas Company?

Q. Yes.

A. Or for the account of Canadian River Gas Company by Ford, Bacon & Davis?

Q. I am speaking of the ultimate expenditures by Amarillo Oil Company for the account of Canadian River Gas Company or by Ford, Bacon & Davis for the account of Canadian River Gas Company, I mean should be treated as expenditures by Canadian River Gas Company.

A. I believe that that sub-schedule in the exhibit will indicate that information.

Q. What sub-schedule is that?

A. Sub-schedule No. 13-B3 on Page 143. Now, that will not indicate all of the money, but it will indicate the amount expended during this construction period as determined by me. Those amounts are reflected in Column 2 of the schedule.

Q. I don't want to arrive at any precise figure, but would I be right in saying that the expenditures were in excess of ten million dollars during that period?

A. Yes.

Q. Now, as an accountant, and based upon your experience and knowledge as an accountant, does it seem reasonable to you that a company engaged in a project of this magnitude and with expenditures in excess of ten million dollars should have interest during construction charges of only approximately one thousand dollars? Does it seem reasonable?

A. I have made this computation on the basis of the facts.

Q. First, answer the question, will you, please, and then you can explain it?

A. Under the existing circumstances, yes.

Q. You think it sounds reasonable?

Mr. Lange: The witness wanted to make an explanation. If he has one to make—

Mr. Spencer: That's all right.

The Witness: I was merely going to say that the computation which is reflected in this exhibit is based on the facts disclosed by the examination. I have presented them for a figure which I think is the correct interest allowance.

By Mr. Spencer:

Q. Well, have you ever in your experience as an accountant come in contact with a similar miracle?

A. Frankly, no.

* * * * *

On redirect examination MR. TEEL testified: (Vol. XLII, pp. 5799-5804.)

Q. Turn to Page 48 of Exhibit 146, the Entry No. 248 involving that item of $81,250, miscellaneous income production. I will ask you whether or not in the making of this entry you have any support in the Uniform System of Accounts, and if so, what section or sections?

A. Yes, the support for that entry which I use—

Mr. Spencer: Pardon me. You are talking about the whole entry and not some part of it?

Mr. Lange: That's right.

The Witness: It is found in the Uniform System of Accounts on Page 41, beginning with the paragraph numbered 17, towards the bottom of the page, extending through paragraph 18, which continues on Page 42. This reads as follows:

"(17) Interest during construction includes the net cost of borrowed funds used for construction purposes and a reasonable rate upon the utility's own funds when so used. Interest during construction shall be charged to the individual job upon which the funds are expended and shall be credited to Account 536, interest charged to construction—Cr. The period for which interest may be capitalized shall be limited to the period of construction. No interest charges

shall be included in these accounts upon expenditures for construction projects which have been abandoned.

"(Note)—when a part only of a plant or project is placed in operation or is completed and ready for service but the construction work as a whole is incomplete, that part of the cost of the property placed in operation, or ready for service, shall be treated as 'Gas Plant in Service' and interest thereon as a charge to construction shall cease. Interest on that part of the cost of the plant which is incomplete may be continued as a charge to construction until such time as it is placed in operation or is ready for service, except as limited in Item 17, above."

18 reads:

"(18) 'Earnings and Expenses During Construction' includes (a) all revenues derived during the construction period from property which is included in the cost of the project under construction and (b) all expenses (except taxes) which are attributable to the revenues received."

That was the authority which I used in making this entry.

By Mr. Lange:

Q. Now, then, with reference to the question you were asked concerning Page 59, the entry on Page 59, Exhibit 146, concerning the item there suspended, I will ask you whether, particularly with reference to the second item, purchase commissions paid to Standard Oil Company of New Jersey, whether you have had any occasion—strike that—whether you have had any experience of your own on which you could determine the reasonableness of the amount of any commission of that character?

A. Applicable—

Q. Applicable here?

A. No.

Q. Do you feel competent to determine the reasonableness of such commission?

A. I misunderstood. No, I do not feel competent to determine the reasonableness of the commissions determined here.

Q. Now, with reference to both suspensions enumerated and set forth on Page 40, you have specifically stated on that page that you reached the conclusions as to the proper

procedure for you to suspend those items and include them in this exhibit based on the reasons there indicated, is that correct?

A. That is correct.

Q. And those reasons are set forth in the exhibit 139 sponsored by Mr. Schutte?

A. That is correct.

Q. At Page 48—through 48-D, inclusive, of that exhibit?

A. I believe it is 48-A. Mr. Schutte's reasons—I mean—there are certain figures which pertain to the Colorado Interstate Gas Company accounts on those figures, but—

Q. In other words, Mr. Schutte sets forth his reasons and supports them with certain basis or certain figures and statistics—or, rather, material set forth in the following pages through 48-D?

A. That is correct.

Q. And as I understand from your testimony, you are supporting your suspensions in Exhibit 146 based on all of those given by Mr. Schutte?

A. That is correct.

Q. Pages 48-A through 48-C—through 48-D, inclusive?

A. That is correct.

Q. And reached your conclusions that you have in your Exhibit 146 with reference to those suspensions?

A. That is correct.

Q. Now, then, in order that this may definitely indicate it, turn to Page 64 of your Exhibit 146; that is, the third page of Schedule No. 1, isn't it?

A. That is correct.

Q. And as I understand it, at the bottom of that Page 64, the adjusted amount under Column 7, $14,247,921.97 is the adjusted amount of the investment in gas plant account of Canadian River Gas Company as of December 31, 1939?

A. With the exception of the Account 107.

Q. With the exception of Account 107?

A. Which is gas plant adjustment account in the amount of $4,091,088, and Account 110, other physical properties in the amount of $1,176.34. The amount of $9,923,329.94 is the amount recommended here, or the adjusted amount for gas plant in service, on this exhibit. That amount is shown in Column 7 in the second sub-total of that Page 64. The total which you read contains those other items which are not—a part of which have been set out apart from gas plant in service.

Q. Apart from total gas plant in service?

A. That is correct.

Q. And the total in Column 8, $186,957.96 represents the total amount of the items suspended in this exhibit for consideration of the Commission?

A. That is correct.

Q. Then the statement on that Page 64, total gas plant accounts, really states total gas plant in service?

A. That would be more appropriate.

Q. As of December 31, 1939?

A. That is correct.

* * * * *

On recross examination MR. TEEL testified: (Vol. XLII, pp. 5804-5806.)

Q. Mr. Teel, turn to your Entry No. 248 on Page 48. What you have done here is in reliance upon the conclusions you find on Mr. Luttring's schedule appearing on Pages 49 and 50 of the exhibit?

A. That is correct.

Q. Now, in support of the treatment of this transaction, you have cited Paragraph No. 17 on Pages 41 and 42 of the Uniform System of Accounts.

A. 17 and 18.

Q. 17 and 18, together with the note?

A. That is correct.

Q. Did the method you employed in computing interest during construction—was it based upon borrowed funds?

A. No.

Q. Sir?

A. No, it was not.

Q. This Paragraph 17 says that interest during construction includes the net cost of borrowed funds used for construction purposes. You did not follow that part of the instruction?

A. No, I did not follow that part of it.

Q. Now, during the course of your examination on 248, Entry 248 and the subsequent entries relating to the same transaction or the same subject matter, I should say, there were occasions when both you and Mr. Luttring testified that as to this point or that point, you exercised your own judgment?

A. That is right.

Q. You do not wish to retract that wherever you so testified?

A. No.

Q. Now, what pages are the suspensions on?

A. Those suspensions begin with Page 59 of Exhibit 146?

Q. Now, I have only one question to ask you in that connection. You do not wish at this time to retract any testimony which you may have given here as to the reasons which you had in mind for making these suspensions?

A. No.

Commission WITNESSES-LUTTRING and TEEL in their Exhibit 146 supra testified concerning original cost of certain properties acquired by Canadian as of May 1, 1927, computed upon the basis of original cost to predecessor companies as adjusted in certain instances by Luttring and Teel.

Commission WITNESS SCHUTTE testified: (Vol. LXV, pp. 9474-9485.)

Q. Further in connection with this assignment, Mr. Schutte, I will ask you whether you had occasion to make a further—or, rather, an additional study in connection with matters pertaining to Canadian River Gas Company in re reaccounting of items?

A. Yes, sir.

Q. That have been expensed and now are desired to be capitalized?

A. That is correct.

Q. Is this a copy of that written statement that I now show you?

A. Yes, sir.

Q. Will you proceed to read that into the record?

Mr. Spencer: Before you proceed, Mr. Schutte, Mr. Examiner, I want to make the same observations and the same reservations with respect to this written statement as I did regarding the preceding written statement.

The Trial Examiner: Well, in glancing through it here I again note that Mr. Schutte has dealt in the main with specific items involved in the plant accounts of Canadian River Gas Company. Is that correct, Mr. Schutte?

The Witness: Yes, plant accounts as presented in Exhibit 67.

Mr. Lange: And 183?

The Witness: And 183.

Mr. Lange: Heretofore presented in this proceeding by Canadian River Gas Company?

The Witness: Yes, sir.

The Trial Examiner: And the nature of the exhibit—or of the written statement, rather, I take it, while it is dealing with different subject matters, it is in general—treats generally the same matter that we have just read into the record concerning the Colorado Interstate Gas Company?

The Witness: It deals with two items, interest during construction and corporate engineering. Those two are likewise included in the statement in connection with Colorado Interstate Gas Company.

The Trial Examiner: I take it, Mr. Spencer, that other than the statement that you have just made that you are not objecting at this time to the witness reading the statement into the record?

Mr. Spencer: No, I am not. I am suggesting, that he read it without interruption, subject to the reservation later to strike any part of it, of all of it if we think it is warranted?

The Trial Examiner: Very well, it will be so understood.

The Witness: "Written Statement Re Canadian River Gas Company's Re-accounting for Items Previously Expensed Which It Now Desires To Capitalize:

Canadian River Gas Company, through Ford, Bacon & Davis, Inc., has also presented a claim for the capitalization of Corporate and Engineering Costs and Interest During Construction.

A memorandum report of April 15, 1940, by Ford, Bacon & Davis, Inc., entitled "Items Charged to Expense on the Books of Canadian River Gas Company During the Period

1929 to 1939" presents the details of the computations for this claim.

The determination of Corporate and Engineering Costs (General Administrative Expenses) is based on the ratio of net property additions to the combined total of net property additions and operating and maintenance expenses, which ratio was determined to be 3.5%. This percentage applied to the net property additions, less $10,331.43 previously capitalized, is the basis of the company's claim to capitalize $98,052.70 of a total General Administrative Expenses of $930,077.00 as Corporate and Engineering Costs Applicable to construction work in progress.

The claim for Interest During Construction is based upon a percentage of the net property additions including leaseholds. A footnote on page 5 of the memorandum report, on which page is shown the determination of costs now claimed as capital, reads "Interest at rate of 1½% on physical property equivalent to 1% on total property additions including leaseholds." This percentage applied to the net property additions resulted in the claim for Interest During Construction in the amount of $30,966.90.

The combined amount for Corporate and Engineering Costs and Interest During Construction, as shown by the memorandum report of April 15, 1940, is:

Corporate and Engineering Costs	$ 98,052.70
Interest During Construction	30,966.90
Total	$129,019.60

The Adjustment for General Construction Cost Applicable to Net Property Additions as shown by Statement No. 2 of Exhibit No. 183, introduced in these proceedings by Mr. William A. Lusk, is as follows:

Item 10	Production		$101,989.00
11	Gathering		13,915.00
12	Transmission	(A)	8,809.00
	General Property:		
14	Production		878.00
15	Gathering		714.00
16	Transmission	(A)	2,736.00
18	Total Adjustment		$129,032.00

The excess amount claimed in Exhibit No. 183 as compared with the memorandum report of April 15, 1940, for Corporate and Engineering Costs and Interests During Construction, to be applicable to plant accounts is therefore $12.40.

Note (A): These amounts also shown in Exhibit No. 67, Statement 1, as Items 7 and 12.

Corporate and Engineering Costs.

As in the case of Colorado Interstate Gas Company, engineering and management services were provided under contracts by Ford, Bacon & Davis, Inc. during the early years of operation.

The engineering services rendered by Ford, Bacon & Davis, Inc., during the period the engineering contract was effective, were billed by it and the cost of such services, including construction fees, assigned to appropriate work orders and/or plant accounts by the company. It has been the company's customary procedure to charge appropriate work orders and plant accounts with the cost of engineering and supervisory services performed by members of the company's engineering personnel. Such charges were based on time reports. Expenses usually were readily identifiable with specific jobs and were charged thereto.

It has not been customary procedure, however, since the completion of the primary construction work in 1928, to make any allocation of general administrative expenses, such as salaries and expenses of general officers or of general office clerks. Expenses incurred when identified with specific jobs have been assigned thereto as direct charges, but no general expense allocations have been applied.

The company's management exercised its discretion as permitted under the system of accounts in consistently omitting the allocation of Corporate And Engineering Costs to construction work performed. Such costs, to be properly includible in plant accounts, should be based upon the time actually spent in connection with construction work. Such time studies cannot now be made with any degree of accuracy.

The method used in the determination of this claim very definitely results in the addition to construction costs of

an arbitrary percentage to cover assumed overhead costs, a procedure contrary to sound accounting principles, as it does not represent actual plant costs.

Under "Components of Construction Cost" the Federal Power Commission Uniform System of Accounts provides for the inclusion of "Engineering and Supervision" and various other "*General* Administrative" costs as construction costs, always based on the amount of such costs actually applicable to the construction costs. Under "Overhead Construction Costs" Gas Plant Instruction No. 6(B) reads as follows: "The instructions contained herein shall not be interpreted as permitting the addition to gas plant accounts of arbitrary percentages or amounts to cover assumed overhead costs, but as requiring the assignment to particular jobs and accounts of actual and reasonable overhead costs."

(Underscoring added)

Gas Plant Instruction No. 6(C) provides that: "The Records supporting the entries for overhead construction costs shall be so kept as to show the total amount of each overhead for each year, the nature and amount of each overhead expenditure charged to each construction work order and to each gas plant account and the bases of distribution of such costs."

Instructions concerning General Officers' and Clerks' Salaries and Expenses During Construction, as contained in the Uniform Classification of Accounts for Natural Gas Companies prescribed by the Public Service Commission of the Commonwealth of Pennsylvania, effective January 1, 1920, read in part as follows:

> "Account No. 259. General Officers' and Clerks' Salaries During Construction.
>
> "If the utility is already operating a natural gas system, charge to this account only that proportion of such salaries, that is based upon the time which such officers and clerks actually spend in new construction."

"Account No. 260. 'General Officers' and Clerks' Expenses During Construction.

"If the utility is already operating a natural gas system, charge to this account only those expenses that are incurred while such officers and clerks are actually engaged on construction work."

The method employed in the determination of Corporate and Engineering Costs now sought to be capitalized, very definitely does not follow these instructions.

Interest During Construction.

The basis used for the determination of Interest During Construction, now sought to be capitalized, is as previously stated, 1½% on physical property additions, which is said to be the equivalent of 1% on total property additions including leaseholds.

The application of interest to property additions such as the cost of renewing leases, which costs were capitalized by the company, is definitely not warranted.

As stated in connection with the claim of Colorado Interstate Gas Company for the present allowance of Interest During Construction which the company did not choose to charge at the time such expenditures were incurred, customary accounting practice in connection with the computation of Interest During Construction is and has been to ignore such computations for relatively small jobs and for jobs of short duration. It is also customary to base such computations on the actual monthly expenditures by individual jobs and to assign the interest costs resulting from such computations to the individual jobs.

That the company's management exercised its discretion as permitted under the system of accounts in not assigning interest costs to construction work, is incontestable. This omission continued throughout the years of operation and, although the company's records and accounts have been subject to periodic audits, no objection to this policy has been found in the company's records.

As one of the "Components of Construction Cost" Gas Plant Instruction No. 5 (17) of the Federal Power Commission Uniform System of Accounts permits the charging of Interest During Construction on the following basis:

"Interest during construction includes the net cost of borrowed funds used for construction purposes and a reasonable rate upon the utility's own funds when so used. Interest during construction shall be charged to the individual job upon which the funds are expended and shall be credited to account No. 536, Interest Charged to Construction—Cr. The period for which interest may be capitalized shall be limited to the period of construction. No interest charges shall be included in these accounts upon expenditures for construction projects which have been abandoned."

The method used by Ford, Bacon & Davis, Inc. for computation of Interest During Construction is very definitely not in accordance with this instruction.

As previously stated, the accounts and records of Canadian River Gas Company have been examined and audited periodically. Due to the unusual type of gas sales contracts between Canadian River Gas Company and Amarillo Oil Company, also between the former company and Colorado Interstate Gas Company, the records and accounts were audited in considerable detail by representatives of both Amarillo Oil Company and Colorado Interstate Gas Company, since accounting errors such as the assignment of expenses to capital, or capital items to expense, would affect the price at which gas is sold and would also have an affect on the inter-company note issues.

The capitalization of Interest During Construction and of Corporate and Engineering Costs, had the company followed such procedure, would have resulted in increasing the amounts advanced by Colorado Interstate Gas Company which are secured by a series of notes, increased the amortization of such notes, currently decreased and subsequently increased the "so-called cost of gas", i. e., the price at which the gas was sold.

Accordingly, any discretionary practices exercised by the management of Canadian River Gas Company, as permitted under the system of accounts in use, would necessarily be either approved or disapproved in the courts of the audits mentioned, and the absence of adjustments or objections to the company's choice in the treatment of these costs makes it apparent that such treatment was approved.

It cannot therefore be said that the present claim to capitalize such costs is due to accounting errors now sought to be corrected. Such re-accounting, in my opinion, is simply a means of inflating the plant accounts."

By Mr. Lange:

Q. Mr. Schutte, in connection with the two items especially that you have discussed in your written statement, Corporate Engineering Costs and Interest during Construction, do you have any other observation or opinion to express at this time?

A. I think not.

Q. And you have approached the discussion of these two items in your written statement entirely and solely from an accounting standpoint?

A. Yes, sir.

Q. No other?

A. No other.

Canadian, through Witness Lusk, introduced, and there was received in evidence, (Vol LXXXXI, page 13862) Exhibit 194. This exhibit is prefaced by a statement of Lusk appearing in the record (Vol. LXV, pp. 9349-9396), and is as follows:

EXHIBIT NO. 194

Canadian River Gas Company

Cost to Predecessor Companies of Property Acquired by Canadian River Gas Company as of May 1, 1927.

Written Statement of William A. Lusk

The books and records of the Amarillo Oil Company, hereinafter called "Amarillo" and certain other predecessor companies have been examined for the purpose of ascertaining the cost to the predecessor companies of certain assets, consisting of producing gas wells, operated and unoperated gas leaseholds and oil and gas leaseholds acquired by Canadian River Gas Company, hereinafter called "Canadian" as of May 1, 1927. The acquisitions of property by

Amarillo from other individuals and companies have been divided into the following periods:

1. Acquisitions from various vendors between the date of incorporation, April, 1917 and January 15, 1923.

2. Acquisition from Mission Oil Company as of January 16, 1923, including costs to A. R. Jones and Associates.

3. Acquisition from Mountain States Gas Company as of August 1, 1924, including costs to Producers & Refiners Corporation.

4. Amarillo Oil Company, January 16, 1923 to May 1, 1927.

The transfer of these properties to Canadian River Gas Company by Amarillo Oil Company was made as of May 31, 1928 but became effective as of May 1, 1927. The additions made by Amarillo Oil Company for the account of Canadian River Gas Company between May 1, 1927 and May 31, 1928 were made at cost and have been excluded from the detailed statements attached hereto.

Separate investigations were made of the books and records of A. R. Jones and Associates, The Mission Oil Company, Producers & Refiners Corporation and Mountain States Gas Company.

A continuous history of each leasehold and well was traced fairly satisfactorily from the time of initial acquisition of the leasehold and initial drilling of a well to final disposition by Amarillo through transfer to Canadian. Exceptions are noted in the section of this report devoted to Operated Leaseholds.

Operated Gas Leaseholds.

The study was confined to the two capital asset accounts appearing on the books of Amarillo at May 31, 1928, entitled "Operated Leaseholds Investment—Gas" and "Unoperated Leaseholds" and the credit account known as "Gas Department Adjustment". Other accounts in the form of reserves, expenses, material accounts and receivables transferred by Amarillo to Canadian have not been considered.

There were approximately 294,915 acres of operated leaseholds involved in the transfer by Amarillo to Canadian, as shown on Statement No. 2, the largest single tracts being the Bivins "A" lease of 200,000 acres and the Masterson "A" lease of 29,455 acres. Both of these leases were acquired by Amarillo through purchase of Mountain States Gas Company acreage.

The recorded cost of all the operated acreage transferred by Amarillo to Canadian also shown on Statement No. 2 was stated at $831,066.68. At the time Amarillo acquired the Mission Oil Company interests, as of January 15, 1923, a representative of Mission Oil Company reclassified the accounts of Amarillo Oil Company. This reclassification purported to restate all transactions of Amarillo acting individually, Amarillo-Jones joint account and Amarillo-Mission joint account. The result of the reclassification as shown on Statement No. 2 was a wholly erroneous statement of leasehold costs, due primarily to the inclusion of all drilling costs incurred by Jones and Mission as leasehold costs. Furthermore, the separation of half interests was incorrect because in removing a one-half interest from Amarillo the Mission Oil Company should receive equal benefit. The reclassification removed a one-half interest but failed to complete the transaction. For the purposes of this study all reclassification entries have been reversed as shown on Statement No. 3 and in their stead actual costs shown on Statements Nos. 5, 6 and 7 have been substituted.

Statement No. 4 shows the operated gas leaseholds acquired by Amarillo Oil Company from various vendors from April, 1917 to January 15, 1923. The original acreage acquired by Amarillo Oil Company by assignment from its five incorporators in full payment for capital stock subscriptions were originally grants to one M. C. Nobles (who became the first President of Amarillo). Nobles in turn assigned a one-fifth interest each to four individuals, retaining for himself a one-fifth interest in approximately 77,000 acres. Amarillo can be said to have commenced business with the acquisition of this acreage in April, 1917.

Subsequent acreage transactions are fairly clear until some time in 1919 or 1920 when transactions are somewhat obscure. During this period, apparently to provide Ama-

rillo with funds, approximately thirty-five sales of acreage are recorded. How much acreage changed hands is not known as the books did not record acreage. However, other records do indicate the sale of substantial acreage at prices ranging from $15 to $30 per acre. Also during 1919 or 1920, substantial acreage was released; i.e., the Ozier, Ingerton and Merchant leases and portions of the Bivins and Masterson leases. The Ozier lease was later acquired by Canadian as Lease No. 82 and the Ingerton lease was later acquired by Producers & Refiners Corporation. The Merchant acreage, according to up to date maps of the Amarillo field, is under lease to several oil companies. Sold and released portions of the Bivins "C" and "D" and the Masterson "B" and "C" leases were obtained by subtracting the known acreage at January 15, 1923, from the known acreage at December 31, 1919.

Statement No. 5 shows the expenditures by A. R. Jones et al for drilling and leaseholds acquired by Amarillo Oil Company from Mission Oil Company in 1923. In 1918 Amarillo Oil Company assigned one-half interest in certain acreage to A. R. Jones for which he agreed to drill five wells. Although an actual assignment was made to A. R. Jones and Associates, Amarillo did not record any reduction in acreage or value on its books. Jones made expenditures as shown on Statement No. 5. The Jones interests later assigned to Mission Oil Company. Mission Oil Company's undivided one-half interest was acquired by Amarillo Oil Company as of January 16, 1923 but no acreage was acquired. Only a minor amount was involved for lease rentals as shown.

The acquisition of leaseholds by Amarillo from Mountain States Gas Company as shown on Statement No. 6 involved $273,095.88, including two leaseholds acquired as unoperated and later transferred to operated. Also in these leaseholds there were the Masteron "H" lease and the Masterson "I" lease, each of which had a producing well. The amounts paid for well and lease, $35,000 and $42,600 respectively, were included as lease costs. To adjust the lease account the acreage portion is assumed at an initial bonus of $1.00 per acre plus incidental charges and rentals, the net result being a transfer of $76,318 as shown on State-

ment No. 7 to the well account. Acreage acquired included the Bivins "A" tract of 200,000 acres and the Masterson "A" tract of 29,455 acres.

Acreage acquired by "Amarillo" direct during the period from January 15, 1923 to May 1, 1927 as shown on Statement No. 2 consisted of three leases and totaled 3,998 acres. The amount involved in these transactions was $131,800.52.

Unoperated Gas Leaseholds.

The tracts classified as unoperated leaseholds at the date of transfer by Amarillo to Canadian comprised approximately 30,235 acres, as shown on Statement No. 8, acquired by Amarillo in the Mountain States Gas Company transaction and subsequent acquisitions of approximately 3,841 acres.

Statement No. 9 shows the unoperated gas acreage acquired by Amarillo Oil Company from various vendors prior to January 15, 1923 and its disposition.

The costs of acreage acquired from Mountain States Gas Company were booked by Amarillo in accordance with actual expenditures made by Producers & Refiners Corporation and Mountain States Gas Company as shown on Statement No. 10. All vouchers were reviewed and costs as recorded were found to be properly classified, and no changes have been made.

Statement No. 11 shows the unoperated gas acreage acquired by Amarillo Oil Company from various lessors between January 16, 1923 and May 1, 1927, the various exchanges and transfers made and the cost of the acreage transferred to Canadian River Gas Company as of May 1, 1927.

Other Leaseholds.

Among the gas leaseholds included in the transfer by Amarillo to Canadian, as shown on Statement No. 12, were (a) the Warrick lease, and (b) the Bivins No. 18 lease (Canadian number), on each of which was located a so-called combination well capable of producing both oil and gas as of the date of transfer.

The Warrick lease was acquired by Amarillo by assignment in April, 1917. Recorded costs of the Warrick lease

have been revised to properly reflect 1917 initial costs of obtaining proportionate abstract and recording fees paid by the Jones interests under joint agreements and the restoration of the Amarillo one-half interest eliminated in the reclassification of January, 1923. The reasons for this revision are more fully described in the operated gas leaseholds section of this report.

Bivins No. 18 was acquired by Amarillo in 1926. No changes were made in the recorded cost of this lease.

Gas Wells.

The gas well account of Amarillo at the date of transfer to Canadian showed 23½ producing gas wells and one dry hole. From the records and correspondence relating to wells, it is evident that drilling operations of Amarillo began with the discovery well on the Masterson "C" lease, completed about December 15, 1918. This well was also known as the Hapgood well. During the period from November, 1918 to May, 1922 the Jones interests drilled five producing wells and one dry hole, four of which were for Jones' account under the November 20, 1918 agreement, and two, including the dry hole, under Amarillo-Jones' joint account. The Amarillo-Mission joint venture started two wells which were completed by Amarillo after January 15, 1923. Five complete wells and four wells in various stages of completion were acquired from Mountain States Gas Company as of August 1, 1924. Amarillo Oil Company drilled nine wells from January 16, 1923 to May 1, 1927 which included completion of two wells comenced under the Amarillo-Mission Oil Company agreement. The half interest in the Thompson No. 1 well was acquired from the Panhandle Refining Company, the original cost of which is unknown. In accounting for the number of wells transferred to Canadian, Bivins No. 2 dry hole disappears, although the cost of drilling was included in Bivins C-1. No adjustment has been made for this dry hole, the cost of which is not known, and further it is considered proper in the ascertainment of cost to include the cost of a dry hole with the cost of producing wells. Another dry hole cost included in the transfer of properties was Fuona No. 1, which later was disposed of by Canadian in the Cliffside transaction.

The recorded cost of gas wells transferred by Amarillo

to Canadian, as shown on Statement No. 13, was $702,140.88 after giving effect to the credit account known as "Gas Department Adjustment", as shown on Statement No. 15. The history of this adjustment is briefly discussed in the next section of this exhibit.

The well account reclassification as of January 15, 1923, has been reversed as shown on Statement No. 14 for the reasons set forth in the operated leasehold section of this study. Practically all vouchers and entries to incomplete well accounts during the period from January, 1923 to May 1, 1927 were reviewed to determine the nature and extent of amounts charged.

Statement No. 16 shows the well drilling costs expended by Amarillo Oil Company from April, 1917 to January 15, 1923.

Statement No. 17 shows the gross expenditures made by A. R. Jones et al in drilling wells subsequently acquired by Amarillo from Mission Oil Company and the adjustments to obtain the cost of drilling certain wells acquired by Canadian River as of May 1, 1927.

Statement No. 18 shows expenditures for well drilling made by Mission Oil Company from May 1, 1922 to January 16, 1923.

Complete and Incomplete Wells purchased from Mountain States Gas Company were properly recorded in the gas well account. The adjustment of $76,318, shown on Statement No. 14, represents the estimated cost of wells acquired from Mountain States Gas Company as shown on Statement No. 7 and erroneously included as leaseholds.

Development costs charged to Profit and Loss, amounting to $9,492.17, as shown on Statement No. 19 have been restored.

Gas Department Adjustment—"Credit".

This account was created in September, 1925, when the property accounts of Amarillo were restated with detailed well accounts set up to conform with revised property account details. In restating the well accounts it became apparent that certain individual well accounts contained no drilling and labor, teaming or freight charges. Estimates of

drilling and labor, teaming and freight were made and set up in the well accounts, the offset being Gas Department Adjustment—Credit. However, the fact was overlooked that drilling, labor and other costs applicable to wells drilled by the Jones interests, Hapgood, Mission Oil Company and certain wells obtained in the Mountain States Gas Company purchase were erroneously included in leaseholds. The drilling, labor and other costs of the Bush No. 1, Bivins A-3, Bivins B-2 and Masterson A-1 were charged to expense in 1925 but later restored by a charge to Gas Department Adjustment and a credit to Surplus. The well costs included with leaseholds constitute, with a few exceptions, the entire amount of $490,587.07 as shown on Statement No. 15.

The whole procedure was erroneous and resulted in a duplication. Further, as this account now appears on the books of Canadian it should be reversed with leaseholds and gas wells adjusted accordingly.

Other Wells.

There were two combination wells (oil and gas), the gas portions of which were transferred to Canadian. These wells, the Warrick No. 1 and Bivins B-3, were completed by Amarillo during April and May, 1925, and at the time of transfer to Canadian were capable of producing substantial amounts of gas. It was understood that Amarillo was obligated to transfer its entire gas investment to Canadian and as these two wells were gas producers they were included in the transfer. Amarillo, however, did not remove all the gas portion from its investment until December, 1928, and April, 1929. The intangible portion of $39,798.51, as shown by footnote on Statement No. 20, was charged to Paid in Surplus.

Meter Settings.

Included in the transfer to Canadian were meter settings at various wells, the costs of which were carried in Pipe Line Investment by Amarillo. These costs amounting to $4,009.59, as shown on Statement No. 21, were removed from Amarillo's books in August, 1928 and charged to Paid in Surplus.

"Amarillo", Charges to Surplus After Canadian Transfer.

The price received by Amarillo from Canadian for gas properties, automobile purchase account and accrued expenses was $5,000,000, and recorded costs removed from the books of Amarillo, including reserves for depletion and depreciation, aggregated $1,448,305. The excess of $3,551,695 resulting from the transactions was classified on Amarillo's books as of July, 1928, as "Paid in Surplus". Examination of Amarillo's books for subsequent periods showed many items included in the sale, that were not removed from the accounts on May 31, 1928, and for which no subsequent charge was made to Canadian. These additional items charged to "Paid in Surplus", reduced the initial Paid in Surplus from $3,551,695 to $3,433,038.29, or $118,657.

Delay Rentals.

The term "delay rentals" usually applies to an amount paid a lessor for delay in drilling. Payments ordinarily cease when acreage becomes productive of gas and royalty payments begin. Amarillo made substantial payments to its lessors which were treated on its books as delay rentals, but which in fact served to discharge contract obligations which had no direct relation to the *deferrence* of drilling obligations. An outstanding example is the Bivins No. 30 lease wherein Amarillo was obligated to pay a minimum of $72,000 per year with deductions for royalties on gas actually produced. For a period extending from August, 1924, to December, 1927, Amarillo paid lessor $374,509.15 under such obligations. This entire amount is restored as a lease cost on the premise that payments of this nature during the development periods are properly capital.

The above principle has also been applied to unoperated leaseholds and $113,509.30 representing delay rental payments has been restored as leasehold costs. The total amount of the above revisions, i. e., $488,018.45 is shown on Summary Statement No. 1.

General and Administrative Costs.

In this study general and administrative costs are given combined consideration. The method generally has been

to determine the percentage relationship of general and administrative costs to the combined primary costs of operation, maintenance and property additions. It is generally understood that general and administrative costs are not only applicable to the operation of properties but also apply to construction and the acquisition of property during any period. The problem is to allocate a portion of general and administrative costs to the primary cost of Gas Wells, Leaseholds and Other Properties, either acquired or constructed. These costs have been determined and are summarized on Statement No. 22. In only two instances were assumptions made:

(a) The percentage determined for Amarillo from April, 1917 to January, 1923 was applied to the properties acquired by Mission Oil Company from the Jones Interests on the premise that for a part of the time Amarillo and Jones each had a one-half interest in the properties.

(b) Mountain States Gas Company after acquiring the Producers & Refiners Corporation properties in the Amarillo field, increased their holdings and then held the combined property for almost a year before sale to Amarillo. It was assumed that general and administrative costs of Mountain States Gas Company were the same in per cent as those of Producers & Refiners Corporation.

After considering the relationship of the entire period from 1917 to 1927, 4.0 per cent was considered a fair and reasonable percentage to apply for general and administrative costs.

Interest Cost.

"Amarillo" has never capitalized interest on its leasing and drilling activities, nor has the Company capitalized any interest on the properties acquired from others. Amarillo, the Jones interests, Producers & Refiners Corporation and Mountain States Gas Company were pioneers in the development of the Amarillo gas field expending substantial amounts of money which were tied up for considerable periods of time before adequate outlets for gas were avail-

able. Amarillo's investment was idle from April, 1917 to October, 1920 the date gas was first delivered at the well to Panhandle Pipe Line Company. The Jones interests had an idle investment from November, 1918 to October 1920 and the investment of Producers & Refiners Corporation and Mountain States Gas Company was without revenue or return in any form from May 1, 1923 to August 1, 1924, the date of sale to Amarillo. During these periods and periods of further development by Amarillo from 1923 to 1927, inclusive, interest should be charged to the development on all money advanced from the date of the first expenditure, to the time the development is in full operation and enjoying a reasonable return.

Considering the nature of the development and the idle investment periods, it is concluded that a reasonable interest cost should be 2.0 per cent. Interest has not been computed on items heretofore charged to expense and restored as capital nor on general and administrative costs.

Conclusion.

From the facts developed herein and after due consideration of all data pertinent to the problem, the restoration of items heretofore expensed and the inclusion of General Administrative and Interest Costs, the cost to the Predecessor Companies of the properties acquired by Canadian River Gas Company as of May 1, 1927, has been determined to be $2,305,841.44, as shown on Statement No. 1.

Signed at Denver, Colorado, this January 30, 1941.

WILLIAM A. LUSK.

Exhibit No. 194

Statement No. 1

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Summary

Item No.	Description	Supporting Statements attached: Book Costs	Supporting Statements attached: Adjustments	Book Costs of Amarillo Oil Company	Adjustments as Recorded Herein	Cost to Predecessor Companies
(1)	(2)	(3)		(4)	(5)	(6)
1	Operated Gas Leaseholds	2	3	$ 831,066.68	$-482,731.54	$ 348,335.14
2	Unoperated Gas Leaseholds	8	-	158,228.70	-	158,228.70
3	Other Operated Leaseholds	12	12	7,405.00	2,087.92	9,492.92
4	Gas Wells	13	14	702,140.88	435,944.64	1,138,085.52
5	Other Wells	20	-	56,775.48	-	56,775.48
6	Meter Settings at Wells	21	-	4,009.59	-	4,009.59
7	Total			$1,759,626.33	$ -44,698.98	$1,714,927.35
8	Delay Rentals	-	-	-	488,018.45	488,018.45
9	General and Administrative Costs	-	-	-	68,597.09	68,597.09
10	Interest Cost	-	-	-	34,298.55	34,298.55
11	Total Cost			$1,759,626.33	$ 546,215.11	$2,305,841.44

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Operated Gas Leaseholds

Item No.	Lease No. Mountain States	Lease No. Canadian River	Lessor	Acquired by Amarillo Oil Company from Various Vendors by Assignment From April 1917 to January 15, 1923 Acres	Amount	Mission Oil Company As of Jan. 16, 1923 Acres	Amount	Mountain States Gas Company As of August 1, 1924 (E) Acres	Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Book Costs of Amarillo Oil Company								
1	-	53	Lee Bivins C and D	13,325.70	$2,886.08	-	$160,561.68	-	-
2	-	54	R. B. Masterson C	9,440.00		-		-	-
3	-	55	R. B. Masterson D	5,333.10		-		-	-
4	-	56	R. B. Masterson E	1,440.00	1,358.16	-	261,364.36	-	-
5	-	58	R. B. Masterson B	17,264.20		-		-	-
6			Total Included in Reclassification as of January 15, 1923	46,803.00	$4,244.24	-	$421,926.04	-	-
7	1055	11	Fuqua Land and Cattle Company	-	-	-	-	1,280.00 (A)	$ 746.15
8	1062	18	Lee Bivins B	-	-	-	-	2,240.00	4,753.77
9	1070	25	W. H. Bush	-	-	-	-	9,000.00 (A)	5,315.88
10	1071	26	R. B. Masterson H	-	-	-	-	1,122.00	36,816.92
11	1075	30	Lee Bivins A	-	-	-	-	200,000.00	105,037.46
12	1076	31	R. B. Masterson A	-	-	-	-	29,455.11	65,178.13
13	1077	32	R. B. Masterson I	-	-	-	-	160.00	42,668.27
14	1088	43	R. B. Masterson F	-	-	-	-	262.77	3,853.08
15	1089	44	R. B. Masterson G	-	-	-	-	594.70	8,725.22
16	-	67	Terry Thompson one-half Interest	-	-	-	-	-	-
17			Total	46,803.00 (D)	$4,244.24		$421,926.04	244,114.58	$273,094.88
18			Difference between cost per Mountain States Gas Company and as booked by Amarillo Oil Company						1.00
19			Total as per Books						$273,095.88

Notes:
(A) Fuqua and Bush leases acquired as unoperated.
(B) Settlement of law suit - Ranch Creek Oil Company.
(C) Booked as 3,920 acres - one-half interest of 1,960 acres correct.
(D) Acreage difference of 89.45 acres between old Amarillo record and new record at January 16, 1923 after Mission Oil acquisition.
(E) See Statement No. 6 attached for division of cost between Mountain States Gas Company and its predecessor company, the Producers and Refiners Corporation.

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Operated Gas Leaseholds

Acquired by Amarillo Oil Company from									
Various Vendors by Assignment From April 1917 to January 15, 1923		Mission Oil Company As of Jan. 16, 1923		Mountain States Gas Company As of August 1, 1924 (E)		Various Lessors January 16, 1923 to May 1, 1927		Total Book Cost Amarillo Oil Company	
Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
13,325.70	$2,886.08	-	$160,561.68	-	-	-	-	13,325.70	$163,447.76
9,440.00		-		-	-	-	-	9,440.00	
5,333.10		-		-	-	-	-	5,333.10	
1,440.00	1,358.16	-	261,364.36	-	-	-	-	1,440.00	262,722.52
17,264.20		-		-	-	-	-	17,264.20	
46,803.00	$4,244.24	-	$421,926.04	-	-	-	-	46,803.00	$426,170.28
-	-	-	-	1,280.00 (A)	$ 746.15	960 (A)	$ 4,800.00	2,240.00	5,546.15
-	-	-	-	2,240.00	4,753.77	-	-	2,240.00	4,753.77
-	-	-	-	9,000.00 (A)	5,315.88	-	-	9,000.00	5,315.88
-	-	-	-	1,122.00	36,816.92	1,078	106,462.18 (B)	2,200.00	143,279.10
-	-	-	-	200,000.00	105,037.46	-	-	200,000.00	105,037.46
-	-	-	-	29,455.11	65,178.13	-	-	29,455.11	65,178.13
-	-	-	-	160.00	42,668.27	-	-	160.00	42,668.27
-	-	-	-	262.77	3,853.08	-	-	262.77	3,853.08
-	-	-	-	594.70	8,725.22	-	-	594.70	8,725.22
-	-	-	-	-	-	1,960 (C)	20,538.34	1,960.00	20,538.34
46,803.00 (D)	$4,244.24		$421,926.04	244,114.58	$273,094.88	3,998	$131,800.52	294,915.58	$831,065.68
					1.00				
					$273,095.88				1.00 (E)
									$831,066.68

Notes:
(A) Fuqua and Bush leases acquired as unoperated.
(B) Settlement of law suit - Ranch Creek Oil Company.
(C) Booked as 3,920 acres - one-half interest of 1,960 acres correct.
(D) Acreage difference of 89.45 acres between old Amarillo record and new record at January 16, 1923 after Mission Oil acquisition.
(E) See Statement No. 6 attached for division of cost between Mountain States Gas Company and its predecessor company, the Producers and Refiners Corporation.

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Adjustments to Operated Gas Leaseholds and Cost to Predecessor Companies

	Acquired by Amarillo Oil Company from					
	Various Vendors by Assignment From April, 1917 to January 15, 1923		Mission Oil Co. As of January 16, 1923		Mountain States Gas Co. As of August 1, 1924	
Description	Acres	Amount	Acres	Amount	Acres	Amount
(2)	(3)	(4)	(5)	(6)	(7)	(8)
Adjustments to Book Costs shown on Statement No. 2						
Eliminate Recorded Cost and Substitute Cost as Per Statement No. 4	-	$-4,244.24	-	-	-	-
Bivins C & D Leases	-	2,248.01	-	-	-	-
Masterson B & C Leases	-	12,319.17	-	-	-	-
Masterson D Lease	-	1,743.79	-	-	-	-
Masterson E Lease	-	313.91	-	-	-	-
Eliminate Recorded Cost and Substitute Cost A.R. Jones, et al, assigned to Mission Oil Company, Per Statement No. 5	-	-	-	$-421,926.04	-	-
	-	-	-	3,131.86	-	-
Adjustment of Mountain States Gas Co. Leases -						
Lease No. 1071	-	-	-	-	-	$ -33,878.00
Lease No. 1077, as Per Statement No. 7	-	-	-	-		-42,440.00
Net Adjustment	-	$12,380.64	-	$-418,794.18	-	$ -76,318.00
Cost of Operated Gas Leaseholds to Predecessor Companies	46,803.00	$16,624.88	-	$ 3,131.86	244,114.58	$ 196,777.88

Statement No. 3 Exhibit No. 19

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Adjustments to Operated Gas Leaseholds and Cost to Predecessor Companies

Acquired by Amarillo Oil Company from									
Various Vendors by Assignment From April, 1917 to January 15, 1923		Mission Oil Co. As of January 16, 1923		Mountain States Gas Co. As of August 1, 1924		Various Lessors January 16, 1923 to May 1, 1927		Total Book Cost Amarillo Oil Co.	
Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
-	$-4,244.24	-	-	-	-	-	-	-	$ -4,244.24
-	2,248.01	-	-	-	-	-	-	-	2,248.01
-	12,319.17	-	-	-	-	-	-	-	12,319.17
-	1,743.79	-	-	-	-	-	-	-	1,743.79
-	313.91	-	-	-	-	-	-	-	313.91
-	-	-	$-421,926.04	-	-	-	-	-	-421,926.04
-	-	-	3,131.86	-	-	-	-	-	3,131.86
-	-	-	-	-	$ -33,878.00	-	-	-	-33,878.00
-	-	-	-	-	-42,440.00	-	-	-	-42,440.00
-	$12,380.64	-	$-418,794.18	-	$ -76,318.00	-	-	-	$-482,731.54
46,803.00	$16,624.88	-	$ 3,131.86	244,114.58	$ 196,777.88	3,998.00	$131,800.52	294,915.58	$ 348,335.14

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Adjustments to Operated Gas Leaseholds Acquired by
Amarillo Oil Company from Various Vendors April, 1917 to January 15, 1923

Date (2)	Description (3)		Lease Designation and Acreage: Bivins C & D (4)	Masterson B & C (5)	Ozier (6)	Ingerton (7)	Merchant (8)	Warrick (Oil & Gas) (9)	Masterson D (10)
1917									
April	Acquired at time of organization of Amarillo Oil Company from M. C. Nobles, H. F. Sullenberger, F. J. Storms, J. M. Neely and M. W. Cunningham in full payment for capital stock subscriptions		23,301.70	31,458.50	9,920	1,280	3,200	2,400	-
June	Acquired from R. B. Masterson		-	-	-	-	-	-	5,481.60
Dec.	Balance	Acres	23,301.70	31,458.50	9,920	1,280	3,200	2,400	5,481.60
1918									
Jan.	Acquired from R. B. Masterson		-	-	-	-	-	-	-
	Miscellaneous cash expenditures for recording, legal, abstracts, etc.		-	-	-	-	-	-	-
	Delay rentals paid to R. B. Masterson 9-1/2 sections		-	-	-	-	-	-	-
Aug.	Assignment to Hapgood Company 2-3/4 sections		-	-1,760.00	-	-	-	-	-
	Assignment to Hapgood Company 1/2 section		-	-320.00	-	-	-	-	-
	Assignment to P. A. Little		-	-160.00	-	-	-	-	-
Dec.	Balance	Acres	23,301.70	29,218.50	9,920	1,280	3,200	2,400	5,481.60
1919									
	Miscellaneous cash expenditures for recording, legal, abstracts, etc.		-	-	-	-	-	-	-
	Delay rental paid to R. B. Masterson on 9-1/2 sections and 16,213 acres		-	-	-	-	-	-	-
Dec.	Balance	Acres	23,301.70	29,218.50	9,920	1,280	3,200	2,400	5,481.60
1920									
	Miscellaneous cash expenditures for recording, legal abstracts, etc.		-	-	-	-	-	-	-
	Delay rental - J. C. Warrick one-half		-	-	-	-	-	-	-
	Acreage surrendered		-7,040.00	-	-	-	-	-	-
	Acreage substituted		1,280.00	-	-	-	-	-	-
	Acreage released or otherwise disposed of (A)		-4,216.00	-2,573.35	-9,920	-1,280	-3,200	-	-
Dec.	Balance	Acres	13,325.70	26,645.15	-	-	-	2,400	5,481.60
1921									
	Delay rentals J. C. Warrick one half		-	-	-	-	-	-	-
	Legal fees - Ranch Creek leases - Masterson		-	-	-	-	-	-	-
Dec.	Balance	Acres	13,325.70	26,645.15	-	-	-	2,400	5,481.60
1922									
	Delay rentals J. C. Warrick one half		-	-	-	-	-	-	-
	Miscellaneous recording fees		-	-	-	-	-	-	-
	Legal fees, Ranch Creek leases - Masterson		-	-	-	-	-	-	-
Dec.	Balance	Acres	13,325.70	26,645.15	-	-	-	2,400	5,481.60
1923									
	Total Leaseholds at January 15		13,325.70	26,645.15	-	-	-	2,400	5,481.60
	Cost of Leaseholds at January 15								
	Total Operated Gas Leaseholds		$2,248.01	$12,319.17	-	-	-	-	$1,743.79
	Total Oil and Gas Leaseholds		-	-	-	-	-	$2,087.92	-

Note: (A) Obtained by substraction - Refer to Text.

Exhibit No. 19
Statement No. 4

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Adjustments to Operated Gas Leaseholds Acquired by
Amarillo Oil Company from Various Vendors April, 1917 to January 15, 1923

Description (3)		Lease Designation and Acreage: Elvins C & D (4)	Masterson B & C (5)	Ozier (6)	Ingerton (7)	Merchant (8)	Warrick (Oil & Gas) (9)	Masterson D (10)	Masterson E (11)	Total (12)	Amount (13)
anization of Amarillo Oil Company from M. C. Nobles, . J. Storms, J. M. Neely and M. W. Cunningham in full took subscriptions		23,301.70	31,458.50	9,920	1,280	3,200	2,400	-	-	71,560.20)	$ 7,742.72
terson		-	-	-	-	-	-	5,481.60	-	5,481.60)	
nce	Acres	23,301.70	31,458.50	9,920	1,280	3,200	2,400	5,481.60	-	77,041.80	$ 7,742.72
terson		-	-	-	-	-	-	-	1,440.00	1,440.00	-
nditures for recording, legal, abstracts, etc.		-	-	-	-	-	-	-	-	-	1,429.85
. B. Masterson 9-1/2 sections		-	-	-	-	-	-	-	-	-	1,520.00
Company 2-3/4 sections		-	-1,760.00	-	-	-	-	-	-	-1,760.00)	
Company 1/2 section		-	-320.00	-	-	-	-	-	-	-320.00)	-374.24
tle		-	-160.00	-	-	-	-	-	-	-160.00)	
nce	Acres	23,301.70	29,218.50	9,920	1,280	3,200	2,400	5,481.60	1,440.00	76,241.80	$10,318.33
nditures for recording, legal, abstracts, etc.		-	-	-	-	-	-	-	-	-	272.88
. B. Masterson on 9-1/2 sections and 16,213 acres		-	-	-	-	-	-	-	-	-	2,786.62
nce	Acres	23,301.70	29,218.50	9,920	1,280	3,200	2,400	5,481.60	1,440.00	76,241.80	$13,377.83
nditures for recording, legal abstracts, etc.		-	-	-	-	-	-	-	-	-	322.59
rrick one-half		-	-	-	-	-	-	-	-	-	600.00
		-7,040.00	-	-	-	-	-	-	-	-7,040.00	-
		1,280.00	-	-	-	-	-	-	-	1,280.00	-
herwise disposed of (A)		-4,216.00	-2,573.35	-9,920	-1,280	-3,200	-	-	-	-21,189.35	-3,231.12
nce	Acres	13,325.70	26,645.15	-	-	-	2,400	5,481.60	1,440.00	49,292.45	$11,069.30
rrick one half		-	-	-	-	-	-	-	-	-	600.00
k leases - Masterson		-	-	-	-	-	-	-	-	-	600.00
nce	Acres	13,325.70	26,645.15	-	-	-	2,400	5,481.60	1,440.00	49,292.45	$12,269.30
rrick one half		-	-	-	-	-	-	-	-	-	600.00
g fees		-	-	-	-	-	-	-	-	-	7.50
k leases - Masterson		-	-	-	-	-	-	-	-	-	5,836.00
lance	Acres	13,325.70	26,645.15	-	-	-	2,400	5,481.60	1,440.00	49,292.45	$18,712.80
nuary 15		13,325.70	26,645.15	-	-	-	2,400	5,481.60	1,440.00	49,292.45	$18,712.80
nuary 15											
aseholds		$2,248.01	$12,319.17	-	-	-	-	$1,743.79	$313.91	-	$16,624.88
seholds		-	-	-	-	-	$2,087.92	-	-	-	$2,087.92

Note: (A) Obtained by substraction - Refer to Text.

Exhibit No. 194

Statement No. 5

Canadian River Gas Company

Cost to Predecessor Companies of Property Acquired by Canadian River Gas Company as of May 1, 1927

Adjustment to Operated Gas Leaseholds Acquired by Amarillo Oil Company from Mission Oil Company as of January 16, 1923

Year		Amount	Totals By Accounts
(2)		(4)	(5)
	Expenditures by A. R. Jones et al., from November 1918 to May 1, 1922		
	Well Drilling		
	Rigs, Casing, Line Pipes, Pumps, Tanks, Automatic and Miscellaneous Equipment	$ 97,596.62	
	Drilling, Labor, Teaming, Trucking and Camp Expense	186,778.76	
	Purchase of one-fourth interest Masterson No. 1	9,500.00	
	Insurance, Taxes, Injuries	1,987.78	
	Other Miscellaneous Expenses	1,779.96	
	Total applicable to Gas Wells but not segregated by Lease or Well		$297,643.12
	Leaseholds		
1919	One-half Renewal "Bivins"	$ 10.00	
	One-half Delay Rentals on 9-1/2 Sections "Masterson"	760.00	
	One-half Delay Rentals on 16,213 Acres "Masterson"	2,026.63	
	One-half Recording Fees	27.12	
	One-half Recording Fees "Warrick"	3.00	
	One-half Delay Rentals "Warrick"	600.00	
1920	One-half Delay Rentals "Masterson"	222.94	
	One-half Delay Rentals "Warrick"	600.00	
	One-half Recording Fees	85.17	
1922	One-half Delay Rentals "Warrick"	600.00	
	Total applicable to	$ 4,934.86	
	Leaseholds - Gas		3,131.86
	Leaseholds - Gas and Oil		1,803.00
	Total, Excluding Legal, Interest and General		$302,577.98

Exhibit No. 194

Statement No. 6

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Operated Gas Leaseholds Acquired by Amarillo Oil Company from Mountain States Gas Company as of August 1, 1934

Lease Nos. Mountain States	Lease Nos. Canadian River	Lessor	Mountain States Gas Company Book Costs: Purchased from Producers and Refiners Corporation: Approximate Acreage	Purchased from Producers and Refiners Corporation: Amount	Additional Expenditures	Total Book Cost	Amarillo Oil Co. Book Cost
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1062	18	Lee Bivins	2,240.00	$ 2,450.47	$ 2,303.30	$ 4,753.77	$ 4,765.77
1071	26	R. B. Masterson	1,122.00	35,191.68	1,625.24	36,816.92	36,791.92
1075	30	Lee Bivins	200,000.00	51,019.62	54,017.84	105,037.46	105,091.71
1076	31	R. B. Masterson	29,455.11	31,667.02	33,511.11	65,178.13	65,148.13
1077	32	R. B. Masterson, et. al.	160.00	42,612.02	56.25	42,668.27	42,658.02
1088	43	R. B. Masterson	262.77	3,778.63	74.45	3,853.08	3,936.06
1089	44	R. B. Masterson	594.70	8,551.79	173.43	8,725.22	8,642.24
			233,834.58	$175,271.23	$91,761.62	$267,032.85	$267,033.85
		Leases acquired as Unoperated transferred to Operated					
1055	11	Fuqua Land & Cattle Company	1,280.00	106.15	640.00	746.15	746.15
1070	25	W. H. Bush	9,000.00	685.88	4,630.00	5,315.88	5,315.88
	Total		244,114.58	$176,063.26	$97,031.62	$273,094.88	$273,095.88

Statement No. 7

Canadian River Gas Company

Cost to Predecessor Companies of Property Acquired by Canadian River Gas Company as of May 1, 1927

Adjustment to Operated Gas Leaseholds Acquired by Amarillo Oil Company from Mountain States Gas Company as of August 1, 1924

		Lease Designation		
	Description	No. 1071 (Masterson)	No. 1077 (Masterson et al)	Total
(1)	(2)	(3)	(4)	(5)
	Purchase Price By			
	Producers & Refiners Corp. for Lease and Well Charged to Lease Investment	$35,000.00	$42,600.00	
	Additional Charges:			
	Rentals	$ 65.70	$40.00	
	Miscellaneous	41.75	16.25	
	Prorated Expense	84.23	12.02	
	Rentals	1,122.00	-	
	Legal	503.24	-	
	Total Additional Charges	$1,816.92	$68.27	
	Total	$36,816.92	$42,668.27	$79,485.19
	Assumed Lease Portion			
	Initial Purchase Price at $1.00 per acre	$1,122.00	$160.00	
	Additional Charges	1,816.92	68.27	
	Total Lease Portion	$2,938.92	$228.27	3,167.19
	Total Well Portion	$33,878.00	$42,440.00	$76,318.00

Exhibit No. 194

Statement No. 8

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Unoperated Leaseholds

Item No.		Acres	Book Cost	Adjustments	Cost
(1)		(3)	(4)	(5)	(6)
	Acquired by Amarillo Oil Company from:				
	Various Vendors				
1	April 15, 1917 to January 15, 1923 (Statement No. 9)	-	-	-	-
2	Mission Oil Company				
	January 16, 1923	-	-	-	-
3	Mountain States Gas Company				
	August 1, 1924 (Statement No. 10)	30,234.95	$123,009.70	-	$123,009.70
4	Various Lessors				
	January 16, 1923 to May 31, 1928 (Statement No. 11)	3,841.47	35,219.00	-	35,219.00
5	Total Unoperated Leaseholds	34,076.42	$158,228.70	-	$158,228.70

Exhibit No. 19

Statement No. 9

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Leased Gas Leaseholds Acquired by Amarillo Oil Company
from Various Vendors, April 15, 1917 to January 15, 1923

Item No.	Canadian River Lease No.	Lessor	Approximate Acreage	Book Cost to Amarillo Oil Company
(1)	(2)	(3)	(4)	(5)
1	57	Warrick	2,400	$ 901.50
2		Half Interest Acquired From Mission Oil Company as of January 16, 1923		901.50
				$1,803.00
3		Transferred to Oil Department		1,803.00
4		Balance		-

Exhibit No. 194

Statement No. 10
Sheet 1 of 3

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Unoperated Gas Leaseholds Acquired by Amarillo Oil Company
From Mountain States Gas Company, August 1, 1924

Item No.	Lease No. Mountain States	Lease No. Canadian River	Lessor	Mountain States Gas Company Book Cost: Acquired from Producers & Refiners Corporation Approximate Acreage	Mountain States Gas Company Book Cost: Acquired from Producers & Refiners Corporation Book Cost	Mountain States Gas Company Book Cost: Additional Expenditures	Mountain States Gas Company Book Cost: Total Book Cost	Amarillo Oil Co. Book Costs
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	1045	1	A. Blessenbach et ux	160.00	$ 1,213.22	$ 160.75	$ 1,373.97	$ 1,373.97
2	1046	2	J. T. Sneed, jr. et ux	640.00	3,251.26	654.50	3,905.76	3,905.76
3	1047	3	Lee Bivins	40.00	1,054.00	40.00	1,094.00	1,094.00
4	1048	4	R. B. Masterson	100.00	1,332.36	-	1,332.36	1,332.36
5	1049	5	R. B. Masterson	80.00	1,065.89	2.00	1,067.89	1,067.89
6	1050	6	J. T. Sneed, jr. et ux	5,440.00	5,853.93	5,440.00	11,293.93	11,293.93
7	1051	7	R. B. Masterson	160.00	2,131.79	160.00	2,291.79	2,291.79
8	1052	8	Lee Bivins	20.00	789.90	21.50	811.40	811.40
9	1053	9	D. P. Seay	540.00	3,283.80	542.00	3,825.80	3,825.80
10	1054	10	R. B. Masterson	80.00	2,006.01	-2,000.00	6.01	6.01
11	1055	11	Fuqua Land and Cattle Company	1,280.00	106.15	640.00	746.15	746.15
12	1056	12	R. B. Masterson	40.00	403.00	80.00	483.00	483.00
13	1057	13	J. T. Sneed, jr.	160.00	1,612.02	331.50	1,943.52	1,943.52
14	1058	14	R. B. Masterson	40.00	403.00	80.00	483.00	483.00
15	1059	15	T. L. McBride et ux	40.00	403.00	80.00	483.00	483.00
16	1060	16	R. B. Masterson	40.00	443.00	40.00	483.00	483.00
17	1061	17	Lee Bivins	40.00	403.00	80.00	483.00	483.00
18	1063	19	M. E. Miller et ux	212.50	1,078.42	2.00	1,080.42	1,080.42
19	1064	20	Lee Bivins	160.00	4,016.02	166.25	4,182.27	4,182.27
20	1065	-	C. L. Kilgore	Lease Contract	1,001.00	-	1,001.00	1,001.00
21	1066	21	Terry Thompson	7,603.80	8,182.45	7,603.80	15,786.25	15,786.25
22	1067	22	Lee Bivins	6,749.30	7,256.14	133.17	7,389.31	7,389.31
23	1068	23	E. Crawford et al	1,440.00	7,310.54	1,440.00	8,750.54	8,750.54
24	1069	24	J. M. Crawford	480.00	2,438.45	486.50	2,924.95	2,924.95
25	1070	25	W. H. Bush	9,000.00	685.88	4,630.00	5,315.88	5,315.88
26	1072	27	W. H. Ingerton et ux	2,000.00	10,152.20	2,004.75	12,156.95	12,156.95
27	1073	28	R. B. Masterson	160.00	2,012.02	40.00	2,052.02	2,052.02
28	1074	29	K. S. Poling	80.00	1,107.11	88.00	1,195.11	1,195.11
29	1078	33	Lee Bivins	20.00	201.50	20.00	221.50	221.50
30	1079	34	J. M. Crawford	175.80	893.12	-	893.12	893.12
31	1080	35	C. J. Hansen et al	160.00	-	332.00	332.00	332.00
32	1081	36	Anthony Walters	320.00	-	669.67	669.67	669.67
33	1082	37	R. B. Masterson	159.88	2,298.89	87.67	2,386.56	2,386.56
34	1083	38	R. B. Masterson	482.05	6,931.03	120.52	7,051.55	7,051.55

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Unoperated Gas Leaseholds Acquired by Amarillo Oil Company
From Mountain States Gas Company, August 1, 1924

Lease No. Mountain States	Lease No. Canadian River	Lessor	Mountain States Gas Company Book — Acquired from Producers & Refiners Corporation — Approximate Acreage	Book Cost	Additional Expenditures
(2)	(3)	(4)	(5)	(6)	(7)
1084	39	R. B. Masterson	324.90	$ 4,671.49	$ 81.23
1085	40	R. B. Masterson	280.00	4,025.90	70.00
1086	41	R. B. Masterson	320.00	4,601.04	91.58
1087	42	R. B. Masterson	201.75	2,900.80	30.44
1090	45	R. B. Masterson	320.00	4,601.04	103.17
1091	46	R. B. Masterson	200.00	2,875.65	50.00
1092	47	O. H. Cooper et ux	212.50	-	1,062.50
1490	48	E. E. Masterson et ux	679.80	-	687.80
1491	49	R. B. Masterson	80.00	-	1,604.70
1492	50	R. B. Masterson	120.00	1,209.01	151.50
1493	51	R. B. Masterson	120.00	-	2,415.55
1494	52	R. B. Masterson	40.00	-	832.35
		Total	41,002.28	$106,205.03	$31,357.40
1081	36	Anthony Walters - change in acreage (resurvey)	12.67	-	-
		Total Acreage Acquired	41,014.95	$106,205.03	$31,357.40

Exhibit No. 194

Statement No. 10
Sheet 2 of 3

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Unoperated Gas Leaseholds Acquired by Amarillo Oil Company
From Mountain States Gas Company, August 1, 1924

Lessor	Mountain States Gas Company Book Cost: Acquired from Producers & Refiners Corporation — Approximate Acreage	Book Cost	Additional Expenditures	Total Book Cost	Amarillo Oil Co. Book Costs
(4)	(5)	(6)	(7)	(8)	(9)
R. B. Masterson	324.90	$ 4,671.49	$ 81.23	$ 4,752.72	$ 4,752.72
R. B. Masterson	280.00	4,025.90	70.00	4,095.90	4,095.90
R. B. Masterson	320.00	4,601.04	91.58	4,692.62	4,692.62
R. B. Masterson	201.75	2,900.80	30.44	2,931.24	2,931.24
R. B. Masterson	320.00	4,601.04	103.17	4,704.21	4,704.21
R. B. Masterson	200.00	2,875.65	50.00	2,925.65	2,925.65
O. H. Cooper et ux	212.50	-	1,062.50	1,062.50	1,062.50
E. E. Masterson et ux	679.80	-	687.80	687.80	687.80
R. B. Masterson	80.00	-	1,604.70	1,604.70	1,604.70
R. B. Masterson	120.00	1,209.01	151.50	1,360.51	1,360.51
R. B. Masterson	120.00	-	2,415.55	2,415.55	2,415.55
R. B. Masterson	40.00	-	832.35	832.35	832.35
Total	41,002.28	$106,205.03	$31,357.40	$137,562.43	$137,562.43
Anthony Walters - change in acreage (resurvey)	12.67	-	-	-	-
Total Acreage Acquired	41,014.95	$106,205.03	$31,357.40	$137,562.43	$137,562.43

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Unoperated Gas Leaseholds Acquired by Amarillo Oil Company
From Mountain States Gas Company, August 1, 1924

Lease No. Mountain States	Lease No. Canadian River	Lessor	Mountain States Gas Company Book Cost: Acquired from Producers & Refiners Corporation Approximate Acreage	Mountain States Gas Company Book Cost: Acquired from Producers & Refiners Corporation Book Cost	Mountain States Gas Company Book Cost: Additional Expenditures	Mountain States Gas Company Book Cost: Total Book Cost
(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Less Cancellations				
1047	3	Lee Bivins	40.00	$ 1,054.00	$ 40.00	$ 1,094.00
1052	8	Lee Bivins	20.00	789.90	21.50	811.40
1059	15	T. L.McBride et ux	40.00	403.00	80,00	483.00
1065	-	C. L. Kilgore	Lease Contract	1,001.00	-	1,001.00
		Total Cancellations	100.00	$ 3,247.90	$ 141.50	$ 3,389.40
		Less Exchanges				
1051	7	R. B. Masterson (A)	160.00	$ 2,131.79	$ 160.00	$ 2,291.79
1056	12	R. B. Masterson (A)	40.00	403.00	80.00	483.00
1058	14	R. B. Masterson (A)	40.00	403.00	80.00	483.00
1060	16	R. B. Masterson (A)	40.00	443.00	40.00	483.00
1492	50	R. B. Masterson (A)	120.00	1,209.01	151.50	1,360.51
		Total Exchanged	400.00	$ 4,589.80	$ 511.50	$ 5,101.30
		Less Transfers to Operated				
1055	11	Fuqua Land and Cattle Company	1,280.00	$ 106.15	$ 640.00	$ 746.15
1070	25	W. H. Bush	9,000.00	685.88	4,630.00	5,315.88
		Total Transfers to Operated	10,280.00	$ 792.03	$5,270.00	$ 6,062.03
		Reductions from Totals on Page 2	10,780.00	8,629.73	5,923.00	14,552.73
		Total Acquired by Canadian River Gas Company	30,234.95	$97,575.30	$25,434.40	$123,009.70

Note: (A) These five leases plus 500 Acre Tract exchanged for Masterson Lease No. 65

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Unoperated Gas Leaseholds Acquired by Amarillo Oil Company
From Mountain States Gas Company, August 1, 1924

Lease No. Canadian River (3)	Lessor (4)	Mountain States Gas Company Book Cost: Acquired from Producers & Refiners Corporation Approximate Acreage (5)	Book Cost (6)	Additional Expenditures (7)	Total Book Cost (8)	Amarillo Oil Co. Book Costs (9)	Elimimated Year (10)
Less Cancellations							
3	Lee Bivins	40.00	$ 1,054.00	$ 40.00	$ 1,094.00	$ 1,094.00	1925
8	Lee Bivins	20.00	789.90	21.50	811.40	811.40	1925
15	T. L.McBride et ux	40.00	403.00	80.00	483.00	483.00	1925
-	C. L. Kilgore	Lease Contract	1,001.00	-	1,001.00	1,001.00	1925
	Total Cancellations	100.00	$ 3,247.90	$ 141.50	$ 3,389.40	$ 3,389.40	
Less Exchanges							
7	R. B. Masterson (A)	160.00	$ 2,131.79	$ 160.00	$ 2,291.79	$ 2,291.79	1926
12	R. B. Masterson (A)	40.00	403.00	80.00	483.00	483.00	1926
14	R. B. Masterson (A)	40.00	403.00	80.00	483.00	483.00	1926
16	R. B. Masterson (A)	40.00	443.00	40.00	483.00	483.00	1926
50	R. B. Masterson (A)	120.00	1,209.01	151.50	1,360.51	1,360.51	1926
	Total Exchanged	400.00	$ 4,589.80	$ 511.50	$ 5,101.30	$ 5,101.30	
Less Transfers to Operated							
11	Fuqua Land and Cattle Company	1,280.00	$ 106.15	$ 640.00	$ 746.15	$ 746.15	1927
25	W. H. Bush	9,000.00	685.88	4,630.00	5,315.88	5,315.88	1925
	Total Transfers to Operated	10,280.00	$ 792.03	$5,270.00	$ 6,062.03	$ 6,062.03	
	Reductions from Totals on Page 2	10,780.00	8,629.73	5,923.00	14,552.73	14,552.73	
	Total Acquired by Canadian River Gas Company	30,234.95	$97,575.30	$25,434.40	$123,009.70	$123,009.70	

Note: (A) These five leases plus 500 Acre Tract exchanged for Masterson Lease No. 65

Exhibit No. 19

Statement No. 11

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Unoperated Gas Leasehold Acquired by Amarillo Oil Company from Various Lessors, January 16, 1923 to May 1, 1927

Item No.	Year	Canadian River Lease No.	Lessor	Approximate Acreage	Book Cost
(1)	(2)	(3)	(4)	(5)	(6)
1	1923	57	Warrick	-	$ 1,200.00
2	1924	57	Warrick	-	1,202.00
3	1925	60	Allison	100.00	1,150.00
4	1925		Masterson	160.00	160.00
5	1926	61	McBride	600.00	6,000.00
6	1926	62	Wright	328.43	3,280.00
7	1926	63	Baker	480.00	3,840.00
8	1926	64	Crawford	1,453.04	10,887.70
9	1926	65	Masterson (A)	560.00	5,261.30
10	1926	66	Gary and Davies	320.00	4,800.00
11	1926	11	Fuqua	960.00	4,800.00
12	1926	69	Kilgore (B)	18,835.20	141,264.00
13			Total Acquired by Amarillo Oil Company	23,796.67	$183,845.00
			Less Acreage Exchanged		
14	1925	-	Masterson	160.00	160.00
			Less Transferred to Oil Department		
15	1923	57	Warrick	-	1,200.00
16	1924	57	Warrick	-	1,202.00
17			Total	-	$ 2,402.00
			Less Transferred to Operated Leaseholds		
18	1926	11	Fuqua	960.00	4,800.00
			Less Acreage not Conveyed as of May 31, 1928		
19	1926	69	Kilgore (B)	18,835.20	141,264.00
20			Total Deductions	19,955.20	$148,626.00
21			Total Acquired by Canadian River Gas Company	3,841.47	35,219.00

Notes: (A) Received in Exchange for Lease Nos. 7, 12, 14, 16, 50 and 160 Acre Tract

(B) Gas Rights sold to Canadian River Gas Company after May 31, 1928: - but oil rights were retained by Amarillo Oil Company.

Exhibit No. 19

Statement No. 12

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Other Leaseholds

Canadian River Lease No.	Description	Lease	Acres	Amount
(2)	(3)	(4)	(5)	(6)
18	Payment to Lee Bivins 1926	Bivins	-	$3,200.00
57	Transfer from Unoperated Gas Leaseholds (Statement No. 9)	Warrick	2,400	1,803.00
57	Transfer from Unoperated Gas Leaseholds (Statement No. 11)	Warrick	-	2,402.00
	Total		2,400	$7,405.00
	Adjustments to Recorded Cost			
57	A.R. Jones and Associates One-Half interest in Rentals and Fees, Statement No. 5			$1,803.00
57	Cost of obtaining at 10.05¢ per acre. Being part of the original assignment to Amarillo Oil Company in April 1917, Statement No. 4			241.20
57	Proportion on acreage basis of miscellaneous legal, abstract, recording costs from April 1917 to January 15, 1923, Statement No. 4			43.72
	Total Additions			$2,087.92
	Cost to Predecessor Companies		2,400	$9,492.92

Canadian River Gas Company

Statement No. 13

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Gas Wells

Item No.	Well No.	Lease	Amarillo Oil Company Acquisitions: Expenditures and Charges April, 1917 to January 15, 1923	Acquired from Mission Oil Co., January 16, 1923	Acquired from Mountain States Gas Co., August 1, 1924	Expenditures and Charges January 16, 1923 to May 1, 1927	Amarillo Oil Co. Total Book Cost April 1917, to May 1, 1927
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	C 1	Bivins	$ 13,855.43 (A)	$ 13,855.43 (A)	-	$ 27,819.39	$ 55,530.25
2	C 1	Masterson (Hapgood Well) (B)					
3	E 2	Masterson					
4	C 3	Masterson	26,035.01 (A)	26,035.01 (A)	-	234,209.34	286,279.36
5	D 4	Masterson					
6	B 5	Masterson					
7	A 1	Bivins	-	-	$ 75,331.44	-7,560.19	67,771.25
8	A 2	Bivins	-	-	73,412.49	-9,215.95	64,196.54
9	B 1	Bivins	-	-	56,377.50	-4,402.32	51,975.18
10	B 2	Bivins	-	-	9,817.09	49,437.11	59,254.20
11	A 2	Masterson	-	-	49,205.91	-16,423.95	32,781.96
12	F 1	Masterson	-	-	79.16	37,654.16	37,733.32
13	G 2	Masterson	-	-	38,614.09	2,730.99	41,345.08
14	H 1	Masterson	-	-	441.21	35,746.13	36,187.34
15	I 1	Masterson	-	-	-49.43	36,602.00	36,552.57
16	1	Bush	-	-	-	55,113.65	55,113.65
17	1	Fuqua	-	-	-	51,358.28	51,358.28
18	1	Thompson One-half Interest	-	-	-	12,951.25	12,951.25
19	A 3	Bivins	-	-	-	30,470.09	30,470.09
20	A 4	Bivins	-	-	-	41,369.20	41,369.20
21	A 5	Bivins	-	-	-	36,402.85	36,402.85
22	B 4	Bivins	-	-	-	27,766.41	27,766.41
23	C 4	Bivins	-	-	-	37,603.58	37,603.58
24	D 3	Bivins	-	-	-	57,193.26	57,193.26
25	A 1	Masterson	-	-	-	72,870.98	72,870.98
26	L	Masterson (Fittings Only)	-	-	-	21.35	21.35
27		Total Book Cost of Wells	$ 39,890.44	$ 39,890.44	$303,229.46	$809,717.61	$1,192,727.95
28		Deduct Gas Department Adjustment Statement No. 15	-	-	-	490,587.07	490,587.07
29		Book Cost of Wells to Amarillo Oil Company	$ 39,890.44	$ 39,890.44	$303,229.46	$319,130.54	$ 702,140.88

Notes: (A) Represents only tangible equipment

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Adjustments to Gas Wells

Description	Expenditures and Charges April, 1917 to Jan. 15, 1923	Amarillo Oil Company Acquisitions: Acquired from Mission Oil Co. Jan. 16, 1923	Amarillo Oil Company Acquisitions: Acquired from Mountain States Gas Co. August 1, 1924
(2)	(3)	(4)	(5)
Eliminate Recorded Cost and Substitute Actual Cost to Amarillo Oil Company, Statement No. 16	$-39,890.44	-	-
	89,566.32	-	-
Eliminate Recorded Cost and Substitute Cost of A.R. Jones, et al, Statement No. 17 and	-	$-39,890.44	-
Substitute Cost of Mission Oil Company, Statement No. 18	-	297,643.12	-
	-	42,705.91	-
Add Mountain States Gas Company Well costs eliminated from Lease Costs - Contra (Statement No. 7)	-	-	$ 76,318.00
Development Costs charged to Profit and Loss per Statement No. 19	-	-	-
Net Adjustment to Book Cost shown on Statement No. 13.	$ 49,675.88	$300,458.59	$ 76,318.00
Total Cost of Gas Wells Acquired by Canadian River Gas Company	$ 89,566.32	$340,349.03	$379,547.46

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Adjustments to Gas Wells

scription	Amarillo Oil Company Acquisitions: Expenditures and Charges April, 1917 to Jan. 15, 1923	Acquired from Mission Oil Co. Jan. 16, 1923	Acquired from Mountain States Gas Co. August 1, 1924	Expenditures and Charges Jan. 16, 1923 to May 1, 1927	Amarillo Oil Co. Total Book Cost May 1, 1927
(2)	(3)	(4)	(5)	(6)	(7)
ost and Cost to Amarillo ment No. 16	$-39,890.44	-	-	-	$ -39,890.44
	89,566.32	-	-	-	89,566.32
ost and A.R. Jones, et al, nd	-	$-39,890.44	-	-	-39,890.44
	-	297,643.12	-	-	297,643.12
Mission Oil No. 18	-	42,705.91	-	-	42,705.91
Gas Company Well costs ease Costs - Contra	-	-	$ 76,318.00	-	76,318.00
harged to Profit and Loss 19	-	-	-	$ 9,492.17	9,492.17
ook Cost shown on Statement	$ 49,675.88	$300,458.59	$ 76,318.00	$ 9,492.17	$ 435,944.64
as Wells Acquired by r Gas Company	$ 89,566.32	$340,349.03	$379,547.46	$328,622.71	$1,138,085.52

Exhibit No. 194

Statement No. 15

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Gas Department Adjustment

Item No.	Well No.	Lease	Drilling	Labor Teaming & Freight	Total Credits	Charges	Book Credit Balance (A)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Development Costs Restored as of September 30, 1925					
1	1	Bush	$ 34,548.44	$ 6,218.06	$ 40,766.50	$ 40,993.17	$ -226.67
2	3	Bivins A	17,135.58	5,286.33	22,421.91	24,075.89	-1,653.98
3	2	Bivins B	32,584.72	8,435.36	41,020.08	41,042.75	-22.67
4	1	Bivins C	63,000.00	9,000.00	72,000.00	-	(72,000.00
5	4	Bivins C	6,937.58	1,871.46	8,809.04	-	(8,809.04
6	3	Bivins D	45,000.00	4,166.50	49,166.50	-	49,166.50
7	1	Masterson A	19,620.79	13,414.83	33,035.62	33,494.10	-458.48
8	5	Masterson B	45,000.00	5,000.00	50,000.00	-	50,000.00
9	1	Masterson C	85,000.00	10,000.00	95,000.00	-	(95,000.00
0	3	Masterson C	5,109.56	113.45	5,223.01	-	(5,223.01
1	4	Masterson D	45,000.00	5,000.00	50,000.00	-	50,000.00
2	2	Masterson E	45,000.00	5,000.00	50,000.00	-	50,000.00
3	1	Masterson F	37,000.00	3,000.00	40,000.00	-	40,000.00
4	1	Masterson H	35,000.00	3,000.00	38,000.00	-	38,000.00
5	1	Masterson I	35,000.00	3,000.00	38,000.00	-	38,000.00
6	2	Bivins A	-	-	-	56.00	-56.00
7	1	Warrick	-	-	-	3,193.68	-3,193.68
8		Total	$550,936.67	$82,505.99	$633,442.66	$142,855.59	$490,587.07 (A)

Note: (A) Credit Balance: Contra Gas Well Account

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Expenditures by Amarillo Oil Company For Drilling Wells, April 1917 to January :

Well Designation	1918	1919	1920	1921	1922
(2)	(3)	(4)	(5)	(6)	(7)
Masterson C 1 (Discovery Well)	$42,958.00	$-1,801.03	$-9,500.00 (A)	-	-
Bivins C 1 and C 2 (C)	-	353.88	33,287.92	-	-
Bivins C 2 (Below Contract Depth)	-	-	8,325.27	-	-
Masterson D 3 and Bivins D 3	-	-	-	-	$27,905.01
Less Payments to A. R. Jones et al., account drilling Bivins C 1 and C 2	-	-	-	-	
Farm Expenditures					
Bivins and Masterson Leases	-	-	2,156	$845.04	12,491.38
Total Drilling and Farm Expenditures	$42,958.00	$-1,447.15	$32,115.75	$845.04	$40,396.39
Tax Expenditures	-	-	-	-	-
Total	-	-	-	-	-

(A) One-fourth Interest sold to A. R. Jones et
included in A. R. Jones et al.; Cost
(B) Full drilling cost included in A. R. Jones
No deductions for cash payments by Amari
to Jones et al., (Statement No. 17).
(C) Bivins C 2. Dry hole.
(D) To January 15

Statement No. 16

Exhibit No. 194

Canadian River Gas Company

Cost to Predecessor Companies of Property Acquired by Canadian River Gas Company as of May 1, 1927

by Amarillo Oil Company For Drilling Wells, April 1917 to January 15, 1923

	1918	1919	1920	1921	1922	1923 (C)	Book Cost
	(3)	(4)	(5)	(6)	(7)	(8)	
	$42,958.00	$-1,801.03	$-9,500.00 (A)	-	-	-	$ 31,656.97
	-	353.88	33,287.92	-	-	-	33,641.80
1)	-	-	8,325.27	-	-	-	8,325.27
	-	-	-	-	$27,905.01	$3,416.10	31,321.11
l., C 2	-	-	-	-		-	-31,000.00 (B)
	-	-	2.56	$845.04	12,491.38	-	13,338.98
	$42,958.00	$-1,447.15	$32,115.75	$845.04	$40,396.39	$3,416.10	$ 87,284.13
	-	-	-	-	-	-	2,282.19
	-	-	-	-	-	-	$ 89,566.32

(A) One-fourth Interest sold to A. R. Jones et al., and included in A. R. Jones et al., Cost

(B) Full drilling cost included in A. R. Jones et al., cost. No deductions for cash payments by Amarillo Oil Company to Jones et al., (Statement No. 17).

(C) Bivins C 2. Dry hole.

(D) To January 15

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Cost of Drilling Wells Acquired by Amarillo Oil Company
from Mission Oil Company as of August 1, 1924

Item No.	Description		Cost
(1)	(2)		(3)
	Gross Expenditures by A. R. Jones et al.		
1	For drilling wells under 1918 agreement, Contract Wells 2-3-4-5- on Masterson Leases. Joint account Wells 1-2 on Bivins Leases		$320,483.03
2	Purchase of One-fourth Interest in Masterson C-1 Well from Amarillo Oil Company		9,500.00
3	Settlement of H. C. Finley (Superintendent) Account		3,000.00
4	Gross Expenditures by A. R. Jones et al.		$332,983.03
	Less		
5	Inventory of materials as of July 1, 1922	$25,314.18	
6	Insurance Credits	235.80	
7	Pipe Purchase Credit	1,568.95	
8	Materials returned	441.62	
9	Total		27,560.55
10	Net Expenditures by A. R. Jones et al. applicable to 1918 agreement and transferred to Mission Oil Company under Agreement of May 1, 1922		305,422.48
	Less Leaseholds:		
11	Gas	3,131.86	
12	Gas and Oil	1,803.00	
	Less General Construction Cost:		
13	Interest	394.70	
14	Legal	2,400.00	
15	Office	49.80	
16	Total Deductions		7,779.36
17	Cost of Wells drilled by Mission Oil Company and acquired by Canadian River Gas Company		$297,643.12

Exhibit No. 194

Statement No. 18

Canadian River Gas Company

Cost to Predecessor Companies of Property
uired by Canadian River Gas Company as of May 1, 1927

Expenditures for Well Drilling by
Mission Oil Company

tem No.	Description	Cost
(1)	(2)	(3)
	Wells Drilled Jointly - Half Interest with Amarillo Oil Company	
	Well Drilling	
1	Masterson No. 3	$ 18,511.97
2	Bivins No. 3	15,607.88
3	Total	$ 34,119.85
	Farm Expenditures	
4	Bivins Lease	6,642.25
5	Masterson Lease	1,943.81
6	Total	$ 8,586.06 (A)
7	Total expenditures by Mission Oil Company from May 1, 1922 to January 16, 1923	$ 42,705.91

Note: (A) Includes $7,935.03 inventory of equipment acquired from A. R. Jones et al as of July 1, 1922

Exhibit No. 194

Statement No. 19

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Well Drilling Costs Charged to Profit and Loss

Item No.	Year	Well Designation	Well Drilling Costs			
			Labor, Teaming & Freight	Drilling	Miscellaneous	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1923	Masterson No.3			$157.69	$ 157.69
2		Bivins No.3			197.13	197.13
3		Bivins No.4	$1,707.65	$6,958.50	571.20	9,137.35
4		Total	$1,707.65	$6,858.50	$926.02	$9,492.17

Exhibit No. 194

Statement No. 20

Canadian River Gas Company

Cost to Predecessor Companies of Property Acquired by Canadian River Gas Company as of May 1, 1927

Other Wells

Description	Amount
(2)	(3)
Expenditures and charges by Amarillo Oil Company from January 16, 1923 to May 1, 1927 written off to Surplus (A)	
Bivins No. B-3	$29,012.43
Warrick No. 1	27,763.05
Total	$56,775.48

Note: (A) The voucher closing out gas investment of the Amarillo Oil Company to Canadian River Gas Company recorded only tangible well equipment consisting of casing and closing in equipment. Drilling, labor, teaming and freight amounting to $39,798.51 were later written off to surplus.

Exhibit No. 194

Statement No. 21

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

Meter Settings at Wells

Item No.	Description	Amount
(1)	(2)	(3)
1	Expenditures and charges by Amarillo Oil Company from January 16, 1923 to May 1, 1927 (A)	$4,009.59
2	Total	$4,009.59

Note: (A) The transfer to Canadian River Gas Company did not indicate meter settings at wells as part of the gas investment of Amarillo Oil Company. These settings were included in pipe line investment and were later charged off to surplus although actually transferred to Canadian River Gas Company.

Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

General and Administrative Costs of Predecessor Companies

Description	Amarillo Oil Co., April, 1917 to Jan. 15, 1923	A. R. Jones et al. Nov. 1918 to May 1, 1922	Mission Oil Co., May 1, 1922 to Jan. 15, 1923	Amarillo Oil Company 1923	1924	1925	1926	1927
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Per Books	$ 7,582.10	-	$12,051.47	$ 17,813.84	$ 21,934.07	$ 19,049.50	$ 24,710.24	$ 26,035.70
As Estimated	-	$ 14,271.99	-	-	-	-	-	-
Total General and Administrative Expenses	$ 7,582.10	$ 14,271.99	$12,051.47	$ 17,813.84	$ 21,934.07	$ 19,049.50	$ 24,710.24	$ 26,035.70
Operating Expenses								
Per Books	13,011.08	-	1,340.83	13,463.88	20,727.48	24,457.38	31,089.98	35,518.62
Rentals on Leases	-	-	-	-	65,820.93	157,085.23	142,796.95	135,606.23
Property Additions - Per Books	145,095.71	297,643.12	42,705.91	326,938.66	-10,312.08	77,145.08	522,922.14	355,021.83
Total Operating Expenses and Property Additions subject to General and Administrative Supervision:								
Amount	$158,106.79	$297,643.12	$44,046.74	$340,402.54	$ 76,236.33	$258,687.69	$702,809.07	$526,146.68
Per Cent	4.795%	4.795%	27.36%	5.233%	28.771%	7.364%	3.516%	4.948%

Note: (A) Excluding Mission Oil Company May 1, 1922 to January 15, and Amarillo Oil Company for year 1934

Exhibit No. 194

Statement No. 22

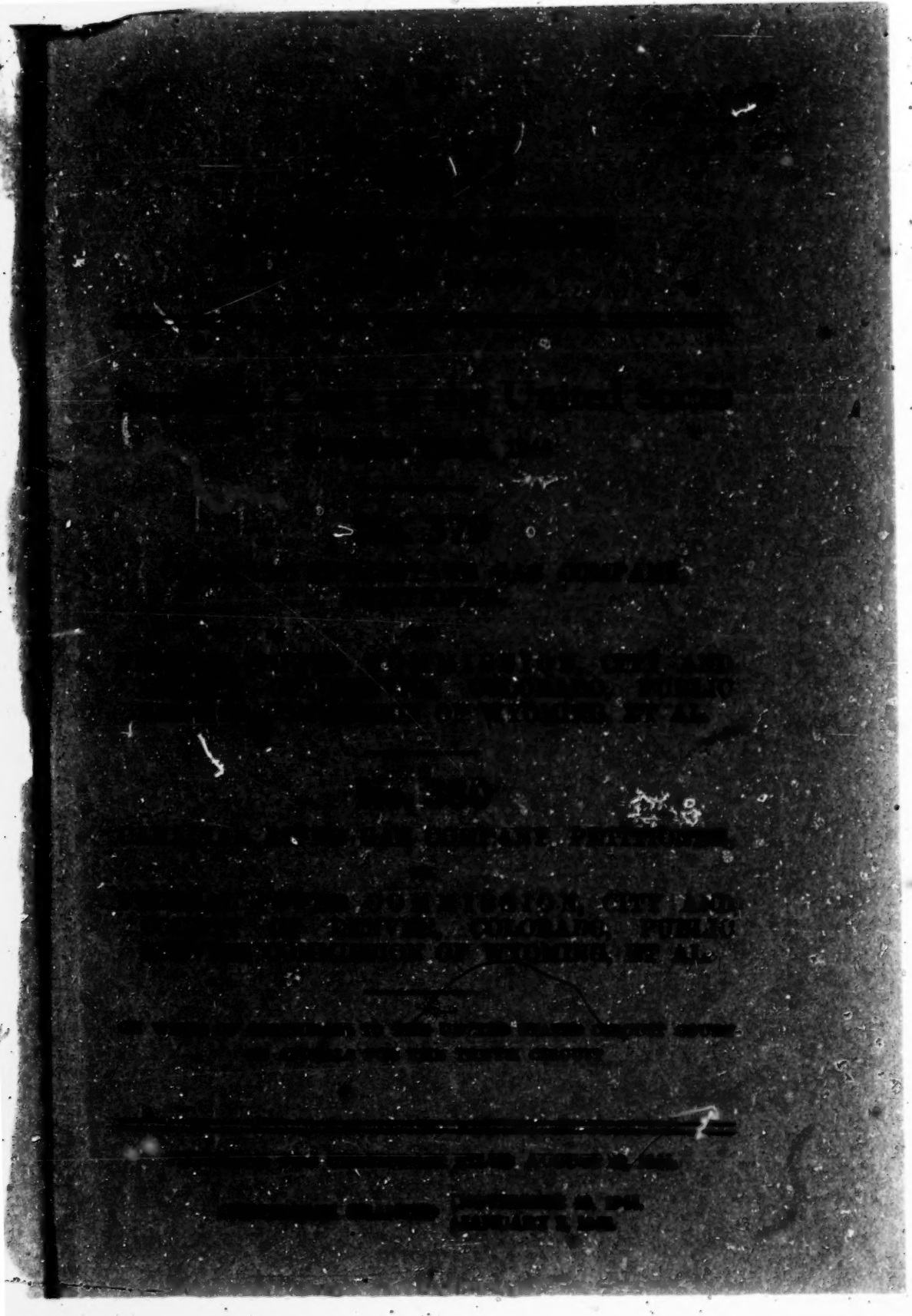
Canadian River Gas Company

Cost to Predecessor Companies of Property
Acquired by Canadian River Gas Company as of May 1, 1927

General and Administrative Costs of Predecessor Companies

A. R. Jones et al. Nov. 1918 to May 1, 1922	Mission Oil Co. May 1, 1922 to Jan. 15, 1923	Amarillo Oil Company					Producers & Refiners Corp. May 1, 1923 to Aug. 23, 1923	Mountain States Gas Co. Aug. 23, 1923 to Aug. 1, 1924	Combined	Total Excluding Periods of Lowest Construction (A)
		1923	1924	1925	1926	1927				
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
-	$12,051.47	$ 17,813.84	$ 21,934.07	$ 19,049.50	$ 24,710.24	$ 26,035.70	$ 20,518.61	-	$ 149,695.53	$ 115,709.99
$ 14,271.99	-	-	-	-	-	-	-	$ 5,991.54	20,263.53	20,263.53
$ 14,271.99	$12,051.47	$ 17,813.84	$ 21,934.07	$ 19,049.50	$ 24,710.24	$ 26,035.70	$ 20,518.61	$ 5,991.54	$ 169,959.06	$ 135,973.52
-	1,340.83	13,463.88	20,727.48	24,457.38	31,089.98	35,518.62	-	-	139,609.25	117,540.94
-	-	-	65,820.93	157,085.23	148,796.95	135,606.23	-	-	507,309.34	441,488.41
297,643.12	42,705.91	326,938.66	-10,312.08	77,145.08	522,922.14	355,021.83	564,187.11	164,602.81	2,485,950.29	2,453,556.46
$297,643.12 4.795%	$44,046.74 27.361%	$340,402.54 5.233%	$ 76,236.33 28.771%	$258,687.69 7.364%	$702,809.07 3.516%	$526,146.68 4.948%	$564,187.11 3.637%	$164,602.81 3.640%	$3,132,868.88 5.425%	$3,012,585.8 4.51

Note: (A) Excluding Mission Oil Company May 1, 1922 to January 15, 1923
and Amarillo Oil Company for year 1934



United States Circuit Court of Appeals

TENTH CIRCUIT.

No. 2550.

COLORADO INTERSTATE GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

No. 2551.

CANADIAN RIVER GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; PUBLIC SERVICE COMPANY OF COLORADO; and COLORADO INTERSTATE GAS COMPANY; RESPONDENTS.

ON PETITION TO REVIEW AND SET ASIDE ORDERS OF THE FEDERAL POWER COMMISSION.

FILED SEPTEMBER 9, 1942.

VOLUME 6—Pages 3097-3670

SHUTTE's cross-examination is set forth supra in Title 18 reading, "Original Cost of Colorado Interstate's Portion of the Physical Properties of the Denver Line to December 31, 1939, and as Estimated, from 1940 to 1947, Inclusive."

Commission WITNESS LUTTRING prepared, and there was introduced in evidence (Vol. LXXXXI, p. 13863) Exhibit 235, which is a comparison of costs to predecessor companies of assets acquired by Canadian from Amarillo Oil Company as of May 1, 1927, as shown by Commission's Exhibit 146, and Canadian's Exhibit 194. This Exhibit 235 shows the difference in the cost to predecessor companies as shown by Luttring's Exhibit 146 and Lusk's Exhibit 194.

Exhibit 235 is as follows:

Exhibit No. 235

Sheet 1 of 3

CANADIAN RIVER GAS COMPANY

COMPARISION OF COST TO PREDECESSOR COMPANIES OF ASSETS ACQUIRED BY CANADIAN RIVER GAS COMPANY FROM AMARILLO OIL COMPANY AS OF MAY 1, 1927 AS SHOWN BY COMMISSION'S EXHIBIT NO. 146 AND RESPONDENT'S EXHIBIT NO. 194

Particulars (1)		References Exhibit No. 194 (2)	References Exhibit No. 146 (3)	Exhibit No. 194 Amount (4)	Exhibit No. 146 Amount (5)	Excess of No. 194 over No. 146 (6)
Cost to Predecessor Companies - Per Books		Statement No. 1	See Note	$1,759,626.33	$1,756,426.33	$ 3,200.00
Deduct - Accumulated oil royalties onBivins Lease No. 18 excluded from assets acquired by Canadian River Gas Co.		Statement No. 12		3,200.00		(3,200.00)
Cost of property acquired by Canadian River Gas Co. per books of Amarillo Oil Co. as of May 1, 1927 before adjustment thereof				$1,756,426.33	$1,756,426.33	
Adjustments:						
Operated Gas Leaseholds:						
Elimination of cost of leases as recorded by Amarillo Oil Co.:						
Various vendors by assignment, April 1917 to Jan. 15, 1923:						
Recorded cost applicable to Amarillo Oil Co.	$4,244.24					
Recorded cost applicable to Mission Oil Co.	4,244.23	Statement No. 3	Page 68	$ (8,488.47)		$ (8,488.47)
Development and other recorded costs		Statement No. 3	J E 203 and Page 70	(417,681.81)	(417,681.81)	
Lease costs transferred to well costs		Statement No. 3	JE R-202	(76,318.00)	(54,508.94)	(21,809.06)
Lease costs substituted for lease costs eliminated in Statement No. 3:						
Cost of leases as recorded	$8,488.47					
Cost of leases removed from income account	8,136.41	Statement No. 3		16,624.88		16,624.88
Cost of leases transferred from well costs		Statement No. 3		3,131.86		3,131.86
Total adjustments to operated gas leaseholds				$ (474,731.54)	$ (472,190.75)	$(10,540.79)
Other Operated Leaseholds:						
Costs of leases transferred from well costs		Statement No. 12		$ 1,803.00		$ 1,803.00
Costs of leases removed from income account		Statement No. 12		284.92		284.92
Total adjustments to other operated leaseholds				$ 2,087.92		$ 2,087.92

CANADIAN RIVER GAS COMPANY
COMPARISON OF COST TO PREDECESSOR COMPANIES OF ASSETS ACQUIRED BY CANADIAN RIVER GAS COMPANY FROM AMARILLO OIL COMPANY
AS OF MAY 1, 1927 AS SHOWN BY COMMISSION'S EXHIBIT NO. 146 AND RESPONDENT'S EXHIBIT NO. 194

Particulars (1)		References Exhibits No. 194 (2)	References Exhibits No. 146 (3)	Exhibit No. 194 Amount (4)	Exhibit No. 146 Amount (5)	Excess of No. 194 over No. 146 (6)
Adjustments (Continued):						
Gas Wells:						
Well costs transferred from operated gas households		Statement No. 14	J E R-202	$ 76,318.00	$ 54,508.94	$ 21,809.06
Development costs removed from income account		Statement No. 14	J E 229	9,492.17	8,809.04	683.13
Elimination of tangible well costs recorded by Amarillo Oil Co. as at Jan. 15, 1923:						
Recorded cost applicable to Amarillo Oil Co.	($39,890.44)	Statement No. 14				
Recorded cost applicable to Mission Oil Co., et al.	(39,890.44)	Statement No. 14				
Well costs substituted for costs recorded in well and lease costs by Amarillo Oil Co. as of Jan. 15, 1923:			J E 203	350,134.47	289,147.77	60,986.70
Amarillo Oil Co.	89,566.32	Statement No. 14				
A. R. Jones, et al.	297,643.22	Statement No. 14				
Mission Oil Co.	42,705.91	Statement No. 14				
	$350,134.47					
Total adjustments to gas wells				$ 435,944.64	$ 352,465.75	$ 83,478.89
Total adjustments to lease and well costs		StatementNo. 1	J E 203 and 229	$ (44,698.98)	$ (119,735.00)	$ 75,036.02
Subtotal				$1,711,727.35	$1,636,701.33	$ 75,036.02
Items originally charged to expense on books of predecessor companies now claimed by Respondent as capital expenditures in Exhibit No. 194:						
Delay rentals charged to income account of Amarillo Oil Co. in the following years:						
Year 1924	$ 65,820.93					
Year 1925	157,085.25					
Year 1926	148,796.95					
Year 1927	116,315.34	Statement No. 1		$ 488,018.45		$488,018.45
General and administrative costs which are purported to be restated from the income account		Statement No. 1		68,597.09		68,597.09
Interest Cost - Purported to represent interest during construction		Statement No. 1		34,298.55		34,298.55
Total				$ 590,914.09		$590,914.09
Total adjustments				$ 546,215.11	$ (119,735.00)	$665,940.11
Total cost to Predecessor Companies, as adjusted		Statement No. 1	See Note	$2,302,641.44	$1,636,701.33	$665,940.11

Re:

The assets acquired by Canadian River Gas Company from Amarillo Oil Company as of May 1, 1927 were recorded on its books in the following entries:

Vo. J-205-1928

Operated gas leaseholds	$831,066.68		
Other operated leaseholds	4,205.00	$ 835,271.68	
Unoperated gas leaseholds		158,228.70	
Gas well investment		1,192,727.95	
Meter settings		4,009.59	
		$2,190,237.92	
Vo. M-35-1928			
Gas department adjustment account		490,587.07	$1,699,650.85

Page 69 of Exhibit No. 146 (under particulars column 1), well costs which were omitted from J-205-1928:

Bivins B-3 well	$29,012.43	
Warrick A-1 well	27,763.05	56,775.48
Total		$1,756,426.33

Mr. Lusk then testified at length as to his Exhibit 194 and Exhibit 235 containing the comparison between Exhibit 194 and Exhibit 146. (Vol. LXV, pp. 9366, et seq.; Vol. LXXVII, pp. 11,357, et seq.; Vol. LXXVIII, pp. 11,398, et seq.)

Witness stated that the principal properties with which Canadian started business were acquired from Amarillo Oil Company as of May 1, 1927, at a consideration of $5,000,000. (Vol. LXV, pp. 9366, et seq.) These properties were originally acquired by Amarillo Oil Company from three principal sources: One source was from the Mountain States Gas Company as of August 1, 1924. Mountain States Gas Company acquired its properties, for the most part, if not entirely, from Producers & Refiners Corporation. Mr. Lusk, in Exhibit 194, has found the costs of the properties to Mountain States Gas Company and Producers & Refiners Corporation. These costs were taken over on the books of Amarillo Oil Company without adjustment, and as to those properties there is no particular difference between Exhibit 146 and Exhibit 194.

One of the other principal sources of the properties transferred by Amarillo Oil Company to Canadian River was Mission Oil Company. (Vol. LXV, pp. 9369, et seq.) As of January 16, 1923, Amarillo Oil Company acquired Mission Oil Company's half interest in the Amarillo Oil Company's properties and paid for same by issuance of capital stock of Amarillo Oil Company. Mr. Lusk went back and determined the cost of that particular half interest to Mission Oil Company and its predecessors, A. R. Jones and associates. Practically the only difference between Exhibit 146 and Exhibit 194 relating to the Mission Oil Company properties is a dry hole known as Bivins 2 which Mr. Luttring excluded from his original costs and Mr. Lusk included. Mr. Lusk's reason for including it (Vol. LXV, p. 9372) was that at the time this well was commenced in May of 1920 all of these properties were in a development stage. Gas was not sold until late in October, 1920.

The third principal source of properties acquired by Amarillo Oil Company which were subsequently transferred to Canadian are miscellaneous, various and sundry acquisitions by Amarillo itself from April, 1917, to May 1, 1927. (Vol. LXV, p. 9372.) On account of adjustments made in Jan-

uary, 1923, the records of Amarillo Oil Company from April, 1917, until January 15, 1923, were extremely difficult to follow, so Mr. Lusk discarded them and went back to the original data of Amarillo Oil Company to determine cost for the period from April, 1917, to January, 1923. From January, 1923, to May 1, 1927, the records of the Amarillo Oil Company were in his opinion entirely adequate for the purpose of determining cost during that period. (Vol. LXV, pp. 9373, et seq.)

Line 18 of Exhibit 235 set forth above shows an item of $488,018.45 excess of cost in Exhibit 194 over Exhibit 146 made up of delay rentals charged to income account of Amarillo Oil Company during the years 1924 to 1927, inclusive. Mr. Lusk explained this entry in Exhibit 194 as follows: (Vol. LXV, pp. 9362-9363.)

"*Delay Rentals*

"The term 'delay rentals' usually applies to an amount paid a lessor for delay in drilling. Payments ordinarily cease when acreage becomes productive of gas and royalty payments begin. Amarillo made substantial payments to its lessors which were treated on its books as delay rentals, but which in fact served to discharge contract obligations which had no direct relation to the deference of drilling obligations. An outstanding example is the Bivins No. 30 lease wherein Amarillo was obligated to pay a minimum of $72,000 per year with deductions for royalties on gas actually produced. For a period extending from August, 1924, to December, 1927, Amarillo paid lessors $374,509.15 under such obligations. This entire amount is restored as a lease cost on the premise that payments of this nature during the development periods are properly capital.

"The above principle has also been applied to unoperated leaseholds and $113,509.30 representing delay rental payments has been restored as leasehold costs. The total amount of the above revisions, i.e., $488,018.45 is shown on Summary Statement No. 1."

Further testifying to this entry (Vol. LXXVIII, pp. 11,400, et seq.) Mr. Lusk stated that Amarillo Oil Company had expensed these amounts of delay rentals on its books,

but Mr. Lusk had capitalized them in his adjustment; that delay rental means, and usually applies to, an amount paid to a lessor for delay in drilling. The definition of delay rental is practically the same in the Pennsylvania Code and the Uniform System of Accounts of the Federal Power Commission, and both mean a sum paid for delay in drilling. It is universally understood that all gas companies delay their drilling and pay rentals for the delay, and when the wells are drilled the delay rentals cease and the production becomes subject to royalty payment under the terms of the lease. In some leases there may be a lump sum payment made right at the outset which may be labeled a bonus or a part bonus and part rentals which automatically defers drilling over a period of years. Other leases do not follow the standard form and have specific provisions with reference to future drilling. In the case of a long-term lease, where the rentals or any amount is paid in advance it is questionable whether the entire amount should be charged to delay rentals or applied as an initial bonus. It might be capitalized or it might be expensed. (Vol. LXXVIII, p. 11403.) Royalties are ordinarily expensed; initial bonuses are capitalized. In the case of the expiration of a lease, with no well drilled on the property and a renewal of the lease with a payment made at the time of the renewal, this payment would be capitalized. If the lease contained a provision providing periodical payments in order to hold it, ordinarily such payments would be expensed. Mr. Lusk then again referred to the Bivins No. 30 lease as being indicative of a certain method of payment or a carrying out of certain obligations under a lease which he stated was typical of the various leases, the payments of which he removed from expense and capitalized in this entry. (Vol. LXXVIII, pp. 11405, et seq.) This lease is dated May 1, 1923, between Lee Bivins, as lessor, and Producers & Refiners Corporation, as lessee, and is identified in Exhibit No. 147. It provided for an $18,000 cash bonus payable at the time of its execution, and then contained the following additional provision: (Vol. LXXVIII, p. 11407.)

> * * * * As additional or future consideration for this lease, the lessee expressly obligates itself to pay to the lessor, the Amarillo National Bank of Amarillo, Texas, a rental of $72,000 per year to be paid in quarterly installments of $18,000 each for a period of five years

from the date hereof; first of which is a cash consideration hereinabove recited and the others are succeeding payments to be made quarterly in advance until the royalties earned and paid hereunder equal or exceed such amount. It is the purpose and intent hereof that the lessor is to receive a minimum of $72,000 per year during such five-year period, either in rents or royalties, the rents to be absorbed in the royalties when the royalties exceed the sum stipulated as rentals.' "

Mr. Lusk then stated that this particular paragraph, plus the clause in the lease which particularly refers to drilling obligations, are the provisions he had in mind in capitalizing these payments. The drilling obligations are a part of the same lease, but the $72,000 was a guaranteed minimum under the lease. Mr. Lusk is not saying that the Amarillo Company erroneously treated these payments in expensing them, but states that they could all have been capitalized, and he has capitalized them, using the Bivins lease No. 30 as an example, because it contains the minimum guarantee clause and also drilling obligations. (Vol. LXXVIII, pp. 11409.) When he established the principle of replacing or restoring all of the delay rentals as part of Amarillo's costs, he carried this principle through with the other leases and arrived at the aggregate sum for the years 1924 to 1927 of $488,018.45.

Line 19 of Exhibit 235 sets forth an item of $68,597.09 shown as cost to predecessor company in Exhibit 194 and not so shown in Exhibit 146. This relates to general and administrative costs. This item appears on Statement No. 1 of Mr. Lusk's Exhibit 194, with the details on Statement No. 22 of that exhibit. Mr. Lusk's explanation in his preface statement to the exhibit (Vol. XLV, pp. 9363, 9364) is as follows:

"*General and Administrative Costs*

"In this study general and administrative costs are given combined consideration. The method generally has been to determine the percentage relationship of general and administrative costs to the combined primary costs of operation, maintenance and property additions. It is generally understood that general and administrative costs are not only applicable to the

operation of properties but also apply to construction and the acquisition of property during any period. The problem is to allocate a portion of general and administrative costs to the primary cost of Gas Wells, Leaseholds and Other Properties, either acquired or constructed. These costs have been determined and are summarized on Statement No. 22. In only two instances were assumptions made:

"(a) The percentage determined for Amarillo from April, 1917, to January, 1923, was applied to the properties acquired by Mission Oil Company from the Jones Interests on the premise that for a part of the time Amarillo and Jones each had a one-half interest in the properties.

"(b) Mountain States Gas Company after acquiring the Producers & Refiners Corporation properties in the Amarillo field, increased their holdings and then held the combined property for almost a year before sale to Amarillo. It was assumed that general and administrative costs of Mountain States Gas Company were the same in per cent as those of Producers & Refiners Corporation.

"After considering the relationship of the entire period from 1917 to 1927, 4.0 per cent was considered a fair and reasonable percentage to apply for general and administrative costs."

Further testifying as to this entry, Mr. Lusk (Vol. LXXVIII, pp. 11424, et seq.) stated that the basis for capitalizing these items was that the Amarillo Oil Company, from the date it was first incorporated up until the latter part of 1920, enjoyed no revenue nor any return for its investment. The same was true of the A. R. Jones Interests and the same was true of a small portion of the Mission Oil Company time. As shown by Statement 22, Exhibit 194, this item involves general and administrative costs of Amarillo Oil Company from April, 1917, to January 15, 1923; A. R. Jones, et al., from November, 1918, to May 1, 1922; Mission Oil Company from May 1, 1922, to January 15, 1923; Amarillo Oil Company from 1923 to 1927; Producers & Refiners Corporation from May 1, 1923, to August 23, 1923; Mountain States Gas Company from August 23, 1923, to August 1, 1924.

Neither of the predecessor companies capitalized any of their general administrative expense (Vol. LXXVIII, pp. 11424, et seq.). Mr. Iliff, in behalf of the Jones Interests, had reclassified the accounts of Amarillo Oil Company as of January 15, 1923, at the time Amarillo Oil Company acquired the Mission Company interests. (Vol. LXXVII, pp. 11366, et seq.) Mr. Iliff probably had the facts available to him, but Mr. Lusk does not think he considered this particular feature. (Vol. LXXVIII, pp. 11424, et seq.) Mr. Jones was an able oil man from the field angle, but Mr. Lusk does not know about his knowledge of bookkeeping practices. So far as Mr. Lusk knows, Mr. Jones made no objection to Mr. Iliff's failure to capitalize these administrative expense items; and for income tax purposes these items were expensed. Mr. Lusk does not think Mr. Iliff set up the combination of the Amarillo Oil Company and the Mission Oil Company according to any code, but simply followed his own ideas. (Vol. LXXVIII, pp. 11430, et seq.)

As appears from line 20 of Exhibit 235, Mr. Lusk, in Exhibit 194, has capitalized interest cost in the amount of $34,298.55, which is not so capitalized in Mr. Luttring's Exhibit 146. The details of this interest item are shown in Statement No. 17, Exhibit 194, and Mr. Lusk's explanation in his preface statement (Vol. LXV, pp. 9365-9366) is as follows:

"*Interest Cost*

"'Amarillo' has never capitalized interest on its leasing and drilling activities, nor has the Company capitalized any interest on the properties acquired from others. Amarillo, the Jones interests, Producers & Refiners Corporation and Mountain States Gas Company were pioneers in the development of the Amarillo gas field expending substantial amounts of money which were tied up for considerable periods of time before adequate outlets for gas were available. Amarillo's investment was idle from April, 1917, to October, 1920, the date gas was first delivered at the well to Panhandle Pipe Line Company. The Jones interests had an idle investment from November, 1918, to October, 1920, and the investment of Producers & Refiners Corporation and Mountain States Gas Company was without revenue or return in any form from May 1, 1923, to August 1, 1924, the date of sale to Amarillo. During these periods

and periods of further development by Amarillo from 1923 to 1927, inclusive, interest should be charged to the development on all money advanced from the date of the first expenditure, to the time the development is in full operation and enjoying a reasonable return.

"Considering the nature of the development and the idle investment periods, it is concluded that a reasonable interest cost should be 2.0 per cent. Interest has not been computed on items heretofore charged to expense and restored as capital nor on general and administrative costs."

Further testifying as to this interest item (Vol. LXXVIII, pp. 11432, et seq.) Mr. Lusk reiterated the statements contained in his preface statement quoted above, and restated that the Amarillo's investment was idle from April, 1917, to October, 1920, when gas was first delivered at the well to Panhandle Pipe Line Company for sale at the city gate of Amarillo and distribution in the City of Amarillo. The Jones interests had an idle investment from November, 1918, to October, 1920, when gas was first delivered at the well to the Panhandle Pipe Line Company. Mr. Lusk applied the 2% interest rate to the total "cost to predecessor companies" of $1,714,927.35 shown in Exhibit 194.

Line 15 of Exhibit 235 shows an excess well cost of $60,986.70 in Lusk's Exhibit 194 over Luttring's Exhibit 146. In his preface statement to Exhibit 194 (Vol. LXV, pp. 9357, et seq.) Mr. Lusk explains this entry as follows:

"*Gas Wells*

"The gas well account of Amarillo at the date of transfer to Canadian showed 23½ producing gas wells and one dry hole. From the records and correspondence relating to wells, it is evident that drilling operations of Amarillo began with the discovery well on the Masterson 'C' lease, completed about December 15, 1918. This well was also known as the Hapgood well. During the period from November, 1918, to May, 1922, the Jones interests drilled five producing wells and one dry hole, four of which were for Jones' account under the November 20, 1918, agreement, and two, including the dry hole, under Amarillo-Jones' joint account. The Amarillo-Mission joint venture started two wells which were

completed by Amarillo after January 15, 1923. Five complete wells and four wells in various stages of completion were acquired from Mountain States Gas Company as of August 1, 1924. Amarillo Oil Company drilled nine wells from January 16, 1923, to May 1, 1927, which included completion of two wells commenced under the Amarillo-Mission Oil Company agreement. The half interest in the Thompson No. 1 well was acquired from the Panhandle Refining Company, the original cost of which is unknown. In accounting for the number of wells transferred to Canadian, Bivins No. 2 dry hole disappears, although the cost of drilling was included in Bivins C-1. No adjustment has been made for this dry hole, the cost of which is not known, and further it is considered proper in the ascertainment of cost to include the cost of a dry hole with the cost of producing wells. Another dry hole cost included in the transfer of properties was Fuqua No. 1, which later was disposed of by Canadian in the Cliffside transaction."

Further testifying as to this entry (Vol. LXXVII, pp. 11384, et seq.) Mr. Lusk stated that this Bivins No. 2 dry hole was commenced about May, 1920; that no gas was sold by the company until late in October, 1920; and although the dry hole itself was not considered a dry hole and abandoned until January, 1921, he considers this dry hole as a part of the cost of development and, as such, a capital item and not an expense item, because it was drilled during the development period. The Amarillo Company did not treat this as an expense item. (Vol. LXXVII, p. 11386) although Mr. Iliff made certain adjustments in which he reduced the value of the well on an appraisal basis. Mr. Lusk is not sure he would have expensed this well, even though completed after the development period had ceased, unless there was a market available to support all the gas that was produced. In this particular instance he arrived at the time the development period ended when gas was first sold in commercial quantities to the City of Amarillo.

For Canadian there was introduced and received in evidence (Vol. LIV, p. 7477) through the witness Lusk Exhibit 184 entitled, "Canadian River Gas Company Original Cost of Production and Gathering Facilities Extended Through

1947." This exhibit is prefaced by the written statement of Mr. Lusk appearing in the record in Vol. LIII, pp. 7437, et seq. It consists of three statements. Statement No. 1, shows the original cost of production and gathering facilities year by year extended from 1939 through 1947. Statement No. 2 shows the original cost of all properties by systems extended through 1947. Statement No. 3 shows the additions to producing and gathering plant from 1940 to 1947, inclusive.

In this exhibit Canadian presents its computation of the original cost of the production and gathering properties of Canadian at December 31, 1939, as shown by Exhibit No. 183 heretofore abstracted herein, extended through 1947 to reflect the cost of added facilities estimated by Mr. Max Watson in Exhibit No. 94 as required to handle the increasing obligations of the company. The costs of new wells, well lines, and the sour gas plant shown by this exhibit are based largely on the oral testimony of Mr. Max Watson. Trunk pipe lines are priced at the estimated cost of labor and materials required (Estimates by Rhodes, Vol. LIV, p. 7466) and the miscellaneous costs are taken at current cost of reproduction new. Other than for changes made necessary by the required new facilities, there are no allowances for the cost of incidental facilities commonly provided in the development of a property.

As shown by this exhibit, the 1939 original cost of the production and gathering systems and the extension of such cost through 1947 is as follows:

Original cost at December 31, 1939, Exhibit No. 183	$10,620,625
Cost of required additional facilities (Statement No. 3)	1,409,520
Original cost extended through 1947	$12,030,145

The total cost of the additions as itemized year by year from 1940 to 1947, as shown by Statement No. 3 of Exhibit No. 184, is as follows:

Statement No. 3.

Item No.	Description	Total
	Production System	
	Gas Well Construction and Equipment	
1.	Additional Wells—Number (36)	
2.	Total Drilling and Equipment	$ 802,800
3.	Reconditioning Old Wells—Number (31)	
4.	Cost of New Equipment	27,260
	Drilling and Cleaning Equipment	
5.	1—120 ft. Steel Derrick	1,560
6.	1—Semi-portable Cleaning Out Unit	10,000
7.	2—80 ft. Steel Derricks	12,000
8.	Total Drilling and Cleaning	$ 23,560
	Field Measuring System	
9.	Additional Well Meters (37)	
10.	Cost of Well Meters	27,750
	General Property	
11.	Plum Creek Plant	5,000
	Gathering System	
12.	Lines to New Wells—Number (36)	
13.	Cost of New Well Lines	250,200
14.	Line to Masterson B-5	4,250
15.	Lay 11,600 feet 18 inch and 7,600 feet 16 inch Line	163,500
16.	Relay and add new Lines—Sour Gas	56,000
17.	Total	$ 473,950
	General Property	
18.	1—Tractor	4,400
19.	1—Air Compressor	2,500
20.	1—Ditcher	5,600
21.	1—Electric Welder	1,700
22.	Total	$ 14,200

Item No.	Description	Total
	Transmission System	
23.	Sour Gas Treating Plant	35,000
24.	Total Additions in Year(s) (1940 to 1947, inclusive)	$1,409,520

Statement No. 3 of Exhibit No. 184 shows the estimated cost of future property additions for the respective years 1940 to 1947, as follows:

1940	$ 96,420
1941	303,600
1942	259,800
1943	219,200
1944	154,900
1945	159,200
1946	183,200
1947	33,200
Total	$1,409,520

The total for the years 1942 to 1947 included in the above is $1,009,500.

With further reference to Exhibit 184 Mr. Lusk testified that the item, "Sour Gas Treating Plant," in the amount of $35,000 will, according to Mr. Watson's estimate, become necessary in 1942 and has been left off the transmission line system in Exhibit 133, but included in this production and gathering facilities Exhibit No. 184. (Vol. LIV, p. 7445.)

This Exhibit 184 starts where Exhibit 183 leaves off and is project. in the future from 1939 to 1947, the extensions being based upon Mr. Watson's estimate of future requirements. (Vol. LIV, p. 7447.) No change has been made in the "Leasehold Item" and it is the same for the whole period through 1947, as, to the best of Mr. Lusk's knowledge and belief, there will be no change in the leasehold account during that period. (Vol. LIV, p. 7448.) This is based upon information secured from Mr. Hendee, General

Manager, Mr. Ford, General Superintendent, and Mr. Watson, General Assistant Superintendent. (Vol. LIV, p. 7449.)

Item No. 1 in Statement No. 3 from Exhibit 184 summarized above differs from Mr. Watson's estimate of the number of wells to be drilled contained in Exhibit 94 in that Mr. Watson's exhibit calls for 41 wells through 1947, whereas Exhibit 184 calls for 36 wells. The reason for this difference is that Mr. Lusk has deducted in Exhibit 184 one well in each of the first five years which are to be exploratory wells and to be expensed. (Vol. LIV, p. 7454.)

The unit cost for the drilling of wells is as estimated by Mr. Watson. (Vol. LIV, p. 7455.)

Mr. Lusk has *assumed* that the material cost will remain the same throughout the entire period, and he stated that this is the only assumption he can make. (Vol. LIV, p. 7459.) The other costs are based upon Mr. Watson's estimates of requirements and costs (Vol. LIV, pp. 7460, et seq.), and in some instances upon Mr. Rhodes' estimate of costs. (Vol. LIV, pp. 7466-7469.) No consideration has been given to retirement of any portion of any of these items of property, as Mr. Lusk does not understand any retirements are contemplated (Vol. LIV, p. 7469), and he knows of no wells which Canadian contemplates abandoning. (Vol. LIV, p. 7470.)

MR. LUSK testified on cross-examination: (Vol. LXXVII, pp. 11357-11394.)

Q. Mr. Lusk, you have heretofore testified and presented your Exhibit 194 in this proceeding entitled "Cost to Predecessor Companies of properties acquired by Canadian River Gas Company as of May 1, 1927"?

A Yes, sir.

Q. And on the title page you repeat that descriptive matter. Exactly what do you contemplate under the word "costs" as that word is employed by you in the title of this exhibit?

A. In this exhibit I have included in the terminology of cost all of the costs that I found of the predecessor companies relating to the acreage and wells and properties turned over—or sold, rather, by the Canadian River Gas Company—

Mr. Spencer: By Amarillo Oil Company.

The Witness: Or by Amarillo Oil Company to the Canadian River Gas Company as of May 1, 1927.

By Mr. Lange:

Q. In other words, your exhibit here contemplates the various items that you say entered into the cost of those several properties to the predecessor companies?

A. Yes, sir.

Q. And you mean by "predecessor companies," the predecessor to Amarillo Oil Company?

A. Predecessor to Amarillo Oil Company and Amarillo Oil Company itself.

Q. And Amarillo Oil itself?

A. That's right.

Q. And I note that in your first page of the written statement you divide those main topics in your treatment in this exhibit into three divisions.

A. There are three divisions but there are really four classes as shown on Page 1 of the written statement.

Q. In other words, what do those first three contemplate?

A. Well, on Page 1 of the written statement, No. 1, are the acquisitions from various vendors between the date of incorporation of the Amarillo Oil Company in April 1927 and January 15, 1923, the date that Amarillo Oil Company acquired the Mission Oil Company interests.

The second one is the acquisition from the Mission Oil Company as of January 16, 1923 which included the properties acquired from A. R. Jones, and they were acquired by the Mission Oil Company from A. R. Jones and Associates. The third one is the acquisition from the Mountain States Gas Company as of August 1, 1924 of said Mountain States Gas Company, including the properties acquired from the Producers and Refiners Corporation, and the fourth period is the Amarillo Oil Company from January 16, 1923 the date of the Amarillo Oil Company acquisition of the Mission Oil half interest to May 1, 1927.

Q. And that treatment—or, rather, in that order the treatment follows in the exhibit, I take it?

A. Correct.

Q. Now in connection with the preparation of this exhibit, did you have available what records?

A. I had available all of the records of the Amarillo Oil Company from April 1917 to January 15th, 1923. I had available all of the records of the Jones interests, the Mission Oil Company from the time of the contract, and the Amarillo Oil Company and the Jones interest in November 18th up to the time of the sale of the Jones property to the Mission Oil Company and the Mission Oil Company from that date to January 16th, 1923, and I had available all of the records of the Mountain States Gas Company, including their predecessor company, the Producers and Refiners Corporation.

I also had all of the records of the Amarillo Oil Company up to May 31st, 1928, the date of the physical transfer of the properties.

Q. And with the availability of those records you proceeded to the preparation of this exhibit, and I notice that on Page 3 you begin that study—or the computations on operated gas leaseholds, is that the subject that you treat first?

A. Yes, sir, that is the first subject.

Q. Now, I recall in connection with Mr. Luttring's testimony given on Exhibit 146 that he sponsored that and your testimony subsequent to that—you made a statement, I believe, that you don't agree with Mr. Luttring's treatment of a number of items in that exhibit.

A. That is correct, particularly one item.

Q. Which item?

A. That the dry hole—the Bivins dry hole—

Q. Well, we get to that letter in this exhibit?

A. Yes, sir.

Q. What treatment did you accord operated leasehold investment in this exhibit that differs with that given by Mr. Luttring in his Exhibit 146?

A. In the case of operated leaseholds, Mr. Luttring treats the opening entry on January 16, 1923 as the beginning of the operated leaseholds of the Amarillo Oil Company, and I went a little bit beyond that in that I went back to April 1917 and picked up the actual acquisition of leases.

Q. On whose books?

A. On the books of the Amarillo Oil Company.

Q. The books of the Amarillo Oil Company?

A. Yes, sir.

Q. Exactly what do you contemplate under the term "operated" as used in connection with "leaseholds"?

A. Those are the leaseholds termed "operated leaseholds" in that they were apparently fully developed and were productive of gas.

Q. Well, you mean in distinguishing those from leaseholds from which there was no gas produced?

A. The unoperated leaseholds ordinarily mean that there is no gas production from those particular leaseholds.

Q. And such leaseholds are either held by paid-up rental or by annual delay rental?

A. Sometimes they are. In this case there are several different classifications regarding operated leases and unoperated leases.

Q. Well, at the time of the—strike that:

Do you make any distinction in connection with unoperated leases as distinguished from operated leaseholds in your treatment beginning at Page 3?

A. Yes, I compiled the operated leaseholds data on Page 3 and the unoperated leasehold data on Page 7.

Q. Now, what is the classification of acreage that you divided up between operated and unoperated leaseholds there?

A. On Page 3, third paragraph, I make the statement:

"The recorded cost of all of the operated acreage transferred by Amarillo to Canadian also shown on Statement 2, was stated at $831,066.68," and on Statement 2, I give a complete detail of it by lease.

Q. Statement 2 of your exhibit?

A. Yes, sir.

Q. Do you there divide the leases between operated and unoperated?

A. No, this is only operated gas leaseholds.

Q. It is limited only to the operated?

A. That is correct.

Q. Where do you treat the unoperated?

A. The unoperated leaseholds are shown on Statement No. 8, which is supported by Statements 10 and 11.

Q. The total amount for acreage of 34,076.42 covers the unoperated leaseholds?

A. That is the acreage, yes, sir.

Q. Statement No. 8 of the Exhibit, line 5, total unoperated leaseholds, $158,228.70, book cost, you have made no adjustment in that item at all?

A. No, sir, there were no adjustments applicable to the unoperated leaseholds as acquired by Amarillo Oil Company from Mountain States Gas Company and various lessors between January 16, 1923 and May 31, 1928.

Q. Why was there no adjustment made?

A. I didn't find anything that would lead me to make any adjustment in the unoperated leases.

Q. Do you have a copy of Mr. Luttring's Exhibit 146 with you, Mr. Lusk?

A. Yes.

Q. Will you turn to Page 68 of Exhibit No. 146, Summary of Cost of Leaseholds, 1928 to 1939, Column 3, Unoperated?

A. Yes, sir.

Q. There being a total there of $158,228.70?

A. That is correct.

Q. That is the same figure as shown on your Statement No. 8, isn't it?

A. Yes, sir, exactly the same figure.

Q. So there is no difference there at all?

A. There is no difference at all.

Q. Now, will you refer to Statement No. 2, Exhibit 194; also turn back again to Page 68 of Exhibit 146. Your Statement 2, Line 18, Column 14, is $831,066.68?

A. That is right.

Q. Now, Statement 1 of Exhibit—

A. Did you say Statement 1 or Statement 2?

Q. Going back to Statement 1 and then again back to Statement 2. I wanted to find out or identify that $831,066.68 on Statement 2 first. You have identified that?

A. Yes, I have identified that.

Q. Now, let's go forward to Statement 1 of the exhibit, Line 3, Column 4, Book Cost of Amarillo Oil Company, $7,405. What does that total include there, Mr. Lusk?

A. That $7,405 includes two oil and gas leases; one to Bivins and one to Warrick. I have separated them from operated gas leaseholds and separated it from unoperated

gas leaseholds and have set them up as Other Leaseholds.

Q. The $7,405 is made up of what dollar figures?

A. $3200 is on the Bivins and there is $4205 on the Warrick.

Q. $4205 on the Warrick and the other added to that makes $7,405?

A. Yes, sir.

Q. Going back to Statement 2 of the exhibit, is that Warrick lease in the amount of $4205 added to your total in Column 14, the total of $831,066.68?

A. Added, did you say?

Q. Yes.

A. No.

Q. I say, if it was added—

A. I beg your pardon.

Q. —you would get a total of $835,271.68?

A. That is correct.

Q. Now, turning again to Exhibit 146 on Page 68, under Column 2, Operated Leaseholds, you find there that same total of $835,271.68, is that right?

A. That is correct. If I take Statement 2 of my exhibit and add the Warrick lease amount of $4,205, that would be exactly in accord with Mr. Luttring's Exhibit No. 146, Page 68, Column 2, Operated Leases.

Q. Yes. Now, in what other respect do you say you don't agree with Mr. Luttring's on his leaseholds account?

A. Well, we are in exact accord on Operated Leaseholds after adding the Warrick, $4,205. We are in exact accord on the unoperated leaseholds of $158,228.70.

Q. Well, there isn't any further item that you are not in accord on on those two?

A. Not on those two, no, sir. There is a difference of $3,200 on the Bivins, as I classified it, "Combination Lease." It is an oil-gas lease, the same as the Warrick. That is the only difference Mr. Luttring and I have, the treatment of $3,200 on the Bivins lease.

Q. And now going back to Page 3 of your Exhibit 194, your written statement, I note that you have this to say in the middle of the first paragraph—no, really, it is the whole third paragraph:

"The recorded cost of all the operated acreage transferred by Amarillo to Canadian also shown on Statement No. 2 was stated at $831,066.68," and this particularly:

"At the time Amarillo acquired the Mission Oil Company interests as of January 15, 1923, a representative of Mission Oil Company reclassified the accounts of Amarillo Oil Company."

What was the occasion of that, Mr. Lusk?

A. Well the occasion of that has never been definitely decided, as to just why that reclassification was made. In fact, I could not trace many of the particular items making up that reclassification.

Q. Is that the work done by Mr. Iliff?

A. That is correct.

Q. And at whose instance—rather, whose interests did Iliff represent?

A. Mission Oil.

Q. And where was he sent from?

A. Kansas City.

Q. That was the residence of Mr. Jones, wasn't it? Wasn't that the residence of Mr. A. R. Jones?

A. That is correct, yes, sir.

Q. And what did Mr. Jones have to do with the sending of Mr. Iliff to do that work?

A. That I don't know.

Q. Is Mr. Iliff in the employ of Mr. Jones, or partially in the employ of Mr. Jones?

A. I believe he was employed by Mr. Jones.

Mr. Spencer: The Mission Oil Company.

The Witness: The Mission Oil Company.

By Mr. Lange:

Q. Is there nothing in the correspondence or the records of the company that show why Mr. Iliff was sent there to do that work at that time?

A. Not that I saw. The exact assignment of Mr. Iliff was just Greek to me. I don't know why he was sent there.

Q. You mean the records don't disclose any reason at all—no correspondence on it?

A. Well, I didn't go through the correspondence to find out just what Mr. Iliff's particular mission was.

Q. Well, he certainly did something very important there, didn't he? It wasn't just casual treatment of any of the records of the company by him?

A. No, I think he was primarily sent there and given that assignment to consolidate the Mission Oil Company and the Amarillo Oil Company, as far as their books and records were concerned.

Q. And how much did he devote to that, how much time?

A. I don't know.

Q. The records don't indicate how long he was there or how much of his time he put in to complete that particular work?

A. No, I didn't delve into the records that far,—that closely, to find out just what Mr. Iliff was—what his particular assignment was.

Q. Well, the records do indicate, or do they indicate, rather, that he did devote sufficient time to that work as would ordinarily be devoted to a job of that kind?

A. I couldn't answer that, Mr. Lange. I don't know just what time he spent there.

Q. The records don't disclose who else worked with him or how many were on the work?

A. I don't know. I didn't go into the record that deeply.

Q. Did you ever discuss it with Mr. Iliff?

A. I never saw the man.

Q. Is he still in the employ of any of the companies?

A. I couldn't say.

Q. Connected with Canadian River in any capacity?

A. I don't know.

Q. Well, when did you first—

Mr. Spencer: Would you mind if I say that he is not?

Mr. Lange: He is not?

Mr. Spencer: He is not, that's right.

By Mr. Lange:

Q. Since when has he been out of the organization?

A. I don't know.

Mr. Spencer: You can take it for what it is worth, but he never was an employe of Southwestern Development Company or any of its subsidiaries. He was an employe of Mission Oil Company and he was sent out by the Mission Oil Company for the purpose of setting up these books and records at the time of the transfer of the Mission half in-

terests in its properties to Amarillo Oil Company. I think the record is also clear that the Amarillo Oil Company adopted what he did at that time.

By Mr. Lange:

Q. You do, Mr. Lusk—I was just coming to that—you do know that he did in fact complete his work on the books of the company—Mr. Iliff did?

A. What Mr. Iliff did was apparently accepted by the Amarillo Oil Company and it was the basis of their opening entry as of January 16, 1923.

Q. Now, then, in that accounting work of his and all the entries made by him in connection with that job remained as he put them on the books of the company, didn't they?

A. That's right.

Q. Now coming back to your Statement 3, you say this:

"This reclassification purported to restate all transactions of Amarillo acting individually, Amarillo-Jones joint account and Amarillo-Mission joint account. The result of the reclassification as shown on Statement 2 was a wholly erroneous statement of leasehold costs, due primarily to the inclusion of all drilling costs incurred by Jones and Mission as leasehold costs."

Now, what is the main basis of your complaint of Mr. Iliff's classification there, Mr. Lusk?

A. The main basis of my complaint of Mr. Iliff's reclassification was that all of the drilling costs of A. R. Jones and part of the incomplete well costs of the Mission Oil Company—that is, I am speaking now of drilling—were included in leasehold costs so that at the outset it was a wholly erroneous statement of fact.

Q. Now, what record did Mr. Iliff have at his disposal—or what records did you have at your disposal, that Mr. Iliff did not have?

A. Why, I don't know, and I couldn't find out and I don't know today just what Mr. Iliff did do with certain accounts or just how he treated them.

Q. Well, all right, let's go to your Statement No. 2 of Exhibit 194. Which of the leases is the first lease that you are particularly concerned with as not having been given the proper treatment by Mr. Iliff in his accounting?

A. Take the Masterson 54, 55, 56 and 58. On that acreage the first well was drilled in—the discovery well, and that acreage as shown on Statement 2 of the Masterson 54, 55, 56 and 58, and that is the C, D, E & B lease of approximately 32 or 33 thousand acres. The acres themselves did not cost $261,364.36.

Q. What did they cost?

A. The actual acreage cost is shown on—that actual acreage of the Masterson B, C & D and E lease cost, respectively—Masterson B & C leases—

Mr. Spencer: Where is it shown, Mr. Lusk?

The Witness: On Statement 3—$12,319.17.

The D lease cost $1,743.79, and the E lease, $313.91.

Now those costs were arrived at by going back to the original lease acquisition by the Amarillo Oil Company from April 1917.

By Mr. Lange:

Q. Now, then, which is the next lease that you were adjusting the cost item on?

A. Well, I adjusted the Bivins C and D lease on Statement 2, just above the $261,364.36, the item above that lease 53, Bivins C & D, $160,561.68. That lease did not cost $160,561.68. That lease cost, as shown on Statement 3, $2,248.01.

Q. All, right, now, which is the next one?

A. That is all of the adjustments as far as the adjustments between the leases and the wells are concerned, due to the consolidation of the Mission Oil Company and the Amarillo Oil Company as of January 16, 1923.

Q. That disposes of that particular transaction?

A. That is correct.

Q. Now turn to Page 4 of your written statement, the paragraph beginning with "Subsequent acreage transactions." You set forth and you speak of "how much acreage changed hands is not known as the books did not record acreage. However, other records do indicate the sale of substantial acreage and prices ranging from $15 to $30 per acre."

Where did you get those figures of $15 to $30 per acre?

A. The acreage that I indicate here in this written statement on Page 4 was obtained from the old check book in which was recorded the sales of acreage.

Q. To whom were those sales made?

A. Well, there is quite a formidable list, Mr. Lange.

Q. Oh, there is? How many?

A. Oh, there must be 35 transactions here—approximately 35 transactions.

Q. Were those sales made to anyone connected with the company—stockholders or otherwise?

Mr. Spencer: I don't know that he knows who the stockholders were at that time.

By Mr. Lange:

Q. Officers—directors?

A. Well, I note here that acreage in small lots was sold to Mr. Neally and Mr. Nobles, and Mr. Nobles and Mr. Neally again. Mr. Nobles was President and Mr. Neally was Treasurer of Amarillo Oil Company at that time.

Q. How much acreage did they buy at that time?

A. My note has 60 to Mr. Neally and Mr. Nobles, and 160 to Mr. Nobles, and I have quite a few blanks here. It did not state on the check book just who the buyers of that acreage were.

Q. And the other buyers—the names aren't familiar to you as having been in anywise connected with the company or either of the companies?

A. No. From my knowledge of the old Amarillo Oil transactions, I would say that most of the acreage as I have it listed here was sold to drillers.

Q. To drillers?

A. Yes.

Q. And at what price?

A. Oh, anywheres ranging from $15 up to $30 an acre.

Q. And what approximate sizes are the acreage?

A. From 20 acres up to 160 acres.

Q. And what period of time was that?

A. Between August 3, 1918 and April 8, 1920.

Q. Are those the only sales you could find any record of?

A. They are the only sales of acreage—

Q. Acreage?

A. That is right.

Q. At that time?

A. That is right, that is, sold by the Amarillo Oil Company.

Q. Did you find any record of acreage sold in August 1918 by the Amarillo Oil Company?

A. That is what I just said, from August 3, 1918.

Q. Did you find any acreage sold at that time by Amarillo Oil Company for $3 an acre?

A. That was a transfer to Hapgood.

Q. 1440 acres?

A. 1760 acres, 2¾ sections.

Q. Who was the purchaser?

A. Hapgood. That was an assignment made to Hapgood for 2¾ sections of land allotted to him under the contract. Hapgood was the driller of the first well.

Q. You say that was an assignment to him. Every transfer of acreage is an assignment, whoever purchasing it getting an assignment?

A. That is my understanding.

Q. In other words, these purchasers you refer to and that are on that list, they are all holders of assignments of acreage, aren't they?

A. That is correct.

Q. Just like Mr. Hapgood obtained an assignment from Amarillo Oil Company for that acreage?

A. That is correct, the only distinction being the Hapgood 2¾ sections of 1760 acres was assigned to him for an amount of $5,920 without profit and the other acreage transactions apparently included a profit.

Q. Wasn't there another transaction for a block of 320 acres sold at $5 an acre in August 1918?

A. I don't have any record of that as of August 1918.

Q. You said 1760 acres went to Hapgood?

A. That is right, 2¾ sections.

Q. This was probably part of that same transaction. Why was it they made the assignment of that acreage at prices way below those you have just given?

A. Under Hapgood's contract for the initial well he was to reserve for himself 2¾ sections of land.

Q. That is true, but you are setting up this $15 to $30

per acre as an index of the range of prices while that acreage was going at the time on your statement.

A. That is a straight sale and I still say that the acreage was sold at prices ranging from $15 to $30 an acre. Hapgood had a contract in which he was assigned for his own use 2¾ sections of land, or 1760 acres. There may be some distinction between that type of sale.

Q. In your statement you are making a direct distinction, aren't you? You are not giving that any consideration at all in fixing your basis per acre price at which those tracts were sold at that time? You are disregarding that Hapgood assignment entirely?

A. That is right, yes, sir.

Q. You don't think that ought to have gone into your basis of determining the probable range of prices per acre?

A. No, I could have added another sentence in there and have said "These acreage sales does not include the assignment to Hapgood of 2¾ sections under his contract."

Mr. Spencer: For the drilling of a well?

The Witness: For the drilling of a well.

By Mr. Lange:

Q. You didn't give it any consideration in determining this basis of $15 to $30 an acre?

A. No, sir.

Q. And those were the only sales that you found any records of at that time?

A. They were the only sales of acreage I could find in going through the records of the Amarillo Oil Company, that is right. This was a list of some 35 separate transactions.

Q. You don't know whether any of those other assignees or purchasers were in any way connected with the company?

A. No, I do not.

Q. Let's go back to your Statement 3, Exhibit 194, and also to Page 7 of Exhibit 146. We will go to Statement 3 of your exhibit first. Line 6, Column 6, there you have an item of $421,926.04. What does that represent?

A. That is the recorded cost of A. P. Jones, assigned to the Mission Oil Company as per Statement No. 5. That is the drilling cost of the Jones well's.

Q. Now, on that same statement 3, Line 1, Column 4, there is an item of $4,244.24.

A. Yes, sir.

Q. Wherein do those two items—strike that.

How did you reconcile those two items with Mr. Luttring's adjusting entry 203, Page 7, Exhibit 146?

A. Well, on Page 7 of Mr. Luttring's Exhibit 146 is a total credited to operated leases of $417,681.81, that would correspond with my $421,926.04 less the $4,000—

Q. In other words, what I was getting at, was it the difference between your $421,926.04 and Mr. Luttring's $417,681.81 as shown on Page 7, Exhibit 146, which was $4,244.23?

A. That is correct. The difference between Mr. Luttring's exhibit and my exhibit in that particular respect is in agreement.

Q. Is in agreement?

A. Yes.

Q. What was the basis of your treatment of this item in Column 4, Statement 3, of your exhibit, Mr. Lusk, where you eliminated the cost from the company's books?

A. I eliminated the recorded cost and substituted cost on Statement 4, which is a built up cost from the beginning of the Amarillo Oil Company up to and including January 15, 1923.

Q. In that respect do you give that a different treatment than from what was shown on the books of the Amarillo Oil Company?

A. That is correct, yes, sir.

Q. Now, let's at this time turn to Page 8 of your written statement covering other leaseholds. It states:

"Among the gas leaseholds included in the transfer by Amarillo to Canadian, as shown on Statement No. 12, were (a) the Warrick lease, and (b) the Bivins No. 18 lease."

The Warrick lease is the same Warrick lease we have just discussed?

A. That is the $4,205.

Q. "On each of which was located a so-called combination well capable of producing both oil and gas as of the date of transfer."

Now, where in your written statement do you cover that treatment of these two leases?

A. That is in the written statement, Page 8.

Q. I mean in your statements in the exhibit.

A. Statement 12.

Q. What is the basis of your treatment of the two items of cost there?

A. The reason I treated those particular leases as substitute leases was due to the fact that as of May 1, 1927 when the agreement was made, and as of May 31, 1928 when the actual physical transfer of property took place from Amarillo Oil Company to the Canadian River Gas Company, the wells on the Warrick lease and the Bivins lease—the two leases shown on Statement 12, were transferred at a price which included only the physical equipment in the well. The drilling costs were later transferred; furthermore, they were always treated as separate oil lease and oil well items.

Q. In that treatment, what is the net difference between your cost and the cost that has been set up by Amarillo Oil Company on its books?

A. The only difference there is the amount I have taken in Item 6 and Item No. 7, Cost of Obtaining at 10.05 cents per acre and the proportion on acreage basis of miscellaneous legal costs from April 1917 to January 15, 1923, all shown on Statement 4.

Q. Is that beginning down on Item 14?

A. All of the miscellaneous cash expenditures for recording legal maps and abstracts, etc., were divided on an acreage basis. Line 5 also contains miscellaneous cash expenditures.

Mr. Spencer: What statement, Mr. Lusk?

The Witness: Statement 4.

By Mr. Lainge:

Q. $1,429.85 is shown on Line 5?

A. I didn't hear you.

Q. $1,429.85 is the amount shown on Line 5?

A. That is right, yes, sir.

Q. And the other was indicated on Line 14?

A. Line 11 and Line 14 and Line 24. All of those miscellaneous expenditures were divided by the total amount of acres held at the time those expenditures were made.

Q. There weren't any changes made in that recording?

A. Sir?
Q. There were no changes made by you?
A. Not in those leases, no, sir.
Q. On Page 5—strike that.

Going back to Page 8 of your written statement again, didn't you take into consideration the matter of oil royalties affecting the cost of that lease?

A. No.
Q. Well, in what way was this difference of $3200 taken care of?
A. That $3200 was taken care of on Statement 12. That was a payment made to Lee Bivins.
Q. Statement 12?
A. Statement 12, yes, sir.
Q. What was that for?
A. That voucher read, "Payment for Oil Royalty or Oil Rights."
Q. Didn't that cover oil royalties?
A. No, I wouldn't say royalties. I would say oil rights. I am not sure. I would have to see whether I had a copy of that voucher or not. I believe it read "oil rights" in the amount of $3200. That was made in 1926.
Q. You don't have that voucher here?
A. No.
Q. What does the Journal Entry M-520 show there?
A. What?
Q. The Journal Entry JM-520 in 1928.
A. Whose entry?
Q. The Amarillo Oil Company—the Canadian River's?
A. M-520, did you say, on Canadian River?
Q. Yes, in 1928.
A. I will have to look that up. You want to know just what the character of the entry was?
Q. Yes. Didn't Amarillo Oil Company charge that to surplus, that $3200?
A. I don't see how the Amarillo Oil Company could charge something on a Canadian River entry.
Q. Will you look at M-520 and maybe we can clear it up.
A. I still don't get it how the Amarillo Oil Company could charge something on a Canadian River's entry.

Q. You don't know exactly what the voucher itself provided?

A. I know on M-12-18 the Amarillo Oil Company in December 1928 restored Bivins B-3 lease previously written off by crediting paid in surplus by $3200. Will that clear it up?

Q. I think that ought to give us exactly what we want on that.

Now, what was that—

Mr. Spencer: Does that release him having to get that voucher?

Mr. Lange: That will obviate the necessity of him getting that voucher.

Mr. Spencer: All right.

By Mr. Lange:

Q. Oh, yes, when we come to the consideration of the Canadian River Gas Company's lease costs, was that item ever included in it?

A. On the Bivins B-18 the recorded cost of the Amarillo Oil Company was $7,965.67 and in arriving at the $831,066.68 as shown by Mr. Luttring's Exhibit and my Exhibit that $3200 was deducted.

Q. In other words, that was never taken up by Canadian River Gas Company?

A. No, that is correct, but when the Amarillo Oil Company restored it to surplus and charged it to leases, I picked if up here.

Q. There wasn't any acreage of any kind involved in the transaction, was there?

A. No, it was a part of lease 18.

Q. Where did Parcomas Oil Company come into the picture?

A. I don't know.

Q. Have they gotten any of the oil rights in connection with that?

A. I couldn't tell you offhand.

Q. You may make a note of that if you will.

Mr. Spencer: I will stipulate they did get the oil rights on it.

Mr. Lange: You will stipulate they did get the oil rights on it?

Mr. Spencer: That is right, Mr. Lange.

By Mr. Lange:

Q. When they got the oil rights they acquired this cost with it, didn't they?

A. If they got the oil rights they should have taken the $3200, that is correct.

Mr. Spencer: I will stipulate that, too, Mr. Lange.

By Mr. Lange:

Q. Now, on Page 9 of your exhibit, treatment of gas wells, in accounting for the number of wells transferred to Canadian River Gas Company, Bivins No. 2 dry hole disappears, although the cost of drilling was included in Bivins C-1. No adjustment has been made for this dry hole, the cost of which is not known; and further, it is considered proper in the ascertainment of cost to include the cost of the dry holes in the cost of producing wells. Just exactly where do you—rather, what do you base this conclusion upon that it is considered proper to include that cost?

A. In the development program, such as this, and in the drilling of a dry hole, this particular dry hole was commenced about May.

Q. What year?

A. 1920.

Q. 1920.

A. And gas was not sold except for drilling purposes until late in October of 1920. Although the dry hole itself was not itself considered a dry hole and abandoned until January of the following year and that is the reason that I have considered that dry hole as part of the cost of the development in the early period of the Amarillo Oil Company.

Q. Well, what was the status of the drilling operation of that well in October 19—what year did you say that was?

A. 1920.

Q. —1920?

A. They were still fishing. The hole itself was in but they were still fishing for tools as far as the records are concerned.

arrive at the time that you say is the period that the development ended?

A. When gas was first sold in commercial quantities.

Q. To the City of Amarillo?

A. Well, possibly. That was the only place that gas could go in those days.

Q. Let's see, what was the cost of that dry hole?

A. In the neighborhood of $50,000. I don't know exactly how much it cost.

Q. Do you know what depth they went?

A. Around 3800 feet.

Q. Who drilled the well?

A. Greenlees-Dick drilled that well, I believe.

Mr. Spencer: By contract?

The Witness: By contract with Amarillo Oil and A. R. Jones interests.

By Mr. Lange:

Q. Do you know in what block they drilled it?

A. I do have that information somewhere. It is one of those—

Mr. Spencer: Go ahead. I'll get it.

By Mr. Lange:

Q. I see you have another dry hole, Fuqua No. A-1.

A. That's correct. That well was later disposed of by Canadian River in the Cliffside transaction.

Q. Do you know whether that—you don't know the acreage on which that was drilled?

A. No. I can find out.

Q. Both of those.

A. Yes, I can give you the answer to the first one, because it is in my memorandum here. Mr. Spencer has it.

Mr. Spencer: Would it be sufficient to stipulate that the location of the Fuqua well was on the helium structure?

Mr. Lange: Yes.

Mr. Spencer: All right, we'll stipulate to that.

Mr. Lange: I'll tell you what, if we could get the block in which that was drilled it would probably be best.

The Witness: Mr. Lange, I can give you the block on the Bivins dry hole.

By Mr. Lange:

Q. All right.

A. Section 2, Block M-20 of the G & M Survey.

Mr. Spencer: What County—Potter?

The Witness: It doesn't state the county. It was classified as the Bivins C-2 well. It was really the Bivins 2 well and then it was classified as the C-2 well.

By Mr. Lange:

Q. The Fuqua well was drilled on Section 4 of Block JAD-BS & F Survey in Potter County?

Mr. Spencer: Well, we'll stipulate that, Mr. Examiner, subject to check.

The Trial Examiner: Did Mr. Lusk give the county on the Bivins well?

The Witness: Yes—Potter County. It is on the map. I didn't have a record of it.

By Mr. Lange:

Q. Now, this Hapgood well that you referred to on Page 9 of your written statement. Is that the first producing gas well that Amarillo had?

A. Well, I don't know whether it was the first producing well or not. It was the discovery well in the Amarillo field.

Q. Now, I wonder whether that is the same well that is referred to in Exhibit 16, Page 132, the memorandum of contract between the Amarillo Oil Company and Perry A. Little, Paragraph 1, as this says:

"There is now on Section 65, Block 0-18 D & P Survey, in Potter County, a gas well called the Hapgood well," and again Section 4, Sub-paragraph 2, at Page 133, "It is assumed that the one producing well now on Section 65 known as the Hapgood well." Is that the well? I want to be sure that that is the same well.

Mr. Spencer, is that the same well as shown on Exhibit 95 as the Masterson C-1?

Mr. Spencer: Why, I think it is, Mr. Lange. I think that is the same well.

The Witness: Are you withdrawing your question to me?

Mr. Lange: Yes. In other words, will you stipulate that that is the same well, Mr. Spencer, subject to check?

Mr. Spencer: Yes.

Mr. Lange: I want to be sure that I have it definitely located.

Mr. Spencer: All right.

By Mr. Lange:

Q. In your written statement on Page 9 of Exhibit 194, referring to that well you cite that it was completed about December 15, 1918. That would tie right in with that contract.

At that time this contract at Page 132 of Exhibit 16 was made December 7th, 1918 and they left the capacity blank. Where did you get the information about the completion date of that well, Mr. Lusk?

A. That is in the records of the Amarillo Oil Company.

Q. I see. On Page 10 near the bottom of the page you have this statement on wells: "Complete and incomplete wells purchased from Mountain States Gas Company were properly recorded in gas well account. The adjustment of $76,318 shown on Statement 14 represents the estimated cost of wells acquired from the Mountain States Gas Company as shown on statement 7 and erroneously included as leaseholds." What is the basis of your determination there?

A. Well, in that particular case on leases 1088 and 1089, I believe it was, I assumed an initial bonus cost of a dollar an acre plus subsequent additions to the acres as acreage expenditures and from that—or that amount, I subtracted from the total cost of acquisition by the Mountain States Gas Company and that gave me $76,318 as shown on Statement 14.

Now, that corresponds very closely with the amount of $76,000 that was added back under the gas well adjustment account in 1925 of $76,000.

Q. $76,318?

A. Yes, sir.

Q. As shown under Column 7 of Statement 14?

A. That's right.

Q. Referring to Exhibit 146, Page 16—Page 6, rather, Entry R-202, do you reconcile your treatment of that with Mr. Luttring's?

A. This entry here doesn't have any bearing on $76,318.

Q. Not on your treatment of those items on Statement 14?

A. The only item on Statement 14 that refers to adjustment of Mountain States Gas Company is the $76,318.

Q. And that appears the same—you made no change in that, then, from what it is recorded on the books of Amarillo Oil?

A. No, I didn't touch the H-1 and the I-1 and the G-2.

Q. The only one that is affected is the F-1?

A. The F-1 lease. I will change that answer, Mr. Lange.

Q. All right.

A. On Mr. Luttring's Exhibit, Page 6, Leases 1071 and 1077, are accorded the same treatment in Exhibit 194 as they are in Exhibit 146. Now, on Mountain States Gas Company leases 1088 and 1089 in Mr. Luttring's exhibit they have been transferred from operated leases to gas well investment and in Exhibit 194 they have been ignored.

Continuing his cross-examination, and on redirect examination, Mr. Lusk further testified: (Vol. LXXVIII, pp. 11398-11448.)

Q. Mr. Lusk, on recess yesterday afternoon Commission's counsel submitted to you the reconciliation figures that were prepared by Mr. Luttring as affecting his Exhibit 146 and your Exhibit 194. A copy of it was given to you. Have you had a chance to check that over?

A. As I mentioned yesterday afternoon, I don't know as I mentioned it for the record or not, but I made up a similar reconciliation and my reconciliation shows $74,546.75 against Mr. Luttring's $75,026.02.

Mr. Spencer: Identify that figure, Mr. Lusk, where it is in Mr. Luttring's reconciliation and what it is.

Mr. Lange: Yes.

The Witness: You mean the figures that I reconciled?

Mr. Spencer: Yes.

The Witness: On Page 1 of the reconciliation sheet that was submitted last night, the $8,488.47 on Line 4 is in accordance with my exhibit and my reconciliation.

By Mr. Lange:

Q. Line 4, Columns 4 and 6?
A. Yes.
Q. Of Sheet 1.
A. Of Sheet 1.

The amounts shown in Line No. 6, Column No. 6, $21,809.06, that is correct. The differences in Column 6, that is, Exhibit 194 over 146, in lines 7 and 8, they are in agreement.

Q. You mean Lines 7 and 8?
A. Lines 7 and 8. The differences in Column 6, Line 11, and Line 10, they are in agreement.

On Sheet 2, Line 13, is a contraentry to the $21,809.06 shown on Line 6 of Page 1, and the difference on Line 14 of $683.13, that is in agreement, and on Line 15, $60,986.70, that includes the cost of the Bivins dry hole, and the net amount shown under sub-total of Line 17, $75,026.02 is substantially in agreement with the reconciliation I made with the exception of $479.00.

Q. $479.00?
A. Yes, sir, and that entire difference is composed of the cost of drilling the Bivins C-2 dry hole.

The difference in the original lease cost to the Amarillo Oil Company over and above those set up as of January 16, 1923, the difference in the lease cost on the Bivins oil and gas lease of $3,200 plus the $2,087.92 shown on Line 12 of Sheet 1, and there is also a $9,147.66 difference in the original cost of the wells drilled by A. R. Jones and Associates before transfer to the Mission Oil Company and its difference of $683.13 on wells drilled by the Amarillo Oil Company, that makes up the entire $75,000.

Q. I see. Now, on your matter of delay rentals, the next item that appears in your written statement on Page 15, is

also the next one that is treated by Mr Luttring on his reconciliation statement, isn't it.

A. It appears on Statement 1 under Exhibit 194. That is my exhibit, and Mr. Luttring eliminates them.

Q. Now, going to your Page 15 of your written statement of Exhibit 194, as I understand it there basically you are proceeding with the matter of capitalizing these items that are labeled by you as delay rentals—or, rather, capitalizing these items of delay rentals which have heretofore been expensed by the company.

A. The Amarillo Oil Company expensed these amounts of delay rentals.

Q. And you are capitalizing them?

A. I am restoring those delay rentals in Exhibit 194.

Q. Now, then, what is your definition of a delay rental?

A. Just as I have it here on Page 15, the term delay rental usually applies to an amount paid to lessor for delay in drilling.

Q. Is that your own interpretation of what the term means?

A. Well, I think that is an accepted term in the gas industry, the term delay rental.

Q. You were referring a number of times to the Uniform System of Accounts of the State of Pennsylvania, effective 1920, weren't you? In your previous testimony didn't you refer to the Pennsylvania Commission Uniform System?

A. That is quite right but I don't think Amarillo Oil Company had anything to do with the Pennsylvania System.

Q. Do you know what the Pennsylvania System had in its provisions as to rentals on operated leases or how they defined that term?

A. I think the interpretation under the Pennsylvania Code is practically the same as the first sentence there.

Q. Do you know what the definition of the term delay rental is under the Uniform System of Accounts of the Federal Power Commission?

A. It is practically the same as this.

Q. In other words, No. 510, Delay Rentals: "This account shall be charged with the amount of rents paid periodically on natural gas lands in order to hold natural gas lands and land rights for the purpose of obtaining a supply of gas in the future"?

A. That is correct.

Q. The provision in the Pennsylvania Code reads: "Charge to this account the amount of rent accrued during each accounting period on gas leases which are being held by the utility for future production of natural gas."

A. That is right.

Q. All right, where is that definition in either code limited to the rentals paid to defer drilling?

A. Well, the interpretation of those codes, both the Pennsylvania and the Federal Power Code, is really a delay rental paid for delaying a particular drilling.

Q. How do you know that is the limitation of that provision?

A. Well, it is universally understood that all gas companies delay their drilling and they pay rentals for that particular delay, and when the wells are drilled and delay rentals cease the production is subject to a royalty payment under the terms of the lease.

Q. Yes; that is true that a great many leases—it may be in the majority of leases—there are provisions providing for the payment to be made periodically in the event it is desired to defer drilling; in others there may be a lump payment made right at the outset; it may be labeled a bonus or it may be labeled part bonus and part rentals which automatically defers drilling over a period of years—sometimes even ten years—isn't that true?

A. That is true. If the bonus payment were made in advance they might defer it for any time.

Q. Other leases don't follow the standard form and write in specific provisions as to what the contracting parties may desire as to future drilling?

A. That is right.

Q. If provision with reference to payments during the life of the lease in the nature of rentals is made, don't you think such obligation is just as the term reads, "a rental"?

A. Well, the term "rental" in the case of a long term lease where the rentals are paid in advance, or in any amount paid in advance, would make it questionable as to whether the entire amount should be charged to delay rentals or whether the amount applied as an initial bonus. It might be capitalized or it might be expensed.

Q. Well, supposing it is aside from the payment of any initial bonus, a payment made in addition to that?

A. It would apply whether or not the terms of the contract and the terms of the lease specified certain amounts for certain things.

Q. Well, now, how would you treat, or, rather, in your accounting practice, how would you treat royalties that accrued in these oil and gas leases?

A. Royalties themselves where payment is made to the royalty owners, is a part of the actual expense of producing gas.

Q. In other words, they are all expensed?

A. Ordinarily, yes.

Q. Isn't it almost universally done in accounting practice?

A. I think so.

Q. What has been your position with reference to the treatment that should be accorded initial bonuses?

A. They are capitalized.

Q. Do you make any distinction between what may be termed a bonus or whatever payment may be made at the time a lease is contracted for or a contract made for the first lease that is labeled a bonus?

A. That is labeled first cost.

Q. You capitalize that?

A. Ordinarily it is capitalized.

Q. Now, if that lease by its terms expired at a certain time and there had been no well drilled on the property; the lease was renewed and some character of payment was made at the time the new lease was entered into, how would you treat that?

A. It would be capitalized.

Q. If that lease had a provision in it with reference to periodic payments to be made in order to hold the lease, how would you treat that?

A. Ordinarily that would be treated as an expense item under the heading of delay rentals.

Q. That is right. Then under what theory do you now say that—strike that.

That has been so treated particularly by the Amarillo Oil Company on its books?

A. That was treated by the Amarillo Oil Company as an expense item, that is correct.

Q. And the items that you have particularly in mind

under delay rentals as discussed on Page 15 of your written statement, are those that accrued during the years 1924 to 1927 with reference to Amarillo Oil Company, aren't they?

A. That is correct.

Q. And those rentals were expensed on the books of the Amarillo Oil Company?

A. That is right.

Q. Now, you single out particularly a certain lease, Bivins No. 30, that you referred to in your written statement on Page 15 as being indicative of a certain method of payment or the carrying out of certain obligations under that lease, don't you?

A. That is right.

Q. You use that as a basis for your treatment of these delay rentals?

A. That is correct. I singled out the largest individual lease there, Bivins 30.

Q. Referring to a $72,000 per year payment accruing under that lease?

A. That is right.

Q. You examined that lease instrument, I presume, Mr. Lusk?

A. Yes, I have examined that lease instrument and have also read the abstract.

Q. That was the lease entered into May 1, 1923 between Lee Bivins as lessor and Producers and Refiners Corporation as lessee?

A. That is right.

Q. And that is included in Exhibit No. 147 that has been identified in these proceedings?

A. I believe so, yes, sir.

Q. That lease provides among other matters, a bonus of $18,000 cash to be paid under the terms of the execution of the lease?

A. That is right.

Q. Then it has this one particularly applicable provision to your treatment of delay rental: "As additional or future consideration for this lease, the lessee expressly obligates itself to pay to the lessor, the Amarillo National Bank of Amarillo, Texas, a rental of $72,000 per year to be paid in quarterly instalments of $18,000 each for a period of five years from the date hereof; first of which is a cash

consideration hereinabove recited and the others are succeeding payments to be made quarterly in advance until the royalties earned and paid hereunder equal or exceed such amount. It is the purpose and intent hereof that the lessor is to receive a minimum of $72,000 per year during such five-year period either in rents or royalties, the rents to be absorbed in the royalties when the royalties exceed the sum stipulated as rentals."

You had that particular paragraph in mind when you recorded this treatment of delay rentals as described on Page 15 of your exhibit?

A. And in addition the clauses in that lease which particularly refer to the drilling obligations.

Q. Yes, I was coming to that fact.

This paragraph—that is to be considered first, and of course all paragraphs following are to be considered together?

A. That is correct.

Q. Now, it is true that lease does have provisions with reference to the driling obligation separate and apart from these rentals?

A. In the lease itself the articles or the paragraphs relative to the drilling obligations are separate.

Q. That is right. In other words, the drilling obligation paragraphs are not in any way connected with this paragraph on rental payments?

A. No, but part of the same lease.

Q. They are part of the same lease, that is true, but the matter of the drilling of the wells—whether any wells are to be drilled is not in any manner dependent upon this paragraph with reference to payment of that $72,000?

A. No, the $72,000 was a guaranteed minimum under the lease.

Q. That is a portion of the money necessary to hold the natural gas land and land rights for the purpose of obtaining a supply of gas in the future?

A. It could be considered that or it could be considered as a delay portion of the drilling.

Q. But as I say, isn't that construction of the provision of the Commission's Uniform System of Accounts as

to delay rentals the same that has been in effect in Pennsylvania, a reasonable one?

A. It all depends upon the interpretation placed upon the particular paragraphs in the Pennsylvania Code or the new Federal Power Commission Code. Delay rentals by whatever name known are payments made in lieu of drilling. That is the universally accepted interpretation.

Q. That is the way you view it, and in the light of that interpretation you say that this payment, for instance, that is made under the Bivins lease was erroneously treated by the Amarillo Oil Company on its books?

A. I don't say it was erroneously treated. My position is that the Amarillo Oil Company could have perfectly well capitalized all of those delay rentals.

Q. It was not an error on their part, but you say they could have done it?

A. They could have capitalized all of those rentals.

Q. But in fact they treated them as expense items?

A. They treated them as expense, that is correct.

Q. They so remained on their books for the entire period and never were changed?

A. That is correct, they have never been changed.

Q. You, however, at this time in the light of your interpretation of what is considered by the term "delay rentals" believe for that reason and others that you may reclassify those items?

A. I classify those and reaccount for them on the premise that the particular Bivins Lease No. 30 contained a minimum gauranteg clause and also drilling obligations.

Q. That is true, but the drilling obligation was separate and apart from this provision as to the rentals?

A. That is correct.

Q. And the lease itself provides this particular payment of $72,000 to be made quarterly as a rental?

A. That is what the lease says and that is what they did —that is the way they were handled on the books of the Amarillo Oil Company.

Q. Now, how were these items handled in connection with the income tax reports made by the company?

A. As expense.

Q. As expense?

A. Yes.

Q. Now, I see you accord the same treatment with reference to these delay rentals on those paid in connection with unoperated leaseholds?

A. That is correct. When I established the principle of replacing or restoring all of the delay rentals as part of the Amarillo Oil Company's cost, I did not stop with the Bivins Lease No. 30 or the Masterson No. 31. I carried it all through and applied all the delay rentals ad restored all of the delay rentals from 1924 to 1927.

Q. And that gives you the total of those two as reflected on Statement 1 of your exhibit of $488,018.45?

A. That is correct, yes, sir.

Q. Line 8?

A. That's right.

Q. Column 5, and also reflected in Column 6.

A. That's right.

Q. Of Statement 1, and your statement, of course, does not show anything on Column 4 with reference to those items. Of course, they weren't so treated on the books of Amarillo Oil Company.

A. They were not treated as capital items on the books of Amarillo Oil Company, that's correct.

Q. Now, this treatment of delay rentals reflected by you in your Exhibit 194 is set forth in Mr. Luttring's reconciliation computation on Sheet 2, Line 18, isn't it?

A. Line 18, that's right.

Q. He gives a breakdown there for the years 1924, 1925, 1926 and 1927. Now, I believe on Statement 22 of your Exhibit 194 you set forth these delay rentals?

A. Not on Statement 22. Statement 22 is the general administrative costs.

Q. Look at Line 5.

A. That's under the heading of Operating Expense.

Q. But what I wanted to call your attention to is the last year. You capitalized delay rentals for the years 1924, 1925, 1926 and 1927, didn't you?

A. That's correct, yes, sir.

Q. And that included the entire year 1927, didn't it?

A. That included all of the year 1927, the lease rentals that were set up by the Amarillo Oil Company—yes, that's right.

Q. Well, this transfer of property—

Mr. Spencer: May I ask a question right there, Mr. Lange?

Mr. Lange: Go ahead.

Mr. Spencer: For the year 1927, Mr. Lusk, I assume from this Statement No. 22 the amounts shown in Column 8 of $135,606.23 was paid by Amarillo Oil Company during that year?

The Witness: That is correct.

Mr. Spencer: Do you know offhand whether it was paid in its entirety prior to May 1, 1927?

The Witness: The records that I have here for lease rentals in 1927 begins with Voucher A which is January, and winds up with Voucher N1 which is December.

Mr. Spencer: Then those payments were made throughout the year by Amarillo Oil Company?

The Witness: That's correct.

By Mr. Lange:

Q. Well, you included the entire amount of delay rentals set up on Amarillo Oil Company's books for the year 1927; didn't you, in your capitalization of these items?

A. That's right.

Q. Wasn't the transfer of the properties made in May of 1927?

A. May 1928.

Q. May 1st, 1927—

A. Well, that was the date of the agreement. The physical transfer was made in May 1928.

Q. Well, weren't prepaid rentals included in the transfer of those properties?

A. Not in the initial transfer, no, sir.

Q. Not for the year 1927 or any part of that?

A. There were some delay rentals paid by the Amarillo Oil Company for the account of the Canadian River Gas Company, but as far as I know there were none of these that are duplicated in that particular setup of the delay rentals paid for the account of Canadian River Gas Com-

pany. If they were paid for the account of the Canadian River Gas Company, they wouldn't get into the expense of the Amarillo Oil Company. They would be set up as receivables.

Q. So in your opinion there is no duplication there at all?

A. Not that I know of.

Q. Now, going back to your Statement 1 of Exhibit 194, Line 8, delay rentals, total of $488,018.45, as I understand it, that—or, rather, can you give me the figures for each of the years that make up that total?

A. Yes, sir.

Q. Turning to—we might turn to Sheet 2 of Mr. Luttring's reconciliation under Line 18. Does that give the totals for each of the years?

A. That's right. I think Mr. Luttring got those figures from me, year by year.

Q. That, then, ties in with your total of $488,018.45?

A. Yes. There is a difference of $40. My working detail shows $488,058.45.

Q. Now, the Statement 22 in your Exhibit 194, shows rentals on leases for the year 1927, Line 5, $135,606.23.

A. That's right.

Q. Now, there is a voucher H 12-8, 1928, in the sum of $19,250.89.

A. That's right.

Q. Isn't that item—and that item is deducted from the total that reconciles the figures to give you the $488,058.45?

A. That's right.

Q. Now, there aren't any delay rentals included in your discussion as set forth on Page 15 other than those appearing on the books of Amarillo Oil Company for the years 1924 through 1927?

A. 1924, Mr. Lange.

The Witness: No. The Panhandle Pipe Line Company sales were made to the Panhandle Pipe Line Company somewhere in the latter part of 1920.

Mr. Lange: Yes, I was coming to that, Mr. Examiner.

Mr. Spencer: I think we either have in the record an exhibit, or it was read into the record, more detail on those sales. I think Mr. Luttring put those in.

Mr. Lange: Yes. Mr. Luttring at that time identified an instrument, Mr. Spencer, that I believe copies had not been furnished. It is Exhibit 160 that you requested him to identify. I have the extra copies of that here and I also have another instrument that either Mr. Lusk or Mr. Luttring could identify on that same subject which has a relationship to that.

Q. I believe yesterday mention was made, or, rather, reference was made to your written statement at Page 9 where you in turn referred to what was known as the Hapgood well that was completed about December 15, 1918.

A. That's right.

Q. Isn't that the well that was named in the agreement that contemplated the original and first delivery of natural gas for the City of Amarillo's market? I think we identified that yesterday.

A. Yes, that's correct.

Q. As being the one named in the contract, Exhibit 16, Page 132 and Page 133.

A. I think that's corect, yes, sir.

Q. And the deliveries of gas that were made for distribution in the City of Amarillo, do you know the nature of the operations that were carried on from 1918 that the Examiner just had reference to?

A. Well, the operations carried on from 1918 from the time that the discovery well was drilled in, I have a list of the well numbers and the dates that gas first was drawn from those particular wells.

Q. Do you have those there?

A. Yes.

Q. You might read those in the record.

A. It is also in Mr. Luttring's Exhibit 146, the date of the first market—

Q. Does your list include the same wells?

A. The same wells, yes, sir.

Mr. Spencer: It is quite a long list.

By Mr. Lange:

Q. That is the list set forth in Mr. Luttring's Exhibit 146 at Page—

A. I think it is Page 71 or thereabouts.

Q. Page 80?

A. Page 80.

Q. Page 80 of Exhibit 146.

A. Yes.

Q. Now, does that list coincide with yours, Mr. Lusk?

A. I believe so. I have checked Mr. Luttring's exhibit on Page 80, the date of the first market, all through Page 81 and Page 82.

Q. Now, this contract of December 7, 1918, between Amarillo Oil Company and Perry A. Little, you know of that, don't you, that that contemplated the construction of a gas line to deliver gas to the city of Amarillo?

A. That's right. Messrs. Little and Driscoll built the line from the field into the Amarillo gate.

Q. And at that time the gas was taken at the gate and distributed in the city of Amarillo by the Amarillo Gas Company?

A. I believe that's right.

Mr. Spencer: Not at that time.

Mr. Lange: When this line was completed.

Mr. Spencer: Well ask him when it was.

By Mr. Lange:

Q. When was that, Mr. Lusk?

A. Well, that line was completed sometime in 1920 or 1921.

Q. Yes, and that contract, as Exhibit 16 shows, was later taken over by other parties, that is, Albert R. Jones, E. W. Goebel, and Frank E. Jones, administrator, as set forth in Exhibit 16, Page 141—no, I will correct that. At that time these three parties, Albert R. Jones, E. W. Goebel, and Frank E. Jones, administrator, acquired an undivided half interest in Amarillo Oil Company and half interest in that contract of December 7, 1918.

Mr. Spencer: By that statement "acquired half interest in the Amarillo Oil Company," you mean half interest in its leases and properties in the field as of that time?

Mr. Lange: Well, I was just reading the provision as it is recited in the contract on Page 141, Mr. Spencer. It reads like this—of Exhibit 16:

"Whereas, the undersigned, Albert R. Jones, E. W. Goebel, and Frank E. Jones, administrator, have acquired and claimed an undivided one-half interest of the interest of the Amarillo Oil Company in and to said contract," referring to the contract of December 7, 1918. It begins at Page 132 of the same exhibit.

Mr. Spencer: I think that is true.

Mr. Lange: I believe at this time, Mr. Examiner, we desire to distribute copies of that Exhibit 160 that had been identified by Mr. Luttring while he was on the stand.

The Trial Examiner: Do you have copies available?

Mr. Lange: Available for distribution, yes.

Since the copies are now distributed, the Exhibit 160 is again offered in evidence and given to the reporter at this time.

The Trial Examiner: Do you recall, Mr. Lange, was that your exhibit?

Mr. Lange: No, this is how it came about, as I recall it, Mr. Examiner: Mr. Luttring was on the stand and Mr. Spencer asked Mr. Luttring whether he could locate that particular instrument and Mr. Luttring later produced it but so far as I recall it had not been received in evidence.

The Trial Examiner: No, it has not been received.

Mr. Spencer: I don't believe that I offered it.

Mr. Lange: No.

Mr. Spencer: Now, if you would like to offer it, it will be satisfactory to me. I would not desire to offer it until there has been some action upon Mr. Luttring's Exhibit 146.

Mr. Lange: Well, if it does tie in definitely with that, why, of course, the action with reference to the offer may be deferred, but we want it indicated that at that time we will request the admission of it.

The Trial Examiner: Very well.

Mr. Spencer: I will say further, Mr. Lange, that if Exhibit 146 is admitted, I think this one should be, too.

Mr. Lange: Now, in connection again with the transfer of the properties to the Amarillo Oil Company in 1924 there was a memorandum executed on April 30, 1924 between Perry A. Little and others—Producers and Refiners Corporation, Mission Oil Company, Panhandle Pipe Line Company, Mountain States Gas Company, Prairie Oil and Gas Company, and as I say it bears date of April 30, 1924. It has some relation to this exhibit and we desire at this time to offer it. We have copies of it.

The Trial Examiner: That has not been marked for identification yet.

Mr. Lange: No, not yet. It is entitled "Memorandum," as far as the heading of it is concerned. It was executed by those several parties and has attached to it a schedule of certain properties.

The Trial Examiner: I think you have adequately described it. It will be marked for identification as Exhibit No. 234.

(Exhibit 234, Witness Luttring, marked for identification.)

Mr. Lange: And that offer may also be deferred until Exhibit 146 is acted upon?

The Trial Examiner: Very well, Mr. Lange.

By Mr. Lange:

Q. Now, Mr. Lusk, turning again to your Exhibit No. 194, Page 16 of your written statement under General and Administrative Costs, your treatment of these items as costs differ from the treatment accorded them on the books of the predecessor company?

A. That is correct, neither of the predecessor companies capitalized any of their general administrative expense.

Q. What is the basis of your treatment of the items?

A. The basis for the treatment, or the premise I established in adding back administrative cost was that the Amarillo Oil Company from the date it was first incorporated up to the latter part of 1920 enjoyed no revenue or any return on its investment. The same is true of A. R. Jones interests and the same was true of a small portion of the time by Mission Oil Company.

Q. Well, don't you think Mr. Iliff knew about that situation pretty well when he made his audit of the company's books?

A. He may have.

Q. Well, aren't you reasonably certain he had those facts available to him?

A. No, I don't think he had. He probably had the facts available and they were made available to him, but I don't think he considered that particular feature of it.

Q. Why not?

A. That the Jones interests and the earlier Amarillo Oil Company did not enjoy any return for several years on the amount of property and money they had invested in the Amarillo field.

Q. Well, Mr. Jones and his associates probably—not only probably, but very definitely knew what the character of the audit work was that Mr. Iliff was doing.

A. They apparently did because Mr. Iliff worked for Mr. Jones.

Q. Mr. Jones was a pretty practical and well-informed executive, wasn't he?

A. Yes, Mr. Jones is an able business man.

Q. Particularly A. R. Jones?

A. He still is.

Q. Don't you think he took the time to confer with Mr. Iliff at that time and knew exactly what treatment Mr. Iliff was according the various items?

A. He probably did. He probably knew all about it.

Q. Even at that time Mr. Jones had been pretty experienced in the industry, hadn't he?

A. Yes.

Q. He knew the practices?

A. From the field angle. I don't know about his knowledge of the practices of bookkeeping.

Q. Where he didn't know he had pretty good advice, didn't he?

A. I think he did.

Q. He made no objection at that time to Mr. Iliff's treatment, did he?

A. Not that I know of.

Q. He made no objection, at that time, to Mr. Iliff's treatment of any of the items in the audit?

A. Not that I know of, no, sir.

Q. And nobody else did at any subsequent date that you know of?

A. Not that I know of, no, sir.

Q. And they remained on the Amarillo Oil Company's books as Mr. Iliff's audit disclosed them?

A. That is up to January 16, 1923.

Q. Now, your treatment with reference to these general administrative costs is predicated primarily, as you state, on the fact that Amarillo Oil Company during a certain period had no income?

A. That is right, Amarillo Oil Company and the Jones interests and Producers and Refiners Corporation and the Mountain States—the last two never enjoyed any revenue from their property.

Q. Referring to Mountain States, didn't Mountain States capitalize some portion of administrative cost on their books?

A. Yes, they capitalized a small portion, yes, sir.

Q. I think you set that out on Statement 22, didn't you, the amount of some twenty thousand dollars?

A. Yes, sir.

Q. It is $20,518.61, Column 9, Statement 22, Exhibit 194?

A. That is right.

Q. Well, have you given any credit to that portion of it?

A. I considered under Statement 22 an overall compilation and arrived, for the purposes of Exhibit 194, at 4 per cent.

Q. Now, weren't there some other administrative and general items—

Mr. Spencer: I don't think he answered your other question directly as to whether or not you had given any credit in his computation for the $20,518.61?

The Witness: I think my answer was, Mr. Spencer, that I considered it for the purposes of Statement 22, Exhibit 194—I considered all of it as a whole and arrived at an overall 4 per cent which I applied to the property.

Mr. Spencer: I see.

By Mr. Lange:

Q. Where do you arrive at that figure of 4 per cent?

A. Well, on Statement 22, Column 12, the total excluding periods of lowest construction which is Column 3 and Column 5 where the percentages are 27.36 and 28.77, respectively, I eliminated those in the computation under Column 12.

Q. And applied 4 per cent to that total?

A. I applied 4 per cent to the total.

Q. Now, again, with reference to the treatment of general administrative costs, how were they treated in connection with the income tax returns of the company?

A. They were expensed.

Q. And there are some other items that I want to know whether you gave consideration to or credit for on your total of general administrative costs. Weren't there some expensed in 1923 and 1924? Wasn't there the amount expensed of $11,435.95 for Mountain States in the year 1923?

A. Yes, there was a portion of the Mountain States which was spread to the leases.

Q. And how much was that?

A. It was approximately—the amount of overhead that was prorated on the Mountain States was $20,518.61. That is the amount for Producers and Refiners—I beg your pardon. That isn't Mountain States.

From my records here the only Mountain States overhead I know of is on Statement 22, $5,991.54.

Q. Weren't there two items of administrative general expense charged to well investment in 1923, a total of $11,435.99?

A. By the Mountain States?

Q. Yes, and in 1924 of $8,687.18.

A. I don't see any in my working detail. Under what heading is that, Mr. Lange?

Q. Administrative and general charged to well investment.

A. Not that I know of.

Q. The only one you have is the one of $20,518.81?

A. That is Producers and Refiners. That is not Mountain States.

Q. Do you have anything on Mountain States?

A. Only this $5,954 I show on Statement 2.

Q. With reference to the treatment accorded these items on the predecessor companies' books, they were consistently

treated by them all the way through, weren't they? They were pretty consistent in their treatment of the items, both the general administrative expense as well as the delay rentals?

A. That is quite right, yes, sir.

Q. And A. R. Jones and his associates, as I stated before, were men that were pretty well conversant with the practices of the oil and gas industry?

A. I believe they were, yes.

Q. Among the pioneers, weren't they?

A. Jones was a "wildcat" driller in the Amarillo field.

Q. He graduated from that class pretty soon, didn't he?

A. Yes, after he discovered gas.

Q. He was a pretty practical man in his operations and dealings and connections with problems affecting oil and gas?

A. Not only that, but he still is, and I believe he was then extremely tax conscious.

Q. You don't think he would have had a man like Mr. Iliff examine the company's books and set up records unless he had quite a bit of confidence in him?

A. I don't think Mr. Jones is the type of man who would employ a man he didn't have confidence in.

The Trial Examiner: By the way, Mr. Lusk, your study of the work done by Mr. Iliff, does that indicate to you he was endeavoring to set up the books in conformity with any particular code of accounts or was he merely setting them up as he conceived they should be?

The Witness: I think Mr. Iliff set the combination of the Amarillo Oil Company and the Mission Oil Company up according to his own ideas. They weren't following any code in the Amarillo Oil Company.

The Trial Examiner: The Amarillo Oil Company didn't follow the Pennsylvania Code?

The Witness: No, sir.

By Mr. Lange:

Q. As far as you know, Mr. Iliff had the approval of Mr. A. R. Jones and his associates in all he did in connection with this accounting work?

A. I believe he did, yes, sir.

Q. Now, these general administrative costs as discussed by you on Page 16 of your written statement, Exhibit 194, are also set forth in the reconciliation statement prepared by Mr. Luttring, Line 19, Sheet 2 of 3?

A. That is correct, yes, sir.

Q. Now going back for just one more question with reference to the manner in which these general administrative costs were treated, didn't Mr. Jones and his associates capitalize practically all items with reference to that excepting possibly a portion of salaries?

A. Yes, Mr. Jones in the Mission Oil Company capitalized all of their expenditures in connection with the exploitation of the Amarillo oil field.

Mr. Spencer: By that you mean direct expense?

The Witness: Direct expense, yes, sir.

By Mr. Lange:

Q. This total as set forth on Mr. Luttring's reconciliation statement, Sheet 2 of 3, has been prepared by you, hasn't it?

A. Yes, sir.

Q. That amount set forth in your Statement 1 of the exhibit, Columns 5 and 6, is $68,597.09, is that right?

A. That is right.

Q. Now, that, as I take it, is an amount which you arrived at by applying 4 per cent to $1,714,927.35 as appearing in Column 6, Statement 1?

A. That is correct. That is a flat 4 per cent of the amount you have just read.

Q. And where do you find a basis for arriving at 4 per cent?

A. In Statement 22.

Q. Oh, yes, you explained that a while ago.

That is Statement 22, Exhibit 194?

A. That is correct.

Q. Now turn to Page 17 of your exhibit where you treat the matter of interest cost. Basically what is your reason for capitalizing that particular item and including it in your Statement 1, $34,298.55?

A. The premise I adopted with reference to general and administrative expense applies also to interest cost. Reading from Page 17, it states: "Amarillo's investment was idle from April 1917 to October 1920, the date gas was first delivered at the well to Panhandle Pipe Line Company. The Jones interests had an idle investment and Producers and Refiners Corporation and Mountain States Gas Company was without revenue or return in any form from May 1, 1923 to August 1, 1924."

Q. I note on Page 17 of the written statement you state: "Amarillo's investment was idle from April 1917 to October 1920, the date gas was first delivered at the well to Panhandle Pipe Line Company." The date has reference to 1920, doesn't it?

A. That is correct, yes, sir.

Q. That is the gas that was delivered the well to the Panhandle Pipe Line Company for sale at the city gate of Amarillo?

A. That is correct.

Q. And for distribution in the city of Amarillo?

A. I believe it was, yes, sir.

Q. Now, what do you have reference to during the period November 1918 to October 1920 concerning the Jones interests justifying the exclusion of any interest cost?

A. As I state on Page 17, Exhibit 194: "The Jones interests had an idle investment from November 1918," that was the date they entered into the contract with the Amarillo Oil Company. " * * * to October 1920." The date gas was first delivered at the well to the Panhandle Pipe Line Company. Jones had a half interest in the Amarillo Oil Company leases and wells and naturally they participated in any sale of gas.

Q. During that period of time, as reflected by the company's books, hadn't they covered any possible interest expenditures that may have been accruing for that period, or, rather, expensed any items during that period at all?

A. In neither the Amarillo Oil Company or the Jones interests or the Mission Oil Company did I see any interest items with the exception of a small amount, an amount of a few hundred dollars.

Q. Why was that?

A. On the A. R. Jones account, interest and discount

earned—that wasn't an expense—a amount of $1,568.10, but there was no charge for interest as such against any of the expenditures made by either A. R. Jones and Associates or the Mission Oil Company.

Q. Well, now, does this item include any legal fees, or did you give that any consideration at all?

A. General legal fees would be under general expense, and it wouldn't have anything to do with interest.

Q. Did you in connection with general administrative expense give any consideration to legal fees that had been paid?

A. Yes, I think the 4 per cent is sufficiently ample to cover any legal expenses that may have been incurred, because when the Mission Oil Company was formed in 1922 there was quite an appreciable sum charged to legal expense.

Q. That was in the year 1922?

A. Yes, sir.

Q. Do you know what that total was?

A. Approximately $8,000.

Q. Now going back again to the treatment of the interest capitalized, how do you arrive at this 2 per cent rate that you apply?

A. The Amarillo Oil Company from April 1917 to January 15, 1923 stated an amount of interest which I capitalized for the purposes of obtaining a rate of $6,935 against expenditures for property and operating expenses of $158,487. That covered the entire period from April 1917 to January 15, 1923. That ratio was 4.375 per cent. I did the same thing with A. R. Jones and Associates and the Mission Oil Company and I found an overall ratio of 5.7 per cent. The Jones and Mission companies combined would approximate five per cent.

The total expenditures by the Mission Oil Company approximated 2.35 per cent and I used 2 per cent all the way through.

Q. And applied that in computing interest cost as set forth on Statement 1, Exhibit 194?

A. That is right, I applied a flat 2 per cent rate against the property shown on Statement 1, the total of Line 7, $1,714,000.

Q. Similarly your computation there applies the 2 per

cent to the total of $1,714,827.35 appearing in Column 6, Statement 1 of the exhibit?

A. That is correct.

Q. Turning to Mr. Luttring's reconciliation statement, Sheet 2 of 3, Line 20, that same total of $34,298.55 appears there, doesn't it?

A. That is correct, Mr. Luttring eliminates it from his Exhibit 146. In this reconciliation Mr. Luttring does not reaccount.

Q. Now, your approach to all of these questions in your Exhibit 194, Mr. Lusk, are, of course, on the various bases you gave in your testimony; that is why you justify reclassifying these items at this time?

A. That is right. I think the testimony is clear on these disputed points.

Q. In other words, it really amounts to a reaccounting in connection with those items, doesn't it?

A. That is correct.

Mr. Spencer: You are speaking of interest costs only, or general administrative expense, too, Mr. Lange?

Mr. Lange: Yes, general administrative as well as interest cost and all of the items, particularly those set forth in Statement 1, items 8, 9 and 10, delay rentals, general and administrative and interest cost.

The Witness: That is the reaccounting, yes.

By Mr. Lange:

Q. And you say you are justified in doing that, although these predecessor companies have not pursued that course heretofore?

A. That is quite right.

Mr. Lange: I believe at this time, Mr. Examiner, we desire to offer this reconciliation statement prepared by Mr. Luttring. I think it would clearly set forth the differences in the two exhibits.

The Trial Examiner: What is the exhibit entitled, Mr. Lange?

Mr. Lange: "Canadian River Gas Company, Comparison of Cost to Predecessor Companies of Assets Acquired

by Canadian River Gas Company from Amarillo Oil Company as of May 1, 1927, as shown by Commission's Exhibit No. 146 and Respondent's Exhibit No. 194."

The Trial Examiner: It will be marked for identification as Exhibit No. 235.

(Exhibit 235, Witness Luttring, marked for identification.)

Mr. Lange: I believe that is all for the present time, Mr. Examiner.

Mr. Spencer: I shall have a few questions on redirect, but I would suggest a short recess before I commence that, Mr. Examiner.

The Trial Examiner: Very well, Mr. Spencer, we will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows):

The Trial Examiner: The hearing will be in order.

Redirect Examination.

By Mr. Spencer:

Q. Well, Mr. Lusk, in answer to one of Mr. Lange's questions I believe it was indicated or implied that the Amarillo Oil Company received $3 per acre for certain leasehold interests that were assigned to Hapgood in 1918. Do you recall that?

A. Yes, sir.

Q. Now, did Mr. Hapgood in fact pay any sum per acre in cash for the assignment of the leasehold interests he received?

A. To my knowledge, no. There was no cash passed in that transaction.

Q. And what was the consideration for the assignment of the leasehold interests by Amarillo Oil Company to Hapgood?

A. At the time of the contract between the Amarillo Oil Company and Hapgood it was agreed that as a part consideration for drilling the discovery well which is the Hapgood well, that Hapgood was to retain and receive for himself 2-¾ sections of land.

Q. Then what does the $3 per acre represent that appears on the books of the Amarillo Oil Company at that time?

A. That $3 per acre represents the average price of acreage that the Amarillo Oil Company had established for the purposes of making that assignment.

Q. On Page 12 of your Exhibit 194 you refer to two combination wells, one of which was located on the Warrick lease and the other on the Bivins 18 lease, I believe. By "combination wells," you mean wells that are capable of producing both oil and gas?

A. That is correct.

Q. Do you know how long after the transfer of these particular properties to the Canadian River Gas Company that these two wells continued to be capable of producing oil?

A. At the time of the physical transfer from Amarillo Oil Company to Canadian River Gas Company, those two combination wells were transferred as combination wells and shortly thereafter the Canadian River Gas Company plugged back to the gas producing sand those two wells and since then they have been flush gas producing wells.

Q. And since then I take it the wells have ceased to produce any oil?

A. They—when they were plugged back, why, that shut off the oil sand.

Q. Now, Mr. Lange also asked you to state your reasons for capitalizing the so-called Bivins 2 well which resulted in a dry hole. Do you recall that?

A. Yes, sir.

Q. I wish you would tell me again why you considered that this well was an exploratory well which should have been capitalized.

A. Well, from my knowledge of going through some of the old correspondence with reference to that particular dry hole, as I mentioned yesterday in response to Mr. Lange's question, that was part of the development program—that particular well. Now, I could go a little further and say that to the best of my knowledge and belief that particular well was an exploratory well and it served to bring in the entire structure around that part of the Bivins acreage. In other words, the company learned more through

the drilling of that dry hole than they had knowledge of previously.

Q. Now, you are familiar with the contract between A. R. Jones and Associates and the Amarillo Oil Company covering the drilling of five exploratory wells?

A. Yes, sir.

Q. Now, what distinction would you make as between those five wells and the Bivins C-2 which resulted in a dry hole?

A. Well, I think that the five exploratory wells and the Bivins C-2 well could be placed in the same category. They are all exploratory wells.

Q. Well, there is a difference in the arrangement for payment of cost of the two classes of wells.

A. That's correct.

Q. What was that?

A. In the initial Jones-Amarillo agreement it was a half-interest proposition.

Q. Well, but who paid for the cost of the five wells that Jones drilled?

A. Jones paid all of the cost of drilling.

Q. And who paid the cost of the dry hole, the Bivins C-2?

A. That was a joint proposition.

Q. Between whom?

A. Between the Amarillo Oil Company and A. R. Jones.

Q. Is that the only distinction you can see between the two classes of wells drilled at that time?

A. Well, that would be the distinction between those classes of wells, yes, sir.

Q. Now turn to Page 15 of your written statement which has to do with delay rentals. Now, in speaking about the Bivins No. 30 lease which you have used as an example for the purpose of illustrating what you have done in the last sentence you state as follows:

"This entire amount is restored as a lease cost on the premise that payments of this nature during the development periods are properly capital."

Is that correct?

A. That is correct.

Q. Now, let me ask you this: In your experience of oil

and gas leases, would you say that a lease required payment of any so-called delay rental after a producing well had been drilled and commenced producing?

A. That would be very rare.

Q. Now, treating the Bivins No. 30 lease specifically, would it have made any difference how many wells were drilled on the Bivins No. 30 lease if no gas was produced from those wells in so far as it concerned this particular payment which was required each year?

A. Well, under the terms of that particular lease, any number of wells could have been drilled without gas producing, but the $72,000 minimum guarantee payment would hold just the same.

Q. No matter how many wells might have been drilled?

A. That's correct. If there wasn't any outlet for the gas under that lease, the $72,000 minimum guarantee payment would go on just the same.

Recross Examination.

By Mr. Lange:

Q. Mr. Lusk referring to that Bivins dry hole you said that as a result of the drilling of that the company learned a great deal about the particular formations in the field that they did not know before.

A. That was my understanding, yes, sir.

Q. Of course, you just heard that from hearsay. You aren't informed as far as the geology is concerned?

A. Oh, no, I don't want to convey that impression, no, sir.

Q. As far as that is concerned, then that is just purely hearsay. You don't know what they learned or what they did not learn?

A. No. From the records of the Amarillo Oil Company and from my own conversations with Mr. A. R. Ford—of course, he was down there since the discovery well and Mr. Ford who is now General Superintendent knows that field well, and what certain wells did and what certain wells did not do and what they learned from the drilling of wells and what they learned from the drilling of dry holes.

Q. And, of course, they probably learn something every time they drill a well that they didn't know before with reference to the field, don't they?

A. That is undoubtedly true.

Q. Now, with reference to these two wells, the Bivins B-3 and Warrick A-1, the oil rights under those wells were transferred to Parcomis, weren't they?

A. That's correct.

Q. As well as the oil equipment?

A. No, sir.

Q. Did you have any tanks?

A. Not that I know of. There might have been a few sludgetanks or run-off tanks that were sold, but I don't think the Parcomis acquired any physical property. In fact, I know they didn't.

Q. Just acquired the oil rights?

A. Just acquired the oil rights and those two wells now have been plugged back and they are producing from the gas horizon whereas heretofore they were producing from the oil horizon.

Q. They did produce oil as late as 1931, didn't they?

A. One of them did, yes.

Q. Which one was that?

A. I think that was the Warrick well. I am not sure which one. There were two wells.

Q. And the Bivins well was the one plugged back later, about 1933, is that what your records show?

A. No, I think several months later, after they acquired it.

Mr. Spencer: Not that late.

The Witness: The Bivins B-3 started to produce large quantities of gas in 1929 and so did the Warrick. The Bivins B-3 in 1929 produced 1,621,543 Mcf.

By Mr. Lange:

Q. And the Warrick?

A. And the Warrick produced 92,446 M.

Q. What is the first year of that big production of gas?

A. 1929.

Q. Both of them?

A. Yes, sir.

I don't have any record of gas production for either of those wells prior to 1929.

Q. Do you have any record of oil produced from those wells prior to that?

A. No, I don't have it here, Mr. Lange, but I do have a record over at the office as to the oil production from those two wells.

Q. Mr. Lusk, then if the minutes of Parcomis Oil and Gas Company as of June 26, 1933 show that the agreement dated May 1, 1933 between Canadian River Gas Company and Parcomis Oil and Gas Company providing for the plugging back of Bivins B-3 well by Canadian River Gas Company—if those are the minutes, wouldn't that very definitely indicate that that well was plugged back at that time, May 1, 1933, or thereabouts?

A. Well, I don't know: I haven't seen those minutes, but from my records here the Bivins B-3 was a very large gas producer in 1929, according to the metered production records.

Q. You just stated, though, that you didn't know what the production of oil was at that time or prior?

A. No, I don't. I have a record of the oil runs—not here with me, but I do have a record of the oil runs.

Q. Will you make a note of that and when you get those figures, then, you may—

Mr. Spencer: We can check those plugging dates for you.

By Mr. Lange:

Q. Will you check the dates shown in the extract of the Parcomis minutes?

A. Are those minutes—do they state the Bivins B-3 well?

Q. Yes, B-3. It says as of June 26, 1933.

There was introduced in evidence Exhibit 234, being a contract or memorandum executed on April 30, 1924, between Perry A. Little, and others, which Exhibit 234 is as follows:

Memorandum.

Whereas, Perry A. Little and T. J. Driscoll own or control approximately ninety percent of the stock of the Amarillo Gas Company, which owns gas distributing property in the city of Amarillo, Texas, and

Whereas, the Panhandle Pipe Line Company, of which Little and Driscoll own or control ninety percent of the stock, owns a pipe line system from the Amarillo gas field to the city of Amarillo, and

Whereas, The Mission Oil Company owns a majority of the stock of the Amarillo Oil Company, which company owns a large acreage under oil and gas leases in the Amarillo gas field and also a pipe line from said field to a smelter plant in the vicinity of Amarillo and

Whereas, the Producers and Refiners Corporation also owns a large acreage under oil and gas leases in the Amarillo gas field, its gas rights, however, having been conditionally assigned to the Mountain States Gas Company, and

Whereas, The Mountain States Gas Company owns certain rights under oil and gas leases in the Amarillo field, and

Whereas, it is desired by all parties hereto to avoid needless waste of gas, to conserve the supply thereof and achieve economies as far as possible in the development and distribution thereof and to make it possible for the Amarillo Oil Company or the company that may be organized to make attractive rates for gas, so as to attract large industries to Amarillo:

Now, Therefore, it is proposed by all the parties hereto as follows:

1st: The Mission Oil Company will, within fifteen days, undertake to secure the entire control of the stock and assets of the Amarillo Oil Company so as to be in a position, if necessary, to assign all of said stock to a company to be organized, in which company The Mission Oil Company is to receive forty-nine percent of the stock and the Mountain States Gas Company is to receive fifty-one percent of the stock; or in case it seems best for the Amarillo Oil Company to continue as the company owning and operating all the properties The Mission Oil Company will deliver to the Mountain States Gas Company fifty-one percent of the stock of the Amarillo Oil Company after capital is increased as may be advisable.

2nd: Little and Driscoll undertake, within fifteen days,

to secure control of all the stock of the Amarillo Gas Company and assign same to the Amarillo Oil Company or to a company to be organized as contemplated herein.

3rd. Little and Driscoll will undertake and agree that the Panhandle Pipe Line Company, ninety percent of the stock of which is owned or controlled by Little and Driscoll, will assign all its stock to the Amarillo Oil Company or to a company to be organized or agreed upon as contemplated herein.

4th: The Producers and Refiners Corporation will assign all its oil and gas leases, together with wells, equipment, etc., and rights thereunder, in what is known as the Amarillo gas field, to the Amarillo Oil Company or to a company to be organized as contemplated herein.

5th: The Mountain States Gas Company will assign all its rights under oil and gas leases in the Amarillo gas field to the Amarillo Oil Company or to a company to be organized as contemplated herein.

6th: The Amarillo Oil Company, or such other company as may be organized to receive the aforementioned properties, will issue bonds to the amount of Three Million Four Hundred Thousand Dollars, ($3,400,000.00), which bonds shall be six percent, first mortgage fifteen year sinking fund gold bonds, sinking fund to become operative and applied on retirement of bonds beginning five years from date, sinking fund to then be five percent of the balance then due each six months with accrued interest, interest to be paid semi-annually, and all or any part to be retirable at any date at par with accrued interest. These bonds are to be issued as follows:

7th: Little and Driscoll, in full consideration for the assignment of all of the stock and assets of the Amarillo Gas Company and Panhandle Pipe Line Company, are to receive said bonds in the sum of Two Million Dollars ($2,000,000.00), less amount of bonds and obligations of said companies that may be outstanding and unpaid.

8th: The Amarillo Oil Company is to receive said bonds in the sum of One Million Four Hundred Thousand Dollars ($1,400,000.00), less any amount by which the bonded indebtedness or outstanding obligations of the Amarillo Oil

Company exceeds Four Hundred Thousand Dollars ($400,000.00); the delivery of said bonds to The Mission Oil Company to be in consideration of the procurement and delivery of all the present stock and assets of the Amarillo Oil Company to a new company, if and when organized as contemplated herein, or fifty-one percent of the stock of the Amarillo Oil Company with increased capital, if the latter company should be decided upon as the company to receive the various properties as herein provided.

9th: The Prairie Oil and Gas Company, by reason of its ownership of the majority of the stock of Producers and Refiners Corporation, agrees to purchase the said One Million Four Hundred Thousand Dollars ($1,400,000.00) of bonds to be issued to The Mission Oil Company, and pay therefore One Million One Hundred Sixty-six Thousand Six Hundred and Sixty-seven Dollars ($1,166,667.00) in cash, or will purchase any part of said bonds at the same ratio.

10th: If it is decided that the transfers of the several properties are to be to the Amarillo Oil Company, then it is understood that the capital stock thereof shall be increased so as to approximately represent the value of its property and fifty-one percent of the entire stock is to be issued to the Mountain States Gas Company and the remaining forty-nine percent is to be issued to The Mission Oil Company; or, if a new company is organized, the stock of such new company shall be issued to the Mountain States Gas Company and The Mission Oil Company in the proportion above provided for.

All parties hereto agree to use their best efforts and reasonable diligence to carry out and complete this agreement, and as the consideration is the mutual agreement of each of the parties to all and to each other, then the failure of one will make this agreement void and inoperative.

All property herein mentioned to be transferred to the Amarillo Oil Company, or to the company to be organized as herein contemplated, free and clear of all debt and incumbrances, except as herein provided.

Description of the property to be transferred by the re-

spective parties and consolidated is shown by Schedule A herewith attached.

Signed this 30th day of April, 1924.

PERRY A. LITTLE.
T. J. DRISCOLL.
PRODUCERS AND REFINERS CORPORATION,
By F. E. KISTLER, Chairman
THE MISSION OIL COMPANY,
By FRANK E. JONES, President.
PANHANDLE PIPE LINE COMPANY,
By PERRY A. LITTLE, President.
MOUNTAIN STATES GAS COMPANY,
By F. E. KISTLER, President.
PRAIRIE OIL AND GAS COMPANY,
By N. K. MOODY, President.

Schedule "A."

Property of Amarillo Gas Company.

All assets of said company including franchise granted by the City of Amarillo, all pipe lines, real estate, buildings, tools and machinery, regulators, meters, contracts, or other property of any kind or character used in or in connection with its business of distributing and marketing gas in the City of Amarillo, Texas, it being the intention to cover all property, both personal and real, of any kind or character used by above said Amarillo Gas Company.

Property of Panhandle Pipe Line Company.

All assets of said company, rights of way, contracts, pipe line connecting the Amarillo gas field with the city of Amarillo, and any and all property, both personal and real, of the said Panhandle Pipe Line Co.

Property of Producers and Refiners Corporation and Property of Mountain States Gas Company.

All their rights under oil and gas leases in the Amarillo gas field, which includes any and all materials, tools, interest in tools, pipe, casing, rigs, and material and sup-

plies of every kind and character used in connection with said leases, these leases being shown by the following list.

No.	Name	County	Acres
T-1045	August Blissenbach	Potter County	160
T-1046	J. T. Sneed, Jr.	Moore	640
T-1047	Lee Bivins	Potter	40
T-1048	R. B. Masterson	Potter	100
T-1049	R. B. Masterson	Potter	80
T-1050	J. T. Sneed, Jr.	Moore	5440
T-1051	R. B. Masterson	Moore	160
T-1052	Lee Bivins	Potter	20
T-1053	D. P. Seay	Moore & Potter	540
T-1054	R. B. Masterson	Potter	80
T-1055	Fuqua Land & Cattle Co.	Potter	1280
T-1056	R. B. Masterson	Moore	40
T-1057	J. T. Sneed, Jr.	Moore	160
T-1058	R. B. Masterson	Moore	40
T-1059	Teant L. McBride	Potter	40
T-1060	R. B. Masterson	Potter	40
T-1061	Lee Bivins	Potter	40
T-1062	Lee Bivins	Hutchinson, Carson Moore & Potter	2240
T-1063	M. E. Miller	Moore	212.5
T-1064	Lee Bivins	Hutchinson & Carson	160
T-1066	Terry Thompson	Moore	7603.8
T-1067	Lee Bivins	Carson & Potter	6749.3
T-1068	L. H. Crawford	Potter	1440
T-1069	J. M. Crawford	Potter & Moore	480
T-1070	Wm. H. Bush	Potter	9000
T-1071	R. B. Masterson	Potter	2200
T-1072	W. H. Ingerton	Hutchinson	2000
T-1073	R. B. Masterson	Potter	160
T-1074	E. S. Poling	Carson	80
T-1075	Lee Bivins	Oldham, Harkley, Moore, Potter, Hutchinson, Carson	200000
T-1076	R. B. Masterson	Moore & Potter	29455.11

No.	Name	County	Acres
T-1077	R. B. Masterson	Potter	160
T-1078	Lee Bivins	Potter	20
T-1079	J. M. Crawford	Moore	175.8
T-1080	C. J. Hansen	Moore	160
T-1081	Anthony Walters	Moore	332.67
T-1082	R. B. Masterson	Potter	159.88
T-1083	R. B. Masterson	Potter	482.05
T-1084	R. B. Masterson	Potter	324.9
T-1085	R. B. Masterson	Potter	280
T-1086	R. B. Masterson	Moore & Potter	320
T-1087	R. B. Masterson	Potter	201.75
T-1088	R. B. Masterson	Potter	262.77
T-1089	R. B. Masterson	Potter	*594.7
T-1090	R. B. Masterson	Moore & Potter	320
T-1091	R. B. Masterson	Potter	200
T-1092	O. H. Cooper	Moore	212.5
T-1490	E. E. Masterman	Moore	679.8

*More or less.

Property of Amarillo Oil Company.

All assets of said company including rights of way, contracts, a gas pipe line connecting the Amarillo gas field with a smelter in the vicinity of the City of Amarillo, Texas, and all its rights under oil and gas leases in said Amarillo field which will also include any and all materials, tools, interest in tools, pipe, casing, rigs, and material and supplies of every kind and character used in connection with said leases in said field, said leases being shown in the following list.

No.	Name	County	Acres
501	Lee Bivins	Potter	14,000
502	R. B. Masterson #1	Potter	19,000
503	Mrs. J. C. Warick	Moore, Carson, Potter & Hutchinson	2,400
504	R. B. Masterson #2	Potter	10,000
505	R. B. Masterson #3	Potter	5,000
506	R. B. Masterson #6	Potter	1,300
			51,700

There was also introduced in evidence Exhibit 160, a document captioned, "Proposition," executed by Albert R. Jones, Harry W. Jones, and E. W. Goebel, under date of November 20, 1918, which Exhibit 160 is as follows:

Proposition.

Whereas, the Amarillo Oil Company, a Texas corporation, is the owner of certain oil and gas leases, upon lands situated respectively in Potter, Hutchinson, Carson and Moore Counties, Texas, and more particularly described in Schedule A, hereto attached and made a part hereof, and is desirous of having said leases developed for oil and gas, and:

Whereas, the undersigned, Albert R. Jones and Harry W. Jones of Johnson County, Kansas, and E. W. Goebel, of Wyandotte County, Kansas, are desirous of entering upon the development of said leases, if satisfactory terms can be made in reference thereto.

Now Therefore, we, the undersigned, Albert R. Jones, Harry W. Jones and E. W. Goebel, do hereby propose:

First: That upon the acceptance of this proposition, the said Amarillo Oil Company will deposit with the National Bank of Commerce, of Amarillo, Texas, its oil and gas leases to, of and upon the lands described in Schedule A, hereto attached (intending to cover all of the oil and gas leases owned by said company of and to lands in said counties at this date, except the oil and gas lease upon the Southwest one-quarter of Section Seventy-one (71), Block O-18 (D. and P. R. R. Co.) hereto attached), together with legal and valid assignments of an undivided one-half (½) interest in and to said leases and each of them to us the said Albert R. Jones, Harry W. Jones and E. W. Goebel, subject to its option contract with Perry S. Little for gas pipe line, together with an escrow agreement or memorandum directing the delivery of said assignment or assignments to us, the said Albert R. Jones, Harry W. Jones and E. W. Goebel, upon the performance of the conditions of this proposition by us.

In consideration of the deposit and assignment or assignments as aforesaid, we, the undersigned hereby propose:

First, To drill five (5) wells upon the lands hereinbefore

mentioned, at points or locations to be agreed upon by the parties to this proposal, as follows, to-wit:

Two (2) wells to be drilled to a depth of Twenty-four Hundred (2400) feet, provided, however, if in the drilling of said wells there is obtained a production of natural gas per well to the amount of not less than five million (5,000,000) cubic feet in Twenty-four (24) hours, or of petroleum oil to the amount of not less than Fifty (50) barrels per day, at a lesser depth than Twenty-four Hundred (2400) feet, then and in that event, said well from which said production is obtained, shall be deemed a completed well in compliance with the terms of this proposal.

Two (2) wells, drilling to commence promptly upon completion of said two gas wells, to be drilled to a depth of Twenty-four Hundred (2400) feet, provided however, if in the drilling of said two wells, there is obtained a production of oil to the amount of not less than Fifty (50) barrels per day at a lesser depth than Twenty-four Hundred (2400) feet, then, and in that event, said well from which said production of oil is obtained, shall be deemed a completed well in compliance with the terms of this proposal.

Second. To drill One (1) well to a depth of Three Thousand (3000) feet; provided, however, if in the drilling of said well a production of not less than Fifty (50) barrels of oil per day is obtained therefrom, at a lesser depth, then and in that event such well will be deemed a completed well in compliance with the terms of this proposal.

Third. If in the drilling of any of the said wells herein provided for, a production of oil is obtained to an amount of not less than one hundred (100) barrels per day of Twenty-four (24) hours at a depth greater than Twenty-four Hundred (2400) feet, then we, the said Albert R. Jones, Harry W. Jones and E. W. Goebel, will drill all of the balance of the said five (5) wells remaining to be drilled by them, to the depth of said one hundred (100) barrel production, unless a production of gas to the amount of five million cubic feet per day, or a production of oil of not less than fifty (50) barrels per day is obtained at a lesser depth.

Fourth. That we, the said Albert R. Jones, Harry W. Jones and E. W. Goebel, will, within ten (10) days after notice of the acceptance of this proposal, order and contract

for the lumber, timber and other materials necessary for the drilling of two of said five (5) wells, and will within sixty days (60) after said notice start the drilling of one (1) of said wells. Provided, however, that if at the expiration of said sixty (60) days, drilling has not started, for reasons unavoidable by ordinary care and diligence, but at said time the drilling contractor is upon the land where said well is to be drilled, equipped with the proper tools and men to do said drilling, then and in that event, we, the said Albert R. Jones, Harry W. Jones and E. W. Goebel are to have an extension of ten (10) days over and above said sixty (60) days within which to start said drilling. The drilling of the second well to be started within thirty (30) days after drilling is started on the first well.

Fifth. That if after two (2) of the said wells herein proposed to be drilled, have been completed by us, we, the said Albert R. Jones, Harry W. Jones and E. W. Goebel, should fail to start immediately or complete the remaining wells; and do not desire so to do, and shall so notify said Amarillo Oil Company, said company shall by legal and proper assignment or assignments convey to us, the said Albert R. Jones, Harry W. Jones and E. W. Goebel, an undivided one-half (½) interest, in the Oil and Gas Leases so as aforesaid owned by said Amarillo Oil Company of and to a one-half (½) section of land, surrounding each of said wells, each to be in a solid block of land, and said assignment shall be a full cancellation of any obligation on the part of said oil company to deliver or cause to be delivered to us, the assignment or assignments of Oil and Gas Leases first hereinbefore provided for.

Sixth: That upon the completion of the said five (5) wells as herein provided, in addition to the leases upon the lands mentioned in Schedule A, the said Amarillo Oil Company, will at once convey to us, the said Albert R. Jones, Harry W. Jones and E. W. Goebel, by legal and valid assignment, a one-fourth (¼) interest in and to the gas rights now held by it of and to the Southwest quarter (¼) of Section Sixty-five (65), Block O-18 (D. & P. R. R. Co.), including one-fourth (¼) of gas well on said land and of the production of gas from said well, excepting all oil produced on said land, and by said well. Said assignment of said lease, to be executed and deposited in escrow as provided herein in respect to other leases.

Seventh. All material to be furnished and the drilling of the five (5) wells hereinbefore described, to be at the expense of us, the said Albert R., Harry W. Jones, and E. W. Goebel, and to be without expense to said Amarillo Oil Company, and the work of drilling said wells when commenced as agreed, shall be prosecuted continuously with due diligence till said five wells are completed, however, subject to the rights of said Albert R. Jones, Harry W. Jones and E. W. Goebel, under fifth paragraph hereof. Provided, however, that we, said Albert R. Jones, Harry W. Jones and E. W. Goebel shall have the right to use all gas produced from and of the said wells drilled by us necessary in the drilling of said wells, free of charge, and that said Oil Company will use its efforts to obtain for us the use of gas necessary for the drilling of the first well to be drilled by us, from the gas well known as the Hapgood Well, drilled under the Company's lease.

Eighth. If upon the completion of two (2) wells, we, the said Albert R. Jones, Harry W. Jones and E. W. Goebel, shall elect to terminate their contract as herein provided: Or upon the completion of said five (5) wells shall have the right to take and remove from the lease premises any tools, casing, piping, rigs and all other personal property belonging to them not in use in, or in connection with a producing well drilled by them.

Dated November 20th, 1918.

ALBERT R. JONES,
HARRY W. JONES,
E. W. GOEBEL.

We accept the foregoing proposition, this 20th day of November, 1918.

AMARILLO OIL COMPANY,
By M. C. NOBLES, President.

Schedule "A."

Lands situated respectively in Potter, Hutchinson, Carson and Moore Counties, Texas, upon and to which the Amarillo Oil Company, a Texas corporation, hold oil and gas leases.

Masterson: Block O-18, D. & P. R. R. Co.

Section: All of 70, ½ of 71, all of 72, ¾ of 63, ½ of 64, ½ of 65, ½ of 66, ¼ of 67, all of 92, 93, 102, ½ of 103, all of 108, ½ of 107, ½ of 104, all of 101, 91, 90, 95, 105, ½ of 106, ¾ of 110, all of 99, 96, 89, 88, 97, 98, 109.

Block 47, H. & T. C. Ry.

Section: All of 67, 66, 65, 64, 63, ¾ of 62, all of 61, 60, 59, 58, 57, 56.

Block G. & M. 3.

Section: ¾ of 16, all of 26, ¾ of 25, all of 27, 29, 30, 31, 32, ½ of 33, all of 35, 36, 37, ½ of 42, all of 43, ¾ of 44, 1/3 of 15, all of 83, 84.

Bivens: Block 46, H. & T. C. Ry.

Section: All of 77, 79, 81, 83, 87, 89, 90, 91, 97, 99, ½ of 101, all of 103, 105, 106, ½ of 107, all of 108.

Block G. & M. 20.

Section: All of 1, 2, 3, ¾ of 4, all of 5, ¾ of 6, all of 14, 15, 16, 31, 32, 40, ¾ of 41.

Block G. & M. 3.

Section: All of 11, 18, 20½, 22, 23, 24 and Palmer survey, just north of Section 14, Block G. & M. 20.

Ozier: Block 47, H. & T. C. Ry.

Section: All of 48, ½ of 49, ½ of 50, all of 51, ½ of 53, all of 54, ½ of 55.

Block G. & M. 3.

Section: 1/3 of 52, ½ of 53, all of 54, ½ of 51, ½ of 50, ½ of 79, ½ of 76.

Block 12, D. & P.

Section: All of 10.

Merchants: Block 47, H. & T. C. Ry.
Section: All of 32, 34, 37, 38, 39.

Ingerton: Block 47, H. & T. C. Ry. ½ of 41.
Block B, S. & F, ¾ of 1.

Warrick: South of ½ of N. ½ of Sec. 94, Block 46, Moore County, and NW¼ Sec. 12, Block Y 2 Carson County, and the SW¼ Sec. 12, Blk. Y 2 Carson County, SW¼ Sec. 96, Block 46, Moore and Potter County, Sec. 16, Block Y 2 Potter County, N ¾ Sec. 96, Blk. 46 Moore and Potter Counties, Sec. 92 Blk. 46 Moore and Hutchinson Counties.

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48. Original Cost of Canadian's Properties at December 31, 1928, to December 31, 1939, Inclusive, and as Estimated 1940 to 1947, Inclusive. Section B.

Exhibit 67, WITNESS LUSK, entitled "Original cost of Denver pipe line properties at December 31, 1928 to 1939, inclusive," shows such original cost separately as between the portion owned by Colorado Interstate and the portion owned by Canadian. This exhibit has been abstracted above, particularly with reference to Colorado Interstate's portion of said Denver Line.

Such original cost as relates to Canadian's portion of the Denver Line is shown on Statement 1 of Exhibit 67 as of December 31 of each of the years 1937, 1938 and 1939, as follows:

Item No.	Account Nos. (Company)	Description	1937	1938	1939
		Owned by Canadian River Gas Co.			
		Transmission System:			
1.	218; 221; 224	Main Compressing Station	$ 599,983	$ 659,917	$ 663,791
2.	218; 220; 226	Transmission Lines	2,658,679	2,689,312	2,690,109
3.	218; 222; 225	Measuring Stations	22,447	22,225	23,088
4.	900; 902; 903; 904; 905; 906	Gasoline Plant	364,504	364,451	365,312
5.	255	Telephone System	85,821	86,337	87,431
6.		Total	$3,731,434	$3,822,242	$3,829,731
7.		Adjustment for General Construction Costs Applicable to Net Property Additions	4,376	8,463	8,800
8.		Total Original Cost	$3,735,810	$3,830,705	$3,838,531
		General Property: (A)			
9.	223; 227	Bivins Camp			
10.	247; 248; 249; 250; 256; 257	Other General Property	$ 161,573	$ 179,289	$ 186,929
11.	253	Automobiles and Trucks			
12.		Adjustment for General Construction Costs Applicable to Net Property Additions	1,563	2,386	2,736
13.		Total General Property	$ 163,136	$ 181,675	$ 189,665
14.		Total Original Cost of Canadian River Gas Co. Property	$3,898,946	$4,012,380	$4,028,196

Note: (A) Amounts shown represent allocations to Denver Line, as shown on Statements Nos. 3, 4, 5 and 6.

Items 1 to 5 are book figures, as are Items 9, 10 and 11, inclusive. Items 7 and 12 are adjustments for general construction costs applicable to net property additions.

Luttring and Teel's Exhibit 146, in so far as it relates to Canadian's portion of the Denver Line, including the Bivins Compressing Station, is heretofore abstracted in Title 19.

Additional facilities in connection with Canadian's portion of the Denver Line were shown by the company to be required during the period, 1940 to 1947, inclusive, in Exhibit 66, page 19 consisting of extension of Bivins compressor station by the addition of five 600 H.P. units, one to be installed in 1941 in the present building, and the other four units to be installed in a new building in 1942; also a new Dalhart compressor station to be installed in 1940 with five 600 H.P. units (four units of which have already been completed and in operation since early in 1940). (Vol. VIII, p. 1084.)

The cost of these additional facilities is shown in Exhibit 133, Witness Lusk, as follows:

Extension to Bivins compressor station	$302,093
New Dalhart compressor station	$266,523

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49. Present Market Value of Leases Owned by Canadian, January, 1941.

For the respondent there was introduced and received in evidence (Vol. LIII, p. 7459) through the witness, Mr. R. J. Wallace, Exhibit No. 181 covering the present market value of leases of Canadian. This exhibit is prefaced by a 21-page statement of Mr. Wallace which appears in the record. (Vol. LII, pp. 7178-7197.) This preface is followed by a map of all Canadian leases in the field, a map of the Masterson consolidated lease, and detailed data relating to each of the leases of the Canadian.

A resume of Mr. Wallace's testimony covering his iden-

tity, experience and qualifications, is as follows: (Vol. LII, pp. 7178-7183.)

He resides in Dallas, Texas. Since October 1, 1940, he has been Vice President of Republic Natural Gas Company. Prior thereto he operated independently as a producer of oil and gas and for many years past conducted a brokerage business for the purchase and sale of oil and gas properties and leases. In 1907 he worked in the oil fields near Bartlesville, Oklahoma, as roustabout and night pumper for Lahoma Oil and Gas Company. In 1908 and 1909 he was employed by Prairie Oil and Gas Company in its Civil Engineering Department on tank and pipe line construction. In 1909 and until 1911, he attended college in the winter and in the summer worked at surveying, as a tool dresser on drilling wells and general oil field work. In 1912 he was elected Register of Deeds for Washington County, Oklahoma, the county seat being Bartlesville. This county was probably one of the most active in oil and gas development at that time. By far the largest percentage of instruments recorded was all types of leases, stipulations and contracts for leases. In 1913 he became Superintendent of the Land and Leasehold Department of the Quapaw Gas Company and associated companies. This was the first large gas company at that time operating in northern Oklahoma. These companies later became the Empire Companies. His work consisted of acquiring and supervising the purchasing and taking of gas leases direct from landowners and brokers. As the company expanded it acquired leaseholds in the states of Alabama, Mississippi, Arkansas, Louisiana, Texas, Oklahoma, Kansas, Colorado, Wyoming and Montana. From 1915 until the latter part of 1919 he was attached to the Production Department of the Gas Division of the Empire Companies and was made Superintendent of the gas pipe lines in the Cushing Field, Oklahoma, which at that time was the largest gas reserve in Oklahoma. He also purchased oil and gas production and acquired gas leases for the gas division. In 1919 through 1920 he was Manager of Oil and Gas Operations in Louisiana for the joint operations of the Empire Companies, the Barnsdall Oil Company and H. V. Foster Interests, his work consisting in supervision of drilling wells, purchasing leases, and selling leases to help finance the ventures. The Empire

Companies withdrew from the joint operations in Louisiana, leaving him with the Barnsdall and Foster Interests. In January, 1921, he was transferred to Billings, Montana, as Manager of Oil and Gas Operations in the Rocky Mountain states. The Barnsdall Foster Company was organized, of which he was General Manager until 1924. He sold his 60% interest in the properties of the Barnsdall Foster Company to the Midwest Refining Company. Later in 1924 he resigned from Barnsdall Foster Company and organized the Record Petroleum Company, in which he owned a substantial interest. This corporation operated in Montana as a leasing company; drilled wells on its own account and as drilling contractors. An interest in a portion of the property was sold to the Midwest Refining Company. In 1926 and until 1928 he secured leases and permits from the government for his own account in the states of Montana, Wyoming and New Mexico. Also during this period the Texas Panhandle Field became quite active, and he made several trips to the Amarillo District to acquaint himself with this activity and the values of leases. In 1928 he moved to Tulsa, Oklahoma, to engage more actively in the brokerage business and in valuation and appraisal of oil and gas properties. He devoted practically the entire year 1929 in consummating two sales. One was the sale of a one-half interest of all the undeveloped oil and gas leases, being approximately 492,000 acres in Kansas and Oklahoma owned by Amarada Petroleum Company to the Dixie Oil Company. The consideration for this one-half interest was $10,000,000. Also the sale or merger of the McMann Oil Company with the Dixie Oil Company which involved a stock merger set up on the value of the properties and was approximately $12,000,000. In 1930 and until 1932 he conducted a general brokerage business and also developed a new gas field on the eastern edge of Kansas City, Missouri. He drilled a number of gas wells and built a pipe line system and sold the gas to the American Pipe Line Company. From 1932 to 1935 he sold gas properties near Kansas City, Missouri, and, in addition to his brokerage business, became Vice President and General Manager of the Signal Oil Company, a producing company operating in Oklahoma and Kansas. He was put in charge of the Signal Oil Company by a creditor bank. In 1936, after drilling some ad-

ditional wells, he sold the production and some of the undeveloped leases for enough to pay the bank's indebtedness and then turned the company back to its owners. In 1936 and until 1938 he drilled a number of wells in the Burton Field, Kansas, in which he owned a one-fourth interest. These wells were combination oil and gas wells and resulted in the building of a casinghead gasoline plant on the property. In the latter part of 1938 he sold his interest in the oil properties retaining his interest in the gasoline plant. From 1938 and until October, 1940, he has been engaged entirely in the brokerage business and in valuation of oil and gas properties and leases. During the years he was employed by various companies and operating the brokerage business he has had occasion to acquire leases in the Texas Panhandle Field and also the Hugoton Gas Field in Kansas. He first became acquainted with the Texas Panhandle Field in the very beginning of operations. Under his supervision there were acquired many thousands of acres in the Texas Panhandle Field and in areas generally surrounding that field.

On cross-examination concerning his previous experience Mr. Wallace testified (Vol. LII, pp. 7199, et seq.) that he first began work in connection with oil and gas leasing in the latter part of 1912, when he did some leasing for Lahoma Oil and Gas Company prior to taking over the position with the Quapaw Gas Company. This leasing then was mostly confined to an oil field in Nowata County, Oklahoma, east of Bartlesville. The next place was where the town of Duncan, Oklahoma, is, which involved leasing for both oil and gas. He first became interested in oil and gas leasing in the state of Texas during the border trouble in 1916, when he was in charge of a large party of both geologists and lease men who were leasing in Star and Zapata counties, Texas. While engaged in the leasing occupation he had made no study of the geology of oil or gas, other than the practical part of such work, certain features of which he absorbed. While he is not a geologist, he feels that he, from practical experience and association with geologists and engineers, is acquainted with some of its forms. He does not claim to be in position to make an estimate of the reserves of oil or gas. He has been through

the Texas Panhandle Field many, many times and has observed the oil properties and the gas properties also. The merger between the McMan Oil Company and the Dixie Oil Company involved some oil properties which were in the Texas Panhandle Field and some in the Pecos Field in Texas, and some in Osage County, Oklahoma, and his occupation in connection with these leasing matters took him into the Panhandle Field and other fields. The most generally accepted form of lease then used was the Mid-Continent 88 Form, or forms similar thereto, which cover both oil and gas, provided both are negotiated for. Right after the discovery of the Eldorado, Kansas, Field in 1915 he and Mr. Ford leased the entire field through a broker, with leases covering both oil and gas. He could not say for certain that any of this area is what is now known as the Panhandle Field but it covered land in Powers, Moore, Potter and Gray counties, where they checkerboarded the leases, taking 160 acres out of each 640 acres, where possible. While he does not recall the exact acreage which was leased at that time, there were from one-half million to one million acres under lease in different states. He does not know when the first leasing took place in the Texas Panhandle Field and, without looking up the records, does not know whether his original leasing covered any of the acreage now owned by Canadian. In his Exhibit No. 181 he has itemized all the older leases in the Texas Panhandle Field and has checked into the history of all the leases now owned by Canadian, but cannot recall whether his original leasing in Texas Panhandle Field covered any of the present Canadian River acreage. As shown by Exhibit 194, all of the original acreage acquired between 1917 and 1919 was acquired by Amarillo direct from landowners.

After thus testifying as to his qualifications and previous experience, Mr. Wallace further testified as follows: (Vol. LII, pp. 7183, et seq.)

That he had been requested to make a report setting forth the present market value of leases owned by Canadian located within the counties of Moore, Hutchinson, Carson, Potter, Oldham and Hartley, Texas. It was necessary for him in the preparation of this valuation to spend many weeks in the Amarillo office of Canadian and in the field,

The status of each lease, the consolidation of leases, the development requirements of each lease and the relationship to other leases, the subjection to outside drainage, the desirability of well blocked acreage to checkered acreage, the large amount of acreage held under one leasehold, the location as to the particular gas productive areas as indexed by the wells drilled within those areas, the rock pressures, and the location of the acreage within the generally accepted proven "sweet gas" areas were some of the factors considered in arriving at the market value of the leases. A very important factor shown in the lease holdings of Canadian favorable to their value is the result of a process of elimination and state of evolution the leases have gone through and favorable consolidation contracts whereby the construction or drilling costs have been reduced to a minimum. The Texas Panhandle Field, unusual to many fields, is accepted as a proven gas field within a boundary line generally accepted as well as a generally accepted area within the field of what is known as a "sweet gas" area and what is known as a "sour gas" area.

Mr. Wallace then defined in considerable detail the area of the field containing within its present limits approximately 1,450,000 acres of oil and gas lands. (Vol. LII, p. 7185.) He stated there was a generally accepted boundary within the proven area of approximately 1,000,000 acres of "sweet gas" lands, the balance being oil-producing lands along the northern boundary of the field and the "sour gas" lands located within the oil area and in the northern and western part of the proven gas area in Hutchinson, Moore and Hartley counties, Texas.

The leases of Canadian valued in Exhibit No. 181 fall within the proven "sweet gas" area, a small portion within the "sour gas" area, and a portion in the area south of the fault line not accepted at this date as proven acreage.

Mr. Wallace then testified as to the history of wastage of gas in the Texas Panhandle Field. (Vol. LII, p. 7186.) During the years of "stripping gasoline" there was estimated in excess of more than 1,000,000,000 cubic feet per day being blown in the air during 1934. As a result of state legislation and serious efforts of the Texas Railroad Commission to enforce the provisions of legislation wastage

has been reduced at the present time to less than 50,000,000 cubic feet of gas per day. The leaseholds of Canadian were generally not within the area where "stripping" took place, and consequently did not suffer the same drainage and loss of rock pressure as did other parts of the field.

From the beginning of the active development of the oil pools in the Texas Panhandle Field in 1926 there was an excessive waste of gas, and in the early days there was no appreciable market for gas for light and fuel, and consequently at that time gas was of little or no value and likewise the market value of leases was very low. The field at that time was termed a "Wild Cat" area, with the producing extent or boundaries of the field not known. Beginning in about 1927, when some of the major gas pipe lines were being planned, the market value of leases increased very rapidly. In the purchases of large acreages prices were paid in excess of some of the smaller individual tracts for the reason that leases on large tracts and well blocked leases were more attractive to the operators who had provided themselves with a market outlet. The original values were paid in form of cash per acre as well as certain definite obligations to drill wells and build pipe lines as the original consideration for the leases. (Vol. LII, p. 7187.)

In 1933 a law was passed permitting the owners of gas wells on small tracts to open up their wells and process the gasoline content therein and blow the residue to the air. This had the effect of lowering the value of leases, as by 1943 there was an estimated 1,000,000,000 cubic feet of gas per day being blown to the air, a large percentage of which was from the "sweet gas" area. In 1935 the Texas legislature repealed the "Stripping Law" by the passage of House Bill No. 266, which House Bill prohibited the blowing into the air of any gas other than the "casinghead" or that gas produced with oil, too low in pressure to be admitted into a major gas pipe line. Later another law was passed providing that sour gas could be utilized for the manufacture of gasoline, providing the residue gas was used in the manufacture of carbon black. A study of the total withdrawals during the past few years shows that present withdrawals of dry gas for carbon black purposes

are limited to sour gas and casinghead gas which is produced in the sour gas area and in the oil-producing area along the boundaries of the proven field.

The conservation legislation, as administered by the Texas Railroad Commission, has had a tendency to increase the market value of leases within the "sweet gas" area, and this activity of the legislature and Railroad Commission has had a tendency to create greater values for the reason that a purchaser of proven leases would now be justified in paying a consideration for leases from which he could reasonably expect a profit based upon the purchaser's estimate of recoverable gas from the leased tracts.

Mr. Wallace then testified that the Canadian leases are located in different gas productivity areas and have been placed by him in several classifications. In determining these classifications (Vol. LII, p. 7189) consideration has been given to the proximity to wells of certain open flow and rock pressure, the past producing history of the wells, and the location of the Canadian leases with reference to the leases of other companies and with gas pipe lines. Consideration has also been given to the manner in which the leases were blocked and the term of the unusually favorable leases and the large acreage under several leasehold contracts and the favorable contracts of consolidation of leases. The above, as well as other factors, were used in determining the value and classifications adopted. Mr. Wallace stated that in the matter of consolidation of leases special attention should be given to the advantage of owning leases under his form of lease contract compared to those of separate and individual leases. Under a consolidated lease the lessee is relieved from drilling many additional wells and is relieved from the duplication of implied drilling and other obligations which would exist in the case of individual leases, as distinguished from a consolidated lease, as well as from the delay rental obligation incident to individual leases. The advantages obtained through consolidation, therefore, add to the value of the leases. (Vol. LII, p. 7190.)

Mr. Wallace then called particular attention to the consolidation known as the Masterson Lease (Vol. LII, p. 7190) which he stated was probably one of the most outstanding

examples of consolidating leases in order to be able to economically operate a gas reserve. Originally what is now included in the consolidated Masterson Lease consisted of a number of individual leases covering individual tracts of as small as 10 acres, 20 acres, and up to 640 acres. Seventy separate leases and transactions were eventually consolidated by Canadian into the Masterson consolidated lease, which has resulted in perpetually holding all the acreage by the wells drilled. With the consolidated lease the discovery of gas on any part of the lands covered has resulted in Canadian gaining title to its portion of the gas in place in the entire consolidated acreage, which usually takes years to accomplish and which adds additional value to the leases and the acreage reserve as a whole. (Vol. LII, p. 7192.) From an operating standpoint the consolidation has decreased the number and density of the wells required to be drilled by Canadian. This is due to the large acreage in the leases which are almost solidly blocked and to their location in the proven gas area. Likewise, the large acreage reserve reduces to a minimum the cost of gathering lines or system, which also is an additional factor the purchasers of leases would consider in valuing the leases.

In evaluating Canadian leases it was necessary for him to prepare an exhibit such as Exhibit No. 181, including a take-off of each separate lease showing the date of the lease, the number of the lease, the lessor's name, the name of the original lessee, the location and description and acreage, the royalty payable to the landowner, and the terms and amounts of delay rentals and, in case of consolidation with other leases, the lease numbers under the consolidation; also the data with reference to all wells drilled and the original open flow and rock pressure, and the latest open flow test and rock test, and the amount of gas marketed from each well in Mcf., as shown by the Canadian records. On each take-off sheet is a notation as to the productive area and pressure area in which the lands are located made from personal observation on the lease or in proximity thereto and from the records and maps of the company.

Mr. Wallace in this exhibit has placed each lease in a

certain classification noted on each sheet in the exhibit, together with the value of each classification representing in his opinion the present market value. He has shown in the exhibit a summary or recapitulation of the total acreage in each classification and the total market value of each classification. The exhibit contains maps and other lease data referred to above.

Although the Canadian leases are well blocked, he found it necessary, due to many conditions existing in their locations, to place them in seven different classifications. These classifications he has designated as follows: A1, A2, A3, B1, B2, B3, and C. Under the different classifications he has placed valuations as follows:

Class A1	$125 per acre
Class A2	100 " "
Class A3	75 " "
Class B1	50 " "
Class B2	25 " "
Class B3	10 " "
Class C	1 " "

(Vol. LII, p. 7194-A.)

In arriving at the value of $125 per acre for Class A1 acreage and from the study he has made, it is his opinion that it is the highest class acreage and should produce the largest per-acre income. Less drilling per acre will be required on Canadian leases than on any other reserve in the field. He estimates that one well to each two sections should be the ultimate density it will be drilled. Therefore, with one well to each 1280 acres the value of that acreage at $125 per acre would be $160,000. He estimates the cost of completing a well to be $25,000, which would result in a total investment of $185,000 for two sections with a well completed. As some of the leases provide a royalty of 1c per thousand cubic feet to the landowner, some 3/16 of 4c per thousand, and some 1/8 of 4c per thousand, he has allowed 1c per thousand cubic feet as royalty on all Class A1 acreage and has also deducted 1c per thousand cubic feet for the expense of operating the well.

From his study of the field generally and the leases and division orders on gas-producing properties, he has found

that 4c per thousand cubic feet is a generally adopted price for gas. Consequently, in order to amortize the purchase of Class A1 leases the cost of drilling a well, the landowner's royalty, the Canadian, as lessee, would only have to produce 7,200,000 cubic feet per acre to receive its money back. Mr. Wallace then stated that the valuation placed on the other classifications is based upon his experience judgment. It is quite customary, when purchasing leases, to arrive at the value of the choicest acreage and then estimate, as he has done, the lesser values of acreage not so well located.

Mr. Wallace then testified (Vol. LII, p. 7195) that in his judgment the total market value of the Canadian leases, exclusive of oil rights, is $15,664,787.64, as shown by the recapitulation attached as a part of Exhibit 181, as corrected in Volume LIII, page 7304.

He then testified that in placing the values upon the Canadian leases he had not considered as a value factor the fact that the wells drilled thereon are connected to pipe lines or any value of contracts that Canadian has for the sale of gas. It is his opinion that if this acreage reserve were available it could unquestionably secure an outlet for its gas, exclusive of any pipe line now in the field.

He concluded his general statement (Vol. LII, p. 7196) by testifying that the "Present Market Value" of the leases, as set out in Exhibit 181, has been based on the leases and contracts applicable to the leases, but does not include gas sale contracts and no value has been placed on the producing wells or equipment thereon. He states it is quite customary to arrive at the value of leases and leasehold estates, and in the event of a sale the inventory value of material for wells, pipe lines, machinery, houses and structures thereon are added to the consideration when transferred. With respect to the value of oil rights in the area covered by the Canadian lease reserve he stated it is his judgment there is no value at this time for oil. The recapitulation of the present market value of the leases for each of the classifications made by Mr. Wallace in Exhibit 181 and contained in that exhibit, as corrected by Mr. Wallace on the witness stand (Vol. LIII, p. 7290), is as follows:

Classification	Classification Values	Acres	Value
A-1	$125.00 per acre	53,944.80	$ 6,743,100.00
A-2	100.00 " "	37,551.31	3,755,131.00
A-3	75.00 " "	25,064.70	1,879,852.50
B-1	50.00 " "	40,285.50	2,014,275.00
B-2	25.00 " "	31,174.80	779,370.00
B-3	10.00 " "	38,832.43	388,324.30
C	1.00 " "	86,734.84	86,734.84
Total		313,588.38	$15,664,787.64

It will be noted that in the total Value the figures "64" underlined above have been transposed, the correct addition being $15,646,787.64, thus making the total as shown in the summary in this exhibit $18,000 too high.

Further testifying on cross-examination in connection with this exhibit (Vol. LII, pp. 7209, et. seq.) Mr. Wallace stated he did not approach his values by what was paid for the leases, but did base his values on his judgment of the present market value of the leases; that in his schedules he had taken the land, tract by tract, and from the index of the wells now drilled, the history of the wells, observation of open flow decline, rock pressure decline, and looking at the situation from the judgment of an operator he placed them in classifications, and then arrived at his present market values, which valuation, as above stated, is exclusive of any wells or well equipment. This exhibit fixes the present market value of the leaseholds of the Canadian. By market value (Vol. LII, p. 7211) he means a value from a willing seller to a willing buyer; namely, a seller who is willing to sell and a buyer who is willing and capable of buying without any distressed elements entering into it, such as mortgage foreclosures, indebtedness, and things of that nature. As the leases stand themselves is what he has reference to in defining market value. He did not take into consideration the quantity of oil or gas in place on any of this acreage, but he knows that a buyer of leases would consider this a proven gas area. When he sees a well producing and sees it tested, or observes or tests it himself, he can observe what it is producing. He does not know what the gas reserves are on this acreage, or any portion of it, and did not classify his

entries on that basis or place a market value on it on that basis. (Vol. LII, pp. 7211, et seq.) He made his classifications on the basis stated in his statement contained in Exhibit 181. In going over the Canadian property as well as other adjoining properties he has had the privilege of examining the records and wells in previous years, and has observed from experience judgment the areas which he considers most prolific, and he has based his values upon that. (Vol. LII, p. 7213.) In 1938 and 1939 he made quite a study of the adjoining properties of Shamrock Oil and Gas Company and also has had access to the records of Texoma Natural Gas Company for which he prepared a similar exhibit presented in the Natural Gas Pipe Line Company rate proceeding in Washington, in September, 1939, FPC Docket G-109.

Mr. Wallace reiterated his testimony abstracted above as to how he arrived at the different classifications. (Vol. LII, p. 7214.). He has never operated the Canadian acreage, but is operating similar acreage and has observed similar acreages. He is operating in the Hugoton Field for the Republic Natural Gas Company which markets to the Northern Natural Gas Company and which also has oil properties in Kansas and on the Gulf Coast. (Vol. LII, p. 7216.) He did not consult any engineer or geologist, but worked independently. He knows pretty well the minds of buyers of proven acreage of this type and has been associated with them in the purchase and sale of properties. He contemplates that a willing buyer would purchase the acreage based upon his judgment. He thinks there is no question about it and feels certain it could be sold if it were available for sale, although a purchaser would probably employ geologists and engineers. From his experience judgment he states he could make a sale at the value he has set up. (Vol. LII, p. 7217.) By this he does not mean a sale of each of the tracts at the valuation price placed thereon, but he has taken the acreage as a whole as the law of averages will maintain in a reserve of this kind. There are no doubt small or individual tracts worth more than others in his classification and valuation, but the law of averages, he is certain, would maintain, and that would result in a very handsome profit. He does not know of a willing seller.

MR. WALLACE further testified as follows: (Vol. LII, Official Transcript, pp. 7218-7220.)

Q. You were defining what you had in mind as the present market value being what a willing buyer would pay a willing seller, is that correct?

A. That is correct.

Q. Is there a willing seller in this particular situation?

A. No, there is not as far as I know.

Q. Well, of course this is purely based on hypothesis on your part in so far as applying your definition of market value in this particular instance?

A. No, I am valuing this as if this property were not connected to pipe lines and had no gas sales contracts. I feel quite certain if this property were available at the values there, whether it is available or not available, there would be no difficulty in finding outlets for the sale of gas in the type of leases and well blocked that this property consists of.

Q. You reached this conclusion without having any petroleum engineer's estimate to guide you at all?

A. I have. The general knowledge I have of the field and the discussions in the field, the years it has produced, indicates to me that this classification I have used is very low over the amount of gas that will be recovered, but I do not know what that will be.

Q. As I understand, you have no knowledge of the reserves in that field, therefore you have no way of determining what the actual recovery of gas will be?

A. My knowledge is only hearsay.

Q. And therefore couldn't be used in this estimate?

A. This isn't based on the reserves.

Q. Then this estimate does not take into consideration any actual sales that have been made in that location of similar acreage?

A. No, there has never been a sale of similar acreage; there has never been a sale of as much proven acreage in one block and under the condition of these lease-holds to my knowledge.

Q. Therefore, some of the judgment figures have not been predicated on any sales?

A. No. I have sold more acreage than this, as I have recited—

Q. Not in this particular area, though?

A. Not in this particular field. It was in not large tracts but by small blocks.

Q. In your statement on the last page it specifically says that it does not take into account any oil rights at all; that you considered them of no value—

A. At this time I don't know any evidence in there that would justify owning oil rights in the area in the acreage where the Canadian River Gas Company is.

Q. Is there any such similar gas acreage of that extent available for purchase in the Panhandle field?

A. No, there is not.

Q. Have you had any connection with any sales of acreage in the vicinity of Canadian River Gas Company in the last few years?

A. No, I have not.

Q. Do you know what the records of any sales that may have taken place in that area disclose?

A. Yes, I have known of isolated tracts that were sold, small tracts, and they have run from $15 to $25 an acre, but invariably they have been small tracts of 640 acres or possibly two sections.

Q. Can you point out any of those on Exhibit 95?

A. I cannot. As I recall it, in going into the records of the Shamrock—I would have to refresh my memory—some of that acreage was acquired piece by piece for some twenty-odd dollars an acre.

Q. Where is that in relation to the acreage of Canadian River Gas Company?

A. Some joins it on the north.

Q. Some joins it on the north?

A. Yes.

Mr. Wallace was then questioned concerning the Rhetta Miller lease containing 212.5 acres (Vol. LII, p. 7222) which he had placed in Classification A2 at a valuation of $21,250. He pointed out that the original bonus paid for this lease was $5 per acre, and $12.50 per acre for renewal in 1928, with $1 per acre delay-rental. He was asked how he arrived at the value of that acreage (Vol. LII, p. 7227), and answered that he classified the area where this acreage was included, but did not mean that the particular lease, as an individual lease, was worth that amount or that he would recommend its purchase as an individual tract for that amount, but that

as a part of a large reserve in a large area its value was increased. (Vol. LII, pp. 7228, et seq.)

Mr. Wallace then testified as follows: (Vol. LII, page 7229.)

Q. Of course, any gas lease that you have in this exhibit, or making it broader still, every gas lease in this exhibit is dependent entirely upon whether there is any gas under the land? If there is no gas there, not any one of these leases would be worth anything, is that true?

A. That is true, if it is demonstrated that there is no gas there, nobody would want them for gas.

Q. It would be entirely dependent upon gas being there in certain quantities?

A. Being a proven gas area.

Mr. Wallace was again asked (Vol. LII, pp. 7230, et seq.) whether it was possible to get anybody to even intimate that he would buy a considerable block of acreage without the report of petroleum engineers or geologists, and he answered that it was; that many, many acres of blocks and leases had been purchased before geology was ever applied to the oil and gas business in the Mid-Continent Field and many thousands of barrels of oil produced. At the present time engineers' and geologists' reports would be secured by a purchaser of gas acreage, but before closing a deal for the purchase or sale of the acreage. If this acreage were available to him in the form it is in covered by the existing leases, then with the number of wells drilled on it as an index to the production, the general knowledge of the field, the amount of gas that has been produced showing that there is 60% or 70% of the original rock pressure, a purchaser of leases like this would consider that a deal could be made and would purchase it, although it would be customary to have engineers go over it to see what the percentage of profit might be on the purchase price. (Vol. LII, p. 7231.)

Mr. Wallace has made no study of Canadian gas sale contracts and where he refers to contracts he means the leases. His valuation is not based at all upon gas sale contracts. (Vol. LII, pp. 7232, et seq.)

Mr. Wallace was then interrogated concerning the bonus

paid for certain other individual leases and the delay rentals thereunder, etc. (Vol. LII, pp. 7234, et seq.) and was asked (Vol. LII, p 7239) how he justified his larger valuations in view of the amount of bonus paid. He stated he did not take that into consideration and was not valuing the leases from the landowner's standpoint or what the landowner should receive, but from what he considered was the capability of the leases to show an earning. He cited the prolific Eldorado, Kansas, Field and stated that only for a very small portion of that field was any money paid to the landowners.

MR. WALLACE further testified as follows: (Vol. LII, pp. 7266-7276.)

Q. Now, what other acreage in the Bivins lease have you classified at $1 per acre?

A. 64,748.34 acres. Generally that acreage that I have classified in "C" classification is below the fault line; that is, the recognized southwestern boundary of the field and the acreage from the field south to the city of Amarillo, Texas.

Q. And the fault line is the staggered line indicated on Exhibit No. 95?

A. I believe that fault line is as it is staircased by the Canadian River Gas Company but I have used the fault line as nearly as possible that has been adopted by the Texas Railway Commission. A fault line usually runs straight. It doesn't run stairsteps.

Q. All of this acreage is below both of those lines, isn't it?

A. Yes, with the exception of possibly a portion of some of the leases that may extend over the fault line.

Q. Now, this acreage in that Section 190, right immediately north of Amarillo, that is, you say, in your opinion, one that has a value of $1 an acre?

A. At this time I don't think it has a value of more than a dollar an acre.

Q. You would say it even has a value of $1 an acre for gas production purposes?

A. A dollar an acre does not entirely represent the value for gas. I have given it $1 an acre—$1 an acre for this acreage, because it is part of one lease; it is all validated,

and there is a great deal of it that is "Wild-Cat," of which you know, and I have considered a dollar an acre was a fair value as a carrying charge, not as a value of gas.

Q. What in your opinion do you define as "Wild-Cat" acreage?

A. Acreage that is not accepted as proven acreage.

Q. As a matter of fact, there is no gas well that has ever been brought in on any of that acreage?.

A. No, but there are some dry holes on some of it.

Q. The dry holes have a very definite indication there is no gas in that particular area?

A. No, just in the well.

Q. But every well that has been drilled in that area has been a dry hole?.

A. That is right.

Mr. Keffer: Just a minute, Mr. Lange. What do you mean "in that area"?

Mr. Lange: This acreage he has under "C" below the fault line.

Mr. Keffer: You mean in the area on that acreage or in the general area?

Mr. Lange: On that acreage.

Mr. Keffer: There are two different things there. There are gas wells in that area but none of it is on this particular acreage.

By Mr. Lange:

Q. There is no producing gas well that has ever been drilled on what you classified under "C" in the Bivins lease?

A. No.

Q. Do you know the provisions of the Bivins Consolidated lease and what has to be done by the lessee in connection with that lease?

A. Yes, they are to drill or cancel.

Q. To drill or cancel?

A. Yes.

Q. There is no definite obligation for them to drill if they desire to exercise an option to cancel?

A. No.

Q. In any year they so desire they can cancel that par-

ticular drilling block or that block of acreage by so notifying the lessor?

A. That is correct.

Q. Without drilling and without any obligation?

A. That is right.

Q. And without any way affecting the remainder of the leasehold?

A. That is right.

Q. Then you still believe that in the light of the history of that particular acreage that you classified as "C" under Bivins, what has happened to it is it is still worth $1 an acre?

A. Yes, I do, because it covers such a large acreage and there are so many unknown quantities. It may be possible a pool may be discovered where that acreage is located.

Mr. Keffer: Could I interpose a question there, Mr. Lange?

Mr. Lange: Yes.

Mr. Keffer: Would you come to the map which is marked as Exhibit No. 95 and look in Section 37 in G-M Block 5 Potter County, and tell me what you find there on the Commission's map?

The Witness: A gas well is marked there.

Mr. Keffer: What is the size of that gas well?

The Witness: It came in originally purported to be 7,000,000 cubic feet. I don't know what it is at this time.

Mr. Keffer: What is marked on the map?

The Witness: 7,000,000.

Mr. Keffer: 7,000,000?

The Witness: Yes.

Mr. Keffer: Is that well south of the fault line?

The Witness: It is south of the fault line and it is a very deep well.

Mr. Keffer: How far is it from a substantial portion of this "C" acreage that is contained in the Bivins-Consolidated lease?

The Witness: Approximately a mile and a half or a mile and three-quarters.

By Mr. Lange:

Q. Whose well is that? Who owns that well?

A. It is purportedly owned by the Humble. I do not know the ownership of it just now. It may still belong to Humble.

Q. Going back to this 190 acres immediately north of the city of Amarillo, do you know anything about the well that was drilled by Canadian River on an acreage adjoining that?

A. Yes, I observed the drilling of that well from practically top to bottom.

Q. You did?

A. Yes.

Q. That was a dry hole?

A. Yes, sir.

Q. And what other drilling operations took place on that particular acreage?

A. On that particular lease?

Q. Yes.

A. There was an old well drilled about 2,000 feet deep, as reported on that map, that seems to correspond with the place on the map where I have indicated there. I think it was drilled by the City of Amarillo. It was a dry hole. It was only drilled 2,000 feet deep.

Q. When was it drilled?

A. I don't have the history of it.

Q. Was it drilled prior to the other well?

A. It was drilled prior to the well of the Canadian River.

Q. How far is that acreage from the nearest producing gas well?

A. This map—if this map was marked up to date—I don't believe it is—indicates it is about seven or eight miles from the helium gas field that is controlled by the United States Government.

Q. Is there any producing gas well closer than that?

A. Not unless that map is not accurate. I don't believe we have marked our map accurately, at least, I have not on the helium pool. I would have to check it. There are more wells in on the helium pool than I see on that map, but I don't know the location. I will say they are not close to that acreage as they are several miles removed.

[Testimony of Mr. Wallace (continued).]

Q. Now, the Bivins Consolidated lease aside from this acreage that is below the fault line, *covera* acreage above the fault line that is in the producing area, doesn't it?

A. Yes.

Q. And as you stated, this group of acreages that are covered by the Bivins lease below the fault line are subject to the company releasing them if they don't drill or pay delay rentals?

A. Yes.

Q. And you have given that acreage a value of $1 an acre?

A. Yes.

The Trial Examiner: You said something about there being a carrying charge, Mr. Wallace. What do you mean by that?

The Witness: That is a term we use in our industry. We quite often have leases that we don't consider of very much value but yet there is a remote possibility, particularly if they are scattered over large areas where there are deeper sands or something that they might come in; but yet at the present time, there is nothing to indicate any lease value; for the fact that they are part of one large lease or within or are checker-boarded, we usually call it a carrying charge or a carrying value of a dollar an acre. It doesn't represent the commodity. The oil and gas rights might be worth more, but it might cost more than that to secure a lease from a landowner so we call that a carrying charge in oil field terms.

By Mr. Lange:

Q. When you speak of a carrying charge, that is not to be in any way related to what you term market value?

A. Yes, it goes into the market value with a lease of 313,588.38 acres and having 64,000 of it that is not determined as proven acreage and not in the generally accepted proven acreage. I believe that all Class C acreage probably would sell. The 64,000 acres covers such an enormous area as it does there might be a possibility of some pools coming in.

Q. Let's take the Class C acreage standing alone, what about that?

A. That 64,000 acres amounting to $64,000, I believe there is enough evidence—the well we spoke of I presume is the Humble which will give you some encouragement—

Mr. Keffer: Just a correction there. The Humble at one time owned that but it has been sold to the Government. It serves as part of their helium reserve.

The Witness: I don't know what disposition was made of it. Another factor is that some of the dry holes that have been drilled in there have had some small showing of gas.

By Mr. Lange:

Q. You still value them at $1 an acre?

A. Yes.

Q. Do you think it is good operating management for Canadian River Gas Company to just release a whole block of 60,000 acres like that because they don't want to drill on it?

A. Yes, I think with the enormous proven acreage they have I would release it.

Q. You would just let that go and charge it off?

A. I would.

Mr. Keffer: I didn't get your answer.

The Witness: I said, yes, with a proven—with a large proven acreage I think I would personally consider the lease practically of the same value and accept $64,000 as it is.

By Mr. Lange:

Q. And if they release subsequent blocks, as they have the right to do, that would be good operating management?

A. I don't see that it would affect the producing lease in the least. I think the earnings that property would show—producing property and proven property wouldn't be affected in the least by the surrender of the "C" acreage.

Q. That would wipe out your Class C valuation there?

A. Yes, sir, that is right. If they didn't own it, I wouldn't classify it, but owning it I considered a dollar an acre sufficient.

Q. Referring to Bivins Section 197, where is that?

A. What?

Q. Referring to Bivins Section 197, where is that? Is that part of the Class C group?

A. Yes, that is Class C.

Q. Can you locate it on Exhibit 95, Mr. Wallace?

A. That is located south of the Panhandle field and six miles due north of the city of Amarillo. It is in A, B & M Survey, Block 2.

Q. Have there ever been any wells drilled on that acreage?

A. Not to my knowledge.

Q. Have there been any dry holes drilled in that acreage?

A. Not to my knowledge.

Q. Do you know whether anyone has ever taken into consideration the drilling of any hole on that acreage?

A. Not to my knowledge, no, sir.

MR. WALLACE further testified as follows: (Vol. LIII, pp. 7302-7311.)

Q. Now, Mr. Wallace, in connection with the preparation of this exhibit you stated that you did not give any consideration to any information with reference to the cost of this acreage to Canadian River Gas Company?

A. No, I did not.

Q. Nor the amount paid original lessors?

A. No.

Q. Either bonuses or delay rentals?

A. No, that doesn't reflect the value of the lease. As I described yesterday, the most prolific oil field in Kansas, at Eldorado, I leased most of that from the lease owner. It doesn't reflect the value of a lease and that is customary throughout the oil and gas fields.

Q. Regardless of what may have happened in those fields, in this particular instance and in your estimate of arriving at what you determined the market value of this acreage, you have also stated that you wouldn't be bound by what may be indicated as market value or any other value on any particular portion of this acreage unless you could take it all together?

A. That is one of the factors that do add value; that is, it is blocked as well as it is under consolidated contract, and the leases practically perpetuated. I didn't say I wouldn't give any value to it if it were not. If there were half of the acreage, it would have a value, but I wouldn't consider it as great a value as in its entirety.

Q. Let's take the Bivins lease. What value would you give that?

A. I haven't prepared a classification value under those conditions. The Bivins lease is divided, part of it being on the east side and part on the west side. I haven't given that study and I don't believe—

Mr. Keffer: You said part of the Bivins lease is on the east side and part of it is on the west side—

The Witness: The east side of the block and the west side of the block, Canadian River's blocked leases.

By Mr. Lange:

Q. You haven't given consideration to the time that Canadian River Gas Company acquired any of this acreage?

A. I don't believe I understand your question as to the time.

Q. You gave no consideration to the time element or as to the value at the time Canadian River acquired this acreage?

A. No. My present market value of leases is baesd as of this date, the date of the leases, and the present condition they are in.

Q. Now, the written statement that you have in your Exhibit 181 where you made your classification of acreage, and, going further, where you state (indicating Page 20):

"It is my opinion that if this acreage reserve were available it could unquestionably secure an outlet for its gas, exclusive of any pipe lines now in the field."

The price of $15,670,250.64 is corrected in your summary sheet which is now $15,664,787.64?

A. Reading that paragraph I would say it is my opinion if this acreage reserve were available, the company could unquestionably secure an outlet for its gas. It is my opinion that it could secure an outlet without any question. The value I have placed is not connected with this paragraph, but I would say if this reserve were available in its present condition I feel very confident I could sell the reserve for the value I have placed on it.

Q. To go back to your definition of the willing buyer, where would the market for the gas be?

A. There is quite an activity right now in the construc-

tion of gas lines. I have talked with executives of several oil companies who would like very much to get into the gas business. There is a market available in Wisconsin and there are several companies trying to get in there. There is also a market available in the territory of St. Louis. There is a market available now and there are many places where an outlet could be secured.

Q. You are then supposing the building of another transmission line to other markets?

A. If I had this acreage I could put it in hands that would build a transmission line.

Q. So your hypothetical buyer is subject to the hypothetical situation of building a pipe line up there and a hypothetical situation of getting a permit to build those lines and a hypothetical situation of getting those markets up there?

A. My business for many years was to find, create deals and interest people in the purchase of properties. I think I know pretty well the minds of purchasers and it is my opinion if this reserve were available to me in the condition it is in I could go and find people with capital that would be willing to——

Q. Let's take this hypothetical company that might be a prospective buyer. What would they have to show before they would part with this $15,600,000 some odd dollars?

Mr. Spencer: He hasn't said that the company was going to part with it.

Mr. Lange: He said that is what hey would pay for it.

Mr. Spencer: I thought you were talking about the pipe line company.

Mr. Lange: No, this mythical company that is going to buy the acreage.

The Witness: Would you read the question to me, please?

(The question referred to was read by the reporter as set forth above.)

The Witness: I don't think the question is clear. I don't know what you mean.

Mr. Lange: I will reframe the question.

Q. This prospective purchaser, what would they require of you to show them before they would want to part with that fifteen million and some odd dollars for this acreage?

A. They would require an examination of the leases, the terms of the leases, the location as to the leases of the accepted proven gas area, and they would probably employ engineers and geologists.

I have in several cases worked out deals and obtained options, and their engineers and geologists would check them up and substantiate the prices I put on them. I don't attempt to make any survey or estimate of gas reserves, but they undoubtedly employ engineers or geologists to do that.

Q. Before they would determine what they were going to do?

A. That is right.

Q. If you had such a deal in mind the company or the prospective purchaser—you enumerated some of the markets, didn't you?

A. I did enumerate some generally.

Q. They would have to first of all have a petroleum engineer's or geologist's estimate on it?

A. I don't know whether they would have to or not.

Q. From your experience in connection with that work you feel pretty confident they would?

A. I think they would, yes, sir. However, this field has been so generally known and there have been so many figures of trillions of acres talked about in this field that—

Mr. Spencer: Trillions of what?

The Witness: Trillions of cubic feet of gas talked about.

—I think they would be well satisfied to option this acreage and have a report made as to the amount of profit they would make from it.

By Mr. Lange:

Q. You are talking about the amount of profit they would expect to make from it?

A. That they would expect to make from it.

Q. You mean from the operation of the marketing of such gas?

A. Whatever their program might be; whether it is a pipe line or marketing company, I wouldn't know.

Q. You don't know what their market would be or where they would expect to derive their profit?

A. Not in a hypothetical case, no.

Q. You think that prospective purchaser would want to know whether he was going to get his return before he wanted to part with this $15,000,000?

A. I think so. The historical data shows that this property has produced some three hundred, eighty billion cubic feet or more and an examination of the wells on it now show over fifty per cent of the original open flow and well over fifty per cent of the original rock pressure.

In this value there is a big profit but I think they would employ engineers to try to estimate what it might be.

Q. You have taken into consideration that they would employ engineers before they would want to go into the deal?

A. I think so. I think any company would want to set up its estimate of return on investment.

Q. And they would want to know what the earning power of this field would be?

A. I think so.

Q. And they would want to know what market they could deliver to and what return they could make on that market?

A. I think so.

Q. Before there could be anything definitely accomplished on that, all of that would have to be pretty definite in the mind of the prospective purchasing company?

A. I think so.

Q. And do you know of any definite situation like that at the present that has come to the point of such a definite stage?

A. There has never been to my knowledge as large an accepted proven acreage under such lease conditions available to any one company.

The West Texas Panhandle field is very closely held by

the gas companies. There are no reserves that are unleased available now that would support a line to a distant market.

Q. Could you—.

A. Pardon me until I finish.

Q. Yes.

A. The Hugoton field, is comparable to the Texas Panhandle in its area. Within the last year there have been a number of outside people attempting to secure adequate reserves in the Hugoton field. They have not been able to do so. In that field there is a total of unleased acreage, a large total amount, but it is held or owned almost entirely by small farmers. The land is divided into 160-acre tracts, the biggest majority of the field. There is only one or two large ranches in the field and they have not been able to secure a reserve that would support a pipe line, and I don't know of an example similar to what we are talking about.

Q. How close is that Hugoton producing area to the Texas Panhandle field?

A. That is a hard question to answer.

Q. Approximately.

A. Less than forty miles—perhaps twenty miles north of this field there are two wells in Sherman County, Texas. They show a similar rock pressure of both the Hugoton field and the Texas Panhandle field.

We don't know whether that is a part of the Texas Panhandle field or part of the Hugoton field. It is an opinion of many operators and engineers that the two fields may connect. We do not know that yet. The Hugoton field has not yet been defined to the north. Roughly estimating, I would say that the Hugoton field as defined now to the north or the farthest producing gas well is probably two hundred miles from this. It looks like one continuous area.

Q. The acreage in the Hugoton field is held by numerous land owners, ranchers, and so forth?

A. Yes.

Q. Do you place any value on that?

A. That is an entirely different problem than this situation here. Your field there will probably not recover the gas that this will, and as I say, there are isolated 160-acre tracts that do not carry much value lease by lease.

Q. These two wells that the acreage is located on, have you placed any value on that acreage?

A. I have never been to the acreage or the wells.

Q. What in your opinion is the value of it?

A. I don't know as I haven't been to them. I don't know the character of the wells and I have made no investigation of them. I merely know they are there by reports.

Q. You haven't taken into consideration in any of your studies the values of that acreage between the two fields?

A. None whatever.

* * * * * *

MR. WALLACE further testified as follows: (Vol. LIII, pp. 7316-7324.)

By Mr. Lange:

Q. Referring back to your exhibit, Mr. Wallace, on Page 19 of the written statement you follow through on the matter of your character of classification of acreage and then you get down to the computation of field price for gas. On what basis do you arrive at this adopted price?

A. In many leases that I have examined I find that the lessors and lessees agreed and it is stipulated in the leases that four cents shall be the basis on which royalties will be paid. From division orders I have seen, and my general knowledge through the field, I think four cents per thousand is generally the adopted price.

Q. You wouldn't term that the market price?

A. I wouldn't know how to say the market price of gas. I know in some instances where the owners of gas wells are selling gas for three and a half cents a thousand under contracts for the life of the leases and paying the landowners on the basis of four cents a thousand, and I don't know what you would call the present market value of gas in the field.

Q. Very many leases don't have any fixed price in their—

A. Some of them have no fixed price whatever.

Mr. Keffer: What is the royalty on those leases?

The Witness: Four cents.

By Mr. Lange:

Q. The price of four cents is generally so fixed in the leases?

A. No, I think you will find more on the basis of four cents not fixed in the lease than you will find it at four cents fixed in the lease.

Q. That would be an agreed basis between the royalty owner and the lessee?

A. Yes, they are set out in the division orders.

Q. Then it is contractual?

A. It apparently is.

Q. If it is a subsequent contract or in the original lease it would be contractual?

A. I presume it would be.

Q. As an adopted price and not one that applies like a posted field price for oil?

A. No, I'm speaking of sweet gas here. I know nothing about sour gas.

Q. There is nothing such as a posted field price for gas?

A. I have never heard of it. I am certain there is not.

Q. Now, on that Page 19 you were then assuming further that such a prospective purchaser would proceed on a certain drilling program on which he could, as you say, receive his money back by doing certain things. What do you contemplate by the term "receiving their money back"?

A. Amortize their investment. I am trying to illustrate in the adoption of my classification just what it would cost after paying $125 per acre for your acreage and the cost of drilling the well, just approximately how much you would have to recover to amortize this investment, the purchase of the lease, the cost of the well, the operation of the well and the paying of the royalties, purely as an example.

Q. How would you know how many wells would have to be drilled?

A. I don't know how many would have to or not have to. In my judgment I have selected one well to two sections and this example is merely to show what it would be on two sections of land—one well to two sections.

Q. You don't mean to say that there would be a well on every two sections of the whole acreage?

A. There may be, I don't know.

Q. Would you contemplate such a procedure?

A. If market conditions warranted, they might want to do that. It is purely an operating problem and I don't know.

Q. What did you have in mind as to what the prospective purchaser would have to do in connection with the acquiring of this acreage when you said that he would drill a well to every 1800 acres on this Class A?

Mr. Keffer: You say 1800?

Mr. Lange: 1280 acres. That is still more wells.

The Witness: No, this problem is not the number of wells that would be drilled on it. I am merely trying to show in my judgment what would possibly be the density of drilling in that large area, blocked as it is, and I am trying to show, which I would illustrate to a prospective purchaser if I could, what he would be expected to recover to amortize his investment. He might drill one well or might drill them all. It would all depend on what his problem is. We are speaking of a hypothetical case.

Q. He would have to have a certain market to work out such an amortization program, wouldn't he?

A. Not on one well.

Q. I mean if he acquired this acreage on the basis of the value as you have fixed, for a total cost of fifteen million dollars plus, he would have a pretty high fixed charge right there to start off?

A. Well, he probably would have to recover, I would say, about five hundred billion cubic feet and not knowing the number of cubic feet recoverable from this—but I hear it stated that there are several trillions, I don't know.

Q. You don't know?

A. No, I don't know, but I hear, there is gossip that the field as a whole has many trillions of feet.

Q. I believe you stated yesterday very distinctly and definitely several times that you made no estimate and did not take into consideration any reserve under this.

A. I certainly did under my classification of market value of leases.

Q. Now, this prospective purchaser would have to have

a pretty definite market located and defined before he could close a deal of this kind?

A. I don't think there would be any trouble if you had the reserve to go find the market. People are finding markets but they are having difficulty in finding reserves at the present time.

Q. You think that the difficulty as to the market would be a minor matter?

A. I don't think it would be nearly so difficult as to acquire a reserve comparable to this one we are speaking of.

Q. Where in your picture would the market fit as to the difficulty factor?

A. I don't understand that question.

Q. How did you approach the problem or did you take that into consideration at all as to what difficulty factor there might be with refefence to having a market?

The Trial Examiner: Now, Mr. Lange, I wonder if you aren't going a little beyond what Mr. Wallace, as I understand, contemplates here? He contemplates that there is no pipe line extending out of there.

Mr. Lange: That's right.

The Trial Examiner: On the price of that acreage.

Mr. Lange: Yes, but he contemplates finding a prospective purchaser who is going to project such a pipe line, build it and find a market, and all of that would be in the picture.

Mr. Spencer: No, I don't believe he testified to that. The purchaser of this gas might never do anything but produce. The pipe line might come to him and he hasn't said that the purchaser of this acreage would build any pipe line or need to find markets. He says that the purchaser here has a better mouse trap. The world is going to beat a path to his door.

Mr. Lange: No, he had a different kind of a trap there.

The Trial Examiner: The point I had, Mr. Lange, is that I thought you were inferring from your questioning that there was some other factor besides those markets already being served out of that field.

Mr. Lange: Mr. Examiner, this is what I was really pursuing: The witness said that if the sale were made, it was exclusive of any lines—"In my opinion if this acreage were available, unquestionably they could secure an outlet for its gas exclusive of any pipe line." I asked the witness as to who the possible purchaser would be and he had several. He said several in existence are known to him who had contemplated markets outside of the state of Texas. Well, that would necessarily assume the building of a line to those markets because he had already excluded these. I was tracing that to see what certainty, if any, there were to those, as to the probability of them materializing.

The Trial Examiner: So that might include markets already served or new markets?

Mr. Lange: Yes.

Q. What consideration did you give that—did you pursue that investigation any?

A. I did not. My consideration to this—and I think my statement is clear there—that anyone purchasing this reserve in the condition it is in, generally accepted as a proven area, could and would create a market for the gas. I don't mean that they would build pipe lines. They might produce or they might build pipe lines. There are many pipe lines being talked about. I don't know.

Q. They excluded those presently serving—

A. I have excluded those.

Q. And you are also certain—or, rather, testimony here is that the gas would be transported out of the state and that would necessitate the building of a line in order to get the gas out?

A. That's right.

Q. Because that is the only way you can transport gas?

A. That's right.

Q. You can transport oil by tank wagon, but not gas?

A. Not unless you liquefy it.

Q. And there is too much there to liquefy?

A. I'm afraid so.

Q. And you made no investigation with reference to what those probable markets would require?

A. Not in connection with this valuation report at all.
Q. Nor what might be in the picture on that?
A. Not in connection with this valuation.

* * * * *

Mr. Wallace further testified: (Vol. LIII, pp. 7326-7327.)

Q. You have had occasion to be pretty familiar with operations in the Hugoton area?
A. I haven't had occasion to be really familiar. I have merely known of the field generally. As I say, I joined this company on the first of October and I was sent east for nine weeks and just within the last three weeks have I devoted my time to the producing problems within the field.
Q. But you do know and have had occasion heretofore to know what some of the problems in that field were?
A. Generally, some of them, yes.
Q. And one of the big problems in that field was lack of markets for gas?
A. That's right. In the Kansas portion, 14 wells are unconnected that have not been able to secure markets.
Q. Capable of producing gas in commercial quantities?
A. Yes. The average is as good as any other wells in the field.

Mr. Spencer: What is the size of the leases on which those wells are located?

The Witness: I believe every lease is on a 160-acre tract and they are widely scattered. There may be some on 640, I am not certain.

Mr. Keffer: How many connected wells are there in the field as compared with those unconnected?

The Witness: We have 118 wells connected. The Panhandle Eastern Pipe Line Company have over a hundred wells connected. These are approximate figures I am giving you. The Stevens County Oil & Gas Company have probably 20 some wells connected. Sidwell Estate have eight or nine wells connected and there are others I don't know.

Mr. Keffer: Well, that's near enough. The proportion of unconnected wells is very very slight.

The Witness: Very slight.

Mr. Wallace was then interrogated concerning a number of specific leases included in his different valuations. (Vol. LIII, pp. 7332, et seq.) His compensation for work in connection with this exhibit is at the rate of $65 a day and expenses. (Vol. LIII, p. 7342.)

On redirect examination (Vol. LIII, pp. 7344, et seq.) Mr. Wallace stated that while he had testified that he had given no consideration to any geological report, he had made a study of each well individually, and had made a trip to each well. He talked to the Canadian Superintendent, took the records of the original open flow, the original rock pressure, the total amount of gas marketed from each well and the log of the well. He examined these and then discussed with the Superintendent any unusual mechanical conditions that might be in the wells that would influence his judgment and then based his opinion on all of that, and all this was the basis of his opinion as to whether there was a good gas reserve, a poor one or just a mediocre one. (Vol. LIII, p. 7345.) He would rather have the historical data as to a well than a geologist's estimate made before the well was ever drilled as to what it was going to do. A geologist is not needed to tell you what a certain well's rock pressure and open flow is and what it has produced in the past. He has taken the actual factual data on these wells after they were drilled. The Canadian wells are scattered pretty well over the leases and give every good index as to the total acreage. (Vol. LIII, p. 7346.) He relied upon the Railroad Commission of Texas for the general outline of the producing area which is generally accepted.

On the basis of Mr. Hammer's testimony of 3,600,000,000,000 cubic feet of recoverable gas in the Canadian acreage its value at 4c per thousand cubic feet would be $144,000,000. Assuming that only one-third of this would be recovered and the other two-thirds lost by drainage, the value of the one-third recovered would be $48,000,000, as compared with his present value of $15,000,000 for the Canadian acreage. (Vol. LIII, pp. 7348, 7349.) It has been Mr. Wallace's experience in gas fields generally and almost without exception that the price of gas advances as the fields become older. (Vol. LIII, p. 7350.)

The largest purchase of acreage Mr. Wallace knows of in the Texas Panhandle Field was made by the Texoma Na-

tural Gas Company along about 1930 or 1931. This involved something in excess of 300,000 acres and the purchase price was in excess of $15,000,000. That acreage was not as well blocked as the Canadian acreage and at the time of purchase the field was not defined, or at least the producing area was not well defined, and in making the purchase the Texoma Company had to take lots of bad acreage with good acreage and in order to get its block it had to take a lot of acreage which was subsequently released. The consideration paid was $40 or $45 per acre straight through, regardless of where it was or what it was, and approximately half of the acreage originally purchased has been discarded. (Vol. LIII, pp. 7351, 7352.)

With further reference to the Texoma purchase referred to above MR. WALLACE testified as follows: (Vol. LIII, Official Transcript, pp. 7354-7358.)

Q. You referred to this Texoma deal for this acreage, Mr. Wallace?

A. Yes, I did.

Q. That took place in 1928, you say?

A. I don't remember the date.

Mr. Keffer: No, he didn't say that.

Mr. Lange: What year was it?

Mr. Keffer: He said around 1930 or 1931. At least I asked the question in that form.

Mr. Lange: That's right.

Q. Then it was 1930 or 1931?

A. Yes.

Q. Do you know the circumstances and facts in connection with that deal?

A. No, I don't know.

Q. Do you know whether the sale was an arm's length sale as coming within your willing buyer and purchaser, as dealing separately and apart without any connection with each other?

A. I don't know the term "arm's length." I was not present and I couldn't answer that question.

Q. Who were the owners of the acreage, the leases, or the assignees of the acreage?

A. Well, the Phillips Petroleum Company, Skelly Oil Company, there was Cities Service Oil Company, there was a purchase made through some of the Insull Companies. There was Magnolia. I don't know any more. I am not certain I am correct on all of those, for that matter.

Q. All right, all of these companies that owned these acreage—or were assignees of it, have stock in Texoma, haven't they?

A. I don't know.

Q. What consideration did they receive for that, or what was the trade?

A. Well, the trade, as I understand it, or, the sale, as I understand it, was $40 or $45 an acre straight through, same price.

Q. What was the maximum amount paid for the acreage?

A. If my memory serves me, it was in excess of $15,000,000.

Q. I mean per acre.

A. $40 or $45 per acre. Now, this is hearsay, and memory.

Q. You testified, though, that this was an acreage that you wanted to point out. Do you know what the character of that acreage was as compared with Canadian River's?

A. Yes. You couldn't put it in the same class. Canadian River is much better acreage as a whole than Texoma as a whole.

Q. All right. Now, what was the valuation that you placed on any of that acreage?

A. What do you mean by "any of that"?

Q. Well, are you sufficiently familiar with that acreage to make any comparison?

A. Of the entire Texoma acreage?

Q. The acreage owned by these separate leases.

The Trial Examiner: It isn't clear, Mr. Lange.

By Mr. Lange:

Q. Are you familiar with the acreage owned in each of these leases that went into that deal?

A. No, I am not.

The Trial Examiner: You mean went into the Texoma deal?

Mr. Lange: That is right.

The Witness: No, I am not.

By Mr. Lange:

Q. Do you know whether any of that acreage was as good as Canadian River's acreage?

A. I would have to refer to my map which is a very old map and to a present map of Texoma to know whether they are retaining any of that same acreage or not. I don't know that and couldn't so testify.

Q. Would any of that acreage be classified as A1?

A. I would say Texoma's acreage as now held is classified, some of it, as A1 acreage.

Q. And you state you didn't know any other circumstances on this deal as to what the formation was of that?

A. No, I know nothing about that.

Mr. Lange: I think that is all for the present.

The Trial Examiner: Mr. Wallace, this figure you mentioned, or the multiplication you made for Mr. Keffer as to the value of that—or alleged value of that gas in the ground, in excess of some $100,000,000, you don't as a broker feel that you could secure a purchaser for this particular acreage for any such sum?

The Witness: Well, if I could price it to him at $15,000,000 and show him that there is $140,000,000—

The Trial Examiner: For the $15,000,000?

The Witness: Yes.

The Trial Examiner: Not for the $140,000,000?

The Witness. No. I was talking of gross figures, with no construction costs taken out.

The Trial Examiner: Or for the one-third he mentioned might be recovered?

The Witness: I don't believe so.

Exhibit 181 by R. J. Wallace contains the following detailed data with respect to the various leases valued by him and owned, as to the gas rights, by Canadian:

Lease No. 1:

Date, June 27, 1932. Term, 5 years. Lessor, August Blissenbach and wife. Lessee, Amarillo Oil Company. Potter County. 160 acres. Consolidated with Leases numbers 66 and 68.

This lease has been perpetuated by consolidation with lease numbered 68. It is located in an area of high productivity and rock pressures over 400 lbs.

Class, A-2. Value, $16,000.00.

Lease No. 2:

Date, June 15, 1932. Term, Perpetual. Lessor, J. T. Sneed, Jr., and wife. Lessee, Amarillo Oil Company. Moore County. 640 acres.

This lease is separated from other leases. It is in a high gas potential area with pressures from 280 to 320 lbs. Was given as a perpetual lease. Adjoining lease-holders have withdrawals comparable to Canadian River Gas Company.

Class, A-2. Value, $64,000.00

Lease No. 6:

Date, June 26, 1923. Term, 6 years. Lessor, J. T. Sneed, Jr., and wife. Lessee, Producers & Refiners Corporation. Moore County. 5,440 acres.

Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	5/26/28	40,500	426	25,780	378	6,061,295
A-2	7/26/39	43,459	388	39,885	388	137,044

This lease is in one of the highest and richest gas potential areas with Rock pressures from 380 to 400 lbs. Blocked with other leases.

Class, A-1. Value $680,000.00

Lease No. 9:

Date, July 16, 1923. Term, 5 years. Lessor, D. P. Seay. Lessee, Producers & Refiners Corporation. Moore & Potter Counties. 540 acres.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	5/13/28	14,000	426	8,669	403	894,290

This lease is well blocked with other leases. It is in a 10 to 20 million cu. ft. potential area with rock pressures from 380 to 400 lbs.

Class, A-2. Value, $54,000.00.

Lease No. 19:

Date, August 19, 1938. Term, 10 years. Lessor, Rhetta W. Miller and husband. Lessee, Amarillo Oil Company. Moore County. 212.5 acres.

This lease is well blocked in a 20 to 30 million cu. ft. potential area with rock pressure of 400 lbs.

Class, A-2. Value, $21,250.00.

Lease No. 21:

Date, July 30, 1923. Term, 5 years. Lessor, Terry Thompson and wife. Lessee, Producers and Refiners Corporation. Moore County. 7,603.8 acres.

Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
B-1	7/27/28	2,600	392	3,195	362	1,848,937
B-2	4/27/36	53,120	407	30,913	356	3,835,196
B-3	9/3/40	70,355	368	70,355	368	None

This lease is in one of the highest potential producing areas with rock pressure of 370 lbs.

Class	A-1	6,189.80	Acres, Value,	$773,725.00
"	A-3	640.00	" "	48,000.00
"	B-1	774.00	" "	38,700.00
			Total,	$860,425.00

Lease No. 23:

Date, July 30, 1923. Term, 5 years. Lessor, L. H. Crawford, et al. Lessee, Producers & Refiners Corporation. Moore and Potter Counties. 1,440 acres.
Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	6/29/28	12,500	421	10,213	404	1,928,974

This lease is well blocked with other leases in an area of 20 to 40 million cu. ft. potential with rock pressures from 380 to 400 lbs.

Class	A-1	480	Acres, Value,	$60,000.00
"	A-2	800	" "	80,000.00
"	A-3	160	" "	12,000.00
			Total,	$152,000.00

Lease No. 29:

Date, June 5, 1923. Term, 5 years. Lessor, E. S. Poling. Lessee, Margie Edgar. Carson County. 80 acres.
Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	5/5/28	20,000	424	11,679	353	2,846,910

This lease, although in a high producing potential area, has been drilled to close density and pressures are declining more rapidly than other areas.

Class, B-1. Value, $4,000.00.

Lease No. 47:

Date, August 19, 1938. Term, 10 years. Lessor, Nellie Mae Cooper. Lessee, Amarillo Oil Company. Moore County. 212.5 acres.

This lease is well blocked in a 20 to 30 million cu. ft. potential area with rock pressure of 400 lbs.

Class, A-2. Value, $21,250.00.

Lease No. 57:

Date, February 27, 1920. Term, Prod. Lessor, Mrs. J. C. Warrick. Lessee, Amarillo Oil Company. Moore, Potter, Carson and Hutchinson Counties, 2,400 acres.
Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	5/7/25	60,000	435	58,747	365	3,881,874
A-2	7/27/29	78,000	416	61,627	353	2,925,736

This lease is in a very high productive area but has been drilled to close density and the rock pressures are declining more rapidly than in other areas.

Class, B-1. Value, $120,000.00.

Lease No. 60:

Date, February 6, 1925. Term, 5 years. Lessor, R. O. Allison, and wife. Lessee, Amarillo Oil Company. Potter County. 100 acres.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	12/12/29	33,000	416	23,211	366	801,726

This lease is in a high potential producing area but has been drilled to close density and the rock pressures are declining more rapidly than in other areas.

Class, B-1. Value, $5,000.00.

Lease No. 61:

Date, February 10, 1926. Term, 5 years. Lessor, Dave N. McBride. Lessee, Amarillo Oil Company. Potter County. 640 acres.

Well drilled on this lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	11/4/30	47,400	429	41,468	387	955,972

This lease is in a high productive area and well blocked with other leases, with rock pressure from 340 to 360 lbs. but might be subjected to offsetting on River bed lease.

Class, A-3. Value, $48,000.00.

Lease No. 63:

Date, Oct. 25, 1934, effective Dec. 8, 1935. Term, 10 years. Lessor, Nettie L. Baker. Lessee, Amarillo Oil Company. Moore and Potter Counties. 583 acres.

This lease is well blocked with other leases and not subjected to drainage of other companies. It is in a pressure area of 400 lbs.

Class, A-2. Value, $58,300.00.

Lease No. 64:

Date, April 21, 1926. Term, 5 years. Lessor, Mrs. Elizabeth Crawford et al. Lessee, Amarillo Oil Company. Potter County. 1,453.04 acres.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
B-1	5/18/31	14,800	423	8,981	412	1,527,681

This lease is well blocked with other leases in a potential area of 10 to 20 million cu. ft., with rock pressures from 380 to 400 lbs.

Class, A-2	667.14 Acres, Value,		$ 66,714.00
" A-3	785.90 "	"	58,942.50
		Total,	$125,656.50

Lease No. 66:

Date, Oct. 1, 1926. Term, 10 years. Lessor, Vernard S. Gary, as Attorney in fact. Lessee, Amarillo Oil Company. Potter County. 320 acres. Consolidated with Leases numbers 1 and 68.

This lease is well blocked with other leases in a 20 to 30 million cu. ft. area with rock pressures from 380 to 400 lbs.

Class, A-2. Value, $32,000.00.

Lease No. 67:

Date, May 31, 1920. Term, 5 years. Lessor, Georgie E. Thompson and husband. Lessee, T. E. Durham. Moore County. 3,840 acres.

Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	12/1/21	75,000	432	67,524	367	3,436,376
A-2	4/8/26	90,000	432	74,602	372	2,116,526
A-3	4/19/40	39,592	371	39,592	371	None

This lease is in a very high potential area with rock pressure of 380 lbs.

Class A-1. Value, $480,000.00.

Lease No. 68:

Date, September 26, 1932. Term, 5 years. Lessor, T. M. Coughlan and wife, and Edward J. Coughlan. Lessee, Amarillo Oil Company. Potter County. 480 acres. Consolidated with Leases numbers 1 and 66

Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	12/26/36	20,183	417	12,984	412	551,000
A-1 B.H.				4,681	413	

This lease in a 15 to 20 million cu. ft. potential area with rock pressures of over 400 lbs.

Class. A-2. Value, $48,000.00.

Lease No. 69:

Date, July 6, 1927. Term, 10 years. Lessor, C. L. Killgore, and wife. Lessee, The Prairie Oil & Gas Company. Moore County. 9,705.7 acres. Consolidated with Lease number 136.

Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	5/27/29	36,354	423	19,551	384	3,711,051
A-2	5/26/37	25,360	405	15,437	390	2,724,541
A-3	11/20/39	8,575	369	9,003	369	None

This lease is mostly in high potential area with rock pressures from 380 to 400 lbs.

Class, A-1,	6,293.7 acres	Value	$786,712.50
" A-2,	3,412 "	"	341,200.00
		Total,	$1,127,912.50

Lease No. 70:

Date, July 21, 1938. Term, 5 years. Lessor, J. M. Crawford and wife. Lessee, Amarillo Oil Company. Moore and Potter Counties. 815.8 acres.

This lease is well blocked with other leases. It is in a 10 to 20 million cu. ft. area with rock pressures from 380 to 400 lbs.

Class A-1,	160 acres	Value	$20,000.00
" A-2,	655.8 "	"	65,580.00
		Total	$85,580.00

Lease No. 72:

Date, January 31, 1939. Term, 10 years. Lessor, Merton H. Gage, et al. Lessee, Amarillo Oil Company. Potter County. 320 acres.

This lease is well blocked with other leases in a potential area of 10 to 20 million cu. ft., with rock pressures from 380 to 400 lbs.

Class, A-2. Value, $32,000.00.

Lease No. 73:

Date, August 23, 1937. Term, 10 years. Lessor, Myra Bradley and husband. Lessee, Amarillo Oil Company. Potter County. 320 acres.

This lease is well blocked with other leases in a fairly high producing area with rock pressures to 400 lbs.

Class, A-2. Value, $32,000.00.

Lease No. 80:

Date, August 19, 1938. Term 10 years. Lessor, Mrs. Mary S. Cooper. Lessee, Amarillo Oil Company. Moore County. 255 acres.

This lease is well blocked in a 20 to 30 million cu. ft area with rock pressure of 400 lbs.

Class, A-2. Value, $25,500.00.

Lease No. 81:

Date, March 6, 1928. Term, perpetual. Lessor, N. H. Read. Lessee, Amarillo Oil Company. Moore County 4,296.9 acres.

Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	10/28/29	15,500	408	11,788	370	2,726,117
A-2	9/30/37	56,640	386	58,747	375	227,173

This lease is in a high producing area, is well blocked with other leases, and has rock pressure of 360 lbs.

Class, A-1. Value, $537,112.50.

Lease No. 84:

Date, July 27, 1933. Term, 10 years. Lessor, W. F. Crawford, et al. Lessee Amarillo Oil Company. Potter and Moore Counties. 1147.69 acres.

This lease is well blocked with other leases. It is in a high potential area with rock pressures from 380 to 400 lbs

Class	A-1	325.29 acres.	Value,	$40,661.25
"	A-2	507.10 "	"	50,710.00
"	A-3	315.30 "	"	23,647.50
			Total,	$115,018.75

Lease No. 86:

Date June 1, 1926. Term, 10 years. Lessor, J. T. Sneed Jr. Lessee Masters Oil & Gas Company. Moore County. 2,777 acres.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
B-1	2/16/27	60,000	435	27,960	381	3,631,916

This lease is well blocked with other leases and is in one of the highest gas potential areas, with rock pressures from 360 to 380 lbs.

Class, A-1. Value, $347,125.00.

Lease No. 90:

Date, February 17, 1932. Term, perpetual. Lessor, Georgie E. Thompson and husband. Lessee, Canadian River Gas Company. Moore County. 337.3 acres.

This lease is well blocked with other leases and is in a high potential area with rock pressure of 380 lbs.

Class, A-1. Value, $42,162.50.

Lease No. 92:

Date, August 8, 1925. Term, 5 years. Lessor, E. B. Johnson, et al. Lessee, The Pure Oil Company. Hutchinson County. 800 acres.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	5/10/24	8,000	412	4,924	312	2,449,552

This lease is situated in a very high gas potential area, but has been drilled to close density and the rock pressures are declining more rapidly than in other areas.

Class, B-1. Value $40,000.00.

Lease No. 95:

Date, February 26, 1925. Term, 5 years. Lessor, J. M. Sanford. Lessee, The Pure Oil Company. Carson County. 3,040 acres.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	1/15/24	75,000	422	67,905	371	4,195,222

This lease is located in a very high potential area. Although it is not well blocked with leases of Canadian River, it is surrounded by holdings of other gas pipeline companies whose withdrawals are governed the same as Canadian River.

Class, A-2, 2,560 acres. Value	$256,000.00
" B-2, 480 acres, value	12,000.00
Total	$268,000.00

Lease No. 107:

Date, July 15, 1924. Term, 5 years, after 1/25/25. Lessor, J. T. Sneed, Jr. Lessee, The Prairie Oil & Gas Company. Moore County. 640 acres.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
C-1	4/8/30	24,000	426	11,545	386	705,451

This lease is blocked with other leases and is in one of the highest potential areas, with rock pressures from 360 to 380 lbs.

Class, A-1. Value, $80,000.00.

Lease No. 108:

Date, March 18, 1926. Term, 10 years. Lessor, J. T. Sneed, Jr. Lessee, Fred S. Cook. Moore County, 640 acres.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
D-1	6-22	5,650	423	6,077	378	997,016

This lease is blocked with other leases and is in one of the highest potential areas with rock pressures from 360 to 380 lbs.

Class, A-1. Value, $80,000.00.

Lease No. 114:

Date, January 14, 1928. Term, 5 years. Lessor, Mattie V. Dunaway. Lessee, J. S. Harris and W. J. McKinney. Hutchinson County. 320 acres.

Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	9/15/28	75,000		28,477	334	1,455,829
A-2	10/18/32	33,000	370	20,616	324	214,920

This lease is situated in a very high gas potential area, but it has been drilled to close density and the rock pressures are declining more rapidly than in other areas.

Class, B-1. Value, $16,000.00.

Lease No. 116:

Date, June 11, 1923. Term, 5 years. Lessor, John Q. Bost. Lessee, Margie Edgar. Hutchinson County. 40 acres.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	5/30/28	25,000	405	20,977	334	1,538,863

This lease is situated in a very high gas potential area, but has been drilled to close density and rock pressures are declining more rapidly than in other areas.

Class, B-1. Value, $2,000.00.

Lease No. 117:

Date, June 7, 1923. Term, 5 years. Lessor, John Q. Bost and wife. Lessee, Margie Edgar. Hutchinson County. 360 acres.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
B-1	7/20/28	20,000	407	4,687	341	1,128,561

This lease is situated in a very high gas potential area, but has been drilled to close density and rock pressures are declining more rapidly than in other areas.

Class, B-1. Value $18,000.00.

Lease No. 118:

Date, October 4, 1930. Term, 1 year. Lessor, Mattie V. Dunaway, et al. Lessee, Amarillo Oil Company. Hutchinson County. 160 acres.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
B-1	3/24/31	37,200	371	16,499	307	615,246

This lease is situated in a very high gas potential area, but has been drilled to close density and the rock pressures are declining more rapidly than in other areas.

Class, B-1. Value $8,000.00.

Lease No. 119:

Date, August 25, 1927. Term, 10 years. Lessor, John Q. Bost, et al. Lessee, C. E. Lehman. Hutchinson and Carson Counties. 640 acres.

Wells Drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
C-1	6/6/31	25,000	407	11,164	342	1,136,623
C-2	10/21/31	24,000	397	18,119	350	885,570

This lease is situated in a very high gas potential area, but has been drilled to close density and the rock pressures are declining more rapidly than in other areas.

Class, B-1. Value $32,000.00.

Lease No. 120:

Date, August 25, 1927. Term, 10 years. Lessor, John Q. Bost, et al. Lessee, C. F. Lehman. Hutchinson and Carson Counties. 640 acres.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
D-1	9/2/30	17,000	406	8,550	341	671,304

This lease is in a high gas potential area, but has been drilled to close density and the rock pressures are declining more rapidly than in other areas.

Class, B-1. Value, $32,000.00.

Lease No. 125:

Date, May 23, 1928. Lessee, Canadian River Gas Company. Fee. Moore and Potter Counties. 3,827.8 acres.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	11/11/29	38,000	425	26,796	369	2,918,364

The Canadian River Gas Company owns the mineral rights in fee, having purchased the minerals in fee after the execution of the lease. It is well blocked with other leases and is in a high potential area.

Class, A-1. Value, $478,475.00.

Lease No. 136:

Date, January 5, 1925. Term, 7 years. Lessor, C. L. Killgore and wife. Lessee, Gulf Production Company. Moore County. 165.25 acres. Consolidated with Lease number 69.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
B-1	6/14/30	13,000	425	4,687	404	1,249,440

This [illegible] is a part of the Killgore lands which are in a large gas potential area and well blocked with other leases with rock pressure of over 400 lbs.

Class, A-1. Value, $20,656.25.

Lease No. 137:

Date, Dec. 1, 1939. Term, 10 years. Date effective Dec. 9, 1939. Lessor, John C. Johnson, et al. Lessee, Amarillo Oil Company. Moore County. 336.7 acres.

This lease is well blocked with other leases and is in a high potential area with rock pressures of about 400 lbs.

Class, A-1. Value, $42,087.50.

Lease No. 139:

Date, January 26, 1939. Term, 5 years. Lessor, Anna Lubberstedt, and husband. Lessee, Amarillo Oil Company. Moore County. 168.35 acres.

This lease is well blocked with other leases in a high potential gas area with rock pressures of about 400 lbs.

Class, A-1. Value, $21,043.75.

Lease No. 140:

Date, December 1, 1939. Term, 10 years. Lessor, William E. C. Curtis. Lessee, Texoma Natural Gas Company. Moore County. 160.00 acres.

This lease is well blocked with other leases in a high potential gas area and has rock pressures of about 400 lbs.

Class, A-1. Value, $20,000.00.

Lease No. 18 "B":

Date, July 18, 1923. Term, 5 years. Lessor, Lee Bivins. Lessee, Producers & Refiners Corporation. Hutchinson, Carson, Potter and Moore Counties. 2,240 acres. Consolidated into "A" Lease.

Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
B-1	3/18/24	76,080	435	34,327	349	10,932,008
B-2	6/11/25	40,000	435	39,147	308	5,801,451
B-3	4/26/26	70,000	435	30,813	350	11,272,151
B-4	8/28/26	70,000	435	43,578	344	9,178,858
B-5	3/16/27	70,000	410	16,259	243	2,941,033
B-6	9/16/27	70,000	426	37,231	336	10,590,641

This lease consolidated under terms of "A" Lease and Consolidation Revisions.

Class B-1,	960 acres	Value $48,000.00
" B-2,	1,280 "	" 32,000.00
		Total, $80,000.00

Lease No. 22 "E":

Date, August 1, 1923. Term, 5 years. Lessor, Lee Bivins. Lessee, Producers and Refiners Corporation. Potter and Carson Counties. 3,538.5 acres. Consolidated into "A" Lease.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
E-1	7/ 7/28	36,000	426	28,725	413	3,260,896

This lease is consolidated under terms of "A" Lease and Consolidation Revisions.

Class,	A-3	160.00	Acres	Value $12,000.00
"	B-1	303.50	"	" 15,175.00
"	B-2	320.00	"	" 8,000.00
"	B-3	160.00	"	" 1,600.00
"	C	2,595.00	"	" 2,595.00
	Total	3,538.50	"	Total, $39,370.00

Lease No. 30:

Date, May 31, 1923. Term, 5 years. Lessor, Lee Bivins. Lessee, Producers & Refiners Corporation. Potter, Moore, Carson, Hutchinson, Oldham and Hartley Counties. 134,458.04 acres. This is the base "A" Lease.

Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A- 2	7/16/24	15,800	414	11,926	386	6,837,316
A- 3	3/30/25	18,500	435	24,751	385	14,000,846
A- 4	4/ 8/26	8,678	412	2,169	360	802,063
A- 5	10/10/26	16,000	432	12,988	405	4,911,328
A- 6	9/18/28	5,200	426	6,535	398	1,895,523
A- 7	9/10/28	25,800	426	19,407	415	4,874,506
A- 8	7/31/28	50,000	423	10,156	425	1,996,837
A- 9	10/22/28	10,500	423	9,440	428	68,141
A-10	5/17/29	2,840	424	1,475	380	71,748
A-13	9/15/30	4,000	423	4,254	414	318,502
A-14	11/ 9/35	35,800	418	31,092	405	10,523,637
A-15	3/ 4/36	7,300	417	9,547	403	1,461,045
A-16	11/28/35	11,400	407	11,567	390	3,746,068
A-17	1/28/36	5,025	412	1,996	315	792,760
A-18	11/ 5/36	18,720	413	13,536	391	3,393,224
A-19	1/30/37	20,800	407	12,842	385	3,103,546
A-20	5/ 1/37	12,263	403	6,768	385	2,118,719
A 20	B.H. —	5,370	400	4,827	390	—
A-21	8/22/37	56,000	400	20,418	361	5,646,839
A-22	12/12/37	3,700	410	3,992	425	—
A-23	2/ 2/38	9,520	405	5,546	388	341,946
A-23	B.H. —	2,258	403	2,293	405	—
A-24	11/29/38	33,880	410	28,725	403	1,874,466
A-25	5/21/39	23,255	—	9,478	414	452,180
A-25	B.H. —	—	—	4,574	410	—

All Leases consolidated into the "A" Lease operate under the terms of said lease and revisions and substitutions as set out in the Consolidation Contract dated May 1, 1939.

Class	A-2	1,304.00 acres	Value	$130,400.00
"	A-3	11,500.60 "		862,545.00
"	B-1	12,322.80 "		616,140.00
"	B-2	16,554.90 "		413,872.50
"	B-3	26,632.40 "		266,324.00
"	C	64,748,34 "		64,748.34
Total		133,063.04	Total	$2,354.029.84

Note: 1,395 acres in consolidation, but not in original lease not valued.

Lease No. 53 & 33:

Date, December 16, 1916. Term, 3 years. Lessor, Lee Bivins. Lessee, M. C. Nobles. Potter County. 15,462.7 acres. Consolidated into "A" Lease.

Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
C-1	2/27/20	20,000	435	10,300	411	7,744,291
C-4	8/28/23	12,000	435	3,898	405	2,810,166
D-3	12/ 2/22	10,981	435	8,837	390	4,116,654

This lease is consolidated under terms of "A" Lease and Consolidation Revisions.

Class	B-1	9,306.70 acres	Value	$465,335.00
"	B-2	1,951.00 "	"	48,775.00
"	B-3	2,224.00 "	"	22,240.00
"	C	1,981.00 "	"	1,981.00
Total		15,462.70 "	Total	$538,331.00

Lease No. 82 "J":

Date, May 23, 1928. Term, 5 years. Lessor, Lee Bivins, et al. Lessee, Amarillo Oil Company. Moore and Potter Counties. 1,553.0 acres. Consolidated into "A" Lease.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
J-1	8/30/33	53,400	403	67,524	369	5,633,724

This lease is consolidated under terms of "A" Lease and Consolidation Revisions.

Class, A-3. Value, $116,475.00.

Lease No. 113 "F":

Date, November 18, 1926. Term, 5 years. Lessor, Lee Bivins. Lessee, John G. McKenzie. Hutchinson County. 160 acres. Consolidated into "A" Lease.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
F-1	12/ 3/27	75,000	423	21,502	352	3,255,716

This lease is consolidated under terms of "A" Lease and Consolidation Revisions.

Class, B-1. Value, $8,000.00.

Lease No. 122 "G":

Date, May 25, 1926. Term, 5 years. Lessor, Lee Bivins. Lessee, Humble Oil & Refining Company. Moore County. 160 acres. Consolidated into "A" Lease.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
G-1	5/25/31	46,000	410	25,685	343	2,537,990

This lease consolidated under terms of "A" lease and Consolidation Revisions.

Class, B-1. Value, $8,000.00.

Lease No. 123 "H":

Date, May 25, 1926. Term, 5 years. Lessor, Lee Bivins. Lessee, Humble Oil & Refining Company. Moore County. 160 acres. Consolidated into "A" Lease.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
H-1	5/22/31	45,000	410	21,118	360	2,602,476

This lease is consolidated under terms of "A" Lease and Consolidation Revisions.

Class, B-1. Value, $8,000.00.

Lease No. 124 "I":

Date, May 18, 1929. Term, 1 year. Lessor, Mary F. Bivins, et al. Lessee, Fritch Oil & Gas Corporation. Potter and Moore Counties. 160 acres. Consolidated into "A" Lease.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
I-1	7/22/31	40,000	395	28,268	363	3,746,650

This lease is consolidated under terms of "A" Lease and Consolidation Revisions.

Class, B-1. Value, $8,000.00.

Lease No. 4-10-49-54-76:

Date, April 24, 1917. Term, 1 year. Lessor, R. B. Masterson. Lessee, M. C. Nobles. Potter County. 11,300 acres. Consolidated with "B" Lease dated December 22, 1916. Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
C-1	12/ 8/18	5,000	430	2,169	396	430,092
C-3	9/23/19	18,000	430	7,319	403	6,761,244

This lease was consolidated under the terms of the lease dated December 22nd, 1916, as to the Gas Rights only, under Consolidation Contract dated October 13th, 1938. This lease is included in Exhibit "A" of said contract.

Class	A-2	6,880.00 acres	Value	$688,000.00
"	A-3	3,840.00 "	"	288,000.00
"	B-1	580.00 "	"	29,000.00
Total		11,300.00 "	Total	$1,005,000.00

Lease No. 26 and 52:

Date, April 8, 1919. Term, extended 7 years. Lessor, R. B. Masterson. Lessee, D. S. Krister. Potter County. 2,240 acres. Consolidated with "B" Lease dated December 22, 1916.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
H-1	7/ 1/21	15,000	430	1,701	407	993,374

This lease consolidated under the terms of lease dated December 22nd, 1916, as to Gas Rights only. Consolidation contract dated October 13th, 1938. This lease is included in Exhibit "A" of said contract.

Class	B-1	560.00 acres	Value	$28,000.00
"	B-2	560.00 "	"	16,000.00
"	B-3	840.00 "	"	8,400.00
"	C	200.00 "	"	200.00
Total		2,240.00 "	Total	$52,600.00

Lease No. 32 & 88:

Date, January 28th, 1922. Term, 5 years. Lessor, R. B. Masterson, et al. Lessee, Empire Gas & Fuel Company. Potter County. 480 acres. Consolidated with leases dated December 22nd, 1916.

This lease is consolidated under terms of lease dated December 22nd, 1916, as to Gas Rights only. Consolidation contract dated October 13th, 1938. This lease is included in Exhibit "A" of said contract.

Class, B-2. Value, $12,000.00.

Lease No. 37:

Date, January 11, 1918. Term, 5 years and extension. Lessor, R. B Masterson. Lessee, R. C. Ware. Potter County. 160 acres. Consolidated with leases dated December 22, 1916.

This lease is consolidated under the terms of the lease dated December 22, 1916, as to Gas Rights only. The Consolidation Contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-2. Value, $16,000.00.

Lease No. 38:

Date, January 11, 1918. Term, 5 years. Lessor, R. B. Masterson. Lessee, W. O'Brien. Potter County. 160 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-2. Value, $16,000.00.

Lease No. 39:

Date, January 11, 1918. Term, 5 years. Lessor, R. B. Masterson. Lessee, T. E. Durham. Potter County. 318.75 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of leases dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, C. Value, $318.75.

Lease No. 40:

Date, January 11, 1918. Term, 5 years. Lessor, R. B. Masterson. Lessee, J. N. Beasley. Potter County. 360 acres. Consolidated with lease dated Dec. 22, 1916.

This lease is consolidated under the terms of lease dated Dec. 22, 1916, as to Gas Rights only. Consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-2. Value, $36,000.00.

Lease No. 41:

Date, January 9, 1918. Term, 5 years. Lessor, R. B. Masterson. Lessee, C. E. Weymouth. Potter County. 320 acres. Consolidated with lease dated Dec. 22, 1916.

This lease is consolidated under terms of lease dated Dec. 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-1. Value, $40,000.00.

Lease No. 42:

Date, January 11, 1918. Term, 5 years. Lessor, R. B. Masterson. Lessee, L. B. Newby. Potter County. 401 acres. Consolidated with lease dated Dec. 22, 1916.

This lease is consolidated under the terms of lease dated Dec. 22, 1916, as to Gas Rights only. Consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-2	163.70	acres	Value	$16,370.00
" B-1	237.30	"	"	11,865.00
Total	401.00	"	Total	$28,235.00

Lease No. 43:

Date, January 11, 1918. Term, 5 years. Lessor, R. B. Masterson. Lessee, D. S. Kritser. Potter County, 342.92 acres. Consolidated with lease dated Dec. 22, 1916.

This lease is consolidated under the terms of lease dated Dec. 22, 1916, as to Gas Rights only. The consolidation

contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, B-3. Value, $3,429.20.

Lease No. 44:

Date, February 8, 1918. Term, 5 years. Lessor, R. B. Masterson. Lessee, L. A. Wells. Potter County. 639.01 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated Dec. 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-2	320.00 acres	Value,	$32,000.00
" B-1	319.01 "	"	15,950.50
Total	639.01 "	Total	$47,950.50

Lease No. 45:

Date, January 11, 1918. Term, 5 years. Lessor, R. B. Masterson. Lessee, M. J. R. Jackson and R. E. Underwood. Potter County. 160 acres. Consolidated with lease dated Dec. 22, 1916.

This lease is consolidated under the terms of lease dated Dec. 22, 1916, as to Gas Rights only. Consolidation contract is dated Oct. 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-1. Value, $20,000.00.

Lease No. 46:

Date, January 11, 1918. No term set out. Lessor, R. B. Masterson. Lessee, J. N. Beasley, et al. Potter County. 322.8 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-2. Value, $32,280.00.

Lease No. 55:

Date, June 1, 1917. Term, ... Lessor, R. B. Masterson. Lessee, Amarillo Oil Company. Potter County. 5,457.18 acres. Consolidated with lease dated Dec. 22, 1916. Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
D-4	11/29/19	107,000	430	90,024	382	29,481,675

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-2	4,355.18 acres	Value		$435,518.00
" A-3	521.00 "	"		39,075.00
" B-1	581.00 "	"		29,050.00
Total	5,457.18 "	Total		$503,643.00

Lease No. 56 & 77:

Date, January 18, 1918. Term ..... Lessor, R. B. Masterson. Lessee, Amarillo Oil Company. Potter County. 1,920 acres. Consolidated with lease dated Dec. 22, 1916. Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
E-2	9/19/29	5,000	425	2,690	393	979,757

This lease is consolidated under the terms of lease dated Dec. 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-2	1,280.00 acres	Value		$128,000.00
" A-3	640.00 "	"		48,000.00
Total	1,920 "	Total		$176,000.00

Lease No. 58:

Date, December 22, 1916. Term, 3 years. Lessor, R. B. Masterson. Lessee, M. C. Nobles. Potter and Moore Counties. 18,386.82 acres.

Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
B-1	11/20/27	68,000	430	43,578	374	16,527,817
B-5	6/24/20	6,250	430	5,481	408	761,582
B-2	7/24/39	39,559	380	35,173	381	453,332
B-3	6/14/39	37,347	—	33,990	385	543,566

This lease is the "key lease" into which all the leases under the consolidation of leases were merged, except, however, with alterations as set out in said consolidation contract.

Class	A-1	3,461.82 Acres, Value	$432,727.50
"	A-2	1,148.80 " "	114,880.00
"	A-3	3,267.20 " "	245,040.00
"	B-1	4,377.50 " "	218,875.00
"	B-2	3,340.80 " "	83,520.00
"	B-3	2,790.70 " "	27,907.00
	Total	18,386.82 Total	$1,122,949.50

Lease No. 71:

Date, January 21, 1918. No term. Lessor, R. B. Masterson. Lessee, J. L. Summers and H. E. Kinkead. Potter County. 1,055 acres. Consolidated with lease dated December 22, 1916.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
K-1	5/31/28	8,300	427	4,542	390	2,039,925

This lease is consolidated under the terms of lease dated Dec. 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class	A-2	640.00 acres	Value	$64,000.00
"	B-1	95.00 "	"	4,750.00
"	B-3	320.00 "	"	3,200.00
	Total	1,055.00 "	Total	$71,950.00

Lease No. 75:

Date, January 28, 1922. No term given. Lessor, R. B. Masterson, et al. Lessee, Emerald Oil Company. Potter County. 640 acres. Consolidated with lease dated December 22, 1916.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
1-1	11/—/20	3,000	425	1,475	396	585,343

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only.

The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, B-1. Value, $32,000.00.

Lease No. 87:

Date, January 10, 1918. No term given. Lessor, R. B. Masterson. Lessee, W. O. Allen and W. M. Thompson. Potter County. 699.4 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class	B-2	367.00 acres	Value	$ 9,175.00
"	B-3	332.40 "	"	3,324.00
	Total	699.40 "	Total	$12,499.00

Lease No. 91:

Date, January 28, 1922. No term given. Lessor, R. B. Masterson. Lessee, The Pure Oil Company. Potter County. 640 acres. Consolidated with lease dated December 22, 1916. Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
N-1	5/24/30	19,891	409	20,563	405	2,513,777

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class	B-1	160.00 acres	Value	$ 8,000.00
"	B-2	400.00 "	"	10,000.00
"	B-3	80.00 "	"	800.00
	Total	640.00 "	Total	$18,800.00

Lease No. 121:

Date, September 14, 1931. No term given. Lessor Eliza Masterson, individually and as executrix. Lessee, Amarillo Oil Company. Potter County. 8,228.25 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class	A-2	160.00 acres	Value	$ 16,000.00
"	B-1	480.00 "	"	24,000.00
"	B-2	3,087.50 "	"	77,187.50
"	B-3	1,150.75 "	"	11,507.50
"	C	3,350.00 "	"	3,350.00
	Total	8,228.25 "	Total	$132,045.00

Lease No. 126:

Date, February 6, 1919. No term given. Lessor, R. B. Masterson. Lessee, L. C. Cazzell. Moore and Potter Counties. 40 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-2. Value, $4,000.00.

Lease No. 127:

Date, February 14, 1919. No term given. Lessor R. B. Masterson. Lessee, H. E. Exum, Moore C[illegible]aty. 40 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-2. Value, $4,000.00.

Lease No. 128:

Date, November 20, 1919. No term given. Lessor, R. B. Masterson. Lessee, Sinclair Oil & Gas Company. Moore County. 108.16 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916. The consolidation contract is dated October 13, 1938 and covers Gas Rights only. This lease is included in Exhibit "A" in said contract.

Class, A-1. Value, $13,520.00.

Lease No. 129:

Date, September 23, 1919. No term given. Lessor, R. B. Masterson. Lessee, Sinclair Consolidated Oil & Gas Company. Potter and Moore Counties. 160 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-1. Value, $20,000.00.

Lease No. 130:

Date, September 23, 1919. No term given. Lessor, R. B. Masterson. Lessee, Sinclair Consolidated Oil & Gas Company. Moore County. 160 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, A-1. Value, $20,000.00.

Lease No. 131:

Date, September 19, 1919. No term given. Lessor, R. B. Masterson. Lessee, Sinclair Consolidated Oil & Gas Company. Potter County. 80 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, B-3. Value, $800.00.

Lease No. 132:

Date, October 8, 1919. No term given. Lessor, R. B. Masterson. Lessee, D. S. Kritser. Potter County, 120 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class A-3. Value, $9,000.00.

Lease No. 133:

Date, May 10, 1919. No term given. Lessor, R. B. Masterson. Lessee, Sinclair Consolidated Oil & Gas Company. Potter County. 134.62 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class, B-3. Value, $1,346.20.

Lease No. 134:

Date, February 8, 1919. No term given. Lessor, R. B. Masterson. Lessee, Gertrude E. Brooks. Potter County. 40 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class C. Value, $40.00.

Lease No. 135:

Date, September 19, 1919. No term given. Lessor, R. B. Masterson. Lessee, Sinclair Consolidated Oil & Gas Company. Potter County. 160 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "A" of said contract.

Class C. Value, $160.00.

Lease No. 31:

Date, May 10, 1923. Term, 10 years. Lessor, R. B. Masterson. Lessee, Producers & Refiners Corporation. Potter and Moore Counties. 29,400.71 acres. Consolidated with lease dated December 22, 1916.

Wells drilled on this Lease;

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
A-1	8/25/25	15,000	435	9,894	367	6,499,377
A-2	3/10/26	52,000	435	34,327	369	24,724,689
A-3	12/12/35	43,320	395	28,725	369	8,083,410
A-4	2/17/39	56,009	388	53,085	385	2,336,682
A-5	10/12/40	24,800	397	24,800	397	None

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "B" of said contract.

Class,	A-1	9680.38 acres.	Value	$1,210,047.50
"	A-2	5,209.00 "	"	520,900.00
"	B-1	879.70 "	"	43,985.00
"	B-2	1,345.80 "	"	33,645.00
"	B-3	4,131.88 "	"	41,318.80
"	C	8,153.95 "	"	8,153.95
Total		29,400.71 "	Total	$1,858,050.25

Lease No. 65;

Date, May 10, 1923. No term given. Lessor, R. B. Masterson. Lessee, Amarillo Oil Company. Moore County. 6,849.38 acres. Consolidated with lease dated December 22, 1916.

Wells drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
J-1	4/30/27	10,000	425	7,414	342	5,207,473
J-2	9/16/27	8,000	427	5,546	407	1,785,219

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "B" of said contract.

Class,	A-1	726.67 acres.	Value,	$ 90,833.75
"	A-2	1,081.16 "	"	108,116.00
"	A-3	531.70 "	"	39,877.50
"	B-1	850.00 "	"	42,500.00
"	B-2	437.80 "	"	10,945.00
"	B-3	1,046.15 "	"	10,461.50
"	C	2,175.90 "	"	2,175.90
Total,		6,849.38 "	Total	$304,909.65

Lease No. 86:

Date, June 1, 1926. No term given. Lessor, R. B. Masterson and J. T. Sneed, Jr. Lessee, Master Oil & Gas Company. Moore County. 2,587.2 acres. Consolidated with lease dated December 22, 1916.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
M-1	3/15/20	9,000	435	4,462	380	2,771,516

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "B" of said contract.

Class, A-1. Value, $323,400.00.

Lease No. 28 and 45:

Date, January 11, 1918. Term, 5 years. Lessor, R. B. Masterson. Lessee, M. J. R. Jackson and R. E. Underwood. Potter County. 480 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "C" of said contract.

Class	A-1	160.00 acres	Value	$20,000.00
"	B-3	320.00 "	"	3,200.00
	Total	480.00 "	Total	$23,200.00

Lease No. 37:

Date, January 11, 1918. No term given. Lessor, R. B. Masterson. Lessee, R. C. Ware. Potter County. 159.88 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "C" of said contract.

Class, A-2. Value, $15,983.00.

Lease No. 38:

Date, January 11, 1918. No term given. Lessor, R. B. Masterson. Lessee, W. O'Brien. Potter County. 482.05 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "C" of said contract.

Class	A-2	160.00 acres	Value	$16,000.00
"	B-3	322.05 "	"	3,220.50
	Total	482.05 "	Total	$19,220.50

Lease No. 39:

Date, January 11, 1918. No term given. Lessor, R. B. Masterson. Lessee, T. E. Durham. Potter County. 324.9 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "C" of said contract.

Class, C. Value, $324.90.

Lease No. 40:

Date, January 11, 1918. No term given. Lessor, R. B. Masterson. Lessee, J. N. Beasley. Potter County. 280 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated

December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "C" of said contract.

Class, A-2. Value, $28,000.00.

Lease No. 41:

Date, January 9, 1918. No term given. Lessor, R. B. Masterson. Lessee, C. E. Weymouth. Potter County. 320 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "C" of said contract.

Class, A-1. Value, $40,000.00.

Lease No. 42:

Date, January 11, 1918. No term given. Lessor, R. B. Masterson. Lessee, L. B. Newby. Potter County. 201.75 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "C" of said contract.

Class	A-2	161.75 acres	Value	$16,175.00
"	B-1	40.00 "	"	2,000.00
	Total	201.75 "	Total	$18,175.00

Lease No. 43:

Date, January 11, 1918. No term given. Lessor, R. B. Masterson. Lessee, D. S. Kritser. Potter County. 261.77 acres. Consolidated with lease dated December 22, 1916.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
F-1	10 1 21	5,000.	425	3,609	415	748,153.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "C" of said contract.

Class, B-3. Total Value, $2,627.70.

Lease No. 44:

Date, February 8, 1918. No term given. Lessor, R. B. Masterson. Lessee, L. A. Wells. Potter County. 589.59 acres. Consolidated with lease dated December 22, 1916.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
G-2	1/14/24	15,000	422	5,175	390	1,034,718

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "C" of said contract.

Class	A-2	160.00 acres	Value $16,000.00
"	B-1	429.59 "	" 21,479.50
	Total	589.59 "	Total $37,479.50

Lease No. 46:

Date, January 11, 1918. No term given. Lessor, R. B. Masterson. Lessee, J. N. Beasley, et al. Potter County. 200 acres. Consolidated with lease dated December 22, 1916.

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "C" of said contract.

Class, A-2. Value, $20,000.00.

Lease No. 32 & 88:

Date, January 28, 1922. No term given. Lessor, R. B. Masterson, et al. Lessee, Empire Gas & Fuel Company. Potter County. 160 acres. Consolidated with lease dated December 22, 1916.

Well drilled on this Lease:

Well No.	Date Completed	Initial Open Flow Mcf.	Initial Rock Pressure Mcf.	Present Open Flow Mcf.	Present Rock Pressure	Production Mcf. to Date
1-1	12/18/22	29,000	430	26,197	409	1,465,169

This lease is consolidated under the terms of lease dated December 22, 1916, as to Gas Rights only. The consolidation contract is dated October 13, 1938. This lease is included in Exhibit "C" of said contract.

Class, B-2. Value, $4,000.00.

Lease No. .....:

Date, ... No term given. Lessor, R. B. Masterson. Lessee, Canadian River Gas Company. Potter County. 1,380.67 acres.

(Acreage included under consolidation contract not under lease prior to consolidation.)

Class	A-1	22.48	acres	Value	$ 2,810.00
"	A-2	160.00	"	"	16,000.00
"	A-3	390.00	"	"	29,250.00
"	B-1	129.40	"	"	6,470.00
"	B-2	330.00	"	"	8,250.00
"	B-3	268.79	"	"	2,687.90
"	C	80.00	"	"	80.00
	Total	1,380.67	"	Total	$65,547.90

Lease No. 58 Consol.:

Date, June 1, 1940. No term given. Lessor, R. B. Masterson. Lessee, Canadian River Gas Company. Potter County. 80.0 acres.

Class B-1. Value, $4,000.00.

Where the witness Wallace did not indicate the primary term of the lease, the clause "no term given" indicates that fact.

50. Market Value of Natural Gas in its Natural State at the Wellhead in the Panhandle Field of Texas and Market Value of Gas in its Natural State, Gathered and Delivered at the Intake of the Bivins Compressing Station.

Respondent's witness, R. A. Ford, in testifying to the above points, stated as follows: (Vol. LXXXX, pp. 13676-13682.)

"My name is R. A. Ford. I reside at Amarillo, Texas. I am the General Superintendent of Canadian River Gas Company. I have been engaged exclusively in the natural gas business since the fall of 1919, at which time I accepted a position with A. R. Jones and associates of Kansas City, Missouri, who drilled some of the first wells on the leases of Amarillo Oil Company in the Texas Panhandle Field.

"When the interests of Amarillo Oil Company and Mission Oil Company in such leases and wells were merged, I continued as Superintendent of Amarillo Oil Company until the Canadian River Gas Company was organized in 1928, at which time I became Superintendent of the Land, Lease and Production Department of Canadian River Gas Company, and continued in that position until the fall of 1936, at which time I became General Superintendent of Canadian River Gas Company, and have held that position until the present time.

"My duties in connection with the Canadian River Gas Company have included, among other things, the determination of the fair market value of gas in its natural state at the well, for the purpose of determining the proper rate of royalty payments to be made to our various lessors for their interest in the production. For the purpose of negotiating royalty settlements with lessors, I am required to, and do, keep advised of royalty payments made by other pipe line companies from time to time, which payments are based upon the value of the gas in its natural state at the well, and I know the prevailing rate upon which such payments are based in the West Panhandle Field of Texas. These royalty payments are based upon the value of sweet gas utilized for pipe line purposes as produced at the well.

"The value of sweet gas utilized for pipe line purposes at the well for a period of years, as thus determined, has been 4c per Mcf. in the West Panhandle Field of Texas. While some of the major pipe line companies began paying 4½c per Mcf. at the well about January 1, 1941, it is my opinion that the prevailing price at this time for such purpose is 4c per Mcf.

"I have also been requested to give my opinion as to the fair market value of sweet gas utilized for light and fuel purposes after the same has been gathered and delivered at the Bivins compressor station of Canadian River Gas Company in the Texas Panhandle Field. There are few contracts of this character in existence, which can be cited as evidence of such value. I do desire, however, to call attention to the following contracts which have a very material bearing upon the question:

"1. The contract dated May 17, 1929, between Amarillo Oil Company and the United States Government;

"2. The contract dated February 26, 1937, between Amarillo Oil Company and the American Smelting & Refining Company; and

"3. The contract dated August 1, 1939, between Amarillo Gas Company and the General Public Utilities, Inc.

"The contract between Amarillo Oil Company and the United States Government covers the purchase and sale of residue gas after the helium content only has been extracted. The delivery is at the discharge of the Government's helium plant, some six or seven miles west of the City of Amarillo, Texas. This contract provides that the Amarillo Oil Company shall pay the prevailing wellhead price in the Texas Panhandle Field, plus 1c per Mcf., for similar gas. For the first ten years of this contract, that is from May 16, 1929, to July 1, 1939, the contract provided that this price should be 5½c per Mcf. on a 16.4 pressure base, which would be the equivalent of 4½c per Mcf. at the wellhead. The contract provides that after July 1, 1939, the partie-

will agree upon the price annually, based as aforesaid upon the prevailing wellhead price, plus 1c per Mcf. Since July 1, 1939, the parties have agreed that the total price shall be 4½ per Mcf., which is equivalent to 3½c per Mcf. at the wellhead. It must be borne in mind, however, that this gas is of an inferior quality and contains only approximately 80% of the heating value of the gas generally produced in the Texas Panhandle Field. When this fact is taken into account, the equivalent price for the gas produced by the United States Government and sold to Amarillo Oil Company would be approximately 4.375c per Mcf. at the wellhead. I might add in this connection that this gas is sold by the Amarillo Oil Company to the American Smelting & Refining Company for consumption at its smelter near Amarillo, Texas, and the price received therefor is 5¼c per Mcf., which is 1¼c less per Mcf. than the price received by Amarillo Oil Company for gas produced from the Texas Panhandle Field and sold under the same contract to the American Smelting & Refining Company.

"The Amarillo Oil Company also sells large volumes of gas produced from Canadian River Acreage in the Texas Panhandle Field to the American Smelting & Refining Company for consumption at its smelter near Amarillo, Texas. It receives for this gas the sum of 6¼c per Mcf. on a pressure base of 14.9 pounds, or approximately 7.16c per Mcf. when converted to a 16.4 pound pressure base. This contract provides that the purchaser must purchase a minimum of 2000 Mcf. per day, averaged over the year, and currently is purchasing something like 10,000 Mcf. per day. It must be borne in mind that this is an industrial sale, and although the load may fluctuate somewhat over periods of time, it nevertheless does not fluctuate between summer and winter and is, therefore, a very desirable contract from the standpoint of the load factor involved. Industrial gas, which does not fluctuate with weather and temperature conditions, is the most desirable type of gas sale, and, for this reason, usually sells at a lower figure than gas sold to customers whose requirements fluctuate with temperature.

"The Amarillo Gas Company sells gas to General Public Utilities Inc. for the fuel requirements of its power plant at Amarillo, Texas. This gas is sold on the basis of 8c per Mcf. for the first 62,500 Mcf. per month; 7c per Mcf. for the next 62,500 Mcf. per month; and 6c per Mcf. for all over 125,000 Mcf. per month, with a minimum obligation of $60,000 per year and with a minimum volume obligation of 750,000 Mcf. per year. The price averages more than 7c per Mcf. for all gas sold. This gas is sold on a pressure base of 13.5 pounds which, when converted to a pressure of 16.4 pounds, amounts to an average price of approximately 9c per Mcf. This is also a very desirable industrial load, with very little fluctuation as between summer and winter. In fact, it is almost constant for every day in the year. The load factor is, therefore, very much better than the load factor of Canadian River Gas Company at its Bivins compressor plant. The transportation costs involved in making the sales of gas to General Public Utilities Inc. and American Smelting & Refining Company at Amarillo, should be no more, if as much, than the gathering costs of Canadian River Gas Company involved in gathering gas from the various wells and delivering the same at a central point in the field at the Bivins compressor station. The main line of Amarillo Oil Company from the field to Amarillo is only approximately fifteen miles in length. This compares favorably with main gathering lines of Canadian River Gas Company, which are in excess of thirty miles in length. The maximum delivery pressure for the gas sold and delivered to American Smelting & Refining Company is 20 pounds, while no pressure is stipulated as to the gas sold to General Public Utilities Inc. and it can, therefore, be delivered at any pressure. The cost of transporting gas at these very low discharge pressures is reduced to a minimum.

"It is my opinion, therefore, that the sales hereinabove enumerated serve as a very good criterion of the value of gas delivered to the intake of the Canadian River compressor station at Bivins. As a matter of fact, gas should sell for more at Bivins station, for the reason that the gas sold to the General Public Utilities

Inc. and the American Smelting & Refining Company has had the natural gasoline extracted therefrom, and for the further reason that both of these sales are to large industrial customers with a much more favorable load factor than is experienced by Canadian River Gas Company at its Bivins compressor station. These contracts, therefore, in my opinion, justify the statement that the fair market value of natural gas gathered and delivered at the Bivins compressor station before the extraction of the natural gasoline and on a 16.4 pound pressure base, is at least 7c per Mcf."

MR. FORD further testified as follows: (Vol. LXXXX, Official Transcript, pp. 13684-13689.)

Q. Mr. Ford, what is this four cents? How is that fixed, this four cents that you have got here as your royalty base? How is that fixed?

A. Four cents as recited as a royalty base?

Q. That's right.

A. By negotiating with the lessors—negotiated contracts on leases that state one-eighth of the value of the gas at the well.

Q. On what pressure base is that?

A. 16.4.

Q. At what pressure base do you sell your gas?

A. You mean Canadian River Gas Company at the mouth of the well?

Q. Yes.

A. Calculated on 16.4 pressure base.

Q. Now, all of the Canadian River Gas Company contracts contain four cents royalty base?

A. Do all of the Canadian River—

Q. Yes.

A. No, they do not.

Q. About what percentage of them do?

A. Pardon me?

Q. About what percentage of them do?

A. The greater number of our leases do not have a fixed royalty rate, simply expressing one-eighth of the value of the gas at the well.

Q. One-eighth of the value of the gas at the well?

A. Yes.

Q. Which ones of the leases do have this four cents written into the lease?

A. Well, some of the Masterson leases, Killgore leases, and Thompson, and Sneed, I think have the four cents written into it.

Q. What about the Bivins?

A. The Bivins lease—are you speaking of original? Some of the original leases with Bivins did not have any value written into the lease and others did.

Q. What about the leases existing now?

A. The Bivins lease?

Q. Yes.

A. After the consolidation agreement had been perfected a year or so ago it had a stipulated payment made to the lessor at the well.

Q. What was that?

A. One cent per thousand cubic feet.

Q. They get more for their gas than other lessors, don't they?

A. Yes, sir.

Q. About how much does that amount to? About what percentage of four cents would that amount to per Mcf.?

A. I don't get what you mean.

Q. If some of these other lessors get one-eighth of your four cents per Mcf. value, how much would the payment of the Bivins Estate amount to—would it be two cents per Mcf., or how much would it amount to?

A. The amount recited in the Bivins contract is one cent per Mcf. and the amount is practically double the one-eighth of four cents value.

Q. Why do you have those discriminatory agreements between your lessors?

A. I couldn't explain that. I am not the party making all of those original agreements and I couldn't state as to why the difference.

Q. Evidently they consider their gas more valuable than these other lessors.

Mr. Keffer: Now, if the Examiner please, of course that Bivins consolidated agreement is in the record. I feel that the assumptions indulged in by Mr. March are rather far-fetched to say that the Bivins contract is either lower

or higher. There isn't any comparison. It simply recites that they shall receive as royalty one cent per Mcf. for all gas produced. It is quite true, as Mr. Ford has just stated, that if you reduce that to a 1/8 basis it would be the equivalent of one-eighth of eight cents, but there is nothing in the instrument that justifies the reduction of a royalty rate to a one-eighth basis.

Now, if the Examiner has read that contract, and certainly Mr. March has, you will recall that there are many stipulations in the thing, or in the lease, which could well account for what Mr. March terms a higher royalty rate. In fact, the original lease; that is, the lease covering 200,000 acres in which the principal lease is included in the consolidation provided a low delay rental and provided that one well should eliminate delay rentals on 20,000 acres for the first primary period, a period of the lease, for the first five years and thereafter that each well should hold 10,000 acres, which is a most exceptional provision, and worth much to the operating company.

Now, all of those special provisions which were of value to the lessee are evident in that royalty rate. Now, to say it is higher or lower, nobody on earth can say that. All these other things must be evaluated and considered in connection with it.

Mr. March: This witness has come up here and testified that the base for royalty payment is four cents based on four cents value of the gas and I have a right to test that statement and I have the right to test his knowledge of what the royalty base is in the Panhandle field of Texas.

Mr. Keffer: Mr. March, that doesn't test it. That's the whole point. He has stated how he arrived at that four cents. The Bivins lease does contain a fixed price and others do not. If he had considered it as you considered it, he would have gotten more than four cents, but you would have been up here raising Hades, generally if as a matter of fact we had considered it.

Why, he is taking the most logical course, and the only correctly legal course that he could take in determining the thing that he is testifying about.

Mr. March: Do you want to testify on this, Mr. Keffer?

Mr. Keffer: Yes, I'll testify on it.

Mr. March: I thought so—

The Trial Examiner: Well, you may continue, Mr. March, but I don't want you to lose sight of the fact that we aren't in a proceeding here to test the discrimination or alleged discrimination or whatever you might label it, of the royalty payments of this company in this particular field.

Mr. March: Yes, but I couldn't possibly test the four cents here without determining what his knowledge was of the actual agreements that had been negotiated in the field; whether they have been negotiated or not. Just because he says they are at four cents—

The Trial Examiner: All right, Mr. March, but how does the question of discrimination between royalty owners enter into this as a test?

Mr. March: It enters into it in this respect: It just goes to show that even the Canadian River Gas Company itself does not have a standard rate of four cents to base their royalty payments on. That's what it shows, and that is right at the heart of this whole thing. They come along here and they have some other payment that is not based on four cents as their royalty, in spite of the fact that the witness comes in here and states that it is based on four cents.

I admit that the question was asked in a manner that made it appear that I was just trying to spread on the record some discriminatory matter. The purpose, however, was to explore and determine as to the standard base for the royalty payments.

The Trial Examiner: I think that is perfectly all right, Mr. March, but you see the question in the form that you put that question gets us into trouble.

Mr. March: I will try to refrain from labeling it.

As to the leases that stipulate that the royalty payments shall be one-eighth of the market value, that market value

has remained static at 4c for the past few years (Vol. LXXXX, p. 13691), the last change being made in about 1936 from 3½c to 4c as a result of investigation with other companies throughout the field, and other surrounding conditions. From 1928 to 1936 his recollection is that the fair market value as negotiated with the lessors remained at 3½c. Most of the Sneed leases stipulate for three-sixteenths of 4c royalty (Vol. LXXXX, p. 13694) and also the Terry Thompson leases. The Killgore lease is one-eighth of 4c. The Canadian has no original leases reciting a royalty payment of less than one-eighth of 4c. (Vol. LXXXX, p. 13697.) In about 60% to 70% of the Canadian's leases covering about 20% of its acreage holdings a 4-cent value has been negotiated where that value was not originally fixed in the leases. (Vol. LXXXX, p. 13699.) Mr. Ford has also made a study of the Texoma Natural Gas Company leases and, according to his investigation, that company's negotiated royalty base at the present time is one-eighth of 4½c on all of its production (Vol. LXXXX, p. 13701), this information being secured from the representatives of the Texoma Company and the personal investigation of two or three leases. While he did not personally check all of the Texoma Company's leases, he did accept the statement of the officials of that company to the effect that the 4½-cent royalty rate was a negotiated rate and not written into the leases. (Vol. LXXXX, p. 13704.) When he negotiated the one-eighth of 4-cent royalty rate, it was pretty definitely standard over the field at that time and generally used by the Texoma Company. (Vol. LXXXX, p. 13706.) Mr. Ford in his study did not give any consideration to the price at which Canadian delivered gas to Colorado Interstate at Clayton, New Mexico, or Gray, Oklahoma, because deliveries were made under a type of contract not suitable for comparison. (Vol. LXXXX, p. 13717.)

In determining his standard value of 4c for royalty purposes, in addition to considering the Texoma Natural Gas Company and Canadian, he considered the Panhandle Eastern which paid one-eighth of 4c pursuant to negotiations during the past year or two. (Vol. LXXXX, pp. 13721, et seq.)

MR. FORD further testified as follows: (Vol. LXXXX, pp. 13724-13744.)

Q. Do you know the Panhandle Eastern purchases gas from various individual companies in the western field?

A. Yes, sir.

Q. Do you know at what price they purchase that gas?

A. Yes, sir.

Q. At what price?

A. Three and one-half cents, I believe that is what they purchase it for. The contracts I am thinking of are the Shamrock and Huber.

Q. Is that after the gas has been gathered and delivered to the pipe line of the Panhandle Eastern?

A. A certain amount of gathering is done by the producing companies.

Q. That includes the gathering, doesn't it?

A. To a certain extent. It goes into the main line of the Panhandle Eastern or the gathering line within proximity of the producing properties of the Shamrock that goes into the Panhandle Eastern, so it is not an elaborate gathering system they have.

Q. However, 3½ cents is not the delivery price but it is the gathering price?

A. 3½ cents is the price, as I understand it, delivered into the Panhandle line at given points.

Q. Well, did you know that Panhandle Eastern's contracts with the companies you have enumerated are at arm's length?

A. I understand they are. I should think they would be.

Q. They were negotiated at arm's length?

A. Yes, sir.

Mr. Keffer: May I ask a question?

Mr. March: Just a second.

Q. How can you come in here and say the value of gas in the Panhandle field of Texas at the wellhead is four cents, when as a matter of fact they are selling it all over the western part of the field at 3½ cents?

Mr. Keffer: Mr. March, he has never made such a statement.

Mr. March: Please let him answer my question.

Mr. Keffer: I don't think an attorney is entitled to misquote the record.

Mr. March: I make an exception to that statement, Mr. Keffer, because I don't think I have misquoted the record. Just to have the record straight, I'll ask him the question all over again.

Q. We have the understanding here and you have testified, have you not, that they purchase gas from these parties at 3½ cents gathered and delivered to their lines? Have you so testified?

Mr. Keffer: Who are you talking about?

Mr. March: I am talking about the Panhandle Eastern.

Mr. Keffer: You said "selling gas all over the field for 3½ cents."

Mr. March: That is your question.

Mr. Keffer: That is what I am talking about.

By Mr. March:

Q. Isn't the Panhandle Eastern's acreage from which gas is purchased pretty well scattered over the western part of the sweet gas field?

Mr. Keffer: What do you mean "western part"?

The Trial Examiner: Why don't you confine your questions to the Shamrock Oil & Gas Company and the Huber Oil Company which he stated was on a 3½-cent basis?

Mr. March: My information is they are all on a 3½-cent basis. I will get to the other companies in a minute.

The Trial Examiner: The witness testified to that and then you come along with a sweeping statement about it being all over the field.

Mr. March: The western part of the field.

The Trial Examiner: Even then it is not in conformity as to what the witness testified about.

Mr. March: All right.

Q. Mr. Ford, do you know whether or not the Shamrock's acreage and the Huber Petroleum Company's acreage which Panhandle Eastern purchases gas at 3½ cents [illegible] retty well scattered in the sweet gas area of the west fi[illegible]

A. Well, I don't know exactly what you mean by pretty well scattered. It is located in Hutchinson and Moore counties, as I recall it.

Q. It isn't located all in one block, is it?

A. No, it is not.

Q. It takes considerable gathering system facilities of these companies to gather this gas up for the Panhandle Eastern?

A. No, sir, it does not, in view of the fact that Panhandle Eastern's own gathering system for their own gas is situated in the proximity of these other leases.

Q. Have you made a study of the proximity of Panhandle Eastern's transmission line or the gathering system of the Huber Petroleum Company and the Shamrock Oil & Gas Company?

A. In a general way I know the proximity, yes. I have been over the territory and the route of their lines on the map.

Q. Do you know the extent of the transmission system?

A. Which are you speaking of?

Q. Of the gathering system of the Shamrock Oil Company.

A. Do I know the extent?

Q. Yes.

A. I don't know the exact number of miles they connected into the system, but I do know ordinarily from the standpoint of a gathering system for a gas company, that it is less than we had or other companies do have in gathering a quantity of gas.

Q. They deliver less gas, don't they, to the Panhandle Eastern than Canadian River delivers to its wholesale customers?

A. Well, they deliver a lesser amount to the Panhandle Eastern than we probably deliver into the Bivins station.

Q. Did you know that all of the gas purchased by Panhandle Eastern in 1939 in the western part of the Panhandle field of Texas wasn't at 3½ cents?

A. Yes, I understood it was approximately at that figure.

Mr. Keffer: What contract are you talking about?

Mr. March: Any contract.

Mr. Keffer: Listen to the question. You are talking about Panhandle Eastern and he is talking about all of them.

Mr. March: I am talking about Panhandle Eastern's purchases and that is all I am talking about.

Mr. Keffer: I asked you that and you said you were talking about the field.

Mr. March: You are confused.

Mr. Keffer: I beg your pardon.

By Mr. March:

Q. In so far as you know, all of the purchases of gas by the Panhandle Eastern in the western part of the field was at 3½ cents in 1939?

A. Yes, or thereabouts. It seems to me the figure is slightly over that but I don't know exactly what is averaged.

Q. That was delivered to the Panhandle Eastern Pipeline?

A. It was delivered at their gathering line at certain different points.

Q. At what pressure base?

A. 16.4.

Q. And did you know there were other companies which delivered gas at that price to the Panhandle Eastern system besides the Huber Oil Corporation and the Shamrock Oil & Gas Corporation?

A. Yes, I understood they had some other contracts. Those two I just readily recalled to mind. There are others.

Q. Do you know whether or not Northern Natural Gas Company sells any gas to them or not?

A. It seems to me that they have a contract there of a small quantity of gas going to Panhandle Eastern.

Q. What about the Navajo Oil Company?

A. Navajo sells to them.

Q. Where is the Navajo Oil Company?

A. They have some holdings in northwestern Carson County.

Q. Then the sales to the Panhandle Eastern extend into Hutchinson, Moore, Carson counties, and do they purchase any of that gas from Potter County?

A. Yes. Well, now, they have some of their own production in Potter County. I am not sure whether they buy any from other companies producing there. Part of that Navajo might be in Potter County, I'm not sure.

Q. Do you know of any companies operating in the western part of the Panhandle field of Texas which has gas and can't sell it—sweet gas?

A. Located where?

Q. In the western part of the Panhandle field.

A. No, I don't recall to mind any.

Q. I thought the Shamrock Oil & Gas had sweet gas they couldn't sell—does it have sweet gas they can't sell?

A. I didn't think they had. They might like to sell more or something of that character. I didn't know they had any particular lease that they couldn't sell any from. I didn't know of any case like that.

Q. Or individuals?. Do you know of any individuals with sweet gas in the western part of the Texas Panhandle field that can't sell their gas?

A. No, sir.

Q. You think all of them can sell their gas?

A. I think in most cases the market would be available.

Q. Will your company buy gas from anyone else?

A. They never have, no, sir. I don't think they are considered to be a buying company.

Q. Do you know whether Texoma Natural Gas Company has ever bought gas from anyone else?

A. Not to my knowledge they haven't.

Q. Do you know what you could go out and buy gas for in the Texas Panhandle field?

A. That would all depend, Mr. March upon the quantity, the type of the contract, and various things have to enter into what you could buy gas for.

Q. You haven't given any consideration to what you could go out and buy gas for in the Panhandle field?

A. Well, no, I haven't considered it just exactly in that

light. I have given consideration to what the value of that gas is by buying and selling companies but I wouldn't say that I had made a study of a new concern going out and negotiating the purchase of gas.

Q. You have got the value written in here at four cents per Mcf. which is the value which is placed in some of the lease contracts for royalty purposes. Now, that is not the market value—

Mr. Keffer: Now, Mr. March, just again—"value placed in lease contracts." Mr. Ford has been very clear to make it that this is negotiated value where the lease contract contained no specific value.

Mr. March: When you negotiate a contract pursuant to a lease you have a negotiated lease contract.

Mr. Keffer: No, you don't have any such thing.

Mr. March: Well, I'll change it. Maybe it will suit you better.

Q. We already have in the record what you have here, Mr. Ford. You wouldn't contend that this four cents was the market price, would you—the sales price for gas in the Panhandle field of Texas?

A. I would consider that a fair market value.

Q. Now, what is your definition of fair market value?

A. I have considered it from my general knowledge of the west Panhandle field that that is the present buying and selling price—fair price for sweet natural gas at the mouth of the well.

Q. As a matter of fact, the Panhandle Eastern is buying the gas already gathered and delivered to their gathering system.

A. That is one contract but we have numerous others at the four-cent value. There are a number of different rates used.

Q. Would you say, then, that the fair market value is four cents—would be synonymous with market price?

A. Well, I would think so, yes.

Q. You think so? Well, do you know?

A. I believe it would.

Q. Do you know what gas sold for in the west part of the Panhandle field of Texas—the average price at which

gas sold in the western part of the Panhandle field of Texas last year?

Mr. Keffer: May I ask a question as to what you mean by that?

Mr. March: Yes, indeed. Sure.

Mr. Keffer: Now, are you taking in royalty gas which to all intents and purposes is the sale by the land holder of his portion of the gas to the producer?

Mr. March: Actual sales.

Mr. Keffer: That is an actual sale.

Mr. March: That is not an actual sale. That is an arbitrary figure set in a contract for the purpose of paying royalty.

Mr. Keffer: Now, Mr. March, there isn't a line of testimony that that is an arbitrary figure. All the testimony has been that that is a negotiated figure. Can't you please state even close to what the record shows on this and we'll get along much faster?

By Mr. March:

Q. Mr. Ford, do you know what the average market price of gas was last year established by actual sales contracts of gas at the wellhead in the western part of the Panhandle field of Texas?

A. I don't know whether I know exactly what contracts you incorporate in that.

Q. I am just—do you know—I'll say this first: You know first that you have to have a market before you can determine the price, don't you?

A. Yes.

Q. You unders and that.

A. Yes.

Q. And you have to have a supply of gas and then you have to have a demand for the gas, don't you?

A. Yes, sir.

Q. You have to have willing buyers and willing purchasers?

A. Yes.

Q. Before you can ever have a market or establish a market price, don't you?

A. Yes, sir.

Q. Otherwise you have an estimated market price which is not established by actual sales contracts.

A. Yes.

Q. Now, is this four cents you have got here in your exhibit the market price established by actual sales of gas in the Panhandle field of Texas last year at the wellhead or is it simply the negotiated value between the companies and their lessors for royalty purposes?

A. It is a result of negotiated contracts with the lessors primarily.

Q. And, therefore, it is not the actual market price fixed by actual sales contracts at the wellhead last year in the Panhandle field of Texas?

A. Yes, it is, in my opinion, considering the fair markets of buying and selling contracts over the field, that the four cents is the established value for buying and selling, even among companies selling to the willing buyers; that is, on the basis of four cents that that would be the value as of today. Of course we have exceptions. There are cases where there will be exceptions.

Q. Do you know whether any purchaser in the western part of the Panhandle field of Texas purchases more gas from independents than the Panhandle Eastern Gas Company?

A. No, I don't.

Q. I see. And that gas—that 3½ cents there is not the wellhead price. Now, where—do you know of any gas sales in the western part of the Panhandle field of Texas where the wellhead price last year—arm's length contracts—where the wellhead price was four cents?

Mr. Spencer: Mr. Examiner, you have got statements or testimony in the first part of that and you wind up with a question. I would like to have it read back or split up in some way.

Mr. March: I'll split it up any way you want it. Yes, I'll ask you this question:

Q. Do you know of any actual sales contracts—arm's length sales contracts—in the Panhandle field of Texas—

the west part of the field, negotiated last year and which the sales price at the wellhead is in excess of 3½ cents?

A. I don't know of any negotiated last year, during 1940 I know of some that were negotiated prior.

Mr. Keffer: Go ahead and tell any more you know about.

Mr. March: I'll get to that in a moment. I'll ask the questions here, Mr. Keffer.

Mr. Keffer: I know, but you limited your—

Mr. March: I'll ask another question which won't limit it. If you want to ask questions you can when I get through.

Q. Do you know of any sales and purchases of gas in the Panhandle field of Texas at the wellhead in the western part of the field last year and prior thereto at 3½ cents and over?

A. Yes, I can call to mind the Hagy, Harrington and Marsh and the Northern Natufal at four cents.

Mr. Keffer: Is what?

The Witness: Is at four cents.

Mr. Keffer: Where?

The Witness: In the western field at Carson and Gray County.

Mr. Keffer: At the well?

The Witness: At the well.

By Mr. March:

Q. At the wellhead?

A. Yes, that is considered the wellhead with one-tenth of a cent added for gathering.

Q. There are some additions for gathering purposes?

A. As I recall, that is 4 1/10 cents delivered at a given point.

Mr. Keffer: Let me ask you this, Mr. Ford: if it doesn't break it down to four cents at the wellhead.

The Witness: Yes, it does.

By Mr. March:

Q. When was that negotiated?

A. 1937 I believe.

Q. They don't have any wells in the western part of the field, do they?

A. They have quite a number.

Q. Where is their acreage?

A. In Carson and Gray counties.

Q. Eastern Carson County and Gray County?

A. I couldn't say as to their division between the two counties.

Mr. Keffer: I can't quite hear you.

The Witness: I couldn't say as to the division of their holdings between the two counties, but their acreage is located in Carson and Gray counties.

Mr. Keffer: Is all of it located in the west Panhandle field of Texas?

The Witness: That is what I consider the west Panhandle field.

Mr. Keffer: Well, the Railroad Commission considers it, too, don't they?

The Witness: Yes.

Mr. Keffer: All right.

By Mr. March:

Q. Are you familiar with the details of that contract?

A. Well, yes, to a certain extent.

Q. Have you ever read the contract?

A. Yes, sir.

Q. When did you ever read the contract—recently?

A. Fairly recently.

Q. Are you familiar with all the terms and provisions thereof?

A. I am fairly familiar with them. I don't know whether I could memorize them but I am generally familiar with the terms of the contracts.

Q. Is that the only contract you know of in which gas is sold at four cents in the Panhandle field of Texas?

A. No, sir.

Q. At the wellhead—

The Trial Examiner: You say "Panhandle field of Texas." You mean the total Panhandle field, Mr. March, or are you still on the west field?

Mr. March: I am still talking about the west field.

The Witness: What was the question?

By Mr. March:

Q. My question is if you know of any other arm's length contracts in the western part of the Panhandle field of Texas at which gas sold at the wellhead at more than 3½ cents.

A. There may be others that I can't just call to mind at the present time.

Q. Did you make a study of that thing?

A. Yes.

Q. If there were others, you would remember them, wouldn't you?

A. Well, I don't have it right to mind readily.

Q. How does Panhandle Eastern take gas from these independents compared with Northern Natural takes from Hagy, Harrington and Marsh, do you know, in volume?

A. You mean reduced down to cubic feet?

Q. Yes.

A. I don't know that. I don't know how they compare. You mean the lessors of the Panhandle Eastern compared with Hagy, Harrington and Marsh?

Mr. Spencer: No, that isn't it.

Mr. March: My question is:

Q. How do the volumes of gas taken by the Panhandle Eastern from these independents compare with the volume which is delivered to Hagy, Harrington and Marsh?

A. I don't know.

Q. Would you be willing to say positively and definitely that Hagy, Harrington and Marsh contract expressly says without any strings that the wellhead price was four cents?

A. That is my recollection from the contract that it stipulates the wellhead value at four cents.

Q. It does stipulate a wellhead price at four cents?

A. I mean price, yes, sir.

Q. Well, now, therefore, the Panhandle Eastern and Hagy, Harrington and Marsh agreements are the only ones that you can remember?

A. Well, there is an outright sale at the mouth of the well.

Q. Yes. Of course the Panhandle Eastern isn't at the mouth of the well.

A. No.

Q. It is gathered. Now, were there any—

Mr. Spencer: Now, Mr. March, you keep sticking in a little testimony. Here you say it is gathered. You don't give the witness any chance then to say whether he agrees with you that it is gathered gas or it isn't.

Mr. March: He already testified that it is gathered.

Mr. Spencer: You keep testifying all along yourself.

The Trial Examiner: He has testified to it and you waste a lot of time by repeating it.

By Mr. March:

Q. Do you know of any sales contracts for wellhead gas negotiated last year in the west part of the Panhandle field of Texas?

A. No, I don't.

Q. Do you know any negotiated the year before?

A. No, I don't recall to mind any.

Q. Do you know of any the year before that?

A. Well, these contracts that we have just been discussing were consummated along in 1937 and 1938, along in that general era.

Q. You mean the Panhandle Eastern?

A. And Northern Natural those we are speaking of.

Q. What about Panhandle Eastern?

A. With whom?

Q. With these various independents which we have enumerated.

A. Which one?

Q. Well, the Huber Oil Corrporation.

A. I don't recall just what year that was made. It was made in that general time.

Q. What about the Shamrock contract with the Panhandle Eastern?

A. I believe it was made along in 1936 or 1937.

Q. Now, so much for that type of gas.

Do you know at what price sour gas is delivered for carbon black purposes and gasoline purposes at the wellhead in the Panhandle field of Texas?

Mr. Keffer: Now, if the Examiner please, again this study is in evidence and the testimony is limited to sweet gas in the natural state at the well. Mr. Ford has not purported to testify as to the value of sour gas in any sense of the word. The term is mentioned and in his statement it is carefully limited to sweet gas.

Now, if Mr. March wants to put on some testimony as to what the value of sour gas is, all right. Certainly this is not proper cross examination of this witness.

Mr. March: He speaks of gas which is delivered to pipe lines.

Mr. Keffer: What kind of gas—sweet gas.

Mr. March: Well, I think that sour gas can be used by pipe lines for commercial purposes. He hasn't limited it to sweet gas.

The Trial Examiner: He certainly has.

Mr. March: I want to test the soundness of using sweet gas. I want to know why they only delivered sweet gas.

Mr. Keffer: The fact remains that he did.

Mr. March: I want to know why he did.

Mr. Keffer: Wait a minute. You can put on some witnesses if you want to show the price of sour gas.

Mr. March: I want to know why he limited it to sweet gas.

The Trial Examiner: He is up here testifying as to the market value of sweet gas at the Bivins compressor station which is 7 cents.

Mr March: Where do you see "sweet gas" mentioned there?

Mr. Keffer: All the way through it.

Mr. March: Yes. Now I want to ask him why he limited it to sweet gas. There it is on Page 2 there.

The Trial Examiner: It is limited to sweet gas on Page 2.

Mr. March: I want to know why he limited it to sweet gas, because I don't see any reason—

The Trial Examiner: I don't think it is important, Mr. March.

Mr. March: Then you overrule me? You sustain the objection?

The Trial Examiner: I certainly think that you ought to confine your cross examination to what the witness is endeavoring to testify to here. He is dealing with sweet gas. He is not dealing with sour gas.

Mr. March: Very well, if the Examiner sustains the objection.

Mr. Ford had nothing to do with negotiating the contract with the United States Government on May 17, 1929. (Vol. LXXXX, p. 13744.) That gas is delivered directly from the helium plant to the Amarillo Oil Company near the helium plant site a short distance from the Town of Amarillo, and that gas is also sold to the American Smelting and Refining Company. While the cost of transportation is less from the helium plant to Amarillo than the cost of gathering for Canadian, nevertheless, the condition is such that he thinks it proper to consider that gas. (Vol. LXXXX, p. 13748.)

Mr. Ford has made no study of any gathering cost figures, for, while he is in charge of the physical properties of the gathering system, costs are handled directly from Colorado Springs. (Vol. LXXXX, p. 13751.)

As to the gas sold under the contract of February 26, 1937, between the Amarillo Oil Company and the American Smelting and Refining Company (Vol. LXXXX, pp. 13751, et seq.), that gas is delivered by Canadian to the Amarillo Oil Company at the wellhead under a contract providing for periodical price changes which have approximated ¼c or 4½c at the

wellhead. Mr. Ford has no idea what it cost the Amarillo Oil Company to transport that gas to the American Smelting and Refining Company. (Vol. LXXXX, p. 1375[illegible]. In his above quoted statement Mr. Ford testified (Vol. LXXXX, p. 13680) that the price received by Amarillo Oil Company from the American Smelting and Refining Company for this gas is 6 1/2c per Mcf. on a pressure base of 14.9 pounds, or approximately 7.16c per Mcf. when converted to a 16.4-pound pressure base.

Mr. Ford did not include in his calculations the sales price by Colorado Interstate to Colorado Fuel and Iron, as he did not think it proper to go into the Colorado contracts and the various considerations that would be involved. (Vol. LXXXX, p. 13755.)

Mr. Ford used the contract of August 1, 1939, between the Amarillo Gas Company and the General Public Utilities Corporation in his study because he thought it was a good contract to use for the purpose he was intending to convey. (Vol. LXXXX, p. 13758.) He had nothing to do with negotiating that contract. The 7-cent value placed by him at the intake of the Bivins Compressor Station is not for carbon black gas nor for gasoline purposes, but for whatever purpose it could be put to for pipe line use. (Vol. LXXXX, pp. 13767-13771.) He took into consideration in arriving at the 7-cent value the two contracts mentioned in his statement quoted above and the prices specified therein and distances from the wells as compared with the gathering system going in to the Bivins Station. Mr. Ford is not familiar with the exact number of unconnected sweet gas wells in the Panhandle Field nor the number of undrilled leases in the west part of the field. (Vol. LXXXX, pp. 13773 et seq.) He understands there is some Shamrock acreage undrilled because of lack of immediate market. So far as he knows, nobody has attempted to sell gas to Canadian recently. (Vol. LXXXX, p. 13775.) In fixing his market value of 7c at the Bivins intake he made no survey to ascertain future demand upon the Panhandle Field. The 7-cent value at Bivins intake has existed for approximately a 10-year period (Vol. LXXXX, p. 13777), with little change in the wellhead price during that period. Mr. Ford has never personally bought or sold gas in the Panhandle Field. (Vol. LXXXX, p. 13780.)

On redirect examination (Vol. LXXXX, pp. 13781-13787) Mr. Ford testified, with reference to the sale of gas by Shamrock Oil and Gas Company to Panhandle Eastern at a price of 3½c per thousand cubic feet, that Shamrock Company paid its landowners on the basis of one-eighth of 4c in settling on a market value basis; that the Panhandle Eastern lines, both main and gathering, extend into the same territory as the Shamrock's leases, and deliveries are made by the Shamrock, not at any central point, but at numerous gathering and main lines of the Panhandle Eastern.

A further check shows that the Northern Natural Company, and not the Panhandle Eastern, is the largest purchaser of natural gas in the Panhandle Field.

With reference to the contract with Hagy, Harrington and Marsh for 4c at the well mentioned previously, Mr. Ford further stated that delivery is made at one central point on a gathering line of the Northern Natural and delivery is not made at the Northern Natural's compressor plant, but there is a partial gathering by Hagy, Harrington and Marsh. He also stated that under this contract Hagy, Harrington and Marsh reserved the gasoline from which they received some remuneration; that they also extract butane and propane in addition to natural gasoline. Sales are made to the Northern Natural at its compressor plant by the Phillips Petroleum Company at the price of 6c, but the Phillips Petroleum Company extracts propane and butane from that gas before it is delivered to the Northern Natural.

Mr. Ford then stated that the effect of negotiating the royalty contracts with the landowners was to buy the landowners' interests in the gas; in other words, the company is purchasing the landowners' interests. There is a large number of these landowners scattered over the field and these negotiated contracts are considerably more numerous than such a type of contract as exists with the Panhandle Eastern and the Shamrock, as every person who owns a farm or ranch that has a gas well on it, plus every person that has a mineral interest in those lands, is involved in the negotiated royalty type of transaction. (Vol. LXXXX, p. 13786.)

Mr. Ford then stated, upon refreshing his memory, that

the Panhandle Power and Light Company purchases gas in this field which is distributed in the City of Borger, Texas, and for which it pays 7c. This gas is approximately two or three miles from the source of production or the wellhead. The Panhandle Power and Light Company also sells gas at the wellhead for the Town of Dumas, Texas, for 5c.

On further cross-examination (Vol. LXXXX, pp. 13787, et seq.) Mr. Ford stated the Panhandle Power and Light Company purchases the gas referred to above at 7c from the Huber Petroleum Company, with delivery at the city gate, which is two or three miles from the wells, the Panhandle Power and Light Company being a distributing company. Mr. Ford has not seen the contract between the Panhandle Power and Light Company and the Huber Company, but has discussed it with different individuals and does not know what connection there may be between the two companies. (Vol. LXXXX, p. 13791.)

With reference to the sales by the Phillips Petroleum Company to the Northern Natural Company, Mr. Ford does not know whether that involved gas which was originally sour gas; it might or might not have been, but, if it was, the sulphur had been removed from it before delivery.

Mr. Ford was then asked to calculate the price paid by Colorado Interstate for Canadian gas (Vol. LXXXX, pp. 13797, et seq.) under its contract, and stated it to be a slight fraction over 6c. A computation based upon data contained in a letter written by Leon Fuqua, Secretary of the Federal Power Commission, to Mr. Ford was then made of the price paid by the Natural Gas Pipe Line Company of America as being 7.4c per Mcf. Mr. Ford stated he did not know whether that was the delivery price at Gray, Oklahoma. (Vol. LXXXX, p. 13799.)

In addition to the testimony of Mr. Ford on the matters abstracted in this subdivision, Mr. R. J. Wallace, as elsewhere shown in the subdivision entitled, "Present Market Value of Leases Owned by Canadian River Gas Company," testified (Vol. LII, p. 7195) that from his study of the field generally and leases and division orders on gas-producing properties he has found that 4c per thousand cubic feet is a generally adopted price for gas.

With reference to this statement Mr. Wallace, in Volume LIII, pp. 7316, et seq., again stated that in many leases he had examined he found a stipulated 4-cent royalty basis provided, and that from division orders he had seen and his general knowledge through the field he thought 4c per thousand was generally the adopted price. There are more instances where the 4-cent price is not fixed in the lease than where it is fixed in the lease. These are covered by division orders. He has never heard of a posted field price.

Reference is also here made to sheets numbered 113 and 127 of Exhibit 168 introduced by the Commission through witness Lester B. McKinstry. Those sheets show tabulations headed, "Canadian River Gas Company Gas Well Royalties," for the years ended December 31, 1939, and December 31, 1938. In tabular form as to various leases they show "Royalty Interest" and "Value Per Mcf. for Royalty Purposes."

For the year 1939, sheet 113 and its continuation on sheet 114 list 45 different leases. In four of these 45 leases the royalty is a flat 1c per Mcf. In all the other leases the royalty is a percentage. In one of these other leases the royalty is a percentage of a 3.928-cent value; in one a percentage of a 4.5-cent value, and in the remaining 39, a percentage of a 4-cent value.

For the year 1938, 61 leases are listed. Under four a 1-cent royalty is paid; under one, a percentage of 3.9136c; under ten, a percentage of 4.5c; and under the remaining 46, a percentage of 4c.

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51. Reproduction Cost New and Less Depreciation of Canadian's Portion of the Denver Line as of December 31, 1938, and as of June 30, 1940.

Supra under Title 21 reading, "Reproduction Cost New and Less Depreciation of Colorado Interstate's Portion of the Denver Line as of December 31, 1938, and as Estimated to June 30, 1940," there is abstracted the evidence on this subject as related to Colorado Interstate. Under Title 21, Exhibit 70, by Witness Rhodes, is abstracted and the methods employed by him are there set forth as to Colorado In-

terstate. As he testified and as his written statement shows, he employed the same methods in Exhibit 68 which covers Canadian's portion of the Denver Line.

The reproduction cost new and less depreciation, showing the accumulated depreciation in the several items of plant in percentage, is shown on pages 35 and 36 of Exhibit 68 (omitting from these pages, for the sake of brevity, the accumulated depreciation in dollars and the per cent condition of the property) as follows:

F. P. C. Acct. No.	Description	Reproduction Cost New	Accumulated Depreciation Percent	Reproduction Cost New Less Depreciation
	Natural Gas Production Plant (Attached to Transmission System)			
331-3	Other Production System Structures (Natural Gasoline Plant)	$ 50,143	15.0%	$ 42,622
336	Residual Refining Equipment (Natural Gasoline Plant)	267,982	27.0	195,627
	Total Natural Gas Production Plant (Attached to Transmission System)	$ 318,125		$ 238,249
	Natural Gas Transmission Plant			
351-1	Land	$ 1,460	0.0%	$ 1,460
351-2	Land Rights (Rights of Way)	35,944	0.0	35,944
352-1	Pumping Station Structures	76,336	9.0	69,466
352-2	Measuring and Regulating Station Structures	7,554	11.0	6,723
352-3	Other Transmission System Structures	16,283	19.0	13,189
353	Mains	2,133,289	7.0	1,983,979
354-1	Pumping Station Equipment	467,794	17.0	388,269
354-2	Measuring and Regulating Station Equipment	14,256	11.0	12,688
354-3	Other Transmission System Equipment	30,084	18.0	24,609
	Total Natural Gas Transmission Plant	$2,783,000		$2,536,367

F.P.C. Acct. No.	Description	Reproduction Cost New	Accumulated Depreciation Percent	Reproduction Cost New Less Depreciation
General Plant:				
370	Land and Land Rights	$ 12,562	0.0%	$ 12,562
371	Structures and Improvements	241,871	19.0	195,916
372	Office Furniture and Equip.	12,759	29.0	9,059
373	Transportation Equipment	37,399	38.0	23,187
374	Stores Equipment	447	25.0	335
376	Laboratory Equipment	4,336	11.0	3,859
377	Tools and Work Equipment	6,317	24.0	4,801
378	Communication Equipment	91,898	16.0	77,194
	Total General Plant	$ 407,589		$ 326,913
Total of Above		$3,508,714		$3,101,529
Undistributed Construction Costs		648,481		610,853
Working Capital		60,000		60,000
Total Natural Gas Production (Attached to Transmission System), Transmission and General Plants (Exclusive of Going Concern Costs or Value)		$4,217,195		$3,772,382

Exhibit 71 brings Exhibit 68 down to June 30, 1940, without any change in the per cent accumulated depreciation. It merely shows the additions and retirements from January 1, 1939, to June 30, 1940, and reproduction cost new, including working capital, as of that date, is shown as $4,501,969, and reproduction cost new less depreciation, $4,016,523.

Exhibit 71, Statement 1, further shows an allocation of general property of Canadian to the Denver Pipe Line, with the result that the reproduction cost new, and reproduction cost new less depreciation, as of June 30, 1940, is as follows:

Item No.	Description	Reproduction Cost New	Reproduction Cost New Less Depreciation
	Natural Gas Production Plant (Attached to Transmission System):		
7	Natural Gasoline Plant	$ 319,306	$ 239,111
8	Natural Gas Transmission Plant	3,007,604	2,726,348
9	General Plant (Allocated to the Denver Pipe Line)	318,034	259,134
10	Total	$3,644,944	$3,224,593
11	Undistributed Construction Costs	673,659	634,814
12	Working Capital	60,000	60,000
13	Total Natural Gasoline Plant, Transmission Plant and General Plant (allocated to the Denver Line)	$4,378,603	$3,919,407

Also supra under Title 21 are set forth Exhibits 231, 231-A, and 231-B by Commission's Witness Hill, as to the transmission line properties of both Colorado Interstate Gas Company and Canadian River Gas Company. Also under said subdivision there is abstracted the testimony of Tamblyn, a witness introduced by the City and County of Denver, as related generally to the structures of both companies. The cost of certain structures at Bivins Station, as estimated by Tamblyn (Exhibit 232), is $278,806, as compared with $355,403, as shown in Exhibit 68 by Rhodes. Exhibit 232 is also set forth in Title 21 supra.

52. Equivalent Original Cost of Canadian's Production and Gathering Facilities at December 31, 1936, to 1947, Inclusive, for all Gas Except Colorado Interstate's Direct Sale Gas.

For Canadian there was introduced and received in evidence (Vol. LXV, p. 9348) through the witness, Lusk, Exhibit 193 entitled, "Canadian River Gas Company Equivalent Original Cost of Production and Gathering Facilities for Resale Gas Alone at December 31, 1936 to 1947, Inclusive." This exhibit is prefaced by Mr. Lusk's written statement

appearing in the record in Volume LXV, pp. 9308, et seq. From Mr. Lusk's written statement and his examination in connection with this exhibit (Vol. LXV, pp. 9307-9348) it is shown that this exhibit is based upon Exhibits numbered 183 and 184, heretofore abstracted covering the original cost of the producing and gathering facilities at December 31, 1928 to 1939, inclusive, and the original cost of the production and gathering facilities extended through 1947 and upon Mr. Watson's Exhibit No. 121 and his testimony with reference thereto in which is described the producing and gathering facilities needed, 1928 to 1947, inclusive, based upon deliveries at Clayton, New Mexico, to Colorado Interstate for resale gas alone.

This Exhibit 193 shows the equivalent original cost of the production and gathering facilities of Canadian for all of its markets excluding only direct sales by Colorado Interstate on the Denver line. (Vol. LXV, pp. 9345, 9346.)

This equivalent cost at December 31, 1947 shown in detail in the three statements composing Exhibit 193 is summarized as follows: (Vol. LXV, p. 9309)

Original cost of facilities needed for all gas as December 31, 1947 per Exhibit No. 184		$12,030,145
Less deductions for facilities not required for resale gas alone:		
Gas well construction	$156,100	
Field measuring stations	5,250	
Gathering system	48,650	
Undistributed general construction costs:		
Production system	7,751	
Gathering system	984	
Total deductions		$ 218,735
Equivalent original cost of production and gathering facilities for resale gas alone at December 31, 1947		$11,811,410

In the course of his cross-examination MR. WATSON testified concerning Exhibit 121 as follows: (Vol. XXX, Official Transcript, pp. 4119-4127.)

Q. Mr. Watson, as I take it from this statement from its description on the cover, the entire basis of it is applicable to gas sold by the company for resale only?

A. For resale only as applied to the Denver line, as I understand the figures submitted in the various exhibits referred to.

Q. Well, what do you limit this exhibit to, if for anything else than just gas for resale on the Denver line?

A. As far as my estimates were concerned, it is reduced deliveries on the Denver line and it is a survey as to what would be required—what would have been required or will be required under the reduced volumes which were submitted to me as a figure.

Q. Confining all of your assumptions to resale only?

A. Confining my figures to the exhibits as presented to me in Mef.

Q. In other words, that, of course, differs from what is actually taking place; there is gas sold to main line industrial accounts for resale?

A. There is a different volume sold actually in previous years than what is included in these exhibits to which we refer.

Q. And both in the past as well as the present time? There are large sales of gas sold to straight line industrials on the company's system that are not taken into consideration in this study?

A. As I understand that is what the exhibits state.

Q. What is the number of that exhibit?

Mr. Keffer: 121.

The Trial Examiner: Mr. Watson's exhibit, you mean?

Mr. Lange: Yes.

The Trial Examiner: Exhibit 121, Mr. Lange.

By Mr. Lange:

Q. And that is also applicable to the Chicago line, isn't it? That is, that that line does not confine itself to resale gas alone?

A. I don't know.

Mr. Keffer: May I interpose just there, Mr. Lange? If you will note, Mr. Lange, this exhibit includes all of the Chicago deliveries, all of the Amarillo Oil Company, all deliveries to all market outlets regardless of the type of gas, and except only as to Colorado Interstate it is limited there to resale only as delivered at Clayton. Does that—

Mr. Lange: Yes.

Mr. Keffer: I thought maybe you misunderstood.

Mr. Lange: Very well.

Q. Then the first page of your exhibit; that is, the first part of the written statement, Page 1; now, these annual volumes of sales and peak month deliveries and peak day obligations, where are these figures from?

The Trial Examiner: That is on Page 2, Mr. Lange.

Mr. Keffer: He has explained that, yes.

Mr. Lange: It begins on Page 1, an un-numbered page.

The Trial Examiner: But he advises you the source of that table on Page 2.

Mr. Lange: Oh, yes, I see it now.

The Witness: The source of each of these volumes is indicated on Page 2 and 3.

By Mr. Lange:

Q. Now, on Page 3 of your Exhibit 121 you state this: "Aside from the above stated deliveries of gas to be made at Clayton, New Mexico for Colorado Interstate Gas Company, which includes only resale gas, all other production and sales requirements and peak month obligations of Canadian River Gas Company for the purposes of this statement have been taken exactly as they appear in Exhibit No. 78 and Exhibit No. 79 * * * and as shown in Exhibit No. 80 * * *

"The conclusions stated hereinafter with respect to changes in required producing and gathering facilities which would result from the production of deliveries at Clayton, are also based upon information and data regarding the

company's producing and gathering facilities set forth in Exhibit No. 89, and Exhibit No. 94 * * * "

What do you mean with respect to "changes required in producing and gathering facilities" there? What changes do you have in mind?

A. There would be less gathering line. If I deferred drilling a well I would defer building the gathering line.

Q. Is that the change you have in mind that is contemplated there?

A. We would defer drilling certain wells and their gathering line and gathering facilites.

Q. All right. What factors did you take into consideration in determining that? For instance, what consideration did you give the reductions in pressures, if any, of the wells?

A. I took the same pressure—rock pressure decline that I had assumed in Exhibit No. 94.

Q. And what consideration did you give the fact as to the actual industrial straight line sales withdrawal?

A. I merely used the reduced volume in estimating my drilling requirements and gathering requirements in the figure which was presented to me in these exhibits.

Q. Well, what consideration did you give your volume of industrial sales?

A. That is not included in my figures. It is merely a reduced total production which I was asked to supply.

Mr. Keffer: Right there, Mr. Lange, you said "what consideration did you give industrials?" Are you referring to the Colorado Interstate Gas Company only?

Mr. Lange: First the Colorado Interstate Gas Company and then all of the industrial sales.

Mr. Brock: That are not resale?

Mr. Lange: That are not resale. I have reference to main line industrial sales.

The Witness: As far as Canadian River Gas Company is concerned, it made no difference to me where it was going.

By Mr. Lange:

Q. What percentage of the total sales were for direct main line industrials on the Colorado Interstate?

A. I did not figure that. Here is all that my figures are based on: My estimates are based on—my estimate is a reduced production requirement. As far as Canadian River's estimates are concerned, it made no difference whether that was industrial sales, main line sales or gas leakage, or whatever it might be—I merely had to supply a certain volume of production and these estimates of the required producing gas wells and other facilities to supply this estimated market are shown in these various exhibits.

Q. Then you took no account whatsoever as to the demand on the system for the direct main line industrial sales?

A. Not in Exhibit No. 121 unless some of the figures in these exhibits included it, which I understand do not, but my figure is merely supplying a reduced volume of gas over what I had in Exhibit No. 94.

Mr. Keffer: May I ask a question?

Mr. Lange: Yes.

Mr. Keffer: I believe you may be talking about different things. I think a question or two would clarify the point.

In respect to all other market outlets other than Colorado Interstate Gas Company you did take into account the whole volume that was delivered to those market outlets, did you not, Mr. Watson?

The Witness: Certainly, because the exhibit to which I referred took all of them into it.

Mr. Keffer: If those market outlets, such as Natural Gas Pipeline Company and Amarillo Oil Company, and such others as you might have, sold industrial gas or sold gas directly from the pipe line, then your computation necessarily took industrial gas on those outlets into account, did it not?

The Witness: Whatever was shown as being produced for those various markets was included.

Mr. Keffer: Does that clarify it?

Mr. Lange: That is part of it.

Q. I want to know with reference to production of gas, what effect on this Exhibit No. 121 does the production of

gas in the field and deliveries from wells to main line industrials have?

A. I have not mentioned main line industrials. This is merely a reduced obligation—

Q. Are there any main line industrials in the field?

A. Are there—

Q. Are there any wells that deliver to main line industrials?

A. What do you refer to as "main line industrials"?

Q. The American Smelting & Refining Company.

A. I know nothing about the Amarillo Oil Company's market.

Q. You don't know about it?

A. No.

Q. Is that a main direct line customer or a resale customer?

A. I know nothing about the distribution of Amarillo Oil Company's requirements at all.

Q. How have you construed a main line industrial as between an industrial for resale?

A. I explain again that I don't know what becomes of the gas after being produced. It might go to industrials for all I know.

Q. You have attempted here to limit yourself to what you consider exclusive main line resales—

Mr. Keffer: On the Colorado Interstate only.

Mr. Lange: That is right, exclusive resales.

The Witness: I presumed from reading our exhibit here it excludes other than resale gas. I have nothing to do with determining those figures as to whether it is industrial, resale or compressor fuel, or what. I was merely to supply this production.

By Mr. Lange:

Q. Then you don't attempt to make any assumption with reference to what is the status of an industrial as to whether it is a resale industrial or a main line industrial?

A. As I understand it, the Canadian River Gas Company is not interested in what disposition is made of the gas which they produce.

* * * * *

On cross-examination Mr. Watson further testified: (Vol. XXX, Official Transcript, pp. 4139-4141.)

Q. Now, the A-26, Bivins?

A. That was the exploratory well.

Q. Oh, yes, that was the dry hole. That is not a producing well?

A. No.

Q. You say that is the exploratory well on the Amarillo lease?

A. No, sir.

Q. What well is that?

A. Bivins A-26 was located in the first exploratory block that was drilled.

Q. I see, that is below the staggered line, the staggered black line on Exhibit No. 95?

A. Yes, sir.

Q. That was drilled in 1939?

The Trial Examiner: I think the answer Mr. Watson gave you might be confusing in the record. As I recall it, you asked him the number of the well that was drilled on the Amarillo lease. Was that the Bivins?

The Witness: No, it was not drilled on the Amarillo lease.

The Trial Examiner: That is what I thought.

By Mr. Lange:

Q. This was a dry hole drilled on the Bivins lease?

A. The Bivins lease, yes, sir.

Q. And you say that would also have been drilled in 1939 in face of this new program?

A. According to lease requirements it would have been drilled in 1939.

Q. That is under the Bivins consolidated?

A. Yes, sir.

Q. And that is one of those driling blocks that could either be drilled or released?

A. I believe that is correct—it was not released, however, as it was drilled.

Q. But it was the option of the company to have released it if it so desired.

A. I wouldn't be sure of that first well.

Q. Is this the first one under that?
A. Under the Bivins consolidated lease?
Q. Yes.
A. Yes, sir.

• • • • •

Mr. Watson further testified as follows: (Vol. XXX, Official Transcript, p. 4145)

Q. The next one is Amarillo No. 1.
A. Amarillo No. 1 is after Killgore A-3 on my list.
Q. Is that the well drilled, resulting in a dry hole?
A. Yes, that was the Amarillo test.
Q. That was the well that was drilled on the lease executed by the City of Amarillo to the Amarillo Oil Company concerning which we inquired about some days ago?
A. Yes, sir.
Q. This is the photostatic copy of that lease, the agreement under which the well was drilled?
A. Yes, sir. That's what our Land Department gave me as the basic lease under that city of Amarillo, Texas. It is recorded here as Amarillo No. 1.

The Trial Examiner: Do you wish that marked as an exhibit for identification, Mr. Lange?

Mr. Lange: Yes.

The Trial Examiner: It will be marked as Exhibit No. 122, for identification.

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Mr. Watson further testified as follows: (Vol. XXX, pp. 4156-4159.)

Q. Now, Mr. Watson, the company proceeded wtih the drilling and actually completed the drilling of that Amarillo No. 1, didn't they?
A. Yes, sir.
Q. And what was the approximate total cost of that well?
A. Approximately $49,000.
Q. Approximately $49,000?
A. Yes.
Q. And just so that it ties right in at that point—it may be in the record heretofore—what was the approximate time that that well was completed? what month and year?

A. Early in 1940.

Q. Early in 1940. Do you recall the month?

A. No. I can find that in the record here somewhere. The City of Amarillo No. 1, completed June 17, 1940.

Q. Completed June 17, 1940?

A. Yes, sir.

Q. Now, then, if that well had been brought in as a producing gas well—strike that.

Are there any producing gas wells right in that locality on any of that acreage in that locality?

A. The Helium structure produces about ten miles northwest of that location.

Q. Not any gas producing well is in existence on any of the yellow Bivins blocks on this map, Exhibit No. 95, is there?

A. No, sir.

Q. And you stated that the company had not heretofore drilled any of those blocks on the Bivins acreage?

A. Oh, yes.

Q. Contiguous to the acreage on which this Amarillo No. 1 was drilled?

A. That block to which you are referring on that Bivins consolidated lease—

Q. Yes.

A. —is not all contiguous to that City of Amarillo test. That block is spread out all over Potter County.

Q. But the block itself, all of which is contiguous to one block of Bivins acreage—

A. Some of the acreage is contiguous to the City of Amarillo test but not all of it.

Q. That's right, but not on any one of those sections in that yellow acreage designated on the map, Exhibit No. 95, contiguous to or adjoining the acreage on which Amarillo No. 1 was drilled has heretofore been drilled by Canadian River Gas Company?

A. No. There are only two thousand acres of that block contiguous. The other eight thousand acres is somewhere else.

Q. I see, but I want to get definitely fixed that there is no well drilled by Canadian River Gas Company as a test on any of this Bivins acreage contiguous to Amarillo—

The Trial Examiner: What is that section number, Mr. Lange?

Mr. Lange: Section 190.

Q. Now, then, if this well Amarillo No. 1 had been brought in as a producing gas well, where would delivery of that gas have been made?

A. Probably would have been made on the Amarillo Oil Company lines supplying Amarillo with gas, if there had been a gas well.

Q. If it had been an oil well, according to this Exhibit 123, the Amarillo Oil Company having retained the oil rights, what would have happened to the well?

A. I don't know. I suppose the Amarillo Oil Company would have had an oil well.

MR. WATSON further testified: (Vol. XXI, pp. 2998-3000.)

Q. Now, then, this block of acreage of 10,102.70 acres was released by the company in the exercise of its option under the Bivins lease not to drill that well, but, rather, to release this acreage and eliminate it from the lease?

A. According to that instrument, that is correct.

Q. So, under that the company would not have to—strike that.

In view of this release, the company did not have to drill that well and spend the amount of money that you had indicated as a minimum amounting to $30,000 per well that would have to be spent for the drilling of that well?

A. According to that instrument, that is correct,

Q. The only other well they drilled under these exploratory provisions resulted in a dry hole?

A. That is correct.

Q. Now, then, as I understand it, the company has the privilege under the Bivins Consolidated lease to release a similar block of acreage each year rather than drill and expend that amount of money in a minimum of at least $30,000? They could do that, couldn't they?

A. (Pause.)

Q. They could release the acreage rather than spend the money for the drilling of the well, couldn't they?

A. I believe that instrument states that.

Q. And if that is correct, the provision of the lease provided that that could be done with reference to these remaining four wells that you included in your drilling program, couldn't it?

A. Not according to that instrument. That covers only one 10,000-acre block.

Q. It covers only one 10,000-acre block?

A. Yes.

Q. But the company could proceed in like fashion for each of those four years if they desired?

A. I do not know whether that is right or not.

Q. You don't know?

A. No.

Q. You wouldn't say they could not do it?

A. No.

Q. It depends upon how long the lease reads?

A. That is right.

Q. You do know they did it in this one instance?

A. Yes, sir.

Q. And if they had the privilege to do it under the lease in this one instance and would exercise such an option each year, it would obviate the drilling of four wells out of their 1941 well program?

A. It would eliminate the exploratory wells.

Q. Yes, or a total minimum cost estimated by you as $120,000, being $30,000 per well?

A. That is correct.

* * * * *

MR. WATSON further testified as follows: (Vol. XXI, pp. 3044-3046.)

Q. Which lines of these wells do supply gas to the Chicago line or Denver line or both?

A. We didn't segregate our market. Our system is interconnected to where I am drilling for all market outlets.

Q. Your system is inter-connected to all market outlets?

A. Yes.

Q. If these particular wells happen to be in some certain area the gas will flow through the gathering line and through the main line at certain times deliverable only to the Denver line or only to the Chicago line: isn't that true?

A. Any delivery to one line would relieve a load to some other line. The system is inter-connected. Any well in that way is drilled for all markets.

Q. Regardless of where that well is located on the gathering line?

A. Yes, because they are all inter-connected.

Q. Your gas can be diverted to either the Chicago line or the Denver line?

A. If you put a well on the system which definitely has to go to Denver you have relieved a well on the Chicago system which goes to Chicago or Amarillo.

Q. According to Mr. Hendee's estimate, upon which you relied, there is quite a larger percentage of gas that is estimated to go to the Chicago line than to the Denver line as the years go on; isn't that true?

A. It is whatever the exhibit shows, yes. In the future years, according to Exhibit No. 80 by Mr. Hendee, there is to be more gas delivered at Gray, Oklahoma, than there is to be for the Denver line; at least after 1944.

Q. Therefore most of the wells will have to be drilled to take care of that particular increase?

A. They will be drilled in an area removed from the Chicago connection.

Q. But they are to supply that particular Chicago increase?

A. Yes. My figures are based on total market without any regard as far as the drilling program is concerned as to where the gas is going.

Q. Without any regard as to the ultimate destination?

A. Yes, sir.

Canadian's WITNESS WALLACE testified as follows: (Vol. LII, pp. 7269-7275.)

By Mr. Lange:

Q. There is no producing gas well that has ever been drilled on what you classified under "C" in the Bivins lease?

A. No.

Q. Do you know the provisions of the Bivins Consolidated lease and what has to be done by the lessee in connection with that lease?

A. Yes, they are to drill or cancel.

Q. To drill or cancel?

A. Yes.

Q. There is no definite obligation for them to drill if they desire to exercise an option to cancel?

A. No.

Q. In any year they so desire they can cancel that particular drilling block or that block of acreage by so notifying the lessor?

A. That is correct.

Q. Without drilling and without any obligation?

A. That is right.

Q. And without any way affecting the remainder of the leasehold?

A. That is right.

Q. Then you still believe that in the light of the history of that particular acreage that you classified as "C" under Bivins, what has happened to it is it is still worth $1 an acre?

A. Yes, I do, because it covers such a large acreage and there are so many unknown quantities. It may be possible a pool may be discovered where that acreage is located.

Mr. Keffer: Could I interpose a question there, Mr. Lange?

Mr. Lange: Yes

Mr. Keffer: Would you come to the map which is marked as Exhibit No. 95 and look in Section 37 in G-M Block 5 Potter County, and tell me what you find there on the Commission's map?

The Witness: A gas well is marked there.

Mr. Keffer: What is the size of that gas well?

The Witness: It came in originally purported to be 7,000,000 cubic feet. I don't know what it is at this time

Mr. Keffer: What is marked on the map?

The Witness: 7,000,000.

Mr. Keffer: 7,000,000?

The Witness: Yes.

Mr. Keffer: Is that well south of the fault line?

The Witness: It is south of the fault line and it is a very deep well.

Mr. Keffer: How far is it from a substantial portion of this "C" acreage that is contained in the Bivins Consolidated lease?

The Witness: Approximately a mile and a half or a mile and three-quarters.

By Mr. Lange:

Q. Whose well is that? Who owns that well?

A. It is purportedly owned by the Humble. I do not know the ownership of it just now. It may still belong to Humble.

Q. Going back to this 190 acres immediately north of the city of Amarillo, do you know anything about the well that was drilled by Canadian River on an acreage adjoining that?

A. Yes, I observed the drilling of that well from practically top to bottom.

Q. You did?

A. Yes.

Q. That was a dry hole?

A. Yes, sir.

Q. And what other drilling operations took place on that particular acreage?

A. On that particular lease?

Q. Yes.

A. There was an old well drilled about 2,000 feet deep, as reported on that map, that seems to correspond with the place on the map where I have indicated there. I think it was drilled by the City of Amarillo. It was a dry hole. It was only drilled 2,000 feet deep.

Q. When was it drilled?

A. I don't have the history of it.

Q. Was it drilled prior to the other well?

A. It was drilled prior to the well of the Canadian River.

Q. How far is that acreage from the nearest producing gas well?

A. This map—if this map was marked up to date—I don't believe it is—indicates it is about seven or eight miles from the helium gas field that is controlled by the United States Government.

Q. Is there any producing gas well closer than that?

A. Not unless that map is not accurate. I don't believe we have marked our map accurately, at least, I have not on the helium pool. I would have to check it. There are more wells in on the helium pool than I see on that map, but I don't know the location. I will say they are not close to that acreage as they are several miles removed.

Q. Now, the Bivins Consolidated lease aside from this acreage that is below the fault line, covers acreage above the fault line that is in the producing area, doesn't it?

A. Yes.

Q. And as you stated, this group of acreages that are covered by the Bivins lease below the fault line are subject to the company releasing them if they don't drill or pay delay rentals?

A. Yes.

Q. And you have given that acreage a value of $1 an acre?

A. Yes.

The Trial Examiner: You said something about there being a carrying charge, Mr. Wallace. What do you mean by that?

The Witness: That is a term we use in our industry. We quite often have leases that we don't consider of very much value but yet there is a remote possibility, particularly if they are scattered over large areas where there are deeper sands or something that they might come in; but yet at the present time, there is nothing to indicate any lease value; for the fact that they are part of one large lease or within or are checker-boarded, we usually call it a carrying charge or a carrying value of a dollar an acre. It doesn't represent the commodity. The oil and gas rights might be worth more, but it might cost more than that to secure a lease from a landowner so we call that a carrying charge in oil field terms.

By Mr. Lange:

Q When you speak of a carrying charge, that is not to be in any way related to what you term market value?

A. Yes, it goes into the market value with a lease of 313,588.38 acres and having 64,000 of it that is not determined as proven acreage and not in the generally accepted proven acreage. I believe that all Class C acreage probably would sell. The 64,000 acres covers such an enormous area as it does there might be a possibility of some pools coming in.

Q. Let's take the Class C acreage standing alone, what about that?

A. That 64,000 acres amounting to $64,000, I believe there is enough evidence—the well we spoke of I presume is the Humble which will give you some encouragement—

Mr. Keffer: Just a correction there. The Humble at one time owned that but has been sold to the Government. It serves as part of their helium reserve.

The Witness: I don't know what disposition was made of it. Another factor is that some of the dry holes that have been drilled in there have had some small showing of gas.

By Mr. Lange:

Q. You still value them at $1 an acre?

A. Yes.

Q. Do you think it is good operating management for Canadian River Gas Company to just release a whole block of 60,000 acres like that because they don't want to drill on it?

A. Yes, I think with the enormous proven acreage they have I would release it.

Q. You would just let that go and charge it off?

A. I would.

Mr. Keffer: I didn't get your answer.

The Witness: I said, yes, with a proven—with a large proven acreage I think I would personally consider the lease practically of the same value and accept $64,000 as it is.

Canadian's WITNESS, J. D. THOMPSON, JR., testified as follows: (Vol. LXXVI, pp. 11168-11170.)

Q. Did you recommend the dry hole drilled down here by the city limits of Amarillo?

A. Yes.

Q. I notice Canadian River has some acreage there. Did you think possibly that there was gas there?

A. Yes.

Q. You wouldn't recommend the drilling of a dry hole if you knew there wasn't any gas there, or had good reason to believe there wasn't any gas there, would you?

A. No. You drill a great many dry holes in exploratory work. That's how oil and gas fields are found is just to hop out in the middle of an undrilled area and see what you get, and the use of geology and geophysics merely reduces the hazard a little bit.

Q. Now, so much for that end of the field south of the Potter County fault line.

Mr. Keffer: I wonder if I could ask a question on the Amarillo well?

Mr. March: Why, certainly. Go ahead.

Mr. Keffer: Do you know whether or not, Mr. Thompson, that well showed both oil and gas?

The Witness: Yes, they had a show of oil and a show of gas, and it showed a favorable structure situation, just about as had been anticipated from our work, but where these shows occurred the porosity was so limited—I don't suppose there was more than six inches of formation that showed any porosity at all and that was very low porosity.

MR. THOMPSON further testified with respect to the exploratory drilling blocks contained in the Bivins Consolidated Lease as follows: (Vol. LXXVI, pp. 11162,11166.)

Q. I have one other question here about your marginal area. I notice Canadian River's acreage extends way down outside the bounds of the field, the southern boundary of the field. Do you consider all that acreage worthless?

Mr. Keffer: To which acreage are you referring?

Mr. March: The acreage of the Canadian River Gas Company below the southern boundary of the field.

The Witness: No.

By Mr. March:

Q. What do you mean by saying it is not worthless if it is outside the boundary of the field?

A. In my opinion it has oil and gas possibilities, although it is not proven.

Q. It borders on the Potter County fault, doesn't it?

A. Yes.

Q. I thought you said as you got to the edge of the fault your pay played out.

A. I did say that and I meant it, but here is the situation: Below the Potter County fault line we have the situation down here in Block 6, D S & F Survey, north of the town of Gentry, Potter County. They have developed a gas field which contains natural gas with a considerable per cent of helium in it which is now owned and operated by the United States Government.

I would say local structural high which has trapped a large quantity of gas—

Q. You are talking about the helium dome?

A. That is right, the helium dome.

Q. That is about how many miles from the edge of the field?

A. The productive part of the helium dome is approximately 11 miles from the border of the field, however, in Section 37, Block 5, G. & M. Survey, Potter County, a well was drilled which originally had a good flow of gas but was junked or abandoned, which extends that field up to within 5½ miles of the Potter County fault line.

I noticed—

Q. Mr. Thompson—

Mr. Spencer: Mr. March, he hadn't finished his answer to your question as to why this particular area had a possibility of oil and/or gas production, although not proven.

The Witness: I know from the structural situation in that area—I know that the helium dome, as they call it, and the

well in Section 37 that I have just described are both situated on an anti clinal fold—or a single anti clinal fold. The fold has two local highs on it, two local domes. The one in the helium dome field itself is larger than the one around the well in Section 37, but they are both situated on the same anti clinal structure which has an axis running from southwest to northeast approximately at right angles to the Potter County fault line.

Now, it has been quite a problem to me to try to evaluate the oil and gas possibilities of the Canadian River acreage below that fault line. I have spent a lot of time considering it and there have been surface geological surveys made in areas where we have outcrops that permit that and certain areas have shown favorable conditions from the standpoint of surface geology.

I have also taken into consideration the favorable indications from the standpoint of subsurface geology such as this anti clinal structure that I have already described, and then there has also been made a magnetometer survey which indicates certain favorable areas and that has been further checked by a torsion balance survey which indicates favorable areas and in several instances these favorable indications by these various methods coincide in a given area and that makes me very reluctant to dispose of that acreage until we have had test wells drilled, and even though the results of one test well on one particular area might turn out to be a dry hole, it might develop information which would cause me to make—or recommend a location in that immediate area not far from the dry hole.

I think that is all, Mr. March.

On cross-examination MR. LUSK testified: (Vol. LXV, pp. 9311-9313.)

Q. Your Exhibit 183 and 184 are intended to cover the entire operation of Canadian River Gas Company, aren't they?

A. Yes, sir. One is the original cost of the—

Q. I mean the entire property of the Canadian River Gas Company, whereas your Exhibit No. 193 attempts to limit

what you term original cost of production and gathering facilities of Canadian River Gas Company for resale gas alone.

A. Exhibit 193 limits the facilities of the Canadian River Gas Company to resale gas only.

Q. Now, I think in connection with Exhibit 183 and Exhibit 184 you stated that those—strike "those"—that the term "original cost" as applied by you on those exhibits was in fact utilizing the book cost as the company set up these items with whatever adjustments had been made?

A. I think I stated that these were the actual cash payments made by the Canadian River Gas Company.

Q. As reflected on the company's books?

A. That is correct.

Q. With whatever adjustments that may have been made?

A. That is right.

Q. In connection with Exhibit No. 193 you added the words "equivalent original cost, production and gathering facilities for resale gas alone." Just exactly what do you contemplate by the word "equivalent"?

A That term was used in the case of Canadian River Gas Company and the Colorado Interstate Gas Company in connection with the transmission line from the Bivins suction to Clayton Junction.

The term "equivalent original cost" was used. It is taking the original book cost from 1936 in this Exhibit No. 193 and then applying Mr. Watson's estimate as described by him in Exhibit 94 and Exhibit 121 and carying it through, and that is the reason for the term "equivalent original cost."

Q. So when you use that portion of the phrase in the sentence "original cost" of those properties, you are using that phrase "original cost" in the same sense that you used it in connection with Exhibit 183 and 184?

A. That is correct, yes, sir.

Q. And your don't in the use of that term subscribe to the use of it in the Commission's Uniform System of Accounts for natural gas companies?

A. If the term "equivalent original cost" was used?

Q. Original cost.

A. No, sir, these are original costs to the Canadian River Gas Company.

Q. As you define the term in your own mind?

A. That is correct.

Q. Turning again to your Statement 1 of Exhibit 193, where you have entitled it "Equivalent Original Cost of Production and Gathering Facilities for Resale Gas Alone, at December 31, 1936 to 1947, Inclusive," what resale gas do you contemplate there?

A. That is all covered in exhibits that have been previously submitted by Mr. Beardsley, Mr. Hendee, and the facilities which were covered in Mr. Watson's Exhibit No. 121.

Q. What I want to particularly know is whether that confines itself to the resale gas on the Denver line.

A. Yes, sir.

MR. LUSK further testified. (Vol. LXV, pp. 9318-9323.)

Q. Now, then, going back again to the production system properties on Statement 1, that first item, Account 205, Leaseholds, that is the total item in that account for each of the years 1936 through 1939, and the 1939 figure is projected all the way through 1947, isn't that correct?

A. That is correct.

Q. This total of $5,305,263 is the figure as per books under Item 205, Leaseholds, isn't it?

A. That is correct.

Q. That embraces all leasehold properties for Canadian River Gas Company in all of its operation, doesn't it?

A. It embraces—

Q. It is utilized in all its operations?

A. That is the book cost and actual payment made by Canadian River Gas Company as of that date. That is the December 31, 1936 balance.

Q. You stated a while ago that this exhibit confines solely to resale gas on the Denver line alone, didn't you?

A. That is right.

Q. Where is the resale gas that is going to Chicago to come from? From what leaseholds will it come?

A. In accordance with Mr. Watson's Exhibit No. 121 he does not make any distinction or he could not say—he does say, rather, that the only material change that would be made for resale gas would be the deferring of certain well drilling and the elimination of other well drilling.

Q. That is true, that comes in Account 212 later, but what I wanted particularly to know at this time from an

accounting standpoint was from what leaseholds this resale gas that goes to the line is going to be taken from since these leaseholds that are set up here in dollars include the whole of the company's leasehold account?

A. This includes the entire leasehold account of the Canadian River Gas Company, that is true, and I understood Mr. Watson's exhibit 121 would require all of these leaseholds for the production of resale gas alone for delivery to the Colorado Interstate Gas Company at Clayton.

Mr. Spencer: Mr. Lusk—this record is getting bad I am afraid—what we are talking about is all of the markets of the Canadian River Gas Company, all of the production, but only one change to eliminate the direct sale of gas on the Denver line. Isn't that correct?

The Witness: We are eliminating the direct sale on the Denver line alone, that is correct.

Mr. Spencer: But outside of that there is no change in any of the production requirements of any other markets the Canadian River Gas Company has?

The Witness: That is right. That is brought out by Mr. Watson's exhibit.

By Mr. Lange:

Q. Yes, Mr. Lusk. You are assigning the cost of the entire leaseholds to this resale gas on the Denver line alone?

A. That is what I am doing, yes, sir.

Q. I want to know what portion of the cost of the leaseholds is assignable to the resale gas that won't be delivered over the Denver line.

A. Well, for the resale gas sold other than the Denver line, I don't know as I could make an allocation.

Q. You don't know that you could make an allocation?

A. No, sir.

Q. You recognize the fact, though, that resale gas that doesn't come off the Denver line would be taken off of those leaseholds?

A. I recognize that.

Q. What cost would you assign to that particular gas under leaseholds?

A. That is one of our problems. That is still a problem, that allocation factor.

Mr. Spencer: For the purposes of this study you have made no assignments or allocation whatsoever?

The Witness: That is correct.

Mr. Spencer: There is no elimination except direct sale gas on the Denver line?

The Witness: There is no elimination except direct sale gas.

By Mr. Lange:

Q. You have treated cost of these leaseholds in your Statement 1, Exhibit 193, both the actual 1936 through 1939 and then the projection through 1947 as embracing the entire cost of those leaseholds?

A. That is correct, yes, sir.

Q. And you are attributing that entire cost to the facilities for the production and gathering of gas for resale on the Denver line alone?

A. That is right.

Q. In that respect, then, you are in fact allocating all of it for that particular purpose alone?

A. In this statement here the only item that I eliminated is the direct sale gas.

Q. So it in effect resolves itself in that amount to gas sales on the Denver line as far as leaseholds are concerned?

A. As far as leaseholds are concerned.

Q. As a matter of fact it could—strike that.

This exhibit intends to confine itself to resale gas on the Denver line alone but as a matter of fact the company does have sales of resale gas that have their destination in the Chicago market?

A. I think that is correct, yes, sir.

Q. You give no consideration to that factor in this Exhibit No. 193?

A. No, sir.

Q. You give no consideration—strike that.

When you attribute this entire leasehold cost set forth in Statement 1 of this exhibit to the resale gas for the Denver line alone you are not giving any consideration to the fact that the gas sold by Canadian River Gas Company for all other uses—strike out "other uses"—for direct sales

both on the Denver line as well as on the Chicago line are taken from these same leaseholds?

A. All of the gas, no matter where its ultimate destination is, was taken from the leaseholds, yes, sir.

Q. So in following your classification here you are basing it entirely on Mr. Watson's Exhibit No. 121?

A. Yes, sir.

Q. And you are not applying any judgment figure of your own?

A. None whatever.

Q. Purely as an accounting problem, or, rather, as an accounting matter, wouldn't you ordinarily attribute the proportionate part of these leasehold costs to direct sales made for the Chicago market as well as direct sales made on the Denver line? Wouldn't they be attributable to those leasehold costs?

A. I don't think there is any doubt about some proportion of it, but what the proportion is, I don't know, as I haven't attempted to allocate it.

Q. There has been no attempt made to do that in this exhibit?

A. No, sir.

Q. Nor to provide for it?

A. No, sir.

Mr. Spencer: You don't mean to say you wouldn't know later after you give it further study, Mr. Lusk?

The Witness: That is still one of my problems.

MR. LUSK further testified as follows: (Vol. LXV, pp. 9329-9331.)

Q. Let me ask you right in connection with that Statement 2, under the deductions, especially under Well Construction and Equipment, this question: These dry holes that are to be drilled on that Bivins acreage, are they deducted here or what treatment have you given them?

A. They were eliminated in their entirety. On Exhibit No. 121 Mr. Watson's program calls for 49 wells on Page 6. Up to 1939 there were eight wells, Column 1 having 4 and 3, and 1. That leaves 41 wells and there are 10 wells—7 new wells, rather, and existing wells drilled, 2, 3, 1, 1; that leaves 34 wells out of Mr. Watson's program for 1939.

From that all of the exploratory wells have been taken out.

Q. Why would you classify these exploratory wells or dry holes—strike that."

Why would you attempt to designate whether the exploratory wells or dry holes should be attributed to the direct sale gas or to the resale gas? How do you reach that conclusion as to which of those two categories they should fall into?

A. Dry holes or exploratory wells do not enter into the computation of fixed capital for original cost of gathering system for resale gas alone. The exploratory well drilling cost is treated and has been treated in all of the exhibits as an expense.

Q. As an expense?

A. Yes.

Q. You have treated them so in your previous exhibits in that manner?

A. That is right.

Q. Now, then, with reference to wells that are to be drilled and that are going to be produced in commercial quantities, how do you determine which of those should be attributed to the resale gas for the Denver line alone or for other purposes?

A. Well, Mr. Watson's exhibit brings that out. I am quite sure it does. He has existing wells drilled 1937 to 1939, Page 6, Exhibit 121. Beginning with 1940 there are 2 wells; 1941, 3 wells; 1942, 1 well; 1943, no well; 1944, 1 well. That consists of seven wells. Those seven wells are shown on Line 5, wells not needed.

MR. LUSK further testified as follows: (Vol. LXV, pp. 9333-9334.)

Q. Where does his program contemplate the drilling of any wells during that period for resale gas alone to the Denver line?

A. He doesn't. In Exhibit 183 and Exhibit 184 we contemplate for all gas the actual drilling required under Mr. Watson's Exhibit No. 94.

Q. For all gas?

A. That is right.

Q. That is what I am getting at. I want to know where he provides for the drilling of any additional wells for resale gas alone for the Denver line.

A. He doesn't. We are taking out wells from the all gas program.

MR. LUSK further testified as follows: (Vol. LXV, pp. 9341-9343.)

Q. This exhibit, as you stated, was prepared to reflect how you would determine the equivalent original cost of production and gathering facilities for resale gas alone and in the preparation of that exhibit do you give any consideration to what an equivalent original cost of production and gathering facilities for direct sales of gas alone would amount to?

A. No, sir, not in this exhibit. There is a direct sale exhibit in all—it is for all gas, rather, not direct sale.

Q. You arrived at that total under your method by a process of elimination?

A. There again I don't feel that I ought to say anything at the present time on allocation between direct sale and resale gas.

Q. Have you made any study of what an equivalent original cost of production and gathering facilities for direct sale gas would be?

A. No, sir.

Q. And you have not given that any consideration at all in the preparation of this exhibit?

A. None whatever. This is strictly resale gas.

Q. And, of course, that is purely hypothetical?

A. Well, we still have that stone wall to hurdle as to just what allocation can or cannot be made.

Q. The Canadian River Gas Company does not in effect limit its sale of resale gas alone?

A. It does not.

Q. It has not in the past and as far as you know does not contemplate doing that in the future?

A. I wouldn't attempt to guess at it, guess at the future policies of the Canadian River Gas Company.

Q. You have projected what you considered they were going to do in the future in 1947 on resale gas alone. You know very well that they don't expect to just sell resale gas alone during that period, don't you?

A. It is very probable that the direct sale gas will drop out. Some of the contracts expire before 1947.

Q. What I mean is this: The Canadian River Gas Company will not limit its sales to resale gas alone for the projected years through 1947?

A. I don't believe they will unless a contract expires.

Q. You know as a matter of fact they are not intending to limit their sales to resale gas alone during that period? As far as you know they don't intend to limit their use of these production and gathering facilities for resale gas alone during that projected period?

A. I don't believe they will. I don't believe that is contemplated.

Q. In connection with the Canadian River Gas Company's sales of gas for resale—I mean, the resales as contemplated under the use of these facilities set up in this exhibit—does Canadian River Gas Company fix its price of gas for resale on the basis of this exhibit?

A. No, sir.

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53. Equivalent Original Cost of Canadian's Portion of the Denver Line for all Gas Except Colorado Interstate's Direct Sale Gas, 1928 to 1947, Inclusive.

Exhibit 134, WITNESS LUSK (Vol. XXXI, p. 4269), covers the original cost of "a Denver line for resale gas only" and has been abstracted supra.

It is there shown that such cost of Canadian's portion of such line, as shown on Statement 1, Part 2 of Exhibit 134 as of December 31, 1939, is $3,933,234, and on this same Statement such cost is shown year by year, 1940 to 1947, inclusive. For 1940 and 1941 it is $3,966,644; for 1942 it is $4,095,644, and for each of the years 1943 to 1947, inclusive, it is $4,307,737.

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54. Working Capital of Canadian River Gas Company.

Supra under Title 22, "Working Capital of Colorado Interstate," there is described the method employed by WITNESS RHODES in Exhibit 70 in determining working capital requirements for Colorado Interstate Gas Company. The same method was used by him in determining working

capital for Canadian River Gas Company. He determined that $190,000 arrived at by the method so described was the minimum requirement, $60,000 of which was determined as the necessary working capital in the operation of the transmission and gasoline plants. (Exhibit 68, page 32.)

This matter was further dealt with in Exhibit 192 by Witness Lusk. On the basis of taking one-eighth of the actual operating expenses for the years 1935 to 1939 inclusive, and, in addition, the cash balance and materials and supplies on hand at December 31 of each year, the averages for the three years 1936, 1937 and 1938 showed $200,674, and for the five years 1935 to 1939 inclusive, $195,290, and he concluded that such averages, when considered as a whole, indicate that $190,000 is the minimum necessary amount of working capital required for the company as a whole, which includes the $60,000 shown in Exhibit 68 as being required for the transmission system.

The annual expenses for the years mentioned, and the average for the two periods also mentioned, together with forty-five days' requirements or one-eighth of the total cash, material and supplies, are shown in detail on the statement accompanying Exhibit 192.

MR. LUSK testified on direct examination as follows: (Vol. LXV, pp. 9265-9269.)

Direct Examination.

By Mr. Spencer:

Q. Mr. Lusk, you have testified heretofore in these proceedings?

A. Yes, sir.

Q. Have you at my request made a study and prepared an exhibit relating to working capital requirements of the Canadian River Gas Company as of December 31, 1938 and June 30, 1940?

A. I have.

Q. This is a copy of the exhibit I referred to?

A. Yes, sir, it is.

Mr. Spencer: Mr. Examiner, may I have Mr. Lusk's exhibit marked for identification?

The Trial Examiner: The document will be marked for identification as Exhibit No. 192.

(Exhibit 192, Witness Lusk, marked for identification.)

By Mr. Spencer:

Q. Mr. Lusk, have you prepared a written statement in connection with your Exhibit No. 192?

A. I have.

Q. Will you read that into the record, please?

A. "This exhibit sets forth the minimum working capital necessarily required by Canadian River Gas Company. The computations are based on one-eighth of the actual operating expenses for the years 1935, 1936, 1937, 1938 and 1939 as shown by the books of the company and in addition the cash balance and materials and supplies on hand at December 31 of each of the respective years. Averages for the three years (1936, 1937, 1938) and five years (1935 to 1939, inclusive) periods are $200,674 and $195,290, respectively. These averages when considered as a whole indicate that $190,000 is the minimum necessary amount of working capital required.

"Working capital of $60,000, shown on Exhibit No. 68 and No. 71 as being required in the operation of the transmission system owned by the company was a prorata allocation of the total working capital requirements on the basis of annual cash costs of operation and maintenance."

Q. Mr. Lusk, you make the statement that $190,000 is the minimum necessary amount of working capital required and I assume that you make that statement without reference to the contract dated January 3, 1928 between Canadian River Gas Company and Colorado Interstate Gas Company covering the purchase and sale of gas under the terms of which Colorado Interstate Gas Company furnishes Canadian River Gas Company with the necessary working capital from time to time?

A. The statement in this exhibit is made without reference to that contract.

Q. In other words, your study and your estimate eliminates any consideration of sources of working capital from that particular contract?

A. That is correct.

Q. You previously have submitted two exhibits with respect to working capital?

A. Mr. Rhodes has.

Q. You did not; Mr. Rhodes has?

A. I did not; he did.

Q. Did one of those exhibits include some item of working capital for Canadian River Gas Company?

A. Yes, $60,000 was set up as the working capital required for the transmission system of the Canadian River Gas Company.

Q. Does that mean that part of the so-called Denver line extending from Bivins station to Clayton Junction?

A. Beginning at the Bivins intake and extending to Clayton Junction, yes, sir.

Q. And you have incorporated that $60,000 in this study?

A. Yes, sir, the exhibit is an overall working capital requirement.

Q. You have one schedule or statement included here which shows in some detail the method by which you have arrived at your working capital estimate of $190,000. I wish you would make any explanation you desire with respect to that schedule or statement which you might think necessary at this time.

A. The only statement with reference to this schedule is that all of the items have been taken as per books with certain exclusions as noted in the footnote at the foot of the schedule. They exclude the management fees which have been excluded since 1936 and any computations of gas used in own operations; it excludes all of the rentals and the operating expenses on the leased facilities; it excludes any loss on the sale of autos and trucks and line abandonments; excludes all legal and other expense with reference to the present rate proceeding; it excludes under Item (G) management fees and taxes, that is, in gasoline operations.

Q. What taxes are you referring to?

A. The gasoline taxes on gasoline production.

Q. The so-called severence tax?

A. No, the severence taxes are included—I made a misstatement. It is for the taxes on property instead of gasoline tax. Gasoline production and severence taxes are paid monthly.

Q. Have you finished?

A. Yes, sir.

Mr. Spencer: That is all.

MR. LUSK testified on cross-examination: (Vol. LXV, p. 9269.)

By Mr. Langer:

Q. Mr. Lusk, this exhibit represents an estimate, doesn't it? The final figure of $190,000 is an estimate that doesn't appear on the company's books?

A. No, sir, it does not. That is a judgment figure taking the $200,674 for the three-year period and $195,000 for the five-year period, and it is rounded down to $190,000.

Continuing his cross-examination, MR. LUSK testified: (Vol. LXV, pp. 9276-9296.)

Going back to that Item 1 under production system, the years 1935 through 1939, those figures are, as you stated, per books, $52,347, and include all of the expenses?

A. That is correct, all of the expenses of the production system.

Q. All of the expenses of the production system? It also includes any expenses attributable to the Chicago line?

A. That is correct.

Q. Why have you set up all of those in this working capital requirement even including a portion of those attributable to the Chicago line when you say that it is your intent to exclude them otherwise?

A. Well, the reason that the production system expense is shown in here as a whole is that this is the entire operating expense of the production system as far as the Canadian River Gas Company's entire property is concerned.

Q. Well, does it include the operations attributable to any portion of the Chicago market?

A. Yes, if the Chicago market gas—and it does—is produced in the Canadian River field.

Q. Then it does include certain expenses attributable to the Chicago line?

A. That is what I said. I think I made it plain that it includes all of the expense of the property of the Canadian River Gas Company.

Mr. Spencer: When you say "the property of the Canadian River Gas Company," you mean the property that is owned by the company rather than leased?

The Witness: That is correct.

By Mr. Lange:

Q. And it also includes any expense attributable to Amarillo deliveries?

A. That is correct.

Q. Does that also apply to the other items through 9 under Operating Expenses?

A. Item 2, Gathering, would be eliminated as far as the Amarillo deliveries are concerned. They are concerned only with Item 1.

Q. Wouldn't there be some items under 2, Gathering System, that you have in here that wouldn't be directly attributable to Denver?

A. That is correct.

Q. And the same way with item 9, the Telephone Department?

A. It is a much disputed item as to how much the telephone department would be used for any other purpose than for Denver.

Q. Now, going back to that second group again, Other Expenses, beginning with item 11, which is Gas Royalties, are those for 1935 through 1939 as per books?

A. Yes, sir.

Q. There is no adjustment to any one of those items?

A. No, sir.

Q. That is the major single item in your operating expenses every year, isn't it?

A. That is right.

Q. Those are gas royalties paid by Canadian River Gas Company to lessors for their proportionate part of the gas taken out that month, that year?

A. That is correct. The gas royalties are paid to the lessors under the terms of the lease agreement.

Q. All right. You have these computations set up in this exhibit annually, haven't you?

A. Yes, sir.

Q. Those royalties are payable on what basis?

A. You mean the time?

Q. Yes.

A. They are usually paid about once a month.

Q. What day of the month are those payable?

A. I would have to look it up under the terms of the lease.

Q. Well, do they vary?

A. I believe they do, yes, sir.

Q. You are not sure at this time whether they are payable at one particular date in the month?

A. No; I am not quite sure. I would have to look up the lease, look up the working detail, and determine just when those payments are made.

Q. Do your working papers show when they are made every month by the company?

A. I doubt it.

Q. In your working papers the date of payment would be definitely reflected each month, wouldn't it?

A. I doubt that because these payments are taken right from the company's books.

Q. You say you don't have that in your working papers, Mr. Lusk?

A. No, sir.

Mr. Spencer: Just a minute. If Mr. Smith has that date I am willing to stipulate it, thus saving having to check it.

If it would suit your purpose, Mr. Lange, I would be willing to stipulate that the gas royalties generally are paid on the 20th day of the month following the month in which it is accrued.

Mr. Lange: The 20th day of the month following the month within which they accrue?

Mr. Spencer: Yes.

Mr. Lange: All right.

Q. Now, then, these figures that appear in your annual computation, 1935 through 1939, is that taking them as of the end of the year?

A. Yes, sir.

Q. Is that taking them as of the end of the year?

A. Yes, sir.

Q. At December 31st?

A. At December 31st.

Q. You haven't attempted to determine the monthly balance of that?

A. No, sir.

Q. And you haven't taken into account in this computation any lag with reference to the time that those are payable? In other words, the 20th day of the month following the month in which they accrued; you haven't taken that into account in this computation?

A. No, sir, there is nothing in this exhibit that indicates any lag. These are book figures taken from the books of the company at the end of each year.

Q. All right. If in the month—rather, at the end of the year, and then beginning the following January, you would compute one-eighth of that $345,867 as set up under 1939, for instance, as being necessary working capital?

A. That is right, one-eighth of that figure.

Q. Although the $345,867 isn't payable—strike that.

Although that $345,867 accrued during December 1939, didn't it?

Mr. Spencer: They accrue monthly.

Mr. Lange: Strike the question.

Q. State your accrual during December 1939 under Gas Royalties. Do you have that figure there?

A. The accrual for the month?

Q. Yes.

A. No, sir, these are annual figures.

Q. You gave no attention to that monthly accrual on gas royalties, did you, in fixing any kind of a lag?

A. I did not, no, sir.

Q. Don't you think if an item accrued during a month and wasn't payable until other revenues had come in during the interim that it would still be a necessary requirement of working capital?

A. I think so. Under this form of computation, regardless of the amount of revenue flowing in, it is always necessary for the company to be prepared.

Q. On what date does the company collect its major revenue each month, the Amarillo Oil Company from Colorado Interstate Gas Company? Do you have those monthly dates?

A. I am just trying to recollect. The Colorado Interstate—I don't think there is any specific date set up between the Colorado Interstate Gas Company and the Canadian River Gas Company.

Q. Isn't that fixed by contract?

A. It is fixed in the January 3rd contract but I don't know as its settlements are made actually on that particular date.

Q. It is payable on a particular date each month, isn't it, as per contract?

A. Yes, sir, I believe it is.

Q. You don't know what day of the month that is?

A. No, I would have to refresh my memory by looking at the contract.

Q. Isn't it the 25th of the month for Colorado Interstate Gas Company?

A. I believe it is, yes, sir.

Q. And on the 20th of the month for the Amarillo Oil Company?

Mr. Spencer: We will stipulate those are the correct dates.

Mr. Lange: In other words, you will stipulate it is the 25th of the following month for Colorado Interstate Gas Company and the 20th of the following month for Amarillo Oil Company and the 20th of the month for Clayton Gas, each of these succeeding months?

Mr. Spencer: Those dates are all correct, Mr. Lange.

By Mr. Lange:

Q. In other words, those are the dates on each succeeding month that Canadian River Gas Company gets its major revenues?

A. That is correct.

Q. Now, then, you have taken no account of any lag, as I understand it, in connection with the payment of these gas royalties on the 20th of the succeeding month in making this computation?

A. No, sir.

Q. Aside from your statement that you say in making this particular computation you did not take any such lag into consideration, why didn't you include all of your taxes, then, in this other expense item?

A. The taxes with reference to the property taxes have been eliminated from this computation. Only the taxes on the gas production which are—

Q. Why did you eliminate—

Mr. Spencer: I am not sure he had completed his answer.

Mr. Lange: Let him complete it.

The Witness: I want to delete the last statement I made and say that the gas severance taxes have been included and the taxes included on gas transportation which are paid monthly.

By Mr. Lange:

Q. You did include those as being necessary items to be taken care of in the company's working capital requirements, but why didn't you include your ad valorem tax items?

A. Ad valorem and property taxes are paid generally until the following year.

Q. But they are accruing items of expense, aren't they?

A. They are accruing items of expense on the books of the company in the form of taxes each month but there are no payments made against those tax accruals until the end of the year.

Q. Once accrued they have to be paid?

A. At some later date, that is correct.

Q. It is just like the gas royalties have to be paid at some later date after they accrue?

A. The gas royalties are paid the 20th of the month following the month in which they accrued, but the ad valorem taxes are paid in May and November or April and October.

Q. You made a distinction as to where a lag should take place and shouldn't?

A. No, I am not considering any lag at all in this computation. I am setting up the items that are actual expenses and that could be actual months, month after month after month during the entire period.

Q. What did you do with your income tax item? Why isn't it in there?

A. The income tax was left out for the simple reason income taxes are due and payable on March 15 and may be paid in quarterly instalments.

Q. They are paid the following year after they are accrued?

A. That is correct.

Q. And once they accrue they certainly have to be paid, don't they?

A. There is nothing so sure as taxes.

Q. Except you seem to be making some of them more sure than others in so far as the company's obligations are concerned. If you have a working capital obligation to meet, you want to provide for it in this computation, don't you?

A. As far as that type of tax is concerned, ad valorem and Federal income taxes, I don't believe this should become part of the working capital requirement because they are taxes that are paid at some later date.

Q. Both the property taxes and the income taxes are paid sometime during the year succeeding the year in which they accrued?

A. That is correct.

Q. The revenues the company has received monthly during that year the taxes accrued, they remain in the possession of the company during that year?

A. That is right.

Q. And you have singled out those two items of taxes apart from these other expense items that you have set up in this computation?

A. That is right, as not being attributable to any working capital requirement or any computation for working capital requirement.

Q. Where is the company going to have the funds to pay those two items if they are not in the same category as these you have provided for under your operating expense?

A. The company accrues all those funds each month from the revenues they receive for the sale of gas less whatever operating expenses have been incurred in all of the operating departments and all of the other expenses.

Under ordinary circumstances the company would have enough money at the end of the year, at the close of the year, to pay off all of its accrued taxes which it does.

Q. In other words, there is a lag in between that you say is automatically taken care of because of the accumulation of the funds in the company's hands?

A. I admit there is a lag, but as far as this computation is concerned, I haven't considered any lag between the date the revenue accrues until the date these expenses incur.

Q. As far as this computation is concerned, you haven't considered any lag, but a lag is definitely there and in any

computation where such a lag is considered it is good accounting practice to take care of it in a computation on working capital?

A. Well, I don't exactly agree with that statement of working capital. Working capital can be built up from operating expenses or it can be built up from the so-called lag between revenues accrued and expenses incurred. That is a difference of opinion.

Q. That may be true, but you have paid particular respect to a lag here with reference to those two items of taxes?

A. No, I wouldn't say—

Q. What would you call it?

A. I have eliminated it entirely.

Q. It is paying more attention to it than giving it the lip service of being a lag? You have eliminated it entirely?

A. Yes, sir, those particular types of taxes have been elmininated entirely.

Q. When you get down to your item 14, Gasoline Royalties, they are being paid quarterly, aren't they?

A. I believe they are.

Q. In other words, they accrue during January, February and then the total amount accrued is payable in March?

A. That is right. Gasoline royalties are paid quarterly.

Q. During January and February the company's revenues have come in regularly as provided for under its contract arrangement?

A. That is correct, yes, sir.

Q. And those gasoline royalties that are payable in March, the revenues against the proportionate part of the revenues that may be utilized for the payment of those have already been collected two months prior thereto?

A. I wouldn't say that because gasoline royalties which are payable on the gasoline extracted at the Bivins plant may not come in for sixty days.

Q. You still have additional time to pay them after they accrue, after the quarter, fifty days after the end of the quarter; so there is that much additional time during which revenues have come in, the proportionate part of which would be attributable to these royalties, or, rather, that would have to be paid on these royalties?

A. That is right.

Q. So you have given no consideration to the fact either in this computation?

A. That is right.

Q. Don't you think that if an item of that size is not payable until fifty days after its final quarterly accrual that you still need the proportionate part of working capital each month to take care of that in advance?

A. I could have eliminated that item entirely from this computation. The average of the computation is $12,000 a year and one-eighth of that is $1500. I could have eliminated that item.

Q. Wouldn't it have been reasonable to have eliminated it?

A. It may have been due to the long period of time in which the gasoline royalties are settled.

Exhibit 192 hereinabove referred to follows:

Exhibit No. 192

WRITTEN STATEMENT OF WILLIAM A. LUSK

This exhibit sets forth the minimum working capital necessarily required by Canadian River Gas Company. The computations are based on one-eighth of the actual operating expenses for the years 1935, 1936, 1937, 1938, and 1939 as shown by the books of the Company and in addition the cash balance and materials and supplies on hand at December 31 of each of the respective years. Averages for the three years (1936, 1937, 1938) and five years (1935 to 1939, inclusive) periods are $200,674 and $195,290 respectively. These averages when considered as a whole indicate that $190,000 is the minimum necessary amount of working capital required.

Working capital of $60,000, shown on Exhibit No. 68 and No. 71 as being required in the operation of the transmission system owned by the Company, was a prorata allocation of the total working capital requirements on the basis of annual cash costs of operation and maintenance.

Signed at Denver, Colorado this 20th day of January, 1941.

William A. Lusk

William A. Lusk

Exhibit No. 192

Canadian River Gas Company

Working Capital Requirements

Computed for December 31, 1938 and June 30, 1940

Item No.	Annual Expenses	1935	1936	1937	1938	1939	Average 3 Year 1936 - 1938	Average 5 Year 1935 - 1939
	Operating							
1	Production System	$ 52,347	$ 41,948	$ 54,148	$ 50,505 (D)	$ 44,630 (D)	$ 48,867	$ 48,716
2	Gathering System	13,620	23,776	22,990	23,766 (D)	26,477 (D)	23,511	22,126
3	Compressing Station	16,209	39,428	40,853	41,591	46,862 (D)	40,624	36,989
4	Transmission System	15,066	21,065	27,262	28,484 (D)	25,883 (D)	25,603	23,552
5	General Expenses	61,445 (A)	62,963 (A)	66,255	73,035 (D)	86,465 (E)(D)	67,418	70,032
6	Land Department	5,815	7,267	7,199	7,581	9,204 (D)	7,349	7,413
7	Meter Department	25,545	23,030	21,614	22,709 (D)	24,728 (D)	22,451	23,525
8	Amarillo Office	8,699	8,767	10,099	9,906	11,338	9,591	9,762
9	Telephone Department	4,331	6,529	10,877	9,016	8,342 (D)	8,807	7,819
10	Total Operating Expense - Gas (B)	$203,077	$234,773	$261,297	$266,593	$283,929	$254,221	$249,934
	Other Expense (C)							
11	Gas Royalties	223,768	304,829	327,929	305,919	345,867	312,892	301,662
12	Rentals on Unoperated Leases	47,224	21,314	21,180	25,079	5,770	22,524	24,113
13	Gasoline Operations (G)	54,044	59,119	65,834	67,155	61,447	64,036	61,520
14	Gasoline Royalties - Bivins and Fritch	6,166	9,455	17,286	12,039	17,132	12,927	12,416
15	Camp Expense	4,849	6,592	7,270	10,034	8,721	7,965	7,493
16	Hotel Expense	1,311	2,116	1,691	1,823	1,044	1,877	1,597
17	Dining Room	5,034	-	-	-	-	-	1,007
18	Shop	1,097	659	-35	163	726	262	522
19	Taxes - Gas Severance Only	21,220	27,815	34,461	31,207	34,102	31,161	29,761
20	Taxes - Gasoline Production and Transportation	150	170	195	154	138	173	161
21	Total Expenses	$567,940	$666,842	$737,108	$720,166	$758,876	$708,038	$690,186
	Working Capital							
22	45 Days Requirement (1/8 of total)	70,993	83,355	92,139	90,021	94,860	88,505	86,274
23	Cash	10,995	11,668	28,338	16,381	11,010	18,796	15,678
24	Materials and Supplies	95,479	77,920	103,106	99,093	91,092	93,373	93,338
25	Total Working Capital Required	$177,467	$172,943	$223,583	$205,495	$196,962	$200,674	$195,290
26	Used as Working Capital							$190,000 (F)

Notes (A) Excludes management fee.
(B) Gas used in own operations excluded on statements by systems.
(C) Rentals and operating expenses on leased facilities excluded.
(D) Excludes loss on sale of autos and trucks and line abandonments.
(E) Excludes legal and other expense re Denver Rate Case.
(F) Of which $60,000 was assigned to transmissions system in Exhibit No. 68 and 71 Reproduction Cost New and Less Depreciation.
(G) Excludes management fee and taxes.

The method employed and the amount of working capital by KENNETH L. SMITH, Witness for the Commission, in Exhibit 145 relating to Colorado Interstate have been abstracted and set forth in part in Title 22 supra. Employing the same formula or method for Canadian in Exhibit 171, Smith determined the working capital for Canadian to be the amount of $150,738.38. Said Exhibit 171 follows:

Docket G-124 Exhibit No. 171

CANADIAN RIVER GAS COMPANY

The Commission, under date of March 14, 1939, issued an order of investigation into and concerning all rates, charges, classifications, rules, regulations, practices or contracts of Canadian River Gas Company, Colorado Interstate Gas Company, and Colorado-Wyoming Gas Company. As a result thereof, and pursuant to instructions from the Commission, an examination of the accounts and records of Canadian River Gas Company has been made for the purpose of setting forth the pertinent facts concerning matters involved in this investigation by the Commission.

The accompanying schedules were prepared from data disclosed in the examination referred to above.

Samuel L. Smith
Examiner of Accounts,
Witness

Approved:

Harold C. Gordon
Examiner in Charge of
Regional Office

Chas. B. Smith
Chief, Bureau of Accounts,
Finance and Rates

CANADIAN RIVER GAS COMPANY
WORKING CAPITAL REQUIREMENTS
BASED ON OPERATIONS DURING THE YEAR 1939

Line No.	Particulars (1)			Total Working Capital (2)	Allocation: Natural Gas Production (3)	Allocation: Natural Gas Transmission Other Than Compressing (4)	Allocation: Natural Gas Transmission Compressing (5)
1	Materials and supplies (average monthly balance during 1939, excluding gasoline stock)			$ 86,941.77	$ 79,177.87	$2,669.11	$5,094.79
	Operating revenue deductions, as adjusted by Examiner of Accounts:						
2	Operating expenses		$665,286.93				
3	Less items for special treatment: Gas well royalties	$354,718.78					
4	Gasoline royalties (Bivins Plant) (Note 1)	4,282.15					
5	Gas used in operations (Note 2)	25,575.15					
6	Joint expenses - rental of leased facilities (Note 3)	230,507.53					
7	Residuals operating expenses (Fritch) (Note 4)	88,015.19	(703,098.80)				
8	Add back credit for residuals produced (Note 5)		399,271.47				
9	Balance		$361,459.60				
10	12½% of above, representing approximately 45 days' operations (Note 6)			45,182.45	38,328.27	2,019.66	4,834.52
11	Items for special treatment: Gas well royalties		$354,718.78				
12	Average lag in receipt of revenues (Note 7)	38.85 days					
13	Average lag in payments for gas well royalties (normally paid on the twentieth day of the following month)	35.00 days					
14	Difference	3.85 days					
15	3.85/365 of $354,718.78						
16	Depreciation (Note 8)			3,741.55	3,741.55		
17	Depletion (Note 8)			none			
18	Taxes (Note 9)			none			
19	Nonrecurring expenses		$ 222.60	none			
20	12½% of above, representing approximately 45 days' operations (Note 6)			27.83	27.83		
	Exploration and development costs, as adjusted by Examiner of Accounts:						
21	Delay rentals		$ 10,401.58				
22	Paid annually in advance, therefore a full year's allowance in working capital			10,401.58	10,401.58		

Exhibit No. 171

3331

CANADIAN RIVER GAS COMPANY
WORKING CAPITAL REQUIREMENTS
BASED ON OPERATIONS DURING THE YEAR 1939

Line No.	Particulars		Total Working Capital	Allocation: Natural Gas Production	Allocation: Natural Gas Transmission Other Than Compressing	Allocation: Natural Gas Transmission Compressing
	(1)		(2)	(3)	(4)	(5)
23	Nonproductive well drilling	$29,293.73				
	12½% of above, representing approximately					
24	45 days' operations (Note 6)		$ 3,661.72	$ 3,661.72		
25	Abandoned leases (Note 8)		None			
	Other items:					
26	Line pack (Note 10)		781.48		$ 781.48	
27	Minimum bank balances (Note 11)		None			
28	Total Working Capital Requirements		$150,738.38	$135,336.82	$5,470.25	$9,929.31

Notes:

(1) No allowance is made herein for gasoline royalties payable for the reason that the average lag in their payment greatly exceeds the average lag in the receipt of revenue. Gasoline royalties are payable quarterly, fifty days after the quarter's end. Accordingly, on the assumption that royalties accrue in equal daily amounts during the quarter, thus making the equated date of their accrual the forty-fifth day of the quarter, payments are due, on the average, ninety-five days after the royalties accrue, a lag much greater than the lag in the receipt of revenues which is only 38.85 days (Cf. Note No. 7).

(2) No allowance is made herein for the charges to operating expenses representing gas used in operations for the reason that the actual expenses of producing and transmitting this gas are included in various other operating expense accounts. The amount deducted herein, $25,575.15, represents the amount charged to operating expenses and credited to revenues (Schedule B-17-1 of exhibit relating to income account of Canadian River Gas Company shows details thereof).

(3) No allowance is made herein for rental of leased facilities because of the lag in payment therefor. The Respondent's payments for these expenses are due on the last day of the following month, which creates a lag of forty-five days, as compared with an average lag of 38.85 days in the receipt of revenues (see Note 7, below).

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CANADIAN RIVER GAS COMPANY
WORKING CAPITAL REQUIREMENTS
BASED ON OPERATIONS DURING THE YEAR 1939

Notes: (cont'd.)

(4) The charges to operating expenses representing the Respondent's share of the joint operating expenses of the gasoline extraction plant at Fritch, Texas, are deducted from the operating expense base, for working capital purposes, for the reason that these expenses are actually incurred by Texoma Natural Gas Company and are settled between the latter company and the Respondent quarterly. The Respondent's share of the proceeds from the residuals produced at Fritch, Texas are also settled quarterly. The entire working capital required for these operations is presumably furnished by Texoma Natural Gas Company.

(5) The total credit to operating expenses for residuals produced is added back to the operating expense base, for working capital purposes, in order that the gross operating expenses may be considered in this computation of working capital requirements. The credit for residuals produced at the Bivins gasoline extraction plant is included in revenues for working capital purposes in computing the average lag in receipt thereof (see note 7, below). The credit for residuals produced at Fritch, Texas is omitted entirely from the working capital computations since these revenues are actually received by Texoma Natural Gas Company and settled quarterly (see note 4, above). The credit for residuals produced by Cannon Gasoline Company is omitted from the working capital computations since this amount has not been received by the Respondent.

(6) The proposed allowance of approximately forty-five days' expenses for operations (as adjusted) and nonproductive well drilling is made discretionally. In the Examiner's opinion, it represents a liberal allowance to cover expenses (as adjusted herein) which are required to be paid in cash during the period from initial rendition of service to average date of receipt of revenues in cash.

CANADIAN RIVER GAS COMPANY
WORKING CAPITAL REQUIREMENTS
BASED ON OPERATIONS DURING THE YEAR 1939

Notes: (cont'd.)

(7) The average lag in receipt of revenues in cash is computed as follows:

CALCULATION OF WEIGHTED AVERAGE LAG, IN DAYS, BETWEEN THE DATE OF DELIVERY OF GAS TO CUSTOMERS AND THE DATE WHEN PAYMENT FOR THAT GAS IS DUE
BASED ON 1939 REVENUES

Customer	Last Day of Billing Period	Date Due in Following Month	Lag in Number of Days Between the Time of Delivery of Gas to Customers, as Equated, and Date when Payment for that Gas is Due	Amount of Revenue	Dollar Days
Amarillo Oil Company	30th	20th	35	$ 205,183.50	7,181,422
Colorado Interstate Gas Company	30th	25th	40	2,126,329.91	85,053,196
Clayton Gas Company	30th	20th	35	24,705.06	864,677
Sinclair Prairie Oil & Gas Company (Gasoline sales)	Date of shipment	1st-10 days net 30	30	177,691.35	5,330,741
Total				$2,533,909.82	98,430,036
Weighted average lag, in days			38.85		

(8) No allowance is made herein for depreciation, depletion or abandoned leases, since these expenses do not necessitate the disbursement of cash or the use of working capital.

(9) No allowance is made herein for taxes in working capital, as revenues are realized in cash, for the greater part, considerably in advance of the payments of taxes, as shown in the following tabulation relating to payment dates of taxes included in 1939 expenses, as adjusted:

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CANADIAN RIVER GAS COMPANY
WORKING CAPITAL REQUIREMENTS
BASED ON OPERATIONS DURING THE YEAR 1939

Notes: (cont'd)

Date Paid	Amount
January 1939	$ 37.90*
February	3,712.69**
March	3,685.19
April	5,229.56
May	3,301.46
June	3,242.95
July	3,817.30
August	4,484.66
September	3,041.39
October	49,109.05
November	10,608.87
December	3,825.67
Subsequent year (1940)	81,044.34
Total	$175,141.03

*This amount relates to Texas Gross Receipts Tax for last quarter of 1938 which Examiner did not reclassify because the amount involved was not significant.

**The larger part of this amount relates to Texas Gross Receipts Tax which is paid on the approximate date on which revenues to cover are received. The remainder of this amount is paid after receipt of revenues.

(10) An allowance in working capital for line pack is computed as follows:

Average line pack during year 1939, according to information prepared by the Bureau of Engineering relating to the transmission line between Bivins compressing station and Clayton Junction, amounts to 21,204 M.C.F.

Price per M.C.F. Due to the comparatively small amount involved, no attempt has been made by the Examiner to determine the actual cost of the gas used in line pack. The arbitrary rate per M.C.F. used herein is

Exhibit No. 171

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CANADIAN RIVER GAS COMPANY
WORKING CAPITAL REQUIREMENTS
BASED ON OPERATIONS DURING THE YEAR 1939

Notes: (cont'd)

equivalent to the rate used by the Respondent in computing the value of the gas used for testing and packing the Texline lateral, and for the majority of the gas used in operation	4 cents
Amount	$848.16
Less net amount capitalized by the Respondent, representing gas used in testing and packing the Texline lateral. 1,667 M.C.F. at 4 cents per M.C.F.	66.68
Net amount	$781.48

(11) No allowance is proposed for minimum bank balances for the following reasons:

(a) Substantial average balance is provided by reason of the lag in payment of a considerable portion of taxes after the average date of receipt of revenues. (See notes 7 and 9, above)

(b) A small duplication in the proposed allowances for stocks of materials and supplies and operating expenses exists, to the extent of 12½% of the charges to operating expenses from the material and supplies account.

KENNETH L. SMITH testified as follows: (Vol. XLVIII, pp. 6659-6668.)

A. "This study was made for the purpose of determining the working capital requirements of Canadian River Gas Company, and is based upon operating figures for the year 1939 because they are believed to be indicative of present conditions. It consists of six pages of computations and notes in which are developed a working capital requirement, allocable to the company's production and transmission operations, amounting to $150,738.38. The computations with the notes that accompany them are self-explanatory."

Q. Mr. Smith, in the preparation of this exhibit 171, I take it that you had available for your work whatever books and records of the Canadian River Gas Company were found necessary in order to enable you to arrive at your computations?

A. Yes, sir.

Q. And it is your belief and your opinion that the working capital as setup by you in this exhibit is adequate for the company's operations?

A. Based on operations for 1939, it is.

Q. And I notice that on the title page of this exhibit it also bears the approval of Mr. Charles W. Smith, Chief, Bureau of Accounts, finance and rates of the Federal Power Commission and Mr. Harold Tomlin, Examiner in charge of regional office.

A. That is correct.

Mr. Lange: I believe that is all for the present.

Cross Examination.

By Mr. Spencer:

Q. Mr. Smith, did you say in your written statement that your determination of working capital requirements of Canadian River Gas Company is based upon operating figures for the year 1939? That is correct, is it not?

A. Yes, sir.

Q. Now, in speaking of operating figures for the years 1939, do you have in mind the company's operating figures per books, or do you have in mind the book figures

as adjusted and reclassified by Mr. McKinstry in [redacted] exhibit which we had this morning, Exhibit No. 168?

A. I have employed the figures as adjusted by Mr. McKinstry in Exhibit 168.

Q. In other words, your reference to figures—to operating figures for the year 1939 has application to the figures as adjusted and reclassified by Mr. McKinstry?

A. Yes, sir.

Q. Now, will you tell me what your definition is of working capital for the purposes of this study?

A. Well, working capital is the capital required by utility—by a utility company to carry on its operations over and above its plant account. The plant account has in the past sometimes been referred to as the fixed capital, although we don't employ that particular term in our system of accounts. We call it plant.

Q. Is there any provision in the code that specifies how working capital shall be determined? I assume there is not.

A. I believe there is not.

Q. Did you have any instructions from the Commission on that subject to guide you?

A. As to a specific set of written instructions, I didn't have. However, I have employed a formula which was approved by Mr. Charles W. Smith, Chief of the Bureau of Accounts, Finance and Rates, and also by Mr. J. P. Jackson who was formerly assistant chief accountant during a part of this investigation. I have discussed my method quite in detail with them and while I don't have any written instructions, I might say that those discussions were comparable at least to verbal or oral instructions and approval.

Q. Am I correct in assuming, then, that you developed the formula upon which this computation is made in the first instance?

A. Not entirely. I think I gained a great many of my ideas in this study from my first discussion with Mr. Charles W. Smith pertaining to this assignment when he was in Denver in July 1939 and since then I have, of course, given it a great deal of study myself starting from that point with what his ideas were in connection with this particular investigation.

Q. Well, let's state it this way, then: You do have a

formula, then, which has been developed from your own ideas plus the ideas that you got from Mr. Charles W. Smith on the subject, is that correct?

A. Yes, I believe that is correct.

Q. Now, is your formula in your working papers, or in what shape do you have your formula, if I should ask you about that?

A. Well, the formula sort of evolves in this exhibit. I don't know that I have—

Q. Well, if I should ask you to state your formula for the record or if I should ask you if you have it expressed in some manner that you can show to me in paper, what about the latter?

A. Well, I don't have it prepared in written statement form as to a formula.

Mr. Spencer: Now, without objection of counsel I would make this suggestion. I do not intend to conclude my cross examination on this subject today, in any event. But I would suggest that the witness prepare a short statement explaining the formula that he has developed and used in this study which could be read into the record on cross examination, unless he prefers to do it extemporaneously.

Mr. Lange: Whichever way the witness believes would be most explicit or the one that gives the record the best information, whichever way the witness can do it best.

Mr. Spencer: If I were to do it I would prefer to think about it and then prepare a statement and read it into the record that way.

Mr. Lange: By which method would you prefer to present it, Mr. Smith?

The Witness: What I would like to do is to go down the line here on each item and explain the principles involved in each one and I feel as to preparing a written statement of a thing like this would require a great deal of time. A written statement if it is going to be a universal formula, has to be prepared very carefully. I have dealt with a specific situation here.

If I have dealt with the situations as they exist in Canadian River and have dealt with them properly, it seems to

me that that is all that is required of this exhibit. I don't need to give a treatise on working capital. If I started writing a statement I might be writing for a week, I don't know.

Mr. Spencer: No, I don't want you to do that. Suppose we follow your suggestion and when I get prepared to cross examine you on the detail in your statement here we can see what explanation develops as to your theories and formula. If we need something else we can consider it at that time. That is satisfactory to me.

The Trial Examiner: I take it, Mr. Smith, that your exhibit contains those various factors that go to make up your formula?

The Witness: Yes, it is all set out clearly. I think the exhibit really speaks for itself in that respect because I point out in the exhibit items that have been considered even though there was no working capital developed or considered applicable to the particular items such as depreciation. Then in the footnote I explain my reasons for excluding depreciation.

Mr. Spencer: Now, let's see, we'll leave that, then, for the time being, Mr. Smith. At some point in this record I believe you stated your qualifications, but I have forgotten. Let me ask you this:

Q. Have you ever had any actual experience in the operating end of a business of the nature carried on by Canadian River Gas Company?

A. Not in a strictly operating sense.

Q. Do you feel for the purposes of making a study of this character that experience in the operating end is essential or desirable, let us say?

A. I doubt if it is as this is an analytical approach. I think an analyst who is careful in his work and takes the results of the operations of a company as shown by its records and makes the kind of study I have made, he would not need to be an operator to do that. If he were an operator, I think he would have to be something of an analyst in addition to being an operator.

Q. Well, I mean after all, to determine the amount of money—cash required by a corporation or a firm or per-

son individually is largely a matter of fact from time to time, a very practical matter, isn't it, quite aside from any analytical study of it? It still has very practical aspects, don't you think?

A. Yes, of course I am assuming that analysts can be practical, of course.

Q. Well, I am not going to assume that an analyst could not be. Does this study here—and I may be ahead of myself—take into consideration the amount of money that Canadian River has required during the year 1939 from time to time for the purposes of carrying on its operations?

A. I feel that it does.

Q. Or is it based on what it should have rather than what it did have?

A. No, I believe that it is based on the actual experience of that company.

Q. During this period?

A. Yes, sir.

Q. Do you include—and again I may be ahead of myself—anything for maintaining carrying balances in the banks in order not to get thrown out of the bank?

A. Yes, I think that is covered in my statement.

Q. Point that out, please.

A. Sheet 4, Note 9. I believe I show there that the lag in the payment of taxes is sufficient to provide the company with a considerable minimum bank balance.

Q. You don't say so in that note, do you, Mr. Smith?

A. Only more or less indirectly. I don't add anything for minimumm bank balances in my tabulation on Page 1, and the reason I don't add it is because it is my position—my analysis of the situation, that a minimum bank balance is provided through the lag of payment of taxes which were accrued in 1939 and which are not paid until the latter part of 1939 and in 1940. You take the table on Sheet 5 of 6 and you will see that the taxes paid in 1940 which were accrued and charged to expense in 1939 amount to $81,000, and a little over.

Now, if we could assume that the accrual of that tax was in equal monthly instalments over the year 1939, then the average cash balance provided through that lag in payment during 1939 alone would be approximately $40,000, and

those taxes, of course, aren't all paid on January 1st, 1940. The income tax included in that is paid in four quarterly instalments—March, June, September and December. That is still an additional lag, so computing it back to a 12-months basis you can see that the minimum bank balance from that source is going to be somewhere between 40,000 and 80,000 dollars.

Q. Well, your answer is that you haven't taken care of minimum bank balances specifically but the lags which occur here with respect to tax payment and perhaps otherwise do provide sufficient minimum balances, is that your answer?

A. Yes, principally the lag in the payment of taxes.

Mr. Spencer: I doubt if I will have a great deal of additional cross examination on this particular exhibit, Mr. Examiner, but what I have I would like to defer until tomorrow, until we can check this statement with our own figures.

The Trial Examiner: You wish to take it up the first thing in the morning, Mr. Spencer?

Mr. Spencer: I would prefer to have Mr. Dougherty go ahead in the morning and I can finish after that. Perhaps we can, however. Can we decide that in the morning? You don't like the break in the record?

The Trial Examiner: Yes.

Mr. Spencer: I will do it in the morning, Mr. Examiner.

MR. KENNETH L. SMITH further testified: (Vol. XLIX, pp. 6671-6692.)

Cross Examination (Continued.)

By Mr. Spencer:

Q. Mr. Smith, before we recessed last evening I believe I asked you if you would give me a general statement which would explain the method, or the reason you have employed in arriving at your working capital for Canadian River Gas Company in Exhibit No. 171 that you have prepared. Can you do that this morning, Mr. Smith?

A. In a somewhat general way?

Q. Yes. Suppose you go ahead and explain it in your

own way generally and any specific questions that develop out of that, why, then I can follow up.

A. Why, I think that as a general overall summary it might be said that the allowance herein computed consists of possibly two major parts; the first, the material and supplies—the stock of material and supplies that the company needs to have to conduct its operations based upon its experience for the year 1939.

Q. That is shown on—

A. That is shown on Line 1—

Q. Of sheet one.

A. Of sheet one.

Q. Yes.

A. Then the other items which are developed in Lines 2 to 27, inclusive on Sheets 1 and 2 might be described as the cash requirements to carry on operations or to provide for expenses of operation.

Q. Cash as distinguished between physical properties represented in your material and supplies?

A. Yes. That is, a company couldn't start business without providing in advance for funds to meet its operating expenses before it collects its revenue. There must be some sort of cash available in some amount to meet those expenses which have to be paid before the revenue starts coming in.

Of course, the situation we are dealing within 1939 is not on the assumption that the company is starting business but treating it as a going concern, going along month to month and dealing with the operating and going conditions as they were in 1939.

Q. Now, suppose you tell me right at this point the general method you utilized in determining the amount that should be set up here in Line 1, Sheet 1, which represents materials and supplies. I assume that has reference to warehouse stock.

A. Yes, the warehouse account for 1939, which was examined and the monthly balances during 1939 were taken off and the average was computed. That is just a straight arithmetical average of the ending monthly balances during 1939 based upon what the company actually had in its warehouse account.

Q. In other words, that is as per company books?

A. Yes, sir.

Q. And there is no adjustments in that figure as I understand it?

A. Not in the warehouse material and supplies that are held for use.

Q. All right, now, can you tell us generally the method that you have utilized in determining the other part, to-wit, cash?

A. Well, the cash requirements for meeting operating expenses is in general based upon the time relationship or the time lag, we might say, between the time when expenses are incurred and revenues are received, that being considered the cash that is needed by the company to finance its operations, the amount of money which it will tie up in expenses from the time those expenses are incurred until the revenues are received from the customers of Canadian River Gas Company. That is the general theory. The application, of course, is shown in the exhibit somewhat in detail.

Q. All right, now, suppose you put in there generally your method of computing what you term "time lag." I note that it varies in different items.

A. Well, I suppose a good starting point on that possibly is to get a picture of the computation of the lag in receipt of revenues which is shown on Sheet 4 of 6 in Note 7.

Q. Go right ahead.

A. There is a table included in that Note 7 which is headed as the "calculation of weighted average lag, in days, between the date of delivery of gas to customers and the date when payment for that gas is due, based on 1939 revenues."

Q. Also as required by contract?

A. I believe that the billing period and the date on which the payments are due in the month following the billing period are stipulated in the contracts.

Q. And you have used both dates?

A. Yes, those have been employed.

Q. All right, now, go right ahead with your explanation.

A. Well, that table develops a weighted average lag in days of 38.85 days. In other words, that is the lag or the number of days that elapse between the average date of

delivering gas to customers and the date when the payment for that gas is due.

I have also, of course, put the gasoline sales in there and given that a lag of thirty days even though the 10-day discount period is, as I understand it, ordinarily availed of.

Q. You don't use that?

A. No, I give it a 30-day lag instead of a 10-day lag.

Q. You might add right there the manner in which you have weighted your average. What are the factors employed in weighting?

A. Well, the three columns to the right of that tabulation are employed. Take, for instance, the revenue from Amarillo Oil Company, the first line of the tabulation in Note 7. The lag is shown as 35 days. The amount of revenue is shown as $205,183.50.

Q. Yes.

A. Then in the last column the dollar days are computed which is simply multiplying the amount of revenue by the lag—

Q. I see.

A. Of thirty days, and then taking the totals at the end of the tabulation of $2,533,909.82 as related to total dollar days of 98,430,036 gives a weighted average lag in days of 38.85. That's straight division.

Q. In other words, you have weighted it in dollars of revenue, is that correct?

A. Yes, sir.

Q. Is that sufficient, do you think, with respect to a determination of lags or as far as revenues are concerned?

A. Yes, that is, I believe, the whole story on the determination of the number of days lag between the time gas is delivered to customers and the date when that payment is due.

Q. Now, will you go back and pick up the determination of a lag with respect to expenses?

A. Well, that takes us back to Sheet 1, Line 2. I have employed there the basic figure to begin with of operating expenses, $665,286.93 which appears in Mr. McKinstry's Exhibit No. 168 as his adjusted operating expenses for the year 1939.

Now, it was not possible to deal with that figure as such

for several reasons, or putting it this way, there were several items, both debit and credit, reflected in his adjusted operating expenses which had to be set aside for separate or special treatment and those are detailed on Sheet 1, Lines 3 to 8, inclusive, and the balance of operating expenses with which I deal are stated on Line 9 of that same sheet. Line 3 takes out the expense of gas well royalties for separate treatment and those are dealt with further on down in the statement; so we can disregard those for the moment.

Q. Yes.

A. The same is true with respect to gasoline royalties shown on Line 4 and gas used in operations is also eliminated from expenses. It is explained in a footnote, Footnote 2—

Q. There is no cash outlay involved?

A. There is no cash outlay involved in addition to the other expenses.

Q. Yes.

A. Then the joint expenses with Texoma Natural Gas Company for the rental of leased facilities appearing on Line 6 of that Sheet 1 is covered by Footnote 3, Sheet 2.

Q. Yes. You make no allowance there, because according to your determinations we received payments or received revenues for those operations prior to the time we had to pay the expenses?

A. Yes.

Q. Based on your average lag?

A. You collect your revenue from the Colorado Interstate Gas Company for that—you see, those expenses are included in the billing of Canadian River Gas Company to Colorado Interstate Gas Company for gas sold over the Chicago line. Your money is received from Colorado Interstate Gas Company before any outlay is required by Canadian River Gas Company to Texoma. That is the significance of Footnote 3, I believe.

Q. I think you can go down to Line 10, Mr. Smith, and explain how you get the figures shown on that line.

A. Line No. 10 is simply $12\frac{1}{2}$ per cent of the so-called balance that I come to on Line 9.

Q. Now, I see that is based upon $12\frac{1}{2}$ per cent of the above, representing approximately 45 days operations. Where do you get the 45 days from?

A. I have a note stating that in Note 6, Sheet 3. I think perhaps that expresses the situation in the note as well as any other way it could be expressed.

Q. I think so. It is a judgment figure?

A. Yes, it is used but it is not a judgment figure you pick out of the air; it is related in a sense to the 38.85 days lag in the receipt of revenues. In other words, if the revenues—if the lag in receipt of revenues is approximately 39 days, then it follows that 45 days expenses of operations should be a reasonable, if not a liberal, allowance.

Q. I see. Line 15, is there any explanation you would like to give regarding it?

A. Line 15 is where I have come to the result as to what is required as a component of working capital for gas well royalties. Gas well royalties is one of the items set aside on Line 3 above for separate treatment.

Now, there is a separate or special treatment there.

Q. I think it is clear enough what you have done.

By the way, on Sheet 1 you have utilized certain headings there for the purpose of allocating total working capital as shown in Column 2. Column 3 is headed "Natural Gas Production" and then Columns 4 and 5 are headed "Natural Gas Transmission", Column 4 being "Natural Gas Transmission Other than Compressing," and Column 5 being "Compressing." These allocations are your own, I assume?

A. Yes.

Q. I mean the figures shown under these headings.

A. Yes, I made the computation to arrive at those allocations. The allocations as such are not on the company's books, if that is what you mean.

Q. What is the basis of your allocation generally?

A. I employed slightly a different method for material and supplies on Line 1 than I did for expense on Line 10. I will explain them separately if you want the general principle involved.

Q. I want just the general principle involved.

A. I wasn't able, from an examination of the warehouse account, the balances, to assign the components to functions, so I employed this method. I took the issues from

warehouse stock for a 12-months period and prorated the average monthly balance used here on that same ratio. In other words, it was based on the way the stock was used. When I came out to approximately 90 per cent for natural gas production I figured that looked good enough; based upon what I knew about the company, it looked reasonable.

Then as to Line 10, it was possible to put those figures into the same pocket, so to speak, that Mr. McKinstry had on his income statement details for 1939 in Exhibit No. 168.

Q. Or a proportionate basis, you mean?

A. No, he has all of his operating expenses broken down into functional groups.

Q. Yes.

A. So the items which follow through to show up in Line 10, which is simply one-eighth of his adjusted operating expenses with certain items eliminated or added back for special treatment, these figures I arrived at on Line 10 are identifiable with the same functional groups he employed in his Exhibit 168. It seemed to me that was the only—

Q. Let's see.

A. Wait a minute. Of course, I have had to make allocations of his general expenses there and I did that on a dollar basis.

Q. On a dollar basis?

A. Yes, sir.

Q. I see. You have the heading "Natural Gas Production;" I assume that also includes gathering?

A. Yes. He combined the company's production and gathering and I believe its metering department expenses, to come to the natural gas production, and of course he also brought the residual operations and revenues into his natural gas production expense and he did that in conformity with the Commission's Uniform System of Accounts.

Q. All right, go down to line 22, Sheet 1.

A. Of course I put that $10,401.58 in for an allowance for delay rentals. That was the delay rental expense shown on Mr. McKinstry's Exhibit No. 168 for the year 1939, and an investigation disclosed that these rentals were paid annually in advance. Therefore, in order to be certain that a

full allowance was made in working capital, I simply allowed the whole year's delay rental, so-called delay rental, according to his income account.

Q. Based entirely on the experience of the company in the year 1939?

A. Well, this is the 1939 figure, and I think possibly that I gave the company more than I should have on that one, but I am not suggesting that it be changed. I allowed a whole year in advance and I think that their average investment in prepaid delay rentals would be only one-half of that. However, I am not suggesting by any means that it be changed.

Q. I wouldn't suggest it either, Mr. Smith, so we will pass on to the next item.

I think if you go to Line 26, Sheet 2, which is described line pack, the amount involved is not very large. I see you have a note which is applicable to it. Is there any additional explanation you might think appropriate for the record?

A. I don't think of anything additional that, I—

Q. This line pack represents gas in the line that must be there all the time?

A. That apparently is the theory as to how the practice grew up. I was never sold on it, putting in a line pack allowance for a production company, but Mr Jackson suggested that I put it in because there has apparently been a decision saying that the line pack should go in as an allowance for working capital, too, so it has been put in. It looks to me as though a line pack for a production company might cause a lot of duplication where your have made an allowance for the expenses of the production company.

Q. Are you arguing against your exhibit?

A. No, sir. As I said before, those things are in there and I want them to stay in there because I wanted this exhibit to be put up in such a way that if there is any doubt about any item I would rather give the company the benefit of the doubt than to try to take it away from them.

Q. As to working capital?

A. Of course, we are discussing a working capital exhibit. I think working capital exhibits are the only exhibits that I have put in for these two companies.

Q. I want to see how generous and liberal you are when you come to this depreciation and depletion schedule of yours. Let me ask you one or two questions on this particular item.

For the purpose of determining the value of the gas represented by line pack you have used a price of four cents per Mcf.?

A. That is right.

Q. Which you designate as an arbitrary rate?

A. That is right.

Q. And which you have utilized because the company utilized it in computing the value of gas used for testing and packing the Texline lateral and for the majority of the gas used in the operation; that is your recommendation on that?

A. Yes, that was about the only tangible figure I could use. It seemed to me that it might be reasonable because even assuming that the value of the gas might be slightly in excess of four cents, there would be factors entering into the cost of the gas, such as depreciation and depletion, for example, which don't require any working capital or cash outlay on the part of the company.

Q. Well, just to clarify that a little, when the company uses the price of four cents per Mcf. for gas used in its operations, that is a well head price, is it not?

A. That is what I understand to be the so-called field price. Now, just where it is supposed to measure value of the gas, at what point; of course I don't know. I know that the—

Q. And this gas used in the line pack figures has been gathered, compressed, and transported to varying distances?

A. That is a fact.

Q. But if you went into that you said you would have had depreciation and other factors to consider?

A. Yes, sir.

Q. You have used the four cents per Mcf.?

A. I used the same price that the company used in their capitalization of the pack on the Texline lateral. I think that influenced my decision there quite a lot.

Q. You are not attempting to say or purporting to say that that represents the value of the gas in the line pack?

A. Well, I am saying that it represents a reasonable allowance for these purposes. I am not implying that that is the price of gas at the Clayton Junction station, or anything like that.

Q. And the amount involved is not large in any event?

A. I think we could figure on this for a month and we then would only be a few hundred dollars at difference.

Q. Had you used the company's book figures for the year 1939 instead of the book figures as adjusted in Mr. McKinstry's Exhibit 168, what would have been your figure for working capital, approximately?

A. I don't believe I could answer that without—

Q. You didn't compute it in that manner?

A. I didn't compute it in that manner because I felt as though I was justified in using the adjusted figure.

Q. All right, I will not pursue that any further except to ask you this: From your knowledge of the figures, you would say that your working capital would have been greater had you used company book figures for the year 1939 without adjustments?

A. I don't believe it would have been much greater.

Q. You don't know, though, exactly, however?

A. I can't make a quick check on it by referring to Mr. McKinstry's exhibit very well because he has reclassified so many items—

Q. I will not ask you to take time to do that.

By utilizing this method of yours for determining working capital, we arrive ultimately, do we not, to an average of cash requirements for the year rather than the actual cash that may be involved from time to time; that is to say, you find working capital here should be $150,738.38. I assume the company may need more than that at certain times and less than that at certain times, is that correct?

A. Some unusual circumstances might create a peak condition which might modify my computation slightly; however, I want to point out that the facts developed in my Footnote 9 creates a considerable cushion there, it seems to me, looking at the situation as a whole over a period of a year, because—

Q. I think you explained that yesterday, didn't you?

A. Yes, sir. There is quite a cushion in that. When

you collect revenues for taxes, part of which are to be used for the payment of taxes, and you don't pay some of those taxes for a year or more later, you definitely have a cushion there that will take up quite a bit of the shock if you do run into that peak condition.

Q. But your computations are based on averages, are they not?

A. The computations that are arrived at on Line 28, Sheet 2, are based on the average condition for the year 1939.

Q. That is correct. It is also possible that the company at various times might need an excess of the average—I mean, need cash in excess of the average or materials and supplies, for that matter?

A. I doubt if they should on materials and supplies, because I might add that I carried this same sort of computation on for 1937 and 1938 and came to a result which was approximately the same as this result—I believe it was a little bit less in those years.

Q. You did have times did you not, when you had materials and supplies on hand during these years in excess of $86,941.77 shown in Column 2, Sheet 1? In other words, this is not a maximum figure, is it?

A. It probably isn't. I can think of situations where purchases of materials and supplies were made to carry on some construction project which may have put a higher figure in that account, but I believe as far as operating materials and supplies is concerned, the average doesn't fluctuate a great deal; that is, the peak condition doesn't fluctuate very much from the average.

Q. These figures are not the maximum figures that you found in looking into the experience of the company, that is true, is it not?

A. No, and if they were an average, of course, they wouldn't be a maximum.

Q. That is right. I think that follows.

A. I think under my system here where the materials and supplies account, if it fell below the average, that would mean just that much more money in the bank for the time being.

Q. I can't see any particular benefit the company would derive by having the balance in the bank.

Let's go to this: Are you familiar with the contract dated January 3, 1928, between Canadian River Gas Company and Colorado Interstate Gas Company covering purchase and sale of gas?

A. I am in a general way familiar with it.

Q. Is it true that contract makes provisions for what we might term generally the working capital requirements of Canadian River Gas Company?

A. I assume you have reference to provisions in general that Colorado Interstate Gas Company pays the expenses of Canadian River Gas Company and handles a sum there for them through their current account?

Q. Yes, sir. That is right. When Canadian River Gas Company needs money for any purpose it gets it from the Colorado Interstate Gas Company—

A. That is my understanding of the situation.

Q. That is all provided for in the contract I mentioned to you a few minutes ago, isn't it?

A. It is my understanding of the operation of the company and the contract.

Q. Assuming that contract, as between the parties, is valid and binding—

Mr. Lange: Of course—

Mr. Spencer: Just a minute. I haven't finished the question.

Q. —and then there is no necessity for any working capital provisions such as you have supplied here in Exhibit No. 171.

A. I haven't given that any consideration.

Q. You wouldn't know about that?

A. I don't believe I am qualified to say.

Q. What is the purpose of this Exhibit 171 entitled "Working Capital" in so far as Canadian River Gas Company is concerned?

A. To show the Examiner and the Commission what the working capital requirements of Canadian River Gas Company are.

Q. Exactly. Now, you really couldn't make a determination of that without considering what provision Canadian River Gas Company had made for itself with respect to working capital, could you?

A. They are the requirements; these aren't the provisions that Canadian River or anybody is making. These are the requirements.

Q. Would you say today that with respect to Canadian River Gas Company and the situation in which you find it that it needs $150,738.38 as working capital?

A. I still think that is a legal question.

Q. Well, let me help you out some. This study in Exhibit 171 of yours is made for the purpose of a rate proceeding, is that correct, without respect to the contracts that may exist between Canadian River Gas Company and Colorado Interstate Gas Company; isn't that simple?

A. I think that follows; that is, if we assume that the contracts were valid, I don't know whether there would be any basis for a rate proceeding or not. I don't know.

Q. I think that is a frank analogy. Who asked you to make this particular exhibit, Mr. Smith?

A. I think Mr. J. P. Jackson gave me that assignment before he resigned from the Commission's staff. He was assistant chief accountant.

Mr. Spencer: That is all.

Redirect Examination.

By Mr. Lange:

Q. Mr. Smith, you just stated on cross examination, or, rather, made some reference to the suggestion or instructions of Mr. J. P. Jackson who was formerly on the Commission's staff, with reference to a portion of this exhibit?

A. Yes, sir.

Q. I will ask you now whether aside from that suggestion of Mr. Jackson these are your views and opinions as an accountant as expressed in this working capital exhibit?

A. Oh, yes. Mr. Jackson asked me to make the exhibit; he didn't tie me down to any method, but I have discussed my method with him.

Q. But this exhibit as it now appears in final form expresses your views as an accountant?

A. Yes, sir.

Q. And your opinions as an accountant?

A. Yes, and it has been approved, of course, by my superiors.

Mr. Lange: I think that is all.

The Trial Examiner: You may step down, Mr. Smith.

(Witness excused.)

Mr. Lange: We at this time desire to offer this exhibit.

The Trial Examiner: Any objection?

Mr. Spencer: I object to it generally as being wholly irrelevant and immaterial to any of the issues involved in this proceeding and specifically because the working capital requirements of Canadian River Gas Company are covered by a contract which has been placed in evidence here, namely, the contract dated January 3rd, 1928 between Canadian River Gas Company and Colorado Interstate Gas Company covering the purchase and sale of gas.

The Trial Examiner: The objection will be overruled.

Mr. Lange: Then Exhibit 171 is admitted?

The Trial Examiner: Exhibit 171 will be received.

In Exhibit 276, Witness Lusk, entitled, "Required revenues from gas on a regulatory rate basis all gas delivered at Clayton Junction, New Mexico to Colorado Interstate Gas Company 1939 to 1947 inclusive," he determined the average working capital for the years 1939 to 1947 inclusive (shown on Statement 12), and in Exhibit 277, entitled "Required revenues from gas on a regulatory rate basis resale gas alone delivered at Clayton Junction, New Mexico, to Colorado Interstate Gas Company," he determined the average working capital for the same years (shown on Statement 12).

The following are the amounts so determined:

(From Exhibit 276) (Statement 12) Year	Average Working Capital (All Gas)	(From Exhibit 277) (Statement 12) Year	Average Working Capital (Resale Gas Only)
1939	$190,000 (A)	1939	$165,000
1940	205,000	1940	175,000
1941	220,000	1941	190,000
1942	230,000	1942	200,000
1943	245,000	1943	215,000
1944	265,000	1944	235,000
1945	275,000	1945	245,000
1946	285,000	1946	250,000
1947	275,000	1947	245,000

Note: (A) as shown in Exhibit 192.

55. **Operating Costs of Canadian, 1928 to 1939, Inclusive, and as Estimated, 1940 to 1947, Inclusive.**

These costs are shown for 1928 to 1939, inclusive, in Exhibit 91, Witness Lusk. He explained (Vol. XIX, pp. 2613, et seq.) that this statement is a summary of all operating and maintenance costs, 1928 to 1939, inclusive, as reflected on the books, except for certain adjustments which were considered necessary in order to properly allocate certain costs to the proper years. The system of accounts maintained by the company is designed primarily to record all its costs in such a manner as to determine amounts due from time to time for gas sold, and to facilitate settlements under the contract entered into between Canadian and Colorado Interstate under date of January 3, 1928 (Exhibit 16) covering the purchase and sale of gas. In keeping with the accounting for costs, as defined under that contract, Statement 1 shows, as part of such costs, interest, federal income taxes and the amount of debt retirement for each year; likewise and for the same reason, revenues from sources other than from the sale of natural gas are shown as credits to the gross cost of operating and maintaining the properties.

MR. LUSK testified on direct examination: (Vol. XIX, pp. 2612-2625.)

By Mr. Spencer:

Q. Mr. Lusk, have you prepared at my request a statement showing the operating costs as adjusted of Canadian River Gas Company for the period 1928 to 1939, inclusive?

A. I have.

Mr. Spencer: I would like to have the statement referred to by Mr. Lusk marked for identification as an exhibit.

The Trial Examiner: It will be marked for identification as Exhibit No. 91.

(Exhibit 91, Witness Lusk, marked for identification.)

Mr. Spencer: I am short on copies.

Q. Do you have a written statement in connection with this exhibit, Mr. Lusk?

A. Yes, sir.

Q. Will you please read that into the record?

A. "The attached Statement No. 1 sets forth all costs of operating and maintaining the properties of Canadian River Gas Company for the period 1928 to 1939, inclusive. This statement is a summary of all operating and maintenance costs of the company for the period mentioned as reflected on its books except for certain adjustments which were considered necessary in order to properly allocate certain costs to the proper years. The system of accounts maintained by the company is designed primarily to record all its costs in such a manner as to determine amounts due from time to time and to facilitate settlements under the contract entered into between the company and Colorado Interstate Gas Company under date of January 3, 1928, covering the purchase and sale of gas. Accordingly, such system of account does not conform, and does not purport to conform, to any classification of costs in a strict accounting sense.

"In keeping with the accounting for costs as defined under the above-mentioned contract the attached Statement No. 1 shows, as a part of such costs, interest, Federal in-

come taxes and the amount of debt retirement for each year; likewise, and for the same reason, revenues from sources other than from the sale of natural gas are shown as credits to the gross cost of operating and maintaining the properties.

"Certain unallocated items appearing in the profit and loss suspense account and the surplus account from time to time have been replaced back to the year in which such charge should have been made. These items consist principally of Federal income taxes paid in the year following that in which they were incurred.

"Statement No. 2, also attached, is a summary of gas expense indicated on Line 3 of Statement No. 1. Statement Nos. 3 to 9, inclusive, show the detailed analysis of gas expense shown by Statement No. 2. Statement No. 10 shows gasoline expense and Statement No. 11 shows all other miscellaneous costs."

Q. Now, Mr. Lusk, in the first paragraph of your statement it refers to a contract dated January 3, 1928 between Canadian River Gas Company and Colorado Interstate Gas Company. Is that contract Exhibit No. 16 in these proceedings?

A. Yes, sir.

Q. Are you generally familiar with that contract?

A. Generally, yes, sir.

Q. I wish you would briefly outline for the Examiner the principal features and characteristics of that particular contract from the standpoint of accounting.

A. Well, Article X of that contract sets forth—

The Trial Examiner: By the way, that contract is in evidence, isn't it, Mr. Spencer?

Mr. Spencer: Exhibit No. 16.

The Witness: Article X of that contract sets forth certain definite and specific allocations of costs, divided between a cost rate to the Amarillo Oil Company and a gas rate factor to the Colorado Interstate Gas Company.

Generally it consists of amortization of the cost of productive gas wells; operation and maintenance of production

system; operation and maintenance of land department; gas royalties; rentals and unoperated leases; two-thirds of the unallocated general administrative and office expense; two-thirds of the profit and loss expense account; other profit and loss expense accounts; amortization of the cost of leases; one-half the requirements of the sinking fund; one-half the interest on the bonds; operation and maintenance of the meter department; taxes on the production system and the measuring stations; two-thirds of the taxes on general unallocated property; two-thirds of the shop labor, supplies and expenses; two-thirds of the Bivins camp expense, net; two-thirds of the Bivins hotel, net; amortization of the A notes, interest on the straight notes, interest on the A notes; two-thirds of the interest on the C notes; interest on the current account; two-thirds of the interest on unfunded debt; two-thirds of the other interest, and the cost of drilling unproductive wells.

Those total costs, divided by a total production figure, equal—or are equivalent to a computed rate to the Amarillo Oil Company under Contract B.

By Mr. Spencer:

Q. In other words, that contract is also on a cost basis?

A. Yes, sir.

Q. The price of gas under that contract is determined by so-called cost accounting?

A. Yes, sir.

Now, in addition to that the operation and maintenance of the gathering system, the operation and maintenance of the compressor system, and the operation and maintenance of the transmission system, and one-third of the unallocated general administrative and office expense; one-third of the profit and loss expense; one-half of the requirements for sinking fund; one-half of the interest on bonds; taxes on gathering, compressing and transmission system; one-third of the taxes on general unallocated property; one-third of shop labor, supplies and expenses; one-third of the Bivins camp expense, net; one-third of the Bivins hotel, net; amortization of the B-1, B-2, B-3 and B-4 notes; one-third of the amortization of the C notes, interest on the B notes; one-third of the interest on the C notes; interest on the

current account; one-third of the interest on unfunded debt; one-third other interest, and the rental and operating expense of lease facilities.

Now, the sum total of that is divided by the total Mcf. delivered to the Colorado Interstate Gas Company and that determines their portion of the factor, the total resulting in a total overall rate to the Colorado Interstate Gas Company. All is defined under that contract and under which the cost accounting for gas purchased and sold of the Canadian River Gas Company.

Q. Have you sufficiently described how the revenues from the sales of gas to others than Amarillo Oil Company and Colorado Interstate Gas Company are treated ultimately, not in this particular exhibit but you might clarify it for the Examiner, to show how other revenues derived from the sales of gas are treated.

A. Well, the Canadian River Gas Company also delivers gas for the account of the Colorado Interstate Gas Company to the Natural Gas Pipeline Company of America. That rate is also the same rate at the present time as the Colorado Interstate Gas Company rate.

Q. It has some sales to Amarillo Oil Company at a fixed price?

A. Yes, there are sales to the Amarillo Oil Company at a fixed price.

Q. Now, would it be fairly accurate to characterize the operations of Canadian River Gas Company as constituting a non-profit company under this contract?

Mr. Lange: I believe that's a conclusion. The accounting figures will reflect whether there is a profit or not. Whether the operations are termed "non-profit" or whether they are termed "profit" I think is purely a conclusion, especially since they are attempting—I suppose there is some attempt being made to tie it in with a provision in a contract which attempts to say that a certain operation is non-profit. That is for the Examiner and the reviewing authorities to determine. That ties in with a provision, the way I see it, with a provision in a contract alleging that such and such a situation obtains.

Mr. Spencer: Well, I'll withdraw it, Mr. Examiner, and start again. You won't have to decide that one.

Q. I notice an item of income taxes in this statement. Will you explain how the company might have income subject to income tax under this character of contract?

A. Well, it all came about with the rulings of The Internal Revenue Department that certain depreciation was not allowable. Therefore, the company was assessed amounts of income taxes from approximately 1931 right down to 1939.

Q. That is to say that there is a difference between the amortizations under the contract and the amortizations, broadly speaking, that are allowed by the Bureau of Internal Revenue for income tax purposes?

A. Well, the Bureau of Internal Revenue wouldn't allow amortization of debt to be included in amortization under any other form, under any circumstances.

Q. Did the original contract, Exhibit 16, make any provision for income taxes?

A. No, sir, it specifically exempted all forms of income tax.

Q. When income taxes developed by reason of this difference in amortization, were arrangements then made to include income taxes as a part of the cost of gas?

A. Yes, sir.

Q. And they have been included subsequently?

A. Yes, sir.

Q. Will you take your statement, Mr. Lusk, starting with Statement No. 1 and go through each statement giving a brief description of what the statement is, in a little more detail than you have in your written statement?

A. Statement No. 1 is an overall summary of the operating costs adjusted, and Line 1, "Gas Purchased," the last gas purchased year was 1935. There hasn't been any purchase—for 1936, 1937, 1938 and 1939. The gas purchased from various producers in the field, might be small drillers, but principally I believe Red River Gas Company.

Item No. 2, "Gas Royalties," is the amount paid to the lessor under a stipulated amount agreed upon in the lease.

Item No. 3, "Gas Expense," is further detailed on Statement No. 2 giving the systems and those systems are further detailed by Statements 3 to 9, inclusive.

Item 4, "Rentals on Unoperated Leases," are the rentals paid to the lessors.

Mr. Lange: Right there, are those the delay rentals?

The Witness: Delay rentals, yes, sir.

By Mr. Spencer:

Q. Also, the nomenclature that you have used here is the nomenclature of the company as appearing on its books? A. That's right.

Line 5, "Rental and Operating Expenses of Leased Facilities," is the amount paid for the transmission of gas from Fritch to Gray, Oklahoma.

Line 6, "Gasoline Expense and Royalties," is the amount of expense incurred at the Fritch gasoline plant, the royalties paid to lessors for gas. It includes the royalties received on the gas passing through Fritch to the Chicago line, less the royalty.

Item 7, "Bivins Camp, Dining Room, Hotel and Store Expense," is the cost of operating the camp, the dining room and the hotel at Bivins compressor station.

No. 8, "Shop Expenses," is a small amount. That is also at Bivins.

Item 9, "Taxes," are the advalorem taxes and all other forms of taxes except federal income tax.

Line 10, "Other Miscellaneous Expenses," the principal item of which being non-productive well drilling expense.

Line 12, "Other Revenue (Exclusive of Sale of Gas)," all of the gasoline revenues from the operation of the gasoline plant at Fritch—or at Bivins, excuse me.

No. 13 is "Rent Revenues," principally derived from the rental of houses around the Bivins compressing station.

Item 14 is the "Bivins Hotel, Dining Room and Store Revenues," received from the Bivins Hotel, dining room and store.

Item 15, "Other Miscellaneous Revenues," is the miscellaneous amount shown each year with the exception of the first year, where the amount is large.

Item 16, "Interest Revenues," are the amounts derived principally from loans made to employes.

Item 17 is the "Total Other Revenues (Exclusive of Sale of Gas)"—

Q. Right there, Mr. Lusk, Items 12 to 17, inclusive, as totaled in Item 18 are applied as a credit against Item 11 above?

A. Yes, that's correct.

Line 18 is the difference between Lines 11 and 17.

Item 19 is all interest paid on the bonded indebtedness of the Canadian River Gas Company and the notes and the amount of interest assessed by the Internal Revenue Department on tax deficiency.

Item 20 is the "Amortization of Debt," including all of the notes.

Item 21, "Federal Income Taxes," set back into the year applicable.

Item 22 is the "Total Interest, Amortization of Debt and Federal Income Taxes," and

Item 23 results in the total operating costs as adjusted.

Q. Do you have any further explanation with respect to the subsequent statement?

A. Well, Statement 2, I previously mentioned, was the summation of the gas expense by systems, and Statement 3—

Q. That particular statement includes all operations of the company, that is to say, production system, gathering system, compressing station, transmission sytem—

A. Yes, it does. It begins with production system and goes down through gathering system, compressing station, transmission system, and all other operating expenses of the company, with the gas used in operations set in as a credit.

Q. Statement No. 3, Mr. Lusk?

A. Statement No. 3 is the detail of the production system. Also shown on Statement 3 is the gathering system operation and maintenance expense.

Statement 4 shows the compression station operations.

and maintenance, and also on Statement No. 4 is the transmission system operating and maintenance expense.

Statement 5 is the land department expense.

Statement 6 is meter department.

Statement 7 is Amarillo office.

Statement 8 is telephone department.

Statement 9 is general administrative expenses.

Statement 10 is gasoline expenses, Bivins only.

Q. That is—you mean the expense of operating the gasoline plant?

A. At Bivins, yes.

Q. Yes.

A. Statement 10 are all the other miscellaneous expenses.

Q. Statement 11, you mean?

A. Statement 11.

Q. Now, Mr. Lusk, you have mentioned in your statement here, something about adjustments which you found it necessary or advisable to make. Will you amplify that a little bit?

A. Well, the principal adjustments that I made, as I stated, as has been stated in this written statement, the Federal income taxes set back, and also a breakdown and a re-allocation to the years of the audit made in 1934.

Q. After giving effect to those adjustments, all of your figures in these statements can be tied back into the financial statements and records of the company?

A. They are tied back, not in this statement but the working papers.

Q. Do you have working papers? You have working papers which do tie your figures into the company's financial statement?

A. Yes, sir.

Q. Are those working papers to be available to counsel?

A. Yes, sir.

Q. Accountants for the Commission?

A. Yes, sir.

Mr. Spencer: Now, Mr. Examiner, unfortunately I wasn't

able to give counsel for the Commission a copy of this exhibit until this morning; in fact, it wasn't completed until this morning. I am willing to make—in fact, I would like to make a request for an adjournment at this time until 2:00 o'clock to give Commission's counsel and their accountants an opportunity to look it over. I believe it will expedite the cross examination, and we can use the time to good advantage, unless the Commission's counsel has some objection.

Mr. Lange: I think we can go ahead at this time with the basic matter that we want to interrogate about. I don't know how much additional information we would be able to assemble between now and 2:00 o'clock in the matter, and if it is agreeable with the Examiner, why, we can proceed.

Mr. Spencer: That's all right.

The Trial Examiner: We will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

Mr. Spencer: That is all of the direct examination I have.

* * * * * * *

In the course of his cross-examination Mr. Lusk testified: (Vol. XIX, pp. 2625-2633.)

Cross Examination.

By Mr. Lange:

Q. Mr. Lusk, Exhibit No. 91, which has just been identified, covers the period from 1929 to 1939, inclusive—December 31, 1939?

A. Yes, sir, by years.

Q. By years?

A. Yes, sir.

Q. And you mention on the first page of your written statement that this exhibit was prepared in accordance with provisions of that contract between Canadian River Gas Company and Colorado Interstate Gas Company?

A. This exhibit was prepared from the books of the Canadian River Gas Company, which books are set up in accordance with that contract.

Q. They are set up in accordance with that contract?

A. Yes, sir.

Q. And the provisions of that contract which you read?

A. That is correct.

Q. And you followed those provisions of that contract in connection with the preparation of this exhibit?

A. Well, each year—

Q. Just explain what you did on that.

A. Each year I verified the operating statements of the company as closely as I could follow that contract. I spent nights and days doing it.

Q. Well, now, what are the provisions with reference to its life? During what period is it operative?

A. From 1928 to 1948.

Q. 1928 to 1948?

A. Yes, sir.

Mr. Spencer: May I ask a question here, Mr. Lange?

Mr. Lange: Surely.

Mr. Spencer: That is the fixed term of the contract?

The Witness: The fixed term of the contract.

By Mr. Lange:

Q. There are also provisions for carrying on beyond that date?

A. I couldn't say. I don't just recall what the provision is.

Q. All right, the contract will show.

Have you had occasion to see if there is a provision for carrying on beyond that date?

A. No, sir.

Q. Now, then, Mr. Lusk, if you were preparing an exhibit that was intended to reflect the cost of operation of Canadian River Gas Company, preparing it as an accountant, and weren't bound by the provision of that contract, would you have set them up as you have in this fashion?

A. Ordinarily I would with the exception of Item 20, Amortization of Debt.

Q. Well, that is on Statement 1?

A. Statement 1, yes, sir.

Q. All right, what does that item reflect as set up by you in Statement 1?

A. That is the requirement of the bonded indebtedness of Canadian River Gas Company and the payment of the notes given to the Colorado Interstate Gas Company when due.

Q. If you hadn't been following the provisions of this particular contract as an accountant, how would you have handled that particular item?

A. I wouldn't have put that in a cost statement at all.

Q. You wouldn't have put it in a cost statement at all?

A. No, sir.

Q. Why?

A. Because it is not an item of cost

Q. In other words—

A. It is in a separate sense.

Q. Is that what you were referring to the other day, that you would rather be an accountant and didn't want to be a dog-catcher for putting it in that particular place?

A. That is right.

Q. So you became a dog-catcher at this time in putting it in?

A. No, I am strictly following the terms of that contract. I make the statement here that it does not conform or purport to conform to any classification of cost in a strict accounting sense.

Q. It does not?

A. But accountants are generally required to follow the contract.

Q. They are? And that is what you did in this case?

A. That is what I did in this case, I followed the contract.

Q. All right, what other item would you have handled in a different fashion if the provisions of the contract had not been binding upon you to follow?

A. Well, I would have eliminated the other revenues.

Q. What are you referring to?

A. The Gasoline Revenues from Item 12 to Item 18, inclusive.

Q. Item 12 to 18, inclusive?

A. Yes, sir.

Q. All right, why would you have eliminated them?
A. Because—

Mr. Spencer: Just a minute.

I would like to get clearly the basis for the question "Why would you have eliminated them?" That is what Mr. Lange asked. The witness has already testified that he is merely setting down a summarization of what the company shows on its books and records in their system of accounts under this contract.

Mr. Lange: He is an accountant and has stated his experience as to what the accounting procedure is. He has qualified this statement specifically on Page 1 where he says: "Accordingly, such system of account does not conform, and does not purport to conform, to any classification of costs in a strict accounting sense."

I want to know what he would have done if he had followed such an accounting basis.

Mr. Spencer: I have no objection to your question. What I want to know is whether he is expressing his own opinion as to how the accounts would have been set up under different circumstances or what the company would have done under different circumstances.

Mr. Lange: I am asking him for his own opinion as an accountant, as an expert.

Mr. Spencer: All right.

The Trial Examiner: Do you recall the question, Mr. Lusk?

The Witness: Yes, sir, I understand the question.

The total of Other Revenues, instead of being deducted from the total expense, ordinarily would be set up as a revenue item and not as a credit to expense.

By Mr. Lange:

Q. And there is one other item you didn't mention in that connection, or did you not intend to mention it? What would you have done with Item 19?
A. The Item of Interest would be set down in its proper place.

Q. Where?

A. Below the line.

Q. Below the line?

A. Yes, sir.

Q. In other words; the way you have it now you would not have followed such procedure under ordinary accounting methods?

A. No, I would have taken the ordinary accounting classification and set that up for the ordinary operating revenues and expenses of Canadian River Gas Company or any other company.

Q. This item of Interest, what does that include?

A. That includes the interest on the bonds, interest on the notes, and interest on the open account.

Q. Of Canadian River Gas Company?

A. Yes, sir.

Mr. Spencer: Open account with whom?

The Witness: The Colorado Interstate Gas Company.

By Mr. Lange:

Q. Now, then, do you know what the uniform system of accounts for natural gas companies, as promulgated by the Federal Power Commission, would show with reference to the proper treatment of Items 2 to 18 that you just mentioned?

A. They would set them up as "other revenues."

Q. How would Item 12 be set up under the uniform system of accounts?

A. As "gasoline revenues."

Q. Do you know the provision of the uniform system of accounts for natural gas companies with reference to the proper handling of that particular item of Gasoline Revenues for natural gas companies?

A. No, I am not familiar with that particular section of the code, no, sir.

Q. You have had occasion to study the provisions of that code?

A. Yes, sir.

Q. And the instructions it contains and the classification of accounts set forth?

A. I don't recall the present new Federal Power Commission—I have read it through several times but I don't know just what classification was used for gasoline—

Q. As I understand it, you didn't give any consideration to the classification as provided for under that code?

A. Not in this exhibit.

Q. Now, then, I also note on Statement 1 that you have Item 21, "Federal Income Taxes." Where would you have placed those if you hadn't been limited by the terms of this contract?

A. Well, in the ordinary classification as set up, as we might call it, those Federal income taxes would be down below the line as other deductions from income.

Q. And in connection with Federal income taxes, you mentioned something with reference to the provision that was taken by the Bureau of Internal Revenue Department some time ago in connection with the company's operating accounts. What exactly was done at that time?

A. The intent of this contract, as I read it, and as I generally followed it, was that the amortization of debt would be exactly equal to the depletion and depreciation taken by the company which would result in a zero net income. Unfortunately, the Bureau of Internal Revenue doesn't look upon it in that light.

* * * * *

MR. LUSK further testified on cross-examination: (Vol. XIX, pp. 2640-2644.)

Q. Referring back to your statement with reference to the changes made or recommended by the Internal Revenue Department, what did the Internal Revenue Department have to say with reference to the company's method of setting up depreciation or depletion on its books?

A. Well, the principal objection of the Internal Revenue Department in the early years was the disallowance of the differences between the cost of the leases and the amount that the company had taken as a depletable base.

The Internal Revenue Department also recommended certain changes and they were adopted by the company, adopted in 1931, in which the company accepted depreciation on a 25-year life basis.

Q. And what had the company set up on its books before that time?

A. The company originally started out to depreciate all of its depletable property on a 20-year life basis, five per cent.

Q. And what was the company's reason for setting them up on a 20-year life basis?

A. It was the life of the contract.

Q. That was for the purpose of tieing in with the provision of that contract?

A. That was the original intent, yes, sir.

Q. Then, when the Internal Revenue Department suggested the change, did the company set up its depreciation on that basis as recommended by the Internal Revenue Department?

A. They did—unfortunately, they did.

Q. What year was that?

A. About 1931.

Q. 1931?

A. Yes, sir.

Q. Why do you say it was unfortunate that the company had to do it on that basis?

A. I am glad you asked that question, Mr. Lange.

Q. All right.

A. Because that is one—

Q. We want to air the whole thing. Let's get the reason for it.

A. I could never understand why the Canadian River Gas Company accepted the rule of the Internal Revenue Department and attempted to fit those rulings into the corporation accounting. They should be set up following their own practices and thoughts. The Internal Revenue Department is interested in taxes and not in corporation accounting.

Q. Well, but you just said they didn't set that up according to their own plans and thoughts but set it up to be complying with the provisions of that contract.

A. No, I didn't.

Q. You say they set it up on a 20-year basis according to the contract?

A. That is correct.

Q. Their opinions or views didn't enter into that after that became fixed?

A. What I am quarreling about is why did they have to accept the Internal Revenue Department's rulings? They could still have gone on a 20-year life basis.

Q. Well, when the Internal Revenue Department made those changes or required those changes to be made, who was in charge of the accounting department of the company at that time?

A. Either—I think it was Mr. Simpson.
Q. Mr. Simpson?
A. Yes, sir.
Q. He is the Mr. Simpson referred to previously in this testimony?
A. Yes, sir.
Q. What was his opinion about it?
A. Why, I imagine that he took the matter up with New York and Amarillo and he was instructed to follow the Internal Revenue Department's ruling.

The operating costs summarized on Statement 1 for the years 1928 to 1939, inclusive, year by year, are brought forward in Exhibit 163 only in so far as they relate to the property owned by Canadian. Rentals on leased facilities and revenues incidental to Chicago line gas are excluded. (Vol. XXXXIII, p. 5952.) These costs as they relate only to property owned by Canadian are extended through the year 1947, and will therefore not be set forth here, but will be set forth in connection with Exhibit 163, which will now be abstracted.

The costs of operations are extended through 1947 in Exhibit 163, Witness Rhodes. (Vol. XXXXIII, pp. 5948, et seq.) In estimating these costs he gave effect to the trends of costs in the past, as shown by Exhibit 91, and to the additional costs resulting from the added facilities listed in Exhibit 66 as to transmission, and in Exhibit 94 as to production and gathering. These costs include not only the operating and maintenance expense, but also interest and amortization of debt called for by the contract with Colorado Interstate, Exhibit 16.

In projecting the past annual costs into the future, due regard has been given to the fact that except for royalties and taxes on production, most of the annual operating expenses of production and transmission are fixed and controlled by the nature and extent of the property, rather than by the amount of gas produced and transported. In general, as a natural gas property is more fully developed, the annual expenses increase in a smaller proportion. The primary expense characteristics of Canadian River property have been studied and determined as related to each class of

property and expense, and form the basis for projecting into the future the past normal expenses of the company. Major well repairs have been separately allowed for.

Interest and amortization of the company's debt have been included as provided for in the contract with Colorado Interstate (Exhibit 16). Additional notes have been provided for to cover the cost of new facilities described in Exhibits 66 and 94. For the facilities required in 1940, actual costs with estimates to complete have been used. For facilities to be provided later whose costs have been testified to by Mr. Watson, such costs have been used. (Vol. XXXXIII, p. 5949.) (For added compressor station equipment costs have been based on actual costs of like facilities recently constructed. For other facilities costs have been taken which are commensurate with reproduction cost new of the Denver Line properties, as set forth in Exhibits 68, 70 and 71.)

Total annual costs of operating and maintenance expense, and the total annual interest and amortization costs projected through 1947 in the manner above described, are shown in summary form by the attached Statement 1, as follows:

Statement 1, Exhibit 163.

Calendar Year (1)	Gas Expense (B) (2)	Other Expense (C) (3)	Total Expense (4)	Deduct Other Revenues (D) (5)
1928(A)	$ 69,337	$136,303	$205,640	$123,308
1929	194,885	430,938	625,823	262,964
1930	227,996	404,937	632,933	205,274
1931	276,160	451,476	727,636	137,823
1932	242,459	405,876	648,335	117,088
1933	210,484	340,098	550,582	123,616
1934	214,668	394,904	609,572	115,408
1935	205,583	441,214	646,797	164,355
1936	236,026	491,691	727,717	193,883
1937	261,297	535,732	797,029	205,803
1938	266,593	517,534	784,127	146,511
1939	339,733	591,277	931,010	184,487
1940	418,900	633,988	1,052,888	148,034
1941	378,600	638,516	1,017,116	158,994
1942	337,100	692,675	1,029,775	162,324
1943	359,300	721,624	1,080,924	163,295
1944	365,500	757,980	1,123,480	166,486
1945	368,800	755,399	1,124,199	169,677
1946	371,900	700,584	1,072,484	169,677
1947	375,700	480,369	856,069	169,677

Notes: (A) 7 Months.

(B) Details attached—Statement No. 2.

(C) Details attached—Statement No. 3.

(D) Details attached—Statement No. 4.

Statement 1. Exhibit 163 (Continued).

Net Operating Expense (6)	Interest (7)	Amortization of Debt (8)	Federal Income Taxes (9)	Total (10)
$ 82,332	$167,801	$ 11,105	.....	$ 261,238
362,859	760,111	79,499	.....	1,202,469
427,659	751,864	837,537	.....	2,017,060
589,813	711,391	798,016	$ 49,766	2,148,986
531,247	748,706	369,651	72,410	2,222,014
426,966	700,321	883,427	66,179	2,076,983
494,164	662,243	898,683	69,956	2,125,046
482,442	593,164	902,445	53,854	2,031,905
533,834	550,053	929,712	45,417	2,059,016
591,226	509,260	953,592	63,736	2,117,814
637,616	475,846	969,301	68,435	2,151,198
746,523	430,563	940,597	66,403	2,184,086
904,854	407,905	986,844	60,300	2,269,903
858,122	377,347	881,632	49,193	2,166,294
876,451	350,174	929,609	44,903	2,192,137
917,629	315,612	968,814	44,662	2,246,717
956,994	268,585	994,996	41,710	2,262,285
954,522	217,711	1,037,272	44,755	2,254,260
902,807	165,271	1,083,875	67,380	2,219,333
686,392	105,630	1,125,460	126,355	2,043,837

The Commission, through its accountant witness, Lester B. McKinstry, introduced in evidence, over respondent's objection, Exhibit 168. (Vol. XLVIII, p. 6578.) This is an extensive exhibit, consisting of 157 sheets, prefaced by a statement of Mr. McKinstry appearing in Volume XLVI, pages 6430, et seq. Mr. McKinstry stated his qualifications and experience in Volume XLVI, pages 6425, et seq.

MR. MCKINSTRY testified on direct examination as follows: (XLVI, pp. 6423-6437.)

Q. Please state your name.

A. Lester B. McKinstry.

Q. Where do you reside, Mr. McKinstry?

The Trial Examiner: How do you spell your name, please?

The Witness: M-c-K-i-n-s-t-r-y.

Denver, Colorado.

By Mr. Lange:

Q. Where and by whom are you presently employed, Mr. McKinstry?

A. The Federal Power Commission.

Q. In what capacity?

A. As an Examiner of Accounts.

Q. And what is your profession or occupation?

A. Accountant.

Q. How long have you been in the employ of the Federal Power Commission?

A. Since May 1939.

Q. May 1939?

A. Yes.

Q. Continuously up to the present time?

A. I have.

Q. During that period of time, Mr. McKinstry, have you had occasion to do any work or be assigned to do any work in connection with the present proceeding?

A. I have.

Q. What is the nature of that work?

A. Gathering accounting information particularly on in-

come and surplus accounts of Canadian River Gas Company.

Q. Of Canadian River Gas Company?

A. That's right.

Q. And how long or during what portion of your employment with the Federal Power Commission have you been on that assignment?

A. Ever since May 1939, or all of the time since I have been with the Commission.

Q. Up until the present time?

A. That is correct.

Q. Have you prepared—or, do you have with you a statement showing your qualifications in connection with the work that you have performed in this proceeding, your previous qualifications?

A. Yes, I have.

Q. Will you please read them into the record?

A. "After graduation from high school in 1917, I was employed by the Western Electric Company, whose principal business is the manufacture and distribution of communication equipment and supplies.

"I worked for this company for more than eleven years, being stationed respectively at the main manufacturing plant in Chicago, the installation division office in Philadelphia, and the general office in New York City.

"The first year of this employment was devoted to a factory accounting training course which afforded practical work in several basic clerical and accounting departments, supplemented by semi-weekly classroom lectures and discussions on the function and operation of the factory accounting system.

"Five additional years at the manufacturing plant involved, for most of this time, supervisory assignments in many of the principal accounting departments, such as vouchering, expense analyses, loading rates, cost, production report analyses and statistics, and internal auditing.

"The remainder of this employment was identified with the accounting incident to increased large-scale installations of mechanical and semi-mechanical central office telephone equipment throughout the United States. I assisted in

formulating a new accounting system adopted to account for the enlarged operations; engaged and supervised, as Division Accountant, accounting personnel numbering at one time a maximum of sixty, during more than one year spent in the Philadelphia division (one of ten comparable divisions in the United States) accounting for the industrial activities of some 3,000 engineers and installers; subsequently, in the New York City general offices, I supervised the preparation of financial reports and statistics followed by assignment to the editing of accounting instructions, the design of accounting forms and the prescription of mechanical equipment to be used in the various accounting processes.

"Concurrent with my Western Electric Company employment, I completed by correspondence an advanced course in accounting given by LaSalle Extension University.

"Early in 1929, I was employed by E. I. duPont de Nemours & Company in their Chicago paint and varnish plant, to conduct special studies relative to cost of packaging their product. This employment was terminated late in 1929, upon submission of a final report of the findings disclosed by the aforementioned special studies.

"Since 1929 and continuing into May 1939, very near all of my employment has been with the following public accounting firms, respectively, Touche, Niven & Company; Glenn Ingram & Company; and Arthur Andersen & Company. With the exception of a year or so at the beginning of this period, I served the above firms in the capacity of senior accountant.

"The accounting engagements in which I participated or which I supervised were diversified. They related principally to balance sheet and detailed audits, special investigations in connection with financing, preparation of Federal and State income tax returns, embezzlements, and other funds. In connection with these engagements, I prepared or was responsible for most of the reports and other particulars which were submitted thereon.

"These engagements afforded a familiarity with many different types of businesses, namely, utility holding and operating companies (electric, gas, water, communications,

transportation), wholesale and retail establishments, brokerage houses, finance companies, banks, clubs, restaurant, municipalities, advertising firms, private estates and institutions, industrials, such as manufacturers of automobiles, dredges and excavators, electrical and gas supplies and equipment, amusement equipment, jewelry, dairy supplies and equipment, farm machinery and equipment, railroad supplies. Engagements relating to utility businesses occupied about forty per cent of the total time expended.

"Between connections with the public accounting firms named above, I was temporarily employed by the Auditor of State for the State of Iowa from August to November 1934, inclusive, to supervise the reconstruction of general books and records relating to investment in and operation of a municipally owned electric plant and water works covering a ten-year period from date of initial construction of properties to the end of 1933.

"Also, from April 1937 through February 1938, I was employed by H. M. Preston & Company to conduct analytical surveys of client corporations contemplating recapitalization or general reorganization, and to assist in the devisement of alternative plans to accomplish the desired recapitalization or reorganization. The surveys entailed visitations to client corporation offices and properties to review all pertinent corporate, financial, and salient business particulars, running from inception of the business up to the latest fiscal period for which full recordings had been made.

"Observations were also made relative to the extent of plant facilities, and of operating and administrative personnel. Studies were also made to determine the relative financial position of client concerns with other concerns in the same line of business, together with comparisons of results from operation respecting movement within the national economic cycle as shown by selected indices for each of the years during which the client concern or its predecessor may have been in existence. The nature of the businesses dealt with involved manufacture of oil and gas well equipment and supplies, vacuum cleaners and printing presses, and a wholesale hardware distributor.

"During 1929 I attended Northwestern University School

for Commerce for one semester of advanced corporate accounting. In 1935 I completed by correspondence the advanced accounting course given by Walton School of Commerce.

"In May 1939, upon termination of employment with the public accounting firm of Arthur Andersen & Company, I was employed by the Federal Power Commission in the capacity of Examiner of Accounts and was immediately assigned to duty in the investigation of Canadian River Gas Company, et al. (Docket G-124)."

Q. Mr. McKinstry, in connection with that assignment in this proceeding, I will ask you whether you have prepared an exhibit covering the income accounts and supplemental data including Examiner's reclassifications and adjustments of Canadian River Gas Company?

A. I did.

Q. Did you also in connection with that exhibit prepare a written statement explaining in substance the important phases of that exhibit?

A. I did, yes.

Mr. Lange: I desire to have this identified, Mr. Examiner.

The Trial Examiner: It will be marked for identification as Exhibit 168.

(Exhibit 168, Witness McKinstry, marked for identification.)

By Mr. Lange:

Q. Proceed, Mr. McKinstry, with your written statement.

A. "This report sets forth the Income Accounts of Canadian River Gas Company for the years 1928 to 1939, inclusive, which are presented in thirty-three statements, schedules, and sub-schedules. It contains income accounts for each of the years 1939, 1938, and 1937, reclassified and adjusted in detail, and income accounts for each of the years prior to 1937, reclassified and adjusted as to their more apparent or significant items only.

"In presentation a distinction has been made by desig-

nating the major or master tabulations as statements, and the subordinate and supporting tabulations as schedules and sub-schedules.

"The statements, six in number, comprise Statements B1, B2 and B3, which are condensed income and earned surplus accounts per books, as reclassified and as adjusted, for the years 1939, 1938 and 1937, respectively; Statement B4, which is a tabulation of expenses suspended for the consideration of the Commission for the years 1939, 1938 and 1937; and Statements B5 and B6, which are condensed income and earned surplus accounts for each of the years 1928 to 1939, inclusive, as reclassified, and as adjusted, respectively.

"Statements B1, B2, and B3, show by major groupings of income: (1) Income per books, (2) Reclassification of Income as summarized from reclassification entries, in Schedules B10, B11, and B12, (3) Adjustments of Income, as summarized from adjusting entries, in Schedules B13, B14 and B15, and (4) Income as Reclassified and Adjusted. The purpose of the Reclassification of Income was so to restate the income accounts that all items of revenue and expense would be assigned to the year in which they were properly accruable, and furthermore, to make such transfers between accounts as were necessary to bring the classification of all items of revenue and expense into conformity with the classification prescribed in the Commission's Uniform System of Accounts. The purpose of the Adjustment of Income was to make the Income Account more nearly reflect the legitimate operating income of the company from gas operations. In addition to the four classifications above, Statements B1, B2, and B3 contain also, Items of Income Suspended for the Consideration of the Commission which are tentatively included in Income as Adjusted by the Examiner. These are more fully described and explained below in a discussion Statement B4.

"The Examiner's Reclassification and Adjusting Entries, which are summarized in the six schedules, B10 to B15, inclusive, for the years 1939, 1938 and 1937, are set forth in detail, entry by entry, mainly in Schedule B16, which is a tabulation of eighty-six entries, each of which is designated

"Seventy-two of these entries are reclassification entries and have been marked as such by prefixing the letter 'R' to the numeral in the entry number; the fourteen other entries are adjustment entries. The entries are designated on Schedules B10 to B15, inclusive, by their numbers so that through the medium of these summaries the individual entries are related to the Income Statements presented in Statements B1, B2 and B3. In addition to entries in the '100' Series, the summaries also contain entries from the '200' and '400' Series, which were made by other Examiners primarily in connection with other reports on this company. The '200' entries are to be found in the report of Luttring and Teel relating to Gas Plant and Examiner's Adjustments, and the '400' entries are in the report of Smith and Luttring relating to Annual and Accrued Depletion and Depreciation of Gas Plant.

"The entries given in Schedule B16, as an examination of them will readily disclose, relate not only to the years 1939, 1938, and 1937, but to each of the prior years of the company's operations as well; in addition to being applied to the operations of 1939, 1938 and 1937, they have also been applied to the Income Account per books for each of the years prior to 1937, for the purpose of developing the Income Account as reclassified and adjusted for the years 1928 to 1939 as set forth in Statements B5 and B6. The year of operations which each item in an entry affects is indicated opposite the amount of the item.

"Statement B4 presents six items relating to expenses that have been suspended by the Examiner for the special consideration of the Commission. It designates them by letter, A to F, inclusive, and fully describes them, giving specific reasons why they are so classified and, in some instances, puts forth suggestions or recommendations as to the disposition to be made of them. The items may be briefly described as follows:

"Credits and expenses relative to the joint operation of Texoma Natural Gas Company's gasoline extraction plant, Legal Expenses, Management, Supervision, and Special Services and Expenses, General and Administrative Expenses which are now asserted by the company to be capital expenditures, Rate Case Expenses, and Federal Income

Taxes. These items were suspended by the Examiner in his attempt to determine whether or not they were properly allowable as revenue or expense, or if so, to what extent, because he had no adequate precedent to guide him, or else lacked sufficient information about the items themselves.

"Schedules B17, B18, and B19, and their subschedules support the item 'Operating Revenues,' which appears on Statements B1, B2 and B3, for the years 1939, 1938 and 1937, respectively. By customer, these schedules show revenue from sales, number of Mcf. sold, average rate per Mcf. sold, point of delivery, and contract metering base. By customer, each of which is affiliated with this company, these schedules show point of delivery, contract metering base, revenue from sales per books and as adjusted, number of Mcf. sold on contract metering base and as translated to a uniform base of 14.65 lbs. pressure per square inch, and the average rate per Mcf. on the contract metering base and on the uniform base of 14.65 lbs. Shown also are minor sundry revenues derived from sources other than sale of natural gas.

"Schedules B20, B21, and B22, support the item 'Operating Expenses,' which appears on Statements B1, B2 and B3, for the years 1939, 1938 and 1937, respectively. By account, these schedules show Production, Transmission, and Administrative and General Expenses, per books and as reclassified and adjusted. They also show Suspensions. Opposite the amount of each reclassification and adjustment the number of the Examiner's Reclassification or Adjusting Entry is given. The operating accounts are arranged in the schedules to agree as closely as practicable with the classification prescribed in the Commission's Uniform System of Accounts. Each of the schedules is supported by subschedules; B20 and B21 by three of them, and B22 by two. The particulars on gas well royalties for the year 1937 are not presented for the reason that they are not comparable with those for the two subsequent years during which two large leasehold consolidations were introduced. Hence, there is one less subschedule in support of Schedule B22.

"The two subschedules common to all three schedules, B20, B21, and B22, present a summary and details of Resi-

duals Produced and Residuals Operation Expenses per books and as adjusted, and an analysis of General Law Expenses. The two subschedules on Gas Well Royalties supporting Schedules B20 and B21 show by lease number total amount of the royalties per books and as adjusted, together with certain other pertinent information.

"Schedule B23, which is a Comparative Summary of Operating Expenses for each of the years 1934 to 1939, inclusive, supports the item 'Operating Expenses' for those years which appears in Statement B6. By account, this Schedule shows Production, Transmission, and Administrative and General Expenses. As has already been pointed out, the operating expenses for the years 1934, 1935, and 1936, are reclassified and adjusted for apparent and significant items, and for the years 1939, 1938 and 1937, they are reclassified and adjusted completely. The figures of this schedule for the last three years are identical with the figures shown in the 'As Adjusted' column of Schedules B21, B22, and B23, and were repeated in this schedule as part of a comparison of the individual operating expense accounts for the six years ended December 31, 1939. Subschedules Nos. 1 and 2 of Schedule B23 are comparative analyses of maintenance expenses of gas well equipment and of field line equipment, respectively, showing those expenses for the six years ended December 31, 1939. Schedule B23 and its subschedules contain comments pertinent to certain fluctuations which the comparisons that they present reveal.

"Schedule B24 shows for each of the years 1939, 1938 and 1937, respectively, the amount of each type of taxes charged against operations per company's books, the Examiner's reclassification and adjustment of these taxes to restate the amount thereof truly applicable to each year, and Taxes as Adjusted. The number of each reclassification or adjusting entry is shown opposite the amount of the entry. This Schedule also sets forth the amount of each year's Taxes Suspended for the Consideration of the Commission. The amounts of Total Taxes shown on this schedule tie in with the amounts shown on Statements B1, B2 and B3.

"Schedule B27 shows certain minor Non-recurring Expenses for the years 1939 and 1938. They are all related to transactions in connection with the consolidation of natural

gas leaseholds. This schedule ties into Statements B1 and B2."

Q. Now, Mr. McKinstry, turning to your Exhibit 168, the first page, I see it bears the approval signatures besides your own of Kenneth L. Smith, Examiner in charge of field assignment; Harold Tomlin, Examiner in charge of regional office; and Charles W. Smith, Chief, Bureau of Accounts, finance and rates.

A. That is correct.

Q. All of whom are officials in that capacity with the Federal Power Commission?

A. Yes, sir.

On cross-examination MR. MCKINSTRY testified: (Vol. XLVII, pp. 6446-6460.)

Q. I believe you have testified heretofore as to your qualifications?

A. I have.

Q. Your first major employment began with Western Electric Company?

A. That is true.

Q. You also testified that commencing in 1929 and continuing on up until May 1939 that you were employed by various public accounting firms; is that correct?

A. That is correct.

Q. And in that connection you had some experience with or acquired some familiarity with different types of businesses including utility holding and operating companies of various kinds, among them being gas utility holding and operating companies, is that correct?

A. That is correct.

Q. And that during this period of approximately ten years, about forty per cent of your total time was devoted to assignments relating to utility businesses?

A. That is right.

Q. How much of the forty per cent would you say, roughly, could be allocated to gas utility holding and operating companies?

A. Well, I would say approximately five per cent.

Q. Approximately five per cent of the forty per cent?

A. That is right, five per cent of the total.

Q. Are we talking about five per cent of the forty per cent or five per cent of the one hundred per cent?

A. Five per cent of the total time.

Q. I see. I assume you have had no experience with gas utility holding and operating companies except along accounting lines?

A. That is correct.

Q. You have had no operating experience?

A. No, not in the technical sense. It is purely accounting.

Q. Your responsibilities and duties have been confined to the accounting side of the operation?

A. That is correct.

Q. Now, what gas companies, either holding companies or operating properties, did you have in mind in this connection?

A. Well, there were no holding companies.

Q. No gas holding companies?

A. No gas holding companies.

Q. But you have some gas operating companies?

A. That is right.

Q. What are those, please?

A. The Peoples Gas, Light & Coke Company.

Q. Of Chicago?

A. That is correct.

Q. All right, the next one?

A. The Sioux City Gas & Electric Company.

Q. The Sioux City Gas & Electric Company?

A. Yes. That is at Sioux City, Iowa.

Q. Is that a manufactured gas?

A. Partly, and it blends gas also.

Q. It blends natural gas with manufactured gas?

A. That is correct.

There is also the Yankton Gas Company of Yankton, South Dakota.

Q. What is that, manufactured or natural gas?

A. Manufactured and blending with the—natural gas blended with manufactured gas.

Q. Is that true during the time you had some connection with their activity or is the blending something that has happened subsequent to that time?

A. I don't know as I understand the question.

Mr. Spencer: Read the question to him, please, Mr. Reporter.

(The question referred to was read by the reporter, as set forth above.)

Mr. Spencer: Then, I will ask you another question.

Q. Was the Yankton Gas Company serving mixed gas at the time you had a connection with it?

A. That is right.

Q. They did?

A. They did.

Q. Is that also true of the Sioux City Gas & Electric Company?

A. That is right.

Q. Now, are there any others?

A. Yes, the Public Service Company of Northern Illinois.

Q. That is also a mixed gas operation?

A. Yes, all these are mixed gas.

Q. The whole list is in fact?

A. That is right.

Q. A combination of artificial and natural gas mixed or blended together for the purpose of distribution?

A. Yes, that is correct.

Q. Does that conclude the list?

A. That is all of the gas companies.

Q. Now, I take it there is no question that any of these companies are engaged in the production of natural gas?

A. That is true.

Q. None of these companies is engaged in the gathering of natural gas?

A. That is true.

Q. None of these companies is engaged in the transportation of natural gas in interstate commerce?

A. That is true.

Mr Lange: Of course, that would be purely a legal conclusion as to whether they are engaged in the transportation of gas in interstate commerce. What they did will speak for itself.

Mr. Spencer: Well, Mr. Lange, if that seems objectionable to you, I will state it another way.

Q. As a matter of fact, Mr. McKinstry, are these companies, any of them, engaged in transporting natural gas by pipe line from one state to another?

A. To my knowledge, they were not.

Q. Just give me a general description, Mr. McKinstry—I don't want you to go into it in too much detail—of what your contract or connection with these four companies consisted of.

A. Well, principally it consisted of annual audits and balance sheet audits only except for the Public Service Company of Northern Illinois, I was also engaged in preparing a registration statement.

Q. Which they filed with the Securities and Exchange Commission?

A. That is correct.

Q. In connection with the issuance of some securities?

A. That is correct.

Q. You do not list here any experience you may have had in any previous rate proceeding of this character. Am I correct in assuming you have had no such experience prior to this case?

A. Referring to what particular kind of rate investigation, Mr. Spencer? What have you in mind?

Q. I had in mind first a gas rate investigation.

A. Not a gas rate investigation.

Q. And have you had some connection with some other utility rate investigation?

A. Yes, in an indirect way.

Q. What class of utility?

A. Communication.

Q. Telephone?

A. That is correct.

Q. And by "indirect," what do you mean by that?

A. The audit firm of Touche Niven & Company, whom I was with, did some special work for the Illinois Commerce Commission in the City of Chicago versus Illinois Bell Telephone Company case.

Q. Did you testify in the case?

A. No, we were merely obtaining accounting data for the Commission. We were also assisting the city in the case.

Q. And I also assume you have never sat as a member or a representative of a rate-making body, is that correct?

A. That is correct.

Q. Now, in May 1939 you entered the employment of the Federal Power Commission as Examiner of Accounts?

A. That is correct.

Q. And you have been so employed since that time?

A. I have.

Q. And your first assignment was what, Mr. McKinstry?

A. On the Canadian River Gas Company, et al. case under Docket G-124.

Q. Which is a portion of the dockets involved in this present hearing?

A. I believe that is the all-inclusive docket.

Q. Now, in that connection you received certain instructions from the Commission as to the nature and scope of the work to be done?

A. Yes, in a general way.

Q. To shorten that up, did you receive the same general instructions which Mr. Luttring has testified he received?

A. Those as now designated in Exhibit 161, I believe.

Q. I think that is correct.

A. Yes.

Q. Those are the same general instructions you received?

A. Yes.

Q. I believe you testified that you have been engaged continuously on this assignment since your employment in May 1939?

A. I did.

Q. Did you testify generally what you did after you received the assignment, I mean where you went and what you did?

A. No, I don't believe I did.

Q. Let me have that—just general.

A. Part of the work—the phase of the work which I was engaged on was wholly related to Canadian River Gas Company.

Q. Income account?

A. Income and surplus accounts.

Q. What did you do?

A. I made a review of those accounts and related them

with the instructions that were given to arrive at the exhibit that is presented here.

Q. You made an examination of the company's books and records in Colorado Springs, I assume?

A. That is correct.

Q. Also at Amarillo?

A. No.

Q. You did not go there?

A. No.

Q. Approximately how much time did you spend in Colorado Springs?

A. I'd say slightly better than a year.

Q. Slightly better than a year?

A. Yes.

Q. Did you do all of this work involved in Exhibit No. 168 yourself, eliminating entries that you are taking from other exhibits?

A. Yes, with perhaps some slight exception which I could indicate by reference to a particular entry, possibly.

Q. Well, let me state it this way: Did you have any assistants whom you supervised and directed in connection with the preparation of your portion of this Exhibit 168?

A. Yes, I did.

Q. Who were those parties?

A. George D. MacDougall, M-a-c-D-o-u-g-a-l-l.

Q. Was he the only assistant you had?

A. Well, that is, full-time assistant.

Q. Full-time assistant?

A. Yes.

Q. You had some part-time assistants?

A. Yes, I did.

Q. Did Mr. MacDougall devote his entire time to this task also in the same manner that you did?

A. Largely, yes.

Q. In your written statement, Mr. McKinstry, you have on Page 1 a sentence or two which relates to the purpose of the exhibit which you prepared. Are those the only purposes for which the exhibit is prepared?

A. I think that states it generally, yes.

Q. As a matter of fact, the exhibit was prepared for this rate proceeding, is it not?

A. That is the broad objective of the accounting matters presented here, yes.

Q. To go a little further with that, you have made a somewhat detailed—perhaps I should say completely detailed audit of the income accounts of the company for the years 1937, 1938 and 1939, have you not?

A. Quite so, as required by the nature of the accounts.

Q. And you have not made such a detailed audit or study of the accounts for years prior to 1937, is that correct?

A. Only to the extent that certain transactions that carried through in a significant amount the preceding years.

Q. Yes, I think that is what you call them, "significant items are carried through," but you don't attempt in this study to make a detailed audit of the accounts for the years prior to 1937, is that correct?

A. Not in the same sense that we did for 1937, 1938 and 1939.

Q. Now, in selecting the three years on which you were going to do the major operation, how did you happen to select 1937 and 1938 and 1939 rather than some other three-year period? I am still getting back to the purpose of the exhibit.

A. Well, I think those were verbal instructions or arrangements that developed in the course of preparing this exhibit.

Q. Verbal instructions from whom?

A. From my immediate supervisor.

Q. And who was he?

A. Mr. Kenneth L. Smith.

Q. Well, isn't the purpose of this exhibit—and I'm not trying to put words in your mouth—to show to the Commission or anyone else that may be interested, what the picture of this company has been from an income and operating expense standpoint for the last three years during which you have complete information; is that so?

A. I don't think there is any intention to limit it to three years. I think the basis is very clearly stated without any—

Q. Well, why didn't you take four years, then, for the complete audit that you made with respect to the last three years?

A. As I indicated previously, this was the decision based or the instructions handed down that three years were to serve the purpose.

Q. What purpose?

A. For the purpose of the more complete examination and the years for which complete adjustments were to be made.

Q. Then as to why these particular three years were selected or why three years rather than five years or some other period was selected you do not know? You received instructions from others as to that, is that correct?

A. As I stated before, three years were adjusted completely according to instructions.

Q. I take it you are not a rate expert, Mr. McKinstry?

A. What do you include in that category? I believe that I have stated my qualifications which are basically related solely to accounting matters.

Q. I think that is a fair question, so I will ask you this: Do you consider yourself qualified by experience, education, or otherwise, to consider testimony and then determine the reasonableness or fairness of rates in a proceeding such as this?

A. I do not believe that I am attempting here to—

Q. That doesn't answer the question.

A. Will you restate the question, please?

(The question referred to was read by the reporter as set forth above.)

The Witness: No, I do not.

By Mr. Spencer:

Q. In connection with one of the purposes which you cite for making this exhibit, Mr. McKinstry, on Page 1 of your written statement you have this clause:

"* * * to make such transfers between accounts as were necessary to bring the classification of all items of revenue and expense into conformity with the classification prescribed in the Commission's Uniform System of Accounts."

Do I understand from that that what you have done here and what we will discuss later is in all instances in accordance with the Commission's Uniform System of Accounts?

A. I believe that the System of Accounts must be used in conjunction with certain accounting conventions. In other

words, the system of accounts is not complete in every detail. It is a broad outline.

Q. In other words, what you have done is, you have used the Commission's Uniform System of Accounts where you found some applicable provision?

A. No, I will say that the pattern is determined by the system outlined in the Uniform System of Accounts.

Q. Are you talking about the general pattern?

A. That is correct.

Q. Would you say that you have found support or confirmation for all of the entries that you have made here in the Commission's Uniform System of Accounts?

A. I believe that in the spirit of the Uniform System of Accounts, yes.

Q. In the spirit of the Uniform System of Accounts as you interpret it?

A. That is correct.

Q. Have you at any point in determining what should be done with respect to a certain item or transaction fallen back on your own judgment or opinion or conclusion as to what should have been done?

A. Well, I think the whole basis of accounting is a matter of judgment and I have done that.

Q. I am speaking of judgment at this time differentiating from any specific provision of the Uniform System of Accounts which you might have had available to guide you.

A. Well, I think without relation to specific instances that I would rather not answer the question.

Q. You would rather have me ask you that as we go along through the exhibit?

A. Yes, sir.

Q. You are not prepared to give a definite answer yes or no on that question at this time?

A. That is right.

The general nature of the exhibit is indicated by the following excerpts from the written statement prefacing the exhibit proper (Vol. XLVI, pp. 6430, et seq.):

> "This report sets forth the Income Accounts of Canadian River Gas Company for the years 1928 to 1939, inclusive, which are presented in thirty-three state-

ments, schedules, and subschedules. It contains Income Accounts for each of the years 1939, 1938, and 1937, reclassified and adjusted in detail, and Income Accounts for each of the years prior to 1937, reclassified and adjusted as to their more apparent or significant items only.

* * * * * *

"The Examiner's Reclassification and Adjusting Entries, which are summarized in the six schedules, B10 to B15, inclusive, for the years 1939, 1938, and 1937, are set forth in detail, entry by entry, mainly in Schedule B16, which is a tabulation of eighty-six entries, each of which is designated by one of a series of numbers that run from 100 to 185. Seventy-two of these entries are reclassification entries and have been marked as such by prefixing the letter 'R' to the numeral in the entry number; the fourteen other entries are adjustment entries. The entries are designated on Schedules B10 to B15, inclusive, by their numbers so that through the medium of these summaries the individual entries are related to the Income Statements presented in Statements B1, B2, and B3. In addition to entries in the '100' Series, the summaries also contain entries from the '200' and '400' Series, which were made by other Examiners, primarily in connection with other reports on this Company. The '200' entries are to be found in the report of Luttring and Teel relating to Gas Plant and Examiner's Adjustments, and the '400' entries are in the report of Smith and Luttring relating to Annual and Accrued Depletion and Depreciation of Gas Plant."

As shown from the above quoted portion of the preface statement to this exhibit, there are 72 reclassification entries in the exhibit which Mr. McKinstry states constitute reclassifications of accounts appearing upon the books of the company for the purpose of complying with the accounting regulations of the Federal Power Commission applicable to gas companies. These reclassifications, however, do not result in any net change in the operating income and expense account of the company and are therefore deemed immaterial to this case and will not be abstracted.

Exhibit 168 is in part as follows:

Statement No. 1
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
CONDENSED INCOME AND EARNED SURPLUS ACCOUNT
PER BOOKS, AS RECLASSIFIED AND AS ADJUSTED, YEAR ENDED DECEMBER 31, 1939

Description	Schedule References	Balance Per Books Unadjusted	Reclassifications Debit	Reclassifications Credit	As Reclassified	Adjustments Debit	Adjustments Credit	As Adjusted	Suspended For Further Consideration of the Commission
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Utility Income									
Operating Revenues	B-17	$2,127,210.79	$ 16,033.35	$ 36,911.83	$2,108,095.27	$ 94,961.97	$ 256.60	$2,202,800.64	$(9,551.75)
Operating Revenue Deductions:									
Operating expenses	B-20	$1,075,174.94	$ 380,301.96	$ 708,920.97	$ 746,555.93	$ 845.28	$ 82,112.28	$ 665,288.93	
Depreciation		273,391.04			273,391.04	153,987.13	273,391.04	153,987.13	
Depletion		320,359.14			320,359.14	44,865.27	320,359.14	44,865.27	
(Profit) and loss on plant retirements		(4,267.64)	4,135.86		(131.78)	131.78			
Taxes	B-24	125,370.28	85,790.92	33,999.17	177,162.03		2,021.00	175,141.03	66,603.02
Nonrecurring expenses	B-25					222.60		222.60	
Total Operating Revenue Deductions		$1,790,027.76	$ 470,228.74	$ 742,920.14	$1,517,336.36	$ 200,050.06	$ 677,883.46	$1,039,502.96	$ 66,603.02
Net Operating Revenues		$ 337,183.03	$ 486,262.09	$ 778,831.97	$ 590,758.91	$ 294,911.97	$ 678,140.06	$1,163,297.68	$(76,154.77)
Exploration and Development Costs									
Delay rentals		$ 5,770.18	$ 6,608.40	$ 8,611.25	$ 3,767.33	$ 6,611.25		$ 10,401.58	
Nonproductive well drilling			29,293.73		29,293.73			29,293.73	
Abandoned leases		3,232.63			3,232.63		1,354.45	1,878.18	
Total Exploration and Development Costs		$ 9,002.81	$ 35,902.13	$ 8,611.25	$ 36,293.69	$ 6,611.25	$ 1,354.45	$ 41,573.49	
Net Utility Income		$ 328,180.22	$ 450,359.96	$ 770,220.72	$ 554,465.22	$ 288,300.72	$ 676,785.61	$1,121,724.11	$(76,154.77)
Other Income									
Interest Revenues		$ 20,920.90			$ 20,920.90	$ 20,903.02		$ 17.88	
Miscellaneous nonoperating revenues		306,101.61	$ 298,774.18		5,327.43	4,086.01		292.59	
Nonoperating revenue deductions (Debit)		(14,359.90)		$ 163,634.05	(725.85)		725.85		
Total Other Income		$ 312,662.61	$ 298,774.18	$ 163,634.05	$ 25,522.48	$ 24,989.03	$ 725.85	$ 310.47	
Gross Income		$ 640,842.83	$ 749,134.14	$ 933,854.77	$ 579,987.70	$ 313,289.75	$ 677,511.46	$1,122,034.58	$(76,154.77)
Income Deductions									
Interest on Debt to Colorado Interstate Gas Company:									
Bonds		$ 340,210.00	$ 25,285.00	$ 28,260.00	$ 327,235.00			$ 327,235.00	
Notes and current account		100,353.40	66,805.79	51,196.18	101,962.71			101,962.71	
Other interest charges		11,403.39			11,403.39			11,403.39	
Miscellaneous income deductions			352.20		352.20	29,019.97		29,372.17	
Total Income Deductions		$ 451,966.79	$ 92,442.99	$ 79,456.18	$ 441,053.30	$ 29,019.97	$	$ 470,073.27	
Net Income for Year Ended December 31, 1939		$ 188,875.44	$ 656,691.15	$ 854,398.59	$ 138,934.40	$ 284,269.78	$ 677,511.46	$ 651,961.31	$(76,154.77)
Earned Surplus									
Credits									
Balance January 1, 1939		$3,273,961.05	$8,108,606.60	$7,903,471.47	$3,068,825.92	$3,862,274.81	$5,742,092.15	$1,948,643.26	
Balance from income account (above)		347,882.04	902,401.99	1,031,533.75	477,014.40	317,587.25	680,292.40	839,719.55	
Total Credits		$3,621,843.09	$9,011,008.59	$8,935,005.22	$3,545,840.32	$4,179,862.06	$6,422,384.55	$2,788,362.81	
Debit - Premium on bonds retired		$ 11,900.00			$ 11,900.00			$ 11,900.00	
Balance December 31, 1939		$3,609,943.09	$9,011,008.59	$8,935,005.22	$3,533,940.32	$4,179,862.06	$6,422,384.55	$2,776,462.81	

Exhibit No. 168
1

3401

Docket 8-168

Statement No2
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
STATEMENT OF CONSOLIDATED INCOME AND EARNED SURPLUS ACCOUNT
FOR YEARS, AS RECLASSIFIED AND ADJUSTED - YEAR ENDED DECEMBER 31, 1958

Line No.	Description	Schedule References	Balance Per Books Unadjusted	Reclassifications Debit	Reclassifications Credit	As Reclassified	Adjustments Debit	Adjustments Credit	As Adjusted	Suspended For Further Consideration of the Commission
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Utility Income									
1	Operating Revenues	B-18	$2,315,500.92	$ 15,232.45	$ 33,869.46	$2,334,053.93	$ 48,144.26	$ 181.65	$2,285,791.32	
	Operating Revenue Deductions:									
2	Operating Expenses	B-21	$ 851,945.86	$ 561,335.50	$ 466,807.52	$ 746,473.84	$ 755.81	$ 74,077.85	$ 679,129.80	$(68,686.56)
3	Depreciation		266,950.01			266,950.01	155,006.25	266,950.01	155,006.25	
4	Depletion		140,999.72			140,999.72	46,823.05	140,999.72	46,823.05	
5	(Profit) and Loss on plant retirements		(4,970.85)	5,483.95	45,675.66	(45,162.46)	45,162.46			
6	Taxes	B-24	98,547.74	105,150.47	34,125.17	169,573.04		1,838.00	167,241.04	69,434.88
7	Nonrecurring expenses	B-25					6,274.35		6,274.35	
8	Total Operating Revenue Deductions		$1,353,472.48	$ 671,969.92	$ 546,608.35	$1,478,834.15	$ 252,501.92	$ 486,515.58	$1,252,816.49	$ 19,808.32
9	Net Operating Revenues		$ 962,028.44	$ 686,969.37	$ 580,477.81	$1,855,219.78	$ 299,646.18	$ 486,697.23	$1,668,617.81	
	Exploration and Development Costs									
10	Delay Rentals		$ 25,078.66	$ 6,348.50	$ 21,772.35	$ 9,654.81	$ 10,789.00		$ 18,553.81	
11	Abandoned Leases		674.50			674.50			674.50	
12	Total Exploration and Development Costs		$ 25,753.16	$ 6,348.50	$ 21,772.35	$ 10,329.31	$ 10,789.00		$ 19,228.31	
13	Net Utility Income		$ 936,275.28	$ 680,620.87	$ 558,705.46	$1,844,890.47	$ 288,857.18	$ 486,697.23	$1,649,389.52	
	Other Income									
14	Interest revenues		$ 21,549.00			$ 21,549.00	$ 20,908.09		$ 685.91	
15	Miscellaneous nonoperating revenues		239,609.49	$ 235,867.35		3,742.14	3,475.34		266.80	
16	Nonoperating revenue deductions (Debit)		(156,140.73)		$ 156,277.68	(163.05)		163.05		
17	Total Other Income		105,017.76	235,867.35	156,277.68	25,128.09	24,383.43	163.05	951.71	
18	Gross Income		$1,041,293.04	$ 916,488.22	$ 714,983.14	$1,870,018.56	$ 313,240.61	$ 486,860.28	$1,650,341.23	
	Income Deductions									
	Interest on debt to Colorado Interstate Gas Company:		$ 566,700.00	$ 28,200.00	$ 31,220.00	$ 569,850.00			$ 569,850.00	
19	Bonds		110,065.68	51,156.48	55,523.97	105,698.14			105,698.14	
20	Notes and current account			45.00		45.00			45.00	
21	Other interest charges			515.00		515.00	$ 23,017.74		23,532.74	
22	Miscellaneous income deductions						2,317.74		2,317.74	
23	Total Income Deductions		$ 676,765.68	$ 80,016.48	$ 86,743.97	$ 676,038.14	$ 25,335.48	$ 126,167.28	$ 701,870.88	
24	Net Income for Year Ended December 31, 1958		$ 364,527.36	$ 836,471.74	$ 628,239.17	$1,193,980.42	$ 287,905.13	$ 360,693.00	$ 948,470.35	
	Surplus Accounts									
	Credits:									
25	Balance January 1, 1958		$6,697,968.65	$7,219,614.48	$7,001,909.05	$6,480,263.20	$3,514,185.50	$4,507,981.87	$4,273,959.57	
26	Balance from income account above		364,527.61	807,466.70	845,047.71	402,108.62	402,069.51	481,167.28	796,367.99	
27	Miscellaneous direct credits (net)		50,476.11	77,439.58	12,061.27	(15,302.20)			(15,302.20)	
28	Total Credits		$7,112,972.37	$8,104,520.76	$7,859,018.03	$6,867,069.62	$3,916,255.01	$4,989,149.15	$5,055,025.36	
	Debits:									
29	Premium on bonds retired		$ 44,790.00			$ 44,790.00			$ 44,790.00	
30	Miscellaneous direct debits (net)		60,278.42	$ 44,180.01	$ 44,183.66	60,274.77			60,274.77	
31	Total Debits		$ 105,068.42	$ 44,180.01	$ 44,183.66	$ 105,064.77			$ 105,064.77	
32	Balance December 31, 1958		$6,273,961.05	$8,108,699.60	$7,903,171.47	$6,868,734.82	$3,862,274.81	$5,742,088.15	$4,998,551.16	

Exhibit No. 168

34102

Docket G-128

CANADIAN RIVER GAS COMPANY

Statement B-3
Sheet 1 of 1

KLS
LRW
Rec
10/16/40

PROPERTY USED AT MARION SERVICE ACCOUNT

PER BOOKS, AS RECLASSIFIED AND AS ADJUSTED - YEAR ENDED DECEMBER 31, 1947

Line No.	Description (1)	Schedule References (2)	Balance Per Books Unadjusted (3)	Reclassifications Debit (4)	Reclassifications Credit (5)	As Reclassified (6)	Adjustments Debit (7)	Adjustments Credit (8)	As Adjusted (9)	Suspended For Further Consideration of the Commission (10)
	Utility Income									
1	Operating Revenues	B 19	$2,283,640.67	$ 15,196.35	$ 38,961.25	$2,287,435.57	$ 29,904.86	$ 324.51	$2,277,815.21	
	Operating Revenue Deductions:									
2	Operating expenses	B 22	$ 942,116.41	$ 416,567.06	$ 698,063.56	$ 660,679.90		$ 104,431.55	$ 572,248.35	$(87,662.61)
3	Depreciation		257,113.39	5,770.08	6,486.27	256,397.10	$ 144,724.45		256,397.10	144,724.45
4	Depletion		140,661.30	3,669.83		136,351.13	39,199.22		136,351.13	39,199.22
5	Profit and loss on plant retirements		6,427.09	10,791.80	203.18	17,018.11			17,018.11	
6	Taxes		134,182.26	101,221.01	88,098.77	166,067.10		2,608.50	166,067.10	63,236.56
7	Total Operating Revenue Deductions	B 21	$1,480,500.45	$ 538,019.77	$ 792,851.78	$1,236,564.04	$ 183,923.67	$ 107,040.05	$1,127,080.79	$ 23,297.74
8	Net Operating Revenues		$ 802,190.23	$ 553,306.12	$ 831,703.03	$1,080,871.53	$ 213,828.53	$ 107,364.56	$1,187,335.50	
	Exploration and Development Costs									
9	Delay Rentals		$ 21,180.08	$ 6,678.65	$ 11,098.28	$ 16,760.45	$ 2,200.00		19,960.45	
10	Net Utility Income		$ 821,210.15	$ 559,984.77	$ 842,801.31	$1,097,631.98	$ 216,028.53	$ 107,364.56	$1,207,295.95	
	Other Income									
11	Interest revenues		$ 21,917.48			$ 21,917.48	$ 20,735.58		$ 1,181.90	
12	Miscellaneous nonoperating revenues		410,430.91	$ 386,779.42		24,141.90	23,594.49		547.41	
13	Nonoperating revenue deductions (Debit)		(25,096.40)		$ 196,181.42	24.50	24.50			
14	Total Other Income		$ 407,252.99	$ 386,779.42	$ 196,181.42	$ 46,083.88	$ 44,354.57		$ 1,728.50	
15	Gross Income		$1,228,463.14	$ 946,764.19	$1,038,982.73	$1,143,715.86	$ 260,383.10	$ 107,364.56	$1,209,024.45	
	Income Deductions									
16	Interest on debt to Colorado Interstate Gas Company:									
17	Bonds		$ 401,370.00	$ 31,220.00	$ 34,190.00	$ 398,400.00			$ 398,400.00	
18	Notes and current account		107,800.34	48,402.67	51,256.00	104,946.22			104,946.22	
19	Miscellaneous income deductions			166.00		166.00	$ 40,288.34		40,454.34	
20	Total Income Deductions		$ 509,170.34	$ 79,788.67	$ 85,446.00	$ 503,512.22	$ 40,288.34		$ 543,800.56	
	Net Income for Year Ended December 31, 1947		$ 719,292.80	$ 866,975.52	$ 953,536.73	$ 640,203.64	$ 220,094.76	$ 107,364.56	$ 665,223.89	
	Earned Surplus									
	Credits:									
21	Balance January 1, 1947		$1,457,100.31	$5,304,309.42	$5,240,667.58	$1,393,458.47	$3,191,779.66	$1,304,643.49	$ 3,476,322.30	
22	Balance from income account (above)		719,292.80	1,866,975.52	1,953,536.73	805,853.99	220,094.76	107,364.56	693,123.79	
23	Miscellaneous direct credits (net)		668,265.84	673,868.19	674.14	1,193,859.89	3,240.00	1,240.00	1,196,019.89	
24	Total Credits		$2,844,658.95	$7,845,153.13	$7,194,878.45	$2,393,172.37	$3,415,114.42	$1,413,248.05	$ 4,365,466.00	
25	Debit - Premium on bonds retired		$ 17,800.00			$ 17,800.00			$ 17,800.00	
26	Balance December 31, 1947		$2,826,858.95	$7,845,153.13	$7,194,878.45	$2,375,372.37	$3,415,114.42	$1,413,248.05	$ 4,347,666.00	

Exhibit No. 168

31103

Income Statement Suspension Reference (1)	Particulars (2)	Year Ended December 31, 1939 (3)	1938 (4)	1937 (5)
A	Natural Gas Production Expenses (Residuals produced (credit)	$(306,523.88)	$(152,564.91)	$(214,887.54)
	(Residuals operation expenses	88,015.19	76,823.42	82,752.01
		$(118,508.69)	$ (75,741.49)	$(132,105.53)

The above amounts relate Canadian River Gas Company's share of the results from joint operation of Texoma Natural Gas Company's gasoline extraction plant at Fritch, Texas. Analytical details thereof are shown in the following subschedules:

Year	Subschedule
1939	B-20-2
1938	B-21-2
1937	B-22-1

Suspension is made for the reason that the results reported by Texoma Natural Gas Company on the joint operation of its Fritch gasoline extraction plant are subject to the ultimate findings in another proceeding (Docket G-112, Natural Gas Pipeline Company of America and Texoma Natural Gas Company) before the Commission. The findings in the aforementioned case have not yet been made available. Any alterations in the results from operation of the Fritch gasoline plant will in turn affect the amounts as reported to Canadian River Gas Company.

The gasoline plant at Fritch, Texas, is owned by Texoma Natural Gas Company and is operated by that company for the benefit of itself and Canadian River Gas Company under a lease and operating agreement dated October 15, 1931 and as modified by letter dated June 8, 1938, a copy each of which is contained in Appendix 1 to this statement (Statement B-4).

Based upon tentative information re case on Docket G-112 obtained through Chicago regional staff of the Division of Accounts, Examiner in entry No. 182 adjusted the balance per books of Canadian River Gas Company for 1937, 1938 and 1939, giving effect to the substitution of depreciation and return on investment in lieu of the charges provided for in Section 6, paragraph (b) of the original lease and operating agreement dated October 15, 1931, a copy of which is contained in Appendix 1 to this statement. Consideration should, therefore, be given the possibility of any change developed on final disposition of case in Docket G-112. The effect of Examiner's adjustment reduced expenses of joint gasoline operations in each of the three years as follows:

1939	$11,722.31
1938	5,410.58
1937	7,647.78

CANADIAN RIVER GAS COMPANY
EXPENSES SUSPENDED FOR FURTHER CONSIDERATION OF THE COMMISSION
FOR THE YEARS 1937, 1938 AND 1939

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10/11/60

Income Statement Suspension Reference (1)	Particulars (2)	Year Ended December 31, 1939 (3)	1938 (4)	1937 (5)
C	Management and supervision fees and expenses	$ 8,366.94	$ 8,168.31	$ 7,777.59
	Special services	2,530.98	1,997.35	2,305.27
		$ 10,897.92	$ 10,165.66	$ 10,082.86

The amounts shown represent all charges made by associated companies other than for insurance and certain telephone services on a recognized cost basis, and the legal fees and expenses included in Suspension B above. The nature of the charges appears in the details supporting Examiner's entries providing segregation from the several accounts in which originally included by Respondent, to classifications shown above. A summary of charges by associated companies and reference to Examiner's entries follows:

	1939	1938	1937
Amarillo Oil Company	$10,013.22	$ 9,902.16	$ 9,752.86
Southwestern Development Co.	884.70	263.50	330.00
	$10,897.92	$10,165.66	$10,082.86
Examiner's Entry No.	R-178	R-179	R-180

For each of the three years there is included in management and supervision fees and expenses $7,500.00 charged by Amarillo Oil Company to compensate for services of R. E. Werts et al. It is the Examiner's recommendation that these annual payments be disallowed in the cost of gas operations by reason of Respondent's failure to substantiate satisfactorily the reasonableness and exact nature of the charges.

Mr. P. C. Spencer (Vice President of Canadian River Gas Company), in response to Examiner's request, submitted the following explanation regarding the annual charge of $7,500.00, in a letter dated March 11, 1940:

"This is not a prorated charge. It is a lump sum payment made by Canadian River Gas Company to Amarillo Oil Company for various services rendered to Canadian River by R. E. Werts and other members of Amarillo Oil Company's staff. The amount of the payment was agreed upon by representatives of Canadian River, Amarillo Oil and Colorado Interstate Gas Company in 1933. The amount agreed upon was estimated to cover the actual cost of services rendered and to be rendered. Since 1935 the services rendered have increased substantially, but the lump sum payment has not been changed."

Examiner Luttring visited offices of Amarillo Oil Company and endeavored to obtain further explanations regarding the annual charge of $7,500.00 but without satisfactory result, as indicated from his notes which in part read as follows:

Exhibit No. 168

3405

CANADIAN RIVER GAS COMPANY
EXPENSES SUSPENDED FOR FURTHER CONSIDERATION OF THE COMMISSION
FOR THE YEARS 1937, 1938 AND 1939

KLS
LRM
mm
10/11/40

Income Statement Suspension Reference	Particulars	Year Ended December 31, 1939	1938	1937
(1)	(2)	(3)	(4)	(5)
C (Cont'd)	"Mr. Snyder (General Auditor, Amarillo Oil Company) refused to give us any information other than that covered in the letters of Mr. Spencer and offered to give us no information until permitted to do so by Mr. Spencer."			

Examiner Luttring wired Mr. Spencer as to whether Mr. Snyder might furnish names and salaries of individuals and amount of time by character of service performed for Canadian River Gas Company, and received the following answer by wire on May 14, 1940:

(Examiner) "Luttring's wire yesterday $7,500.00 fee includes substantial services performed for Canadian by Moody, Baird, Spencer and their respective office forces therefore Snyder cannot give complete answer the charge is so small in view of the total services rendered it would seem to require little if any substantiation however Luttring wants additional details suggest he cover by writing me further letter of inquiry simplified as much as possible bearing in mind we have not maintained any job or time records please advise further wishes."

Examiner Luttring's notes further show:

"In discussions with Mr. Snyder and from records which we were permitted to examine it was learned that Amarillo Oil Company carries a group of accounts under 'Special Administrative Department'. Mr. Snyder informed us that salaries of Mr. Wertz, Mr. Snyder and other employees who devote their services to the various subsidiaries under the jurisdiction of this special administrative department are charged to the special department as well as expenses of these employees.

"Mr. Snyder stated that the fee of $7,500.00 charged to Canadian River Gas Company was first deducted from the expenses of the Special Department and the balance then prorated to the other subsidiaries participating in the services of those in the Special Department.

"We asked Mr. Snyder the extent to which we could get data representing the expenses related to the fee of $7,500.00 and his reply was that no information could be divulged except on advice of counsel.

"Mr. Snyder does not deny that the books of Amarillo Oil Company contain most of the expenses, ... which relate to the fee of $7,500.00 . . . ."

The remainder of amounts included in this suspension appear to be reasonable and proper charges to gas operating expenses and, in the opinion of the Examiner, should be passed accordingly.

Exhibit No. 168

3406

10

CANADIAN RIVER GAS COMPANY
EXPENSES SUSPENDED FOR FURTHER CONSIDERATION OF THE COMMISSION
FOR THE YEARS 1937, 1938 AND 1939

Income Statement Suspension Reference (1)	Particulars (2)	Year Ended December 31, 1939 (3)	1938 (4)	1937 (5)
D	Items charged to expense claimed as cost of gas plant in report of Ford, Bacon & Davis, Inc., dated April 18, 1940	$ 16,576.40	$ 9,293.47	$ 10,129.23
	Certain general and administrative expenses for the years 1937, 1938 and 1939, now claimed by the Respondent as gas plant capital expenditures, are suspended in order that the expenses so claimed may be directed to the attention of the Commission and its staff. The report of Ford, Bacon & Davis, Inc. covering the claim for restatement of plant has been filed with the Commission by the Respondent.			
E	Rate case expenses	$ 56,600.61		
	Respondent charged to expenses on its books amounts expended incident to rate case pending before the Commission. Examiner's reclassification entry R-139 transfers such expenses under the balance sheet caption "Deferred Debits" as of December 31, 1939, for the purpose of suspending the items for such disposition as the Commission may prescribe. Analytical details of the expenses thus suspended are contained in Schedule A-12 which appears in the exhibit relating to the balance sheet as of December 31, 1939.			
	Total suspensions related to operating expenses	$ (9,551.75)	$ (48,626.36)	$ (87,562.63)
F	Federal income tax	$ 66,403.02	$ 68,454.88	$ 65,736.69
	Income taxes for the years 1937, 1938 and 1939, as adjusted, are suspended for the reason that the income received by the Respondent, and which constituted the basis for assessment of its income taxes, may, as a result of this proceeding, be found to have been in excess of a fair return. The Examiner recommends that expenses chargeable to the ratepayer include, with respect to income taxes, only such an amount as would represent the necessary taxes required to be paid based upon the income which the Commission determines it is proper for the Respondent to earn.			
	Total suspensions related to operating revenue deductions	$ 56,851.27	$ 19,828.52	$ (23,826.94)

Exhibit No.

ket G-12h

Statement B-4
Appendix No. 1
Sheet 1 of 7

CANADIAN RIVER GAS COMPANY
GASOLINE PLANT OPERATING AGREEMENT
DATED OCTOBER 15, 1931, BETWEEN
TEXOMA NATURAL GAS COMPANY
AND CANADIAN RIVER GAS COMPANY

O P Y

THIS AGREEMENT, dated as of October 15, 1931, by and between XOMA NATURAL GAS COMPANY, a Delaware corporation, hereinafter referred to as "Texoma", and CANADIAN RIVER GAS COMPANY, a Delaware corporation, reinafter referred to as "Canadian River",

W I T N E S S E T H:

WHEREAS the parties hereto as of October 15, 1931, entered to a certain Lease and Operating Agreement wherein Canadian River eased from Texoma an undivided twenty-five percent (25%) interest in certain compressor station at Fritch, Texas, and in a certain pipe ine between Fritch, Texas, and Gray, Oklahoma, owned by Texoma; and

WHEREAS Texoma is the owner of a certain absorption type tural gasoline plant, adjacent to the said compressor station and cated upon the following described land in Hutchinson County, Texas, -wit:

A portion of Section 5, Block Y-2, Tyler Tap RR Survey, containing 80 acres and described by metes and bounds as follows: Beginning at a point 660 feet east and 660 feet north of the southwest corner of said Section 5; thence north parallel with the west line of said Section 1320 feet to a point for corner; thence east parallel with the south line of said Section 2640 feet to a point for corner; thence south 1320 feet to a point for corner; thence west 2640 feet to the place of beginning; and

WHEREAS both parties hereto transport raw natural gas to the id compressor station of Texoma at Fritch, Texas, where said gas is mpressed for transportation through the said pipe line of Texoma, d the parties hereto desire that such raw natural gas be subjected treatment for the extraction of natural gasoline at the said gaso- ine plant of Texoma hereinabove described;

NOW THEREFORE, in consideration of the premises and of the tual promises and covenants herein contained, the parties hereby ree as follows:

SECTION 1. The natural gas delivered by the parties to the id compressor station of Texoma at Fritch, Texas, in accordance th the provisions of the said Lease and Operating Agreement between em, shall, after compression as contemplated in said lease and erating agreement, be subjected to a process for the extraction of tural gasoline therefrom in the gasoline extraction plant of Texoma ove described.

SECTION 2. The natural gas so delivered by the parties to the said compressor station shall be raw natural gas as produced from the wells, except that any helium therein contained may first have been extracted therefrom and that such gas may have been first treated for the removal of sulphur therefrom.

SECTION 3. Texoma shall have full charge, control and authority over the operations of said gasoline plant, shall conduct the operations thereof in accordance with the accepted practice in the industry, and shall have the right to manufacture therein gasoline of such grades and such specifications as it may consider necessary or desirable. It shall also have the right and authority to dispose of the entire product so manufactured at such prices, upon such terms and to such party or parties as it may deem advisable, as though it were the sole owner thereof.

SECTION 4. Texoma agrees to keep and maintain said gasoline plant in a reasonable and proper state of repair, charging the cost thereby incurred to the operation of said plant. In the event it becomes convenient or necessary from time to time to construct additions or extensions to said plant or to install additional equipment therein, Texoma will do so, charging the cost thereof to the investment in said plant.

SECTION 5. Texoma may discontinue the manufacture of gasoline in said plant during such period or periods as it may deem advisable.

SECTION 6. Canadian River shall be charged by Texoma with certain proportions of the total cost of operation and maintenance of, and interest and retirement charges on, said gasoline plant as follows:

(a) That proportion of the total cost of operating and maintaining the said gasoline plant; of insurance and local, state and federal taxes thereon and on the product thereof (except taxes on net income); of the total costs of marketing and delivering the product thereof; and of all other costs (including a proper part of the unallocated general, administrative and office expense of Texoma) properly applicable to the ownership and operation of the said gasoline plant and disposition of the product thereof, which the quantity of natural gas delivered by Canadian River to the said compressor station of Texoma at Fritch, Texas, bears to the total quantity of natural gas delivered thereto, such quantities for the purposes hereof being those determined in accordance with the provisions of the hereinbefore mentioned lease and operating agreement.

(b) Twenty five percent (25%) of the interest and of the sinking fund and/or other retirement charges on all

bonds, notes or other indebtedness of Texoma from time to time outstanding, the proceeds of which have been invested in the said gasoline plant; provided however that in the event the said plant is abandoned on account of obsolescence or otherwise Canadian River shall pay to Texoma twenty five per-cent (25%) of the unamortized investment of Texoma in the said gasoline plant and Canadian River shall not thereafter be required to pay any additional amounts under this sub-division (b) with respect thereto.

Canadian River shall be credited with that proportion of the amounts received from the sale of gasoline manufactured at said plant, which the theoretical gasoline recovery from the natural gas delivered to the compressor station of Texoma at Fritch, Texas, by Canadian River bears to the total theoretical gasoline recovery from the total natural gas delivered thereto. The theoretical gasoline recovery shall be computed as follows:

The gasoline content of the natural gas delivered to the compressor station of Texoma at Fritch, Texas, by each corporation or person making such deliveries shall be separately tested daily by Texoma by use of the charcoal method and distillation apparatus and/or such other method as may be agreed upon by the parties hereto and/or recommended hereafter by the Natural Gasoline Association of America. Canadian River shall be notified of the time and place of all such tests and shall have the right to observe and check all such tests and may, if it so desires, install its own apparatus for the making of similar tests. Such daily tests by Texoma, and the corresponding daily volumes of natural gas delivered to the compressor station of Texoma, at Fritch, Texas, determined as provided in subparagraph (a) of this Section 6, or as otherwise agreed to by the parties, shall be used to calculate the total theoretical gasoline recovery from the gas so delivered.

SECTION 7. Texoma shall on or before the first day of each February, May, August and November render to Canadian River a general report of the operations of said gasoline plant during the quarter year ending on the last day of December, March, June and September next preceding, respectively, and a statement showing the amount due hereunder from either party to the other with respect to such quarter year, which statement shall show in detail all matters necessary for the computation of all such amounts. The net charge, if any, against Canadian River as shown by any such statement shall be paid by it to Texoma on or before thirty (30) days after the receipt of such statement and the net credit, if any, to Canadian River as shown by any such statement shall be paid by Texoma to Canadian River simultaneously with the presentation of such statement.

SECTION 8. Canadian River shall have free access to the gasoline plant described herein at all reasonable hours for the inspection thereof, and may at reasonable times audit and inspect the books and records of Texoma with relation to the operations of said gasoline plant.

SECTION 9. Canadian River shall warrant generally the title to all gas furnished by it hereunder and its right to extract and dispose of gasoline therefrom, and it will indemnify Texoma and save it harmless from all suits, actions, debts, accounts, damages, costs, losses and expenses arising from or out of any failure of such title or right.

SECTION 10. Nothing herein shall be construed as vesting in Canadian River any title to the gasoline plant hereinabove described.

SECTION 11. All notices to be given hereunder by Canadian River to Texoma shall be given by registered mail or by delivering the same to Texoma at its office at Chicago, Illinois, or at such other office as may hereafter be designated by Texoma for the purpose, and all notices to be given by Texoma to Canadian River shall be given by registered mail or by delivering the same to Canadian River at its office at Amarillo, Texas, or at such other office as may hereafter be designated by Canadian River for the purpose.

SECTION 12. In the event either party shall be rendered unable wholly or in part by force majeure to carry out its obligations under this agreement other than to make payment of amounts due hereunder, it is agreed that on such party giving notice and full particulars of such force majeure in writing or by telegraph to the other as soon as possible after the occurrence of the cause relied on, then the obligations of the party giving such notice so far as they are affected by such force majeure, shall be suspended during the continuance of any inability so caused but for no longer period, and such cause shall, so far as possible, be remedied by such party with all reasonable dispatch.

The term "force majeure" as employed herein shall mean acts of God, strikes, lockouts, or other industrial disturbances, acts of the public enemy, wars, blockades, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraints of rulers and peoples, civil disturbances, explosions, breakage or accident to machinery or lines of pipe, the necessity for making repairs and/or alterations in machinery or lines of pipe, freezing of lines of pipe, and any other cause, whether of the kind herein enumerated or otherwise, not within the control of the party claiming suspension and which by the exercise of due diligence such party is unable to overcome.

Exhibit No. 168

ocket G-124

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Appendix No. 1
Sheet 5 of 7

SECTION 13. This agreement may be assigned by either of the parties hereto without the consent of the other to any person, firm, or corporation acquiring all of the assets of such party, but it may not otherwise be assigned without the consent of the other party hereto. Whenever any person, firm or corporation is referred to herein such reference shall be deemed to include the successors and assigns of such person, firm or corporation.

SECTION 14. This contract shall be and remain in full force and effect from the date hereof until the termination of the above described Lease and Operating Agreement between the parties of even date herewith.

IN WITNESS WHEREOF, the parties hereto have caused their names to be signed hereto and their respective corporate seals to be hereunto affixed and attested by their respective officers thereunto duly authorized as of the date first above written.

TEXOMA NATURAL GAS COMPANY

(Seal)

By H. O. CASTER
President

Attest:
C. C. KELLY
Secretary

CANADIAN RIVER GAS COMPANY

(Seal)

By H. K. MOODY
Vice-President

Attest:
VICTOR A. IOBE
Secretary

Docket G-124

Statement B-4
Appendix No. 1
Sheet 6 of 7

CANADIAN RIVER GAS COMPANY
SUPPLEMENTAL LETTER
DATED JUNE 8, 1938
FROM CANADIAN RIVER GAS COMPANY
TO TEXOMA NATURAL GAS COMPANY

COPY

CANADIAN RIVER GAS COMPANY
Colorado Springs, Colorado

June 8, 1938

Mr. S. E. Campbell, Secretary
Texoma Natural Gas Company
20 North Wacker Drive
Chicago, Illinois

Dear Sir:

In connection with the various points raised by Mr. Rice in making his audit of the Fritch Gasoline Operations for the year 1937, we agree to the settlement of these points on the following basis:

1. In connection with the amortization and interest on bonds of Texoma Natural Gas Company, it is agreed that January 1, 1932 be set as the date the funds from the sale of bonds were completely expended and that amortization and interest of the bonds are to be figured from January 1, 1938 on the basis of the ratio of investment applicable to the Gasoline Plant to the total investment shown on the books as of January 1, 1932, less automotive equipment and furniture and fixtures; this percentage being as follows:

Investment applicable to gasoline plant, January 1, 1932	$ 767,621.63
Total Applicable Investment 1-1-32	$25,600,990.28
= .029981.0601	

2. Beginning July 1, 1938, separate notes for additions to Gasoline Plant investment less salvage value of retirements from January 1, 1938, will be set up and amortized over the proper periods to Gasoline Expense and that future additions to Gasoline Plant investment less salvage value of retirements will be handled likewise on separate notes.

3. Gasoline Expense is to include only its proportionate share of legal expense directly affecting the Gasoline Plant and such other legal expense as is known to be of an overhead nature; all other legal expense is to be charged directly to the division of the project that it affects.

4. It is agreed that in making the above procedure effective, both the Texoma Natural Gas Company and the Canadian River Gas Company agree to waive claim for an adjustment of differences on the above three items of procedure in connection with the Gasoline Plant Expense.

Yours very truly,

CANADIAN RIVER GAS COMPANY

By W. K. Moody
President

Approved this 20th day of June, 1938
TEXOMA NATURAL GAS COMPANY
By S. E. Campbell
Secretary

Docket G-124

CANADIAN RIVER GAS COMPANY
COMPARATIVE CONDENSED INCOME AND EARNED SURPLUS ACCOUNTS
AS RECLASSIFIED* BY PERIODS, JUNE 1, 1928 TO DECEMBER 31, 1939

Line No.	Description	Twelve Months Ended December Thirty-First 1939	1938	1937	1936	1935	1934	1933	1932	1931
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Utility Income									
1	Operating Revenues	$2,448,095.27	$2,334,053.93	$2,307,395.57	$2,199,632.59	$2,152,537.20	$2,521,942.80	$2,117,957.98	$2,253,357.17	$2,050,748.08
	Operating Revenue Deductions									
2	Operating expenses	$ 746,555.93	$ 746,473.84	$ 660,679.90	$ 648,280.94	$ 547,231.1	$ 549,196.42	$ 447,158.55	$ 545,333.68	$ 484,473.18
3	Depreciation	273,391.04	266,950.01	256,497.10	250,079.92	245,[illegible]88.75	241,579.78	234,706.42	231,282.06	233,848.62
4	Depletion	320,359.14	140,959.72	134,351.13	117,229.10	152,934.82	155,944.63	96,022.33	81,666.61	95,283.23
5	(Profit) and loss on plant retirements	(131.78)	(45,162.46)	17,018.41	1,052.02	77,031.60	(6.84)	1,652.22	24,264.23	3,004.85
6	Taxes	177,162.03	169,073.04	168,057.49	141,674.29	137,647.37	150,302.19	167,525.05	145,690.00	107,370.10
7	Total Operating Revenue Deductions	$1,517,336.36	$1,278,294.15	$1,236,604.03	$1,158,316.27	$1,160,133.67	$1,097,016.18	$ 947,064.57	$1,028,236.58	$ 923,979.98
8	Net Operating Revenues (Loss)	$ 930,758.91	$1,055,759.78	$1,070,791.54	$1,041,316.32	$ 992,403.53	$1,424,926.62	$1,170,893.41	$1,225,120.59	$1,126,768.10
	Exploration and Development Costs									
9	Delay rentals	$ 3,787.33	$ 7,604.81	$ 16,760.45	$ 12,720.81	$ 47,224.39	$ 51,484.90	$ 55,625.47	$ 125,158.81	$ 88,948.33
10	Nonproductive well drilling	29,293.73								61,160.96
11	Abandoned leases	3,232.63	674.30		57,383.45	36.79		96,942.13	6,034.07	
12	Other exploration costs									
13	Total Exploration and Development Costs	$ 36,313.69	$ 8,279.11	$ 16,760.45	$ 70,104.26	$ 47,261.18	$ 51,484.90	$ 152,567.60	$ 131,192.88	$ 150,109.29
14	Net Utility Income (Loss)	$ 894,445.22	$1,047,480.67	$1,054,031.09	$ 971,212.06	$ 945,142.35	$1,373,441.72	$1,018,325.81	$1,093,927.71	$ 976,658.81
	Other Income									
15	Interest revenues	$ 20,920.90	$ 21,549.00	$ 21,917.48	$ 21,472.36	$ 24,127.34	$ 31,661.23	$ 30,788.61	$ 30,882.48	$ 30,330.14
16	Miscellaneous nonoperating revenues	6,327.43	3,742.14	54,831.09	63,728.66	57,537.80	51,140.64	46,103.25	54,834.46	56,209.80
17	Nonoperating revenue deductions (debit)	(725.85)	(163.05)	34.60	(658.76)	(1,097.23)	(1,193.46)	(1,185.69)	(4,878.71)	(1,679.30)
18	Total Other Income	$ 26,522.48	$ 25,128.09	$ 76,783.17	$ 84,542.26	$ 80,567.91	$ 81,608.41	$ 75,706.17	$ 80,838.23	$ 84,860.64
19	Gross Income (Loss)	$ 920,967.70	$1,072,608.76	$1,130,814.26	$1,055,754.32	$1,025,710.26	$1,455,050.13	$1,094,031.98	$1,174,765.94	$1,061,519.45
	Income Deductions									
	Interest on debt to Colo. Interstate Gas Co.									
20	Bonds	$ 327,235.00	$ 362,830.00	$ 398,400.00	$ 434,095.00	$ 469,765.00	$ 505,440.00	$ 587,190.00	$ 579,750.00	$ 562,276.48
21	Notes and current account	104,962.71	105,948.14	[illegible]8,939.22	110,863.36	112,694.78	132,248.32	222,977.93	159,716.98	142,206.84
22	Other interest charges	11,403.39	45.00				14.20	5,459.13	6,842.37	5,635.39
23	Interest charged to construction (credit)									
24	Miscellaneous income deductions	352.20	515.00	168.00						
25	Total Income Deductions	$ 443,953.30	$ 469,338.14	$ 507,507.22	$ 544,958.36	$ 582,459.78	$ 637,702.52	$ 815,627.06	$ 746,309.35	$ 710,118.71
26	Net Income (Loss)	$ 477,014.40	$ 603,270.62	$ 623,307.04	$ 510,795.96	$ 443,250.48	$ 817,347.61	$ 278,404.92	$ 428,456.59	$ 351,400.74
	Earned Surplus									
	Credits									
27	Balance, beginning of year (deficit)	$3,068,733.82	$2,480,253.20	$1,874,766.16	$1,381,820.20	$ 956,419.72	$ 156,892.11	$ (103,662.81)	$ (508,359.40)	$ (835,960.14)
28	Balance from income account (above)	477,014.40	603,270.62	623,307.04	510,795.96	443,250.48	817,347.61	278,404.92	428,456.59	351,400.74
29	Total Credits (Debit)	$3,545,748.22	$3,083,523.82	$2,498,073.20	$1,892,616.16	$1,399,670.20	$ 974,239.72	$ 174,742.11	$ (79,902.81)	$ (484,559.40)
30	Debit - Premium on bonds retired	$ 11,900.00	$ 14,790.00	$ 17,820.00	$ 17,850.00	$ 17,850.00	$ 17,820.00	$ 17,850.00	$ 23,760.00	$ 23,800.00
31	Balance, end of year (deficit)	$3,533,848.22	$3,068,733.82	$2,480,253.20	$1,874,766.16	$1,381,820.20	$ 956,419.72	$ 156,892.11	$ (103,662.81)	$ (508,359.40)

*Per books subject to reclassifications made for the purposes of assigning revenues, expenses and direct surplus debits and credits to the period in which properly accruable, and of grouping all items according to the principal functional divisions outlined in the Uniform System of Accounts.

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Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
COMPARATIVE CONDENSED INCOME AND EARNED SURPLUS ACCOUNTS
AS RECLASSIFIED* BY PERIODS, JUNE 1, 1928 TO DECEMBER 31, 1939

	Twelve Months Ended December Thirty-First										Seven Months Ended Dec. 31,
1939 (2)	1938 (3)	1937 (4)	1936 (5)	1935 (6)	1934 (7)	1933 (8)	1932 (9)	1931 (10)	1930 (11)	1929 (12)	1928 (13)
$2,448,095.27	$2,334,053.93	$2,307,395.57	$2,199,632.59	$2,152,537.20	$2,521,942.80	$2,117,957.98	$2,253,357.17	$2,050,748.08	$1,952,092.23	$ 942,124.76	$ 502,470.65
$ 746,555.93	$ 746,473.84	$ 660,679.90	$ 648,280.94	$ 547,231.1	$ 549,196.42	$ 447,158.55	$ 545,333.68	$ 484,473.18	$ 395,208.47	$ 767,926.44	$ 114,391.32
273,391.04	266,950.01	256,497.10	250,079.92	245,288.75	241,579.78	234,706.42	231,282.06	233,848.62	342,833.67	348,033.71	173,793.94
320,359.14	140,959.72	134,351.13	117,229.10	152,934.82	155,944.63	96,022.33	81,666.61	95,283.23	87,247.54	125,130.79	41,960.01
(131.78)	(45,162.46)	17,018.41	1,052.02	77,031.60	(6.84)	1,652.22	24,264.23	3,004.85	6,657.92	2,836.90	
177,162.03	169,073.04	168,057.49	141,674.29	137,647.37	150,302.19	167,525.05	145,690.00	107,370.10	54,184.24	14,127.06	6,364.22
$1,517,336.36	$1,278,294.15	$1,236,604.03	$1,158,316.27	$1,160,133.67	$1,097,016.18	$ 947,064.57	$1,028,236.58	$ 923,979.98	$ 886,131.84	$1,258,054.90	$ 336,510.09
$ 930,758.91	$1,055,759.78	$1,070,791.54	$1,041,316.32	$ 992,403.53	$1,424,926.62	$1,170,893.41	$1,225,120.59	$1,126,768.10	$1,065,960.39	$ (315,930.14)	$ 165,960.56
$ 3,787.33	$ 7,604.81	$ 16,760.45	$ 12,720.81	$ 47,224.39	$ 51,484.90	$ 55,625.47	$ 125,158.81	$ 88,948.33	$ 81,348.53	$ 97,257.49	$ 60,450.47
29,293.73								61,160.96			
3,232.63	674.30		57,383.45	36.79		96,942.13	6,034.07		6,597.75	5,498.52	
									2,555.91	2,762.72	
$ 36,313.69	$ 8,279.11	$ 16,760.45	$ 70,104.26	$ 47,261.18	$ 51,484.90	$ 152,567.60	$ 131,192.88	$ 150,109.29	$ 90,502.19	$ 105,518.73	$ 60,450.47
$ 894,445.22	$1,047,480.67	$1,054,031.09	$ 971,212.06	$ 945,142.35	$1,373,441.72	$1,018,325.81	$1,093,927.71	$ 976,658.81	$ 975,458.20	$ (421,448.87)	$ 105,510.09
$ 20,920.90	$ 21,549.00	$ 21,917.48	$ 21,472.36	$ 24,127.34	$ 31,661.23	$ 30,788.61	$ 30,882.48	$ 30,330.14	$ 28,384.55	$ 29,482.71	$ 2,981.53
6,327.43	3,742.14	54,831.09	63,728.66	57,537.80	51,140.64	46,103.25	54,834.46	56,209.80	63,036.42	93,089.86	352.91
(725.85)	(163.05)	34.60	(658.76)	(1,097.23)	(1,193.46)	(1,185.69)	(4,878.71)	(1,679.30)	(1,183.78)	27.53	(3.15)
$ 26,522.48	$ 25,128.09	$ 76,783.17	$ 84,542.26	$ 80,567.91	$ 81,608.41	$ 75,706.17	$ 80,838.23	$ 84,860.64	$ 90,237.19	$ 122,600.10	$ 3,331.29
$ 920,967.70	$1,072,608.76	$1,130,814.26	$1,055,754.32	$1,025,710.26	$1,455,050.13	$1,094,031.98	$1,174,765.94	$1,061,519.45	$1,065,695.39	$ (298,848.77)	$ 108,841.38
Co.											
$ 327,235.00	$ 362,830.00	$ 398,400.00	$ 434,095.00	$ 469,765.00	$ 505,140.00	$ 587,190.00	$ 579,750.00	$ 562,276.48	$ 647,430.19	$ 552,898.33	$ 263,968.12
104,962.71	105,948.14	108,939.22	110,863.36	112,694.78	132,248.32	222,977.93	159,716.98	142,206.84	104,433.72	207,213.09	36,529.06
11,403.39	45.00				14.20	5,459.13	6,842.37	5,635.39			
											(132,695.64)
352.20	515.00	168.00									8,112.27
$ 443,955.30	$ 469,338.14	$ 507,507.22	$ 544,958.36	$ 582,459.78	$ 637,702.52	$ 815,627.06	$ 746,309.35	$ 710,118.71	$ 751,863.91	$ 760,111.42	$ 175,912.81
$ 477,014.40	$ 603,270.62	$ 623,307.04	$ 510,795.96	$ 443,250.48	$ 817,347.61	$ 278,404.92	$ 428,456.59	$ 351,400.74	$ 313,831.48	$ (1,058,960.19)	$ (67,071.43)
$3,068,733.82	$2,480,253.20	$1,874,766.16	$1,381,820.20	$ 956,419.72	$ 156,892.11	$ (103,662.81)	$ (508,359.40)	$ (835,960.14)	$ (1,126,031.62)	$ (67,071.43)	
477,014.40	603,270.62	623,307.04	510,795.96	443,250.48	817,347.61	278,404.92	428,456.59	351,400.74	313,831.48	(1,058,960.19)	(67,071.43)
$3,545,748.22	$3,083,523.82	$2,498,073.20	$1,892,616.16	$1,399,670.20	$ 974,239.72	$ 174,742.11	$ (79,902.81)	$ (484,559.40)	$ (812,200.14)	$ (1,126,031.62)	$ (67,071.43)
$ 11,900.00	$ 14,790.00	$ 17,820.00	$ 17,850.00	$ 17,850.00	$ 17,820.00	$ 17,850.00	$ 23,760.00	$ 23,800.00	$ 23,760.00		
$3,533,848.22	$3,068,733.82	$2,480,253.20	$1,874,766.16	$1,381,820.20	$ 956,419.72	$ 156,892.11	$ (103,662.81)	$ (508,359.40)	$ (835,960.14)	$ (1,126,031.62)	$ (67,071.43)

r the purposes of assigning revenues, expenses and direct surplus debits and credits to the period in which properly accruable,
ncipal functional divisions outlined in the Uniform System of Accounts.

Docket G-124

CANADIAN RIVER GAS COMPANY
COMPARATIVE CONDENSED INCOME AND EARNED SURPLUS ACCOUNT,
AS ADJUSTED, BY PERIODS, JUNE 1, 1928 TO DECEMBER 31, 1939

Line No.	Particulars	Twelve Months Ended December 31							
	(1)	1939 (2)	1938 (3)	1937 (4)	1936 (5)	1935 (6)	1934 (7)	1933 (8)	1932 (9)
	Utility Income								
1	Operating Revenues	$2,393,386.99	$2,285,794.32	$2,277,815.24	$2,185,378.51	$2,164,006.33	$2,548,559.36	$2,148,915.98	$2,292,939.94
	Operating Revenue Deductions:								
2	Operating expense	$ 665,286.93	$ 673,129.80	$ 557,248.35	$ 558,588.80	$ 451,986.84	$ 461,644.63	$ 379,452.17	$ 472,857.28
3	Depreciation	153,987.13	153,008.23	144,723.45	145,632.19	147,867.57	150,131.45	147,896.12	146,929.13
4	Depletion	44,865.27	36,323.03	39,199.22	35,395.08	26,906.50	23,336.89	17,328.43	17,253.98
5	Taxes	175,141.03	167,241.04	165,148.99	141,674.29	137,647.37	150,302.19	167,525.05	145,690.00
6	Nonrecurring expenses	222.60	6,274.35		6,867.93	14,053.29	13,809.45		
7	Total Operating Revenue Deductions	$1,039,502.96	$1,035,976.45	$ 906,620.01	$ 888,158.29	$ 778,461.57	$ 799,224.61	$ 712,201.77	$ 782,730.39
8	Net Operating Revenues	$1,353,884.03	$1,249,817.87	$1,371,195.23	$1,297,220.22	$1,385,544.76	$1,749,334.75	$1,436,714.21	$1,510,209.55
	Exploration and Development Costs								
9	Delay Rentals	$ 10,401.58	$ 18,333.81	$ 19,960.45	$ 12,720.81	$ 47,232.89	$ 53,525.40	$ 107,652.92	$ 155,679.81
10	Nonproductive well drilling	29,293.73							
11	Abandoned leases	1,878.18	674.30		43,173.67	36.79		81,585.13	5,459.07
12	Other exploration costs								
13	Total Exploration and Development Costs	$ 41,573.49	$ 19,008.11	$ 19,960.45	$ 55,894.48	$ 47,269.68	$ 53,525.40	$ 189,238.05	$ 161,138.88
14	Net Utility Income	$1,312,310.54	$1,230,809.76	$1,351,234.78	$1,241,325.74	$1,338,275.08	$1,695,809.35	$1,247,476.16	$1,349,070.67
	Other Income								
15	Interest revenues	$ 17.88	$ 625.91	$ 1,182.90	$ 927.68	$ 361.16	$ 8,052.77	$ 8,142.21	$ 8,170.32
16	Miscellaneous nonoperating revenues	292.39	268.80	305.60	904.65	818.11	1,006.76	1,043.27	5,070.22
17	Nonoperating revenue deductions (Debit)				(658.76)	(1,097.23)	(1,193.46)	(1,185.69)	(4,878.71)
18	Total Other Income	$ 310.27	$ 894.71	$ 1,488.50	$ 1,173.57	$ 82.04	$ 7,866.07	$ 7,999.79	$ 8,361.83
19	Gross Income	$1,312,620.81	$1,231,704.47	$1,352,723.28	$1,242,499.31	$1,338,357.12	$1,703,675.42	$1,255,475.95	$1,357,432.50
	Income Deductions								
	Interest on debt to Colorado Interstate Gas Company:								
20	Bonds	$ 327,235.00	$ 362,830.00	$ 398,400.00	$ 434,095.00	$ 469,765.00	$ 505,440.00	$ 587,190.00	$ 579,750.00
21	Notes and current account	104,962.71	105,968.14	108,939.22	110,863.36	112,694.78	132,248.32	222,977.93	159,716.98
22	Other interest charges	11,403.39	45.00				14.20	5,459.13	6,842.37
23	Interest charged to construction (Credit)								
24	Miscellaneous income deductions	29,372.17	23,532.74	30,253.64				6,700.63	
25	Total Income Deductions	$ 472,973.27	$ 492,355.88	$ 537,592.86	$ 544,958.36	$ 582,459.78	$ 637,702.52	$ 822,327.69	$ 746,309.35
26	Net Income (Loss)	$ 839,647.54	$ 739,348.59	$ 815,130.42	$ 697,540.95	$ 755,897.34	$1,065,972.90	$ 433,148.26	$ 611,123.15
	Earned Surplus								
	Credits:								
27	Balance, beginning of year (Deficit)	$4,998,551.16	$4,273,992.57	$3,476,682.15	$2,796,991.20	$2,058,943.86	$1,010,790.96	$ 595,492.70	$ 8,129.55
28	Balance from income account (above) (Debit)	839,647.54	739,348.59	815,130.42	697,540.95	755,897.34	1,065,972.90	433,148.26	611,123.15
29	Total Credits (Debit)	$5,838,198.70	$5,013,341.16	$4,291,812.57	$3,494,532.15	$2,814,841.20	$2,076,763.86	$1,028,640.96	$ 619,252.70
30	Debit - Premium on bonds retired	$ 11,900.00	$ 14,790.00	$ 17,820.00	$ 17,850.00	$ 17,850.00	$ 17,820.00	$ 17,850.00	$ 23,760.00
31	Balance, end of year (Deficit)	$5,826,298.70	$4,998,551.16	$4,273,992.57	$3,476,682.15	$2,796,991.20	$2,058,943.86	$1,010,790.96	$ 595,492.70

Exhibit No. 168

Statement B-6
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
COMPARATIVE CONDENSED INCOME AND EARNED SURPLUS ACCOUNT,
AS ADJUSTED, BY PERIODS, JUNE 1, 1928 TO DECEMBER 31, 1939

	Twelve Months Ended December 31										Seven Months Ended December 31
1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
$2,393,386.99	$2,285,794.32	$2,277,815.24	$2,185,378.51	$2,164,006.33	$2,548,559.36	$2,148,915.98	$2,292,939.94	$2,073,687.19	$1,952,092.23	$ 942,124.76	$ 414,351.17
$ 665,286.93	$ 673,129.80	$ 557,248.35	$ 558,588.80	$ 451,986.84	$ 461,644.63	$ 379,452.17	$ 472,857.28	$ 410,578.98	$ 310,320.03	$ 196,964.52	$ 105,038.50
153,987.13	153,008.23	144,723.45	145,632.19	147,867.57	150,131.45	147,896.12	146,929.13	144,877.76	139,358.26	139,348.16	65,278.93
44,865.27	36,323.03	39,199.22	35,395.08	26,906.50	23,336.89	17,328.43	17,253.98	15,698.16	14,803.66	9,015.41	3,045.35
175,141.03	167,241.04	165,148.99	141,674.29	137,647.37	150,302.19	167,525.05	145,690.00	107,370.10	54,184.24	14,127.06	6,364.22
222.60	6,274.35		6,867.93	14,053.29	13,809.45						
$1,039,502.96	$1,035,976.45	$ 906,620.01	$ 888,158.29	$ 778,461.57	$ 799,224.61	$ 712,201.77	$ 782,730.39	$ 678,525.00	$ 518,666.19	$ 359,455.15	$ 179,727.00
$1,353,884.03	$1,249,817.87	$1,371,195.23	$1,297,220.22	$1,385,544.76	$1,749,334.75	$1,436,714.21	$1,510,209.55	$1,395,162.19	$1,433,426.04	$ 582,669.61	$ 234,624.17
$ 10,401.58	$ 18,333.81	$ 19,960.45	$ 12,720.81	$ 47,232.89	$ 53,525.40	$ 107,652.92	$ 155,679.81	$ 140,880.04	$ 87,917.13	$ 95,317.49	$ 60,450.47
29,293.73								61,160.96			
1,878.18	674.30		43,173.67	36.79		81,585.13	5,459.07		3,313.45	1,943.52	
									16.29	1,260.22	
$ 41,573.49	$ 19,008.11	$ 19,960.45	$ 55,894.48	$ 47,269.68	$ 53,525.40	$ 189,238.05	$ 161,138.88	$ 202,041.00	$ 91,246.87	$ 98,521.23	$ 60,450.47
$1,312,310.54	$1,230,809.76	$1,351,234.78	$1,241,325.74	$1,338,275.08	$1,695,809.35	$1,247,476.16	$1,349,070.67	$1,193,121.19	$1,342,179.17	$ 484,148.38	$ 174,173.70
$ 17.88	$ 625.91	$ 1,182.90	$ 927.68	$ 361.16	$ 8,052.77	$ 8,142.21	$ 8,170.32	$ 7,694.60	$ 7,385.85	$ 8,921.81	$ 497.59
292.39	268.80	305.60	904.65	818.11	1,006.76	1,043.27	5,070.22	5,063.63	3,433.92	12,570.44	352.91
			(658.76)	(1,097.23)	(1,193.46)	(1,185.69)	(4,878.71)	(1,679.30)	(1,183.78)	27.53	(3.15)
$ 310.27	$ 894.71	$ 1,488.50	$ 1,173.57	$ 82.04	$ 7,866.07	$ 7,999.79	$ 8,361.83	$ 11,078.93	$ 9,635.99	$ 21,519.78	$ 847.35
$1,312,620.81	$1,231,704.47	$1,352,723.28	$1,242,499.31	$1,338,357.12	$1,703,675.42	$1,255,475.95	$1,357,432.50	$1,204,200.12	$1,351,815.16	$ 505,668.16	$ 175,021.05
$ 327,235.00	$ 362,830.00	$ 398,400.00	$ 434,095.00	$ 469,765.00	$ 505,440.00	$ 587,190.00	$ 579,750.00	$ 562,276.48	$ 647,430.19	$ 552,898.33	$ 263,968.12
104,962.71	105,948.14	108,939.22	110,863.36	112,694.78	132,248.32	222,977.93	159,716.98	142,206.84	104,433.72	207,213.09	36,529.06
11,403.39	45.00				14.20	5,459.13	6,842.37	5,635.39			
											(132,696.64)
29,372.17	23,532.74	30,253.64				6,700.63		690.42		782,082.67	8,347.27
$ 472,973.27	$ 492,355.88	$ 537,592.86	$ 544,958.36	$ 582,459.78	$ 637,702.52	$ 822,327.69	$ 746,309.35	$ 710,809.13	$ 751,863.91	$1,542,194.09	$ 176,147.81
$ 839,647.54	$ 739,348.59	$ 815,130.42	$ 697,540.95	$ 755,897.34	$1,065,972.90	$ 433,148.26	$ 611,123.15	$ 493,390.99	$ 599,951.25	$(1,036,525.93)	$ (1,126.76)
$4,998,551.16	$4,273,992.57	$3,476,682.15	$2,796,991.20	$2,058,943.86	$1,010,790.96	$ 595,492.70	$ 8,129.55	$(461,461.44)	$(1,037,652.69)	$ (1,126.76)	
839,647.54	739,348.59	815,130.42	697,540.95	755,897.34	1,065,972.90	433,148.26	611,123.15	493,390.99	599,951.25	(1,036,525.93)	$ (1,126.76)
$5,838,198.70	$5,013,341.16	$4,291,812.57	$3,494,532.15	$2,814,841.20	$2,076,763.86	$1,028,640.96	$ 619,252.70	$ 31,929.55	$ (437,701.44)	$(1,037,652.69)	$ (1,126.76)
$ 11,900.00	$ 14,790.00	$ 17,820.00	$ 17,850.00	$ 17,850.00	$ 17,820.00	$ 17,850.00	$ 23,760.00	$ 23,800.00	$ 23,760.00		
$5,826,298.70	$4,998,551.16	$4,273,992.57	$3,476,682.15	$2,796,991.20	$2,058,943.86	$1,010,790.96	$ 595,492.70	$ 8,129.55	$(461,461.44)	$(1,037,652.69)	$ (1,126.76)

Docket G-124

CANADIAN RIVER GAS COMPANY
SUMMARY OF EXAMINER'S ADJUSTMENT ENTRIES APPLIED TO INCOME ACCOUNT
YEAR ENDED DECEMBER 31, 1939

Entry No.	Particulars	Operating Revenues	Operating Revenue Deductions: Operating Expenses	Depreciation	Depletion	Profit and Loss on Plant Retirements	Taxes	Non-recurring Expenses
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
101	To credit production expenses with net proceeds realized by Amarillo Oil Company from gasoline produced by Respondent		$(25,056.24)					
102	To adjust royalties received from J. M. Huber Petroleum Company	$(256.69)						
110	To adjust production expenses for amortization and retirements earned on Bivens gasoline plant		(5,778.35)					
111	To adjust production expenses for interest on investment in Bivens gasoline plant		(20,903.02)					
112	To adjust production expenses for allowances made to Colorado Interstate Gas Company for B.T.U. loss	28,153.07	(28,153.07)					
117	To adjust miscellaneous income deductions for trustee's fees		(220.42)					
118	To segregate nonrecurring expenses		(222.60)					$222.60
120	To adjust shop expense for unallocated balance at end of year		725.85					
127	To adjust charges for Federal capital stock tax						$(2,021.00)	
133	To restate billings to Amarillo Oil Company for gas delivered to Panhandle Pipe Line Company	26,811.90						
170	To adjust materials and supplies account in connection with physical inventory adjustments		((56.21)					
			(117.37					
182	To adjust for substitution of depreciation and return on investment in Texoma Natural Gas Company joint gasoline operations in place of retirement and interest on bonds and notes		(11,722.31)					
201	To remove delay rentals on leaseholds from gas plant investment							
216	To adjust gas plant with appreciation of abandoned leases							
404	To reverse depletion accrual				$(320,359.14)			
405	To provide annual depletion on operated acreage				18,526.22			
412	To remove plant retirements from income					$131.78		
406	To provide annual depletion of gas well intangible costs				26,339.05			
407	To reverse depreciation accrual			$(273,391.04)				
408	To provide annual depreciation baked on service lives			153,987.13				
	Total Debits	$ 54,964.97	$ 843.22	$ 153,987.13	$ 44,865.27	$131.78		$222.60
	Total Credits	(256.69)	(82,112.22)	(273,391.04)	$(320,359.14)		$(2,021.00)	

Exhibit No. 168

Schedule B-13
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
SUMMARY OF EXAMINER'S ADJUSTMENT ENTRIES APPLIED TO INCOME ACCOUNT
YEAR ENDED DECEMBER 31, 1939

	Operating Revenue Deductions						Exploration and Development Cost		Other Income			Income Deductions
Operating Revenues	Operating Expenses	Depreciation	Depletion	Profit and Loss on Plant Retirements	Taxes	Non-recurring Expenses	Delay Rentals	Abandoned Leases	Interest Revenues	Miscellaneous Nonoperating Revenues	Nonoperating Revenue Deductions	Miscellaneous Income Deductions
(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	$(15,056.24)											$15,056.24
$(256.69)										$ 256.69		
	(5,778.35)									5,778.35		
	(20,903.02)								$20,903.02			
28,153.07	(28,153.07)											
	(220.42)											220.42
	(222.60)					$222.60						
	725.85				$(2,021.00)						$(725.85)	2,021.00
26,811.90												
	((56.21)											
	(117.37											
	(11,722.31)											11,722.31
							$6,614.25	$ (400.00)				
								(954.45)				
			$(320,359.14)									
			18,526.22									
				$131.78								
			26,339.05									
		$(273,391.04)										
		153,987.13										
$ 54,964.97	$ 843.22	$ 153,987.13	$ 44,865.27	$131.78		$222.60	$6,614.25		$20,903.02	$6,035.04		$29,019.97
(256.69)	(82,112.22)	(273,391.04)	$(320,359.14)		$(2,021.00)			$(1,354.45)			$(725.85)	

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Schedule S-14
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
SUMMARY OF EXAMINER'S ADJUSTMENTS BEFORE APPLIED TO INCOME ACCOUNT
YEAR ENDED DECEMBER 31, 1938

Entry No.	Particulars	Operating Revenues	Operating Revenue Deductions: Operating Expenses	Depreciation	Depletion	Profit and Loss on Plant Retirements	Taxes	Non-recurring Expenses	Exploration and Development Cost Delay Rentals	Other Income: Interest Revenues	Miscellaneous Non-operating Revenues	Non-operating Revenue Deductions	Income Deductions Miscellaneous Income Deductions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
101	To reflect revenue realized by Amarillo Oil Company from gasoline produced by Respondent		($14,607.53)										
102	To adjust royalties received from J. M. Huber Petroleum Company												$14,607.53
110	To adjust credit for amortization and retirements earned on Divine gasoline plant investment	$ (184.66)									$ 184.66		
111	To adjust credits for interest on Divine gasoline plant investment		(3,288.69)								3,288.69		
112	To adjust for allowances made to Colorado Interstate Gas Co. for B.t.u. loss		(20,983.09)							$20,983.09			
117	To adjust miscellaneous income deductions for trustees' fees	22,568.23	(22,568.23)										
118	To segregate nonrecurring expenses in connection with consolidation of leases		((275.00)										
126	To adjust shop expense for unallocated balance at end of year		((892.86)										1,167.86
127	To adjust charge for Federal capital stock tax		(6,274.35)					$6,274.35					
153	To restate billing to Amarillo Oil Company for gas delivered to Panhandle Pipeline Co.		165.05				($1,832.00)					($165.05)	
170	To adjust materials and supplies account in connection with physical inventory adjustments	26,076.03											1,832.00
182	To adjust for substitution of depreciation and return of investment in Texaco Natural Gas Co. joint gasoline operation in place of retirement and interest on bonds and notes		((37.75)										
201	To remove delay rentals on leaseholds from gas plant investment		(570.76)										
402	To reverse retirements charged to depletion on Vo. B-54, 1938		(5,410.35)										5,410.35
403	To restate abandoned lease cost from depletion to income (Based)								$10,729.00				
404	To reverse depletion accrued					$ 5,779.24							
405	To provide annual depletion on operated acreage					37,960.32							
412	To remove plant retirements from income				($140,959.72)								
406	To provide annual depletion of gas well intangible costs				19,509.62								
407	To reverse depreciation accrued					1,686.90							
408	To provide annual depreciation based on service lives				22,813.41								
				($266,950.01)									
				155,008.23									
	Total Debits	$48,644.26	$ 733.81	$155,008.23	$ 36,324.03	$45,162.16		$6,274.35	$10,729.00	$20,983.09	$3,473.34		$23,017.74
	Total Credits	(184.66)	(71,077.86)	(266,950.01)	(140,959.72)		($1,832.00)					($165.05)	

Schedule B-15
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
SUMMARY OF EXAMINER'S ADJUSTMENT ENTRIES AFFECTED TO INCOME ACCOUNT
YEAR ENDED DECEMBER 31, 1957

Entry No.	Particulars	Operating Revenues	Operating Revenue Deductions: Operating Expenses	Depreciation	Depletion	Profit and Loss on Plant Retirements	Taxes	Exploration and Development Cost: Delay Rentals	Other Income: Interest Revenues	Miscellaneous Nonoperating Revenues	Nonoperating Revenue Deductions	Income Deductions: Miscellaneous Income Deductions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	To reflect income realized by Amarillo Oil Company from gasoline produced by Respondent		$ (18,992.02)									$18,992.02
2	To adjust royalties received from J. M. Huber Petroleum Company	$ (525.53)								$ 525.53		
10	To adjust credit for amortization and retirements earned on Rivers gasoline plant investment		(26,617.62)							26,617.62		
11	To adjust credits for interest on Rivers gasoline plant investment		(20,791.58)						$20,791.58			
12	To adjust for allowances made to Colorado Interstate Gas Company for B.T.U. loss		(27,581.34)							27,581.34		
17	To adjust miscellaneous income deductions for trustee's fees		(957.34)									957.34
20	To adjust shop expense for unallocated balance at end of year		(34.60)								$34.60	
27	To adjust charges for Federal capital stock tax						$(2,608.50)					2,608.50
28	To restate billing to Amarillo Oil Company for gas delivered to Panhandle Pipeline Company	29,903.86										
70	To adjust materials and supplies account in connection with physical inventory adjustments		(120.73)									
			(562.34)									
89	To adjust for substitution of depreciation and return on investment in Texoma Natural Gas Co. joint gasoline operation in place of retirement and interest on bonds and notes		(7,547.78)									7,547.78
91	To remove delay rentals on leaseholds from gas plant investment							$3,200.00				
94	To reverse depletion accrual				$(154,351.13)							
95	To provide annual depletion on operated acreage				11,680.25							
96	To provide annual depletion of gas well intangible costs				21,516.99							
97	To reverse depreciation accrual			$(256,697.10)								
98	To provide annual depreciation on service lives			144,723.45								
112	To remove plant retirements from income					$(17,018.41)						
	Total Debits	$29,903.86	$ 144,723.45	$ 38,196.99	$ 33,196.99			$3,200.00	$20,791.58	$54,589.09	$34.60	$30,095.62
	Total Credits	$ (525.53)	$(203,451.55)	$(256,697.10)	$(154,351.13)	$(17,018.41)	$(2,608.50)					

Exhibit No. 168

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CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES RELATING TO THE INCOME ACCOUNT

35

Particulars	Year	Debit	Credit
No. 101			
Miscellaneous Income Deductions	1939	$15,056.24	
do.	1938	14,607.53	
do.	1937	18,992.02	
Natural Gas Production Expenses - Residuals Produced - Credit	1939		$15,056.24
do.	1938		14,607.53
do.	1937		18,992.02

To credit Respondent's production expenses with proceeds (less royalties paid) realized by Amarillo Oil Company during 1937, 1938 and 1939 from gasoline extracted from natural gas produced by the Respondent, as disclosed by an examination of the books and records of Amarillo Oil Company pertaining to its natural gas gasoline operations. This entry has the effect of reducing Respondent's production expenses for the purpose of the proceeding under Docket G-124 with the realization from the residual recovered by Amarillo Oil Company, an associated company having same control as Respondent.

No. 102			
Other Income - Miscellaneous Nonoperating Revenues	1939	$ 256.69	
do.	1938	184.65	
do.	1937	323.53	
Miscellaneous Gas Revenues	1939		$ 256.69
do.	1938		184.65
do.	1937		323.53

To transfer from nonoperating income to gas revenues, royalties received from J. M. Huber Petroleum Company in the years 1939, 1938 and 1937, arising from sale of Respondent's lease No. 94 in 1931.

CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

42

Particulars	Year	Debit	Credit
No. 110			
Miscellaneous Nonoperating Revenues (Amortization and Retirements Earned on Gasoline Investment)	1939	$ 5,778.35	
do.	1938	3,288.69	
do.	1937	26,617.62	
do.	1936	34,180.10	
do.	1935	39,549.71	
do.	1934	39,289.59	
do.	1933	37,682.60	
do.	1932	37,792.08	
do.	1931	37,664.86	
do.	1930	34,936.32	
do.	1929	38,480.87	
Natural Gas Production Expenses - Residuals Operation Expenses	1939		$ 5,778.35
do.	1938		3,288.69
do.	1937		26,617.62
do.	1936		34,180.10
do.	1935		39,549.71
do.	1934		39,289.59
do.	1933		37,682.60
do.	1932		37,792.08
do.	1931		37,664.86
do.	1930		34,936.32
do.	1929		38,480.87

To adjust production expenses (residuals operation) for amounts included therein and credited on Respondent's books to miscellaneous nonoperating revenue representing amortization and retirements earned on investment in Bivins gasoline plant. The Respondent's entries, if not reversed, would result in overstatement of production expenses (residuals operation) since annual depreciation as revised by the Commission's accountants includes provision for amortization of Respondent's investment in gasoline plant.

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CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

43

Particulars	Year	Debit	Credit
No. 111			
Other Income - Interest Revenues	1939	$20,903.02	
do.	1938	20,923.09	
do.	1937	20,734.58	
do.	1936	20,544.68	
do.	1935	23,766.18	
do.	1934	23,608.46	
do.	1933	22,646.40	
do.	1932	22,712.16	
do.	1931	22,635.54	
do.	1930	20,998.70	
do.	1929	20,560.90	
do.	1928	2,483.94	
Natural Gas Production Expenses - Residuals Operation Expenses	1939		$20,903.02
do.	1938		20,923.09
do.	1937		20,734.58
do.	1936		20,544.68
do.	1935		23,766.18
do.	1934		23,608.46
do.	1933		22,646.40
do.	1932		22,712.16
do.	1931		22,635.54
do.	1930		20,998.70
do.	1929		20,560.90
do.	1928		2,483.94

To adjust production expenses (residuals operation) for amounts included therein and credited on Respondent's books to interest revenues, representing interest on investment in Bivins gasoline plant. The Respondent's entries, if not reversed, would result in overstatement of production expenses (residuals operation). Interest on investment is chargeable to the return or gross profit from operations and is not a component of operating expense.

CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

44

Particulars	Year	Debit	Credit
No. 112			
Operating Revenues - Sales to Other Associated Companies	1939	$28,153.07	
do.	1938	22,368.23	
do.	1928	6,869.48	
Miscellaneous Nonoperating Revenues	1937	27,584.34	
do.	1936	28,643.91	
do.	1935	17,169.98	
do.	1934	10,844.29	
do.	1933	7,377.38	
do.	1932	11,972.16	
do.	1931	13,481.31	
do.	1930	24,666.18	
do.	1929	42,038.55	
Natural Gas Production Expenses Residuals Operation Expenses	1939		$28,153.07
do.	1938		22,368.23
do.	1937		27,584.34
do.	1936		28,643.91
do.	1935		17,169.98
do.	1934		10,844.29
do.	1933		7,377.38
do.	1932		11,972.16
do.	1931		13,481.31
do.	1930		24,666.18
do.	1929		42,038.55
do.	1928		6,869.48

To adjust production expenses (residuals operation) for amounts included therein by Respondent representing allowances made to Colorado Interstate Gas Company to compensate it for loss of B.t.u. content in natural gas delivered to certain of its industrial customers, attributed to the extraction of gasoline from natural gas by Respondent at its Bivins gasoline plant. These allowances represent only portions of price reduction made by Colorado Interstate Gas Company to certain industrial customers as a result of the B.t.u. content of gas deliveries being less than that specified in the respective contracts of sale. The portion of the price reduction passed to the Respondent by Colorado Interstate Gas Company is here regarded as an adjustment of Respondent's revenues which may not properly be included as a charge to operating expenses.

CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

49

Particulars	Year	Debit	Credit
No. 117			
Miscellaneous Income Deductions	1939	$ 220.42	
do.	1938	1,167.86	
do.	1937	937.34	
Administrative and General Expenses - Other Expenses (Account 457)	1939		$ 220.42
do.	1938		892.86
do.	1937		937.34
Natural Gas Production Expenses - Other Supplies and Expenses (Account 358)	1938		275.00

To transfer to miscellaneous income deductions the Respondent's expenses for trustees' (The Chase National Bank of New York City - Trustee) fees, etc., under its bond indenture during the years 1937, 1938 and 1939. Since the original expenses in connection with the issuance of bonds are ultimately charged to income deductions, through amortization of debt discount and expense, current bond expenses are likewise regarded as financial expense and therefore reclassified as income deductions. Detail of payments by years, follows:

Year	Respondent's Voucher	Respondent's Account Number 358	457
1939	P-1-11		$220.42
1938	P-1-11		$217.81
	F-22		234.15
	G-1-32	$275.00	
	M-1-28		217.81
	M-22		223.09
		$275.00	$892.86
1937	P-1		$217.81
	P-22		256.43
	M-1		217.81
	M-22		245.29
			$937.34

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CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

50

Particulars	Year	Debit	Credit
No. 118			
Nonrecurring Expenses	1939	$ 222.60	
do.	1938	6,274.35	
Natural Gas Production Expenses - Other Supplies and Expenses (Account 358)	1939		$ 222.60
do.	1938		6,274.35

To segregate as nonrecurring the expenses incurred during 1938 and 1939 in connection with consolidation of various leases. The purpose of these expenditures was such that repetition of similar expenses in future years is improbable. Details follow:

Year	Respondent's Voucher	Description	Amount
1938	K-39	Closing W.O. 470 - Making Torsion Balance	$5,143.88
1938	L-35	survey of area adjacent to supposed fault line on Bivins and Masterson leases	390.00
			$5,533.88
		Payment to Southwestern Development Co. - Traveling expenses, New York to Chicago, July 13 to 16, 1938, re proposal to consolidate gas leases of Canadian River Gas Company:	
1938	G-3-11	(P. C. Spencer	$ 102.20
		(Geo. Baird	224.30
			$ 326.50
		Payment to Adkins, Pipkin, Madden & Keffer -	
1938	G-3-12	(Expenses of Mr. Keffer to Chicago, July (12 to 17, incl.	$ 58.00
		(Fee for four days' time on trip to Chicago	200.00
			$ 258.00
		Payment to Amarillo Oil Company -	
1939	D-3-41	Portion of R. E. Wertz trip, Amarillo to Washington-New York and return, April 27 to May 5, 1939, incl.	$ 222.60
1938	G-3-26	Expenses of R. E. Wertz on trip, Amarillo to Chicago and return, July 12 to 17, 1938	155.97
			$ 378.57
			$6,496.95

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CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

54

Particulars	Year	Debit	Credit
No. R-125			
Operating Revenue Deductions - Taxes	1939	$66,403.02	
do.	1938	68,434.88	
do.	1937	63,735.69	
do.	1936	45,417.49	
do.	1935	53,855.05	
do.	1934	69,941.37	
do.	1933	66,178.61	
do.	1932	27,139.07	
do.	1931	17,909.56	
Income Deductions - Other Interest Charges	1934	14.20	
do.	1933	5,459.13	
do.	1932	6,842.37	
do.	1931	5,635.39	
Administrative and General Expenses - Profit and Loss Suspense	1939		$125,441.31
do.	1938		61,283.07
do.	1937		135,304.85
do.	1936		31,282.11
do.	1935		36,920.17
do.	1934		37,878.68
Taxes Accrued - Federal Income Taxes	12/31/39		68,855.64

To reclassify from profit and loss suspense Federal income taxes and interest on such taxes which were paid delinquently, and also to relate these expenditures in the years to which applicable. Also to provide for Federal income taxes accruable as of December 31, 1939.

CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

56

Particulars	Year	Debit	Credit
No. 127			
Income Deductions - Miscellaneous Income Deductions	1939	$2,021.00	
do.	1938	1,832.00	
do.	1937	2,608.50	
Operating Revenue Deductions - Taxes	1939		$2,021.00
do.	1938		1,832.00
do.	1937		2,608.50

To transfer to miscellaneous income deductions the portion of Federal capital stock tax for 1937, 1938 and 1939 not properly includible in operating revenue deductions, computed as follows:

	1939	1938	1937	1936
Capital stock account per Respondent's books	$ 1.00	$ 1.00	$ 1.00	$ 1.00
Surplus, per Respondent's books at end of each year	3,609,943.09	3,273,961.05	2,697,958.65	1,487,402.91
Total adjusted base for Federal capital stock purposes	$3,609,944.09	$3,273,962.05	$2,697,959.65	$1,487,403.91
Tax, $1 per each full $1,000 for year ending June 30th of following year	$3,609.00	$3,273.00	$2,697.00	$1,487.00
Less one-half of tax applicable to next succeeding year	1,804.50	1,636.50	1,348.50	743.50
Tax applicable to current year	$1,804.50	$1,636.50	$1,348.50	$ 743.50
Add one-half of tax indicated for preceding year applicable to current year	1,636.50	1,348.50	743.50	
Total tax applicable to current year	$3,441.00	$2,985.00	$2,092.00	
Tax per Respondent's books (as reclassified by Examiner's Entry No. R-126)	5,462.00	4,817.00	4,700.50	
Excess transferred to miscellaneous income deductions	$2,021.00	$1,832.00	$2,608.50	

CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

57

Particulars	Year	Debit	Credit
No. 127 (Cont'd)			
Since excess profits taxes are not a necessary cost of conducting gas operations, capital stock taxes paid to avoid payment of excess profits taxes are likewise not properly includible in the cost of gas operations.			
No. R-128			
Natural Gas Production Expenses - Other Supplies and Expenses	1936	$ 262.97	
Natural Gas Production Expenses - Maintenance:			
Gas Well Equipment	1936	3,010.95	
Field Line Equipment	1936	483.81	
Other Production and Gathering Equipment	1936	193.63	
Measuring Station Equipment	1936	193.64	
Natural Gas Transmission Expenses - Maintenance of Transmission Line Equipment	1936	2,182.40	
Administrative and General Expenses - Maintenance of Telephone System	1936	2,505.08	
Natural Gas Production Expenses - Other Supplies and Expenses	1937		$ 262.97
Natural Gas Production Expenses - Maintenance:			
Gas Well Equipment	1937		3,010.95
Field Line Equipment	1937		483.81
Other Production and Gathering Equipment	1937		193.63
Measuring Station Equipment	1937		193.64
Natural Gas Transmission Expenses - Maintenance of Transmission Line Equipment	1937		2,182.40
Administrative and General Expenses - Maintenance of Telephone System	1937		2,505.08
To reclassify from 1937 to 1936 operating expenses, accumulated expenditures on work orders as of December 31, 1936 which were charged on Respondent's books to 1937 operating expenses.			

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CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

58

Particulars	Year	Debit	Credit
No. R-129			
Natural Gas Production Expenses - Maintenance:			
Gas Well Equipment	1937	$2,942.45	
Field Line Equipment	1937	208.90	
Natural Gas Transmission Expenses - Bivins Camp Expenses	1937	1,224.55	
Administrative and General Expenses - Maintenance of Telephone System	1937	807.30	
Natural Gas Production Expenses - Maintenance:			
Gas Well Equipment	1938		$2,942.45
Field Line Equipment	1938		208.90
Natural Gas Transmission Expenses - Bivins Camp Expenses	1938		1,224.55
Administrative and General Expenses - Maintenance of Telephone Syste	1938		807.30
To reclassify from 1938 to 1937 operating expenses, accumulated expenditures on work orders as of December 31, 1937 which were charged on Respondent's books to 1938 operating expenses.			
No. R-130			
Natural Gas Production Expenses - Maintenance of Other Production and Gathering Equipment	1938	$181.57	
Natural Gas Production Expenses - Maintenance of Other Production and Gathering Equipment	1939		$181.57
To reclassify from 1939 to 1938 operating expenses, accumulated expenditures on work orders as of December 31, 1938 which were charged on Respondent's books to 1939 operating expenses.			

CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

59

Particulars	Year	Debit	Credit
No. R-131			
Income Deductions - Miscellaneous Income Deductions	1939	$352.20	
do.	1938	515.00	
do.	1937	168.00	
Administrative and General Expenses: Other General Expenses (Account 457)	1939		$ 1.00
Other Nonoperating Expenses (Account 562)	1939		351.20
Natural Gas Transmission Expenses - Other Supplies and Expenses (Account 381)	1938		3.75
Natural Gas Production Expenses - Residual Operation Expenses (Account 561-11)	1938		3.75
Administrative and General Expenses - Other Nonoperating Expenses (Account 562)	1938		507.50
do.	1937		168.00
To reclassify as income deductions, amounts which Respondent designates as donations cleared through an account entitled "Donations," to various operating expense accounts.			
No. R-132			
Administrative and General Expenses - Other General Expenses (Account 457)	1939	$219.16	
do.	1938	54.15	
do.	1937	132.56	
Administrative and General Expenses - Other Nonoperating Expenses (Account 562)	1939		$219.16
do.	1938		54.15
do.	1937		132.56
To reclassify administrative and general expenses by transferring balance of amounts classified thereunder by Respondent as other nonoperating expenses, considered to be properly includible in operating revenue deductions.			

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CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

60

Particulars	Year	Debit	Credit
No. 133			
Deferred Debits - Other (Amarillo Oil Company)	12/31/39	$34,519.70	
Operating Revenues - Sales to Other Associated Gas Utilities	1939	26,811.90	
do.	1938	26,076.03	
do.	1937	29,903.86	
do.	1936	14,254.08	
Operating Revenues - Sales to Other Associated Gas Utilities	1935		$11,469.13
do.	1934		26,616.56
do.	1933		30,958.00
do.	1932		39,582.77
do.	1931		22,939.11

To restate billings to Amarillo Oil Company for the period from July 1, 1931 to December 31, 1939 for gas delivered to Panhandle Pipe Line Company at the ascertained rate provided in sales contract with Amarillo Oil Company dated January 3, 1928. In accordance with a supplemental agreement dated July 1, 1931 to the aforementioned sales contract, a billing rate of 4½ cents per MCF was used during the foregoing period. From July 1, 1931 through 1935, the ascertained rate was in excess of 4½ cents per MCF and subsequent thereto the ascertained rate has been less than 4½ cents per MCF. The amount of $34,519.70 transferred to deferred debits by this entry represents the portion of the excess of the ascertained rate from July 1, 1931 through 1935 over 4½ cents per MCF which had not been offset as of December 31, 1939 by the excess of 4½ cents per MCF over the ascertained rate subsequent to 1935. The supplemental agreement dated July 1, 1931 provides that the ascertained rate per MCF will be used instead of 4½ cents per MCF when the deficiency of $34,519.70 as of December 31, 1939 has been entirely offset.

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CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

61

Particulars	Year	Debit	Credit
No. R-134			
Operating Revenue Deductions - Taxes	1939	$543.81	
do.	1938	532.46	
do.	1937	188.41	
Operating Revenue Deductions - Taxes	1939		$532.46
do.	1938		188.41
Taxes Accrued - Federal Old Age Benefits Tax	12/31/39		456.49
Payables to Associated Companies (Colorado Interstate Gas Company)	12/31/39		87.32
To reclassify Federal old age benefit tax within the year to which applicable and to provide accrual for such tax not paid as of December 31, 1939.			
No. R-135			
Operating Revenue Deductions - Taxes	1939	$770.48	
do.	1938	751.90	
do.	1937	494.47	
do.	1936	279.12	
Operating Revenue Deductions - Taxes	1939		$751.90
do.	1938		494.47
do.	1937		279.12
Payables to Associated Companies (Colorado Interstate Gas Company)	12/31/39		118.66
Taxes Accrued - Federal Unemployment Tax	12/31/39		651.82
To reclassify Federal unemployment tax within the year to which applicable and to provide accrual for such tax not paid as of December 31, 1939.			

CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

62

Particulars	Year	Debit	Credit
No. R-136			
Operating Revenue Deductions - Taxes	1939	$ 7,476.43	
do.	1938	26,876.17	
do.	1937	28,808.02	
do.	1936	31,066.74	
do.	1935	29,200.36	
do.	1934	28,576.93	
do.	1933	26,841.61	
Natural Gas Transmission Expenses - Chicago Project	1933	91.85	
Taxes Accrued - Ad Valorem Taxes	12/31/39		$ 7,476.43
Operating Revenue Deductions - Taxes	1939		26,876.17
do.	1938		28,808.02
do.	1937		31,066.74
do.	1936		29,200.36
do.	1935		28,576.93
do.	1934		26,841.61
Natural Gas Transmission Expenses - Chicago Project	1934		91.85
To reclassify State ad valorem taxes within the year to which applicable and to provide accrual for such tax not paid as of December 31, 1939.			
No. R-137			
Operating Revenue Deductions - Taxes	1939	$ 713.30	
do.	1938	704.64	
do.	1937	389.27	
do.	1936	1,851.91	
Payables to Associated Companies (Colorado Interstate Gas Company)	12/31/39		$ 306.41
Taxes Accrued - State Unemployment Taxes	12/31/39		406.89
Operating Revenue Deductions - Taxes	1939		704.64
do.	1938		389.27
do.	1937		1,851.91
To reclassify State unemployment taxes within the year to which applicable and to provide accrual for such taxes not paid as of December 31, 1939.			

Exhibit No. 168

Docket G-124

Schedule B-16
Sheet 30 of 67

CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

63

Particulars	Year	Debit	Credit
No. R-138			
Administrative and General Expenses - General Office Clerks Salaries (Account 428)	1939	$245.67	
Administrative and General Expenses - Other Expenses (Account 457)	1939		$245.67
To redistribute between 1939 administrative and general expenses, amounts transferred to Respondent by Colorado Interstate Gas Company covering regular time of regular employees carried on the latter's private payroll charged to other expenses through Canadian River Gas Company work order No. 516 (all work and material in connection with evaluation report of Ford, Bacon & Davis, Inc.).			
No. R-139			
Other Deferred Debits - Rate Case Expense	12/31/39	$54,600.61	
Administrative and General Expenses:			
General Office Clerks Salaries (Account 428)	1939		$ 434.35
General Law Expenses (Account 433)	1939		1,005.76
Rent (Account 434)	1939		221.67
Other General Office Expenses (Account 435)	1939		16,516.78
Other Expenses (Account 457)	1939		36,422.05
To reclassify, pending decision of the Commission as to proper disposition thereof, certain administrative and general expenses incurred by Respondent to December 31, 1939 as a result of the rate investigation by the Commission. Analytical details of the above amounts are presented in Schedule A-12 which supports the deferred amount appearing in the balance sheet as of December 31, 1939. Reclassification as a deferred debit has the effect of placing the charges in suspense pending the Commission's decision regarding ultimate disposition thereof.			

Docket G-124

Schedule B-16
Sheet 31 of 67

CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

64

Particulars	Year	Debit	Credit
No. R-140			
Exploration and Development Costs - Nonproductive Well Drilling	1939	$29,293.73	
Administrative and General Expenses - Profit and Loss Suspense	1939		$29,293.73
To reclassify from administrative and general expenses - profit and loss suspense, the accumulated 1939 expenditures for drilling Bivins A-26 well designated on the records as a "dry hole."			
No. R-141			
Operating Revenue Deductions - Depreciation	1935	$ 5,893.97	
do.	1934	5,893.97	
do.	1933	5,893.97	
do.	1932	5,893.97	
do.	1931	5,893.97	
Surplus - Miscellaneous Direct Debits (Net)	1938		$19,255.51
Operating Revenue Deductions - Depreciation	1937		6,386.37
do.	1936		3,827.97
To reclassify direct surplus charges covering adjustment of provision for depreciation applicable to overhead and salvage included in plant investment as shown by Respondent's journal voucher M-58 (1938).			

Docket G-124

Schedule B-16
Sheet 32 of 67

CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

65

Particulars	Year	Debit	Credit
No. R-142			
Operating Revenue Deductions - Depreciation	1937	$ 5,770.08	
do.	1936	6,098.60	
do.	1935	7,264.72	
do.	1934	6,064.45	
Surplus - Miscellaneous Direct Debits (Net)	1938		$25,197.85
To reclassify direct surplus charges covering adjustment of provision for depreciation applicable to miscellaneous utility plant investment as shown by Respondent's journal voucher M-57 (1938).			
No. R-143			
Surplus - Miscellaneous Direct Debits (Net)	1938	$ 4,180.04	
Operating Revenue Deductions - Profit and Loss on Plant Retirements	1937		$ 133.88
do.	1936		1,210.28
do.	1935		1,826.16
do.	1934		1,009.72
To reclassify net profit realized on utility plant retired credited on books to surplus (Respondent's journal voucher M-57, 1938).			
No. R-144			
Exploration and Development Costs - Abandoned Leases	1936	$ 2,657.33	
Surplus - Miscellaneous Direct Credits (Net)	1938		$ 2,657.33
To reclassify 1938 direct surplus charge representing correction of accounting for loss on abandonment of two Sneed leases in 1936 (Respondent's journal voucher M-54, 1938).			
Lease No. 107-C		$ 82.94	
Lease No. 108-D		2,574.39	
		$2,657.33	

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Schedule B-16
Sheet 33 of 67

CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

66

Particulars	Year	Debit	Credit
No. R-145			
Operating Revenue Deductions - Depletion	1937	$ 3,689.83	
do.	1936	3,362.10	
do.	1935	2,239.98	
do.	1934	112.03	
Surplus - Miscellaneous Direct Credits (Net)	1938		$ 9,403.94
To reclassify 1938 direct surplus charge covering revision of depletion provisions applicable to prior years as shown by Respondent's journal voucher M-54 (1938).			
No. R-146			
Surplus - Miscellaneous Direct Credits (Net)	1937	$660,832.62	
Profit and Loss on Plant Retirements	1935	25,757.94	
do.	1932	19,448.58	
do.	1931	959.60	
Operating Revenue Deductions - Depreciation	1935		$130,163.28
do.	1934		137,279.13
do.	1933		138,858.73
do.	1932		144,569.63
do.	1931		141,790.23
do.	1930		1,536.00
Profit and Loss on Plant Retirements	1934		11,220.08
do.	1933		1,581.66
To reclassify 1937 direct surplus credits covering revision of depreciation provisions applicable to prior years as shown by Respondent's journal voucher J-44 (1937).			

CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE INCOME ACCOUNT

67

Particulars	Year	Debit	Credit
No. R-147			
Operating Revenue Deductions - Depletion	1930	$1,536.00	
Surplus - Miscellaneous Direct Credits (Net)	1937		$1,536.00

To reclassify 1937 direct surplus charge covering amount of depletion provision in Dunaway lease No. 114 for the year 1930 as shown by Respondent's journal voucher J-44 (1937).

No. R-148

Exploration and Development Costs - Abandoned Leases	1933	$3,337.13	
Surplus - Miscellaneous Direct Credits (Net)	1937		$3,337.13

To reclassify 1937 direct surplus charge representing correction of accounting for loss on abandonment of leases in 1933 (Respondent's journal voucher J-44, 1937). Leases and amounts applicable thereto:

Lease No.	Lease Name	Amount
69-A	Killgore	$ 19.57
92	Johnson	286.09
114	Dunaway	3,031.47
		$3,337.13

CANADIAN RIVER GAS COMPANY
TEXAS
FOR THE YEARS 1957, 1958 AND 1959

Line No.	Description	Per Books	Reclassifications Debit	Reclassifications Credit	As Reclassified	Adjustments Debit	Adjustments Credit	As Adjusted	Suspended For Further Consideration of the Commission	Income Statement Suspension Reference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Year 1959									
1	Federal income		(R-125) $ 66,403.02		$ 66,403.02			$ 66,403.02	$66,403.02	F
2	Ad valorem (Texas and New Mexico)	$ 76,483.54	((R-136) 7,476.43	(R-136) $26,876.17	59,834.53			59,834.53		
3			((R-177) 2,750.73							
4	Texas gross receipts	34,220.09			34,220.09			34,220.09		
5	Federal and state unemployment	6,517.04	((R-135) 770.48	((R-135) 751.90	7,697.01			7,697.01		
6			((R-137) 713.50	((R-137) 704.64						
7			((R-177) 1,152.73					2,436.05		
8	Federal old age benefit	2,014.11	((R-134) 543.81	(R-134) 532.46	2,436.05					
9			((R-177) 380.59							
10	Federal capital stock	5,134.00	(R-126) 5,462.00	(R-126) 5,134.00	5,462.00		(127) $2,021.00	3,441.00		
11	Franchise (Delaware and Texas)	971.50			971.50			971.50		
12	Federal tax on gasoline produced or recovered from natural gas		(R-177) 137.85		137.85			137.85		
13	Total for year 1959	$125,570.26	$ 85,790.92	$33,999.17	$177,162.03		$2,021.00	$175,141.03	$66,403.02	
	Year 1958									
14	Federal income		(R-125) $ 68,434.88		$ 68,434.88			$ 68,434.88	$68,434.88	F
15	Ad valorem (Texas and New Mexico)	$ 53,759.90	((R-136) 26,876.17	(R-136) $28,808.02	55,356.49			55,356.49		
16			((R-177) 1,596.42							
17	Texas gross receipts	31,323.26			31,323.26			31,323.26		
18	Federal and state unemployment	5,904.93	((R-135) 751.90	(R-135) 498.47	7,508.60			7,508.60		
19			((R-137) 704.64	(R-137) 589.27						
20			((R-177) 1,050.87					2,369.17		
21	Federal old age benefit	1,725.15	((R-134) 532.46	(R-134) 188.41	2,369.17					
22			((R-177) 299.97							
23	Federal capital stock	4,545.00	(R-126) 4,817.00	(R-126) 4,545.00	4,817.00		(127) $1,832.00	2,985.00		
24	Franchise (Delaware and Texas)	1,109.50			1,109.50			1,109.50		
25	Federal tax on transportation of natural gasoline		(R-177) 127.47		127.47			127.47		
26	Federal tax and gasoline produced or recovered from natural gas		(R-177) 26.67		26.67			26.67		
27	Total for year 1958	$ 98,347.74	$105,150.47	$34,425.17	$169,073.04		$1,832.00	$167,241.04	$68,434.88	
	Year 1957									
28	Federal income		(R-125) $ 63,735.69		$ 63,735.69			$ 63,735.69	$63,735.69	F
29	Ad valorem (Texas and New Mexico)	$ 57,307.34	((R-136) $ 28,808.02	(R-136) $31,066.74	56,599.66			56,599.66		
30			((R-177) 1,511.04							
31	Texas gross receipts	34,579.10			34,579.10			34,579.10		

Exhibit No. 168
3457
155

Docket G-124

Schedule K-4A
Sheet 2 of 2

CANADIAN RIVER GAS COMPANY
TEXAS
FOR THE YEARS 1957, 1958 AND 1959

Line No.	Description	Per books	Reclassifications Debit	Reclassifications Credit	As Reclassified	Adjustments Debit	Adjustments Credit	As Adjusted	Suspended for Further Consideration of the Commission	Income Statement Suspension Reference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
32	Federal and state unemployment	$ 5,285.68	((R-135) $ 484.47	((R-135) $ 279.12	$ 4,923.99			$ 4,923.99		
33			((R-137) 389.27	((R-137) 1,851.91						
34			((R-177) 865.60							
35	Federal old age benefit	1,840.53	((R-134) 188.41		2,345.36			2,345.36		
36			((R-177) 316.42							
37	Federal capital stock	4,901.00	(R-126) 4,700.50	(R-126) 4,901.00	4,700.50		(127) $2,608.50	2,092.00		
38	Franchise (Delaware and Texas)	1,018.60			1,018.60			1,018.60		
39	Federal tax on transportation of natural gasoline		(R-177) 138.51		138.51			138.51		
40	Federal tax on gasoline produced or recovered from natural gas		(R-177) 56.08		56.08			56.08		
41	Total for year 1957	$104,932.25	$101,224.01	$38,098.77	$168,057.49		$2,608.50	$165,448.99	$63,735.69	

3459
Exhibit No. 168
156

Exhibit 168 covers generally the years 1928 to 1939, inclusive, but is complete only as to the years 1937, 1938 and 1939. The exhibit, therefore, and the testimony with reference thereto will be abstracted only in so far as for the years 1937, 1938 and 1939 it makes deductions from operating expenses or additions to operating income or suspends items for special consideration of the Commission.

The following is a summary of the evidence applicable to the remaining 13 items of adjustment above referred to.

Credit to Income Account of Canadian of Net Gasoline Earnings Realized by Amarillo Oil Company From Gasoline Extracted from Natural Gas Purchased by Amarillo Oil Company From Canadian.

This item appears as Entry No. 101, sheet 35, Exhibit 168, and involves the following amounts which Mr. McKinstry credits to the Canadian River income account:

1937,	$18,992.02
1938,	14,607.53
1939,	15,056.24

The explanation made by Mr. McKinstry on this Entry No. 101 is as follows:

"To credit Respondent's production expenses with proceeds (less royalties paid) realized by Amarillo Oil Company during 1937, 1938 and 1939 from gasoline extracted from natural gas produced by the Respondent, as disclosed by an examination of the books and records of Amarillo Oil Company pertaining to its natural gas gasoline operations. This entry has the effect of reducing Respondent's production expenses for the purpose of the proceeding under Docket G-124 with the realization from the residual recovered by Amarillo Oil Company, an associated company having same control as Respondent."

He then stated he was familiar with the contract of January 3, 1928, under which Amarillo Oil Company purchases natural gas from Canadian; that the point of delivery under that contract is at the wellhead; that there is nothing in the contract which gives Canadian the right to extract gasoline from the natural gas so delivered to Amarillo Oil Company.

Exhibit 168 covers generally the years 1928 to 1939, inclusive, but is complete only as to the years 1937, 1938 and 1939. The exhibit, therefore, and the testimony with reference thereto will be abstracted only in so far as for the years 1937, 1938 and 1939 it makes deductions from operating expenses or additions to operating income or suspends items for special consideration of the Commission.

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He then stated he was familiar with the contract of January 3, 1928, under which Amarillo Oil Company purchases natural gas from Canadian; that the point of delivery under that contract is at the wellheads; that there is nothing in the contract which gives Canadian the right to extract gasoline from the natural gas so delivered to Amarillo Oil Company

at the well, and there is nothing in the contract which provides that Canadian shall be entitled to receive any part of the revenues derived from the extraction of gasoline from that natural gas after it is delivered to Amarillo Oil Company at the well; that the natural gasoline is extracted from this gas at the gasoline plant of the Cannon Gasoline Company, a short distance north of Amarillo, Texas, on the pipe line of the Amarillo Oil Company; that the Amarillo Oil Company does not itself extract the gasoline but has a contract with the Cannon Gasoline Company for the extraction, which contract Mr. McKinstry has not seen. Mr. McKinstry stated he did not deem it necessary for him to see that contract for the purposes of his study, and that the specific figures set forth by Mr. McKinstry in his exhibit were obtained by Mr. Luttring. Mr. McKinstry stated that he himself conceived the idea of crediting these amounts to the income account of Canadian. He was asked how this idea grew in his mind (Vol. XLVII, p. 6470), and answered that he observed that in the case of gas sent over the Denver line the gasoline was extracted at Bivins and the net result of that operation went into the accounts of Canadian, and in the case of gas going over the Chicago line the gasoline was extracted at Fritch by the Texoma Natural Gas Company, which company accounted to Canadian for the extraction, and that this left the gas sent over the Amarillo line without any accounting for the natural gasoline contained in the natural gas. Mr. McKinstry was then asked if he concluded that was wrong, and answered that he concluded the natural gasoline was a thing inherent to the natural gas. (Vol. XLVII, p. 6470.) Mr. McKinstry stated there was nothing in the contract which would give him the right to treat this natural gas income as income of Canadian as he has done in his exhibit, and to do that he had to that extent ignored the contract. (Vol. XLVII, pp. 6471, et seq.) He then stated that the only reason upon which he based this entry was that he considered that natural gasoline was an inherent property or element in the natural gas which was produced by Canadian.

Mr. McKinstry further stated that in making this Entry No. 101 he had made no allowance for any income tax paid by Amarillo Oil Company on this revenue, and that this

entry should state that these figures are before federal income tax, if any, was paid.

MR. MCKINSTRY testified: (Vol. XLVII, pp. 6460-6476.)

Q. Now, turning to the exhibit itself, Statements B1, B2 and B3, appearing on Pages 1 to 3, inclusive, they contain a summary of the effect of what you have done in this exhibit as to the years 1937, 1938 and 1939, is that correct?

A. That is correct.

Q. And speaking only of those years, everything that we get from other ports of the exhibit tie back into these particular statements which I have enumerated?

A. Yes.

Q. And those are the three years which you were instructed to include for the purpose of making your rather detailed or more exhaustive audit of this income account? You have testified to that, have you not?

A. Yes.

Q. Turn to Statement B1, Page 1, Column 3. You have a heading there which is entitled "Balance Per Books Unadjusted." Are those the book figures as set up by accounts on the books and records of the company?

A. Well, the groupings as indicated under Column 1 are the descriptions as generally provided under the Uniform System of Accounts. It was necessary to make certain combinations of the company's book balances to arrive at the figures shown in Column 3. However, the balances as used are without any adjustment. They are those that appear on the company's books.

Q. Maybe I can shorten it up this way: I know what you have done but I think the record should show what would be necessary in order to tie the figures into the books of the company shown in Column 3, Statement B1. Will you put in just a brief description with the actual book figures by accounts?

A. Well, the exact detail would be—

Q. I don't want you to give the exact details. Just give a general description of what would be necessary.

A. I think, as stated before, we have taken the company's book balances and made groupings of those balances to combine them under the groupings as provided

under the Uniform System of Accounts as nearly as was practicable.

Q. You would have to have some reconciliation with the figures you show in Column 3 in order to tie into the books, is that not correct?

A. That is correct.

Q. And that reconciliation you have in your working papers?

A. That is true.

Q. Which you have made available to us?

A. That is true.

Q. And the classification of accounts as you have them under the heading of "Description," is not the company's grouping or classification?

A. No.

Q. That is your own description and in providing that you attempted to follow as far as you could the code?

A. That is correct.

Q. You do not mean to say by that that the company's groupings or classifications are wrong?

A. No.

Q. You are merely attempting to conform as closely as you can to the code?

A. That is correct.

Q. One other question before we start on specific entries. Are you familiar with the contract dated January 3, 1928 between Canadian River Gas Company and Colorado Interstate Gas Company covering the purchase and sale of natural gas?

A. I have some conversance with it from an accounting standpoint only.

Q. Have you read the contract?

A. Yes, I have.

Q. You would have to have some familiarity with it in order to have completed this exhibit, isn't that correct?

A. Not as an absolute requirement, no.

Q. Well, let's not get crosswise. You mean you didn't care what the contract provided as far as your study was concerned?

A. I didn't express myself in that regard.

Q. Are you expressing yourself now in that regard?

A. I am expressing it wholly from an accounting stand-

point with the determination of rates as the objective of that accounting.

Q. Well, I am trying to follow you, Mr. McKinstry, and I am trying to see if I can come out at the right point. From the standpoint of the study of the audit you were going to make, the contract which I have just mentioned was relatively unimportant?

A. Well, I hardly feel from the objective that we were working to that the contract is necessarily a requisite in our determination.

Q. Well, we will come back to the contract later.

Now turn to Page 34—

A. Is that Page 34, Mr. Spencer?

Q. Yes. Have you your working papers here, Mr. McKinstry?

A. I have.

Q. As I understand your Entry No. R-100, it is a reclassification item?

A. Yes, sir.

Q. Wherever you have the letter "R" preceding the numeral, it indicates a reclassification rather than an adjustment?

A. That is right.

Q. And this particular Entry R-100, Page 34, simply records gas used in operation and charged for at a fixed price as an inter-department sale in accordance with the requirements of the code?

A. Yes. When you refer to the code you mean the Uniform System of Accounts?

Q. Whenever I say "code" here, let's assume I am speaking of the Uniform System of Accounts promulgated by the Federal Power Commission unless I speak of some other system of account.

Mr. Lange: You have reference to the code for natural gas companies? There is another Uniform System of Accounts.

Mr. Spencer: Yes, that is right. There is no use of getting a long name in the record every time.

Mr. Lange: That is right.

By Mr. Spencer.

Q. This entry makes no difference in the ultimate result in our net income?

A. No, the net is not changed.

Q. Now turn to your Entry No. 101, Page 35. This is an adjustment entry. Now, as I understand your entry here you propose that the net gasoline earnings realized by Amarillo Oil Company from gasoline extracted from natural gas purchased by the Amarillo Oil Company from Canadian River Gas Company shall be credited, at least for the purpose of this study, to the income account of Canadian River Gas Company?

A. That is correct, it is only for the purpose of this study.

Q. In other words, you don't contemplate any book adjustments?

A. No.

Q. And you don't think Amarillo Oil Company would hand over the money?

A. I wouldn't conjecture on that point.

Q. All right. There is a number of these entries and I am not going to have much cross examination about some of them, but there are a few of them I want to inquire about at some length and this is one of them.

A. Surely.

Q. Amarillo Oil Company purchases natural gas from Canadian River Gas Company pursuant to a contract?

A. Yes, it does.

Q. Do you know the date of that contract?

A. I believe I do.

Q. It is January 3, 1928?

A. That corresponds with my understanding.

Q. Have you read the contract?

A. I have from an accounting standpoint.

Q. Do you consider yourself familiar with the information in it for the purpose of answering questions on cross examination regarding the entries you made here?

A. Yes, I do.

Q. All right, where are the sales of gas made under that contract? Where is the delivery point?

A. I believe at the well, the well heads.

Q. That is correct. Now, is there anything in the con-

tract which gives Canadian River Gas Company the right to extract gasoline from the natural gas so delivered to Amarillo Oil Company at the well?

A. According to my reading of it, I believe not.

Q. Is there anything in that contract which says that Canadian River Gas Company shall be entitled to receive any part of the revenues derived from the extraction of gasoline from that natural gas after it is delivered to Amarillo Oil Company at the well?

A. Not according to my reading of that contract.

Q. Where is the natural gasoline extracted from this gas?

A. I understand it is a short distance north of Amarillo, Texas on the pipe line of Amarillo Oil Company.

Q. At whose gasoline plant?

A. The Cannon Gasoline Company.

Q. Then, we are agreed, are we not, Amarillo Oil Company does not extract any gasoline from the natural gas which it purchases from Canadian River Gas Company, is that correct?

A. It does not itself do so, but it does have some—

Q. We will come to that in a minute.

A. All right.

Q. Under what arrangement does Cannon Gasoline Company extract the gasoline from this particular gas?

A. Are you referring to whether a contract exists?

Q. Yes.

A. I understand that a contract does exist.

Q. Did you see the contract?

A. No, I did not.

Q. Do you think it was necessary to see the contract for the purposes of making the determinations which you made here in Entry No. 10?

A. Well, I might say that these—

Q. No, answer the question and then explain it.

The Trial Examiner: He can answer that question.

The Witness: Would you restate the question?

Mr. Spencer: I am not trying to stop you. I would like to have you answer the question and then make any explanations you want to.

The Witness: Will you please restate the question?

(The question referred to was read by the reporter, as set forth above.)

The Witness: Under the circumstances, no.

By Mr. Spencer:

Q. Now, you can add any explanation you want to to that if you desire to do so.

A. This information was obtained by Mr. Luttring in his examination of the records of Amarillo Oil Company.

Q. Do you mean the figures as to revenues derived by Amarillo Oil Company during these years of this particular transaction?

A. These specific figures were obtained by him.

Q. You made no examination of the books and records of Amarillo Oil Company?

A. No, I did not.

Q. These figures were given to you by Mr. Luttring?

A. They were.

Q. And you accepted the figures?

A. I did.

Q. Now, when he handed you the figures, what did he say? Did he just give you these figures and have you think it over and come to the conclusion this entry should be made, or what did happen?

A. Well, that would be a mechanical feature.

Q. I realize giving you the figures would be merely a mechanical feature but I am trying to find out after he gave you the figures how you happened to reach the conclusions you have here. You needed something more than the figures in order to make an entry of this character.

A. I think the idea was conceived prior to the procurement of the figures.

Q. All right, now, we are coming to it. Now, who conceived the idea?

A. I would say that I did.

Q. Well, what was the idea that you conceived? How did the thing grow in your mind?

A. Well, observing that gas sent over the Denver line, the gasoline was extracted at Bivins and the net result of that operation going into the accounts of the Canadian River Gas Company, the gas going over the Chicago line, the gasoline was extracted from it at Fritch by the Texoma

Natural Gas Company who accounted to Canadian River Gas Company for that extraction, leaving the gas sent over the Amarillo line without any accounting for the natural gasoline contained in that natural gas.

Q. And you concluded that was wrong?

A. I concluded that the natural gasoline was a thing inherent to the natural gas.

Q. In order to have reached that point you had to ignore the contract between the parties covering the purchase and sales of gas which was later processed, is that not right?

A. That is a matter of financial arrangement between the companies as to whether they so chose to treat it in that fashion. My consideration was primarily from a cost standpoint.

Q. Well, let's go back to my question. In order to reach the conclusion you did, you had to ignore express contract provisions between the parties covering their respective rights and obligations in the purchase and sale of gas, is that not correct? I understand you to so testify here this morning.

A. To what effect, Mr. Spencer?

Q. Well, do we have to go back over that again?

A. I am not certain as to what reference you have.

Q. The gas is sold at the well, did you so testify?

A. I did.

Q. You also testified you had no recollection of any provision which gave the Canadian River Gas Company the right to extract gasoline from the gas so sold?

A. That is right.

Q. You also said that you knew of no provision in the contract which gave Canadian River Gas Company the right to any of the proceeds from gasoline that might be extracted from the gas so delivered?

A. No mention of it was made in the contract.

Q. Well, no mention—

A. No provision.

Q. You know of no provision, do you?

A. I know of no provision.

Q. Well, then, there is nothing in the contract which would give you any right to do anything which you are doing here, is that correct?

A. Not under the terms of the contract.

Q. Therefore, you had to ignore the contract in order to arrive at this entry, is that not correct?

A. To that extent, yes.

Q. And why do you ignore the contract?

A. Due to the reason that, as I cited, considering that natural gas was an inherent property in the natural gas—the natural gasoline, I should say, is an inherent element in the natural gas which was produced by Canadian River Gas Company.

Q. All right, and is that the only reason upon which you base this entry?

A. I would say it is.

Q. All right. Now let us assume that Amarillo Oil Company paid an income tax on this revenue here which you have indicated in Entry No. 101. Have you made any allowance for deduction from this income or revenue which might be necessitated by the payment of income taxes on it?

A. This represents only the net income from these operations.

Q. You have made no provision here for income tax on these profits which may have been made by Amarillo Oil Company, is that correct?

A. That is right.

Q. And to that extent the figures you show here do not represent net income to Amarillo Oil Company at all, do they?

A. I would say they do in part.

Q. If in fact Amarillo Oil Company paid an income tax on these profits which you have shown here, then is it not true that these figures do not represent actual net income to Amarillo Oil Company?

A. Well, I might state it then before Federal income tax, if any were paid.

Q. To what account in the code do you credit these items, Mr. McKinstry?

A. To natural gas production, residuals produced-credit.

Q No. 747.1, isn't it?

A. That is correct.

Q. Now, what part of the instructions for that account pertain to this particular transaction? Will you read that into the record, only that part which may be necessary? If

is all in the paragraph with the capital letter "A," isn't it, Mr. McKinstry?

A. Well, the mechanics of the transaction wouldn't necessarily follow—

Q. But the basic instruction is in the first paragraph under 747.1, is that correct?

A. Yes, I think that is so.

Q. Will you read that into the record, please?

A. All right. Page 112 of the Uniform System of Accounts under 747.1, "Residuals Produced Credit."

A: "This account shall be credited in the appropriate subdivisions of Account 131.1, material and supplies—gas debited monthly with the estimated value of residuals and other byproducts obtained in connection with the production of natural gas, whether intended for sale or for use in operations."

Q. Now, that has reference to the production of natural gas gasoline by the accounting company, doesn't it, and in this instance consider for the moment Amarillo Oil Company to be the accounting company?

A. I don't know whether I could make that assumption in the case of Amarillo Oil.

Q. Do you think this is a correct account for this adjustment?

A. I do.

Q. Notwithstanding the fact that Amarillo Oil Company does not do the processing, has nothing to do with that operation, and neither does Canadian River Gas Company?

A. The entry is not premised on that

Q. Notwithstanding that, I say, you think that is correct?

A. I do.

Q. Suppose you turn to Page 92, revenues and processing natural gas, 617. Now read that and tell me if you think that particular account has any application to this transaction.

A. Referring to Account 617?

Q. Yes.

The Trial Examiner: Do you wish to have him read it into the record, Mr. Spencer?

Mr. Spencer: If he please.

The Witness: Page 92 of the Uniform System of Accounts, 617, revenue from processing natural gas; then in quotes:

"This account shall include the revenue derived from royalties and permits or other bases of settlement for permission granted others for the right to remove products from natural gas."

By Mr. Spencer:

Q. Now, do you think that has any application to the transaction we are considering here in your Entry No. 101?

A. No, I believe not under the interpretation which I have given the matter of endeavoring to determine the cost of production.

Q. All right, that is your interpretation?

A. That is correct.

Q. Just once more, you have also testified, have you not, that this gasoline is extracted by Cannon Gasoline Company pursuant to a contract?

A. That is, a contract between Amarillo Oil Company and Cannon Gasoline Company.

Q. Is that not correct?

A. That is correct.

Credit to Gas Revenue Account of Royalties Received From J. M. Huber Petroleum Company in the Years 1937, 1938 and 1939 Arising From Sale of Respondent's Lease No. 94 in 1931

This item appears as Entry 102, sheet 35, Exhibit 168, and involves the following amounts:

1937	$323.53
1938	184.65
1939	256.69

The explanation made by Mr. McKinstry on this Entry 102 is as follows:

"To transfer from nonoperating income to gas revenues, royalties received from J. M. Huber Petroleum Company in the years 1939, 1938 and 1937 arising from sale of Respondent's Lease No. 94 in 1931."

Mr. McKinstry made no further explanation of this adjustment, although by the nature of his entry he assumes Canadian should set up as gas revenues the income received on property sold in 1931.

Deduction From Operating Expense Involving Bivins Gasoline Plant

This item appears as Entry 110, sheet 42, Exhibit 168, and involves the following amounts:

1937	$26,617.62
1938	3,288.69
1939	5,778.35

The explanation made by Mr. McKinstry on this Entry No. 110 is as follows:

> "To adjust production expenses (residuals operation) for amounts included therein and credited on Respondent's books to miscellaneous nonoperating revenue representing amortization and retirements earned on investments in Bivins gasoline plant. The Respondent's entries, if not reversed, would result in overstatement of production expenses (residuals operation) since annual depreciation as revised by the Commission's accountants includes provision for amortization of Respondent's investment in gasoline plant."

In his cross-examination MR. MCKINSTRY testified: (Vol. XLVII, pp. 6476-6481.)

Q. Turn to your Entry No. 110 on Page 42 of Exhibit 168. I think I understand what you have in mind in this entry, Mr. McKinstry, and I assume you did it for the purpose of setting up these accounts so as to conform more closely to code requirements?

A. Well, not entirely. That is within the general outline of that code, always bearing in mind that we have endeavored to follow the basic accounting concepts.

Q. Well, now, you have this item relating to gasoline plant—this item relates to gasoline plant, doesn't it?

A. Yes, it does.

Q. Are you familiar with the company's practices with

respect to its settlements with land owners and others for royalties and gasoline extracted from natural gas?

A. Yes. That is, referring to the lease provisions, and so forth, or the general basis of—

Q. Well, sometimes it is in a lease provision and sometimes in a supplemental agreement or letter of some character. Are you familiar with that?

A. I think I am familiar with the general outline of the factors to be included.

Q. What is the basis utilized by the company generally in settling with its lessors and other royalty holders for royalties on gasoline extracted from natural gas?

A. Why, I believe it is usually on the net proceeds from the sale of natural gasoline in most instances.

Q. The royalties are figured on a certain percent or fraction of the net income, is that not correct?

A. That is true.

Q. Now, it has been the company's practice in arriving at that income for the purpose of royalty settlement to include as a part of the cost of extracting the gasoline, amortization and interest on the gasoline plant investment, is that correct?

A. That has been the company practice, yes.

Q. And what you do here is take it out?

A. According to the books that is true, yes.

Q. You are not attempting to say here that it is not properly part of the operating costs for the purpose of—to record these entries here on the books of the company in order to make correct settlement with royalty holders, are you?

A. You mean to include in that question whether I would consider it improper to record the amortization on the books in this fashion—amortization and retirements?

Q. I am saying this, Mr. McKinstry: The company as a practical matter must keep sufficient records in order to determine what its net income is on this gasoline plant investment and the gasoline extracted from gas that goes through it, and its custom and practice in the past, and it is so provided in some instances, has been to include in its cost these entries here involving retirements, amortization of this investment.

A. Of course, that is presumably for depreciation only.

is it not—I mean, that is what it is, under the general outline of the accounts.

Q. That's right.

A. We are required to put depreciation in one account even though it relates to this property, so for the sake of this particular medium it may be employed by the company for consideration in its determination of royalty settlements.

Q. Yes.

A. There is no exception taken on my part in that respect.

Q. You can even see the necessity for some sort of computations of that character satisfactory between the parties?

A. If those are the elements which the lease provisions impose, why, that would be for the company to determine the manner in which they elect to do it.

Q. You are not attempting to set yourself up as an arbitrator or *criterian* as to whether or not we are treating our royalty holders fairly or unfairly, are you?

A. No, there is no consideration there.

Q. Well, if we took these items out of our books entirely, the only effect of that would be to increase revenue to the royalty holders?

A. Yes, but—

Q. —and decrease our own net income, is that not correct?

A. No, but reading on in this description, reference is made that the annual provision for depreciation will, of course, be reflected under depreciation as an operating revenue deduction.

Q. Well, does that have reference to this exhibit on depreciation that is to follow?

A. The depreciation as applicable to the gasoline plant will be included there.

Q. Well, is that the main purpose in making this entry, to clear the decks?

A. That is correct.

Q. For this coming exhibit?

A. That is right. Well, I would say primarily to remove from the residuals operation expenses the amount which the company has included in lieu of depreciation.

Q. Turn to your Entry No. 111 on Page 43. The subject matter of this entry as related to—

A. 110.

Q. —the discussion that we have had there will be generally applicable also to 111, would it not?

A. Yes, except that whereas depreciation would be provided in some respect in another section of the operating expense—operating revenue deductions in this instance.

Q. It would be eliminated entirely?

A. That's right.

Q. And you are doing that only for the purpose of this study?

A. That is correct.

Q. And without regard to the necessities of doing just exactly what we have to—or what we have done in order to carry out our obligations with our land owners and our lessors, is that right?

A. Of course, I can't see where you would be obligated to the lessors in this instance, necessarily.

Q. Well, are you testifying that you know what we should do?

A. No.

Q. Then you don't know what we should do in this respect in order to carry out our obligations?

A. I am merely treating the residuals operation expenses only.

Deduction From Operating Expense Amounts Representing Interest on Investment in Bivins Gasoline Plant

This item appears as Entry 111, sheet 43, Exhibit 168, and involves the following amounts:

1937	$20,734.58
1938	20,923.09
1939	20,903.02

The explanation made by Mr. McKinstry on this Entry 111 is as follows:

"To adjust production expenses (residuals operation) for amounts included therein and credited on Respondent's books to interest revenues, representing interest on investment in Bivins gasoline plant. The Respondent's entries, if not reversed, would result in overstate-

ment of production expenses (residuals operation). Interest on investment is chargeable to the return or gross profit from operations and is not a component of operating expense.".

With reference to this item Mr. McKinstry testified (Vol. XLVII, p. 6480) that his testimony with reference to Item 110 is generally applicable to this item, and that in making this elimination he is merely treating the residuals operating expenses only, without consideration as to what the company's obligations to its landowners or lessors may be.

Deduction From Operating Expenses of Allowances Made to Colorado Interstate Gas Company to Compensate It for Loss of B.t.u Content, Etc.

This item appears as Entry 112, sheet 44, Exhibit 168, and involves the following amounts:

1937	$27,548.34
1938	22,368.23
1939	28,153.07

The explanation made by Mr. McKinstry on this Entry 112 is as follows:

"To adjust production expenses (residuals operation) for amounts included therein by Respondent representing allowances made to Colorado Interstate Gas Company to compensate it for loss of B.t.u content in natural gas delivered to certain of its industrial customers, attributed to the extraction of gasoline from natural gas by Respondent at its Bivins gasoline plant. These allowances represent only portions of price reduction made by Colorado Interstate Gas Company to certain industrial customers as a result of the B.t.u. content of gas deliveries being less than that specified in the respective contracts of sale. The portion of the price reduction passed to the Respondent by Colorado Interstate Gas Company is here regarded as an adjustment of Respondent's revenues which may not properly be included as a charge to operating expenses."

In testifying concerning this deduction Mr. McKinstry stated (Vol. XLVII, pp. 6481, et seq.) that this elimination is made only for the purposes of this particular study and he is not attempting to say what changes, if any, should be made in the books of account of the company on this particular subject.

Deductions From Operating Expense of Trustee's Fees Paid the Chase National Bank of New York City, Trustee

These deductions are, $937.34 for 1937; $1167.86 for 1938; and $220.42 for 1939, and appear in Entry No. 117, sheet 49, Exhibit 168. The explanation made by Mr. McKinstry on this entry No. 117 is as follows:

> "To transfer to miscellaneous income deductions the Respondent's expenses for trustees' (The Chase National Bank of New York City—Trustee) fees, etc., under its bond indenture during the years 1937, 1938 and 1939. Since the original expenses in connection with the issuance of bonds are ultimately charged to income deductions through amortization of debt discount and expense, current bond expenses are likewise regarded as financial expense and therefore reclassified as income deductions."

In his examination with reference to this Entry No. 117 (Vol. XLVII, p. 6489, et seq.) Mr. McKinstry testified that the company has certain expenses in connection with its outstanding bond issue, namely, payment of fees and expenses to a trustee under an indenture, a portion of which expenses the company, during 1937, 1938 and 1939, has charged to production expenses. Mr. McKinstry has removed them from the utility income account of the company as not being properly chargeable to gas operation, but as being an incident to corporate finances and not a cost of service to the gas consumers. In the Commission's accounting code there is a specific provision relating to the amortization of debt discount and expense and he has interpreted these expenditures as being within the same category. (Vol. XLVII, p. 6490.)

Mr. McKinstry's attention was called to Account 801, page

128 of the code, reading in part: "This account shall include such items as expense applicable to the Gas Department * * * fees of transfer agents, registrars of stock, and fiscal agents." He was asked whether he did not consider that a trustee, acting in the capacity of the Chase National Bank of New York City, would be considered as a fiscal agent. He answered he thought so, although he did not regard these fees in this Entry 117 in that sense. He stated that if he is wrong in his analogy between a trustee in this situation and amortization of debt and discount expense, then his treatment of this item would be different. He also stated that as an accounting matter, independent of these rate proceedings, he did not find any fault with the manner in which the company has treated these expenditures on its books.

Deductions From Operating Expenses of Certain Amounts as Being Nonrecurring Expenses

This item appears as Entry 112, sheet 50, Exhibit 168, and involves $6274.35 in 1938 and $222.60 in 1939. The 1938 expenses included in this item cover $5143.88 for the making of a Torsion Balance survey of areas adjacent to supposed fault line on the Bivins and Masterson leases, $390 paid to the Southwestern Development Company to cover traveling expenses in connection with a proposal to consolidate Canadian River gas leases, and certain small sums paid to P. C. Spencer, George Baird and R. E. Wertz.

The explanation made by Mr. McKinstry on this Entry 112 is as follows:

> "To segregate as nonrecurring the expenses incurred during 1938 and 1939 in connection with consolidation of various leases. The purpose of these expenditures was such that repetition of similar expenses in future years is improbable."

With reference to this entry and other entries covering so-called nonrecurring expenses, Mr. McKinstry testified (Vol. XLVII, pp. 6493, et seq.) that the primary purpose in setting them up in a different classification is to earmark them for attention as a class of expenditure that is not apt to occur in the future.

Deductions From Operating Expenses of Certain Amounts Paid for Federal Capital Stock Tax

This item appears as Entry 127, sheet 56, Exhibit 168, and involves the following amounts:

1937	$2608.50
1938	1832.00
1939	2021.00

The explanation made by Mr. McKinstry on this Entry 112 is as follows:

"To transfer to miscellaneous income deductions the portion of Federal capital stock tax for 1937, 1938 and 1939 not properly includible in operating revenue deductions, computed as follows:"

MR. MCKINSTRY further testified as follows: (Vol. XLVII, pp. 6495-6504.)

Turn to Page 54. Your Entry 125, as I understand that entry it merely changes the company's income taxes to operating expenses on an accrual basis rather than a cash basis?

A. That is true.

Q. That is also true as to Entry R-126, Page 155, which has to do with capital stock payments?

A. That is correct.

Q. Now, for the purposes of this study you prefer recording these expenses on an accrual basis?

A. That is correct.

Q. And you have done the same thing with respect to other items of expense which the company has kept on a cash basis rather than on an accrual basis?

A. That is correct.

Q. Let me ask you this: Are you familiar with—well, I guess I asked you if you were familiar with the Canadian River Gas Company and Colorado Interstate Gas Company contract respecting the sale of natural gas, and you said generally, didn't you?

A. Yes.

Q. Are you sufficiently familiar to say whether or not that contract contemplates that the company shall keep such costs as they have involved here in Entries Nos. 125 and 126 on a cash basis rather than on an accrual basis?

A. I really don't know whether the contract is specific in that regard or not.

Q. Don't you think the company would probably keep its books on an accrual basis if it were not required to do otherwise by contract?

A. It wouldn't be within my province to say.

Q. You wouldn't want to say about that?

A. No.

Q. You are not prepared to say that the contract which the Canadian River Gas Company has with Colorado Interstate Gas Company covering the purchase of gas does not require that its operating expenses be recorded on a cash basis?

A. No, I do not.

Q. You didn't take that into consideration in making these reclassifications or adjustments involving changing from a cash to an accrual basis?

A. No, I did not.

Q. Does the code require you to set up these items on an accrual rather than a cash basis?

A. I believe it makes reference to the calendar period. I think that is the general accounting practice.

Q. Would you say that it was obligatory under the code to set it upon an accrual rather than a cash basis?

A. I don't know that I would be in a position to pass upon that point. I don't know. That is merely an accepted accounting practice in general.

Q. Generally speaking, your reclassification of accounts from a cash to an accrual basis does not affect the ultimate picture so far as Canadian River Gas Company is concerned, that is, the overall picture?

A. No, it does not.

Q. All I am trying to do is to find out just why you make the change; why you think it is necessary.

Now, turn to Page 56, your Entry No. 127. Perhaps I will let you explain this entry in your own words and your reasons for it—I mean a general description.

A. Yes. This is throwing below the line the portion of the Federal capital stock tax for each of the years 1937, 1938 and 1939, and which I have determined relates to the excess of the amount of tax that would normally have been paid if the tax were based on the company's net worth rather than its declared net worth.

Q. Well, for the purpose of your calculation, how did you determine net worth?

A. By the addition of the net worth factors, capital stock and surplus.

Q. As shown on the books?

A. As shown on the books.

Q. Now, you used the terminology "normal tax which the company would have paid." Tell me again what you mean by the normal tax which the company would have paid.

A. Well, by that I refer to the net worth factors of the capital stock plus the surplus.

Q. Now, why did the company declare valuations for capital stock purposes and pay capital stock taxes in excess of the amounts that you have indicated as being normal?

A. Will you restate the question?

(The question referred to was read by the reporter as set forth above.)

The Witness: Truthfully, I don't know that I can state why they did.

Mr. Spencer: Let's get at it in another way.

Q. Does your entry here imply that the company has been improvident in its declaration of values and its payment of taxes on capital stock?

A. I don't think it would be for me to say whether they were or were not.

Q. Well, your records show here they have declared certain values and paid certain taxes. Now you have come along and made your adjustment. As I gather it from your entries you say they paid too much; they shouldn't be allowed that much. There must be a reason for that.

A. I don't think there has been any reflection to say they have paid too much. It is merely taking the excess of

the tax which applies to the portion of the excess of the declared net worth over the net worth as shown by the company's books.

Q. Well, now, in the last paragraph of your explanation with reference to this entry you say "Since excess profit taxes are not a necessary cost of conducting gas operations, capital stock taxes paid to avoid excess profit taxes are likewise not properly includible in the cost of gas operations."

Have I quoted you correctly?

A. You have.

Q. Do you think these taxes were paid by the company to avoid another tax; to-wit, the excess property tax?

A. I am afraid the assumption has been stated here in the wording.

Q. I am leading up to something else. That is why I asked that question. Will you answer that question?

A. Will you repeat the question?

(The question referred to was read by the reporter as set forth above.)

The Witness: I believe that implication is contained in the wording of this entry which you have just read.

By Mr. Spencer:

Q. Well, if they hadn't declared any value for capital stock purposes and they hadn't paid any taxes on that basis, they would have paid excess profit tax, is that not correct?

A. I think that is the general consequence.

Q. Do you not think the company here did the reasonable and prudent thing to declare a value on its capital stock for the purpose of avoiding much greater tax that would have had to be paid in the form of excess taxes?

A. I don't think that I should endeavor to pass judgment on the wisdom that they have—that they may have adopted.

Q. Well, are you prepared to say that capital stock tax that the company has paid is not an ordinary prudent and reasonable expenditure of the company as it has been made?

A. I believe we have made a limitation here to the por-

tion that relates only to the net worth and have associated that with the cost of gas operations, and the remainder which the company has paid is not—no exception is taken to that.

Q. You are running around me and I don't think there is any necessity for it.

What would have happened if the company had declared values and paid taxes as you indicated that it should have done? Would the company then have paid excess profit taxes in excess of the capital stock tax that it paid?

A. I think that is highly hypothetical. I don't believe I should be drawn into that point.

Q. I am trying to get you to join in here sufficiently to explain what you have done. Let me ask you the question again:

Do you consider the capital stock tax payments made by the company to be ordinary and necessary operating expenses of the company as such?

A. As of the entirety?

Q. Yes.

A. Yes, I do, as required by law.

Q. Then, maybe we are getting some place. For the purpose of this rate proceeding you are making certain adjustments, is that right?

A. That is true.

Q. And the basis of that adjustment is what?

A. It is deemed only the portion of that tax which relates to the net worth of the company as assessable against the gas operation.

Q. Well, where should the balance of it be assessable?

A. The balance as indicated in this entry falls below the line.

Q. What is the effect of that so far as this proceeding is concerned?

A. It is not included in the cost of gas operation.

Q. You have got a code provision that serves as a guide for you in this Entry No. 127, Mr. McKinstry?

A. Not specifically. I think it comes within the general provisions of the general instructions, notably on Page 7 of the Uniform System of Accounts under Paragraph 2, Sub-paragraph F.

Q. All right, will you read that in, please?

A. Yes.

"All charges to the accounts prescribed in this system for gas plant, operating revenues and operating expenses shall be just and reasonable, and any payments by a natural gas company in excess of just and reasonable charges shall be included in Account 538, Miscellaneous Income Deductions."

Q. These charges that we have involved here are charges paid to the United States Government, is that correct?

A. Yes, sir.

Q. And I assume, then, after reading your instruction that the United States Government has been unjust and unreasonable in charges made here for capital stock purposes, is that correct?

A. No, I think there is another factor in the equation. The basis upon which the tax has been paid has been—the basic reason for not considering that all of this tax which has been paid is properly chargeable to gas operations—in other words, had the tax been related to the book net worth of the company, no adjustment would have been made.

Q. That factor in the equation which you mention you get outside of the paragraph that you quoted from the code, is that not true?

A. This refers to the excess of any just charge.

Q. Yes.

A. Therefore, if the whole amount has been included, it has been determined as not being wholly just but only just in part as related to gas operations—

Q. But it starts off "All charges" and so forth "shall be just and reasonable." The very first part of the sentence—is that not correct?

A. I don't believe that it would not permit the separation of any given amount, however. If any portion—it also refers later on in the same sentence—"* * * shall be just and reasonable, and any payments by a natural gas company in excess of just and reasonable charges shall be included in Account 538, Miscellaneous Income Deductions."

We are merely dealing with the excess here.

Mr. McKinstry stated that the charges involved in this entry are charges paid to the United States Government, but he then stated that the basic reason for his not considering that all of this tax which had been paid is properly chargeable to gas operations is that the tax is not related to the book net worth of the company, and if it had been related to the book net worth of the company, no adjustment would have been made.

Restating of Billings to Amarillo Oil Company for Gas Delivered to Panhandle Pipe Line Company.

This item appears as Entry 133, sheet 60, Exhibit 168, and involves the following amounts:

1937	$29,903.86
1938	26,076.03
1939	26,811.90

The explanation made by Mr. McKinstry on this Entry 133 is as follows:

"To restate billings to Amarillo Oil Company for the period from July 1, 1931, to December 31, 1939, for gas delivered to Panhandle Pipe Line Company at the ascertained rate provided in sales contract with Amarillo Oil Company dated January 3, 1928. In accordance with a supplemental agreement dated July 1, 1931, to the aforementioned sales contract, a billing rate of 4½ cents per MCF was used during the foregoing period. From July 1, 1931, through 1935, the ascertained rate was in excess of 4½ cents per MCF and subsequent thereto the ascertained rate has been less than 4½ cents per MCF. The amount of $34,519.70 transferred to deferred debits by this entry represents the portion of the excess of the ascertained rate from July 1, 1931, through 1935 over 4½ cents per MCF which had not been offset as of December 31, 1939, by the excess of 4½ cents per MCF over the ascertained rate subsequent to 1935. The supplemental agreement dated July 1, 1931, provides that the ascertained rate per MCF will be used instead of 4½ cents per MCF when the

deficiency of $34,519.70 as of December 31, 1939, has been entirely offset."

MR. MCKINSTRY further testified as follows: (Vol. XLVII, pp. 6504-6508.)

Q. Turn to your Entry No. 133 on Page 60, please. Now, see if I state this correctly, Mr. McKinstry:

Pursuant to a contract dated January 3, 1928 between Amarillo Oil Company and Canadian River Gas Company, it is provided that Canadian River shall sell gas to Amarillo Oil Company on a cost basis as stated in the contract. Now, in July of 1931 that particular contract was amended so as to provide for a billing rate for gas sold to Amarillo Oil Company not to exceed four and a half cents per Mcf.; that is to say, if the cost price is computed on the original contract and it was in excess of four and a half cents, Amarillo Oil Company would pay only the four and a half cents.

A. That is right.

Q. And subsequently if the cost of gas should fall below four and a half cents, Amarillo Oil Company would continue to pay four and a half cents per Mcf. until it had made up the difference between what it did pay and what it would have paid under the original contract, is that correct?

A. That is my understanding.

Q. Now, you don't question that the agreement of July 1, 1931 did amend the original agreement, is that correct?

A. No, I do not.

Q. Now, you have ignored that amendment, however, in making your computations in No. 133, is that right?

A. That is true.

Q. And recomputed the cost of this gas to Amarillo Oil Company on a basis of the original contract and have ignored the amendment of July 1, 1931, is that correct?

A. That is correct.

Q. All right, now, we are down to that point.

You tell me why you did that, please.

A. Merely to reflect within the respective periods what I have deemed to be the revenue properly applicable to those periods.

Q. But Canadian River did not receive the revenue indicated here in such periods?

A. That is true.

Q. Amarillo Oil Company did not pay these figures that you indicate here—Canadian River received something different and Amarillo Oil Company paid something different?

A. That is true. I have used, as you will understand, the accrual method, and under that method it would be necessary to give recognition to the underbilling that existed up to a certain point.

Q. Well, I haven't quarreled with you much on your accrual basis, but take a look at this, Mr. McKinstry: Let us assume for the purposes of testing the rationality of what you have done, let us assume that the cost of gas as computed under the original contract never fell below four and a half cents. Would you then go ahead and continue to set up what Amarillo Oil Company would have paid under a contract that had been amended?

A. Well, expression would be given to indicate that that was something to be reckoned with.

Q. Yes.

A. In other words, the companies have indicated that they have gone into another arrangement whereby the normal income or the original agreement followed has been amended whereby income has been foregone in an earlier period to be taken up in a subsequent period. That would be given recognition under the accrual method.

Q. Yes, but getting down to the realities of the situation, wasn't the effect of this amendment entered into between the parties in July 1931 to place a ceiling over the price to be paid for this particular gas, to-wit: four and a half cents per Mcf.?

A. Well, I don't think that I should go into that, as to why they did it.

Q. You have gone plenty far already, you might just as well go ahead. It seems to me you have got to go ahead if you are going to tell me why and wherefore you did this.

A. Well, I believe that I have stated it is done on an accrual basis and the facts so developed in the light of the way this billing has been carried on indicates that the amount outstanding at the end of 1939 is a very nominal sum, $34,519.70.

Q. Well, now, Mr. McKinstry, during all of this period the company actually paid four and a half cents per Mcf. for its gas.

A. That is the basis of settlement.

Q. Why in the world do you need to do any accruing about that, that is an absolute transaction?—four and a half cents.

A. Well, the revenue in the later years, from 1936 on, in effect is picking up deficiencies in billings from 1931 to 1935, inclusive. In other words, it is not strictly—that gas was delivered in those years.

Q Well, maybe we can shorten it this way. In making this entry you did not attempt to follow whatever the contract provisions may be between the parties?

A. That is true.

Q. And it seems to you that if you treated the whole matter on what you term an accrual basis you would get a more level picture on the income involved?

A. I felt that some of the income in 1939 back through 1936—

Q. I'm not going to quarrel with you. You play havoc with our books, however, and our contracts.

It doesn't have any effect on the income in the end?

A. No. It is just a shift in amounts between years.

Addition to Operating Expenses of Moneys Paid for Delay Rentals and Lease Renewals

This item appears as Entry 201 in Exhibit 168, as shown by sheets 31, 32 and 33, covering the years 1939, 1938 and 1937 respectively. Entry 201 on each of these sheets is directed to the following heading: "To Remove Delay Rentals on Leaseholds From Gas Plant Investment." The amounts added to operating expenses and deducted from operating income by this adjustment for the three years are as follows:

1937	$ 3,200
1938	10,729
1939	6,214.25

Deduction from Operating Expense of the "Appreciated Value" of Certain Leases Charged to Canceled and Surrendered Leases.

This is Item 216 (sheet 31, Exhibit 168) in the adjustments made by Mr. McKinstry under the heading, "To Adjust Gas Plant with Appreciation of Abandoned Leases," and the amount deducted from operating expenses is limited to the year 1939 only, and is the sum of $954.45. This Item No. 216 is likewise covered in the Luttring and Teel Exhibit 146 and is elsewhere abstracted, reference to which is hereby made.

Depletion Adjustments.

Sheets 31, 32, and 33 of Exhibit 168 for the years 1939, 1938 and 1937, respectively, show three entries, numbered 404, 405 and 406, entitled as follows:

"404. To reverse depletion accrual."

"405. To provide annual depletion on operated acreage,"

"406. To provide annual depletion of gas well intangible costs."

Depreciation Adjustments.

Sheets 31, 32 and 33 of Exhibit 168 for the years 1939, 1938 and 1937, respectively, likewise show adjusting entries numbered 407 and 408, entitled as follows:

"407. To reverse depreciation accrual."

"408. To provide annual depreciation based on service lives."

Adjustments Re Plant Retirements.

Sheets, 31, 32 and 33 of Exhibit 168 for the years 1939, 1938 and 1937, respectively, likewise show Entry 412, entitled, "To Remove Plant Retirements from Income."

The following relate to the items of income suspended by Exhibit 168 for the consideration of the Commission, but

tentatively included in income, as adjusted by Mr. McKinstry. These suspended items, with the exception of Item 182, are shown in Schedule B4, pages 4-11 of Exhibit 168, and other supporting schedules. Entry 182 is not shown by Schedule B4, but is the item hereinabove referred to by stipulation transferred from an adjusted item to a suspended item.

Income From Joint Operation of Texoma Natural Gas Company's Gasoline Extraction Plant at Fritch, Texas

As shown by page 4 of Schedule B4, Exhibit 168, the amounts involved in this suspension are:

1937	$132,105.53
1938	75,741.49
1939	118,508.69

Supporting subschedules are: B-20-2, p. 115; B-21-2, p. 130; B-22-1, p. 140. Mr. McKinstry's explanation of this suspension, on page 4, Exhibit 168, is as follows:

"The above amounts relate Canadian River Gas Company's share of the results from joint operation of Texoma Natural Gas Company's gasoline extraction plant at Fritch, Texas. * * *

* * * * * * * * * *

"Suspension is made for the reason that the results reported by Texoma Natural Gas Company on the joint operation of its Fritch gasoline extraction plant are subject to the ultimate findings in another proceeding (Docket G-112, Natural Gas Pipeline Company of America and Texoma Natural Gas Company) before the Commission. The findings in the aforementioned case have not yet been made available. Any alterations in the results from operation of the Fritch gasoline plant will in turn affect the amounts as reported to Canadian River Gas Company.

"The gasoline plant at Fritch, Texas, is owned by Texoma Natural Gas Company and is operated by that company for the benefit of itself and Canadian River

Gas Company under a lease and operating agreement dated October 15, 1931, and as modified by letter dated June 8, 1938, a copy each of which is contained in Appendix 1 to this statement (Statement B-4).

"Based upon tentative information re case on Docket G-112 obtained through Chicago regional staff of the Division of Accounts, Examiner in entry No. 182 adjusted the balance per books of Canadian River Gas Company for 1937, 1938 and 1939, giving effect to the substitution of depreciation and return on investment in lieu of the charges provided for in Section 6, paragraph (b) of the original lease and operating agreement dated October 15, 1931, a copy of which is contained in Appendix 1 to this statement. Consideration should, therefore, be given the possibility of any change developed on final disposition of case in Docket G-112. The effect of Examiner's adjustment reduced expenses of joint gasoline operations in each of the three years as follows:

"1939	$11,722.31
1938	5,410.35
1937	7,547.78"

On cross-examination concerning this suspension (Vol. XLVIII, pp. 6552, 6553) Mr. McKinstry stated that this suspension involves both revenue and operating expenses of the Texoma Company in connection with its lease and operations of the Fritch Gasoline Extraction Plant, and possibly a few minor amounts which Canadian has included in connection with these operations. He stated he is not questioning in any respect the entries which Canadian made on its books in connection with this transaction, and that there is no dispute about that. When he was asked to state briefly for the record the purposes of suspending this particular transaction, he quoted again from his statement in Schedule B4 set forth above. Mr. Spencer, counsel for the respondent, and the Trial Examiner then asked Mr. McKinstry certain questions and received answers as follows: (p. 6554)

"Q. Well, you don't mean by that that anything the Federal Power Commission is going to do in the case in which Texoma Natural Gas Company is involved will

operate retroactively to change any of the figures as between Texoma Natural Gas Company and Canadian River Gas Company, do you?

"A. That is the implication.

"Mr. Spencer: You amaze me.

"The Trial Examiner: Do you think there will be?

"The Witness: Should there be any. I don't know that there will be any."

MR. MCKINSTRY further testified as follows: (Vol. XLVIII, pp. 6557-6559.)

The Trial Examiner: But your thought is, inasmuch as there is a proceeding involving Texoma that if a final determination made of that proceeding involving the gasoline plant of Texoma results in reduced costs, then Canadian River Gas Company should in turn benefit from that proceeding? Am I clear on that?

The Witness: That is clear. And, conversely, if those operations show an increased cost, likewise the results would be correspondingly affected.

* * * * * *

The Trial Examiner: And the amounts that you set forth here, Mr. McKinstry, for example, your 1939 amount of $11,722.31, is that more for the purpose of indicating what you think the result might be or—

The Witness: Well, of course, we are more or less basing the adjustment on the matter of principle. The basis and the figures themselves are developed as a result of information obtained from the Commission's Chicago regional office.

The Trial Examiner: And you feel that the Commission should follow the regional office, we'll say the contention of the regional office, that these are the amounts that would result?

The Witness: That is true. That is, in regard to those particular items.

The Trial Examiner: That's all.

Mr. McKinstry then stated that to his personal knowledge the Commission has not entered any order affecting the rate charges of the Texoma Company for the years 1937, 1938 and 1939, and that he has no idea what the Commission may do, even as to the year 1937, which was prior to the passage of the Natural Gas Act, but his thought is that where there are proceedings in progress or investigation, it is only reasonable to await the final findings; that he does not know what effect any order entered by the Commission in the Texoma case would have upon figures in this case as that will develop when that investigation has been passed upon finally. This suspension is based entirely upon his own judgment, and not upon any specific instruction from the Commission's office. To his knowledge Canadian is not a party to the Texoma case (p. 6556). Mr. McKinstry stated, with respect to this suspension, that there was involved here jointly operated facilities which are also involved in another rate proceeding before the Commission, and therefore he thought it ought to be earmarked for the Commission's attention so that it would not be overlooked, and he is not making any recommendations about it.

Upon further questioning by the Trial Examiner (pp. 6557, et seq.) Mr. McKinstry stated that if there were no other proceedings pending before the Commission regarding the Texoma Company, he would handle this item by using the adjustments which he made as the final adjustment of that particular operation without any further reference to it, although he might add that due to the affiliation to some extent between the Texoma and Canadian companies, it might likewise have been suspended, but he did not suspend it for that reason. His thought is that inasmuch as there is a proceeding pending involving the Texoma Company, if the final determination made of that proceeding involving Texoma's gasoline plant results in reduced costs, then Canadian should, in turn, benefit from that proceeding, and, conversely, if those operations showed an increased cost, the results likewise would be correspondingly affected. He stated he had received the amount of his figures from the Commission's Chicago regional office (p. 6559), and in anwer to a question from the Trial Examiner stated that as to these particular items he felt the Commission should follow the contention of the regional office.

Mr. McKinstry testified that there is a contract between the Texoma and Canadian companies covering this operation, a copy of which is set forth at pages 12-16, Exhibit 168; that he would rather not say what effect a final determination by the Commission in the Texoma case might have on the abrogation of this contract, as that is a legal matter. (p. 6560.)

Suspension of General Law Expenses.

The items suspended for consideration of the Commission by Mr. McKinstry under this heading are as follows:

"General Law Expenses:	1939	1938	1937
W. A. Vinson, Houston, Texas	$ 3,240.00	$3,240.00	$ 3,240.00
Vinson, Elkins, Weems & Francis, Houston, Texas	16,488.39	1.39	11,259.57
C. H. Keffer, Amarillo, Texas			590.77
Adkins, Pipkin, Madden & Keffer, Amarillo, Texas	6,625.76	4,379.96	9,185.11
L. M. Fisher, Amarillo, Texas	500.00		
Long, St. Lewis & Nyce, Washington, D. C.			55.36
Miscellaneous	27.86	14.65	
Totals	$26,882.01	$7,636.00	$24,330.81"

Mr. McKinstry's explanation for these suspensions appears on pages 5, 6, 7, and 8 of Exhibit 168, as follows:

"For the most part, Respondent's records, together with supplementary information obtained, do not sufficiently disclose the purposes for which legal services were engaged. Also, the charges represent principally

allocations charged to Respondent by associated companies. It has not been possible to determine the exact basis nor otherwise to arrive at any conclusion as to the reasonableness of such charges or allocations. In view of the foregoing circumstances, all general law expenses contained in the Respondent's operating expenses, as adjusted, have been included in this suspension.

"Examiner's comments relating to the above classes of items are as follows:

Re: W. A. Vinson and Vinson, Elkins, Weems & Francis

"Mr. W. A. Vinson is a member of the firm of Vinson, Elkins, Weems & Francis.

"Below are quoted paragraphs as numbered on page 2 of letter dated April 23, 1940, received from Mr. P. C. Spencer, Vice President of Canadian River Gas Company, in response to Examiner's request concerning charges for 1939 legal services:

"'(2) Vinson, Elkins, Weems & Francis, Houston, Texas.

"'The vouchers listed . . . represent fees and expenses paid to the above firm for legal services rendered by members of the firm on behalf of the Company during the year 1939. Such services were performed principally in connection with legislative matters relating to taxation, conservation and proration of natural gas production in the Texas Panhandle Field, in which the Company is vitally interested. In addition to legislative matters, during the year members of the firm also appeared on behalf of the Company before state boards and agencies with respect to various miscellaneous matters affecting the Company's business and affairs. While the firm has heretofore represented the Company in litigated matters, and is retained for that purpose, it was not called upon to do so during the year 1939.'

"'(3) W. A. Vinson

12 monthly payments of $270.00 each for retaining fees.

"Mr. Vinson's legal firm has been retained by the Company over a period of years. The above mentioned payments, which were made to Mr. Vinson for the account of his firm, represent the annual retainer fee for the services mentioned in item (2) supra." (Full fee is $300.00 monthly; $30.00 monthly is invoiced to Red River Gas Company.)

"Charges to Canadian River Gas Company for annual retainer fee and for special services constitute 90% of the total charges rendered, the other 10% having been invoiced to Red River Gas Company. This division follows the practice outlined in the second paragraph, page 2 of Mr. P. C. Spencer's (Vice President of Canadian River Gas Company) letter dated March 11, 1940, addressed to Examiner, which reads in part:

"* * * Southwestern Development Company has two subsidiaries engaged in production of natural gas in the Texas Panhandle Field—Canadian River Gas Company and Red River Gas Company. It has been the practice over a period of years to divide between these two companies any general expense involved in the protection of their mutual and common interests as gas producing companies, on a basis of 90% to Canadian River and 10% to Red River, which is estimated to represent the proportionate relationship of their interests; * * *"

Re: C. H. Keffer and Adkins, Pipkin, Madden & Keffer

"Mr. C. H. Keffer is a member of the firm of Adkins, Pipkin, Madden & Keffer.

"Practically all of the above charges have been received through Amarillo Oil Company acting on behalf of associated Southwestern Development Company subsidiaries and, in this connection, the third and fourth paragraphs of Mr. P. C. Spencer's March 11, 1940, letter to Examiner are quoted:

"'Over a period of years the law firm of Adkins, Pipkin, Madden & Keffer has been retained to repre-

sent all subsidiaries of Southwestern Development Company operating in the Texas Panhandle District. One lump sum retainer fee (now $10,000.00 per annum) is paid for all companies included in the arrangement. The retainer fee is divided between the several companies represented in proportion to the time devoted to office and routine business of the respective companies. The record of time so spent is kept by the firm and the allocations resulting therefrom have been changed from time to time to conform substantially to such record.

"'The retainer fee referred to above covers only normal office and routine work. Whenever other services are performed which involve only one company, all expenses and fees, in connection therewith are charged direct to that company; * * * Whenever separate services are rendered for more than one company on the same trip, all expenses and fees, if any, in connection therewith are allocated between such companies in proportion to the amount of time devoted to their respective businesses; * * * Whenever services are rendered in connection with a common interest of more than one company, the expenses and fees, if any, for such services are allocated between such companies in proportion to their respective interests; * * *'

"Joint direct conversations with representatives of Amarillo Oil Company and Mr. C. H. Keffer were had in an endeavor to obtain an understanding of the legal services rendered and the allocation of charges therefor to Canadian River Gas Company and other companies associated with it. Examiner Luttring's notes on these conversations read in part:

"'The firm of Adkins, Pipkin, Madden & Keffer are paid a retainer fee of $10,000.00 per year (by Amarillo Oil Company in quarterly installments) for services rendered to the following companies:

Company	Functional Character of Business
Canadian River Gas Co.	Production
Amarillo Oil Co.	Transmission
Amarillo Gas Company	Distribution
Clayton Gas Co.	"
West Texas Gas Co.	"
Dalhart Gas Co.	"
Red River Gas Co.	Production
Panhandle Pipe Line Co.	Transmission
Parcomis Oil & Gas Co. (oil only)	Production

"* * * explained to Mr. Keffer that the invoices rendered to Canadian River Gas Company by Amarillo Oil Company for their portion of the retainer did not show the description of the work performed. Mr. Keffer produced a diary for the years 1938 and 1939 (1937 diary had been destroyed) in which a notation is made of the name of the company, number of hours and brief description of the work performed. Mr. Keffer pointed out that the hours shown are the actual hours of service performed either in conference or on work for the Company; it did not include his time for services preparing for opinions and other counsel to the companies.

"'The retainer fee is paid each calendar quarter by Amarillo Oil Company, which company prorates the fee on the basis of hours of service rendered to the respective subsidiaries participating in the fee. * * *

"'We requested permission to use the diaries to extract information related to Canadian River Gas Company, which request was at first granted but Mr. Keffer decided after we had returned to our office, to make typewritten lists of the diary notes. (These lists were duly obtained.)

"'The matter of lack of description of the character of expenses was also discussed and Mr. Keffer informed us that it has always been the practice of their firm to only account for the amount spent on out-of-town trips, the difference between his cash at the be-

ginning and end of the trip. We suggested he give us a letter stating the nature of the expenses charged to Canadian River Gas Company.'

"Mr. Keffer responded by letter, May 14, 1940, which in part reads as follows:

"'You are advised that the expenses include such items as transportation, hotel bills, meals, tips, taxicab fares, telephone and telegraph bills, and occasionally stenographic bills. When I transact business for more than one client on the same trip the expense account is prorated.'

Re: Other Charges suspended

	1939	1938	1937
L. M. Fischer	$500.00	.....	.....
Long, St. Louis & Nyce	.....	.....	$55.36
Miscellaneous	27.86	$14.65	.....
	$527.86	$14.65	$55.36

"The above amounts, though suspended, appear to be proper charges concerning which no fundamental questions are raised, hence it is the Examiner's recommendation that they be allowed as acceptable charges to gas operating expenses."

On cross-examination concerning this suspension Mr. McKinstry testified (Vol. XLVIII, pp. 6560, et seq.) that this suspension involves certain fees and expenses paid to attorneys by Canadian for the years 1937, 1938 and 1939; that he is not disputing the fact that these attorneys rendered services to the company or that these services were of value and were needed by the company, and that he is not indicating in any manner that the amounts paid for the services were unreasonable. He suspended these fees and expenses because the company records do not sufficiently disclose the purposes for which the legal services were engaged (p. 6561). He testified he was furnished information concerning these services by Mr. Spencer and was referred to Mr. Spencer's letters quoted above in Mr. McKinstry's explanation, and then stated that the principal

reason for suspending these general law expenses in their entirety was to put all of the expenditures for legal services in one account and to give the Commission opportunity to review all the expenditures of that sort, and, particularly, as to the payments to Vinson, Elkins, Weems & Francis of Houston, Texas, 90% of which were charged to Canadian and 10% to Red River Gas Company. He testified he had received an explanation of this division from Mr. Spencer (p. 6563), but wanted to place all the information before the Commission and did not ask for any further information than that secured from Mr. Spencer. Mr. McKinstry also testified that he had not asked for any further information as to the fees paid Mr. Keffer's firm (p. 6564), but he simply felt it was advisable to flag the whole transaction for the Commission's consideration, the reason largely being because the transactions involved allocations between associated or affiliated companies rather than any failure upon the part of Canadian to give him more information or data.

Suspension of Management and Supervision Fees and Expenses and Special Services.

This suspension appears on pages 9 and 10 of Exhibit 168. The amounts thereof and Mr. McKinstry's explanation are as follows:

"The amounts shown represent all charges made by associated companies other than for insurance and certain telephone services on a recognized cost basis, and the legal fees and expenses included in Suspension B above. The nature of the charges appears in the details supporting Examiner's entries providing segregation from the several accounts in which originally included by Respondent, to classifications shown above. A summary of charges by associated companies and reference to Examiners entries follows:

	1939	1938	1937
Amarillo Oil Company	$10,013.22	$ 9,902.16	$ 9,752.86
Southwestern Development Company	884.70	283.50	330.00
	$10,897.92	$10,185.66	$10,082.86
Examiner's Entry No.	R-178	R-179	R-180

For each of the three years there is included in management and supervision fees and expenses $7,500.00 charged by Amarillo Oil Company to compensate for services of R. E. Wertz et al. It is the Examiner's recommendation that these annual payments be disallowed in the cost of gas operations by reason of Respondent's failure to substantiate satisfactorily the reasonableness and exact nature of the charges.

"Mr. P. C. Spencer (Vice President of Canadian River Gas Company), in response to Examiner's request, submitted the following explanation regarding the annual charge of $7,500.00, in a letter dated March 11, 1940:

"'This is not a prorated charge. It is a lump sum payment made by Canadian River Gas Company to Amarillo Oil Company for various services rendered to Canadian River by R. E. Wertz and other members of Amarillo Oil Company's staff. The amount of the payment was agreed upon by representatives of Canadian River, Amarillo Oil and Colorado Interstate Gas Company in 1933. The amount agreed upon was estimated to cover the actual cost of services rendered and to be rendered. Since 1933 the services rendered have increased substantially, but the lump sum payment has not been changed.'

"Examiner Luttring visited offices of Amarillo Oil Company and endeavored to obtain further explanations regarding the annual charge of $7,500.00 but without satisfactory result, as indicated from his notes which in part read as follows:

"'Mr. Snyder (General Auditor, Amarillo Oil Com-

pany) refused to give us any information other than that covered in the letters of Mr. Spencer and offered to give us no information until permitted to do so by Mr. Spencer.'

"Examiner Luttring wired Mr. Spencer as to whether Mr. Snyder might furnish names and salaries of individuals and amount of time by character of service performed for Canadian River Gas Company and received the following answer by wire on May 14, 1940:

"(Examiner) 'Luttring's wire yesterday $7,500.00 fee includes substantial services performed for Canadian by Moody, Baird, Spencer and their respective office forces therefore Snyder cannot give complete answer the charge is so small in view of the total services rendered it would seem to require little if any substantiation however Luttring wants additional details suggest he cover by writing me further letter of inquiry simplified as much as possible bearing in mind we have not maintained any job or time records please advise further wishes.'

"Examiner Luttring's notes further show:

"'In discussions with Mr. Snyder and from records which we were permitted to examine it was learned that Amarillo Oil Company carries a group of accounts under "Special Administrative Department." Mr. Snyder informed us that salaries of Mr. Wertz, Mr. Snyder and other employees who devote their services to the various subsidiaries under the jurisdiction of this special administrative department are charged to the special department as well as expenses of these employees.

"'Mr. Snyder stated that the fee of $7,500.00 charged to Canadian River Gas Company was first deducted from the expenses of the Special Department and the balance then prorated to the other subsidiaries participating in the services of those in the Special Department.

"'We asked Mr. Snyder the extent to which we could get data representing the expenses related to the

fee of $7,500.00 and his reply was that no information could be divulged except on advice of counsel.

"'Mr. Snyder does not deny that the books of Amarillo Oil Company contain most of the expenses, * * * which relate to the fee of $7,500.00 * * *.'

"'The remainder of amounts included in this suspension appear to be reasonable and proper charges to gas operating expenses and, in the opinion of the Examiner, should be passed accordingly.''

On cross-examination with reference to this suspension, Mr. McKinstry stated (Vol. XLVIII, pp. 6566, et seq.) that the suspension involves management and supervision fees and expenses and special services rendered to the Canadian River in the years 1937, 1938 and 1939 by Amarillo Oil Company and Southwestern Development Company. The Southwestern Development Company items do not involve fees of any character but are primarily for reimbursement on traveling and other expenses incurred for Canadian, and are so indicated on the records. The principal item suspended is a charge made by Amarillo Oil Company to Canadian of $7500 per year covering general administrative services rendered to Canadian by Amarillo Oil Company. It is indicated that this charge is for various services rendered by R. E. Wertz and other members of Amarillo Oil Company's staff. Mr. McKinstry states he is not questioning that Amarillo Oil Company and Mr. Wertz and others of the Southwestern Development Company group rendered general administrative services to Canadian (Vol. XLVIII, p. 6568), and he is not questioning that the services are of value or that the $7500 per year charge is unreasonable or excessive. There is no indication in the books and records of Canadian that Mr. Spencer ever received any direct payment as Vice President or Director or counsel for the company, or that Mr. N. K. Moody, President and Director of the company, received any direct payment for services he rendered the company, and the same is true as to Mr. George Baird, the Secretary and Treasurer and Director of the company. Mr. McKinstry's attention was then called to the information which Mr. Spencer had furnished him,

which is set forth in the above quotation from Exhibit 168 as to the services rendered for the $7500 annual fee.

MR. MCKINSTRY further testified as follows: (Vol. XLVIII, pp. 6566-6570.)

By Mr. Spencer:

Q. Let's go to the next mentioned item, Mr. McKinstry, and that involves management and supervision fees and expenses and special services rendered to the company in the years 1937, 1938 and 1939 by Amarillo Oil Company and Southwestern Development Company.

A. That is correct.

Q. Now, there are no fees—

The Trial Examiner: What page is that on, Mr. Spencer?

Mr. Spencer: Sir?

The Trial Examiner: What page is that on?

Mr. Spencer: Page 9.

Q. Now, there are no fees of any character involved in payments made to Southwestern Development Company, is that correct?

A. No, there are none.

Q. Any charges made by Southwestern Development Company to Canadian River primarily for reimbursement on traveling and other expense that I may have incurred for Canadian River or Mr. Baird may have incurred?

A. That is true.

Q. Those items are items of expenses on behalf of and incurred on behalf of Canadian River?

A. As so indicated by the records.

Q. And no fees there by Southwestern Development Company for Canadian River?

A. None.

Q. Now, that takes care of that. The principal item which has been included in the charges made by Amarillo Oil Company to Canadian River is the payment of $7500 per year covering general administrative services rendered to Canadian River by Amarillo Oil Company, is that correct?

A. The only indication we have is services of R. E.

Wertz, et al. That is the extent of the description we have of the item.

Q. Did I furnish you with an explanation with respect to that item? I think you will find it next to the last paragraph on that page.

A. That is true. It is indicated there that various services rendered by R. E. Wertz and other members of Amarillo Oil Company's staff—

Q. Well, I don't think it is necessary to read that into the record. It is in your exhibit and it speaks for *it*-

A. Yes.

Q. You aren't questioning that Amarillo Oil Company and Mr. Wertz and others of the Southwestern Development Company group rendered service to Canadian River,—I mean, general administrative services?

A. No, I am not questioning that.

Q. You are not questioning that the services are of value?

A. No.

Q. And you aren't indicating in any manner that the payment of $7500 per year is unreasonable or excessive?

A. No.

Q. Did you find any place in your examination of the books and records of the Canadian River Gas Company that I ever received any fee or salary or any other character of compensation from the Canadian River Gas Company?

A. There is no indication of any direct payment having been so made.

Q. No payment to me as Vice President or Director or Counsel for the company that you found in its books and records?

A. No, I found none.

Q. And similarly, did you find any such payment to Mr. N. K. Moody, President and Director for the company for the services he renders to the Canadian River Gas Company?

A. No, I don't recall having seen any, speaking of the last few years.

Q. Now, is that also true of Mr. George Baird who is Secretary and Treasurer and a director of Canadian River Gas Company?

A. That is true.

Q. Now, I believe you have it in here some place where

I explained to Mr. Luttring in a telegram that the $7500 fee paid annually by Canadian River to Amarillo Oil Company includes—this is on Page 10, third paragraph—includes substantial services performed for Canadian River, performed by Moody, Baird, Spencer and their respective office forces. You knew that?

A. That's right, yes.

Q. If I told you, Mr. McKinstry, that during the past year, or let me say during the year 1939, approximately one-third of my time was devoted to the business and affairs of Canadian River Gas Company, particularly in connection with this rate proceeding and that whatever those services were worth to Canadian River Gas Company was included in this $7500 that you have set up here, would you say that was unreasonable?

A. Why, I don't think it would be my place to pass judgment. It sounds—

Q. You mean you don't know how to evaluate my services?

A. I wouldn't attempt to. I'm afraid—

Q. Well, if that were true, can't you say that $7500 would be a pretty reasonable price for all these services that are rendered by those of us who are in Southwestern and Amarillo Oil Company?

A.—I don't think it would be within my province. I don't think I could honestly say.

Q. Well, I'm going to leave it up to the Examiner and I won't press you any further.

Suspension of Items Charged to Expense Claimed as Cost of Gas Plant in Report of Ford, Bacon and Davis, Inc., Dated April 15, 1940

This item of suspension appears upon sheet 11 of Exhibit 168 and involves the following amounts:

1937	$10,129.23
1938	9,293.47
1939	16,576.40

Mr. McKinstry's explanation of this suspension, on sheet 11, is as follows:

"Certain general and administrative expenses for the years 1937, 1938 and 1939, now claimed by the Respondent as gas plant capital expenditures, are suspended in order that the expenses so claimed may be directed to the attention of the Commission and its staff. The report of Ford, Bacon & Davis, Inc., covering the claim for restatement of plant has been filed with the Commission by the Respondent."

In further explanation of this suspension Mr. McKinstry, on cross-examination (Vol. XLVIII, pp. 6570, et seq.), stated that Mr. Lusk, in an exhibit introduced by the respondent through him, indicated these items should be capitalized, and that what he is doing here is calling the item to the attention of the Commission so that it would not be included both as capital and as an operating expense. Mr. McKinstry stated he was making no findings with respect to this particular item nor any recommendation.

Rate Case Expense

This is a 1939 item appearing on sheet 11 of Exhibit 168 involving $54,600.61. Mr. McKinstry's explanation on sheet 11 follows:

"Respondent charged to expenses on its books amounts expended incident to rate case pending before the Commission. Examiner's reclassification entry R-139 transfers such expenses under the balance sheet caption 'Deferred Debits' as of December 31, 1939, for the purpose of suspending the items for such disposition as the Commission may prescribe. Analytical details of the expenses thus suspended are contained in Schedule A-12 which appears in the exhibit relating to the balance sheet as of December 31, 1939."

In further explanation of this item MR. MCKINSTRY testified as follows: (Vol. XLVIII, pp. 6571, 6572.)

Q. All right, Item E, which involves the suspension of the rate case expenses incurred by the company in the amount of $54,600.61.

A. That is correct.

Q. You are taking this out of the income statement account?

A. That is correct.

Q. It is more than a suspension, then, isn't it?

A. It is placed in the deferred debit section on the balance sheet.

Q. That is more than a suspension, isn't it?

A. Yes, and this merely has reference again to that amount which is deferred.

Q. Well, then, you have done something with it. That is, you have taken out that item as an operating expense and you have put it in the deferred debits on the balance sheet and you have flagged the whole business?

A. That is right.

Q. I assume you do that upon the theory that whatever our proper expenses may be in this rate proceeding they may be amortized over some period?

A. As determined by the Commission.

Q. Yes, as determined by the Commission. You aren't attempting to fix any rate or amortization?

A. No.

Federal Income Tax.

This suspension likewise appears on Sheet 11, Exhibit 168, in amounts as follows:

1937	$63,735.69
1938	68,434.88
1939	66,403.02

Mr. McKinstry's explanation on sheet 11 follows:

"Income taxes for the years 1937, 1938 and 1939, as adjusted, are suspended for the reason that the income received by the Respondent, and which constituted the basis for assessment of its income taxes, may, as a result of this proceeding, be found to have been in excess of a fair return. The Examiner recommends that expenses chargeable to the ratepayer include, with respect to income taxes, only such an amount as would represent the necessary taxes required to be paid based upon income which the Commission determines it is proper for the Respondent to earn."

Further explaining this suspension (Vol. XLVIII, pp. 6572, et seq.), Mr. McKinstry stated that these figures are the company's book figures as related to these particular years, but not as taken up on the books in those years. The books, however, disclose that these amounts were paid for these years and no adjustment changing the amount as related to any year has been made. Mr. McKinstry does not have in mind that the Commission would enter any order in this proceeding that would serve to take away from or add to the company's net income for these years 1937, 1938 and 1939, and the purpose of this suspension is to call this particular situation to the Commission's attention in any analysis of past revenues and operating expenses it may make for comparative purposes. He does not contemplate that by this suspension there would be any changes on the books of account of the company, and that same situation is true generally with respect to all the income accounts as kept by the company for these particular years which Mr. McKinstry has shown in this exhibit. To Mr. McKinstry's knowledge there is no order of the Commission outstanding at the present time which requires the company to reclassify and adjust these income accounts.

Substitution of Depreciation and 6% Return on Investment for Amortization of Debt Included in Payments Made by Canadian to Texoma Natural Gas Company in Connection with Joint Operation of the Fritch Gasoline Plant.

This is the item included in the adjustments and deductions from operating expenses in Exhibit 168 (sheet 95) which, by stipulation of counsel during the course of the hearing (Vol. XLVIII, pp. 6575-6577), was eliminated from the adjustment items and incorporated into the items suspended for the Commission's decision. This entry is explained by Mr. McKinstry on sheet 95, Exhibit 168, as follows:

"To adjust 1937, 1938 and 1939 charges for interest and amortization of debt made to Respondent by Texoma Natural Gas Company in connection with joint operation of latter's Fritch gasoline plant. Depreciа-

tion and 6% return on investment are substituted in this entry in place of interest and amortization in accordance with data supplied by the Chicago regional staff of the Division of Accounts as per schedules attached to letter of Mr. R. M. Lindsay, Examiner in Charge, Chicago region, to Mr. W. E. Baker, Chief Accountant, dated August 1, 1940, copy of which is attached hereto. Summary of adjustment follows:

Item	1939	1938	1937
Bond, amortization and interest	$29,044.49	$22,721.39	$24,907.52
Depreciation	$ 5,739.31	$ 5,654.45	$ 5,574.07
Return on investment	11,582.87	11,656.59	11,785.67
	$17,322.18	$17,311.04	$17,359.74
Net reduction	$11,722.31	$ 5,410.35	$ 7,547.78

Testifying further as to this entry (Vol. LXVIII, pp. 6512, et seq.), Mr. McKinstry stated that this entry is a reclassification of charges paid by the company to the Texoma Company representing interest and amortization of debt in the gasoline plant of the Texoma Company which is a part of the leased facilities of the Canadian Company. The Canadian leases a portion of the gasoline plant facilities of the Texoma Company located near Fritch and has an operating contract with the Texoma Company, a copy of which is set forth at pages 13-16, Exhibit 168. Mr. McKinstry testified that under that contract, as a part of the rental which the Canadian pays for the gasoline plant, there is included a portion of the interest and amortization of the debt of Texoma on that plant.

Section 6 of the October 15, 1935 operating contract between the Texoma Company and Canadian (pp. 13 and 14, Exhibit 168), provides, in part as follows:

"Section 6. Canadian River shall be charged by Texoma with certain proportions of the total cost of

operation and maintenance of, and interest and retirement charges on, said gasoline plant as follows:

* * * * * *

"(b) Twenty-five per cent (25%) of the interest and of the sinking fund and/or other retirement charges on all bonds, notes or other indebtedness of Texoma from time to time outstanding, the proceeds of which have been invested in the said gasoline plant; provided, however, that in the event the said plant is abandoned on account of obsolescence or otherwise Canadian River shall pay to Texoma twenty-five per cent (25%) of the unamortized investment of Texoma in the said gasoline plant and Canadian River shall not thereafter be required to pay any additional amounts under this subdivision (b) with respect thereto."

Mr. McKinstry then testified (Vol. XLVIII, p. 6514), that in his Entry 182 he has not followed the contract, but has set up the account on an entirely different basis; that there is no intention on his part to establish some new contractual relation between the companies, but he is setting it up on what he considers a proper cost basis. He then stated (p. 6515) that the entire accounting by the Texoma Company for the operation of its gasoline plant and its subsequent settlement with Canadian is a part of the suspension that appears in Statement B4 abstracted above so that the entire settlement is subject to the findings in the investigation in which the Texoma Company is subject to now. Mr. McKinstry testified that the Canadian owns no part of these facilities and that he has set up his entry on the basis of a return to the Texoma Company on its investment at 6%; that this 6% is predicated upon information obtained from him through the Chicago regional staff (Vol. XLVIII, pp. 6516-6517), this information being contained in a letter dated August 1, 1940, from R. M. Lindsay, Examiner in charge of the Chicago region. There is no specific provision in the code guiding him in the making of this entry as he has done it. The basic consideration involves the cost included to represent decline in service value of the gasoline plant with the amounts themselves supplied by Mr. Lindsay, with the contract ignored. He has looked at the matter purely from an accounting stand-

point as to the determination of cost, and not from the standpoint of the contract provisions (p. 6522).

Again (Vol. XLVIII, pp. 6526, et seq.), Mr. McKinstry restated that he had substituted a new method of computing cost from that contained in the contract by substituting depreciation for amortization provided for in the contract.

Mr. McKinstry did not determine the depreciation rate used in his computation nor the 6% return on investment rate, but adopted someone else's figures (p. 6528). He has not examined the records of the Texoma Company. His whole calculation has been made and determined by persons other than himself (p. 6530) in another proceeding which is now pending before the Commission, and there is no evidence in this proceeding on that subject. His idea of making this adjustment originated with himself.

On redirect examination (XLVIII, pp. 6575, et seq.), Mr. McKinstry stated that the principles involved in this adjustment or suspension would have been recognized, notwithstanding receipt of the basic information from the Commission's Chicago regional office, and that this suspension could have been made without having to rely upon the information alone received from the Chicago office. As above pointed out, it was then stipulated (pp. 6576, 6577) that this entry should be suspended for consideration of the Commission.

MR. MCKINSTRY also prepared and submitted Commission Exhibit 169, "Balance Sheet of Canadian River Gas Company," and in connection therewith testified as follows: (Vol. XLVIII, pp. 6580-6585.)

A. "This report consists of a balance sheet of the Canadian River Gas Company as at December 31, 1939, and six supporting schedules.

"Statement A-1 shows the balance sheet per the company's books, reclassifications and adjustments of items contained in it, which were made by the Examiner, and the balance sheet as adjusted. The six schedules include one that summarizes the Examiner's reclassification and adjustment entries, one that nets amounts receivable from

and amounts payable to associated companies, one that shows the Examiner's analysis of the 1939 rate case expenses, which have been transferred to Deferred Debits, and three that support and explain other items on the balance sheet, namely, Deferred Debits—Others, long-term debt, and surplus.

"The first schedule, A-10, shows the Examiner's adjustments and reclassifications in summary form and their application to the various balance sheet items affected; it gives a brief description of each entry and designates it by number. The entries, themselves, are not given in this exhibit, with the exception of Entry No. R-1 shown in Schedule A-11, but are to be found in other accounting studies, prepared by members of the Federal Power Commission staff, which will be offered in evidence in this case.

"Entries in the '100' series are shown in Schedule B-16 of the study entitled 'Income Accounts and Supplemental Data, Including Examiner's Reclassifications of Adjustments;' entries in the '200' series are shown in the study entitled 'Gas Plant Accounts and Examiner's Adjustments:' and entries in the '400' series are shown in the study entitled 'Annual and Accrued Depletion and Depreciation of Gas Plant and Examiner's Adjustments.'

"The reclassification and adjustment debits and credits made against Balance Sheet Accounts on Statement A-1 are the footings of the columns in Schedule A-10, each of which columns represents a balance sheet account and contains all the debit or credit entries affecting the account it represents.

"Schedule A-11, which is Adjustment Entry No. R-1, is a tabulation showing the balances receivable from each associated company offset against the balances payable to each of these companies, and vice versa. This schedule was prepared for the purpose of developing for the balance sheet the net amounts receivable from and payable to associated companies.

"Schedule A-12 is an analysis of 1939 rate case expenses amounting to $54,600.61. These expenses are carried in the balance sheet as a deferred debit. In addition to showing the nature of each rate case expense item, this schedule also

shows the account to which the items were charged by the company. They were all transferred to the balance sheet account 'Other Deferred Debits' by Examiner's Entry No. R-139 and the total amount of them represents Expenses Suspended for Further Consideration of the Commission (cf. Statement B4 of Report on Canadian River Gas Company Income Accounts).

"'Included in the total is $23,790.97 representing the cost of a valuation report and a physical inspection of the Respondent's properties made by and under the direction of Ford, Bacon & Davis, Inc., Consulting Engineers. This firm billed for its work at cost of services, plus ten per cent, plus overheads of approximately 75 per cent, and plus expenses at cost.

"'Schedule A-13 sets forth the particulars of the account 'Deferred Debits—Other,' shown on the adjusted balance sheet at December 31, 1939, in the amount of $34,519.70. The amount which is classified on the company's books as a memorandum account, only, represents revenue receivable in the future from Amarillo Oil Company, pursuant to terms of sales contracts with that company, which are explained in this schedule. The adjustment necessary to place this item on the balance sheet was made in Examiner's Entry No. 133 The books show that as of August 31, 1940, the balance in the Deferred Debit Account was $14,151.25, or $20,368.45 less than the balance on December 31, 1939.

"Schedule A-14 shows the total amount of the company's twenty-year bonds, dated June 1, 1928, that have been issued, the amount of them that have been redeemed, and the balance of them outstanding on December 31, 1939. It also shows the amount of its promissory notes outstanding.

"All the long-term debt, both bonds and notes, has been issued to and is held by Colorado Interstate Gas Company. The bonds were issued during 1928 and 1929 at 100 in the total principal amount of $11,000,000, and bear interest at six per cent per annum. From 1930 to 1939, inclusive, $5,943,000 of them in principal amount have been redeemed, leaving outstanding as at December 31, 1939, $5,057,000. Bonds are redeemable at a premium, semi-annually, to June 1, 1948.

"The notes payable have been issued from month to month since 1928 to finance current construction after the exhaustion of the funds provided by the sale of bonds; they bear interest at the rate of six per cent per annum. Each note is payable in equal monthly instalments over a period not to exceed 120 months nor to extend beyond May 31, 1948, whichever is the shorter period.

"Schedule A-15 shows forty-two Examiner's adjustments and reclassifications of the Surplus Account that increase the balance of that account, as of December 31, 1939, from $3,609,943.09 to $5,826,298.70. These entries are the same as these shown in Column 17 of Schedule A-10. They are reproduced in Schedule A-15, so that they may be more conveniently referred to, and to provide a reconciliation of the balance of the Surplus Account, per books, with the balance as adjusted by the Examiner."

Q. Mr. McKinstry, in the preparation of this Exhibit No. 169, you had available for your inspection the books and records of the Canadian River Gas Company?

A. I did.

Q. And what records did you use in the preparation of this exhibit with reference to the Canadian River Gas Company?

A. You mean in respect to the company's records?

Q. Yes.

A. Or referring to our—

Q. No, the company's—in other words, you got your figures from the company's books and records and then whatever adjustments you had to make, you of course made them?

A. That is correct.

Q. And after the exhibit—or, rather, after the basic material had been gathered by you for the preparation of this exhibit and before it was finally reproduced, I will ask you whether on the title page there appears the signatures of Mr. Kenneth L. Smith in charge of field assignment; Mr. Harold L. Tomlin, Examiner in charge of regional office, and Mr. Charles W. Smith, chief, Bureau of Accounts finance and rates; is that correct?

A. That's right.

Q. And all of those men are presently connected with the Federal Power Commission in those capacities?

A. That is right.

Q. And were at the time they affixed their signatures to that page?

* * * * *

On cross-examination MR. MCKINSTRY further testified: (Vol. XLVIII, pp. 6586-6590.)

A. It is. That is, to the point of summarization in a large part from other exhibits.

Q. And with the exception of one reclassification entry which you have put in here, the balance sheet as you have constructed it here represents merely a recapitulation of the work done in Exhibit No. 168?

A. And as affected by the previous exhibit, I believe, on the utility plant accounts.

Q. Yes, I should have included Exhibit 146.

A. And one exhibit on the reserves for depreciation and depletion.

Q. Yes. Now, turn to Page 2 of Exhibit 169. Go down—which is the liability side of the balance sheet—

A. That is correct.

Q. Go down to Line 27 and you have an item there that is designated "Taxes Accrued", $549.55. To shorten it up I'll tell you that it is my information that that particular item is not accrued taxes but represents old age benefits payments made by employees and held by the company temporarily. Is that your understanding?

A. That is. Of course, that is a social security tax.

Q. But it is not a company tax?

A. That is true. It is not a company tax. It still is a tax accrued for and on behalf of the employes that has been collected by the company.

Q. Yes, but as to the employes, it is an accrued tax, but as to the company it is something that they owe the employes until it is paid, is it not?

A. Well, I believe the amount has been deducted from the—well, I won't go into the exact details.

Q. It is not a very large amount and I think we are agreed on what it is.

A. Yes, it is a social security tax.

Q. I wanted to ask you this question: This Entry No.

182 as set forth in Exhibit 168 is carried over into this balance sheet?

A. No, it is not.

Q. Can we leave it this way, Mr. McKinstry, if you feel it necessary to do so, please check that and if you find it carried over we ought to make some stipulation.

A. I can very definitely say that it does not.

Q. All right. Pages 3, 4 and 5 of Exhibit 169 carrying summary schedules of all of the reclassification and adjustment entries have been applied to this balance sheet?

A. That is correct.

Q. On Page 6 you have an Entry No. R-1. I assume the only purpose of that is to net the amount that may be a debit or a credit as between associated companies?

A. That is true.

Q. The company, perhaps on its books now or on its balance sheet perhaps has not netted those figures?

A. No, they have a receivable and a payable. They have each of those accounts shown whereas I have netted the respective balances to the one total.

Q. All right, Schedule A-11 on Pages 7 and 8, what is the purpose of that, Mr. McKinstry?

A. That is merely to give the detail of the entry of the one just referred to showing the balances per books, both receivable and payable and showing reclassifications of the respective balances.

Q. I think I mis-described that. I was talking about Schedule 8—no—yes, I should have said Pages 6 and 7 instead of 7 and 8 as I did.

A. Oh, yes.

Q. All right, now, we come to Schedule A-12 which consists of five pages commencing on Page 8, and that is an analysis of the '39 rate expenses which you have transferred to other deferred debits as of December 31, 1939 and also suspended?

A. That is correct.

Q. In Exhibit No. 168.

A. Yes.

Q. Now, these are the rate expenditures as you found them on the books for the year 1939, Mr. McKinstry?

A. I believe that there have been some slight changes from—these are all shown per the books, although we have made some slight reclassifications, I believe.

Q. Those are rather inconsequential?

A. They are not of major proportions.

Q. Now, the classification of these suspensions as you have shown in Columns 6 to 12, inclusive, is that your classification?

A. That is, yes.

Q. You classified them and distributed them from the information appearing on the voucher, I presume?

A. That is right—endeavored to do so.

Q. Now turn to Page 13, your Schedule A-13, the second paragraph commencing on Page that starts off this way:

"The original sales contract with Amarillo Oil Company, dated June 3, 1928." I believe that date you have there is a typographical error and I believe perhaps you or counsel will want to correct it.

A. It should be January 3, 1928.

Mr. Lange: It should be January 3, 1928 instead of June.

The Trial Examiner: Do you wish to make that correction in your exhibit?

The Witness: Yes, I do.

The Trial Examiner: Very well, the reporter will be directed to physically make such correction.

By Mr. Spencer:

Q. Your Schedule A-15 commencing on Page 15 merely is a reconciliation of earned surplus per books as reclassified and as adjusted?

A. That is correct.

Q. Which I presume makes the balance sheet complete in any event?

A. That is true.

Said Exhibit 169 is in part as follows:

CANADIAN RIVER GAS COMPANY

BALANCE SHEET

DECEMBER 31, 1939

Line No.	Assets and Other Debits (1)	Per Books (2)	Examiner's Reclassifications and Adjustments Debit (3)	Credit (4)	As Adjusted (5)
	Utility Plant				
1	Gas plant in service	$14,519,788.71	$ 846,372.66	$5,442,831.43	$ 9,923,329.94
2	Construction work in progress	150,582.36			150,582.36
3	Gas plant held for future use		80,952.45		80,952.45
4	Gas plant adjustments		4,561,250.22	459,369.34	4,091,880.88
5	Total Utility Plant	$14,670,371.07	$5,488,575.33	$5,912,200.77	$14,246,745.63
	Investment and Fund Accounts -				
6	Other physical property		$ 1,176.34		$ 1,176.34
	Current and Accrued Assets				
7	Cash	$ 9,517.29			$ 9,517.29
8	Special deposits	266.82			266.82
9	Working funds	1,492.36			1,492.36
10	Notes receivable (all from employees)	365.00			365.00
11	Accounts receivable from others, excluding associated companies	5,617.31			5,617.31
12	Receivables from associated companies	676,721.85	$ 37,106.00	$ 669,909.99	43,917.86
	Materials and supplies				
13	Held for use in gas business	87,607.67		155.38	87,452.29
14	Gasoline held for sale	3,484.62			3,484.62
15	Prepayments	524.50	3,920.90		4,445.40
16	Total Current and Accrued Assets	$ 785,597.42	$ 41,026.90	$ 670,065.37	$ 156,558.95
	Deferred Debits				
17	Rate case expenses (Schedule A-12)		$ 54,600.61		$ 54,600.61
18	Other (Schedule A-13)		34,519.70		34,519.70
19			$ 89,120.31		$ 89,120.31
20	Total Assets and Other Debits	$15,455,968.49	$5,619,898.88	$6,582,266.14	$14,493,601.23

Exhibit No. 169

35221

Docket A-114

Sheet 2 of 2

CANADIAN RIVER GAS COMPANY
BALANCE SHEET
DECEMBER 31, 1939

Line No.	Liabilities and Other Credits (1)	Per Books (2)	Examiner's Reclassifications and Adjustments Debit (3)	Credit (4)	As Adjusted (5)
	Capital Stock - Common capital stock 25,000 shares, no par value (all issued to Southwestern Development Company)				
21		$ 1.00			$ 1.00
	Long-Term Debt (All payable to Colorado Interstate Gas Co.) First Mortgage and Collateral Trust Twenty Year Six Per Cent Sinking Fund Gold Bonds,				
22	due June 1, 1948	$ 5,057,000.00			$ 5,057,000.00
23	Advances	1,348,254.14			1,348,254.14
24	Total Long-Term Debt (Schedule A-14)	$ 6,405,254.14			$ 6,405,254.14
	Current and Accrued Liabilities				
	Accounts payable to other than				
25	associated companies	$ 134,256.95			$ 134,256.95
	Payables to associated com-				
26	panies	860,344.62	$ 669,909.99	$ 81,603.18	272,037.81
27	Taxes accrued	549.95		80,742.27	81,291.82
	Other current and accrued				
28	liabilities	1,720.60		9,376.93	11,097.53
	Total Current and Accrued				
29	Liabilities	$ 996,871.72	$ 669,909.99	$ 171,722.38	$ 498,684.11
	Reserves				
	Reserve for depreciation of gas				
30	plant Note (1)	$ 2,955,528.47	$3,236,309.29	$1,718,177.52	$ 1,437,396.70
	Reserve for amortization and depletion of producing natural				
31	gas land and land rights Note(2)	1,488,370.07	1,566,562.70	404,159.21	325,966.58
32	Total Reserves	$ 4,443,898.54	$4,802,871.99	$2,122,336.73	$ 1,763,363.28
33	Earned Surplus (Schedule A-15)	$ 3,609,943.09	$3,293,587.58	$5,509,943.19	$ 5,826,298.70
34	Total Liabilities and Other Credits	$15,455,968.49	$8,766,369.56	$7,804,002.30	$14,493,601.23

Notes:

(1) Amount in column 5 includes $2,339.96 applicable to gas plant held for future use.

(2) Amount in column 5 includes $1,423.16 applicable to natural gas land and land rights held for future use.

2

Exhibit No. 169

35.23

Exhibit No. 169

Docket G-124

Schedule A-11
Sheet 1 of 2

CANADIAN RIVER GAS COMPANY
EXAMINER'S RECLASSIFICATION AND ADJUSTMENT ENTRIES
RELATING TO THE BALANCE SHEET

6

Particulars	Debit	Credit
No. R-1		
Payables to Associated Companies:		
Texoma Natural Gas Company	$ 28,630.08	
Amarillo Oil Company	2,287.75	
Sinclair Prairie Oil Company	65.41	
Colorado Interstate Gas Company	638,920.99	
Dalhart Gas Company	5.76	
Receivables from Associated Companies:		
Texoma Natural Gas Company		$ 28,630.08
Amarillo Oil Company		2,287.75
Sinclair Prairie Oil Company		65.41
Colorado Interstate Gas Company		638,920.99
Dalhart Gas Company		5.76
	$669,909.99	$669,909.99

With respect to balances as of December 31, 1939 with associated companies, (1) to apply against balance receivable the balance payable when latter balance is less than that of the former, (2) to apply against balance payable the balance receivable when latter balance is less than that of the former. Summary of net balances follows on sheet 2 of this schedule.

Exhibit No. 169

ket G-124

Schedule A-13
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
DEFERRED DEBITS - OTHER
DECEMBER 31, 1939

13

The entire amount hereunder relates to the prospective sum coverable from Amarillo Oil Company on billings for natural gas livered to that company since July 1, 1931 through December 31, 1939.

The original sales contract with Amarillo Oil Company, dated 3, 1928, provides that deliveries of natural gas will be settled on a rate per MCF ascertained in accordance with provisions stipulated the aforementioned contract. By a supplemental agreement dated ly 1, 1931, natural gas sold to Amarillo Oil Company and in turn livered to facilities of Panhandle Pipe Line Company, is billed at cents per MCF rather than at the ascertained rate developed under the iginal contract of sale. On these particular deliveries the 4⅜ cent te per MCF is to apply until such time as this rate shall have enabled e Respondent to recover the deficiency in billing which occurs when e ascertained rate exceeds the revised rate of 4⅜ cents per MCF. The pplemental agreement provides that when the entire deficiency in lling has been offset, the supplemental agreement will be rendered rmanently inoperative and the rate ascertained in accordance with the iginal contract of sale will apply to all subsequent billings.

From July 1, 1931 and continuing through the year 1935, the certained rate was in excess of 4⅜ cents per MCF, and subsequent ereto the ascertained rate has been less than 4⅜ cents per MCF. The ount of $34,519.70 set up as a deferred debit in Examiner's entry . 133 represents the portion of the deficiency in billing during the riod July 1, 1931 to the end of 1935 which had not been offset as of cember 31, 1939, detailed below by periods:

d of Year	Amount of Annual Excess: Ascertained Rate over 4⅜ Cent Rate	Amount of Annual Excess: 4⅜ Cent Rate over Ascertained Rate	Cumulative Amount - Excess of Ascertained Rate over 4⅜ Cent Rate
1931	$22,939.11		$ 22,939.11
1932	39,582.77		62,521.88
1933	30,958.00		93,479.88
1934	26,616.56		120,096.44
1935	11,469.13		131,565.57
1936		$14,254.08	117,311.49
1937		29,903.86	87,407.63
1938		26,076.03	61,331.60
1939		26,811.90	34,519.70

Exhibit No. 169

Docket G-124

Schedule A-14
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
LONG-TERM DEBT
DECEMBER 31, 1939

14

First Mortgage and Collateral Trust Twenty Year Six Per Cent Sinking Fund Gold Bonds due June 1, 1948: (Note 1)

Date of Issue (At Par)	Principal Amount
June 27, 1928	$ 8,470,000.00
Dec. 3, 1928	740,000.00
Dec. 30, 1929	1,790,000.00
Total issued	$11,000,000.00
Principal amount redeemed between June 1, 1930 and December 31, 1939	5,943,000.00
Balance outstanding December 31, 1939 (Note 2)	$ 5,057,000.00

Promissory Notes (Note 1) 1,348,254.14

These notes have been issued from time to time to finance current construction after the exhaustion of the funds obtained from the sale of bonds. The notes are redeemable in equal monthly installments over a period of 120 months from date of issuance or by May 31, 1948, whichever is the shorter period. The notes bear interest at the rate of 6% per annum, payable semiannually on January 1 and July 1.

Total Long-Term Debt $ 6,405,254.14

Notes:

(1) All issued to and outstanding amount held by Colorado Interstate Gas Company.

(2) Semiannual provisions to a sinking fund are to be made to permit redemption of annual principal amounts as follows:

Year	Principal Amount
1940	$ 594,000.00
1941	595,000.00
1942	594,000.00
1943	592,000.00
1944	595,000.00
1945	594,000.00
1946	595,000.00
1947	594,000.00
1948	304,000.00
	$5,057,000.00

RECONCILIATION OF EARNED SURPLUS PER BOOKS, AS RECLASSIFIED AND AS ADJUSTED
DECEMBER 31, 1939

Line No.	Examiner's Entry No. (1)	Description (2)	Debit (3)	Credit (4)
1		Balance per (Respondent's) books		$3,609,943.09
		Examiner's reclassification entries affecting earned surplus		
	R-104	To accrue amount receivable from Texoma Natural Gas Company for 1939 joint operation of Fritch gasoline plant		27,106.00
2				
	R-106	To accrue gasoline royalties applicable to joint operation of Fritch gasoline plant	$ 4,160.75	
3				
4	R-121	To set up prepayments of delay rentals		2,632.09
5	R-125	To accrue unpaid Federal income tax	68,855.64	
6	R-126	To accrue unpaid Federal capital stock tax	2,895.00	
7	R-134	To accrue unpaid Federal old age benefit tax	543.81	
8	R-135	To accrue unpaid Federal unemployment tax	770.18	
9	R-136	To accrue unpaid State ad valorem taxes	7,476.43	
10	R-137	To accrue unpaid State unemployment taxes	713.30	
	R-139	To defer rate case expenses for consideration of the Commission		54,600.61
11				
12	R-167	To set up prepayments of gas well royalties		1,288.81
13	R-168	To accrue unpaid gas well royalties	4,926.18	
14	R-169	To accrue unpaid interest on long-term debt	25,285.00	
	R-171	To accrue unpaid interest on current account and notes payable to Colorado Interstate Gas Company	55,805.79	
15				
16			$ 171,722.38	$3,700,570.60
17				171,722.38
18		Balances reclassified		$3,533,848.22
		Examiner's adjustment entries affecting earned surplus		
19	133	To restate billings to Amarillo Oil Company		34,519.70
	170	To remove differences in physical inventories included		
20		in materials and supplies	$ 155.38	
21	201	Elimination of delay rentals from lease costs	151,591.23	
	204	Adjustment to reflect profit from sale of Cliffside property to U. S. Government	782,082.67	
22				
23	205	do.		498,208.84
24	207	do.	28,327.24	
25	208	do.		4,399.73
26	209	do.		4,722.50
27	210	do.		2,539.62
28	216	Adjusting appreciation on abandoned leases		85,005.75
29	217	Adjusting appreciation on Ingerton lease No. 27 sold in 1935		34,595.00
	218	Adjusting for Parcomic Oil & Gas Co. interest in Ingerton lease, No. 27		7,875.00
30				
	219	Adjusting notes receivable obtained in sale of Ingerton lease No. 27	124.44	
31				
32	242	Eliminating duplicate charge to utility plant for pipe	690.42	
33	245	Adjusting telephone right of way	235.00	
34	248	Adjusting interest during construction	81,250.00	

Exhibit No. 169
3531

Docket G-124

Schedule A-15
Sheet 2 of 2

CANADIAN RIVER GAS COMPANY
RECONCILIATION OF EARNED SURPLUS PER BOOKS, AS RECLASSIFIED AND AS ADJUSTED
DECEMBER 31, 1939

Line No.	Examiner's Entry No. (1)	Description (2)	Debit (3)	Credit (4)
35	250-A	Reallocation of Clayton lateral overheads	$ 10,233.36	
36	400	To reverse depreciation and depletion accrued on Ingerton lease, No. 27, and wells	61,290.54	
37	401	To apply net loss on retirement of Ingerton lease, No. 27 and wells, to reserves		$ 51,374.07
38	402	To reverse erroneous charges to reserve for depletion	5,725.24	
39	403	To eliminate charges to reserve for depletion covering abandoned leases	37,950.32	
40	404	To reverse Respondent's total accruals in reserve for depletion		1,549,089.05
41	405	To set up revision of reserve for depletion of operated acreage	110,241.42	
42	406	To set up revision of reserve for depletion of intangible well costs	172,929.56	
43	407	To reverse Respondent's total accruals in reserve for depreciation		3,098,285.02
44	408	To set up revision of reserve for depreciation of gas plant	1,679,038.38	
45	411	To set up revision of reserve for depreciation applicable to Clayton lateral		3,532.73
46	412	To transfer to reserve for depreciation profit and loss on retirement of utility plant		100,168.67
47			$3,121,865.20	$5,948,165.90
48				3,121,865.20
49		Balance Adjusted		$5,826,298.70

Exhibit No. 169

35 33

169

MR. MCKINSTRY also prepared and submitted Commission Exhibit 175, "Comparison of Operations of Canadian River Gas Company for Nine Months Ended September 30, 1940," and "Balance Sheet as of September 30, 1940." With reference thereto MR. MCKINSTRY testified as follows: (Vol. XLIX, pp. 6815-6819.)

Q. Mr. McKinstry, did you in connection with the preparation of this Exhibit 175 also prepare a written statement setting forth in summarized form the principal items of the exhibit?

A. I did.

Q. Will you please read that statement into the record?

A. "The principal purposes of this exhibit, which relates to Canadian River Gas Company, are to present (1) a comparison of operations for the two nine-months periods ended September 30, 1940, and 1939, respectively; (2) the amount of expenditures incurred in connection with this proceeding, up to September 30, 1940; and (3) the changes in the investment in gas plant in service for the nine months ended September 30, 1940.

"The schedules comprising this exhibit are as follows:

"Schedule No. 1 Balance Sheet, as reclassified, September 30, 1940.

"Schedule No. 2 Gas plant in service, September 30, 1940.

"Schedule No. 3 Deferred debits—rate case expenses, September 30, 1940.

"Schedule No. 4 Statement of income and surplus accounts as reclassified for the nine months ended September 30, 1940, and 1939, and comparison.

"Schedule No. 5 Statement of operating revenues for the nine months ended September 30, 1940, and 1939, and comparison.

"Schedule No. 6 Summary of operating expenses as reclassified for the nine months ended September 30, 1940, and 1939, and comparison.

"The figures used in this exhibit are as shown by the company's books, as at the dates stated in the schedules. Only two reclassifications have been made: rate case expenses have been transferred from the income account to

the balance sheet, in order to classify them as deferred charges, and certain operating and non-operating expenses have been transferred from work in progress to the earned surplus account.

"Financial.

"Schedule No. 1, the balance sheet at September 30, 1940, reflects the balances as shown by the books except for the reclassifications explained above.

"Schedule No. 2 shows in summary form by accounts, additions to and retirements of gas plant in service and gasoline plant in service during the nine months ended September 30, 1940, which principally are as follows:"

Mr. Lange: You may just copy that into the record as a table, Mr. Reporter?

The Trial Examiner: Yes, it may be copied.

(At the direction of the Trial Examiner, the following table was copied into the record:)

Gas Wells	
211 Gas Well Equipment—Intangible	$14,574.33
212 Gas Well Equipment—Tangible	8,260.58
	$22,834.91
Main Compressor Stations	
Dalhart Station:	
218-C Land	429.87
221-C Structures	25,174.06
223-C Other Structures	10,932.81
224-C Equipment	187,489.07
	$224,025.81

The Witness: "The additions to main compressor stations account represent the construction and installation new of a compressing station and equipment, and bring the number of 600 H.P. Clark compressor units that the company has in service to five.

"Results of Operation.

"Net utility income for the nine months ended September 30, 1940, as shown on Schedule No. 4, is greater than net utility income for the nine months ended September 30,

1939, by $116,136.98. This increase is accounted for as follows:"

Mr. Lange: And may we have that table copied also?

The Trial Examiner: Yes.

(At the direction of the Trial Examiner, the following table was copied into the record:)

	Increase (Decrease) 1940 over 1939
Operating Revenues	$110,230.19
Operating Revenue Deductions:	
Operating expenses	$ 26,077.58
Depreciation	1,919.32
Depletion	4,385.29
(Profit) on plant retirements	(3,498.38)
Taxes	(16,779.81)
Total	$ 12,104.00
Net Operating Revenues	98,126.19
Exploration and Development Costs:	
Delay rentals	$ 12,155.91
Nonproductive well drilling	(30,166.70)
Total	$(18,010.79)
Net Utility Income	$116,136.98

The Witness: "Schedule No. 5 shows the increase of $110,230.19 in operating revenues by sub-classifications.

"Schedule No. 6 sets forth the increase of $26,077.58 in operating expenses by accounts. This increase consists chiefly of increases in gas well royalties.

"Taxes are less in 1940 chiefly because of the fact that in 1939 Texas advalorem taxes were paid in advance but in 1940 have not been.

"The decrease in nonproductive well drilling expense shown as $30,166.70, represents the entire amount expended in 1939; during the first nine months of 1940, $48,935.68 was similarly expended, but is classified by the company as profit

and loss suspense in Subschedule No. 6-1 and was not reclassified for the purpose of this exhibit.

"Miscellaneous nonoperating revenues classified under other income in schedule 14, line 16, is $83,624.65, less for the 1940 period than for comparable period of 1939. The decrease is due principally to the fact that the price per gallon realized from the sale of gasoline extracted from natural gas dropped approximately fifty per cent in 1940 below the 1939 price."

By Mr. Lange:

Q. Mr. McKinstry, in the preparation of this exhibit—strike that.

Does this exhibit reflect the figures as per company's books?

A. They are all according to the company's books.

Q. Were there any adjustments that appear on any figures that were obtained by you from those figures that appear in this exhibit?

A. The grouping perhaps does not correspond with the balances as shown on the company's books, nevertheless they are based upon the book balances without any adjustment.

Q. Without any adjustment?

A. That is true.

Q. You haven't made any, nor does this exhibit attempt to reflect any adjusted figures?

A. That is correct.

Q. But it is intended as a comparison to reflect the actual book figures of the company for those two operating nine-months periods?

A. That is right.

Q. Oh, yes, is there a reclassification anywhere in the exhibit?

A. Yes, there is.

Q. Will you point it out, please?

A. Page 1 which is Schedule No. 1, Line 3, "Construction work in progress" has been reclassified taking from it the amounts which the books contain relating to operating expenses as of September 30, 1940, and we have also treated the nine months ended 1939 in a similar fashion.

Q. Where is that shown? Doesn't the note on Page 2,

Note 2—or, rather, Note 1—Note 1 and Note 2 on Page 2 cover the reclassification that you have made?

A. No, the Note 1 only relates to the period ending September 1940—September 30th, 1940.

Q. And what does Note 2 refer to?

A. That is another reclassification which appears on Line 10.

Q. Of Page 1?

A. Of Page 1. That total amount is taken from the earned surplus account and placed in this balance sheet.

Q. That is the item identified as rate case expenses?

A. That is correct.

Q. With the Note 2 referring to it?

A. That is correct.

Q. Note 2 appearing on Page 2?

A. That is correct.

Q. Are there any other reclassifications in the exhibit, Mr. McKinstry?

A. No, those are the only two.

Q. And you have previously stated that you made no adjustments?

A. No adjustments.

* * * * *

On cross-examination MR. MCKINSTRY testified as follows: (Vol. L, pp. 6835-6840.)

Q. Mr. McKinstry, on Friday afternoon you submitted your Exhibit No. 175 which generally shows the comparison of operations of the Canadian River Gas Company for two 9-months' periods ending September 30, 1940 and 1939, respectively?

A. That is correct.

Q. As I recall your direct testimony with reference to that exhibit and also as indicated in your written statement, the figures shown in your balance sheet are book figures with the exception of two reclassifications which you have made?

A. That is correct.

Q. The first reclassification involves the transfer of rate case expense from the income account to the balance sheet in the form of a deferred debit?

A. Yes.

Q. You have taken that out, as I think was developed in a previous exhibit which you had for Canadian River?

A. Yes.

Q. So what you do here is merely to give effect on the balance sheet to what you did generally in your exhibit with respect to the income accounts of Canadian River?

A. Except to merely take the book figures only without any adjustment or major reclassification.

Q. Now, your written statement indicates that the second reclassification involves certain operating and non-operating expenses which have been transferred from work orders to work in progress to the earned surplus account?

A. That is correct.

Q. Now take your balance sheet as reclassified on September 30, 1940 which is on Page 1, Schedule No. 1, and indicate to me on the balance sheet where your second reclassification appears.

A. On Line 3, construction work in progress, the amount of $44,495.90 which is the amount remaining after we have removed $7,578.84 from it as indicated in Note 1 on Page 2 of Schedule No. 1.

Q. Yes. Now, in order to arrive at the figures shown in Line 3, Sheet 1 of Schedule No. 1, you had to make some reclassification between expense items and capital items, did you not?

A. Yes.

Q. And you used your own judgment in that regard?

A. The amounts were taken from the individual work order sheets in the work in progress ledger at Colorado Springs.

Q. Yes, I understand the amounts are the book amounts, but the classification of those amounts had been made by you as between expense and capital, is that not correct?

A. I believe the classifications are indicated on the work orders.

Q. Well, do you any place in this exhibit show the breakdown as between expense items and capital items in the work orders which you have involved in this reclassification?

A. It merely shows the amount which has been reclassified only.

Q. Well, would it be correct to say, then, that your classification of the various expenditures contained in the work orders which you mention here has been taken by you as indicated on the voucher?

A. No, as indicated—

Q. On the work order?

A. On the work order. I believe the work order ledger sheet has an indicated classification between expense and the expenditures for plant.

Q. In any event, what you attempted to do was to take the company's classification of those expenditures rather than to exercise your own judgment?

A. That is correct.

Q. I take it that one of the primary purposes of this exhibit as you have indicated in your written statement is to show a comparison of operations for the last two nine-month periods?

A. That is correct.

Q. Do you think that such a comparison can be best obtained by using a nine-months period rather than a twelve-months period ending on the date you want to use?

A. This happened to be the latest data we were able to assemble and get together for an exhibit. It is true that the more complete the period the more indicative and the more reliable is the information in comparative form with other annual periods.

Q. Well, you could have taken the twelve-months period in each instance preceding September 30th instead of the nine-months period, is that not right?

A. Taken twelve months ending—

Q. Yes.

A. That, of course, is something that could have been used, true enough.

Q. And in that event you would have had a full year's operations rather than nine months?

A. That is correct.

Q. And I believe you have indicated that for the purpose of comparison the full year would be preferable to nine months?

A. When I referred to that, it would be the twelve months of 1940 if it was all available.

Q. Yes. Now, for the purpose of comparison I take it

you have not included here any information that might show the differences in degree day deficiencies during these periods in the principal markets to which this gas of Canadian River Gas Company is transported and sold?

A. Will you repeat the question, please?

(The question referred to was read by the reporter as set forth above.)

The Witness: No, I have not.

By Mr. Spencer:

Q. Degree day deficiencies would have some bearing on the two periods for comparative purposes, would it not?

A. Well, as far as I am concerned, I am merely taking the factual information and comparing the two together.

Q. Well, then, is your answer that you do not know whether it would or not?

A. Well, I would say that it would, knowingly.

Exhibit 175, in part, is as follows:

Exhibit No. 175

Docket G-124

Schedule No. 1
Sheet 1 of 2

CANADIAN RIVER GAS COMPANY
BALANCE SHEET, AS RECLASSIFIED
SEPTEMBER 30, 1940

1

Line No.	Assets and Other Debits	
	Utility Plant	
1	Gas plant in service (Schedule No. 2)	$14,438,053.69
2	Gasoline plant in service (Schedule No. 2)	349,451.24
3	Construction work in progress (Note 1)	44,495.90
4	Total Utility Plant	$14,832,000.83
	Current and Accrued Assets	
5	Cash	$ 19,570.98
6	Notes receivable	305.00
7	Accounts receivable	183,649.12
8	Materials and supplies	98,308.71
9	Total Current and Accrued Assets	$ 301,833.81
	Deferred Debits	
10	Rate case expenses (Note 2) (Schedule No. 3)	$ 119,564.00
11	Other	3,151.58
12	Total Deferred Debits	$ 122,715.58
13	Total Assets and Other Debits	$15,256,550.22

	Liabilities and Other Credits	
14	Capital Stock - common capital stock 25,000 shares, no par value (all issued to Southwestern Development Company)	$ 1.00
	Long-term Debt (all payable to Colorado Interstate Gas Co.)	
15	First Mortgage and Collateral Trust Twenty Years Six Per Cent Sinking Fund Gold Bonds, due June 1, 1948	$ 4,760,000.00
16	Advances covered by promissory notes	1,401,133.38
17	Total Long-term Debt	$ 6,161,133.38
	Current and Accrued Liabilities	
18	Vouchers payable	$ 63,875.47
19	Accounts payable	356,671.00
20	Accrued liabilities	161.88
21	Total Current and Accrued Liabilities	$ 420,708.35
	Reserves	
22	Reserve for depletion	$ 1,725,481.02
23	Reserve for depreciation	3,148,898.06
24	Total Reserves	$ 4,874,379.08
25	Earned Surplus (Note 1 and 2)	$ 3,800,328.41
26	Total Liabilities and Other Credits	$15,256,550.22

Notes: (1) After reclassifying to Earned Surplus, operating and nonoperating deductions included in work in progress:

Total per books	$52,074.74
Total per this schedule	44,495.90
Total reclassified (see footnote Schedule No. 4)	$ 7,578.84

(2) The amounts shown under caption, "Deferred Debits - rate case expenses", are derived by reclassification from Earned Surplus as shown in footnote of Schedule No. 4:

Accumulated rate case expenses for the year 1939 as shown in Schedule A-12 of Exhibit on Balance Sheet and Supplemental Data	$ 54,600.61
Accumulated rate case expenses for nine months ended September 30, 1940	64,963.39
Total	$119,564.00

Schedule No. 2
Sheet 1 of 3

CANADIAN RIVER GAS COMPANY
GAS PLANT IN SERVICE
SEPTEMBER 30, 1940

	Particulars	For Books: Balance Jan. 1, 1940	Additions	Retirements	Balance Sept. 30, 1940
	Production System				
205	Operated Acreage - Leaseholds	$ 5,722,261.05	$ 1,866.00		$ 5,724,127.05
205	Unoperated Acreage	135,241.69	183.25		135,424.94
	Total	$ 5,857,502.74	$ 2,049.25		$ 5,859,551.99
	Gas Wells				
211	Gas Well Equipment - Intangible	$ 2,413,769.48	$ 14,574.33		$ 2,428,343.81
212	Gas Well Equipment - Tangible	835,141.57	8,260.58	$ 717.07	842,685.08
	Total	$ 3,248,911.05	$ 22,834.91	$ 717.07	$ 3,271,028.89
	Gas Department Adjustment	$ (490,813.74)			$ (490,813.74)
218	Drilling and Cleaning Equipment	$ 24,679.54	$ 4,972.18	$ 3,776.39	$ 25,875.33
	Field Lines				
206B	Rights of Way	$ 13,512.51			$ 13,512.51
213B	Construction	345,373.36	$ 1,140.10	$ 28.05	346,485.41
	Cathodic Protection		1,587.75		1,587.75
214B	Equipment	892,155.08	6,257.37	1,381.15	897,031.30
	Total	$ 1,251,040.95	$ 8,985.22	$ 1,409.20	$ 1,258,616.97
	Other Field Facilities				
209M	Field Measuring Station Structures	$ 9,301.40	$ 556.06	$ 381.48	$ 9,475.98
215M	Field Measuring Station Equipment	49,837.88	2,033.91	1,857.46	50,014.33
221B	Field Compressor Station Structures	3,308.84			3,308.84
224B	Field Compressor Station Equipment	15,762.02	20.93	3.45	15,779.50
	Total	$ 78,210.14	$ 2,610.90	$ 2,242.39	$ 78,578.65
	Gasoline Investment				
900	Land	$ 615.00			$ 615.00
902	Rights of Way	242.13			242.13
903	Structures	48,545.21	$ 56.91		48,602.12
904	Equipment	293,112.72	1,436.69	$ 1,153.31	293,396.10
905	Delivery Line	2,792.48			2,792.48
906	Loading Rack	3,802.16	2.66	1.41	3,803.41
	Total	$ 349,109.70	$ 1,496.26	$ 1,154.72	$ 349,451.24
	Total Production System	$10,318,610.38	$ 42,948.72	$ 9,299.77	$10,352,209.33

Exhibit No. 175
3
35417

CANADIAN RIVER GAS COMPANY
GAS PLANT IN SERVICE
SEPTEMBER 30, 1940

	Particulars	For Books: Balance Jan. 1, 1940	Additions	Retirements	Balance Sept. 30, 1940
	Transmission System				
	Mains and Laterals				
218C	Land	$ 579.34			$ 579.34
220D	Rights of Way	31,826.56			31,826.56
226D	Equipment	2,477,058.47	$ 4,696.99	$ 830.64	2,480,924.82
	Total	$ 2,509,464.37	$ 4,696.99	$ 830.64	$ 2,513,330.72
	Dehydration Plant				
218D	Land	$ 441.22			$ 441.22
223D	Structures	6,193.62			6,193.62
227D	Equipment	35,138.83	$ 1,263.30	$ 188.72	36,213.41
	Total	$ 41,773.67	$ 1,263.30	$ 188.72	$ 42,848.25
	Main Compressor Stations				
218C	Land	$ 1,515.66	$ 429.87		$ 1,945.53
221C	Structures	95,060.65	25,174.06		120,234.71
223C	Other Structures		10,932.81		10,932.81
224C	Equipment	539,444.11	187,489.07	$ 137.37	726,795.81
	Total	$ 636,017.42	$ 224,025.81	$ 137.37	$ 859,905.86
	Measuring Stations				
218M	Land	$ 503.75			$ 503.75
222M	Structures	6,045.90			6,045.90
225M	Equipment	15,615.69	$ 92.92	$ 449.90	15,258.31
	Total	$ 22,165.34	$ 92.92	$ 449.90	$ 21,807.96
	Divine Camp Investment				
218DC	Land	$ 826.25			$ 826.25
223DC	Structures	163,246.08	$ 798.60	$ 13.72	164,030.96
227DC	Equipment	22,066.27	821.33	75.00	22,832.60
	Total	$ 186,138.60	$ 1,619.93	$ 88.72	$ 187,689.81
	Total Transmission System	$ 3,395,579.00	$231,698.95	$ 1,695.35	$ 3,625,582.60
	Undistributed Fixed Capital				
200	Organization Expense	$ 387.45			$ 387.45
203	Other Undistributed Fixed Capital	8,843.16			8,843.16
262	Law Expenditures during Construction	53,091.59			53,091.59
266	Interest during Construction	556,897.95			556,897.95
	Total	$ 619,220.15			$ 619,220.15

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Exhibit No. 175

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Schedule No. 2
Sheet 3 of 3

CANADIAN RIVER GAS COMPANY
GAS PLANT IN SERVICE
SEPTEMBER 30, 1940

	Particulars	Per Books Balance Jan. 1, 1940	Additions	Retirements	Balance Sept. 30, 1940
	General Property				
247E	Office Structures	$ 2,793.03			$ 2,793.03
248E	Other Structures	33,588.04	$ 201.74	$ 6.96	33,782.82
249E	General Office Equipment	11,735.27	741.62	126.00	12,350.89
250E	General Store Equipment	6,154.19	379.17	7.20	6,526.16
255	Telephone System - Rights of Way	11,518.14			11,518.14
255E	Telephone System - Equipment	73,081.00	1,412.43	745.11	73,748.32
256E	General Tools and Implements	8,350.86	71.39		8,422.25
257E	Other General Equipment	3,050.25	105.01	25.91	3,129.35
253	General Garage Equip. (Autos, etc.)	36,078.40	9,423.86	7,360.37	38,141.89
	Total	$ 186,349.18	$ 12,335.22	$ 8,271.55	$ 190,412.85
	Total Gas Plant	$14,519,788.71	$286,982.89	$19,266.67	$14,787,504.93

3551
Exhibit No. 175

Docket G-124

Schedule No. 4
Sheet 1 of 5

CANADIAN RIVER GAS COMPANY
STATEMENT OF INCOME AND SURPLUS ACCOUNTS - AS RECLASSIFIED
FOR THE NINE MONTHS ENDED SEPTEMBER 30, 1940 AND 1939 AND COMPARISON

Line No.	Description	Applicable to Year 1939 — Twelve Months Ended Dec. 31, 1939	Three Months Ended Dec. 31, 1939	Nine Months Ended Sept. 30, 1939	Cents per M.C.F.	Applicable to Year 1940 — Nine Months Ended Sept. 30, 1940	Cents per M.C.F.	Increase or (Decrease) Nine Months 1940 over 1939 — Amount	Cents per M.C.F.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	M.C.F. of gas produced (at 16.4 lbs. per square inch absolute)	41,791,261	11,936,708	29,854,553		29,981,187			
	Utility Income								
2	Operating Revenues	$2,427,216.79	$ 899,739.36	$1,527,477.43	5.12	$1,637,707.62	5.29	$110,230.19	.17
	Operating Revenue Deductions:								
3	Operating expenses (See note) (Schedule No. 6)	$ 991,280.60	$ 266,916.84	$ 724,363.76	2.43	$ 750,441.34	2.43	$ 26,077.58	
4	Depreciation	273,391.04	71,573.78	201,817.26	.68	203,736.58	.66	1,919.32	(.02)
5	Depletion	320,359.14	87,633.48	232,725.66	.78	237,110.95	.76	4,385.29	(.02)
6	(Profit) on plant retirements	(4,267.64)	(2,234.32)	(2,033.32)	(.01)	(5,531.70)	(.02)	(3,498.38)	(.01)
7	Taxes	125,270.28	62,350.14	63,020.14	.21	46,240.33	.15	(16,779.81)	(.06)
8	Total Operating Revenue Deductions	$1,706,133.42	$ 486,239.92	$1,219,893.50	4.09	$1,231,997.70	3.98	$ 12,104.00	(.11)
9	Net Operating Revenues	$ 721,083.37	$ 413,499.44	$ 307,583.93	1.03	$ 405,709.92	1.31	$ 98,126.19	.28
	Exploration and Development Costs								
10	Delay rentals	$ 5,770.18	$ (2,572.85)	$ 8,343.03	.03	$ 20,498.94	.07	$ 12,155.91	.04
11	Nonproductive well drilling	29,293.73	(872.57)	30,166.70	.10			(30,166.70)	(.10)
12	Abandoned leases	3,232.63	3,232.63						
13	Total Exploration and Development Costs	$ 38,296.54	$ (213.19)	$ 38,509.73	.13	$ 20,498.94	.07	$(18,010.79)	(.06)
14	Net Utility Income	$ 682,786.83	$ 413,712.63	$ 269,074.20	.90	$ 385,211.18	1.24	$116,136.98	.34
	Other Income								
15	Interest revenues	$ 70,920.90	$ 5,229.33	$ 15,691.57	.05	$ 15,735.68	.05	$ 44.11	
16	Miscellaneous nonoperating revenues	305,101.61	100,274.72	201,826.89	.69	121,202.24	.39	(80,624.65)	(.30)
17	Nonoperating revenue deductions (debit)	(146,359.90)	(47,972.68)	(116,387.28)	(.39)	(114,965.29)	(.37)	1,421.99	.02
18	Total Other Income	$ 151,622.61	$ 57,531.37	$ 101,131.24	.37	$ 21,972.63	.07	$(82,158.61)	(.28)
19	Gross Income	$ 834,409.44	$ 471,244.00	$ 370,205.44	1.25	$ 407,183.81	1.31	$ 36,978.37	.06
	Income Deductions								
	Interest on debt to Colorado Interstate Gas Company, on	$ 330,210.00	$ 160,650.00	$ 169,560.00	.56	$ 152,710.00	.49	$(17,850.00)	(.07)
20	Bonds	100,353.40		100,353.40	.34	113,462.04	.37	13,108.64	.03
21	Notes and current account	11,403.39		11,403.39	.04	297.06		(11,116.33)	(.04)
22	Other interest charges	$ 441,966.79	$ 160,650.00	$ 281,316.79	.94	$ 266,469.10	.86	$(15,857.69)	(.08)
23	Total Income Deductions	$ 392,482.65	$ 310,594.00	$ 91,888.65	.31	$ 140,714.71	.45	$ 48,826.06	.14
24	Net Income for period								
	Earned Surplus								
	Credits	$3,273,961.05	$3,359,909.70	$3,273,961.05		$3,664,543.70			
25	Balance at beginning of period	392,482.65	310,594.00	91,888.65		140,714.71			
26	Net income for period (from above)	$3,676,443.70	$3,670,503.70	$3,365,849.70		$3,805,258.41			
27	Total Credits	11,900.00	5,960.00	5,940.00		5,940.00			
28	Debit - Premium on bonds redeemed	$3,664,543.70	$3,664,543.70	$3,359,909.70		$3,799,318.41			
29	Balance at end of period (See note)								

Exhibit No. 175

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CANADIAN RIVER GAS COMPANY
STATEMENT OF INCOME AND SURPLUS ACCOUNTS - AS RECLASSIFIED
FOR THE NINE MONTHS ENDED SEPTEMBER 30, 1940 AND 1939 AND COMPARISON

Note: Earned Surplus in the foregoing statement is per books after addition thereto for rate case expenses deferred and deduction therefrom for operating and nonoperating deductions included in work in progress as set forth in the following detail:

	1939	1940
Earned Surplus, September 30:		
Per books	$3,388,703.88	$3,688,343.25
Per this schedule (above)	3,359,909.70	3,800,328.41
Net increase (decrease) in earned surplus	$ (28,794.18)	$ 111,985.16
Reclassified from earned surplus for the three months ended December 31, 1939 and from construction work in progress at September 30, 1940 to earned surplus:		
Operating Revenue Deductions		
Operating expenses:		
Production System		
W.O. 554		$ (3,417.40)
W.O. 569		(2,300.45)
Gathering System		
W.O. 522 closed October 1939	$ (223.88)	
Compressing Station		
W.O. 536 closed December 1939	(217.41)	
Transmission System		
W.O. 537 closed December 1939	(889.33)	
W.O. 538 closed November 1939	(490.60)	
W.O. 576		(385.15)
General		
W.O. 574		(587.56)
Telephone System		
W.O. 534 closed December 1939	(5.07)	
W.O. 564		(309.96)
	$ (1,826.29)	$ (7,000.52)
Exploration and Development Costs		
Nonproductive well drilling (Bivins A-26)	$ (30,166.70)	
Other Income		
Nonoperating revenue deductions		
Bivins Camp expense		
W.O. 498 closed November 1939	$ (397.21)	
W.O. 528 closed November 1939	(712.72)	
W.O. 536 reopened 1940		$ (289.16)
Shop expense		
W.O. 498 closed December 1939	(47.64)	
Gasoline expense		
W.O. 536 closed December 1939	(217.41)	
W.O. 536 reopened 1940		(289.16)
Total	$ (1,374.98)	$ (578.32)
Total reclassified from earned surplus	$ (33,367.97)	
Total reclassified from construction		$ (7,578.84)

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Schedule No. 4
Sheet 3 of 3

CANADIAN RIVER GAS COMPANY
STATEMENT OF INCOME AND SURPLUS ACCOUNTS - AS RECLASSIFIED
FOR THE NINE MONTHS ENDED SEPTEMBER 30, 1940 AND 1939 AND COMPARISON

	1939	1940
Reclassified from earned surplus to deferred debits - rate case expenses:		
Operating Revenue Deductions		
Operating expenses - general:		
General office clerks salaries	$ (160.91)	
General law expenses	691.01	$ 1,072.81
General office rent	177.37	161.72
Other general office expenses - supplies and expenses	3,543.57	13,998.35
Other general expenses - other expenses	332.27	49,730.51
Operating expenses - Land Department	(9.52)	
Total	$ 4,573.79	$ 64,963.39
Rate case expenses accumulated in work in progress during 1939 and closed to expense in December 1939:		
Amount applicable to nine months ended September 30		$ 22,617.09
Amount applicable to three months ended December 31		14,865.02
Rate case expenses charged direct to operating revenue deductions during 1939:		
Amount applicable to nine months ended September 30		4,573.79
Amount applicable to three months ended December 31		12,544.71
Total	$ 4,573.79	$ 54,600.61
Total accumulated rate case expenses, reclassified (Schedule No. 3)	$ 4,573.79	$ 119,564.00
Net increase (decrease) in earned surplus	$ (28,794.18)	$ 111,985.16

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Schedule No. 5
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
STATEMENT OF OPERATING REVENUES
FOR THE NINE MONTHS ENDED SEPTEMBER 30, 1940 AND 1939 AND COMPARISON

Line No.		Nine Months Ended September 30 1940 M.C.F.	1940 Amount	1939 M.C.F.	1939 Amount	Increase or (Decrease) M.C.F.	Increase or (Decrease) Amount
	Amarillo Oil Co. "Special Gas"						
1	Channing	6,623	$ 242.28	6,300	$ 235.72	323	$ 6.56
2	Dalhart	226,873	29,075.73	232,543	30,046.24	(5,670)	(970.51)
3	Texline	6,059	1,348.31	5,479	1,250.91	580	97.40
4	Hartley	3,402	582.91	3,341	590.97	61	(8.06)
5		242,957	$ 31,249.23	247,663	$ 32,123.84	(4,706)	$ (874.61)
6	Contract "B"	3,974,304	$ 166,564.46	2,946,494	$ 127,928.36	1,027,810	$ 38,636.10
7	Contract "C"	172	$ 21.16	164	$ 20.17	8	$ .99
8	Total Amarillo Oil Co.	4,217,433	$ 197,834.85	3,194,321	$ 160,072.37	1,023,112	$ 37,762.48
9	Clayton Gas Co.	66,339	$ 17,226.52	64,972	$ 17,139.47	1,367	$ 87.05
	Colorado Interstate Gas Co.						
10	Denver Line	12,816,642	$ 828,660.75	12,740,478	$ 842,576.82	76,164	$ (13,916.07)
11	Chicago Line	13,394,126	862,776.82	13,378,074	885,182.62	16,052	(22,405.80)
12	Gas Revenue Adjustments		(281,373.97)		(389,044.05)		107,670.08
		26,210,768	$1,410,063.60	26,118,552	$1,338,715.39	92,216	$ 71,348.21
13	Gas Used In Gasoline Plant	251,653	$ 12,582.65	231,004	$ 11,550.20	20,649	$ 1,032.45
14	Total Operating Revenues	30,746,195	$1,637,707.62	29,608,849	$1,527,477.43	1,137,344	$110,230.19

Note: Amounts enclosed in parentheses denote red figures.

Exhibit No. 175 12

3559

3561-3563

Exhibit No. 175

Docket G-124

Schedule No. 6
Sheet 1 of 1

CANADIAN RIVER GAS COMPANY
SUMMARY OF OPERATING EXPENSES - AS RECLASSIFIED
FOR THE NINE MONTHS ENDED SEPTEMBER 30, 1940 AND 1939 AND COMPARISON

13

Line No.	Description	Nine Months Ended September 30 1940	1939	Increase or (Decrease)
	(1)	(2)	(3)	(4)
	Summary of Operating Expenses			
1	Gas royalties	$264,740.09	$245,370.22	$19,369.87
2	Rental and operating expenses of leased facilities	158,633.59	155,135.54	3,498.05
3	Profit and loss suspense (Subschedule No. 6-1)	101,190.56	108,332.59	(7,142.03)
	Gas expenses (Subschedule No. 6-1):			
4	Production system	29,848.77	36,437.38	(6,588.61)
5	Gathering system	18,383.71	21,336.17	(2,952.46)
6	Compressing system	41,049.32	33,411.92	7,637.40
7	Transmission system	17,168.48	19,246.41	(2,077.93)
8	General	80,026.58	63,891.24	16,135.34
9	Land department	6,340.50	6,834.56	(494.06)
10	Meter system	18,350.25	19,406.40	(1,056.15)
11	Amarillo office	8,321.65	8,532.84	(211.19)
12	Telephone system	6,387.84	6,428.49	(40.65)
13	Total	$750,191.34	$724,365.76	$26,077.58

Note: The only reclassifications applied to the operating expenses, per books, for the nine months ended September 30, 1940 and 1939 are those shown in footnote to Schedule No. 4.

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Subschedule No. 6-1
Sheet 1 of 7

CANADIAN RIVER GAS COMPANY
STATEMENT OF OPERATING EXPENSES AS RECLASSIFIED
FOR THE NINE MONTHS ENDED SEPTEMBER 30, 1940 AND 1939 AND COMPARISON

14

Description	Nine Months Ended September 30 1940	1939	Increase or (Decrease)
(1)	(2)	(3)	(4)
Detail of Profit and Loss Suspense			
Federal Income Taxes:			
Applicable to year 1934		$ 33,035.40	
do. 1935		22,572.94	
do. 1936		1,398.09	
do. 1937	$ 2,452.62		
do. 1938		51,326.16	
do. 1939	49,802.26		
	$ 52,254.88	$108,332.59	$(56,077.71
Nonproductive well drilling:			
Bivins A-26	$ 189.69		
City of Amarillo No. 1	48,746.08		
	$ 48,935.68		$ 48,935.68
Total	$101,190.56	$108,332.59	$ (7,142.03

56. Operating Costs of Canadian, 1928 to 1939, Inclusive, and as Estimated, 1940 to 1947, Inclusive, for all Gas, Except Colorado Interstate's Direct Sale Gas.

Exhibit 165, Witness Rhodes (Vol. XLVI, p. 6277), shows the cost of operations of Canadian for resale gas alone, 1928 to 1947, inclusive. Rhodes said that without the production of gas delivered to the Denver Line for sale direct to consumers, the resulting annual costs of Canadian's operations are lower than those shown in Exhibit 163, abstracted above, due to the reduction in the required production facilities set forth in Exhibit 121, Witness Watson, and a reduction in transmission facilities set forth in Exhibit 98, Witness Rhodes, as well as from the reduced volume of gas required. Savings in the cost of operations through the elimination of direct sale gas below those actually incurred in 1939 are stated to be as follows:

1.	Reduction in Total Expense, Column (4), due to reduced number of wells and volume of gas (which refers to Statement No. 1 of this exhibit)	$115,629
2.	Offsetting reduction in gasoline revenue due to reduced volume of gas, Column (5)	-85,078
3	Net Reduction in Net Operating Expense, Column (6)	$ 30,551
	(Page 6278)	
4	Reduction in interest, amortization and income taxes, Columns (7), (8) and (9)	$ 21,267
5.	Net reduction in Total Cost of Operations, Column (10)	$ 51,818
	(Page 6279)	

These reductions in cost were determined by the application of the principles used in projecting past operating costs of Colorado Interstate, as shown in Exhibit 76, to future operating costs as shown in Exhibit 136 (abstracted supra in Title 24).

The reduction in costs reflects the full net savings that result from the reduced use of those facilities that are un-

changed, and the reduced extent of the facilities that are curtailed. As to items of equipment, the construction of which is deferred, the corresponding notes issued on account of such equipment have been similarly deferred.

In the case of reduced pipe line diameter, bonds have been eliminated representing the saving in actual construction cost that could have been achieved with a smaller pipe. Different reduction in costs were made for years other than 1939 reflecting the costs normally to be expected in those years with reduced property required to be operated.

Statement 1 is reconciled with Exhibit 163 as follows:

"(a) Cost of operations of Canadian River Gas Company's property owned by it in 1939 per Exhibit No. 163	$2,184,086
"(b) Net deductions from such costs in 1939 made in this exhibit and summarized above	51,818
"(c) Annual cost of operations of Canadian River Gas Company in 1939 without Denver line direct sale gas shown by Column (10) of the attached Statement No. 1	$2,132,268"

The detail of Statement 1 showing the cost of operations for resale gas alone 1928 to 1947, inclusive, is shown below:

Calendar Year (1)	Gas Expenses (B) (2)	Other Expense (C) (3)	Total Expense (4)	Other Revenues (D) (5)	Net Operating Expenses (6)	Interest (7)	Amortization of Debt (8)	Federal Income Taxes (9)	Total Operating Costs (10)
1928(A)	$ 69,337	$111,371	$180,708	$ 16,504	$164,204	148,207	$ 11,105	.....	$ 323,516
1929	194,885	339,818	534,703	115,403	419,300	740,517	79,499	.....	1,239,316
1930	222,619	305,440	528,059	113,446	414,613	732,536	819,096	.....	1,966,245
1931	273,380	375,583	648,963	86,680	562,283	693,127	779,575	$ 53,484	2,088,469
1932	240,848	343,632	584,480	72,327	512,153	731,506	851,210	76,238	2,171,107
1933	209,251	275,463	484,714	70,606	414,108	684,185	865,163	70,556	2,034,012
1934	213,981	330,794	544,775	64,124	480,651	647,171	880,418	75,702	2,083,942
1935	205,335	358,456	563,791	94,664	469,127	579,156	884,181	58,290	1,990,754
1936	233,582	396,403	629,985	98,039	531,946	537,108	911,448	53,385	2,033,887
1937	256,456	437,793	694,249	111,574	582,675	495,807	932,426	74,322	2,085,230
1938	256,460	430,892	687,352	86,475	600,877	459,882	940,987	75,198	2,076,944
1939	327,600	487,781	815,381	99,409	715,972	418,506	919,212	78,578	2,132,268
1940	410,418	529,014	939,432	85,347	854,085	396,012	872,332	71,990	2,194,419
1941	373,458	528,609	902,067	91,456	810,611	359,519	840,860	60,017	2,071,007
1942	332,282	582,798	915,080	94,618	820,462	327,867	872,099	55,439	2,075,867
1943	356,110	616,059	972,169	97,466	874,703	296,775	920,402	59,659	2,151,539
1944	362,452	652,813	1,015,265	100,315	914,950	256,003	966,898	62,423	2,200,274
1945	365,996	650,529	1,016,525	103,135	913,390	205,325	1,007,917	66,108	2,192,740
1946	369,201	596,320	965,521	103,135	862,386	153,986	1,054,520	89,575	2,160,467
1947	372,847	374,143	746,990	103 135	643,855	95,322	1,099,001	150,083	1,988,261

Notes: (A) 7 Months.
(B) Details Attached—Statement No. 2.
(C) Details Attached—Statement No. 3.
(D) Details Attached—Statement No. 4.

On cross-examination Mr. Rhodes testified: (Vol. XLVI, p. 6285.)

Q. Mr. Rhodes, you use the same principle that you used in Exhibit 163?

A. Yes.

Q. And if I should ask you on cross examination regarding this exhibit questions of a similar nature involving the principal nature of the exhibit, your answer would have to be the same.

A. That is true.

* * * * *

Mr. Rhodes further testified: (Vol. XLVI, p. 6286.)

Q. Then if I should ask you similar questions regarding the same principle as to this exhibit as I did to Exhibit 136, your answers would be substantially the same?

A. Yes, they would.

* * * * *

Mr. Rhodes further testified: (Vol. XLVI, pp. 6288-6295.)

The Witness: This exhibit was based on the production of the amount of gas required exclusive of the direct sale gas which we assumed would not be supplied by Canadian River or go up the line.

By Mr. March:

Q. Did you assume, Mr. Rhodes, that there would be no other market for this direct sale gas if it was not used by the direct sale industrial customers on the Denver line?

A. Well, I made no specific assumptions except that I eliminated that volume of gas from the business of the Denver line and from the business of Canadian River Gas Company for the purpose of this study.

Q. Well, in order for you to reach the conclusions there would be a reduction in the volume of gas, therefore, a reduction in the volume of gasoline revenues, you had to assume, did you not, that the gas which was not used by the direct industrial load, the Denver line, would not be sold to anyone else?

A. In effect, yes.

Q. As a matter of fact, from a practical standpoint, in all probability that gas could be disposed of by Canadian

River Gas Company even if the direct industrial sale customers of the Denver line did not take the gas?

A. I don't know to whom.

Q. It would go to help supply the Chicago market, couldn't it?

A. That's already included in full.

Q. Yes, but, of course, if you had these direct sale industrial customers cut off the Denver line, why, you wouldn't have to increase your facilities to take care of the Chicago load, you could just divert that load over to the Chicago load immediately.

A. That's already been taken care of by Mr. Watson's testimony, that so many wells less would be required to produce the gas in the absence of that particular market.

Q. As a matter of fact it could very well be diverted, couldn't it, to the Chicago market?

A. No, the Chicago market is completely satisfied.

Q. What about the Milwaukee market?

A. The Milwaukee market is not attached.

Q. It will be attached shortly, won't it?

A. Well, whatever is going to Milwaukee is already provided for in the amount of gas to be produced in here.

Q. Yes, I know that. However, if you cut off the direct industrial customers off the Denver line then you won't have to increase your facilities to supply the Milwaukee load?

A. That's taken care of by Mr. Watson's testimony as to how much reduction in facilities would be possible. We have eliminated all of the facilities that Mr. Watson states could be eliminated if this business did not exist.

Mr. Spencer: "This business," meaning the direct sale Denver business?

The Witness: Direct sale business.

By Mr. March:

Q. Mr. Rhodes, would you as an engineer state here for the record that in your opinion if this gas was not delivered to direct industrial customers on the Denver line that there would be no market for the gas in the immediate future?

A. I don't know what would happen under such circumstances. I have confined this statement to an estimate of

what the operating cost would be to deliver the amounts of gas that the company is now delivering exclusive of that gas and with the reduced facilities, or the elimination of facilities, rather, that could be made with that reduced volume of gas.

Q. You wouldn't want to express an opinion in regard to that?

A. Well, it has nothing to do with this exhibit at all.

Q. You wouldn't want to express an opinion in regard to that?

A. I don't know what market there would be with regard to that particular gas if the Denver line wasn't taking it. That would be conjecture on my part.

Q. As a matter of fact, you have no intentions, do you, of cutting off the direct industrial load from the Denver line?

A. I haven't given any thought to it.

Q. As a matter of fact, this whole exhibit is purely a hypothetical conjecture as to what would happen if you did certain things?

A. No, that is an incorrect description of it. It is a determination of what the cost to Canadian River Gas Company would be in the absence of that business. The business is there, it is true.

Q. And do you expect the business to remain there?

A. Presumably.

Q. As a matter of fact, under the terms of the agreement under which—the basic agreements under which this project was inaugurated, it would be impossible to cut off that direct industrial sale gas?

A. I don't know.

Q. Under the terms of the contracts?

A. I don't know about that.

Q. You haven't made any study of those contracts?

A. Not from that standpoint.

Q. Then you wouldn't know?

A. I don't recall just what the basic agreement provided in that respect, but the facts are, I already put in an exhibit showing what it would cost with all of the gas, and here is what it would cost with a certain part of it missing.

Q. Although we are interested only in the Denver line here, you have included in this exhibit the production of gas by the Canadian River Gas Company for all purposes?

A. Well, in this exhibit I am interested in all of the gas the Canadian River produces except that which goes to the Denver line for sale direct to consumers.

Q. Now, I note here on Page 2 that you state: "The above reductions in cost were determined by the application of the principles used in projecting past operating costs of Colorado Interstate Gas Company shown by Exhibit No. 76 to future operating costs shown by Exhibit No. 136."

Now what do you mean by the principles?

A. Well, the basic principle is the principle of the added cost of added facilities or the increment cost principle, as it is sometimes referred.

Q. That's what you mean by those principles?

A. That's right. These adjustments here are made on what I call, and is frequently called, the increment cost basis rather than the average unit cost basis.

Q. I note here that you state that for 1939 the net reduction in the total cost of operations, Column 10, is $51,818. Now, would you, Mr. Rhodes, state that it would only cost in operating expenses $51,818 to take care of the direct industrial load on the Denver line?

A. That would be the added operating costs required to take care of the direct sale gas on the Denver line as an added volume of business.

Q. Yes. Of course, that's not the question I asked you—

Mr. Spencer: Read the question to Mr. Rhodes again.

(The question referred to was read by the reporter, as set forth above.)

The Witness: You might change that to read "Added total cost of operations," and you might further add it is the increment cost, as I previously described it, of producing and delivering that gas to Clayton Junction.

By Mr. March:

Q. Of course, I understand that this $51,818 is allegedly

the incremental cost, but my question was this, as to whether or not you would state for the record here that it would cost only $51,818 to take care of your direct industrial load on the Denver line, operating expenses—assuming that you did not have the other load?

A. No, I would not state that at all.

Q. You wouldn't even want to leave that impression in the record, would you?

A. Of course not.

Q. As a matter of fact, it would take almost as much to take care of the industrial load, if you only had that, as it would the resale load?

A. Other *thing* being the same.

Q. Well, why didn't you prepare an exhibit which would show that?

A. Because I hadn't been asked to, and I have given no thought to it as a situation worthy of consideration.

Q. Who asked you to prepare this exhibit?

A. Mr. Spencer.

Q. He outlined what kind of an exhibit he wanted and told you to prepare it?

A. No, he just told me he wanted to know what the cost of operations would be with the volumes of gas required other than direct sale gas and with the property that will be required to handle that curtailed business.

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57. Sales Price of All Gas Sold to Colorado Interstate at Clayton Junction on Cost Basis Computed Under Contract.

The contract of January 3, 1928, between Colorado Interstate and Canadian (Exhibit 16) covering the purchase and sale of gas provides a method of determining the cost of gas in Article Tenth thereof.

In Exhibit 164, Witness Lusk (Vol. XLIII, p. 5998) shows the computed costs under basic contract terms of all gas delivered by Canadian at Clayton Junction, New Mexico, to Colorado Interstate, 1928 to 1947, inclusive. This exhibit shows the cost of operations of Canadian, 1928 to 1939, inclusive, and the estimated cost, 1940 to 1947, inclusive as related to the property owned and as required in the future.

up to the end of 1947, all as shown in Exhibit 163, abstracted supra. Such cost is divided between the well mouth production system, the gathering system and the transmission system, including the Bivins gasoline plant. Those parts of the respective system costs computed under basic contract terms are shown which constitute the cost of all gas delivered at Clayton, New Mexico, to Colorado Interstate. Mr. Lusk stated that these costs comprise (a) costs arising from operating and maintaining the property owned by the company, and (b) payments reimbursing the Colorado Interstate with interest for the funds advanced by it and used in the purchase and development of such properties, all under the basic method provided in the contract for the sale of gas to Colorado Interstate (Exhibit 16) at Clayton Junction. (Vol. XLIII, p. 5999.)

The costs were divided between the well mouth production system, the gathering system and the transmission system in order to compute the cost of all gas delivered at Clayton Junction. Most of the costs are directly charged to some one of the three systems. Those costs which are undistributed on the company's books have been divided as between the three systems pro rata with the directly charged expenses related thereto.

Payments in reimbursement of Colorado Interstate for moneys advanced for the purchase and development of the company's property comprise interest and amortization costs of the company's bonds and notes owned by Colorado Interstate, including interest on current advances. The aggregate total amount of bonds authorized and issued by Canadian was $11,000,000, the entire proceeds of which were used for the initial purchase and construction of Canadian's properties. Under the terms of the contract (Exhibit 16) subsequent purchase and construction of properties are financed through notes issued by Canadian to Colorado Interstate. These notes are designated straight notes, A notes, B notes and C notes, classification representing specific systems of property. (Vol. XLIII, p. 6016.) Maturities extend over a period not exceeding 120 months and for shorter periods subsequent to 1938 so that the last maturity is July 1, 1948. Such costs related to the bonds were divided as between systems pro rata with the book costs of the

property purchased or constructed by the use of the proceeds of the bonds. Such costs related to most of the notes have been charged directly to the systems developed through the use of (Vol. XLIII, p. 6000) the proceeds of such notes.

Interest on and amortization of notes issued to provide for general property have been assigned to the Denver pipe line properties in the proportion that general property was so assigned in Exhibits 67 and 133, relating to original cost of the Denver pipe line properties. The remainder was divided between the well mouth production system and the gathering system pro rata with the physical properties in those systems. Interest on current indebtedness was divided in proportion to the direct cost of operating and maintaining the three systems. The division of costs of operations as between systems is summarized by Statements 2 to 4, inclusive, with supporting Statements 5 to 8, inclusive

The contract of January 3, 1928, between the Canadian and Colorado Interstate makes provision for the division of costs as between separate deliveries of gas which make joint use of certain facilities. These provisions were based solely on the volumes of gas delivered, and ignored the other characteristics of the deliveries which affect their respective costs, and such provisions were used in assigning the cost of operations to the deliveries of all gas at Clayton. (Vol. XLIII. p. 6001.)

By way of example, the transmission costs are assigned to Clayton Junction deliveries in the proportion those deliveries bear to the total amount of gas delivered from Canadian River transmission line. The gathering costs are assigned to Clayton Junction deliveries in the proportion that the gas gathered to make such deliveries (including a pro rata share of gas used at Bivins) bears to the total gas gathered; and the well mouth production costs (including gas purchased) are assigned to Clayton Junction deliveries in the proportion that the gas produced to make such deliveries (including a pro rata share of gas used in gathering) bears to the total well mouth production.

The percentages of production, gathering and transmis-

sion costs chargeable under the contract for deliveries at Clayton are made on Statements 9 and 10.

Statements 1, 2, 3 and 4 show year by year from 1928 to 1947, inclusive, in summary form, the computed cost of gas under the basic contract terms of all gas delivered at Clayton Junction to Colorado Interstate. (Vol. XLIII, p. 6002.)

The quantities of gas are based on Exhibit 78, which shows the quantities up to and including 1939, and on Exhibit 80, which shows the estimate of future deliveries, from 1940 to 1947, inclusive. These exhibits are abstracted supra.

In arriving at total production costs all of the gas produced by Canadian for all of its various deliveries is included. All of this gas is involved in the gathering, except deliveries to the Amarillo Oil at the well mouth for delivery to Amarillo, Texas, free gas to the lessors, and gas used in the production system, and includes all the gas delivered at Fritch and at Bivins. (Vol. XLIII, p. 6004.) With respect to transmission, it includes the output at Bivins station less the gas that goes to Dalhart, Texline and Hartley, under the Amarillo Oil special contracts, and deliveries made to Clayton Gas Company. The difference is what is received at Clayton Junction by Colorado Interstate. The costs assigned to gas delivered at Clayton Junction found in production, are costs that are shared by all of the gas produced. It is only a portion of the total production costs which he took out and allocated to Clayton Junction delivery, contained in Statement 1 under the column "Production" that is divided strictly on an Mef. basis. (Vol. XLIII, p. 6005.)

The gathering costs, in the second column of Statement 1, are related to all of the gas which actually goes through the gathering system to Fritch or Bivins, and the figure in column 2 is the proportionate amount which he allocated to the quantity delivered by Canadian to Colorado Interstate at Clayton Junction.

The transmission operations include the compressor station costs at Bivins, and from Bivins to Clayton Junction.

The total costs of the transmission incurred by Canadian

were divided between the quantities delivered to Amarillo Oil, Clayton Gas Company, north of Bivins station, and deliveries at Clayton Junction to Colorado Interstate. (Vol. XLIII, p. 6006.)

The total output at Bivins in relation to the total Mcf. received at Clayton Junction is the factor used in determining the transmission costs.

In column 4 is shown the computed cost on all of these various factors. It includes all the gas received by the Colorado Interstate which it sells to industrial consumers as well as customers for resale. (Vol. XLIII, p. 6007.)

The percentage figure in column 12, Statement 2 of the exhibit, which a footnote shows is worked out on Statement 9, has been applied against the dollars shown in Column 11.

The figures used from 1940 to 1947 tie into Mr. Rhodes' Exhibit 163. (Vol. XLIII, p. 6008.)

The indirect expense is composed of all of the expenses shown on Statement 6, which is general and administrative expense and the Amarillo office expense.

He spread the indirect expense as between production, gathering, compressing and transmission system on the ratio of the direct gas expense. (Vol. XLIII, p. 6013.)

As shown on Statement 1, the computed cost of all gas under basic contract terms, delivered to the Colorado Interstate at Clayton Junction, 1928 to 1947, inclusive, is as follows:

Year	Production (B) (1)	Gathering (B) (2)	Transmission (B) (3)	Total (4)
1928 (A)	$ 133,948	$ 16,560	$ 50,017	$ 200,525
1929	528,703	99,648	181,232	809,583
1930	916,517	160,621	471,492	1,548,630
1931	1,046,496	131,764	466,992	1,645,252
1932	957,947	120,349	466,901	1,545,197
1933	872,017	117,383	436,962	1,426,362
1934	701,605	93,258	432,420	1,227,283
1935	638,320	79,649	372,108	1,090,077
1936	665,645	95,587	372,600	1,133,832
1937	678,541	101,623	376,483	1,156,647
1938	650,537	105,309	435,038	1,190,884
1939	699,942	112,878	408,188	1,221,008
1940	699,884	113,468	510,142	1,323,494
1941	672,062	121,223	499,803	1,293,088
1942	615,475	114,692	508,103	1,238,270
1943	590,005	112,213	542,541	1,244,759
1944	576,933	109,152	521,686	1,207,771
1945	566,117	108,000	501,758	1,175,875
1946	625,352	120,927	486,372	1,232,651
1947	1,014,218	248,180	471,447	1,733,845

Notes: (A) 7 Months.

(B) Amounts in Columns (1), (2), and (3) from Statements 2, 3, and 4 respectively.

The operations of Canadian and its use of its production, gathering and transmission facilities involve sales to three individual customers, i.e., Colorado Interstate, Amarillo Oil Company and Clayton Gas Company. Deliveries to Colorado Interstate are made at two points: (1) Clayton Junction, New Mexico, for the Denver pipe line market, and (2) Gray, Oklahoma, for the Chicago pipe line market. Deliveries to Amarillo Oil are made at the well for the city of Amarillo and Channing markets, and at different points along Canadian's pipe line system for the Dalhart, Hartley and Texline, Texas, markets. Deliveries to Clayton Gas Company are made at the Clayton, New Mexico, town border. (Vol. I, pp. 65, 66.)

The contract under which deliveries are made to Colo-

rado Interstate at Clayton Junction, and the contract under which deliveries are made to Clayton Gas Company, are fully abstracted under Title 7 supra.

Under Title 8 supra there is abstracted the contract between Colorado Interstate and Natural Gas Pipe Line Company of America, dated October 15, 1931, together with amendments thereto, found in Exhibit 7-G, and as a part of the arrangement for the sale by Colorado Interstate to Natural Gas Pipe Line Company of America at Gray Junction, Oklahoma, a contract was entered into between Canadian and Colorado Interstate, dated June 1, 1938, and which is found in Exhibit 16. Section 6 provides:

> "The natural gas which Buyer requires for delivery to Natural Gas Pipe Line Company of America under the terms and provisions of the agreement between Buyer and said Natural Gas Pipe Line Company of America dated October 15, 1931 (abstracted under Title 8 in Colorado Interstate's brief), as modified from time to time, is a part of the gas sold and delivered under the terms of said 1928 agreement. Such gas shall be delivered by Seller to Buyer into the pipe line of Natural Gas Pipe Line Company of America at the junction between the pipe line owned by Texoma Natural Gas Company and Natural Gas Pipe Line Company of America near Gray, Beaver County, Oklahoma. Seller will continue in full force and effect the lease and operating agreement dated October 15, 1931, between Seller and Texoma Natural Gas Company, and the agreement of the same date between the same parties relating to the operation of the gasoline plant at Fritch, Texas, and will fully perform all the terms and provisions of each thereof in order to enable Seller to make delivery of gas to Buyer at Gray Junction, Oklahoma."

The contract between Canadian and Amarillo Oil providing for the sale of gas by the former to the latter at the well for the Amarillo and Channing markets, dated January 3, 1928, is Exhibit 16-B, which is contained in the contract of January 3, 1928, between Canadian and Colorado Interstate (the gas sales agreement) and which is Exhibit 16. The reason for the designation as Exhibit 16-B is that this contract was designated Exhibit B and made a part of

the gas sales contract just referred to. This contract is for a term of twenty years from the day on which Colorado Interstate begins delivering gas to Public Service Company of Colorado and "so long thereafter as Seller has available for delivery to Buyer hereunder quantities of natural gas which Buyer determines are profitable for it to buy under the terms of this contract." It provides in Article II that the gas to be sold shall be delivered by Seller and received by Buyer at the gate valves on Seller's wells, or the pipe connection points at which Seller receives natural gas bought for delivery hereunder from other producers. The price to be paid by Amarillo Oil is the "Seller's cost" as determined and defined in the contract.

Statement No. 7 and Statement No. 8 of Exhibit 164 are as follows:

Canadian River Gas Company

Distribution of Debt Amortization

1928 to 1947, Inclusive

Year	Production System					Gathering System			
	Bonds	Straight Notes	"A" Notes	"C" Notes	Total	Bonds	B-1 Notes	"C" Notes	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1928 (A)	-	$ 3,626	$2,771	$ 120	$ 6,517	-	$ 1,155	$ 46	$ 1,201
1929	-	33,052	12,190	1,024	46,266	-	8,401	390	8,791
1930	$408,645	116,272	9,704	1,268	535,889	$57,076	10,821	483	68,380
1931	345,776	173,351	7,460	1,878	528,465	48,295	14,490	715	63,500
1932	377,210	183,675	6,945	2,588	570,418	52,686	22,821	985	76,492
1933	373,584	197,557	6,967	2,811	580,919	52,179	25,770	1,070	79,019
1934	373,584	208,770	9,725	2,939	595,018	52,179	23,665	1,118	76,962
1935	373,584	210,074	7,851	3,206	594,715	52,179	26,383	1,220	79,782
1936	373,584	222,775	7,863	3,769	607,991	52,179	40,024	1,434	93,637
1937	373,584	235,540	8,977	4,187	622,288	52,179	48,123	1,593	101,895
1938	369,956	245,788	5,542	5,780	627,066	51,673	52,868	2,200	106,741
1939	369,956	249,165	-4,847	5,564	619,838	51,673	48,743	2,117	102,533
1940	369,956	186,991	-1,274	6,231	561,904	51,673	49,160	2,348	103,181
1941	369,956	140,860	1,692	5,900	518,408	51,673	60,271	2,476	114,420
1942	369,956	147,000	2,098	5,676	524,730	51,673	74,416	2,451	128,540
1943	366,329	159,333	2,670	5,970	534,302	51,166	84,443	2,543	138,152
1944	366,329	179,238	2,954	6,010	554,531	51,166	93,618	2,536	147,320
1945	366,329	212,404	4,209	5,895	588,837	51,166	102,872	2,467	156,505
1946	366,329	255,355	5,580	5,375	632,639	51,166	106,071	2,228	159,465
1947	366,329	290,802	7,044	4,938	669,113	51,166	112,631	2,042	165,839

Note: (A) 7 months

Statement No. 7

Exhibit No. 164

Canadian River Gas Company

Distribution of Debt Amortization

1928 to 1947, Inclusive

	Gathering System				Transmission System and Compressing Stations				Total Debt Amortization
Total	Bonds	B-1 Notes	"C" Notes	Total	Bonds	B 2,3 & 4 Notes	"C" Notes	Total	
(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
$ 6,517	-	$ 1,155	$ 46	$ 1,201	-	$ 3,247	$ 140	$ 3,387	$ 11,105
46,266	-	8,401	390	8,791	-	23,252	1,190	24,442	79,499
535,889	$57,076	10,821	483	68,380	$204,188	27,607	1,473	233,268	837,537
528,465	48,295	14,490	715	63,500	172,775	31,094	2,182	206,051	798,016
570,418	52,686	22,821	985	76,492	188,482	31,252	3,007	222,741	869,651
580,919	52,179	25,770	1,070	79,019	186,669	33,554	3,266	223,489	883,427
595,018	52,179	23,665	1,118	76,962	186,669	36,620	3,414	226,703	898,683
594,715	52,179	26,383	1,220	79,782	186,669	37,554	3,725	227,948	902,445
607,991	52,179	40,024	1,434	93,637	186,669	37,036	4,379	228,084	929,712
622,288	52,179	48,123	1,593	101,895	186,669	37,875	4,865	229,409	953,592
627,066	51,673	52,868	2,200	106,741	184,857	43,921	6,716	235,494	969,301
619,838	51,673	48,743	2,117	102,533	184,857	26,905	6,464	218,226	940,597
561,904	51,673	49,160	2,348	103,181	184,857	40,342	6,560	231,759	896,844
518,408	51,673	60,271	2,476	114,420	184,857	57,816	6,131	248,804	881,632
524,730	51,673	74,416	2,451	128,540	184,857	85,410	6,072	276,339	929,609
534,302	51,166	84,443	2,543	138,152	183,045	107,195	6,120	296,360	968,814
554,531	51,166	93,618	2,536	147,320	183,045	104,121	5,979	293,145	994,996
588,837	51,166	102,872	2,467	156,505	183,045	103,189	5,696	291,930	1,037,272
632,639	51,166	106,071	2,228	159,465	183,045	103,702	5,024	291,771	1,083,875
669,113	51,166	112,631	2,042	165,839	183,045	102,875	4,588	290,508	1,125,460

Note: (A) 7 months

On cross-examination MR. LUSK testified: (Vol. XLV, pp. 6167-6168.)

Q. Mr. Lusk, you testified on direct examination last week with reference to the preparation of your Exhibit No. 164, did you not?

A. That is correct, yes, sir.

Q. And I notice the title of that, the exhibit, appearing on the cover of it was "Canadian River Gas Company Computed Costs under Basic Contract Terms, all gas delivered at Clayton Junction, New Mexico, to Colorado Interstate Gas Company, 1928 to 1947, inclusive."

Of course, the exhibit will speak for itself, but what was your purpose for the preparation of it?

A. To establish the cost of gas at Clayton Junction.

Q. Now, the computation of the figures of the cost set forth is limited, of course, in its scope to the provisions of the contract between the two companies as of January 3, 1928, I take it?

A. That is correct, yes, sir.

* * * * *

MR. LUSK further testified: (Vol. XLV, pp. 6183-6184.)

In Exhibit 164 where do you show the figures as set forth in the amortization cost of Statement 1, Mr. Rhodes' exhibit?

A. You can take any part of Mr. Rhodes' exhibit and add to it. The total debt amortization, Column 14—

Q. That is shown on Statement 7, Exhibit 164?

A. Yes. You take Mr. Rhodes' statement of total debt amortization and it is the same as my Statement 7, Column 14.

Q. Any statement of amortization of debt in Mr. Rhodes' exhibit would have to be made in your Statement 7?

A. That is right. If we were concerned in these exhibits in making small piecemeal changes, we would never finish in order to provide notes and amortization charges.

Q. But to that extent it doesn't include the true cost, even under the contract, does it?

A. I think it does. We reflect a true cost—as a matter of fact, I doubt if there is anything known as a true cost.

Q. What do you determine under true cost?

Canadian River Gas Company

Distribution of Interest Charges

1928 to 1947 Inclusive

Year	Production System						Gathering System				
	Bonds	Straight Notes	"A" Notes	"C" Notes	Current Account	Total	Bonds	"B" Notes	"C" Notes	Current Account	Total
1928 (A)	$ 80,075	$ 1,737	$ 1,636	$ 56	$27,067	$110,571	$11,184	$ 510	$ 21	$ 488	$12,203
1929	397,703	8,295	5,769	317	66,500	478,584	55,548	4,585	121	3,419	63,673
1930	394,932	33,733	5,636	642	34,851	469,794	55,161	5,601	244	2,094	63,100
1931	342,988	84,540	3,856	721	31,217	463,322	47,906	6,878	274	1,516	56,574
1932	353,647	90,441	2,358	1,085	41,827	489,358	49,395	8,146	413	2,392	60,346
1933	331,889	83,922	1,835	1,249	35,393	454,288	46,356	8,715	475	2,553	58,099
1934	310,130	81,889	1,767	1,160	36,441	431,387	43,317	9,536	442	2,370	55,665
1935	268,371	71,929	1,642	1,060	20,097	383,099	40,278	8,930	403	885	50,496
1936	266,613	63,031	676	1,177	20,858	352,355	37,238	11,420	448	1,324	50,430
1937	244,836	55,977	775	1,153	20,574	323,315	34,197	15,512	439	1,219	51,367
1938	223,132	50,607	723	1,510	23,973	299,945	31,165	17,946	575	1,554	51,240
1939	201,428	44,325	-734	2,056	19,795	266,870	28,134	16,881	782	1,327	47,124
1940	179,651	48,401	124	741	25,769	254,686	25,092	14,744	279	1,539	41,654
1941	157,911	43,405	491	763	25,585	228,155	22,056	17,825	321	1,595	41,797
1942	136,134	41,070	570	830	25,799	204,403	19,014	22,272	358	1,519	43,163
1943	114,430	40,316	620	813	25,499	181,678	15,983	21,762	346	1,485	39,516
1944	92,726	38,427	645	661	25,687	158,146	12,951	18,913	279	1,462	33,605
1945	70,949	33,681	624	500	25,601	131,355	9,910	15,130	209	1,495	26,744
1946	49,190	27,540	528	321	25,092	102,671	6,871	11,241	133	1,617	19,862
1947	27,432	15,576	357	146	22,378	65,889	3,831	6,016	60	2,205	12,112

Note (A): 7 Months

Statement No. 8

Exhibit No. 164

Canadian River Gas Company

Distribution of Interest Charges

1928 to 1947 Inclusive

	Gathering System					Transmission System and Compressing Stations					
Total	Bonds	"B" Notes	"C" Notes	Current Account	Total	Bonds	"B" Notes	"C" Notes	Current Account	Total	Total Interest
$110,571	$11,184	$ 510	$ 21	$ 488	$12,203	$40,012	$ 1,613	$ 66	$ 3,336	$ 45,027	$167,801
478,584	55,548	4,585	121	3,419	63,673	198,721	6,290	369	12,474	217,854	760,111
469,794	55,161	5,601	244	2,094	63,100	197,337	12,710	747	8,176	218,970	751,864
463,322	47,906	6,878	274	1,516	56,574	171,382	13,545	837	5,731	191,495	711,391
489,358	49,395	8,146	413	2,392	60,346	176,708	15,524	1,260	5,510	199,002	748,706
454,288	46,356	8,715	475	2,553	58,099	165,835	14,660	1,451	5,988	187,934	700,321
431,387	43,317	9,536	442	2,370	55,665	154,963	13,477	1,348	5,403	175,191	662,243
383,099	40,278	8,930	403	885	50,496	144,091	11,883	1,232	2,363	159,569	593,164
352,355	37,238	11,420	448	1,324	50,430	133,219	8,950	1,367	3,732	147,268	550,053
323,315	34,197	15,512	439	1,219	51,367	122,337	6,925	1,340	3,976	134,578	509,260
299,945	31,165	17,946	575	1,554	51,240	111,493	6,464	1,754	4,950	124,661	475,846
266,870	28,134	16,881	782	1,327	47,124	100,648	9,617	2,388	3,916	116,569	430,563
254,686	25,092	14,744	279	1,539	41,654	89,767	15,441	780	5,577	111,565	407,905
228,155	22,056	17,825	321	1,595	41,797	78,903	21,994	793	5,705	107,395	377,347
204,403	19,014	22,272	358	1,519	43,163	68,022	28,130	888	5,568	102,608	350,174
181,678	15,983	21,762	346	1,485	39,516	57,177	30,477	833	5,871	94,358	315,612
158,146	12,951	18,913	279	1,462	33,605	46,333	24,137	657	5,707	76,834	268,585
131,355	9,910	15,130	209	1,495	26,744	35,451	17,918	483	5,760	59,612	217,711
102,671	6,871	11,241	133	1,617	19,862	24,579	11,712	300	6,147	42,738	165,271
65,889	3,831	6,016	60	2,205	12,112	13,707	5,514	135	8,273	27,629	105,630

Note (A): 7 Months

A. I determine that this is not a true cost but a cost under contract.

Q. And the contract by its terms definitely puts that limitation as to what is to be included? That is what you stated?

A. That is right.

Q. Of course, the very theory of accounting is to record the correct cost?

A. The correct cost is recorded, not the true cost.

Q. What distinction do you want between true cost and correct cost?

A. I don't think any accountant, engineer or lawyer knows exactly what true cost is.

Q. A lawyer has to take that information from the accountant. What is the difference between your true and correct cost?

A. I don't know because I don't know what a true cost is.

Q. Then you don't know the difference between the two?

A. Well, I don't know the meaning of one, so I can't give you the difference between one and the other.

* * * * *

MR. LUSK further testified: (Vol. XLV, pp. 6190-6192.)

Q. Now let's go to Statement 2, Exhibit 164.

A. Yes.

Q. As I take it the items of rentals on operated leases—

A. Unoperated leases.

Q. Yes, unoperated leases. Column 3 is the same as that concerning which Mr. Rhodes testified, and he stated that he based his information there on that received from Mr. Watson as to what the rentals on unoperated leases would be projected into the future?

A. Yes.

Q. The other is as per book?

A. That is correct.

Q. Unadjusted?

A. Unadjusted.

Q. And I take it the same applies to Column 5, "Drilling Dry Holes." I notice in your exhibit the three items at the top of Column 5 that have the capital C affixed to them refer to what you call loss on sale of Cliffside property.

A. That is correct. In Exhibit 91 those three items for each of the years 1929, 1930 and 1931 are set out separately and I only put them in here to save a column.

Q. Why is this under "Drilling Dry Holes"?

A. Just as I explained, I put them in the classification with capital C for the purpose of saving an extra column.

Q. That is the only purpose?

A. Yes.

Q. Because otherwise they really wouldn't have a relation to it?

A. No, they would have no place in that column if it were related to strictly dry holes.

Q. You, of course, made no investigation of your own as to either the 1939 or subsequent figures, particularly as to the projections other than what Mr. Watson stated would be required?

A. With this exception: The amount shown in 1940, $49,100 is an actual expenditure for drilling the Amarillo No. 1.

Q. That is in 1940?

A. That is right.

Q. But the others are based on Mr. Watson's estimate alone?

A. They are Mr. Watson's estimates.

* * * * *

MR. LUSK further testified: (Vol. XLV, pp. 6206-6213.)

Q. Now, then, your "C" notes, in Column 4. In what way would any change in the drilling program affect them?

A. It wouldn't affect the "C" notes at all. The "C" notes are issued for general property like drilling and cleaning equipment—not drilling and cleaning equipment, general property in connection with Bivins camp, any general property in connection with the Masterson camp.

Q. Now, what are the mechanics? How does the company go about negotiating loans or borrowing of money under those two methods?

A. Which two methods?

Q. The "A" and "C" notes.

A. Oh, the "A" and "C" notes. Well, whenever the Canadian River Gas Company contemplates any building or the addition of any property, why, they just receive the money from the Colorado Interstate Gas Company.

Q. And issues what kind of a note?

A. Well, they issue a promissory note.

Q. Payable over what period of time?

A. Well, from 1928 up to 1938 it was 120 months. The

notes matured in 120 months. Now, subsequent to 1938, up until the time the contract expires between the Canadian River Gas Company and the Colorado Interstate Gas Company, those notes are issued with a flat maturity date of June 1, 1948 and if the note is issued in January of 1948, that note must be retired in six months.

Q. Well, they all have flat maturity dates of June 1, 1948?

A. From now on, yes, sir—from 1938 on.

Q. Well, are the notes payable on or before or are they absolute as to interest?

A. They are absolute.

Q. So if they don't—if the company doesn't continue to need that particular amount of money before the expiration of the maturity date of the note, they would still have to pay the note interest?

A. That is right.

Q. At the rate of six per cent per annum?

A. Yes.

Q. What is the necessary purpose of making the maturity date absolute?

A. The expiration date of the contract.

Q. If they wanted to make the maturity dates absolute, why didn't they make the interest portion of them on or before so that if they wanted to retire them before that time they wouldn't be obligated to continue the interest?

A. Well, the Canadian River itself, as the Canadian River, does not have any funds with which to retire any of the debt.

Q. Well, now, that's coming back to that assumption that you made a while ago that it is a non-profit company. Are you just applying that term to these operations as disclosed in your exhibit?

A. That's what this contract anticipates.

Q. Well, you broaden that, though, when you stated that it was a non-profit company—Canadian River.

A. No, I didn't.

Q. Didn't you make that statement?

A. I made that statement, yes, but I didn't broaden it or amplify it or expand it.

Q. Then I was correct in assuming that you stated it was a non-profit company?

A. I did.

Q. And you weren't limiting that statement just to this contract?

A. That's what the contract anticipates.

Q. Are these the only operations that are carried on under this contract—strike that.

The operations that are carried on under this contract by Canadian River Gas Company are the only operations of Canadian River Gas Company?

A. I think so.

Q. Well, then, if it is a non-profit company, how does it happen to have a surplus?

A. That is easily explainable.

Q. All right.

A. That surplus is due to the difference between the internal revenue bureau and the company in the methods of computing the depletion and depreciation.

Q. Is that the only reason that it does have a surplus?

A. The origin of that surplus, and that is the nature of that surplus.

Q. And has that been the history of it?

A. That is the history of that surplus.

Q. Then prior to that time it had no surplus?

A. In 1928 the Canadian River Gas Company and in 1929 the Canadian River Gas Company had a deficit.

Q. And subsequently, the only reason attributable to that surplus is this new method of calculation?

A. That's right. The Canadian River Gas Company I think I stated could have eliminated that surplus very readily and handily by staying away from the internal revenue bureau's dictates of how depletion and depreciation should be calculated. They didn't have to follow that, but for some unknown reason they elected to follow it.

Q. They had the option to do one or the other?

A. That's right, and at the present time the Canadian River Gas Company can reverse that surplus.

Q. They haven't in fact reversed it?

A. No, but they can.

Q. Are you certain that they can, Mr. Lusk?

A. Well, if Mr. Hendee or Mr. Shields or Mr. Dougherty told me to reverse that surplus I would reverse it in one fell swoop.

Mr. Dougherty: You are talking about reversing it on the corporate books; that would have no change on the income tax books, however?

The Witness: No.

Mr. Dougherty: You wouldn't make a reversal so far as the internal revenue is concerned?

The Witness: They don't care about it. They have collected their pound of flesh under their interpretation and they are out.

By Mr. Lange:

Q. Now, going back to those A and C notes, as I understand it, then both series of notes under the present plan, their maturities are fixed at June 1948?

A. That's correct.

Q. And they all bear a fixed rate of interest which would be applicable during the entire life of the note until their maturity date?

A. Oh, no.

Q. All right, in what way is that modified?

A. That's interest on a reducing balance all the time.

Q. Well, on the reducing balance?

A. Yes.

Q. If, however—wait a minute—what do you mean by "reducing balance"?

A. Well, if you gave me a series of notes for ten months—

Q. All right.

A. —and each bore and each note matured at the rate of $10 for each month, you wouldn't want to pay me interest on $100 when you paid off six notes.

Q. As I understand the way those notes are issued, the company has a certain drilling program at a certain particular time they determine that they may need $30,000 or $6,000 or whatever it would take to drill a certain number of wells and equip them, and once they determine that or whenever they determine that they issue a certain series of notes, don't they?

A. No, sir. I explained before that when the company launches on a well drilling program or a gathering line program or any other program for expansion, it all goes through an open account first. Then when that particular expansion is complete, the notes are issued.

Q. Well, during the time, though, they are carrying on those drilling operations and the funds are necessary to be

extended, until their program is completed they have that money on open account?

A. That's correct.

Q. And they are paying the same rate of interest on that money as they do on the notes, at six per cent per annum?

A. That's right.

Q. When they complete the certain drilling program, then as I understand it, at that time they execute this series of notes?

A. That is correct.

Q. And how are those notes payable, serially? In what manner?

A. Well, after 1938, as I explained before, there is a definite maturity date—June 1, 1948—and if a note is issued in 1943, for instance, for $100,000 for drilling, that note will mature in 1948.

Mr. Dougherty: Payable in instalments in the meantime?

The Witness: That's right.

Mr. Dougherty: You didn't make that clear, Mr. Lusk. What you do is take the remaining number of months from the date that the note is issued until June 1, 1948?

The Witness: I think I have explained that.

Mr. Dougherty: You haven't explained it to him in your oral testimony.

* * * * *

MR. LUSK further testified: (Vol. XLV, pp. 6222-6229.)

Q. Oh, I see. Going back on this same exhibit, Statement 7, to the notes, the straight notes under Column 2 applicable to new wells, we find the same situation obtaining there even in more pronounced fashion than that obtaining under Column 11 with reference to the amortization of the debt for compressor station units; isn't that true?

A. That would be true, but the mere fact that in 1947 the straight note amortization amounts to $290,802 doesn't mean that there are $290,802 amortized in an extremely short period. They are falling in those periods and as the time grows shorter and the program for expansion is being continued, then the latter years the rates will be that much higher as far as the amortization is concerned.

Q. All right, let's see what Mr. Watson has to say with reference to his drilling program in Exhibit 94. He proposes to drill a well in 1947. That's approximately $30,000. You, of course, have just one year to amortize that?

A. That's right.

Q. Suppose that there were a drilling of six wells in 1946 at his proposed or estimated figure of around $30,000. That would be $360,000.

A. $180,000.

Q. I beg your pardon, $180,000, and that would have to be amortized over a period of less than two years. Of course, I suppose it would be during that year?

A. That's right.

Q. And in 1945 he estimates the drilling of five wells. That would be $150,000?

A. Correct.

Q. And you would have about an average of two and a half or between two and a half and three years to amortize that.

A. That's correct.

Q. And in 1944 he has six wells. That would be $180,000?

A. Yes.

Q. And you have then three and a half to four years to amortize that?

A. That's correct.

Q. Isn't each of those, particularly as you get closer, an unusually short period to amortize investments of that character?

A. There is no question about it.

Q. And that is done in this instance solely and entirely because of the contract requirements?

A. That's correct.

Q. Then, of course, that drilling program, as I inquired of you before, is based on Mr. Watson's estimate, and any change in that would, of course, accordingly change this estimate as to amortization requirements?

A. That's right.

Q. Now, going back to the basic Statement 2 in the exhibit, the item of interest, that again refers and its basis is in Statement 8?

A. Statement 8, yes, sir.

Q. Now, then, just as an accounting matter, Mr. Lusk, ordinarily you wouldn't include interest as an operating cost or expense, would you?

A. No, not in regular accounting, we don't call interest charges part of an operating expense.

Q. So it is put in this exhibit or computed here purely because of the contract requirements?

A. That's correct.

Q. Now, what interest items are included in that column that are found *basicly* in Statement 8?

A. On the production system we have interest on the bonds, straight notes, A notes and C notes, and the current account.

Q. Now, as I take it, the interest items that appear there—well, first of all your production, under your production system is applicable to bonds through 1939, those are as per books, have been computed out?

A. No, the interest on the bonds can be taken right from the statement.

Q. What is the statement you mean?

A. The company's financial statement.

Q. Well, I mean, how do they get to this Statement No 8? Where is it taken from?

A. Well, I took the entire amount of bond interest paid in each year from 1928 to 1939 and separated between the three systems on the same basis that I separated the amortization of the bonds on Statement 7.

Q. And the interest, then, follows each accordingly?

A. Everything—7 and 8 then follow each other,

Q. And that portion of the projected interest from bonds, 1939, those are computed on the same basis following each projection as to the principal retirement?

A. Not on the bonds.

Q. Not on the bonds?

A. Not on the bonds. There is no change made in the bonds for any future program. It is all taken up through the notes.

Q. Well, now, let's see. I don't quite get this interest projection under bonds. For 1944 to 1947 the bonds remain statie during that time. Can you enlighten me on that?

A. Well, the bonds don't remain static. There is a portion of them retired every year.

Q. In what proportion are they retired during those last four years?

A. I am quite sure the indenture takes care of approximately $595,000 a year. Of course, that would reduce the interest during the last few years of 1944, 1945, 1946 and 1947.

Q. Now, do I understand this item of interest is entirely applicable to the bonds and several series of notes?

A. That is correct, yes sir.

Q. Now, how is that interest ordinarily paid; that is, in practice? In what interest do you make payment of the interest?

A. So far as the cash is concerned, there is no cash transaction between the Canadian River Gas Company and the Colorado Interstate Gas Company, as it is just a book entry.

Q. It is just a book entry?

A. Yes.

Q. When are those book entries made?

A. The interest is computed on the straight notes and all of the A notes and as the instalments fall due are on the instalment due, each month the interest is transferred from one company to another by means of a single book entry.

Q. Now, then, whenever the company determines to enter upon a construction program with reference, for instance, to the drilling of wells, and equipping them, say, having direct reference to Mr. Watson's program, for instance, how do they go about determining at what particular period of time or what part of the operation they want to issue a series of notes? He has a program projected over a period of some seven years which I suppose he would contemplate carrying out. At what stage of that program would you determine to issue a certain series of notes?

A. We wouldn't determine anything until the wells were finished.

Q. Under that there wouldn't be any notes issued until 1947?

A. If there wasn't any well-drilling program until 1947—

Q. But the program is beginning in 1941. They are going to drill a series—according to his projection—of wells every year.

A. That is right. Those five wells will be completed within that year.

Q. That is what I am getting at. When would they issue their first series of notes to take care of the drilling operation? Wouldn't it be limited to that year?

A. If there were five wells completed under Mr. Watson's program, there would be notes issued for the cost of those five wells.

Q. They would wait until the end of the calendar year 1941, for instance, and the money for the drilling operations would be on an open account basis?

A. No. For the five wells to be drilled in 1942 or 1941—

Q. Let's take 1941.

A. As soon as the well is completed there is a note issued for it.

The Trial Examiner: For the one well?

The Witness: For the one well.

While they are drilling the first well they are drilling the second well, the third well, the fourth well, and the fifth well, but those wells are not completed on the same day or same time. One might be completed in February, another in March, another in April and another in May. As soon as those wells are completed the amount expended for those wells which appears in open account is then closed out of open account and thrown into notes.

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58. Sales Price of All Gas Sold to Colorado Interstate at Clayton Junction, Except Its Direct Sale Gas, on Cost Basis Computed Under Contract.

In Exhibit 167, Witness Lusk shows computed costs of Canadian under basic contract terms of resale gas delivered at Clayton Junction to Colorado Interstate, 1928 to 1947, inclusive.

He explained (Vol. XLVI, pp. 6345, et seq.) that in Exhibit 164 the computed cost under basic contract terms of all gas delivered at Clayton Junction to Colorado Interstate was shown, and that this exhibit shows the annual cost of resale gas only; otherwise, it is identical with Exhibit 164.

He took Exhibit 165, Witness Rhodes, and separated that exhibit between production, gathering, transmission and compressing systems. His figures represent the cost of reduced operations, and include change in the size of the pipe line from Bivins Station to Clayton Junction, from the 22" pipe line to a 20" line, and the reduced facilities in the field and in the gathering system due to the reduced quantities of gas (p. 6346).

The computed cost under basic contract terms, of resale gas delivered at Clayton Junction to Colorado Interstate, 1928 to 1947, inclusive, shown in Statement 1 of Exhibit 167, is as follows:

Year	Production (B) (1)	Gathering (B) (2)	Transmission (B) (3)	Total (4)
1928(A)	$ 58,443	$ 14,425	$ 62,224	$ 135,092
1929	289,616	95,091	259,202	643,909
1930	646,133	156,831	464,746	1,267,710
1931	805,787	116,457	446,370	1,368,614
1932	738,179	97,793	447,600	1,283,572
1933	618,066	88,856	424,984	1,131,906
1934	452,911	64,254	421,666	938,831
1935	419,484	56,160	373,431	849,075
1936	401,147	62,574	402,180	865,901
1937	430,365	70,080	406,003	906,448
1938	431,795	74,469	424,728	930,992
1939	435,047	74,732	445,095	954,874
1940	448,837	79,683	524,606	1,053,126
1941	431,753	86,236	498,882	1,016,871
1942	389,910	79,645	490,305	959,860
1943	377,127	77,883	545,324	1,000,334
1944	369,123	75,356	557,147	1,001,626
1945	363,761	74,608	538,442	976,811
1946	411,150	86,344	523,319	1,020,813
1947	806,314	241,083	508,518	1,555,915

Notes: (A) 7 Months.

(B) Amounts in Columns (1), (2), and (3) from Statements Nos. 2, 3, and 4, respectively.

On cross-examination Mr. Lusk testified: (Vol. XLVI, pp. 6344-6351.)

Q. Mr. Lusk, the use of the phraseology "resale gas delivered at Clayton Junction," I assume refers to the gas or that part of the gas actually delivered at Clayton Junction which is taken by Colorado Interstate Gas Company and then resold to public utility customers in the State of Colorado?

A. For resale, that's correct.

Q. And also the Colorado-Wyoming Gas Company?

A. That's right.

Q. In other words, there has been taken out the quantities which Colorado Interstate Gas Company sells directly to industrial consumers which consumed that gas?

A. That's correct.

Q. I think you might read into the record this one-page preliminary statement first.

A. "Exhibit No. 164 in this proceeding shows year by year Canadian River Gas Company's computed cost under basic contract terms of all gas delivered at Clayton Junction, New Mexico to Colorado Interstate Gas Company under the contract between Canadian River and Colorado Interstate of January 3, 1928 which is Exhibit No. 16 in this case. Had the gas delivered to Colorado Interstate Gas Company at Clayton been limited to its requirements of resale gas, then lower total annual costs of the gas would have resulted. This exhibit with its attached statements shows such annual costs of resale gas otherwise identical with Exhibit No. 164 in this proceeding dealing with all gas.

"It is shown by Column (4) of Statement No. 1 that in 1939 the contract cost of resale gas delivered at Clayton Junction, New Mexico to Colorado Interstate Gas Company amounted to $954,874 and that it had fallen from a maximum of $1,368,614 in 1931. These figures show a saving in 1939 of $266,134 below the corresponding cost of all gas referred to above."

Q. In what way is this Exhibit 167 related to Mr. Rhodes' recent exhibit 165 which is entitled "Cost of Operation of Canadian River Gas Company for Resale Gas"?

A. Well, I have taken in this exhibit Mr. Rhodes' Exhibit 165 and using all of the data contained in this exhibit

and all of his computations and separated Mr. Rhodes' exhibit between the production, gathering and the transmission and compressing system.

Q. Do your figures, therefore, represent the cost on reduced operations and does that include such change in the size of the pipe line from the Bivins station to Clayton as computed by Mr. Rhodes previously?

A. That is correct.

Q. That is on the basis, I think, of what he termed the 20-inch line?

A. That is correct.

Q. It involves that change in the physical facilities of transmission?

A. It involves the changes of reducing the size of the 22-inch to 20-inch from Bivins to Clayton and involves the reduced facilities in the field and in the gathering system and whatever changes are made due to the reduced size of the line and the reduced quantities of gas in the compressing stations.

Q. I note in your Exhibit 167, Mr. Lusk, Statement 2, under Column 5, that there is apparently that same typographical error with a capital C after the figure $61,095 which we found in Exhibit 164?

A. That's correct. In my copy I have eliminated that and made a note when I came to the exhibit, or came to this statement, I was going to make that same reference that you are making now.

Mr. Dougherty: If the Examiner please, may the reporter be directed to eliminate that capital C where indicated?

The Trial Examiner: Yes, we'll have the reporter do that.

By Mr. Dougherty:

Q. Are there any other typographical errors in this exhibit?

A. I don't know of any at the present time.

Q. Is the general form of Exhibit 167—by that I mean the form of the statements and the subject matter, similar to 164?

A. Yes, sir.

Q. So that if you took Exhibit 164, Statement 1, that it is similar to Statement 1 in Exhibit 167?

A. That's correct.

Q. And the difference between the totals on Statemen No. 1 in Exhibit 164 and those on Statement No. 1 in Exhibit 167 would represent the amounts that have been estimated as being savings or amount that would not have to have been expended if the lesser quantity of gas had been sold at Clayton?

A. In Statement 1 of Exhibit 167 is purely resale gas, and Statement 1 of Exhibit 164 is all gas, and the difference between the two represents the difference of direct sale gas.

Q. Now, are these subsequent statements in Exhibit 167—or do the subsequent statements in Exhibit 167 deal with the same character of costs as the statements in Exhibit 164 which bear the same numbers?

A. Yes, sir.

Q. So that by taking Statement No. 2 or any other number in the two exhibits the comparison can be made of the different amounts which have been estimated in both exhibits?

A. The statements in Exhibit 167 and the statements in 164, ten in number in each case, correspond with each other. One is resale gas and the other is all gas.

Q. In general, then, that is the difference in dollars that are shown, and I take it that the total dollars in Exhibit 164 are greater in most, if not all, instances than in 167—

A. That's right.

Q. And that represents what might be called the incremental cost as computed which the company incurred—the Canadian River Gas Company incurs in providing this additional quantity of gas which it actually does sell to Colorado Interstate at Clayton; that is, the quantity which is then resold by Colorado Interstate to direct industrial customers?

A. They are both taken from Mr. Rhodes' Exhibit 163 and 165, and as Mr. Rhodes terms it, it is the incremental cost of the gas delivered at Clayton for direct sale purposes, the difference between the two statements.

Q. The basis of the statements is incremental cost rather than some allocation on a volume basis?

A. That's correct.

Mr. Dougherty: I think that is all the direct I have, if the Examiner please, because it is substantially the same as Exhibit 164, and I think that brings that out.

The Trial Examiner: Very well, Mr. Dougherty.

Cross Examination.

By Mr. Lange:

Q. Mr. Lusk, in connection with your cross examination on Exhibit 164, I think it was very definitely fixed—or the facts were very definitely fixed, that this study in 164 as a cost was definitely limited as per contract of January 3rd, 1928.

A. That's right. It is based on the contract, that's right.

Q. And reflects your study of costs of gas within the limitations of that contract?

A. That is correct.

Q. Now, then, I take it in this Exhibit 167 wherever you speak of costs or wherever you make a comparison with a reduction as you set forth in the written statement accompanying this Exhibit 167, particularly the last sentence, that that means a reduction also within the limitations of the contract, to start off with?

A. I thing that's right, yes.

Q. And then applied to resale gas alone?

A. That's correct.

Q. So this study in 167, first of all, is confined to the limitations of the provisions of the contract of January 3rd, 1928, as to all of which applies to all gas, and then on the additional assumption that only resale gas is involved?

A. I think you mentioned the wrong exhibit. Did you say 167? Did you say 167 was resale gas? That's 164.

Q. 167 applies to resale gas and 164 to all gas.

A. That is correct.

Q. Otherwise, those assumptions are correct as stated?

A. That's right.

* * * * *

Mr. Lusk further testified on cross-examination: (Vol. XLVI, p. 6358.)

Q. Now, then, throughout this whole exhibit, of course, you have necessarily the additional assumption that you

did not have in your Exhibit 164 with respect to estimating costs, because in Exhibit 164 you took account of all of the gas under the contract and in Exhibit 167 you are confining it to the contract on the additional assumption that it is just resale gas?

A. That is correct.

Q. So I will ask you whether all of the principles that you discussed in 164 as applicable there, you also adopt as applicable to the computations in Exhibit 167?

A. Yes, sir.

* * * * *

MR. LUSK further testified on cross-examination: (Vol. XLVI, pp. 6362-6365.)

Q. Now, then, with reference to Column 8, Amortization of Debt, according to your Exhibit 164, Statement 2, in what respect do the figures in Column 8 of Exhibit 167 differ from the figures of Column 8, Exhibit 164?

A. There are slight differences that crept in on these exhibits. One is in the calculation of the amortization of debt in the production system with the resale gas—with the direct sale gas eliminated and with certain of the properties eliminated due to the resale gas program. The proportion of the bond applicable to the production system was raised slightly because the overall property base was reduced and the production system percentage of the property was not reduced in proportion. It was a change in the overall base. That made these calculations for resale gas slightly higher in some years.

Q. In arriving at the figure in Column 8, Exhibit 167, you necessarily had to depart from the method of calculations as set forth in the contract in determining amortization, didn't you?

A. No, sir.

Q. You don't?

A. No. We take the amount of amortization as set forth in the contract and apply the difference due to the reduction in property. The principle followed is the same.

Q. And in determining the amounts to be set forth for amortization of debt under this column, under this proposed estimate, or, rather, under this estimate limiting itself to resale gas only, you of course do not take into consideration and do not in any manner predicate these figures on

what the actual reserves of gas are for the Canadian River Gas Company?

A. None whatever. The application of any reserves for Canadian River Gas Company does not enter into this statement at all.

Q. In other words, in that calculation the same method applies as applied to the calculations on debt amortization in Column 8, Statement 2, Exhibit 164?

A. Yes, sir.

Q. Now, then, under Column 10, Federal Income Taxes, I notice that the year 1947, in it you have a sizable increase in the tax. How did you get that? How do you account for that?

A. That is the same as the increase in Statement 2 of Exhibit 164. It is due to the elmination of the Chicago load and the consequent reduction in depletion—not depletion, but the constant reduction in the severence taxes and all other forms of taxes incident to the Chicago gas line.

Q. Now going back from 1947 to 1944, in 1944, Exhibit 164, Statement 2, Column 8, you have a minus under your income tax figures showing a loss. You have considerable profit in this statement in Exhibit 167, haven't you?

A. Why, in Exhibit 167 the income tax for 1944 has been computed at $18,460. That is due to the amortization of debt in relation to the depletion and depreciation as taken.

Q. What I am trying to reconcile is that the lowest figure on the total and the profit figure indicated this $18,460.

A. That is different. Under the resale program the difference between the amortization of debt and allowance for depreciation and depletion as allowed by the Bureau of Internal Revenue would be much different than under the all gas program.

Q. That accounts for the difference?

A. Yes, sir.

Q. And under this resale plan you would have a profit indicated by the income tax payments, whereas the loss is indicated under the total statement?

A. That is really not a loss. That is a minus shown to tie you in—the Federal income tax ties into the three systems. It is shown as a minus to the production system in order to tie it all in.

Q. I take it that the calculations that you have made and

resulting in the future set forth in this exhibit in the several statements were made in a similar fashion as those were made in Exhibit No. 164 and as to each statement?

A. Yes, sir.

* * * * * *

MR. LUSK further testified on cross-examination: (Vol. XLVI, pp. 6369-6371.)

Q. I take it that these calculations that appear in Statement 9 of Exhibit 167 were reached on the same basis of the calculations on Statement 9, Exhibit 164?

A. Yes, sir, the same principle was followed throughout both exhibits.

Q. Of course, Mr. Lusk, the company is not in fact operating on the basis as indicated in this cost exhibit. They are not so segregating the items on their books are they?

A. They are segregated into certain proportions of the operating expenses divided between the systems; they segregate taxes by systems; they segregate bonds between two systems; they segregate notes and other evidences of debt between the two systems.

Q. The company is not in fact presently limiting its sale to resale customers?

A. The Canadian River Gas Company?

Q. Yes.

A. The Canadian River Gas Company doesn't make any distinction between resale customers and direct sale customers.

Q. And it doesn't make any sales at all to direct industrials?

A. Not Canadian River Gas Company, no.

Q. It makes all of its sales to—let's see. It is the Colorado Interstate Gas Company; the Amarillo Oil Company—

A. Yes.

Q. And who are the others?

A. Well, the Amarillo Oil Company is divided into several contracts and the Colorado Interstate, and the Clayton Gas Company.

Q. That is right.

A. The Canadian River Gas Company wholesales gas.

Q. Their contracts are in evidence in this proceeding. The main one, of course, we are concerned with is the contract in Exhibit 16.

A. Yes, sir.

Q. Under the terms of which, particularly Paragraph or Section 10, you have arrived at these cost figures that appear in Exhibit 164 and you have related them to resale only in Exhibit 167?

A. That is correct.

Q. But in so far as the Canadian River Gas Company is concerned, it doesn't now nor has it in the past endeavored to limit its sales to resale gas only, has it?

A. No, sir, there is no distinction of gas sales in the Canadian River Gas Company and has not been any since the company commenced operation.

Q. Nor is there any contemplated as far as you know?

A. As far as I know, no.

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59. Estimates of Natural Gas Reserves.

Testimony of A. A. HAMMER, Federal Power Commission Engineer, who testified for and on behalf of the Commission.

Mr. Hammer submitted exhibits and other testimony with respect to the original and remaining reserves of natural gas in the Texas Panhandle Field and the reserves pertaining to the acreage owned by Canadian River Gas Company. Mr. Hammer utilized the pressure decline method in computing such reserves. His testimony, Vol. 51, pp. 7049-7123, is as follows:

My name is A. A. Hammer, residence, Washington, D. C., and I am presently employed by The Federal Power Commission as Engineer, and have been so employed since January 3, 1939. I have spent approximately one and one-half years in connection with the present proceedings, which time was consumed primarily with an examination of all the records and the files of the oil and gas division of the Texas Railway Commission at Pampa, Texas, and at Austin, Texas, together with an accumulation of a large volume of sheets and records totaling more than 30,000 photostatic records pertaining to the Texas Panhandle gas field, and in addition, an estimated 10,000 additional sheets that were taken off manually pertaining to the same field. My experience as an Engineer is as follows (Vol. 51, pp. 7049-7053):

A. I am a graduate of Washington State College, the class of 1907. I majored in geology and mining. I took minor work in chemistry and general engineering and from 1907

to 1912 I was employed as a chemist for the Washington Portland Cement Company in the western part of the state of Washington and also a geologist for the State of Washington, working on a survey of cement materials in the state.

In 1912 I went into South America for the Barber Petroleum Company—that is a subsidiary of the Caribbean Asphalt Company—as geologist and engineer doing work in Venezuela and Colombia. I returned to the United States in the fall of 1914. During the latter part of 1915 and the early part of 1916 I did work in the Province of Alberta, Canada, investigating oil and gas problems.

In August 1916 I was appointed to the petroleum division of the United States Bureau of Mines in connection with the development of oil and gas on Indian lands in the state of Oklahoma. This work included the actual supervision of the drilling and completion of oil and gas wells, the conservation of oil and gas, the handling and control of high pressure gas wells, and all allied subjects.

The work in Oklahoma continued until 1919 during which time I did special work for the War Trade Board on oil and gas well equipment in use or in warehouses in Oklahoma and Kansas. I also did special work in connection with the Council of National Defense on surveys of refineries as to production available for the prosecution of the war; also during that period special work was done for the Internal Revenue Bureau in the valuation of oil and gas properties.

In 1919 I was transferred to the state of Texas and opened up the first office for the United States Bureau of Mines—I mean the petroleum division—in that state, and I was in sole charge of that work. It was during the time of the oil boom at Ranger and Burkburnett, Texas, and during that work I assisted the Chairman of the Texas Railway Commission, Mr. Terrell, in the preparation of the first conservation regulations of the state.

In 1920 I resigned from the Bureau of Mines and spent one year with the Sinclair Oil Company as an assistant to the general superintendent on special production problems. In 1921 I went to New York City where I was employed by the then Union Oil Company of Delaware in attempting to reorganize the engineering and geological work.

In April 1941 I was offered—

Q. April 1941?

A. April 1921.

In April 1921 I was offered a position and accepted a job as chief of the geological and engineering staff of the Absaroka Oil Development Company, a subsidiary of the Northern Pacific Railway Company. The company was organized to develop the land grants of that railway company.

In the autumn of 1925 I made my first trip into the Texas Panhandle. About a month was spent there looking over the possibilities in various localities lying adjacent to the present producing areas. I might say in that connection that the Hammond Cattle Company tried to interest us in a ranch that they had in Roberts County lying to the northwest, and having spent a month down there I decided that there was neither oil or gas in Roberts County so I turned the proposition down. That was my first visit into the Texas Panhandle.

Q. Roberts County, Texas?

A. Roberts County, Texas.

Between 1926 and 1930 a period was spent in charge of the geological and development program for the Hurley Oil Company of Tulsa, Oklahoma in West Texas. During this time I became thoroughly acquainted with the geological and drilling problems in West Texas as most of the oil and gas in that general territory is produced from limestone and dolomitic limestone. I acquired more than a passing knowledge of both the reservoir rocks as well as drilling and producing problems.

Between 1930 and 1933 some time was spent in the Rocky Mountain states associated with the Minnesota Northern Power Company, now the Montana-Dakota Utilities Company. This work consisted of the estimation of gas reserves in the state of Montana and the development of gas fields; the examination of new areas, and new markets; these investigations were carried on in Montana, Colorado, Utah, and in the state of Washington.

Between 1932 and 1939 time was spent largely on gas problems in Utah, Colorado and New Mexico, largely in

connection with the development and utilization of the carbon dioxide gases from those states.

Since January 3, 1939 I have been employed by the Federal Power Commission.

Q. As an engineer?
A. As an engineer.

Mr. Spencer: Mr. Examiner, I assume that counsel for the Commission expects to submit here such an exhibit having to do with gas reserves of the Texas Panhandle through this witness.

Mr. March: We have already given you copies of it.

Mr. Lange: Yes.

Mr. Hammer then read into the record the following prepared statement (Vol. 51, pp. 7056 to 7071):

A. This is entitled: "General Statements of the Problem Concerning the Estimate of Gas Reserves in the Texas Panhandle Field."

"Since the early life of the Texas Panhandle field, many and variable estimates of the gas reserves have been given and in one form or another have been called to the attention of those interested in the natural gas business.

"These estimates have naturally varied from time to time, progressively in years, approaching more nearly a true figure when made by unbiased geologist and engineers, as the amount of development widened over the field and the necessary factual data became more wide spread and dependable.

"In recent years, however, there has been too large a variation in reported estimates, when considered in the light of data now available.

"In order, therefore, to arrive at the best possible estimate of reserves, it became necessary to make an exhaustive research to initiate and carry through a thorough study of all the available data having a bearing on the problem.

"Collection of Basic Data

"The collection of basic data on which to make a study of the gas reserve of the Texas Panhandle Gas Field required the entire time between June 15, 1939 and November 8, 1939.

"During this time five employes of the Federal Power Commission were actively engaged in securing records of essential data having a direct bearing on the subject. By far the larger part of the data were secured from the Railroad Commission of Texas, from official records in the offices of that Commission at Pampa and Austin, Texas.

"In addition to the records of the Railroad Commission, data were secured from a number of the larger companies producing and transporting gas in the Panhandle field.

"More than 30,000 sheets of records were taken by photostatic processes. In addition, the equivalent of an estimated 10,000 sheets were taken by manual copying.

"These records covered all the data on gas withdrawals, and pressure of gas wells, in the files of the Railroad Commission from the time of the first reports up to August 1939.

"They also included the records of all the logs of gas and oil wells which it was possible to secure. By a close estimate, the log record of all wells drilled was found to be complete to the point where less than 100 were missing or unobtainable.

"Other data taken included:

"(a) A large number of Bureau of Mines back pressure curves for the determination of open flow of gas wells were secured both from the Railroad Commission, as well as from a number of the larger gas companies, including those of the Canadian River Gas Company wells.

"(b) Records of the acidization of gas wells were secured from the companies engaged in that work, showing the name and location of the wells, the amount of acid used in treatment, and the increase or decrease in open flow after treatment.

"(c) Reproduction of the records of many hearings before

the Texas Railroad Commission dealing with the problems affecting oil and gas production, wastage of gas, and allied subjects were taken.

"Besides the collection of recorded data, many trips were made through the field, during the summer of 1939, to observe field conditions and to discuss the various problems with field superintendents, engineers and geologists employed by both major and smaller companies engaged in the production of natural gas and oil.

"Much valuable information was secured from these men on questions having a direct bearing on field conditions that affect the question of available gas supply in the field.

"It required the entire working time of six men for a period of eight months to tabulate and allocate the mass of data into a form suitable for a study of the gas reserves in the field.

"Maps and Well Locations

"County maps were secured of each of the counties in which any part of the Panhandle field occurs. These maps are of Wheeler, Gray, Carson, Hutchinson, Moore, Potter and Hartley counties Texas. No maps were secured of Collingsworth or Oldham counties, because of the extremely small portion of those counties lying in either proven or possible gas territory.

"These maps had been brought up to date as to well locations. However, to be sure of the locations, the maps were checked against the locations given on the well logs. The maps were then checked against field maps of various companies as a further check on locations of wells.

"We are, therefore, more than reasonably sure that the well locations on the maps used in the determination of weighted areal pressures are correct.

"Discussion of Detail Problems on the Estimation of Gas Reserves.

"The problem confronting anyone who undertakes of the estimation of gas reserves in the Texas Panhandle field is unusual when compared to the ordinary gas field. Among

the reasons for this statement is the large areal extent of the field, which has not been definitely delimited to date, the occurrence of gas in a dolomitic limestone reservoir over such a wide area, and the inherent variables in reservoir characteristics that are universally found in such reservoirs.

"Without going into the question of the agencies causing porosity in dolomites or dolomitic limestones, all competent geologists and petroleum engineers recognize the fact that there is almost universal variation in voids or pore space throughout any given segment of such formations. The changes in porosity may vary widely from the tiniest void, originally existing, to cavernous conditions.

"What size the voids are is indeterminate because the shape and size of such voids are dependent largely upon the action of solvents existing either in the gas, water vapors or circulating underground waters in past geologic times. In fact, there is ample evidence to indicate solution in one place and redeposition in another in the same general producing formation, as shown by both calcite and anhydrite deposited in limestone or dolomites where small fissures originally existed.

"Furthermore, it is entirely possible that the limestones and dolomites that act as a reservoir for gas in the Panhandle field may have been at one time at, or close, to the surface of the seas in which they were deposited, and hence, in the zone of influence of oxidation, areal, or subareal erosion.

"It is a recognized fact that where competent sediments or strata (component in a geologic sense meaning fragile, not subject to bending or flowage without fracture), such as the reservoir rocks of the Texas Panhandle gas field, have been subjected to stresses that result in major folding and faulting, fracturing of the competent beds occur, resulting in voids between the faces of the fractured material.

"This is more particularly true where the folding is accompanied by major faulting. Where such conditions exist, there is always more or less fracturing, often in the form of parallel faulting extending away from the zone of

major displacement until the point of minimum stress has been reached.

"Under such conditions, where competent beds exist, there occur an indetermine number and size of fractures which make the determination of the percentage of voids or pore space impossible to determine.

"This is particularly true in the Panhandle field in the area where the Canadian River Gas Company acreage is located. This area is delimited on the south side by a fault estimated as having a displacement of from 400 to 800 feet, and is situated principally at the highest structural part of the entire field where the greatest stresses were probably exerted at the time folding took place.

"In a more specific and definite way, Mr. H. F. Stevens, Commission engineer, and I examined numerous cores of the gas producing formation taken during the earlier development of the field, and in no case had it been possible to secure a core through that part of the producing horizon from which the major flows of oil or gas come. Only that part of the core from which little or no gas or oil could be recovered. Determination of porosity from these recoverable portions of the cores would, in no wise, give an indication of the porosity at points of maximum production of oil or gas.

"Since the practice has become almost universal to complete wells with cable tools (percussion tools), there is absolutely no way to determine the porosity of the original producing formation in place in the ground (undisturbed before drilling) from an examination of the crushed sample taken at the well head.

"To anyone realizing these conditions existing in the Panhandle field, it has been realized at all times a futile effort to attempt to determine the porosity of the reservoir beds, in the Panhandle field, as a means for the determination of reserves by the porosity-pressure method.

"Hence, the only method worthy of consideration is the determination of reserves by application of the principles of Boyle's law. That is the determination of the decline in pressure due to the removal of known volumes of gas at a constant temperature.

"During the life history of any large gas field, even such procedure is of minimum value until such time as sufficient development has occurred as to establish a widespread index of data uniformity distributed over the field.

"When that time has been reached, then the production-pressure decline method offers the most reliable method for the determination of gas reserves where conditions are such as those found in the Texas Panhandle field.

"Furthermore, conditions as to subnormal pressure in the Panhandle field more nearly approach the ideal for the application of Boyle's law. That law presupposes a container of constant volume and temperature unaffected by any extraneous pressure, and where at the start the gas is under a constant pressure.

"Since there is no noticeable tendency of water encroachment around the edges of the field, and hence, little or no extraneous pressure being exerted on the gas reservoir, the field closely approaches an ideal condition for the application of Boyle's law in the determination of the gas reserves in the field.

"Five-Year Period Instead of Total Data

"After having analyzed and studied all the available data previously collected, it was found advisable and necessary to utilize only that segment of life history of the field during which it had reached its greatest period of development and during that period when records and factual data were such that a large degree of dependence could be placed in them.

"It was evident that such a period existed only after the Railroad Commission of the State of Texas, moving under a conservation act passed by the state legislature, obtained a large degree of effective enforcement during the year of 1935.

"Prior to 1935, the history of the field is, in modern terms, a 'black-out' of confusion, and little dependence can be placed on recorded data or estimates of wastage of gas.

"Pressures were never uniformly taken, and those taken and recorded meant little because they were usually taken

with steam gauges probably seldom calibrated against either a master gauge or dead-weight tester.

"No uniform pressure base on which to report gas withdrawals existed. Gas was reported on a wide range of pressure bases, no record of which is available in the offices of the Railroad Commission of Texas or elsewhere as far as can be ascertained.

"Since August 1, 1935, the engineers of the Texas Railroad Commission have kept records of such character that they may be readily used as a basis upon which to calculate the gas reserves of the Panhandle field.

"It was, therefore, determined to base the calculation of gas reserves upon the data of record between August 1, 1935 and August 1, 1939.

"Detailed Discussion of Geology Not Necessary.

"Any extensive discussion of the historical or structural geology of the Texas Panhandle gas field is neither necessary or advisable in arriving at an estimate of the gas reserves of that field.

"These features have become so well known that any such discussion would only add material to the record of no essential value.

"It does seem pertinent, however, to state that the producing horizons of the Panhandle gas field are of the same geologic age as those producing gas in the Hugoton gas field.

"These formations are of the lower Permian age. In the Panhandle field they are referred to as the 'Big lime' divided into the brown dolomite, the white dolomite, and a zone consisting of arcosic material, dolomite and limestone. The latter may be of Pennsylvanian age. This point is not certain.

"In the state of Kansas, geologists have assigned the following names to rocks of the same geologic age; named in descending order, they are as follows:

"The Harrington dolomite,
"The Krider dolomite, and
"The Winfield dolomite.

"All are assigned to basal Permian or of Wichata-Albany age as described for central Texas.

"Water Conditions

"There is very little or no effective water movement in a true sense of edge-water encroachment.

"During the summer of 1939, Mr. H. F. Stevens and I inquired on many occasions of geologists, field superintendents and others, and found no one who had any idea that water encroachment from the edge of the field was serious, or even noticeable. Neither did we see any evidence of excessive water being produced from oil wells. What danger there is in the field from water encroachment is brought about by improper completion of wells and inadequate repair work to shut out bottom water. These cases are few in number, so that actually there is no serious water trouble in the field.

"General Statement of Method Used

"The method employed for determining gas reserves by the construction of isobaric maps, the determination of weighted average pressures therefrom, and the utilization of accumulated production against the weighted pressures naturally assumes the following conditions:

"1. That development or drilling has been sufficiently wide-spread to give an index of characteristics of the field;

"2. That there has been a sufficiently long history of production to the point where wide-spread indexes have been established as to the volumes removed and the resulting pressure decline;

"3. When such a life history has been established, then the field, or any part thereof will continue to follow the same characteristics throughout the future life thereof, as has been established in the past, unless seriously affected by mechanical condition of the wells.

"The method used in the determination for the gas re-

serves under Canadian River Gas Company lands is the same as that used for the determination of the reserves for the entire field.

"This method is based on Boyle's law, which states that the volume of any given weight of gas at constant temperature varies inversely as the pressure. Briefly the steps taken to arrive at a determination of reserves are as follows:

"1. The construction of isobaric maps for a period of five years, on 10-pound intervals, from 1935 to 1939, on county maps of a scale of 4,000 feet per inch;

"2. The division of the maps into areas or quadrants;"

That term "quadrant" there I might explain. We had to have some term applicable to the areas so we simply chose that name. It hasn't any particular significance except that it refers to areas.

"3. Determination of quadrant areas and isobar areas by use of planimeter;

"4. Calculation of weighted average pressures for each year for each quadrant;

"5. Compilation of production for each quadrant yearly for the five-year period, accumulatively;

"6. Balancing these previously obtained values for each quadrant with like values of immediately adjacent quadrants where the configuration of isobars indicate possible effective movement of gas either to or from the quadrant in question;

"7. The determination of production per-acre-pound decline on the entire effective area;

"8. Utilizing this production per-acre-pound factor in arriving at the reserves for the quadrant in question by applying it to the weighted average pressure decline in the quadrant in question times the total quadrant acreage;

"9. The determination of the acreage of the Canadian River Gas Company in the quadrant, and the application of the same principal to that acreage."

Mr. Spencer: How large is a quadrant?

The Witness: They vary somewhat in size.

Mr. Spencer: They are not uniform in size?

The Witness: Not exactly uniform, no.

"To be more specific about the method of balancing each quadrant against adjacent quadrants where isobar configurations indicate effective movement of gas, calculation of the production per-acre-pound decline, if based solely on the production from wells in that quadrant alone as against the weighted pressure of the quadrant, indicated a volume removed per pound in pressure drop clear out of proportion to that of adjacent areas.

"If there were gas moving into the quadrant from outside its boundaries, the production per-acre-pound would be high in relation to the acreage in the quadrant. If, on the other hand, gas were moving out of a quadrant, the per-acre-pound would be low. If the quadrant data alone were used, the results obtained would be an indication of availability of supply to the then existing wells in the quadrant, rather than indicating reserves in place. It is for this reason, it was necessary to balance quadrants, or areas adjacent to the one, together with the one in which it was desired to estimate the gas in place as the reserves in place.

"At this point, it should be pointed out, very definitely, that only by determining the available reserves existing in distinct and separate parts of the field can there be an estimate of reserves established applicable to any given productive local acreage.

"Averages of this field, as a whole, are always erroneous and misleading for the reason that by striking an average over a field of the size of the Panhandle field, gas is automatically assigned to areas that do not have the indicated reserve. For example, suppose two areas of equal size, one located some place in the eastern part of the field, and the other in the western part. The one in the west shows a reserve remaining of 26,000 Mcf. per acre, and the east shows a reserve remaining of 6,000 Mcf. per acre. The average would be 16,000 Mcf. per acre. Thus, 10,000 Mcf. would be deducted from the area of high reserves, and

10,000 Mcf. added to the area of low reserves. Under such a calculation, no one would be so gullible as to believe that a proper allocation of reserves had been made as to the gas bearing lands in the two localities.

"Furthermore, it is axiomatic that in anything made up of components having diverse characteristics, an average based on the whole is fallaceous and invalid for the reason that it does not weigh in the characteristics of its diverse component parts.

"Minimum Estimates

"The estimate is a minimum estimate because:

"1. Stabilization of pressures are seldom if ever reached during the 'closed-in' period prior to determination;

"2. During the period used for determination of reserves, only metered gas was employed. No estimate of wasted gas was made;

"3. The pressures were not calculated to reservoir conditions, but were well-head gauge pressures;

"4. Utilizing a 25-pound abandonment pressure well-head gauge, necessarily means a higher weighted pressure, because there would be no such well-head pressure if there were no high pressure at undrilled points. In other words, to have 25 pounds well-head gauge pressures at abandonment, necessarily indicates a pressure differential between the face of the producing formation in the well as against undrilled areas;

"5. Consideration was given to the deviation from Boyle's law, but was not applied. Its utilization would have given a somewhat higher result."

By Mr. Lange:

Q. Mr. Hammer, in connection with your work on this assignment in estimating gas reserves on the acreage of Canadian River Gas Company, I will ask you whether you prepared an exhibit entitled "Derivation of Weighted Gas Pressures"?

A. I have.

Q. Is this the exhibit I am now showing you?

A. That is right.

Mr. Lange: Will the stenographer please identify it?

The Trial Examiner: It will be marked for identification as Exhibit No. 179.

(Exhibit 179, Witness Hammer, marked for identification.)

Mr. Hammer then identified Exhibit 179 which was subsequently admitted in evidence, which Exhibit consists of a map prepared under his supervision and direction. This map portrays the Texas Panhandle Oil and Gas Field. The outlines of the map were taken from maps prepared by the Texas Railway Commission. The particular map is a reduction by photostatic process of original county maps that were on a scale of 4,000 feet to the inch. The Roman numerals on the map indicate the divisions or quadrants for each county.

The witness then read into the record a description of the map as follows (Vol. 51, pp. 7073-7085):

"1. Base Maps and Boundary Determinations:

"A. Base Maps:

"The base maps for the construction of closed-in wellhead isobars of the Texas Panhandle field are the county maps of the Browning Map Company, drawn to a scale of one inch equals 4,000 feet.

"Five sets of the county maps covering the Panhandle field were necessary—each set representing the pressure configuration of the summer of each of the years considered. Each set includes maps of the counties off Potter, Moore, Hartley, Hutchinson, Carson, Gray, Wheeler, and portions of Oldham and Collingsworth counties.

"B. Delineation of the Field Boundary:

"The first operation was the necessity of delineating the limits of gas productivity—the field boundary, thereby blocking out the area considered to be productive or potentially productive.

"The field boundary as determined and used by the Railroad Commission of Texas as of 1938 served as the boundary used for this reserve estimate. The field boundary was

carefully drawn upon each set of maps, care being taken to follow the Railroad Commission location exactly.

"On the northeast flank of the field both the field boundary and the gas-oil boundary, as delineated by the Railroad Commission, were plotted. In all cases the isobars were carried only to the gas-oil boundary upon the assumption that the inclusion of the area northeast of the gas-oil line, in the light of the lack of appreciable metered gas volumes and absence of closed-in wellhead pressure data, would introduce error. As far as can be determined, this area is restricted to oil production, with little evidence of potential gas productivity.

"One alteration of the field boundary is to be noted. March 30, 1938, the Stokely & Savage well, C. H. Beigel No. 1, was completed as a gas well in Section 63, Block 23, H. & G. N. R. R. survey, near the east south central border of Gray County. This well, having a closed-in wellhead pressure of 406 pounds in the summer of 1939, lies approximately 1¼ miles southwest of the field boundary as located by the Railroad Commission of Texas."

I might say the term "southwest" there means if it goes out west of the boundary it put it outside the boundary they previously had.

"It became necessary, therefore, to relocate the boundary in this area. The approximate position of the relocated boundary in that area is represented by the heavy dashed line southeast of the solid heavy line representing the Railroad Commission boundary. From available structural data, consideration of well logs of the adjacent wells and structural maps, it appears probable that potential gas reserves extend southwest of Gray County to the vicinity of the town of McLean. These data seem to indicate that a structural high exists in this area with porosity and productivity in strata existing down to approximately 400 feet above sea level.

"II. Pressure Data and Construction of Isobars

"A. Sources and Tabulation of Pressure Data:

"The closed-in well head pressures used were derived from photostatic copies of the production-pressure records of the Railroad Commission, supplemented by such pressure data

as were available from various company records. The pressure values were checked on both form 3 records and company records, wherever possible. In cases of serious discrepancies in pressure data, additional verification was requested from the company controlling the well under consideration.

"The pressure data were tabulated by wells for the 5-years under consideration, the 5 years from 1935 to 1939, inclusive, and each pressure was plotted at its well location on the county maps for each year. In all cases summer pressures were used, taken in July, August, and September.

"When it was observed that the recorded pressures of a well appeared to be erratic and fluctuated between high and low values over a period of time, special note was made of the pressures. Then the production history of that well was tabulated for the intervals between the dates of the recorded pressures in order to correlate withdrawal volume with pressure change. This procedure was extended to adjacent wells which might conceivably have exerted some influence upon the pressures under consideration. Also the log of the well and its history were consulted in order to note the effects that the mechanical condition of the well might have upon the pressures recorded. When it was observed that a well having a low pressure recorded one year showed a higher pressure in succeeding years, with no evidence of heavy withdrawals having depressed the pressure; it was assumed that the mechanical condition of the well was responsible or that the recorded low pressure was an error of measurement or recording. In such cases the position of isobars in the vicinity of the well were determined by the pressures of adjacent wells and the general isobar configuration of adjacent areas.

"B. Construction of Isobars:

"The equal pressure contours or isobars, based upon the plotted closed-in wellhead pressures, were drawn at 10-pound intervals. The procedure of drawing isobars through the plotted pressures is based upon the equal spacing of isobars according to a predicated uniform slope decline of pressure over the distance between the locations of the pressure measurements. That is, the pressure differential between the

two wells over the distance of separation of the two wells is contoured by equal map spacing of the 10-pound interval isobar lines.

"The various county maps for the five-year period 1935-1939 were carefully isobared according to the above procedure, except in those areas now dominantly oil producing; where closed-in well head pressures were scattered or almost entirely lacking. The immediate area adjacent to Borger, in the south central portions of Hutchinson County and the northwest and north central portions of Gray County are such areas. In these areas the recorded well pressures are the lowest in the field and tend to fluctuate erratically, with the records of the individual wells being characterized by pressure measurements scattered through the past history of the well at odd intervals and with frequent gaps. Under such circumstances weighted average pressures were determined for these 'oil areas' by noting the average pressures of areas of equal well density and similar pressure stage, and weighting these pressures by their areal distribution.

"In northern and western Moore County, Hartley County, Potter County, and Carson County are areas which, by the presence of wells at substantial distances from the field limits having pressures only slightly depressed from 430 pounds, and from the isobar spacing and configuration, appear to be undrained and at 430 pounds well head gauge. By extrapolating the isobar pressure decline slope of the areas under consideration to 430 pounds, isobar lines of 430 pounds were constructed. The position of this 430-pound line delimits approximately with the best accuracy possible, the remaining areas of substantially virgin field pressures.

"III. Possible Isobar Map of the Texas Panhandle Gas Field as of the Summer of 1939.

"Upon the completion of the isobaring and planimetering of the individual county maps, each map was photographically reduced approximately one-quarter in size and a mosaic of the whole Panhandle field made. This composite of county maps was then photographed and an enlarged negative made, from which blue line prints could be produced.

"The individual county maps upon which all isobaring and

planimetering was done were carefully matched and the isobars connected across the county lines. The matching of counties is virtually perfect where no errors in the original drafting of the maps are present.

"There are some areas in which appreciable drafting errors on the original maps are evident; the most marked discrepancies occur in the vicinity of the junction of Hartley, Moore, Potter, and Oldham Counties at the extreme western end of the field.

"The county map of Moore County was drawn in such a manner that the county line included portions of sections actually located in Potter County. The Potter County map, on the other hand, has the county line placed accurately with respect to the various sections. Hence, as can be seen, the sections and isobars on either side of the Moore-Potter County line do not match exactly, and an excess of acreage exists in Moore County on the Moore County map. Also the Potter County map is slightly off scale and skewed somewhat with respect to the north and south lines of the field.

"These discrepancies in drafting produced no errors in the isobaring or calculations, as care was taken to match the county lines of Potter and Moore correctly by overlapping when the isobars were connected across the county line. This overlapping is made evident by noting that on the composite map the isobars adjacent to the county line in western Moore and Potter stop short of the limits of the individual maps, but if the maps were overlapped in such a manner that the isobars joined, then each section and the county line would be in correct relationship one to the other.

"The skewness of Potter County precludes the overlapping of the Moore and Potter Counties of the composite map, without disturbing the continuity of the other boundaries of Potter County with adjacent counties. However, the smaller side of Potter and the skewness were balanced out as exactly as possible through the planimeter factor, and similarly the acreage of Moore County was reduced to the correct value by its planimeter factor and by planimetering only up to the true position of the county line, with respect to the individual sections.

"Such errors as may have resulted are extremely small

and will always be present in drafted maps. Invariably on all maps inspected, including the maps furnished the Commission by the Canadian River Gas Company, it was observed that the sections adjacent to the county lines in Potter and Moore Counties are reduced and subnormal in size.

"For example, Section 25, Block PMc, E. L. & R. R. Survey straddles the Moore-Potter County line and is labeled as being 662.6 acres. Its map area is 1.292 sq. in. In contrast, Section 33, E. L. & R. R., Block PMc, Moore County, is labeled 640 acres with a map area of 1.531 sq. in. The larger acreage unit has the smaller map area.

"It is to be remembered that the detailed configuration of any map is an approximation to the survey data, and that particularly in this region the survey data and general property lines leave much to be desired with respect to accuracy.

"The probable error in acreage as determined for Quadrant III Potter by planimetering tends to yield a slightly smaller acreage, which in the calculation of reserves tends to give a larger remaining reserve figure. This tendency is compensated for through the general tendency of the method to yield a minimum estimate. The net error is probably substantially less than five per cent, and will be conservative under any circumstances.

"Derivation of Acreages, Acre-Pound Values and Weighted Average Pressures

IV. Estimation of Quadrant Acreage

"Although the maps varied somewhat in scale, the field outlines and the quadrant boundaries were drawn in such a manner that if the maps were all adjusted to the same scale, the boundary lines would coincide. The size and shape of the quadrants were determined from consideration of two factors, the first being necessarily the limitation of the radius of action of the planimeter tracer arm. The second consideration is the desire and necessity of having each quadrant area include wells whose general pressure-production characteristics are similar or related with special regard to drainage configurations.

"The planimeter was run around the boundary of the

quadrant area. This reading (Reading 1) was recorded and checked by a verification run. The individual isobar areas (continuous areas bounded by isobar and boundary lines) were now measured individually by the planimeter and their readings recorded. When all the constituent isobar areas of a quadrant had been measured, the individual areas were totaled, and this sum was compared to the reading (Reading 1) of the entire quadrant area. If this total did not check closely with Reading 1, the area was replanimetered until a check was obtained.

"(It is necessary here to note that a single run around the boundary of the unknown area will give a closer approximation of the area than will the summation of the small isobar areas comprising the measured area. Whenever a planimeter run is made, errors arise from a combination of human and instrumental factors, the total error of which is in direct proportion to the length of line followed by the tracer point. The length of line traced in outlining the total area is much less than the summation of the perimeters of the constituent isobar areas. Hence the proportion of error to area for the single run around the entire area is less than the proportion of the sum of the constituent isobar errors to their total area.)

"V. Conversion of Planimeter Reading to Acreage

"In each of the quadrants there were large tracts of land of known acreage. To obtain a conversion factor between planimeter readings and acreage, the following method was used:

> "The planimeter was carefully run around the perimeter of the tract of known acreage and the planimeter reading noted. The known tract acreage was then divided by the planimeter reading to obtain a conversion factor between the planimeter reading and acreage. In each case as large a block of acreage which could be defined within the quadrant was chosen. This was done to get as representative a conversion factor as could be obtained in each case, consideration being given to size and distribution of tracts of known acreage throughout the quadrant."

The Trial Examiner: Mr. Hammer, right there in con-

nection with your quadrant, does this heavy square on the map indicate—

The Witness: You mean, for example, you will find the Roman numbers in the center?

The Trial Examiner: Yes.

The Witness: That represents the quadrant.

The Trial Examiner: That represents the quadrant?

The Witness: Yes.

Mr. Lange: You are now referring to the map attached to this exhibit?

The Witness: That is right.

"VI. Application of Conversion Factor

"The conversion factor was now applied to the summation of the isobar areas to obtain a total quadrant acreage and also to the individual isobar areas to obtain acreages lying between isobar lines. The acreage lying between isobar lines or isobar lines and the field boundary were now multiplied by the average of the boundary isobar pressures to obtain each acre-pound value. The summation of the isobar area acre-pound values within the quadrant constitutes the unadjusted acre-pound value for the quadrant.

"VII. Adjustment of Quadrant Acreages and Acre-Pound Values

"The quadrant areas in acres were calculated for each of the quadrants over the five-year series of maps. Hence there were five separate calculations of each quadrant acreage, each of which differed in value by a small amount from the others. To obtain an average acreage which could be used for all calculations, the five different acreages were added together and their sum divided by five. The quotient or average acreage was now considered the adjusted quadrant acreage for each of the five years and was used in further calculations.

"To obtain adjustment factors for each of the five years in order to adjust the yearly acre-pound values of the quadrants, the original quadrant acreage value was divided into the adjusted acreage value. The individual isobar acre-

pound values were then multiplied by this adjustment factor to obtain adjusted isobar acre-pound values. The sum of the isobar acre-pound values in a quadrant was considered the adjusted quadrant acre-pound value. (Adjustment of the acreages and acre-pound factors was necessary, for these values, together with production data, were to be used in a relationship in which all values must be commensurate. For example, if a quadrant acre-pound value for one year were to be compared to the same quadrant acre-pound value for another year, it is seen that the acre-pound values have to be calculated from the same acreage value, otherwise no true comparison exists.)

"VIII. Derivation of Quadrant Weighted Average Pressures for Each of the Five Years.

"The quadrant weighted average pressures were obtained by dividing each yearly quadrant acre-pound value by the quadrant acreage."

The witness further testified with respect to Exhibit 179 (the map) that the red line indicates the outer lines of all of the quadrants in which Canadian River Gas Company has producing acreage, and those are the lines to which he made reference in his statement that he just read, where an adjustment had to be made. The Arabic letter groups that appear inside the red lines represent the approximate remaining reserves per acre in Mcf. in the area of Canadian River Gas Company's holdings. The name "Amarillo" appearing at the lower left-hand corner of the map means the city of Amarillo, Texas.

The witness further stated in explanation of the map that the development in Potter and Moore Counties during the period from 1935 to 1939 had a very marked tendency to make a somewhat uniform pressure distribution over those areas, and that from 1935 to 1939, inclusive, there was an area running across Carson County and across and into Gray County beginning at the extreme southwestern corner of Hutchinson County, Quadrant 3, and cutting across the extreme northern part of Quadrant 4, Carson County; across Quadrant 3, Carson County, and across Quadrant 2, Carson County, and into Quadrant 4 in Gray County. The pressure decline in this area has been normal for the area, but there

has been a marked drop in isobars across that territory that has been constant from the beginning up to the present time. The witness stated that he did not know what caused this, but he did think it was very significant. He stated that it could be an area of low permeability, or it might be caused by some change is deposition, but whatever the cause, the situation has remained constant over the period.

The witness then stated that he had prepared another exhibit entitled, "Statement of Gas Reserves and Method of Calculation, Canadian River Gas Company," which is Exhibit 180. This exhibit was then identified and later received in evidence, over objection of Company counsel.

The objection and ruling of the examiner is reflected by the following (Vol. 90, pp. 13657-13660):

Mr. Keffer: If the Examiner please, the respondents object to the admission of Exhibit 180 prepared by Mr. Hammer for the reason that the exhibit is wholly irrelevant, incompetent, immaterial for various reasons and among those reasons is the fact that Mr. Hammer has stated repeatedly upon his cross examination that he did not take into account the geology of the field producing formations as such, their characteristics, and has eliminated from all consideration many factors which would necessarily affect the result and which must necessarily be considered if a correct result is to be reached; and stated finally his approach was that of a mathematician's approach to the problem, merely taking into account weighted average decline pressures as he determined them with respect to production.

It is our position that his background in this method is wholly insufficient to reach any result that is entitled to any consideration whatsoever. In enumerating briefly some of our specific objections to the exhibit I do not mean in any sense of the word to limit our objections to those specific matters detailed but resting upon the general objection that the exhibit is wholly irrelevant and incompetent and immaterial.

Mr. March: Mr. Examiner, most of the objections have gone to the merits of the exhibit rather than to the competency of the exhibit and the materiality of the exhibit. Mr. Hammer testified in applying the pressure decline method

as he applied it he applied it to the whole and as to the Canadian River acreage that automatically drainage was one of the things taken into consideration;

Not only that, his method applied here is a method which has been applied by other persons in estimating reserves in the Panhandle field of Texas and it is a well established and well known method. It has scientific backing and we feel that it is competent; it is relevant—it is relevant alone because there have been exhibits heretofore offered and put into evidence by counsel for the company utilizing another method, the porosity thickness method, and certainly an estimate of reserves is most competent and most relevant in this case if we are going to determine in any respect the life of the reserves in the field.

The fact of the business is we couldn't determine this rate case unless we had some evidence of the life of the field and the life of the Canadian River reserves in the field.

The Trial Examiner: In so far as the Examiner is concerned, the Examiner is satisfied that the study presented has been presented by an able and competent geologist and he has employed a recognized method.

Now, the matters he did consider or did not consider to me go to the weight to be given to the study rather than to the admissibility of the study and inasmuch as this evidence is carefully weighted, it seems to me that it would do no harm for it to come into the record.

On the grounds stated the objection will be overruled and Exhibit No. 180 will be received.

The witness then read a prepared statement as follows (Vol. 51, pp. 7089-7101):

A. "The future remaining gas reserves under land controlled by the Canadian River Gas Company in the Texas Panhandle field are summarized as follows:

"1. All calculations arriving at the reserves are made on a pressure base of 14.65 pounds absolute. The pressures taken were well head closed-in pressures.

"2. The determinations were made by the application of the principles of Boyle's Law.

"3. The estimate of remaining reserves of gas beneath the lands of the Canadian River Gas Company as of August 1, 1939, are 3,645,213,000 Mcf., calculated to a 25-pound well-head abandonment pressure."

At that point I wish to call attention to the fact that there is a slight discrepancy there between the figure presented and the figure that I gave to the accountant. That discrepancy—

Q. When you are referring to the figure you gave the accountant, is that 3,645,213,000 Mcf.?

A. Yes, sir.

Q. Very well.

A. It was brought to my attention by the fact that I couldn't estimate or couldn't arrive at the exact amount of acreage assigned to the Canadian River Gas Company in one or two certain areas. It was impossible to assign more acreage to an area than actual planimetering of the maps indicated. That brought about that small discrepancy there. It amounts to only—well, it is only three or four-tenths of one per cent. It was so small that I didn't see any reason why it should be called to the attention of the accountants so that they would be required to recalculate the work.

Q. Very well.

A. I will read that again, starting with Paragraph 3.

"3. The estimate of remaining reserves of gas beneath the lands of the Canadian River Gas Company as of August 1, 1939, are 3,645,213,000 Mcf., calculated to a 25-pound well head abandonment pressure.

"4. The calculated ultimate reserve beneath these lands is, to zero well head pressure, 4,269,165,000 Mcf.; and to an abandonment pressure of 25 pounds, the estimate is 4,018,609,000 Mcf.

"5. At an assumed annual withdrawal of 50 billion cubic feet, the remaining reserves will last for a period of 73.7 years.

"Details of the method used and tabulation of basic data follow in this exhibit."

Q. Will you explain in connection with each of these

tables and charts that are appended to the exhibit; first, your Table 1 following the written statement, and tell us exactly what the nature of the calculations is that appear on that table?

A. That is a tabulation of the years, the quadrant acreage, quadrant acre-pound factor, quadrant weighted average pressure and accumulated production for all quadrants that were utilized in this estimate.

Q. Now, your Table 2, turn to Page 3.

A. Table 2 is a sample calculation showing the solution by which we arrived at the Mcf. per acre-pound decline from a simultaneous equasion derived from the method of least squares.

Q. I notice that the data appearing here was taken from Table 3. Is that the following table?

A. Yes, that is right.

Q. Will you relate that to this Table 2?

A. I think I can best illustrate that by stepping to the map.

Q. Very well.

A. Quadrant 3 that we used, for an illustration, is this triangular area here in the northwestern part of Potter County. We realized that no one could arbitrarily draw a line and say that the area within—the line delimiting that area would not be affected by adjacent areas, in order to arrive at a fair determination of the problem.

Furthermore, wells noted over a period of five years indicated there have continually been a low pressure area in that part of that Quadrant.

Q. Speaking of Quadrant 3, Potter County?

A. Yes. The configuration of the isobars over the five-year period indicated that there was a larger percentage of gas, a larger amount of gas, rather, being produced out of this area—

Q. Speaking now of Quadrant 3?

A. —than seemed to be warranted from the withdrawal of the surrounding isobars. To arrive at the production per acre-pound of this area we took in this area—

Q. Hartley County, which the red figures "13,713" indicates?

A. There is only one quadrant there so we didn't indicate it.

Q. I see.

A. Quadrant 3 of Moore County, Quadrant 2 of Moore County, Quadrant 3 of Potter County and Quadrant 2 of Potter County. We determined from those the production per acre-pound decline and applied it to Quadrant 3.

Q. That is Potter County.

A. Potter County.

I might state that same principle has been followed through in the entire calculations in this exhibit. While it moves from west to east—it would apply the other way—when we came over to determine the reserve of Quadrant 2—

Q. Potter County?

A. Potter County.

—we eliminated Hartley County, but we utilized Moore County, Quadrant 2, Moore County, Quadrant 3—

Q. Potter County?

A. Potter County.

—Potter 2, Potter 1, and Moore 1, to arrive at it, and took the production per acre-pound decline and applied it to that Quadrant.

Q. Quadrant 2?

A. Quadrant 2.

—and it likewise eliminates those to the west that were not immediately adjacent to the area in question.

Q. Now, turn to Page 4, Exhibit 180, Mr. Hammer—

A. All right.

Q. You have there an explanation of the construction of curve. What curve are you referring to in this exhibit?

A. I am referring to the curve immediately following the statement.

Q. Appearing at Page 4 of the exhibit?

A. That is right, appearing at Page 4-B of the exhibit. It is entitled "Quadrant Group Decline Curve, Quadrant III, Potter County, Texas."

Q. You may proceed with that explanation.

A. "The same groups of quadrants, together with their total acreage, weighted pressures and accumulated production for the mathematical determination of the gas reserves of Potter County, Quadrant III, as are used in the sample calculations, are also used here.

"The slope of the curve is determined by multiplying the total acreage (229.712A.) by the previously determined production per-acre-pound decline (35.1 Mcf.), arriving at a factor of 8,062,891; then arbitrarily choosing some pressure on the pressure decline scale, subtract this pressure from the original 1935 pressure, then multiply such drop in pressure by the factor of 8,062,891.

"The points on this curve were determined by the following data:

"Pressure decline in pounds—"

The Trial Examiner: I don't think it will be necessary for us to read these figures. The reporter will copy them in.

(At the direction of the Trial Examiner, the following statement was copied into the record:)

422.7 — 400 equals 22.7
422.7 — 375 " 47.7
442.7 — 350 " 72.7
422.7 — 325 " 97.7

Then— 8,062,891 x 22.7 equals 183,027,626 Mcf. at 400 lbs.
8,062,891 x 47.7 " 384,599,901 " " 375 "
8,062,891 x 72.7 " 586,172,176 " " 350 "
8,062,891 x 97.7 " 787,744,451 " " 325 "

The Witness: "The projection of the curve arrives at a figure of 3,207,000,000 Mcf., ultimate reserve from August 1, 1935 to an abandonment pressure of 25-pounds well-head gauge, 422.7 lbs. — 25 lbs. equals 397.7 or functional pressure to well-head abandonment of 25-pound gauge.

"397 x 8,062,891 equals 91,356,462

"3,207,000,000 divided by 91,356,462 equals 35.0999 (35.10) Mcf. per-acre-pound decline, also the functional pressure

"397.7 x 8,062,891 equals 3,206,611,751 Mcf.

"After the curve had thus been constructed, the pressures for 1935, 1936, 1937, 1938 and 1939 were plotted against the accumulated production showing the proper position of those points on the projected curve.

"There is thus shown that the method of calculating the

production per acre-pound decline by the simultaneous equations derived from the application of the method of least squares, is fair, applicable, and as exact as supporting data will permit."

* * * * *

Q. On Page 4, Paragraph 2, you refer to the total acreage of 229,712 acres?

A. Yes, that is the total acreage embraced in all these quadrants that were used for the determination of the acre-pound. In other words, it is for that acreage embraced in this area here. It embraces the area of Quadrant 2 and 3, Potter County; Quadrant 2 and 3, Moore County, and that part of the territory in Hartley County.

Q. What relation does the total acreage have to the total acreage of Canadian River Gas Company, for instance?

A. Well, this factor hasn't any relationship that I am using now.

Q. It has none?

A. No.

Q. It has no place in this picture except that it is the total acreage you used in developing your formula?

A. That is right, and in arriving at the production per acre-pound.

Q. That is the only purpose of the total acreage shown here?

A. That is right.

By Mr. Lange:

Q. Now, Mr. Hammer, tell us about the curve at Page 4-C.

A. I made no written statement on that because it occurred to me that it was almost self-explanatory. The title of Curve 4-C is "Enlarged Partial Group Decline Curve, Quadrant, Quadrant III, Potter County, Texas." That means the same data, the same information and a portion of the same curve as on the preceding curve on Page 4-B. The purpose of this curve or this partial curve as is stated on the curve itself "Illustrating that calculated decline curve not only follows the straight line characteristics of pressure decline versus accumulated gas withdrawals, but gives a truer and more conservative slope than interpolated construction."

The three lines of the three curves, of them "A" was drawn to indicate the probably maximum decline curve that

anyone could draw on the data at hand—I mean, draw it without any mathematical calculation, it would be the most probable decline in relation. In other words, if you drew that Curve B simply placing a straight edge on there and trying to get the proper spacing as between all of these various points, that would probably be the slope that would be decided by the average engineer.

Curve C is a decline curve based on factor of 35.1 Mcf. per acre-pound decline as determined by mathematical method. The curve drawn through the large circles on this is the slope determined by the mathematical calculation.

Those smaller circles are the accumulated production for this area utilized plotted against the weighted pressures for each one of the five years. The purpose of that curve is to illustrate that the slope of the curve as calculated not only follows the decline as it should against volume removed but also shows that the method is more conservative, at least in this case, than if someone would draw the curve manually.

* * * * *

I would like to refer back a moment to the curve on Sheet 4-B. It is the only thing I believe I didn't explain on this curve and that is the large circles represent the calculated points based on the 35.1 production per acre-pound, and the small circles represent the points where accumulative production is plotted against pressures. I don't believe I mentioned that before.

The point there is to illustrate that the calculated slope will fall at the proper position as against the accumulated production plotted against the drop in pressure. That is the only point that I wanted to explain regarding that.

Q. That is all in regard to Curve 4-B?

A. That is right.

Q. Now proceeding to Table 4 and Table 5, Page 4 of 4—

A. Tables 4 and 5—haven't we missed Table 3?

Q. That is right. You had just referred to the relation.

A. Table 3 simply shows the various groups of areas or Quadrants that were utilized in arriving at a production per acre-pound decline factor for each of the quadrants

in which Canadian River Gas Company has producing acreage.

Q. All right, Now, Table 4?

A. Table 4 shows the calculated remaining reserve for the entire quadrant in which the Canadian River Gas Company has producing acreage, and Table 5 shows the calculated remaining reserve of the Canadin River Gas Company as of August 1, 1939, gas in Mcf. at 14.65 pounds per square inch absolute.

This table shows the quadrant in question, the weighted average pressure for 1939, the functional pressure—now, that term "functional pressure" represents the difference between weighted averages of August 1939 and abandonment pressure of 25 pounds well-head gauge. I believe I explained this situation previously.

* * * * *

Q. On Table 4 you show the remaining reserve at 25 pounds abandonment pressure for the sum total of your various quadrants used there, is that correct?

A. The remaining to 25 pounds abandonment pressure.

Q. In Table 5 you show remaining reserve in Canadian River Gas acreage without any reference in your title to 25 pounds abandonment pressure. Am I correct in assuming, however, if you applied your note indicated by the asterisk in each instance you would arrive at the same point, whether it is in the title or not?

A. That is right, they are both on the same basis.

* * * * *

A. The total reserve there is simply a summation of the calculated reserve for the Canadian River Gas Company productive acreage in each quadrant. That remaining reserve per acre over there is derived by dividing the estimated remaining reserve by the total acreage in the quadrant and those are the figures that are placed on that map; that is, the figures in red.

Q. The map is in Exhibit No. 179?

A. That is right.

Q. The acreage figures in red pencil on the map is in Exhibit No. 179?

A. Yes. They are simply placed on there to give sort

of a graphic picture of the variables in remaining reserve over the area.

The witness then read into the record a further explanation of Exhibit 180 as follows (Vol. 51, pp. 7101-7109):

"As the gas reserves in each quadrant were all calculated by the same method an illustration of the method is given in the case of one of them. Illustration example; Quadrant III Potter County.

"I. Grouping of Quadrants.

"In order to obtain the accumulated production versus pressure decline relation for this quadrant, it was first necessary to choose those quadrants immediately adjacent to Quadrant III which, after a study of isobar configurations, indicated the truest relationship between production and pressure factors having an effect on that quadrant. The data from these quadrants was then grouped together with that from Quadrant III for the purpose of deriving a production per acre-pound decline value.

"II. Basic Data, Table I.

"The basic data of each of the Quadrants entering into the calculations of those quadrants in which the Canadian River Gas Company owns acreage is found in Table I. This contains a summary of quadrant acreages, quadrant acre-pound values, quadrant weighted average pressures and quadrant accumulated production since August 1, 1935 to August 1, 1939.

"The quadrant acreage in Column D, the quadrant acre-pound values in Column E, and the quadrant weighted average pressures in Column F were derived as explained in a preceding section entitled 'Derivation of Acreages, Acre-pound Values and Weighted Average Pressures.'

"The weighted average pressure in Column F is derived by dividing the acre-pound value in Column E by the quadrant average in Column D.

"III. Calculation Data, Table III.

"Table III contains the tabulated data for the calculation of reserves in all quadrants having acreage owned by the Canadian River Gas Company as explained in accord-

ance with the criteria shown in Paragraph 1, grouping of quadrants.

"The combination of quadrants for the calculation of the production per acre pound decline value for quadrant III Potter was chosen from table III. These data are found in Column A, Lines 20 and 23, the years Column B, the total acreage of the group in Column C, the group acre-pound value in Column D and the group accumulated production from August 1, 1935 to August 1, 1939 in Column F. The group weighted average pressure, Column E, was obtained by dividing the group acre-pound value for each of the years by the constant group acreage.

"The group acreage (col. C, line 21), the group weighted average pressures from 1935 to 1939 (column E, lines 21 to 25), and the group accumulated productions from 1935 to 1939 (column F, lines 21 to 25) were taken from table III for the sample calculation of Quadrant III Potter shown on table II.

"IV. Sample Calculation, Table II:

"Table II illustrates the method followed to derive a production per acre-pound decline value for reserve acreage. The weighted average pressures versus the accumulated production data (table II) can be interpreted by the straight line equation: (See table II A. Graph of Quadrant III Potter data)

"$P = a - b\,Q$ where

"P is weighted average well head closed in pressure (Column C)

Q is the accumulated production by years from August 1, 1935 corresponding to P (Column D)

a and b are constants to be determined.

a; representing the pressure at zero production

b; representing the rate of change of pressure with production (gas withdrawal). Q.

"By the reasoning of the method of least squares the constant b may best be determined from the following two simultaneous equations.

"Eq. (1)

$$SP = Na - bsQ$$

"Eq. (2)

$$SPQ = aSQ - bsQ^2$$

"Where N = the number of data points. (In this case 5)
"SP = the sum of the P's (P = Pressures)
SQ = the sum of the Q's (Q = Volume of gas removed* (S = Summation)
SPQ, is the sum of the products of each P multiplied by the corresponding Q (i.e. 419. S in Column C, line 2 x 26,020,994 in Column D, line 2), and
SQ^2 is the sum of the squares of each Q [i.e. $(26,020,994)^2$ Column D, line 2 = 67.709213×10^{13}, Column F, line 2]

"Eq. (3)

Multiplying equation (1) by $\frac{SQ}{N}$ we obtain

$$\frac{SP.SQ}{N} = aSQ - \frac{b}{N}(SQ)^2$$

"Eq. (4)

Subtracting equation (3) from equation (2)

$$SPQ - \frac{SP.SQ}{N} = bSQ^2 \text{ plus } \frac{b}{N}(SQ)^2$$

"Solving for b in equation (4)

$$b = \frac{SPQ - \frac{SPSQ}{N}}{\frac{(SQ)^2}{N} - SQ^2} = \frac{NSPQ - SPSQ}{(SQ)^2 - NSQ^2} = \frac{SPSQ - NSPQ}{NSQ^2 - (SQ)^2}$$

"Now b is the change in weighted pressure for a change in production for the group 4 area. Since it is desired to know the change in production for change in weighted pressure for one acre, we take the reciprocal of b (i.e. $\frac{1}{b}$) and divide the reciprocal by the group acreage A, giving

"Eq. (5)

$$\frac{1}{Ab} = \frac{NSQ^2 - (SQ)^2}{A(SPSQ - NSPQ)}$$

"Equation 5 was then placed in line 7 of table II. When the proper values are substituted in this last equation and

the solution completed, it results in a value of 35.10 Mcf. per acre pound decline.

"This value is inserted in column G, line 25, of table III, column G, line 7 of table IV and column G, line 18 of table V where it is used to calculate the remaining reserves for the Canadian River acreage in table V and the remaining reserves of the quadrant in table IV.

"V. Remaining Reserves of Quadrants Containing Acreage of the Canadian River Gas Company, Table IV.

"The acreage for Quadrant III Potter County was obtained from table I (Column D, Line 21) and inserted in table IV (column E, line 7). In like manner the 1939 weighted average pressure of Quadrant III was obtained from table I (Column F, line 25) and placed in table IV (column C, line 7). To obtain the effective drop to an abandonment wellhead closed-in pressure of 25 pounds per square inch gauge, 25 pounds was subtracted from this weighted average pressure and the result tabulated in table IV (column D, line 7). The effective acre-pound value for the pressure decline to abandonment was then obtained by multiplying the acreage (column E, line 7) by the effective pressure drop (column D, line 7) and tabulating the result (column F, line 7). The acre-pound decline value (column F, line 7) multiplied by the production per acre-pound decline factor (column G, line 7) yields the Quadrant remaining reserve as of August 1, 1939 (column H, line 7). This remaining reserve divided by the quadrant acreage of 33389 yields the average remaining reserve per acre for the quadrant (column I, line 7).

"The reserves and the average reserves per acre for the other quadrants were derived in exactly the same manner.

"VI. Remaining Reserves of Canadian River Acreage, Table V.

"The values in table V were computed in exactly the same manner as they were in table IV, with the exception that the weighted average pressures of Canandian River acreage lying within Quadrant III Hutchinson County, and Quadrant IV Carson County, Table V (column C, lines 14 and 15) did not happen to coincide with the weighted average

pressures of the two quadrant acreages, Table IV (column C, lines 3 and 4). In the majority of quadrants, the Canadian River acreage was well enough distributed over the high and low pressure acreas so that its weighted average pressure would be very close to the weighted average pressure of the quadrant. However, in Hutchinson III and Carson IV, the acreage happened to be concentrated in areas of higher pressure than the average of the respective quadrants; hence, separate calculations were made to obtain the weighted average pressures of the acreage in Hutchinson III and Carson IV, according to the Canadian River acreage's areal pressure distribution. The Canadian River acreage weighted average pressure was then employed, as was the quadrant weighted average pressure in the other examples, to obtain the remaining reserves for Canadian River acreage in Hutchinson III and Carson IV.

"The remaining reserves and the average remaining reserve per acre values for Canadian River acreage were then tabulated in Table V (columns H and I)."

By Mr. Lange:

Q. Is there any other matter in connection with this Exhibit No. 180 which you believe should be given further description or that you should amplify at this time or clarify in any respect?

A. I think of nothing else at the moment.

Q. And the estimate of reserves as stated on Page 1 of your Exhibit 180, Canadian River Gas Company, are those as found by you as of August 1, 1939?

A. Yes, sir.

Q. And in your opinion from the line of your experience and the examination of the materials had and all of the information available, it represents in your opinion the correct estimates?

A. It is without doubt the best judgment. The methods used and the determination of the reserves at which I arrived were in my opinion the best that can be determined for the area under consideration.

Q. In Exhibit No. 180 or Exhibit No. 179 no attempt is made by you to either discuss or in any way give any opinion with reference to any matters of drainage?

A. No, except this, that in the utilization of the isobaric method of the determination of gas reserve, the method automatically takes into consideration certain drainage factors. If it did not take into consideration certain drainage factors; it wouldn't be applicable for usage but it has automatically taken into consideration certain factors.

Q. Those will be presented in a subsequent statement with reference to drainage?

A. There will be a subsequent exhibit and discussion of the question of drainage as a whole.

The witness further testified as follows (Vol. 51, pp. 7109-7120):

Q. You have just stated in answer to Mr. Lange's last question that your isobaric method; the preparation of the map with the isobaric contours on it did take into account automatically some of the methods of drainage?

A. That is right.

Q. I take it it doesn't adjust itself completely to the drainage question?

A. No, that is right.

Q. Would you mind stating what those elements are pertaining to drainage that you did take into account?

A. Automatically the construction of isobars indicate the differential in pressure between low and high pressure areas.

Q. I understand that, but from the standpoint of estimating a reserve I was wondering how that is accounted for in any drainage or took any drainage into account.

A. I hoped that I explained that a while ago. That was one of the reasons why we grouped these very quadrants, to arrive at a determination of the acre-pound factor, because a study of the isobaric maps over a period of five years indicated there was a drainage to and from it and that has been taken into consideration.

Q. That is, you took it into consideration in determining the outside lines of your quadrant areas?

A. Well, I don't know that I understand exactly what you mean.

Q. Maybe I didn't make it clear and I don't think I quite understood you, and I don't intend to get into the drainage question either.

My only thought was to clarify in my mind, at least, the

extent to which these isobar contour lines, if you term them that, took into account drainage in any manner whatsoever insofar as calculating the reserve in each of your quadrant areas.

A. I think I can answer it this way: The area, that is, the quadrants utilized in arriving at a production per acre-pound factor are so sufficiently large that they cover, at least have covered during the five-year period any area that might have any bearing on the question of the movement of gas to or from the areas in which the Canadian River Gas Company has acreage.

Q. Yes, I understand that. Let me ask you this and it may clarify it somewhat: Your isobar lines show different pressure gradients, that is, they are constructed on a basis of 10-pound variances in pressures between each line, is that correct?

A. Yes.

Q. Now, your flow of gas is in what direction from the standpoint of your map as shown by your isobar lines on there?

A. As a usual thing it is at right angles.

Q. That is right. It is from the high pressure or high pressure isobar lines to the next lower pressure and on to the next lower and on, and on just like water running down hill, isn't it?

A. That is true. The very fact that you may have low and high pressure areas—that is what I meant when I said it automatically considered those.

Q. I was wondering if that was what you had in mind regarding that.

A. Yes.

Q. In other words, take your own map. Near the four corners of Monroe, Hutchinson, Potter, and Carson Counties your isobar lines there show a pressure just cutting the four corners there of how much?

A. Well, that isobar there is 360 pounds.

Q. 360 pounds?

A. Yes.

Q. Then the next line to the southwest is 370 pounds, is it not?

A. 370 as you go south, that is right.

Q. And the next to the southwest is 380 and on and on at 10-pound intervals?

A. That is right.

Q. Now, with just as that is illustrated, take your *reservour* conditions on your isobar line indicated by 390 with reference to your isobar line shown as 360. You would have a 30-pound differential in pressure there, wouldn't you?

A. That is true.

Q. And the movement of gas underground would be in what direction between those two points?

A. I will have to qualify my answer there.

Q. All right.

A. It doesn't necessarily mean there is a movement of gas for the simple reason that these wells existing in the area between your 380 and 370, the gas withdrawn from the wells in that area have been largely responsible for that pressure differential and not in any long distance drainage.

Q. All right, suppose you shut those wells in for the time being and then what would happen?

A. If you could assume a condition where a person would shut his wells in for a year or two you might have drainage.

Q. Aside from drainage, you have a movement of gas from high pressure areas to low pressure areas?

A. There is no argument about that on the average.

Q. All right, and except as it may be influenced by producing wells as you have just stated, your isobar map would indicate very definitely and very specifically the movement of the gas underground assuming that it is moving?

A. With the exception that the migration factor is very largely affected by the permeability factor. It won't be the same at all points.

Q. That is very true. You will find it is moving more rapidly in some areas than in other areas?

A. That is correct.

Q. I appreciate that. Now, Mr. Hammer, you have designated on your quadrants a figure which determines, as I take it, the reserve remaining per acre in each of those quadrant areas?

A. Yes, that is right.

Q. Do you have the figures on that readily available showing what your original reserves were in each of those quadrants where you show the remaining reserve?

A. I don't know that I have it here. I will see.

Q. Well, if you can get that—you needn't get it right now, but we would like to have that.

A. Well, I have got it here.

Q. All right. you stated in one of your statements, I believe, that it was extremely difficult—in fact, you stated it a time or two, as I construed it, extremely difficult to take an isolated area and determine the reserve of gas in that area without considering its relationship to the surrounding areas?

A. To the immediately surrounding areas.

Q. Yes. All right, now, with respect to the determination of the reserves of Canadian River, you necessarily had to a very great extent at least, consider the field-wide picture, did you not, Mr. Hammer?

A. No, I did not.

Q. You didn't?

A. No.

Q. Have you considered the field-wide picture with respect to reserves generally in the Panhandle area?

A. Only in just a passing way, is all.

Q. In other words, you have made no estimate of the reserves in the Panhandle field as such?

A. I have made a general estimate, largely for the purpose of general information only.

Q. And as a matter of comparison, I take it. The two are so closely associated you almost had to have that, didn't you, to test your work on Canadian River?

A. No, I didn't have to have that at all.

Q. You didn't?

A. No.

Q. Well, did you in any event arrive at such a figure in connection with this work?

A. I arrived at a figure for the total field, future reserve.

Q. Well, I am wondering, in fact, as we view the matter, at least, it would be necessary for you to take the overall picture and your determination of the overall picture to get any satisfactory approach to the Canadian River picture, and in view of that our geologists would like to go over your working papers with you to that extent and determine the relationship between the two, at least from our theory, even though it might not be true as to yours.

Mr. March: If it please the Examiner, as far as that information is concerned, we will make available all working papers relative to the estimated reserves of Canadian River acreage as covered in this exhibit, but Mr. Hammer has testified that he has not prepared in connection with his estimate of reserves of Canadian River an estimate of the reserves of the entire field. He is not here offering an exhibit which shows the estimates of reserves of the entire field. If that were done, why, we—and we had prepared such an exhibit to offer, we would be glad to make available any working papers in regard to that exhibit.

Now, Commission's counsel's position, Mr. Keffer, is this, that we will make available to you all working papers relative to this exhibit. Now, I know that you are interested in the overall picture of the entire field—

Mr. Keffer: Very much.

Mr. March: Incidentally, we are not. We are interested in Canadian River's acreage directly, and so that is our position, but we will make available all working papers that we possibly can.

If there is any disagreement as to that, we can discuss that this evening and clear it up. That is our position.

Mr. Spencer: Well, Mr. Examiner, I am glad we have reached this point, that if a witness says that he has done something in connection with this study and his working papers or something else that he may have utilized in that connection are not available, we should have known that a long time ago. The witness said that he did make a figure on the gas reserves of the field in connection with his work here. Now, certainly it is competent, material and relevant to the issues we are here discussing, and I am not asking for any more working papers that he has, but whatever working papers he may have in connection with that field reserve figure, I think we are entitled to examine them.

Mr. March: We aren't offering an exhibit that gives the reserves of the field. Mr. Hammer says that that was not essential to this exhibit at all, that he does have some idea that if this method were applied to the entire field, he has some idea as to what the final figure would be, but as to an

exhibit and as to working papers in regard to that, we do not have them nor are they available for examination nor are we offering an exhibit in that regard.

We are making available all of the working papers in regard to this exhibit, however. An estimate of the reserves of the entire field has absolutely no bearing whatsoever on this particular exhibit. We don't have such an exhibit to offer in this case.

Mr. Spencer: I would suggest that the Examiner ask the witness what he has got.

The Trial Examiner: I feel like this, Mr. Spencer, with regard to these working papers, that unless counsel voluntarily makes those papers available which pertain to matters that the witness perhaps has considered but is not going to testify to in this proceeding, I feel that I have little, if any, discretion in that matter.

Now, if the witness undertakes to testify as to the total reserve in the Panhandle field, I think that would present a slightly different picture, but his testimony, as I understand it, will be confined entirely to the reserves underlying the acreage of the Canadian River Gas Company and if Commission's counsel makes the working papers underlying this particular exhibit available, which they have agreed to do, why, it seems to me that the Examiner would have little discretion in the present controversy.

Mr. Spencer: The Examiner may be right, and, of course, we would be bound by his ruling. If counsel wants to hold back anything related to the reserves in this field or acreage, I think we are on a different basis now as to making available working papers. We certainly have held nothing back.

Mr. March: Mr. Spencer, we are not going to hold one thing back in regard to this exhibit. Now, I know you gentlemen would like to have us present an estimate of reserves of this entire field. We have determined that that is not necessary to arrive at the Canadian River acreage reserve. We have not done that. We have no working papers and no exhibit to offer in that connection. You have got to have an exhibit before you can have working papers; so we have no

papers on the entire fields whatever, and we don't want to hold back one thing.

By Mr. Keffer:

Q. Mr. Hammer, have you arrived at a figure for the field as a whole?

A. You say, had I arrived at a figure?

Q. Yes, a figure with respect to the reserves in the Panhandle field as a whole.

A. As I stated, on academically, a figure that until I have done more work I would not want to attempt to support.

Q. Well, in taking into consideration the Canadian River reserve you have considered a lot of acreage that is not Canadian River acreage, didn't you? Your map here shows that.

A. Oh, yes.

Q. That's right, you went beyond the confines of the Canadian River block, so to speak, and considered some of Texoma, Panhandle Eastern acreage, Shamrock and acreage of many other producing companies.

A. I wasn't at all interested in who owned the acreage or anything of that type.

Q. That is very true, yet you did—

Mr. Spencer: Just a minute.

The Witness: The only reason that that acreage was utilized was to cover a sufficiently large area so that I would be in the position of having all of the area in that would have any direct bearing on the areas in which Canadian River had its acreage.

The following tables and plats were attached to and formed a part of Commission Exhibit 180:

TABLE I

SUMMARY
OF
QUADRANT ACREAGE, QUADRANT ACRE-POUND FACTOR, QUADRANT WEIGHTED AVERAGE PRESSURE AND ACCUMULATED PRODUCTION SINCE AUGUST 1, 1935

(A)	Quadrant Used in Calculation (B)	Year (C)	Quadrant Acreage (D)	Quadrant Acre-Pound Values (E)	Quadrant Weighted Average Pressure (F)	Accumulated Production Since Aug. 1935 (G)	Quadrant Used In Calculation (H)	Year (I)	Quadrant Acreage (J)	Quadrant Acre-Pound Values (K)
	Hartley	1935	32,906	14,113,298	428.9	0	Moore V	1935	62,614	26,580,646
		1936		14,112,147	428.9	793,677		1936		26,303,793
		1937		14,047,499	426.9	3,322,690		1937		25,952,293
		1938		13,952,964	424.0	5,112,209		1938		25,577,700
		1939		13,928,532	423.3	6,785,156		1939		24,861,166
	Potter I	1935	57,588	24,176,000	419.8	0	Moore VI	1935	79,556	32,460,060
		1936		23,961,000	416.1	6,350,014		1936		31,859,029
		1937		23,819,000	413.5	16,118,207		1937		31,278,671
		1938		23,582,000	409.5	26,884,883		1938		29,964,818
		1939		23,196,000	402.8	38,090,487		1939		28,106,200
	Potter II	1935	44,937	18,966,000	422.0	0	Hutchinson II	1935	50,658	10,579,045
		1936		18,869,000	419.9	5,139,895		1936		10,389,149
		1937		18,628,000	414.6	10,662,205		1937		10,311,726
		1938		18,497,000	411.6	16,471,851		1938		10,042,966
		1939		18,191,000	404.8	22,663,102		1939		9,862,606
	Potter III	1935	33,389	14,198,000	425.2	0	Hutchinson III	1935	53,967	15,920,702
		1936		13,985,000	418.9	5,107,348		1936		15,708,405
		1937		13,938,000	417.5	12,480,159		1937		15,259,718
		1938		13,847,000	414.7	18,423,562		1938		15,010,397
		1939		13,607,000	407.5	23,675,254		1939		14,601,992
	Moore I	1935	62,173	23,810,359	383.1	0	Hutchinson IV	1935	46,157	18,132,760
		1936		23,364,975	375.8	22,420,751		1936		17,935,802
		1937		23,115,452	371.8	48,575,340		1937		17,641,497
		1938		22,704,031	365.2	75,542,559		1938		17,058,999
		1939		22,108,761	355.6	106,900,904		1939		15,235,188
	Moore II	1935	61,866	25,624,302	414.2	0	Carson III	1935	79,985	30,145,100
		1936		25,396,197	410.5	11,252,097		1936		29,541,800
		1937		24,933,023	403.0	28,889,480		1937		28,746,700
		1938		24,248,578	392.0	54,733,964		1938		28,195,800
		1939		23,238,433	375.6	83,195,880		1939		27,146,200
	Moore III	1935	56,614	24,212,203	427.7	0	Carson IV	1935	40,251	16,400,700
		1936		24,061,291	425.0	3,687,977		1936		16,175,600
		1937		24,005,164	424.0	8,812,810		1937		15,929,200
		1938		23,878,660	421.8	13,616,200		1938		15,472,200
		1939		23,574,156	416.4	19,825,970		1939		15,160,100
	Moore IV	1935	28,775	12,364,650	430.0	0				
		1936		12,364,650	430.0	0				
		1937		12,253,421	426.1	0				
		1938		12,227,488	425.2	719,687				

TABLE I

SUMMARY
OF
QUADRANT ACREAGE, QUADRANT ACRE-POUND FACTOR, QUADRANT WEIGHTED AVERAGE PRESSURE AND ACCUMULATED PRODUCTION SINCE AUGUST 1, 1935

3649-3651

Quadrant Acreage (D)	Quadrant Acre-Pound Values (E)	Quadrant Weighted Average Pressure (F)	Accumulated Production Since Aug.1935 (G)	Quadrant Used In Calculation (H)	Year (I)	Quadrant Acreage (J)	Quadrant Acre-Pound Values (K)	Quadrant Weighted Average Pressure (L)	Accumulated Production Since Aug.1935 (M)	(N)
32,906	14,113,298	428.9	0	Moore V	1935	62,614	26,580,646	424.5	0	
	14,112,147	428.9	793,677		1936		26,403,793	420.1	3,390,624	
	14,047,499	426.9	3,322,690		1937		25,952,293	414.5	10,797,395	
	13,952,964	424.0	5,112,209		1938		25,577,709	408.5	20,141,371	
	13,928,532	423.3	6,785,156		1939		24,861,166	397.1	30,697,349	
57,588	24,176,000	419.8	0	Moore VI	1935	70,556	32,460,060	408.0	0	
	23,961,000	416.1	6,350,014		1936		31,855,029	400.4	14,433,687	
	23,815,000	413.5	16,118,207		1937		31,278,671	393.2	41,710,710	
	23,582,000	409.5	26,884,883		1938		29,964,818	376.7	77,333,909	
	23,196,000	402.8	38,098,487		1939		29,106,200	366.9	114,958,335	
44,937	18,966,000	422.0	0	Hutchinson II	1935	50,658	10,579,045	208.8	0	
	18,869,000	419.9	5,139,895		1936		10,389,449	205.0	53,039,510	
	18,628,000	414.6	10,662,205		1937		10,314,726	203.6	96,746,558	
	18,497,000	411.6	16,471,851		1938		10,042,966	198.3	134,174,315	
	18,191,000	404.8	22,663,102		1939		9,868,606	194.7	162,690,577	
33,389	14,198,000	425.2	0	Hutchinson III	1935	53,967	15,920,702	295.0	0	
	13,985,000	418.9	5,107,348		1936		15,708,405	291.1	55,115,234	
	13,938,000	417.5	12,490,159		1937		15,259,718	282.8	96,450,840	
	13,847,000	414.7	18,423,562		1938		15,010,397	278.1	131,318,309	
	13,607,000	407.5	23,675,254		1939		14,601,952	270.6	172,149,088	
62,173	23,819,359	383.1	0	Hutchinson IV	1935	46,157	18,132,760	392.8	0	
	23,364,975	375.8	22,420,751		1936		17,935,802	388.6	2,801,562	
	23,115,452	371.8	48,575,340		1937		17,841,497	386.6	6,629,322	
	22,704,031	365.2	75,542,559		1938		17,058,999	369.6	11,913,000	
	22,106,761	355.6	106,900,904		1939		15,235,188	330.1	21,566,975	
61,866	25,624,302	414.2	0	Carson III	1935	70,985	30,145,100	376.9	0	
	25,396,197	410.5	11,292,097		1936		29,541,800	369.3	35,487,550	
	24,933,023	403.0	28,809,480		1937		28,746,700	359.4	78,002,878	
	24,248,578	392.0	54,733,964		1938		28,196,800	352.5	114,656,197	
	23,238,433	375.6	83,195,880		1939		27,446,200	343.1	147,625,322	
56,614	24,212,303	427.7	0	Carson IV	1935	40,251	16,409,700	407.7	0	
	24,061,291	425.0	3,687,977		1936		16,175,600	401.9	12,423,965	
	24,005,464	424.0	8,812,810		1937		15,924,200	395.7	29,186,069	
	23,878,600	421.8	13,616,200		1938		15,472,200	384.4	48,732,042	
	23,574,156	416.4	19,825,970		1939		15,160,100	376.6	69,278,145	
28,775	12,364,650	430.0	0							
	12,364,650	430.0	0							
	12,253,421	426.1	0							
	12,227,488	425.2	719,687							

Exhibit No. 1

TABLE II

SAMPLE CALCULATION

OF PRODUCTION PER ACRE-POUND DECLINE

Quad. III Potter County Illustrated

ata Taken From Table III Summary
(Production Per Acre-Pound Decline
Basic Data)

Year	A Group Acreage	P Group Weighted Average Pressure	Q Group Accumulated Production	PQ	Q^2
1935	229712 ●	422.7	0	0	
1936	●	419.8	26020994	10.923618×10^9	67.709213×10^{15}
1937		416.0	64177363	26.697779×10^9	$411.873264 \times 10^{15}$
1938		411.1	108357786	44.545086×10^9	$1174.140979 \times 10^{15}$
1939		402.8	156145362	62.895352×10^9	$2438.137407 \times 10^{15}$
		●P = 2072.4	●Q = 354701495	●PQ = 145.062680×10^9	●Q^2 = $4091.860863 \times 10^{15}$
(A)	(B)	(C)	(D)	(E)	(F)

$$\text{Production Per Acre-Pound} = \frac{N\,\bullet Q^2 - (\bullet Q)^2}{A(\bullet PQ - N\,\bullet PQ)}$$

$N = 5$

$N\,\bullet Q^2 = 5 \times 4091.860863 \times 10^{15} = 204.593045 \times 10^{15}$ (M.C.F.)^2

$(\bullet Q)^2 = (354701495)^2 = 125.81315 \times 10^{15}$ (M.C.F.)^2

$\bullet PQ = 2072.4 \times 354701495 = 7350.834 \times 10^6$ (Pounds x M.C.F.)

$N\,\bullet PQ = 5 \times 145.062680 \times 10^9 = 7253.1315 \times 10^6$ (Pounds x M.C.F.)

$N\,\bullet Q^2 - (\bullet Q)^2 = 204.593045 \times 10^{15} - 125.81315 \times 10^{15} = 78.779895 \times 10^{15}$ (M.C.F.)^2

$\bullet PQ - N\,\bullet PQ = 7350.834 \times 10^6 - 7253.1315 \times 10^6 = 9.7702 \times 10^6$ (Pounds x M.C.F.)

$A = 2.29712 \times 10^6$ Acres

$$\text{Production Per Acre-Pound Decline} = \frac{78.779895 \times 10^{15} \text{ (M.C.F.)}^2}{2.29712 \times 10^6 \text{ Acres} \times 9.7702 \times 10^6 \text{ (Pounds x M.C.F.)}} = 35.10 \text{ M.C.F./Acre-Pound}$$

● Denote Summation of Quantities

For Derivation of this Equation See P. 7

Exhibit No. 180

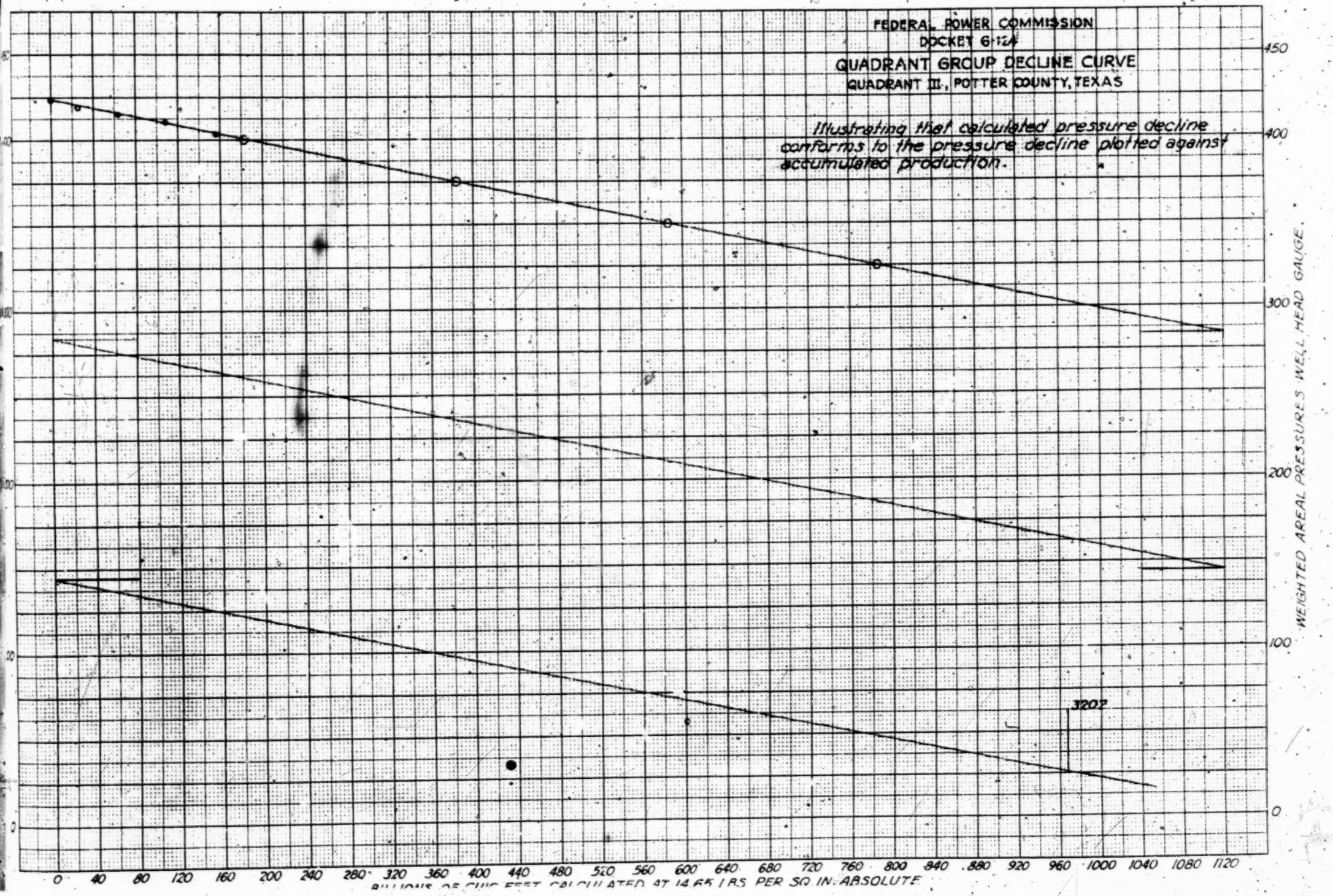


EXHIBIT NO. 100

FEDERAL POWER COMMISSION
DOCKET G-124

ENLARGED PARTIAL GROUP DECLINE CURVE
QUADRANT III, POTTER COUNTY, TEXAS

Illustrating that calculated decline curve not only follows the straight line characteristics of pressure decline vs. accumulated gas withdrawls, but gives a truer and more conservative slope than interpolated construction.

A- Maximum decline curve possible.
B- Most probable decline curve interpolation.
C- Decline curve based on factor of 35.1 MCF per acre pound decline as determined by mathematical method.

WEIGHTED AVG PRESSURES WELL HEAD GAUGE

420 430 410 400 390 380 370 360

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270

BILLIONS OF CUBIC FEET CALCULATED AT 14.65 LBS. PRESSURE PER SQ IN. ABSOLUTE

TABLE III

SUMMARY
OF
PRODUCTION PER ACRE-POUND DECLINE
BASIC DATA

Quadrants Used In Calculation (A)	Year (B)	Group Acreage (C)	Group Acre-Lb. (D)	Weighted Average Pressure (E)	Accumulated Production From Aug.1, 1935 (F)	Production Per Acre-Lb. Decline Calculated (G)	Quadrants Used In Calculation (H)	Year (I)	Group Acreage (J)
Hartley							**Moore II**		
HA, P III,	1935	151,664	64,888,851	427.8	0		P I, P II	1935	487,492
M III, M IV,	1936		64,523,088	425.4	9,589,002		P III, M I	1936	
	1937		64,244,384	423.6	24,625,659		M II, M III	1937	
	1938		63,906,052	421.4	37,871,658		M IV, M V	1938	
	1939		63,259,621	417.1	52,120,127	34.43	M VI	1939	
Potter I							**Moore III**		
P I, P II	1935	320,782	124,916,063	389.4	0		HA, P II	1935	321,081
M I, M II	1936		123,475,177	384.9	113,041,956		P III, M II	1936	
H III, C IV	1937		121,680,393	379.3	229,882,150		M III, M IV	1937	
	1938		119,514,206	372.6	356,683,708		M V	1938	
	1939		116,406,286	363.2	492,586,826	58.97		1939	
Potter II							**Carson IV**		
P I, P II	1935	316,567	130,908,564	413.8	0		C III, C IV	1935	344,622
P III, M I	1936		129,650,463	409.6	53,908,082		P I, M I	1936	
M II, M III	1937		128,431,939	405.7	125,548,210		H II, H III	1937	
	1938		126,758,209	400.4	205,672,519			1938	
	1939		123,868,350	391.2	294,359,597	42.71		1939	
Potter III							**Hutchinson III**		
HA, P II	1935	229,712	97,114,503	422.7	0		H III, H IV	1935	339,692
P III, M II	1936		96,423,635	419.8	26,020,994		M I, M VI	1936	
M III	1937		95,551,986	416.0	64,177,353		P I, C IV	1937	
	1938		94,424,140	411.1	108,357,786			1938	
	1939		92,539,121	402.8	156,145,362	35.10		1939	
Moore I									
P I, P II	1935	462,952	183,856,769	397.1	0				
M I, M II	1936		181,733,999	392.6	130,866,867				
M V, M VI	1937		178,911,357	385.6	282,390,855				
H III, C IV	1938		175,056,733	378.1	454,158,988				
	1939		170,463,742	368.2	644,242,570	47.88			

3665-3667

Exhibit No. 18

TABLE III

SUMMARY
OF
PRODUCTION PER ACRE-POUND DECLINE
BASIC DATA

Accumulated Production From Aug.1, 1935 (F)	Production Per Acre-Lb. Decline Calculated (G)	Quadrants Used In Calculation (H)	Year (I)	Group Acreage (J)	Group Acre-Lb. (K)	Weighted Average Pressure (L)	Accumulated Production From Aug.1, 1935 (M)	Production Per Acre-Lb. Decline Calculated (N)
		Moore II						
0		P I, P II	1935	487,492	202,403,920	415.2	0	
9,589,002		P III, M I	1936		200,173,935	410.6	71,822,393	
24,625,659		M II, M III	1937		197,916,324	406.0	178,056,915	
37,871,658		M IV, M V	1938		194,528,224	399.0	303,867,486	
52,120,127	34.43	M VI	1939		189,985,739	389.7	447,849,088	36.82
		Moore III						
0		HA, P II	1935	321,081	136,050,799	423.8	0	
113,041,956		P III, M II	1936		135,092,078	420.7	29,411,618	
229,882,150		M III, M IV	1937		133,757,700	416.6	74,975,348	
356,683,708		M V	1938		132,229,339	411.8	129,218,814	
492,586,826	58697		1939		129,550,220	403.5	191,676,458	30.58
		Cars n IV						
0		C III, C IV	1935	344,622	121,049,906	351.2	0	
53,998,082		P I, M I	1936		119,137,229	345.7	185,137,024	
125,548,210		M II, M III	1937		117,180,756	340.0	362,159,892	
205,672,519			1938		115,007,354	333.7	533,310,315	
294,359,597	42.71		1939		112,374,779	326.1	696,843,743	81.43
		Hutchinson III						
0		H III, H IV	1935	339,692	130,918,581	385.4	0	
26,020,994		M I, M VI	1936		129,000,811	379.8	113,845,313	
64,177,353		P I, C IV	1937		127,039,538	373.9	238,670,488	
108,357,786			1938		123,792,425	364.4	374,724,802	
156,145,362	35.10		1939		119,408,331	351.5	523,253,214	45.94
0								
130,866,267								
282,390,855								
454,158,988								
644,242,570	47.88							

TABLE IV

REMAINING RESERVE TO 25 LBS. ABANDONMENT PRESSURE

OF QUADRANTS CONTAINING ACREAGE OF THE CANADIAN RIVER GAS CO. AS OF

AUGUST 1, 1939 - GAS IN M.C.F. AT 14.65 POUNDS PER SQ. IN. ABS.

	County	Quadrant	1939 Wtd. Avg. Pressure	Functional Pressure*	Acreage	Acre-Lbs.	Production Per Acre-Pound Decline
1.	(A)	(B)	(C)	(D)	(E)	(F)	(G)
2.	Hartley	Hartley	423.3	398.3	32,906	13,106,460	34.43
3.	Hutchinson	III	270.6	245.6	53,967	13,254,295	45.94
4.	Carson	IV	376.6	351.6	40,251	14,152,252	81.43
5.	Potter	I	402.8	377.8	57,588	21,756,746	58.97
6.	Potter	II	404.8	379.8	44,937	17,067,073	42.71
7.	Potter	III	407.5	382.5	33,389	12,771,293	35.10
8.	Moore	I	355.6	330.6	62,173	20,554,394	47.88
9.	Moore	II	375.6	350.6	61,866	21,690,220	36.82
10.	Moore	III	416.4	391.4	56,614	22,158,720	30.58
11.	TOTAL				443,691		

*Functional Pressure is 1939 Weighted Average Pressure Minus 25#/IN^2.

TABLE V

REMAINING RESERVE

OF CANADIAN RIVER GAS CO. ACREAGE

AS OF AUGUST 1, 1939 - GAS IN M.C.F. AT 14.65 POUNDS PER SQ. IN. ABS.

	County	Quadrant	1939 Wtd. Avg. Pressure	Functional Pressure*	Acreage	Acre-Lbs.	Production Per Acre-Pound Decline
12.	County	Quadrant					
13.	Hartley	Hartley	423.3	398.3	14,358	5,718,791	34.43
14.	Hutchinson	III	319.2	294.2	5,347	1,573,117	45.94
15.	Carson	IV	362.6	337.6	5,670	1,914,192	81.43
16.	Potter	I	402.8	377.8	48,825	18,446,085	58.97
17.	Potter	II	404.8	379.8	42,125	15,999,151	42.71
18.	Potter	III	407.5	382.5	33,289	12,733,043	35.10
19.	Moore	I	355.6	330.6	26,592	8,791,438	47.88
20.	Moore	II	375.6	350.6	28,661	10,048,676	36.82
21.	Moore	III	416.4	391.4	17,648	6,907,368	30.58
22.	TOTAL CANADIAN RIVER GAS CO.				222,515		

*Functional Pressure is 1939 Weighted Average Pressure Minus 25#/IN^2.

Exhibit No. 180

TABLE IV

REMAINING RESERVE TO 25 LBS. ABANDONMENT PRESSURE

OF QUADRANTS CONTAINING ACREAGE OF THE CANADIAN RIVER GAS CO. AS OF

AUGUST 1, 1939 - GAS IN M.C.F. AT 14.65 POUNDS PER SQ. IN. ABS.

1939 Wtd. Avg. Pressure	Functional Pressure*	Acreage	Acre-Lbs.	Production Per Acre-Pound Decline	Remaining Reserve	Remaining Reserve Per Acre
(C)	(D)	(E)	(F)	(G)	(H)	(I)
423.3	398.3	32,906	13,106,460	34.43	451,255,000	13,713
270.6	245.6	53,967	13,254,295	45.94	608,902,000	11,283
376.6	351.6	40,251	14,152,252	81.43	1,152,418,000	28,630
402.8	377.8	57,588	21,756,746	58.97	1,282,995,000	22,279
404.8	379.8	44,937	17,067,073	42.71	728,935,000	16,221
407.5	382.5	33,389	12,771,293	35.10	448,272,000	13,426
355.6	330.6	62,173	20,554,394	47.88	984,144,000	15,829
375.6	350.6	61,866	21,690,220	36.82	798,634,000	12,909
416.4	391.4	56,614	22,158,720	30.58	677,614,000	11,969
		443,691			7,133,169,000	16,077

*Functional Pressure is 1939 Weighted Average Pressure Minus 25#/IN^2.

TABLE V

REMAINING RESERVE

OF CANADIAN RIVER GAS CO. ACREAGE

AS OF AUGUST 1, 1939 - GAS IN M.C.F. AT 14.65 POUNDS PER SQ. IN. ABS.

1939 Wtd. Avg. Pressure	Functional Pressure*	Acreage	Acre-Lbs.	Production Per Acre-Pound Decline	Remaining Reserve	Remaining Reserve Per Acre
423.3	398.3	14,358	5,718,791	34.43	196,898,000	13,713
319.2	294.2	5,347	1,573,117	45.94	72,269,000	13,516
362.6	337.6	5,670	1,914,192	81.43	155,873,000	27,491
402.8	377.8	48,825	18,146,085	58.97	1,087,766,000	22,279
404.8	379.8	42,125	15,999,151	42.71	683,324,000	16,221
407.5	382.5	33,289	12,733,043	35.10	446,930,000	13,426
355.6	330.6	26,592	8,791,438	47.88	420,934,000	15,829
375.6	350.6	28,661	10,048,676	36.82	469,992,000	12,909
416.4	391.4	17,648	6,907,368	30.58	211,227,000	11,969
		222,515			3,645,213,000	16,343

*Functional Pressure is 1939 Weighted Average Pressure Minus 25#/IN^2.

United States Circuit Court of Appeals

TENTH CIRCUIT.

No. 2550.

COLORADO INTERSTATE GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

No. 2551.

CANADIAN RIVER GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; PUBLIC SERVICE COMPANY OF COLORADO; and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

ON PETITION TO REVIEW AND SET ASIDE ORDERS OF THE FEDERAL POWER COMMISSION.

FILED SEPTEMBER 9, 1942.

VOLUME 7—Pages 3671-4350

Witness HAMMER further testified on cross examination, Vol. 54, pp. 7507-7593, inclusive, as follows:

The pressure contour (Isobar Map 179) follows the outlines of the field, with some minor exceptions, as determined by the Texas Railroad Commission, the total distance from one end of the field to the other being approximately 120 miles. The outline of the field was not determined by the witness but he merely copied the outline as determiined by the Texas Railroad Commission, with some minor exceptions.

Beginning at a point just southwest of the town of Pampa right near the southwestern limits of the town, a dotted line is shown which runs generally from that point to the northwest through the remaining portion of Gray County across Carson County and through the more or less central portion of Hutchinson County. This dotted line (Exhibit 179) represents the northeastern limits of the productive gas territory or the outer limits of the gas field in this particular area as interpreted by the Texas Railroad Commission.

The area between the dotted line above referred to, and the outer heavy solid line in the same area, represents oil producing territory. There are some dry spots but generally the structures are favorable for oil production. The little dots between the dotted line and the outer heavy line represent producing oil wells, each dot representing a well, but he did not know the approximate volume of oil production in the field as of the time of testifying.

There is another dotted line generally south and southwest of the dotted line above referred to on the pressure contour map (Exhibit 179). This dotted line begins just south of the town of Pampa in Gray County and runs generally from that point in a northwesterly direction in a rather irregular wavy line across the north portion of Gray County, entirely across Carson County and intersecting the Carson-Hutchinson county line some ten miles east of the northwest corner of Carson County. The line continues across the southwestern portion of Hutchinson County and intersects the Hutchinson-Moore County line at a point probably 12 miles north of the southwest corner of Hutchinson County. It continues across Moore County and northwesterly to a point some 6 or 7 miles east of the town of Dumas in Moore County, thence in a general southwesterly and

southerly direction across the town site of Dumas, thence a little to the southeast and then turning back again southwesterly to a point where it intersects the Moore County and Hartley County Line about 5 miles north of the southwest corner of Moore County; thence, a curved line from that point extending somewhat into Hartley County and then turning back southeasterly again and then generally in a southerly direction to a point of intersection with the southern limits of the field near the northwest corner of Potter County. This line represents the division point between the sour gas producing area and the sweet gas producing area.

Sour gas contains sulphur and/or hydrogen sulphide in quantities too great to make such gas desirable for domestic use, while sweet gas is comparatively free from such substances. Otherwise the two gases are practically the same.

The sweet-sour gas line was not located by the witness but was taken from maps prepared by the Texas Railroad Commission.

Sour gas is produced north and northeast of the line and sweet gas, south and southwest of the line, except at the western edge of the field where the sour gas is produced generally west of the line, and sweet gas east of the line.

Again referring to the little dots on the pressure contour map included in the gas producing area, beginning in Wheeler County near the south-central portion of the County and running pretty well along the northeastward portion of the gas field, across Wheeler, Gray and Carson Counties, and well into Hutchinson County, all of which are in the gas producing area, such dots generally represent oil wells, all of which have been drilled in the gas producing area and through the gas producing horizon before they encountered oil. This portion of the gas field also produces oil and has produced large volumes of oil. The structural conditions are such, however, that in drilling for oil they have drilled through gas-producing formations, the oil lying just underneath the gas, in a separate strata.

The discovery well in the entire panhandle field was drilled in about 1918 or 1919 on the Masterson Ranch in Potter County, and on acreage that the witness thinks is now owned by Canadian River Gas Company. This well,

the witness has been told, was just a wild-cat well. Other wells were drilled at a later date in Potter County. The nearest known production of oil or gas at the time this well was drilled was in the vicinity of Vernon, Texas, or somewhat east of Vernon, around Iowa Park, Texas, the distance being probably 200 miles from the Masterson Ranch well. After the Masterson well was drilled there were other wells drilled in an effort to find oil. There was a great deal of drilling but for the first several years after the discovery well the most of the wells drilled were gas wells, and although such wells were drilled for oil, the operators were successful only in developing gas.

The witness further testified (Vol. 54, p. 7524) as follows:

Q. Was there any market for the gas at that time, do you know, Mr. Hammer?

A. Well, there was a market but there wasn't any outlet.

Q. All right; we'll say that?

A. No, there wasn't any at that time.

The first oil well was drilled in the Texas Panhandle Field in about 1925, although oil might have been discovered somewhat earlier than that date. The big production of oil in the field began with the discovery of the Borger field in the latter part of 1925, or the first part of 1926. The presence of oil was probably known to some degree in the latter part of 1925, but the big drilling campaign commenced in 1926.

Borger is in the southern part of Hutchinson County. The various little dots shown on the isobar contour map (Exhibit 179) to the eastward and to the northeastward, to the north and to the northwest of Borger, might be termed the original Borger oil pool which became very active in 1926. All of the wells around Borger, between Borger and the dotted line which represents the outer limits of gas production, were drilled for oil, and generally all of them produced oil, but I think those wells were drilled through the gas producing formation. Very little attention was given to saving and utilizing gas production at that time. A great deal of gas was blown into the air. Later gasoline plants were erected and a small volume of natural gasoline was extracted from the natural gas and the residue was blown into the air. Residue gas is the gas that remains after the gasoline

has been extracted, and you have almost as great a volume of gas after the extraction of the gasoline as you had before. All of this residue gas was blown into the atmosphere.

Following the discovery of the Borger pool wells were drilled in and around that general area, the wells generally being southeastward from Borger along the northeastern portion of the structure, down to Pampa and the little town of Lefors in Gray County and on down into the northern portion of Wheeler County. Many of the wells, although drilled for oil, discovered gas only. If they were drilled a little too high on the structure to produce oil, they almost certainly encountered gas. A great many of the old gas wells that were drilled primarily for oil in the first instance were disappointments since no oil was discovered, but they did encounter gas and the wells were saved as gas wells.

Many of the oil wells produced both oil and gas. All of the little dots shown on the Map (Exhibit 179), but within the gas producing area, also encountered gas, or at least the greater majority of them did. There might be some exceptions to this but generally they all did discover gas. It is a very rare thing to get a dry hole within the gas producing area so far as gas in concerned. Each of the wells represented by the little dots above referred to encountered gas even though the wells might also have encountered oil, unless the well represented a dry hole in both cases.

There were a great many gasoline plants constructed in the early days of the Texas Panhandle Field to utilize gas for the manufacture of natural gasoline. During that period this field became noted as one of the largest natural gasoline producing areas in the world. Plants were constructed pretty well along the entire northeastward border of the field from Wheeler County to Hutchinson County and later on up into the northern portion of Moore County. The witness did not observe the practice of completing oil wells during that period, but did learn from his general investigation, and in discussing the matter with operators in the field, that well owners did sometimes cement the inner casing improperly, or after cementing it jar it loose or perforate it in some other way in order to get a much larger gas production from the gas producing strata above the oil strata. Witness stated that he had heard this practice be-

came the scandal of the industry for a while, and he had heard it said that there were great volumes of dry gas or natural gas produced with the innercasing string and then processed for its natural gasoline. The witness assumed that all of the gas in the Texas Panhandle Field, whether it is produced in the oil field section or high on the structure or wherever it is produced, does have sufficient gasoline content to make it profitable to remove the natural gasoline. It is a uniform practice at any rate to remove the natural gasoline from such gas, and if it were not profitable Canadian River would not be taking it out.

After the natural gasoline plants were constructed carbon black plants were constructed in the field to utilize the residue gas from the gasoline plants. The carbon black plants were generally constructed near the gasoline plants. Plants were constructed in the northern part of Parsons County around Whitedeer, around Pampa and in Wheeler County, in Moore County and around Borger. A great deal of the gas produced in the field was not utilized for fuel but was blown into the air or burned in carbon black plants. The witness does not know the total volume of gas used in the manufacture of carbon black but he would not be surprised if more than 90% of all of the carbon black in the world is made in the Texas Panhandle.

Carbon black is made simply by burning the gas against an iron. It is burned under low or insufficient air conditions so that it will produce what is ordinarily called a smoke or soot. The soot collects on the angle iron and a moving chain with scrapers removes it. Carbon black is just the soot from the burning of gas against a steel plate somewhat like the smoke off of a lamp chimney. It takes around 1,000 cu. ft. of gas to make a pound of carbon black. Carbon black is used largely in the production of automobile tires and prolongs the wear and tear on tires—it toughens the tire. Before the days of carbon black, zinc oxide was used for that purpose, but did not give nearly as much mileage on the tires as carbon black.

The next step in the evolution of the gas industry in the Texas Panhandle Field was the construction of stripping plants. This period began along in 1933 or 1934, after the Legislature of Texas had enacted a statute which permitted operators to utilize gas from gas wells, that is, just natural

gas as produced from the wells and extracted the gasoline from the gas and vent the residue into the air. The witness recalls that there were several such plants constructed and great volumes of gas during that period were popped (vented) into the air.

Still later the Legislature of Texas enacted a statute permitting the manufacture of carbon black from sour gas. The carbon black industry was greatly expanded subsequent to that time although there had been carbon black plants in the field prior to that time utilizing the so-called casing head gas, that is, gas produced with the inner string of casing, but which frequently, by reason of improper well completions, came from the gas producing stratum above, that is, from the gas producing portion of the structure.

Sour gas is produced north and northeast and in the western part of the field to the west of the sour gas line hereinabove referred to, and the wells located in that portion of the field produce sour gas. This gas is run into gasoline plants and the residue is burned as carbon black.

The witness has not particularly traced the history of the carbon black plants, and in getting his production figures did not attempt to determine the volume that was consumed by carbon black plants. He attempted to go back of 1935 in his production studies, but decided that the data prior to 1935 was not complete although the Texas Railroad Commission had compiled production figures prior to that date, but the gas was reported on different pressure bases.

The witness further testified as follows (Vol. 54, pp. 7555-7561):

Q. We are just about through, Mr. Hammer, with some of this historical background. I believe we were on the matter of the legislation of the State of Texas which permitted the use of certain types of gas for carbon black, were we not, when the recess occurred?

A. Yes, I think we were.

Q. Now, your study of the history of the field and particularly the production history of the field, has indicated to you just what has happened since that legislation was passed, has it not, Mr. Hammer?

A. When was the legislation passed?

Q. It was passed in 1935.

A. That is the statute you are talking about, the 1935 statute?

Q. Yes. It is ordinarily referred to as "House Bill 266," almost universally so. You will see in the Railroad Commission's report that it is listed as "House Bill 266."

A. I think in general that my study has covered that period from 1935 on.

Q. Now, prior to that time you had noted no doubt that the gas that was utilized by carbon black plants was produced generally in the Borger area and I might say also in the Sanford area just west of Borger. Do you know what I mean by the Sanford area?

A. As I stated a while ago, I haven't traced the history of where carbon black plants were located.

Q. In getting your production figures which show the outlet for the gas or the disposition of the gas, it shows certain portions of the gas for carbon black plants, doesn't it?

A. You are referring to the time prior to 1935?

Q. Yes, from the beginning to almost 1939.

A. Well, from 1935 on we took notice of that phase of it, yes.

Q. Well, didn't you go back of 1935 at all in your production studies?

A. Yes, we attempted to go back of 1935 but if you will recall in my written statement—I said that just because of this thing we are talking about now—that I didn't consider the data prior to the time of such characterization that it could be utilized with any degree of accuracy.

Q. But you necessarily had to go back of that before you could determine that in your mind it was not satisfactory for your use?

A. I did go back of that.

Q. So you had to go back of 1935 in your study of the field and the producing history of the field?

A. That was after I had found out that the history was up to a certain point prior to 1935 and then decided to make my study on the area from 1935—at times from 1935 on, I did not give that early period very much attention.

Q. What was the difficulty, Mr. Hammer, with those earlier records which you discarded in your study of the matter?

A. Well, I think I have stated that fairly well in my written statement.

Q. You said it was black-out. It wasn't hardly that bad?

A. All right.

Q. The Railroad Commission of Texas has compiled—

A. We couldn't depend upon the early pressure that was recorded. The various bases at which gas was reported to the Texas Railroad Commission varied over such a wide range, and as a matter of fact, the Texas Railroad Commission itself has no information that can be relied upon as to what pressure was utilized in those early reports turned into the Commission.

Q. That is quite true. I say, that is quite true, but I don't know whether I mean to say just that, but I do mean to say that the Commission prior to 1935 did not require gas to be reported on a uniform pressure basis?

A. That is right.

Q. And that is as far as that statement can go, isn't it? They did require the reports?

A. They did require the reports.

Q. The production reports?

A. The production reports, but they didn't—

Q. Some operator might operate on some pressure that was one and some other—

A. That is right.

Q. And that is the extent of your criticism, isn't it?

A. That is one of them.

Mr. March: Please let the witness finish, Mr. Keffer.

Mr. Keffer: I beg your pardon. I thought he had.

The Witness: I made an attempt to get at the early history of those early pressures—those early pressure bases, and I wasn't very successful.

By Mr. Keffer:

Q. As a matter of fact, the Railroad Commission of Texas does carry in its records the annual volumes of gas production in the Panhandle and as the official regulatory body of the state of Texas does rely upon those records, is that not a fair statement?

A. Well, there are various degrees—

Mr. March: We object to the question. We don't object to the rewording of the question, but to have this witness to say what the Railroad Commission of Texas relies upon,

Mr. Examiner, isn't a proper question. He can reframe the question.

Mr. Keffer: Suppose you ask the question.

Mr. March: I am not interested in getting an answer but I am interested in seeing that this witness is not put in the position of testifying as to what the Railroad Commission of Texas relies upon.

By Mr. Keffer:

Q. You can say if you don't know, Mr. Hammer. You went through the Railroad Commission's records at Austin, Texas, did you not?

A. That is right.

Q. And you got certain data from those records?

A. That is right.

Q. And so far as you know, the Railroad Commission does rely upon the records which they keep and have in their possession with respect to this gas production?

Mr. March: I object—

Mr. Keffer: I said, as far as he knows.

Mr. March: As far as the Commission's counsel is concerned he is not going to permit the witness to answer unless the Examiner so rules, because any construction this witness can put on what the Railroad Commission relies upon or any Commission relies upon is a construction or question that can be answered either way by the witness. He shouldn't be required to answer it. He could say he didn't know, of course, but it is an improper question and we don't propose to stand idly by and see an improper question answered.

Mr. Lange: Too, Mr. Examiner, even if he stated he knew or thought he knew, he couldn't read the minds of the Texas Railroad Commission to determine what they had in mind.

The Trial Examiner: I think that is right, Mr. Lange.

When you use the term "rely," Mr. Keffer, by that you mean that is the only official record, the official record that the Railroad Commission has of the production in the field?

Mr. Keffer: That is exactly what I mean, that the Railroad Commission's orders are of course official records, it being an official body.

Mr. March: He can ask whether he knows as to those records being on file with the Railroad Commission of Texas. He can ask that question and he can state whether they are filed, but to say as to whether this Commission relies upon those records generally or in any specific case, that is a matter not for this witness to testify to.

Mr. Keffer: It doesn't make any difference in particular.

I believe, Mr. Examiner, that they do rely upon those records.

The Trial Examiner: I would think so, Mr. Keffer, assuming they are the only records they have. However, I think the argument of Commission's counsel is sound.

Mr. Keffer: I think that is probably correct.

Q. I might have asked you the question, but to be certain, I will state it again anyway.

The Railroad Commission of Texas does keep records prior or does have records showing the production of gas from the Panhandle field prior to 1935?

A. Yes, they do. I might add to that that we found in the Commission's early records in Austin, Texas; that they were very incomplete; that there were a lot of people in the early days who produced gas but didn't turn in any reports.

Q. You have no idea as to the relationship or as to the percentage, rather, of reported gas and unreported gas?

A. No.

The witness made no distinction between sour gas production and sweet gas production in his studies and made no segregation as between carbon black plants or other uses, although he did consider the total volume of production from 1935 to 1939 without regard to the uses of the gas produced. He was not interested in the segregation of the figures after the gas came out of the ground. He gave no consideration to the volume of sweet gas that was produced because, according to his viewpoint, he didn't think in terms of sweet or sour gas, but he was interested in getting the volume of gas that came out of the ground. Although he spent some time in the field he did not inspect any of the carbon black plants. He saw them but he didn't pay any particular attention to them. It didn't make any difference

to him what became of the gas after it was produced and it didn't require any knowledge of the carbon black plants or their locations, or the volumes consumed by them. He didn't use judgment factors to any great extent, but his work was based as nearly as it could be on the actual factual data. There might be some slight variation from this, but not very much. He used his judgment to some extent, but not a great deal. The only factor he needed was the volume of gas that came out of the ground and the disposition of it made no difference, or whether it was sweet or sour gas, or whether it came from the sweet gas area or the sour gas area.

In every one of the areas (quadrants) the witness considered all of the gas that came out of all of the wells and every quadrant in the field as nearly as he could get it, and then utilized that information in that particular area regardless of any disposition of gas after it was metered from the well. He stated, for example, that when he considered the reserve estimate of quadrant 2 in Hutchinson County, which includes Borger, he was not particularly interested with the gas that came from east of Borger where so many wells have been drilled, or whether it came from the southwestern portion of the quadrant, or whether it came from the northern part of the quadrant. It made no difference whatsoever in so far as the witness was concerned.

Witness knew there had been an increase in gas production in Moore County since 1935, but he didn't know whether there was a slight increase or a large increase until he had a chance to check it. He didn't think there was any production, relatively speaking, in the sour gas area of Moore County prior to 1935. He knew there had been a large production of sour gas in Moore County beginning with 1936, but didn't know the volume and didn't know whether it produces more than one-half of the sour gas in the entire field or not. He did not know from memory how many carbon black plants there were in Moore County, and neither did he know the number of casinghead plants—natural gasoline plants—without checking. He did not know whether there were any pipe lines leading out of northern Moore County to the Borger and Sanford area in Hutchinson County which transported sour gas to carbon black plants, but thought there was one line that transported sour gas to gasoline plants.

The natural gas development in the Panhandle, with respect to pipe lines, began in about 1928. The pipe lines take their gas from sweet gas lines, and practically speaking, there is no sour gas used in the pipe lines except for a small portion in Hartley County, and perhaps isolated cases over the field along the sour-sweet gas line. The pipe line companies are taking sweet gas almost exclusively from the sweet gas area.

The witness did not know the comparative volume of gas produced from the field that actually goes into the pipe line leading out of the field as compared to the total production of the field. He made no study of that at all. The witness paid no attention whatsoever to gas that was lost in drilling operations because it was virtually impossible to get it and he would have to rely on somebody's judgment since such gas was not metered.

The witness went into the field a number of times and discussed all sorts of matters with various field superintendents, and in many cases the opinions were checked against the records but he couldn't; at the time of testifying, be more specific as to just what information he gained from them. The witness then stated that it was very difficult to make an estimate of gas reserves in the Texas Panhandle Field, or in any other field, without having a rather intimate knowledge of the field, and that it takes time to do this and that you get part of the information from the people that live and work in the field, and the rest of it is personal observations made by going through the field.

The witness further testified (Vol. 54, pp. 7586-7591) as follows:

Q. Just how many trips did you make through the field, Mr. Hammer, approximately? Give it to me approximately, if you haven't it exactly.

A. I don't know as I could give you that exactly. Oh, it was probably ten or fifteen, something like that.

Q. What did you do when you would go out on these trips?

A. We would try to find, usually the field superintendent of these various companies producing gas.

Q. What would you do when you found him?

A. We would ask him all sorts of questions trying to get

facts and opinions from people that we thought should have a worth-while opinion.

Q. Did you then check those opinions against records?

A. In most instances we checked a lot of those opinions, yes.

Q. What was the occasion of having these opinions if by scientific process you can take a slide rule and figure it all out?

A. Well, I will change that. I will say experience of these superintendents.

Q. What do you mean by experience? What does that include?

A. Well, that includes their operating experience in the production and drilling and care of gas wells, things of that type.

Q. That is still rather general. Can you be more specific on just what information you gained from them?

A. Not right at the present time.

Q. You knew at the time how gas wells are operated, pretty well, didn't you?

A. Well, various superintendents had various ideas of how to do this thing and how to do the other thing. They don't all have the same ideas, and what we were after was—

Q. Did that help you, then, to formulate an opinion as to the reserves in the field after talking to those people?

A. It helped to give us certain facts or where we could find certain facts.

Q. In other words, to get back to this fundamental thing, it is difficult to make an estimate of gas reserves in this field or any other field without having a rather intimate knowledge of the field, is that not correct?

A. You must get a rather intimate knowledge.

Q. It takes time to do that—you get that from the people that live in the field and work there. Is that a fair statement?

A. Well, that's part of it.

Q. What's the rest of it?

A. Well, the rest of it is observation personally that I got from the field in going through it.

Q. That's right. I appreciate that, that you do get knowledge that way that is of substantial benefit in the kind of work in which you were engaged, but now can you detail

just a little more the observations that you did make in that connection?

A. Well, I'll tell you the particular thing, among other things, the particular thing we wanted to find out in talking particularly to the superintendents was such things as the condition of the wells, where the condition of wells had any effect on the pressure and volumes of the wells, or whether there were any water effect in the well in different localities; whether wells had been drilled too deep, for example, and had gone into water, and where they had drilled down into the granite wash, and what the effects of these things of that kind were.

Q. Now, did you ask them about the actual drilling of the wells, the type of formations encountered and matters of that sort; where they encountered them?

A. Oh, we discussed that, I think as a sort of a side issue because we had most of the logs on the wells.

Q. You relied on the logs very largely to give you that type of information?

A. Yes. There were too many wells to do anything else with.

Q. As to the development and as to producing formation and so on?

A. Well, we discussed the reservoir conditions with some of them, certainly, because that was a problem.

Q. Did you examine any well cuttings?

A. It wouldn't have done me any good if I had.

Q. Why?

Mr. Spencer: The question was, "did you?"

The Witness: No, I didn't, and I repeat again it wouldn't have done me any good if I had.

By Mr. Keffer:

Q. Wouldn't have meant any more to you than if I had gone out and done that?

A. That's right, or anyone else, for that matter.

Mr. Keffer: Mr. Examiner, it is a little past 4:30 and it might save a little time if I could get some of the rest of my examination a little better in mind.

If the Examiner would like for me to blunder on through, I can, but I think—

The Trial Examiner: Well, I don't want to force you to go ahead, Mr. Keffer, if you feel—

Mr. Keffer: I feel it would be advantageous to me, but certainly to the Examiner, and I think maybe to the attorneys and maybe even to the witness.

The Witness: May I make a statement?

Mr. Keffer: Yes.

The Witness: I said I hadn't examined any of them. I want to qualify that this way.

Mr. Spencer: Any what?

The Witness: Any of the nut cuttings. I didn't examine any cuttings but I did examine a considerable number of cores that were taken from the field, that were taken out in the early days before they started using cable tools for finishing the well.

By Mr. Keffer:

Q. Did you examine any late cores?
A. I don't think they have taken any recently.

Mr. March: Mr. Hammer, you went through the field just for your general information?

The Witness: That is right.

Mr. March: You didn't collect this basic data for this exhibit by going around talking to somebody and considering what he said the cuttings were, and so forth, or hearsay like that?

The Witness: I paid no attention to anything like that.

Mr. Keffer: I want to interpose an objection to counsel leading his witness, and I think that objection has good foundation.

Mr. Hammer continued his testimony as shown by Vol. 55, pp. 7598-7782, inclusive, as follows:

Q. Mr. Hammer, did you make an effort to secure information that Mr. Keffer requested regarding the utilization of gas for carbon black purposes?
A. Yes, I did.

Q. With what result? Were you able to secure the yearly production?

A. The annual reports of the Texas Railroad Commission give that information by daily averages by months. I found in none of them a total figure, and in each year, of course, the only report was for the first seven months of the year, so that in order to get a total for the year, taking daily averages by months, it would require an enormous amount of work.

Now, in lieu of that, I got some information that I think will fill the requirement and give what counsel wants as well as giving the total figures.

Q. Will you read that into the record?

A. These excerpts that I will read are verbatim quotations from the actual report of the Texas Railroad Commission for the years 1938 and 1939.

The first quotation is on Page 18 of the 1938 Commission report: "Of the total gas produced in the field and utilized during the first seven months of this year, 37.4 per cent was taken by pipe lines for light and fuel distribution; 45 per cent was burned in carbon black plants * * * "

Cross Examination

By Mr. Keffer:

Q. How much?

A. 45 per cent.

" * * * 2.3 per cent was vented into the air from gasoline plants; 11.6 per cent was consumed as plant and lease fuel and 3.7 per cent was accounted for as extraction loss in the removal of gasoline content."

That is for 1938.

Q. That is for the first seven months in 1938?

A. In the first seven months.

In 1939—the first quotation is on Page 9 of the 1939 Texas Railroad Commission's report: "Casing head production continued its decline, falling about fifteen billion feet for the year, or approximately 12½ per cent. The amount of sour gas withdrawn decreased roughly sixteen billion feet from the last year's total."

On Page 11 of the 1939 annual report—

Q. Was that 1937 or 1939 you have just been reading from?

A. 1939.

Q. 1939?

A. Yes. "The total gas produced in the field and utilized during the first seven months of this year, 40.31 per cent was taken by pipe lines for light and fuel distribution; 45.76 was burned in carbon black plants; 1.55 per cent was vented into the air from gasoline plants; 8.92 per cent was consumed at the plant as lease fuel and 3.46 per cent was accounted for as extraction loss through the removal of gasoline content."

Mr. March: Mr. Hammer, did you utilize any of that data in the preparation of this exhibit?

The Witness: No, I did not.

Mr. March: I wish to state we are furnishing this information because we want to cooperate with you, Mr. Keffer, but this has nothing whatsoever to do with the exhibit and if you want any further information regarding the disposition of the gas produced in the field, you will have to put it in by one of your own witnesses. I want to get the record clear in that regard.

The witness made no use of this data in the preparation of his Exhibits 179 and 180. He considered the geology of the field only in a general way. His study of the character of the field dealt largely with the characteristics of the producing horizon itself. The producing formations are dolomites and limestones, but the greater part of the producing formations are dolomites. There is some granite wash, but it has relatively little importance, and it is his opinion that it would be better practice not to even try to recover the gas in the granite wash until the field is more nearly exhausted from the upper horizon. The most prolific gas producing areas in the field are in part of Carson County and the northwest part of Moore County which follow a line close to the axis of the fold, and he means by "axis" the highest structural point which would be somewhat south of the exact center of the field.

The witness further testified (Vol. 55, pp. 7605-7606) as follows:

Q. What do you mean "axis"?

A. The highest structural point.

Q. In order that we might visualize that a little greater, would you say that the axis, generally speaking, would represent a line just about dividing the field into two equal parts?

A. No.

Q. Give me a little more definite description of what you mean by axis.

A. It would be somewhat south of the exact center. It is difficult to describe it.

Q. I appreciate that. I would like to have you just as nearly as you can give a general statement that the Examiner and others here might hear in order that they might visualize pretty well what you mean by that.

A. Well, in general—this is just a broad explanation—

Q. I understand that.

A. The axis of the fold would start in some place in the vicinity of Quadrant 3, Moore County; it would cut across Quadrant 2, and the southwest corner of Quadrant 1, Moore County; the northeast corner of Quadrant 1, Potter County; and through about the center part of Quadrants 3 and 4, Carson County; and just north of the town of Whitedeer, or in the vicinity of Whitedeer—

Mr. Lange: What county?

The Witness: Carson County.

Then it would hit into Quadrant 4 of Gray County; thence from there in a southeast direction through Quadrant 5, Gray County; Quadran 4, Gray County; Quadrant 3 in Wheeler County, and Quadrant 2 and 1 in Wheeler County.

Mr. Lange: That is Quadrant 6, Gray County?

The Witness: That is right.

By Mr. Keffer:

Q. To state it a little differently, that is generally a line a little south of what you might call the center line from the northwest to the southeast?

A. In the western part of the field it would be considered south.

He determined that these areas were the most prolific by taking the total production for each quadrant and determining the per-acre pound decline. He examined some 700 or 800 gas well logs, but could not name them, did not keep a list of them, and did not record the data. He examined the well logs to see if the dolomite had been penetrated and to determine the physical condition of the well, but made no notes. He determined the total thickness of pay formation by taking the entire measurement of the dolomite penetrated whether it was productive of gas or not. He determined areas of low productivity and determined where the low production per-acre pound decline was located.

The witness stated that beginning with the bulging point on the south side of the field just south of Whitedeer in Carson County and east of this over into Gray County, and on through over to the eastern end of the field, you will find an area of low productivity and has no particular significance with respect to the producing ability of the field. It is an area of low productivity. He has determined that this is an area of low productivity by a study of the acre-pound decline. There has been quite a lot of production from the area just referred to in Wheeler County. The pressures in much of the area are high—above 420 pounds. The production has been slack. He found the productivity of the area along the limits of production, along the south side and southwest side of the field, to be variable in Potter and Carson Counties. Although his quadrant took in this acreage with other more productive acreage, it does not clearly show the extent of the productivity along the edges. He did not study the edges of the field particularly as to productivity in Carson and Potter Counties except as to the extent reflected by his quadrant as a whole.

In determining his weighted average pressures as a basis for his reserve estimates, he procured the weighted pressures from the weighted average areal pressure although he did not compute the acre content for the area between each isobar line, but only considered this area in determining his average pressures, then considered the entire acreage and the entire production in a quadrant in arriving at the per-acre pound decline in pressure. In other words, he first laid off the isobars, then laid out quadrants. He used a plani-

meter and determined the area in each quadrant between each isobar line. He then determined the area for the entire quadrant. He then took the area between the isobars and multiplied that by the average pressure between the isobars. Then he took the summation of all these and divided that by the total acreage and arrived at an average weighted pressure for the quadrant. This was illustrated by taking Quadrant 1 in Potter County. The isobar lines on the south line of the Quadrant indicated a pressure of 430 pounds. He had the pressure and the acreage in the 430 pound pressure segment and the production, but he did not attempt to determine the productivity between the isobar lines. He simply determined the weighted pressure and the weighted productivity for the entire quadrant. He made no effort to determine production or productivity segment by segment because it wasn't necessary in his opinion. He did not think he would have gotten any better answers if he had determined the volume of gas in place per acre between each isobar line and didn't know whether the Texas Railroad Commission approached the problem this way or not because they have never put out any estimate of reserves.

He then stated, with respect to the illustrative Quadrant, that he averaged the whole thing in from the north line of the county to the southern limits of production (Quadrant 1, Potter County). He didn't figure each segment separately, and that was true of each segment and of every Quadrant through out the field.

The witness further testified (Vol. 55, pp. 7631-7636) as follows:

Q. I take it from the statements you have just made in answer to preceding questions, Mr. Hammer, that you found no wells in the field that contained 200 feet of dolomite which produced gas all the way through the entire thickness of the dolomitic formation encountered?

A. Well, I understand your question now. I didn't before. I think it is a true statement that at least the logs don't show production all the way through.

Q. Do you have any better evidence than the logs on those things?

A. No.

Q. That's right. So, so far as you know there are none?

A. Are none what?

Q. Are no wells with 200 feet of producing thickness of dolomite.

A. As far as I know I would say there were none.

Q. That's right, and you have no reason to suspect that there are some with that much producing thickness?

A. Well, I think it would be a fair statement, although I think there is some confusion in the interpretation of a lot of things in connection with those wells in this respect:

You will notice on a log that it says an increase at such and such a point on the log—an increasing flow. As a matter of fact, it is difficult to tell exactly when an increase does start when you are drilling a well. You might have a slight increase in drilling down and suppose you only attempted to gauge an open flow well, say, every ten, fifteen or twenty feet in drilling. Well, you might have a slight increase all the way down, then when you gauged you might show a total increase. Well, if the formation happened to soften up a little bit right at the time you made your test you wouldn't be justified in saying that all that gas came out of that particular point, see?—because some of it might have come from above. There is more or less porosity throughout the entire thickness of the dolomite and naturally even the smaller—the parts of smaller porosity naturally contain some gas.

Q. All right, now, what investigation have you made to determine all those things you have been talking about?

A. I didn't make any investigation of porosity.

Q. You are just theorizing now?

A. No, it is based on knowledge after having been around dolomitic and limestone oil and gas fields for many years. That is a judgment.

Q. That is one thing you can't work out on a slide rule?

A. That is right.

Mr. March: May I interpose a question?

Mr. Keffer: Please answer the question first.

The Witness: Didn't I answer it?

The Trial Examiner: There is no question pending, Mr. Keffer.

Mr. Keffer: Go ahead, Mr. March.

Mr. March: You did not—

Mr. Keffer: Don't ask a leading question.

Mr. March: Maybe it will be best that I not ask a question. I will wait until redirect and take up the points.

Mr. Keffer: All right.

Mr. March: I didn't intend to ask a leading question.

The Trial Examiner: Were you going to clear up an uncertain point here in this testimony?

Mr. March: That's right. If this is not satisfactory, we can strike it, Mr. Keffer.

Mr. Hammer, when you were giving that average of 200 feet a few minutes ago, you did not intend—you were merely giving the average depth of the dolomite, were you not? You were not giving the average depth of the producing formation?

The Witness: That's right, the overall figures of the total thickness of the dolomite.

Mr. March: Did you use in any manner in this exhibit the thickness of the dolomite in the producing formations?

The Witness: No.

Mr. March: In the computation of your reserves by the pressure decline method?

The Witness: I did not use them at all.

Mr. March: That's all.

By Mr. Keffer:

Q. All right, now, as a matter of fact, Mr. Hammer, it all resolves itself into just this, doesn't it, that you weren't particularly interested with the thickness of producing formations; therefore, you made no specific effect to determine the producing thickness of producing formations?

A. Now, I will qualify that.

Q. Can you answer yes or no?

A. I can't answer yes or no and I won't answer it yes or no. I will answer it in my own way.

The Trial Examiner: Answer it, Mr. Hammer. You don't have to answer yes or no. You can answer in your own way, but try and respond to the question.

The Witness: What is the question?

(The question referred to was read by the reporter, as set forth above.)

The Witness: All right, I'll answer it this way: As I stated before, the only thing I was interested in was total penetration of the producing dolomite regardless of the so-called thickness of pay strings. I wanted the total penetration to find out—

By Mr. Keffer:

Q. You wanted the total penetration to see whether the open flow of the well was truly reflected, is that correct?

A. I wanted to see whether all of the thickness that could possibly produce gas had been penetrated.

Q. That's right, in order that you might know that there weren't some producing formations that were left that were not uncovered?

A. That is correct.

Q. All right, then, from the standpoint of making your reserve estimate, you cared nothing about the producing thickness in so far as reserve figures were concerned and paid no attention to them?

A. Well, now, let me get this straight: What do you mean by "producing thickness"?

Q. The actual number of feet that actually produced gas in any given well.

A. I maintain there is nobody that can determine that.

Q. Suppose there are people that say they can determine it?

A. All right, let them prove it.

Q. You aren't in position to prove it?

A. It is not necessary to attempt it.

Q. I know, but, now, if you will bear this in mind, Mr. Hammer, it will help this a lot. You have some rather definite ideas and you are pretty steadfast, apparently, on them. There may be other geologists that have other different ideas.

A. All right.

Q. We want to explore this thing fairly, fully and accurately. When I ask you a question, when you don't think it makes any difference, I wish you would answer the question anyway and we will get along a lot faster. Will you make that agreement with me on that?

A. Well, as far as possible.

The witness saw various wells drilled in between the years 1926, 1927 and 1928 when he was in the field, although he had not seen any drilled in recently, but he knew how they acted and how they looked when they were drilled in. He thought it was a very foolish requirement for the operating companies to require their geologists to observe wells drilled in. Although it is customary for companies to require their geologists to be present on the derrick floor when a well is being drilled through the producing formations, he still thinks this is a foolish requirement because he can get all that information from the well log of the average well and there would be no reason for being present. He does not believe that you can get an accurate determination of the porosity by examining well cuttings from gas wells in the Panhandle Field, or any where else, and he did not attempt to do it.

The witness further testified as follows (Vol. 55, pp. 7639-7644):

Q. All right, now, Mr. Hammer, again, have you ever known—I will state it that way—of gas reserves having been estimated by the porosity sand thickness method?

A. Yes, I have known of it.

Q. Do you think those estimates are of any value?

A. It all depends on conditions under which the estimates are made and the character of the producing horizon.

Q. Now, what are those conditions?

A. Well, you take sandstone condition, where your sandstone has not undergone any change, where it is not attacked by weak acids that might be in any gas or water, and if you have good cores, taken by the core barrel from the sandstone, you can arrive at a very definite—I think at least a fair estimate of gas reserves.

Q. Isn't it difficult to get good cores in a gas well?

A. It is almost impossible.

Q. That's right, so that you just take the whole thing out when you base it on good cores, don't you?

A. Yes. You mean as far as a dolomite—as far as the Panhandle is concerned?

Q. As far as any field is concerned.

A. If you can't get good cores?

Q. Yes, that's right.

A. I think that is in general a fair statement, if you want to get an accurate estimate.

Q. Well, we will just agree that you can't get good cores, generally speaking, in a gas producing formation.

A. In the Panhandle?

Q. Or anywhere else.

A. Oh, yes.

Q. Well, where do you get them?

A. Where?

Q. Yes.

The Trial Examiner: You mean what other field, Mr. Keffer?

Mr. Keffer: Yes, that's right.

The Witness: Well, I don't recall exactly now. I know of gas producing horizons where cores have been taken in the gas producing horizon.

By Mr. Keffer:

Q. What is the real reason why you can't get, ordinarily, a good core in gas producing formations?

Mr. Lange: You mean in the Panhandle?

Mr. Keffer: Anywhere.

Mr. Lange: Anywhere?

By Mr. Keffer:

Q. We'll say in the Panhandle. Maybe I should restrict it to that.

A. Yes, I don't like to—this is our problem right here.

Q. All right.

A. The reason is that—now, the question is, what are the reasons why you can't get a good core, is that right?

Q. That is right.

Mr. Lange: In the Panhandle.

The Witness: In the Panhandle.

By Mr. Keffer:

Q. That's right.

A. Well, apparently, the reasons are—I will qualify that somewhat. I mean that you can't get a good core through that part of the producing dolomite where it is indicated that a major flow of gas or oil comes from. You can get fairly good cores of some of the rest of the dolomite.

Q. That's right, but why is it you can't get a good core where the gas comes from the major flow?

A. Because the formation there is so soft and it has undergone perhaps so much solution in the past and attacked by different weak acids of different kinds. The only thing left perhaps is largely siliceous material that wouldn't be attacked by circulating waters or by weak acids, and when you attempt to get your core out all breaks down and goes all to pieces. You just can't get one out.

Q. Isn't that due primarily to the pressure of the gas?

A. No, I wouldn't say so because where you take a core with a rotary core barrel, the pressure exerted on that is by your fluid column; that is, by your mud column, tends almost entirely, if not entirely, to equalize your gas pressure so that it is just a question of the character of the material itself, is the reason why you can't get it out.

Q. Now, where you can't get good cores, what is the customary way for the determination of porosity?

A. I have never attempted to do it. I don't know.

Q. Do you know of any people that have attempted to do it?

A. I have heard of people that have, yes.

Q. How did they do it?

A. I don't know how they did it.

Q. As a matter of fact, can't you take your drill cuttings and examine them under a microscope and compare them with others of known porosity and by comparison arrive at a pretty accurate figure?

A. No, I don't think so.

Q. A lot of people do think they can.

A. Well, let them prove it.

Q. Well, now, as a matter of proving, you haven't proven

that it is not correct. Let's don't get into any argument about it.

A. Let me put it this way: I have yet to see any authority or any statement in any written literature where anybody has ever determined a method of determining the porosity of a dolomite or a limestone in place by the examination of the cuttings from that well.

Mr. Lange: In the Texas Panhandle field?

The Witness: Or any place else.

By Mr. Keffer:

Q. My question was, by comparing with certain cuttings of a similar formation concerning which the porosity is definitely known.

A. I don't think—

Q. Did you ever hear that?

A. I don't think it can be done.

Q. At least you are of the opinion that you can't do it?

A. I don't believe anyone else can.

Q. Well, now, you stated a while ago, I take it, that you can't utilize the porosity sand thickness method of determination of reserves in place in natural gas fields unless you have good cores of the area, is that right?

A. I think in general that would be—would approach, at least, a fair statement.

Q. You say "it would approach it." What is wrong with it?

A. Because of the horizontal variability in the dolomite itself. It varies so much from point to point that in order to get a fair average of porosity, even if you could take cores, you would have to drill more wells than would be ever economically or feasibly possible to drill in order to get a proper average.

Q. What is the variability in the Panhandle? You have referred to that two or three times.

A. Well, that's just the point. There are indicated variables there, but I don't know as anybody ever has been able to prove just what those variabilities are except in a general way. In other words, they are relative. They are a relative differential, not an actual.

Q. Don't you find that areas are rather uniform; that

the variability is between areas rather than between locations, from well to well?

A. No that rule won't hold.

The witness further testified as follows (Vol. 55, pp. 7646-7667):

Mr. March: Before we proceed further I wish to state I have secured the estimated reserves of the whole Texas Panhandle field and I wish to have it marked for identification.

The Trial Examiner: Very well.

Redirect Examination.

By Mr. March:

Q. I hand you what purports to be the remaining gas reserve in the Texas Panhandle field in Mcf. on a pressure base of 14.65 pounds per square inch absolute calculated to 25 pounds well head gauge abandonment pressure and I will ask you what it is.

A. Yes, that it what it is.

(Exhibit 186, Witness Hammer, marked for identification.)

By Mr. March:

Q. I will ask you if that estimate of the remaining gas reserves in the Texas Panhandle field was prepared by you or under your supervision?

A. It was. I assisted in it and it was prepared under my direction.

Q. I notice there that the tabulation does not contain a date. Is that as of August 1, 1939?

A. This is as of August 1, 1939.

Mr. March: Mr. Examiner, we might have that inserted on all of the copies.

The Trial Examiner: I think it would be advisable.

Mr. Spencer: Do you desire to have it inserted right under the title, Mr. March?

Mr. March: Yes.

The Trial Examiner: Yes, as of August 1, 1939.

By Mr. March:

Q. Since your cross examination has started and since you have offered your reserve of the Canadian River, you have consulted your working papers and data and have checked this estimate of remaining gas reserves, have you not?

A. Yes, sir, that is right.

Q. And it is your position that this has nothing whatsoever to do with the estimate of reserve for the Canadian River's acreage, although it does include the Canadian River's acreage reserve?

A. Except as to that part of it that lies in the territory where Canadian River has its acreage—

Q. It is your position it is independent and separate—

Mr. Spencer: Mr. March, let him state his position.

Mr. March: I have to ask him a question.

Mr. Spencer: Go ahead.

By Mr. March:

Q. Is it your position that the estimate of reserves for the entire field is not essential to your Exhibit 180 showing the estimated reserve of the Canadian River's acreage?

A. It definitely is not necessary.

Mr. March: Mr. Examiner, we offer this exhibit with the understanding that it is, as far as Commission's counsel is concerned, and that is as far as the purpose of the exhibit is concerned. We have not only gone one hundred per cent of the way with counsel here but we are now going two hundred per cent of the way.

The Trial Examiner: The Examiner may want to utilize Mr. Hammer's figures, too, Mr. March.

Mr. March: I think it would be the most accurate.

Of course, Mr. Examiner, this estimate of reserves of the whole field was not prepared in connection with this case. This estimate was in the Texoma case. We intended to offer that estimate in that case.

Mr. Spencer: When you get through there, Mr. March, you seem to be damning this with faint praise. If there

isn't any purpose for having it put in here; and you must remember that we haven't asked you to put it in here.

Mr. March: The cross examination is going to be over the whole field, so if we have to go through this ordeal we want to get the credit for having the reserve figure in.

Mr. Spencer. All right. It is in for the purpose of facilitating cross examination as far as you are concerned?

Mr. March: As far as I am concerned, it is an estimate of the reserve for the whole field.

The Trial Examiner: Let me straighten this out. I think perhaps the Examiner prior to the conclusion of this hearing may request just such information as has been placed in the record by Commission's counsel for whatever purpose the Examiner might want to use it for and I think with that understanding now in the record we may proceed.

Mr. March: I wish to ask this one further question:

Q. This estimate of reserves for the whole field was prepared in the same mannerism for the Canadian River's acreage as reflected in Exhibit 180?

A. The same method.

Q. The same procedure all the way through?

A. Yes, sir.

Mr. March: That is all.

The Trial Examiner: You may proceed now, Mr. Keffer.

* * * * *

Exhibit 186, which shows the estimate of Witness Hammer of the remaining gas reserves of the whole Texas Panhandle Field as of August 1, 1939, is as follows:

Remaining Gas Reserves Texas Panhandle Field.
As of Aug. 1, 1939.

In M.C.F. On a Pressure Base of 14.65 Pounds Per Square Inch Absolute Calculated to 25 Pounds Well Head Gauge Abandonment Pressure.

County and Quadrant	Quadrant Acreage	Remaining Reserve	Remaining Reserve Per Acre
Hartley-HA	32,906	451,255,418	13,713
Potter I	57,588	1,282,995,311	22,279
Potter II	44,937	728,934,688	16,221
Potter III	33,389	448,272,000	13,426
Moore I	62,173	984,144,385	15,829
Moore II	61,866	798,633,900	12,909
Moore III	56,614	677,613,658	11,969
Moore IV	28,755	546,702,305	19,012
Moore V	62,614	1,308,919,224	20,905
Moore VI	79,556	1,421,935,155	17,873
Moore VII	65,530	1,070,775,272	16,340
Moore VIII	29,198	598,765,092	20,507
Hutchinson I	9,660	192,292,250	19,906
Hutchinson II	50,658	652,228,822	12,875
Hutchinson III	53,967	608,902,312	11,283
Hutchinson IV	46,157	516,968,612	11,200
Hutchinson V	35,097	543,749,214	15,492
Carson I	52,814	1,039,002,628	19,673
Carson II	82,997	2,183,830,359	26,312
Carson III	79,985	2,277,423,428	28,473
Carson IV	40,251	1,152,417,880	28,630
Gray I	27,987	215,979,606	7,717
Gray II	22,265	188,534,855	8,468
Gray III	12,361	144,725,137	11,708
Gray IV	57,929	669,490,087	11,557
Gray V	18,310	142,699,453	7,794
Gray VI	49,744	282,587,644	5,681
Gray VII	32,334	209,302,755	6,473
Gray VIII	37,036	357,726,280	9,659
Wheeler I	23,576	—	—
Wheeler II	59,060	233,145,256	3,948
Wheeler III	51,545	359,761,692	6,980
Wheeler IV	33,553	104,698,348	3,120
Wheeler V	9,307	27,184,297	2,921
Total	1,501,719	22,420,439,224 M.C.F.	

The witness did not take into account the open flows of the wells in making his fieldwide estimate, but he did take into account the production from each well in the field. He stated that the wells along the axis of the field generally have good open flows, although he could not give the open flows of any of them. He stated that he did not find open flows essential in making his estimate.

Q. Certainly in evaluating reserves you were interested in knowing what a well would produce, weren't you?

A. In the volume removed, yes, of the metered gas.

Q. The ability to produce, weren't you interested in that?

A. Not in the sense of reserves. Open flow had nothing to do with that.

Q. What makes a large well, anyway?

A. Pressure and a large permeability.

Q. How about porosity?

A. Porosity doesn't have any particular relationship to the question of open flow.

Q. What is porosity?

A. Porosity?

Q. Yes.

A. It is the void existing between the solids in any given rock.

Q. It is the void space in the rock formation which is filled with gas? I say, "void filled with gas." It would be gas if it didn't happen to be something else. It is the porous space in the rock?

A. It is the porous space. As I said, it is the void between the—

Q. And porosity particularly determines the amount of gas you have in place per acre, porosity and thickness?

A. If you could determine it, it would.

Q. Answer my question.

Mr. Reporter, please read the question.

(The question referred to was read by the reporter as set forth above.)

The Witness: Well, naturally, the size of a reservoir always determines—

By Mr. Keffer:

Q. In stating again—

Mr. Lange: Let him finish his answer.

The Witness: Please let me finish.

Mr. Keffer: I beg your pardon.

The Witness: The size of the reservoir capacity always determines the amount of gas present.

By Mr. Keffer:

Q. How do you get reservoir capacity? What are the two things that determine reservoir capacity?

A. Pressure and porosity.

Q. Pressure and porosity and sand thickness?

A. Yes.

Q. Now, those are the three things and the only three things. In fact, pressure—strike that.

In fact, sand thickness and porosity are the only two things that determine reservoir capacity?

A. Sand thickness and pressure.

Q. Pressure will tell the amount of gas you can get into a certain space under a certain pressure but the space, the important thing is spaces which carry the gas, that is, the cubic content of those are determined entirely by porosity and sand thickness?

A. That is right.

Q. Then the volume of gas you have in those porous spaces is determined by the pressure you have in the reservoir?

A. That is right.

Q. Then there isn't any question if you knew sand thickness and porosity and pressure you could figure the field more accurately that way than in any other?

A. If you knew them.

Q. "If you knew them," you would go that far?

A. If you actually knew them, yes.

Q. You do know in many cases and in many fields where the porosity and sand thickness method has been used in estimating reserves?

A. In sandstone reservoirs.

Q. Sir?

A. In sandstone reservoirs.

Q. That is right.

What would be the difference in estimating a sandstone reservoir and a dolomite reservoir?

A. Because you can determine—in most cases you can determine your porosity in a sandstone reservoir because you can get out good cores, but—

Q. If you—

A. Let me finish.

—in limestone reservoirs you can't do it because you don't get out the cores and you can't determine from point to point the variables that enter into it.

Q. As a matter of fact, the early estimates of this field made by everybody were made by the utilization of the porosity sand thickness method, were they not?

A. I don't know how the early ones were—

Q. You have read of estimates, haven't you?

A. Yes, sir.

Q. Weren't they all based on that method? Did you ever see one that used the pressure decline method?

A. I believe that the early ones were.

Q. That is right.

Well, now, do you say that those fellows knew absolutely nothing about the way of determining them?

A. No, I didn't say that. I said they were jumping at conclusions, perhaps, in utilizing ideas of porosity which they couldn't substantiate.

Q. All right, what kind of an estimate would you have made if you had made one ten years ago?

A. Ten years ago?

Q. Yes.

A. Well, ten years ago I would have probably used or attempted to use the same method.

Q. You mean the pressure decline method?

A. No, I mean the—

Q. The porosity and sand thickness figures?

A. Yes. As I explained in my written statement, it is a progressive thing. In the early stages of the field where you don't have the factual data necessary you have to resort then to something else, but when you reached that point

where you do have the factual data, then the other things eliminate the earlier guessing that you were forced to employ.

Q. You then questioned the early estimates?

A. That is right.

Q. Although you would have made the same sort of an estimate?

A. In the earlier stages, certainly, because at that time there was no other way to do it.

Q. Why wasn't there some other way to do it?

A. You didn't have enough factual data over the field to utilize it.

Q. You say that you haven't enough factual data. Explain what you mean by that. Expand on that. Tell us what you mean.

A. There hadn't been enough wells drilled over the field; there hadn't been enough indices established between the volume removed and the pressure decline. In other words, you didn't have an index covering the field ten years ago that would give you the information necessary.

Q. You have a great many areas in which there have been no wells drilled?

A. A few, but in relation to the total area, they are relatively small.

Q. But you did have pressure declines, didn't you, in 1930?

A. Pressure declines in a newly developed field where there are only a few wells, it is a dangerous thing to attempt to use it at that stage of development.

Q. Well, take a situation—I still can't frame your answer. You say you don't have enough factual data where the thing would work properly. Can you state why it wouldn't work with the factual data you had at that time? Is that question clear to you?

A. I am not sure that it is.

Q. Let me see if I can't state it a little differently.

You have a situation where you use a method that you say is bad but it is the best that you can do. Obviously, you think that under the conditions of ten years ago the porosity sand thickness method under conditions then existing than the pressure decline method?

A. I wouldn't even make that comparison.

Q. No?

A. In the earlier stages you couldn't utilize the pressure decline method. You didn't have any choice.

Q. You didn't have enough tools there to do it?

A. That is right.

Q. You had to take the second best, is that what you figured?

A. Well, you can call it that.

Q. In your terminology you would rank pressure decline first and porosity second?

A. As it applies to the Texas Panhandle field I would say that in my opinion as of today where you have the great mass of factual data you have that there is no choice—

Mr. March: Mr. Keffer, May I ask a question here?

Mr. Keffer: Surely.

Mr. March: Could you in 1930 have made anywhere near an accurate estimate of the reserves as you can now?

The Witness: No, not at all.

Mr. March: Could you have made an accurate estimate at all by using the porosity thickness method at that time?

The Witness: You would have the same problem there. You wouldn't have had sufficient wells drilled over the field to have given you any information that would have particular value for the field as a whole.

Mr. March: Your estimate wouldn't have been very much in 1930?

The Witness: Not a great deal.

By Mr. Keffer:

Q. Now, as a matter of fact, Mr. Haumer, can you draw me a line and tell me how much experience you ought to have with respect to the producing formations before you can begin applying the pressure decline method with some degree of certainty?

A. Well, I think this field has reached that stage.

Q. About when did it reach it, in your opinion?

A. Well, it is a progressive proposition—

Q. I appreciate that.

A. —and more factual data were collected from year to year and from time to time whereby you could more nearly approach a condition where you ought to get the best answer.

Q. In other words, as time goes on the better your answer, isn't that it?

A. That is true.

Q. When a field is fully depleted, any one can tell how much was in it to start with?

A. If it had been properly metered out.

Q. I think I could do that. I think anybody that could add could do that.

A. That is true.

Q. I think that is obvious. The nearer you approach that the more accurate your estimate is?

A. That is correct, the more data you have.

Q. If you made an estimate next year it would probably be a little different than the estimate you are making this year?

A. It would probably have some variations.

Q. If you made an estimate last year it would be slightly different from the one you would make this year?

A. The estimate of reserves by any method is never a complete thing because of certain factors that are inherited in the problem.

Q. You haven't quite answered my question, but let me state it again.

Using the pressure decline method, every time you make an estimate from year to year you get a different figure, is that correct?

A. Well, slightly different, maybe, but not any great difference.

Q. Suppose it did differ greatly, what would you say then about it?

A. Well, if you have the right sort of factual data, and you have done the right sort of a job in the first place you shouldn't have any great variation.

Q. I know that, but still you don't answer my question.

I said, suppose you did have a great variation, what would that indicate?

A. I think I answered your question. If you have done your work properly in the first place, the corrections that you would get by the following year or two wouldn't or shouldn't greatly change the shape of any curve that you might use.

Q. Getting back to my question, suppose you had done all of that properly and suppose it does change that curve—that is my question—then what do you say about it?

A. Read that question, please.

(The question referred to was read by the reporter, as set forth above.)

The Witness: Well, if the actual facts change an answer, it is a changed answer and that is all there is to it.

By Mr. Keffer:

Q. It shows your former estimate was wrong, doesn't it?

A. Whatever slight variation there is.

Q. I am not assuming any slight variation, Mr. Hammer, I am assuming a substantial variation.

A. Well, it would prove that your previous estimate—we are assuming all the time your factual data is one hundred per cent true as near as you can get it—

Q. Go ahead and make that assumption.

A. In that case I would say that you would not have any great variation—

Q. All right, but getting back to my question, I am assuming all of that and still there was a substantial variation, then what would your answer be to that?

A. Well, I just stated that whatever the answer was would be the answer and if it were slightly higher or lower it would show that variation.

Q. You keep using the word "slightly." I am assuming it is substantially lower or higher as the case may be.

A. Well, as I see the question, and as I stated a while ago, if the work is properly done you are assuming something that isn't apt to happen at all.

Q. I know, but indulge me the privilege of making an assumption—

Mr. March: I will help you—

Mr. Keffer: I think I can do it all right.

Q. Let me make the assumption which I have made and then tell me what would be your judgment of a situation like that. What would it indicate?

A. Well, it would indicate a variation in the estimate.

Q. Certainly.

A. You might make another estimate, we will say, the next year or so and it might vary in the opposite direction—

Q. But you are still not answering my question.

A. I have. As I see it I have already answered your question.

Q. Not as I see it.

If you have made estimates on rock pressure decline method this year and you have found next year that by utilizing the same method you get a substantial variation from what you got this year, what would that indicate to your mind with respect to the availability of the pressure decline method for estimating reserves in this field?

A. I see, I think, where we are not on the track. We have not utilized any one year; we have utilized the factors over a period of five years, and I don't believe anyone is justified in taking the data from year to year and attempting to arrive at an estimate.

Q. All right, then, I will broaden my question.

Take the five-year period which you have utilized and made your estimate on and your estimate in 1939, then you find out that in 1940 you got entirely a different answer using the same method, then what would you say?

A. Well, I would say that with the added year of factual data, if there was a variable, that probably indicated the later estimate was the best.

Q. Probably? Don't you know it would be the best?

A. I said "probably."

Q. All right, then, getting back to the original question—back to the question I asked a while ago—the longer your period the better your estimate? There can't be any argument about that, can there?

A. That is true. The longer period of actual factual data, the better off you are.

* * * * *

He stated that the greater the porosity of producing formations the greater the production, but it would not necessarily follow that the greater the open flow the greater the production. He was then asked if you could produce as much gas from a five million cu. ft. open flow well as you could from a twenty million cu. ft. open flow well, and he answered that certainly you can produce more from a larger well than from a smaller one.

The permeability has less influence on gas production than on oil production. Gas will pass through a porous space with more ease than will oil. A big oil well requires a large factor of permeability but you can have a big gas well with lower permeability as compared to oil. Permeability retards the flow of gas much less than it retards the flow of oil. He didn't know whether permeability or porosity has more influence in the Texas Panhandle Field in determining the size of a well, but permeability retards the flow of gas or the migration of gas from one point to another in a structure to a much lesser degree than is true of oil. You may have a formation the permeability of which is such that there would be little migration of oil into the well bore, yet the same type of formation with the same permeability might permit a large volume of gas to flow into the well if gas were encountered instead of oil.

Porosity, simply stated, is the void spaces existing between solids in any given reservoir. Permeability is the measure of flow of the gas through that formation. You might have a twenty percent porosity in Well A, and twenty percent porosity in Well B, but the gas would not necessarily flow as rapidly to the well bore in one as it would in the other because of the possible variation of the characteristics of the reservoir rocks themselves, such as the angularity of the material that makes up your formation. This would have some effect. For instance, you might have one reservoir filled with round rock that would have certain porous spaces. Gas under those conditions would pass through readily. You might have the same reservoir with the same porosity but the solids would be angular and of all different kinds and shapes, and yet in that case the gas would pass through it with lesser ease. In other words, it wouldn't pass through so rapidly. You have a higher

permeability in perfectly round grains of sand than in those that are irregularly shaped.

The gas producing formations in the Texas Panhandle Field are not composed of sand, but of dolomite. Dolomite is a rock consisting principally of magnesium and calcium carbonates, and is fairly hard. You have running through all of that dolomite formation porous spaces that are rather like pipe lines leading through there in all directions, but generally on a horizontal level, but you also have running throughout that dolomite variables in porosity. There is running through the rock producing formation hundreds and maybe thousands of porous spaces running horizontally, vertically, or at almost any level. The porous spaces may be honey-combed like a piece of honey-comb. Gas could migrate long distances in a honey-combed formation if the porous spaces were interconnected.

The pressure conditions in the Texas Panhandle Field indicate that the porous spaces throughout the field are inter-connected. This is shown by the isobar lines on the Isobar Contour Map (Exhibit 179) prepared by witness.

The witness had never examined any cores from the formation where the greatest flow of gas was discovered because they were never able to get a core out of that area, but the entire thickness of the producing formation contains more or less porous spaces and the witness had seen cores where porosity tests had been run in the harder part of the formation, and according to statements made to him, those cores contained considerable prorous spaces, but he did not recall the extent of the porosity. He probably looked at half a dozen cores in all. He made a notation concerning them but didn't have it with him. He took a photograph of the cores in question then discussed the entire matter with employees of Phillips Petroleum Company who had taken the cores out of the racks for him. He discussed the matter with the research department and with their field superintendent and geologist but he made no physical examination of the cores. The cores showed that there was more or less porosity all through the dolomite.

Permeability is a less important factor from the standpoint of gas production than from the standpoint of oil

production for the reason that gas will flow through a porous media much more rapidly than a fluid of any type, but he does not believe that permeability varies directly with porosity in the Texas Panhandle Field.

Gas under high pressure flows rather rapidly through angular obstructions, depending upon your permeability factors, and would move with more ease than would either oil or water. It would be necessary to know what the permeability was before you could tell whether the movement of gas would be slowed down under high pressures.

The witness further testified (Vol. 55, pp. 7689-7700) as follows:

Q. You know gas under high pressure flows rather rapidly in these angular obstructions you talked about, and wouldn't that have a tendency to slow down the gas flow very much?

A. It would all depend upon what your permeability factors were?

Q. I am assuming your angular situation which you referred to a while ago, your gas under high pressure would nevertheless migrate rather readily where oil or water wouldn't hardly move at all—

A. It would move through with more ease.

Q. You would have to have a most unusual situation in your porous space to slow down the movement of your gas very much under these high pressures, wouldn't you?

A. Well, you would have to know—in order to answer that you would have to know what your permeability was.

Q. I realize that, but the fact still remains that this gas will move rather readily through this porous media regardless of whether it is smooth all the way through there or whether you have these angular matters sticking out into your pores?

A. No, you can't make that comparison at all. You can't set up a condition underground and produce imaginary tubes running horizontal in a formation which gas would flow through. That sort of assumption is absurd.

Q. Will you tell me why it is so absurd?

A. I have just told you.

* * * * *

Q. Mr. Hammer, did you state this morning the number of cores Phillips Petroleum Company had taken of various wells in the field?

A. No, I didn't. I don't know how many.

Q. Do you have any idea of about how many it was?

A. No, I don't have any idea of how many it was.

Q. Would 1500 sound about right?

A. How many?

Q. 1500.

A. 1500?

Q. Yes

A. I have no idea of how many there were.

Q. How many did you see when you were looking at them in the room?

A. Well, that would only be an estimate. There were a lot of racks full of them, filling quite a good-sized shed. I wouldn't know how many there were.

Q. You are not as good in estimating the number of cores as that efficiency expert I heard of one time who was good in estimating a large herd of sheep?

A. No, I don't estimate that way.

Q. I believe you stated you made no determination of those that you saw either as to porosity or peremeability?

A. That is right.

Q. Did you get any information from the employes as to what percent was of porosity or permeability?

A. Just general statements. I made no notes on them when we discussed them.

Q. In other words, you more or less ignored those cores as having any useful service in making this estimate, is that correct?

A. Yes, I think that can be stated as being true.

Q. Do you have any idea why the Phillips Petroleum Company had those cores made?

A. They were looking for information on the producing horizon.

Q. That is right. It was rather expensive to take those cores, wasn't it?

A. Yes,—

Q. Phillips Petroleum Company evidently thought they were worth something, didn't they?

A. Yes.

Q. Or they wouldn't have taken them?

A. Yes.

Q. Very well. What information could the Phillips Petroleum Company get from them?

A. I think they were disappointed in that they—as I stated, they never got any cores that gave them any information through that part of the strata that gave the major flows of oil or gas.

Q. Assuming they were disappointed, they were certainly very persistent in keeping on taking them, if they did take a number, weren't they?

A. It is my understanding they didn't continue that for a very large number of years for the reasons—

Q. You say those cores—

Mr. Lange: Let him finish the answer to your question.

The Witness: For the reason they found out that the pressure of the column of mud in the rotary drilling acted upon the producing horizon and had a tendency to force the mud into the formation and they had difficulty in cleaning the wells out so they did like everyone else does, they quit utilizing, as I understood it, a rotary for the completion of their wells.

* * * * * *

Q. Now, you do know, Mr. Hammer, that tests of oil reserves, or estimates, rather, of oil reserves, are ordinarily made by the porosity sand thickness method, don't you?

A. It is a usual thing, I believe it is.

Q. I didn't get that.

A. I said, as a usual thing I believe they are.

Q. That is correct.

A. There are so many exceptions.

Q. That is right, there are many exceptions, but when you have a water drive, for example, where your pressures remain constant, I don't know whether there are exceptions there or not, because after all, you would have to have your porosity and sand thickness there as in other cases, wouldn't you?

A. That is right.

Q. What are the exceptions where the oil reserves are not estimated by porosity sand thickness method?

A. Well, in recent years; since proration, for example, has come into the state of Texas so strongly and where development has gone on—

Q. Where development has what?

A. Where development has gone on continuously in the field I think they varied that somewhat, but in a general even that is true as far as oil is concerned.

Q. We agreed this morning that permeability has less bearing upon gas producing formations and the flow of gas through a porous media than it does as to oil, didn't we?

A. In general we did, yes, sir.

Q. That is right. Then if you can estimate oil by the porosity sand thickness method, there is still greater accuracy in estimating gas reserves by that method, is that not true?

A. No, I wouldn't say there is any great accuracy.

Q. Your permeability factor doesn't throw you out of line so much, does it?

A. The permeability when you are estimating by porosity doesn't have anything to do with it.

Q. Is it not very common to estimate oil reserves based upon the size of the wells drilled, the producing ability of the wells?

A. I don't believe that would hold true.

Q. Are you stating that for a fact it is not true?

A. What do your mean—let me see if I get your question. You mean that you could tell the amount of oil reserve under any given amount of acreage by the flow of oil from that well?

Q. Not necessarily that. In determining the relative acre content, it is quite customary for oil companies to rely upon the producing ability of the wells for the determination of that fact?

A. Well, no. In limestone reservoirs I couldn't say that is true.

Q. I am talking about a dolomite reservoir.

A. That is what I am talking about.

Q. On what kind of reservoir is it true?

A. Well, it might be more nearly true as far as certain types of sandstone reservoirs are concerned.

Q. What would be the difference between sandstone and dolomite?

A. Sandstone is one that usually has a more uniform porosity than does a limestone or dolomite.

Q. Well,—

A. Let me finish my illustration.

Q. All right.

A. If you wanted them, I could give you five hundred of them, more or less. I have seen limestone wells where a well would come in and produce at the rate of three thousand barrels a day flowing; I have seen as many as six wells drilled on 160-acre tracts, the largest of which was never more than three hundred barrels. Now, that is a common thing to expect in a limestone reservoir as far as oil production is concerned.

Q. Do you find that is true in the brown dolomite in the Panhandle?

A. As I say, I have made no particular study of oil production.

Q. From your general knowledge you should be able to answer that question. There is a great uniformity of areas with respect to the production of oil and the size of oil wells in the brown dolomite in the Panhandle field?

A. I haven't checked them.

Q. You have found that is true in the gas section of the brown dolomite?

A. I don't know as having paid any attention to it.

Q. What makes a big gas well?

A. What makes a big gas well?

Q. Yes.

A. Well, you are talking about a big gas well in a limestone reservoir?

Q. In the Panhandle field in the brown dolomite.

A. Well, a big gas well necessarily means a large volume of gas coming out, and that is dependent largely upon the factor of the permeability surrounding a well.

Q. And what else?

A. Well, it necessarily follows that you must have a good reservoir condition.

Q. Isn't that some indication of porosity?

A. It is so, yes.

Q. That is right. If you get a big gas well you are almost certain you will have a higher porosity?

A. Not necessarily.

Q. Isn't that generally true in this Panhandle field?

A. I wouldn't say it was.

Q. Would you say it wasn't?

A. You are neglecting your permeability factor entirely.

Q. I know it, but would you say it was not?

A. Would I say it was not an indication of porosity?

Q. That is right.

A. Well, I wouldn't want to go that far, no.

Q. All right, then, you just haven't studied it from that angle, is that correct?

A. That is right. The method we used doesn't depend upon the questions of permeability or porosity.

Q. You made no particular search or investigation to determine whether that is true or isn't true?

A. As to whether what was true?

Q. Whether a big well indicates high permeability and high porosity.

A. Well, I made no particular investigation of that because it wasn't necessary from our standpoint.

Q. Then the statement I just made, as I take it, is a correct statement, then, since you attached no particular significance on the approach you made to the problem; you made no particular effort to determine what relationship, if any, did exist?

A. That is right.

* * * * *

The witness does not know the areas of maximum of open flow in the Texas Panhandle Field, it being unimportant to him to study this phase of the matter. He did know that the area of northern Moore County, for example, was an area of large per acre pound decline, but he didn't know as to open flow, whether the wells produced five million cubic feet or fifty million cubic feet. It wasn't important to him. He made no study to determine the size of the wells along the edges of the field and did not know whether they were small or large. This was not important to him.

* * * * *

The witness further testified (Vol. 55, pp. 7710-7726) as follows:

Q. Now take Quadrant 1, Potter County, the wells that you generally *fine* in that quadrant are in the north half of the quadrant, the majority of them?

A. No, I would say that the majority are about in the center.

Q. About the center?

A. Yes.

Q. You have an area in the northwest portion of the quadrant with a few wells in it. There is only one connected well there, is that right?

A. I believe that is right.

Q. So you have there a great deal of undeveloped acreage in that quadrant and you assumed that in the undeveloped acreage—I say "undeveloped," but I mean fairly good-sized areas in which wells have not yet been drilled—the wells, when and if drilled in that area, will be about the same size of the wells that have been drilled in that area?

A. Well, in my study of this situation in general I didn't go over the field making assumptions about what new wells would be. It wasn't necessary.

Q. You did assume that your acre content would be about the same as reflected by the wells already drilled?

A. I am glad you asked that question.

Q. All right, I am glad I asked you one you wanted to hear.

A. Don't interrupt me until I get through.

Q. All right, make the answer relevant to the question I asked you.

A. Surely. You take a given amount of production taken from a group of wells in an area and the larger the area where you utilize simply that production, the lesser amount of gas per acre pound than if you used a small area.

In other words, the utilization of undrilled acreage gives you a minimum reserve because you are taking a maximum amount of acreage into consideration, so the question of size of the wells hasn't anything to do with the question of reserve. You take a large area and a smaller amount of production and apply it to that area and you will get a minimum result because of the distribution over the larger area.

Q. Well, I don't think I quite understand that last statement of yours, "you get a minimum result." I wish you would explain that to me. I just don't catch it.

A. Well, suppose, for example, that you had a group of, say, ten wells on five hundred acres and it was possible—I wouldn't advise it, but take it as an illustration—you drilled, we will say, five wells on a thousand acres. You calculated and drew your isobars and calculated for that thousand acres the production per acre pound for that area.

All right. Then if you took, say, instead of one thousand acres, two thousand acres, and drilled more wells but applied it to the production from that one thousand acres to your two thousand acres you would have a lesser production per acre pound.

Q. Why wouldn't you have twice as much?

A. You would have less because you have more acreage. Your acre factor enters into that.

Q. What I am talking about is reserves. If you take two isolated tracts, one of them containing one thousand acres that has five wells upon it; then take another one that has two thousand acres having five wells that are identical in every respect in the things which you have considered in arriving at reserves, wouldn't you come out with just twice the reserve in the 2,000-acre tract more than you would come out with in the 1,000-acre tract?

A. Let's see. Your question was, if I get it, if you had identically the number of wells and the identical number of production on a thousand acres?

Q. That is right, and identical performance.

A. And the identical amount of gas had been taken out?

Q. Yes.

A. And you utilized—and you made a calculation on the smaller area?

Q. That's right.

A. Then you had an identical number of wells and an identical number of—no, and a larger amount of acreage, would your reserve estimate be larger in one case than in the other, is that right?

Q. Be twice as much on the 2,000-acre tract as on the 1,000-acre tract.

A. You are neglecting, Mr. Keffer, your acreage factor in your computation. It would be less than a smaller per acre—I am talking about undeveloped area.

Q. You mean you would have less content per acre in the two thousand?

A. You would have an indicated less production per acre pound.

Q. That is not what I am talking about. I am talking about acre content of gas in place.

A. Well, but you arrive at your gas in place by the utilization of your acre pound factor.

Q. Well, all right. Let's assume another situation. You have an area of a thousand acres in which there are five wells drilled; then you expand that area outside the lines, expand it so you will have two thousand acres with just the same five wells drilled, same performance and everything else. Would you say you wouldn't have twice as much gas under the two thousand as you would have under the one thousand?

A. Certainly not, simply for the reason that there is distribution of that gas under a large area.

Q. I know you are distributing it.

A. You would have a lesser production per acre pound.

Q. You wouldn't have as much if that was a perfect reservoir, I can understand you wouldn't have as great a per pound drop for the volume produced, but I am talking about gas in place.

A. That's what I'm talking about.

Q. How do you determine gas in place? I've got it all backwards, then. . .

A. Well, I'll try to explain it so that you will understand.

Q. That's right.

A. You understand, I think I have explained often enough how we arrived at our weighted pressure.

Q. Yes, I think I understand that.

A. All right. Then we take that weighted pressure and we calculate from that the production per acre pound decline as against the weighted pressure.

Q. Yes.

A. See?

Q. Yes.

A. All right, that production per acre pound decline, then you take that. You have in there production per acre pound decline. You have in there three factors, don't you? You have production; you have acreage; and you have pressure—pressure decline. All right, you simply take your acreage and you multiply that by your pressure drop;

then you multiply that by your 35.1 Mcf., see? In other words, you then have your acreage and you have your pressure and you have your Mcf. Now the *compulation* of those three will give you the product per acre pound All right, then you have so many acres and you calculate the reserve for the number of acres.

Q. The production per acre pound. Then you make one more computation and you get the gas in place per acre, don't you?

A. It amounts to the gas in place per acre pound decline.

Q. Well, let's get off of that per acre pound. Now, the exhibit you introduced here this morning shows, well, I don't seem to have it here, but it shows the remaining reserves down to 25 pounds per acre, not per acre pound decline or anything else, but the number of—volume of gas per acre.

A. Yes, that is right.

The Trial Examiner: Mr. Keffer, may I interrupt you a moment?

Mr. Keffer: Yes.

The Trial Examiner: Mr. Hammer, do you make a determination of your acreage area prior to your calculation, or—

The Witness: Oh, yes, prior to your calculation. You know the total amount of acreage involved in each quadrant, see?

The Trial Examiner: Yes, and you made that prior to the time that you calculated the reserves in place?

The Witness: Prior to it?

The Trial Examiner: Yes.

The Witness: Yes, certainly.

The Trial Examiner: What I mean is, not to get down to this figure here, but I mean prior to the time that this calculation which you described was made.

The Witness: Well, the determination of the acreage in a quadrant and the determination of the weighted pressure is the first step that you take.

The Trial Examiner: Yes, that's what I wondered.

The Witness: That's right.

By Mr. Keffer:

Q. All right, now you have calculated it in Quadrant A, we'll call it, and you got an original reserve. Let's get it back to originals and we can compare it better. You got an original reserve of 10,000,000 feet per acre. You take that same setup and apply it to another quadrant that contained a thousand acres and it would naturally figure out ten million feet per acre on that one, too, wouldn't it?

A. Well, that's one way, but you are still neglecting—

Q. You can answer that yes or no.

A. Yes, you're right—

Q. Now, wait, I want to ask you another—

Mr. March: He can make an explanation if he wants to. He can say yes and then he can make an explanation.

Mr. Keffer: All right, go ahead.

The Witness: You are leaving out of there—what you have arrived at when you come down to that is a figure that has already taken into consideration the production per acre pound decline, scattered over the entire area.

By Mr. Keffer:

Q. All right, now let's talk about original reserve per acre, which is a very simple calculation to find when you have your acreage per pound decline on your method, isn't it?

A. All right.

Q. All right, now, we have got original reserve per acre of ten million feet per acre, original reserve, in Quadrant 1; then you have another identical quadrant with identical wells, with identical performance, that also contains a thousand acres, and that, since everything is identical, you would come out with that at ten million feet per acre, wouldn't you, original?

A. Now, what you mean—there is one thing that is confusing.

Q. Precisely what I said. I can't state it any clearer.

A. Repeat your question, please.

(The question referred to was read by the reporter, as set forth above.)

The Witness: You are talking about original. What do you mean by reserve?

By Mr. Keffer:

Q. Gas in place, there before any is produced.

A. I haven't given you any figures on that.

Q. I know you haven't but you could get that readily from the figure that you did give me. I could figure that out if I had what you just gave me.

The Trial Examiner: Well, now, let me see if I get your question, Mr. Keffer. You are talking about a quadrant that he has established a reserve on and then assuming—

Mr. Keffer: Another identical quadrant.

The Trial Examiner: Yes.

Mr. Keffer: With the same identical wells and performances and pressures.

The Trial Examiner: In another area?

Mr. Keffer: Sir?

The Trial Examiner: In the same area or another area?

Mr. Keffer: It wouldn't make any difference. They can be joining as far as that is concerned.

Q. Am I right in what I stated, Mr. Hammer?

A. Read what he stated.

(The record referred to was read by the reporter, as set forth above.)

By Mr. Keffer:

Q. All right, now, wouldn't you?

A. You would come out with—let's see if I get this straight. If you had one area, a small area—

Q. Yes.

A. —where you get, we'll say, ten million per acre and then identical stuff in a larger area?

Q. No, the same size area, another thousand-acre tract.

A. Another thousand-acre tract?

Q. Identical in every respect, you would get the same figure per acre content, wouldn't you?

A. If identical in every respect?

Q. Yes.

A. Exactly identical, yes.

Q. Yes, no deviation at all.

A. All right.

Q. You then get ten million per acre on that other one, wouldn't you, Quadrant B?

A. If everything were identical?

Q. That's right.

A. Oh, yes.

Q. Well, we are together that far, aren't we?

A. I guess so.

Q. There is no mistake there. Then you have twice as much in that, then throw the two quadrants together you would have twice as much in the two-thousand-acre quadrant as you would in either one of the thousand-acre quadrants, wouldn't you?

The Trial Examiner: You mean just add the two totals?

Mr. Keffer: That's all there is to it. It is very simple.

The Witness: Well, under that sort of an assumption you would have twice, all right.

By Mr. Keffer:

Q. Well, that's what I thought. I guess maybe I thought you said a while ago you would have less than twice as much under the two thousand than under the one thousand.

A. Yes, but the analogy wasn't the same.

Q. I intended to make it precisely the same. Where is the difference in the analogy? Maybe we'll learn something here.

A. Well, it's hard for me to explain it any further than I have, but the point is that if you have two areas—take your same illustration—you have two areas of different sizes in the one area, a small area, we'll say. You *arive* at a production per acre pound from the production that came from those wells in that area, see?

All right. Now, if you have an area, we'll say twice that large, as you have illustrated, and you take the same production, assume that you had the same production from the same number of wells and you spread that over the larger area, you are bound to get a less production per acre pound.

Q. Why, of course. I can understand that. It is very simple, but when you reduce that or convert that over to

original reserves per acre content, you are going to have just twice as much gas in the ground over the larger area.

A. No, you aren't.

Q. Then you would have in the smaller area.

A. No.

Q. We're right back where we started. I guess we've spent enough time on that, anyway.

The Trial Examiner: I think the record is clear on that, Mr. Keffer—I mean, I think you are talking about one thing and Mr. Hammer is talking about another.

Mr. Keffer: I think that's right, and Mr. Hammer persists in talking about per acre pound decline, while I talk about per acre content. I think that's the whole difference. I don't know whether it is or not, but we'll leave that.

The Trial Examiner: In other words, Mr. Hammer has fixed these reserves for his quadrant. Now, you were assuming two quadrants, you see, Mr. Keffer, and I think that is where the misunderstanding occurs. In other words, as I got your question you were throwing this ten thousand acres into Mr. Hammer's one-quarter in one instance, and in this other instance you are talking about two hypothetical separate quarters.

Mr. Keffer: I was trying to segregate, Mr. Examiner—reduce it to a point of acre content, if you had twice as many acres and had the same acre content you would have just twice as much gas. Now, I think that ought to work out that way in Mr. Hammer's way of figuring it or anybody else's way of figuring it, but if it doesn't work out that way in Mr. Hammer's way of figuring it, I want to know why, and if it doesn't, then I think something is wrong with Mr. Hammer's method.

The Witness: You have been talking about an acre, haven't you?

By Mr. Keffer:

Q. Yes.

A. This thing that I have just been mentioning so often is production per acre pound.

Q. I know, but that isn't what I have been talking about.

A. But that is the production per acre pound that has come out of an acre of ground.

Q. What good have you done when you get to production per acre pound if you stop there?

A. You don't stop there.

Q. Of course you don't. You go on another step and do what?

A. Well, you take your area and your weighted pressure and you calculate your reserve.

Q. You find the number of cubic feet per acre multiplied by the number of acres and that gives you the reserve of your quadrant, don't you? Isn't that right?

A. Let's see, you multiply your acreage—

Q. Your acreage content by the number of acres in your quadrant and that gives you the reserve in your quadrant.

A. No, not in the utilization of a production per acre pound.

Q. Well, just another minute or two and then I'm going to leave this. You have your per acre pound drop in pressure.

A. That's right.

Q. All right, then, tell me where you go from there and how you get there.

A. Well, I just explained it a few minutes ago.

Q. Let's do it again.

A. You take your area involved, see?

Q. The number of acres in it?

A. The number of acres, and you multiply that by the pressure drop between any two given pressures, that gives you your production—no, that gives you your per acre pound factor; then you have calculated a production per acre pound and you multiply that by the Mcf. and you get your reserve.

Q. Per acre?

A. No, for the area.

Q. For the area. All right, then, if you divide by the number of acres, then what happens?

A. You don't divide.

Q. I know, but we'll just do it this time. What would you get?

A. It would be a wrong assumption and it isn't anything that has, as I see it, a bearing on the question of reserves. You would be doing things wrong.

Q. I don't think it does much, either, Mr. Hammer, but I don't know. I'm just trying to see if it does.

Now, this Exhibit 186 introduced this morning, you show remaining gas reserves per acre in Hartley-HA, 13,713,000. Now, how did you get that figure?

A. Well, on this particular sheet I divided the remaining reserves as calculated here by the acreage.

Q. That's exactly what I said, and you just said it wouldn't give you anything, didn't you?

A. There was a misunderstanding there as to what you were trying to get at.

The witness then testified (Vol. 55, pp. 7726-7782) as follows:

Now, what causes drainage in a gas field, Mr. Hammer?

A. Pressure differential.

Q. Do you have pressure differentials in the Panhandle field?

A. Oh, yes, there are pressure differentials in the Panhandle field.

Q. Where are the lower pressure areas generally?

A. In that field in general they are along the northeast side of the field.

Q. What has made those low pressure areas on the northeast flank of the field?

A. Gas withdrawals.

Q. Where?

A. Well, along the northeast side of the field.

Q. That's right, as gas has been withdrawn along the northeast flank and low pressures were formed in there, what happened?

A. As gas was withdrawn and low pressures formed, what happened, you say?

Q. That's right.

A. Well, a lot of things happen. There was a general tendency—a general tendency for gas to move from the higher to lower pressure areas.

Q. You say "general." Isn't that an unavoidable tendency or an unavoidable result?

A. Well, there are all sorts of degrees as to the movement of gas.

Q. I appreciate that, but it moves, nevertheless.

A. It has a tendency to move all right.

Q. Well, doesn't it move? Let's cut out the word "tendency" and say that it does move.

A. It isn't that—

Q. Isn't that right?

A. Well, I would rather leave that, that the movement is a variable condition but that there is—

Q. But there is, nevertheless, a movement?

A. There is a movement.

Q. That's right.

A. It will vary in degrees very considerably.

Q. That's right, the movement is from what point to what point?

A. Naturally it is from the high to the low pressure areas.

Q. Just on the same principle that water runs downhill, isn't it?

A. Well, I suppose that would be a good explanation.

Q. It is impossible without some exterior force for gas to move from a low pressure area to a high pressure area, isn't it?

A. I have never heard of it being done in a gas field.

Q. I don't think you ever will. In fact, that is Mr. Boyle's law to a degree, at least, isn't it?

A. That's right.

Q. All right, now, the areas along the northeast flank of that structure are generally low, practically from one end of the field to the other, is that not correct?

A. No, not the entire distance.

Q. Well, let's start from a point, say in the northwest portion of Hutchinson County.

A. If you would start from an area in the vicinity of the Borger field and go from there east, I would agree with you in general.

Q. Well, why couldn't you start way north of Borger? Here is Borger, and way up here just opposite the word "Hutchinson," wouldn't you be getting low pressures there on the northeast flank of the field? I am referring to Exhibit 179.

A. They are all degrees of pressure, Mr. Keffer. That

area up there in northwest Hutchinson County in 1939 was a relatively high pressure area.

Q. That's right, but is it today?

A. So you can't say that that is a low pressure area.

Q. All right, let's take, then, from in the vicinity of Borger and going on down through the length of the field. Which direction do you go from that line to get into a higher pressure area?

A. You mean from the line that was drawn in making the limits of the field?

Q. That's right, from any point along that northeast flank. Start anywhere you want to.

A. Well, in general, it would be to the—well, toward the east—it would be to the south and west.

Q. All right, as to the movement your isobar lines show that completely, do they not?

A. Yes.

Q. And the farther southwest you go, what do you find?

A. You find higher pressure areas.

Q. That's right. You start southwest from Borger and you will find a higher pressure area, and going a little farther, still higher, and going farther, you will find it still higher, and where do you find the very highest pressure areas in that field?

A. Well, there are three of them, really, at northwest Hutchinson County, the extreme western Moore and part of Hartley County, and the area along the south border of the field.

Q. That's right, you generally find the higher pressure areas at points farther east, away from the low pressure areas along the northwest flank, don't you?

A. In general that is true except that northwest Hutchinson, I would say.

Q. Now, state again just what causes that.

A. Well, I said it was pressure differential between different areas.

Q. And the gas is migrating in what direction on that —from the high to the low, I think you stated that, is that not correct?

A. I have.

Mr. Keffer: I have another map here that is colored which I would like to put up here for just a moment. I would like for this map to be marked as an exhibit for identification. We do not desire to introduce it just now, but it will be introduced later.

The Trial Examiner: It will be marked for identification as Exhibit No. 187.

(Exhibit 187, Witness Hammer, marked for identification.)

The Trial Examiner: Did you state what the map is, Mr. Keffer?

Mr. Keffer: No.

The Trial Examiner: Would you do that?

Mr. Keffer: This map shows the outline of the Texas Panhandle gas field as determined by the Railroad Commission of Texas, showing pressure bands at 20-pound intervals in different colors in order that it might better reflect the bands of pressure differentials in the field.

This color along the northeast side of the structure here, I guess you would call it a slate color or perhaps represents pressures from zero up to two hundred pounds; that is, nothing up above two hundred in that area and nothing below zero.

The next band, which is I guess an orange color—anyway, it is this color here that I am pointing to—is two hundred to two hundred and twenty pounds pressure.

The next is a dark blue band which is two hundred and twenty to two hundred and forty pounds pressure.

The next is a pink bank which is two hundred and forty to two hundred and sixty pounds pressure.

The next is a green band from two hundred and sixty to two hundred and eighty pounds pressure, and the next is a red band from two hundred and eighty to three hundred pounds pressure.

The next is sort of a purple band from three hundred to three hundred and twenty pounds pressure.

The next, I guess is colored a light green.

Mr. March: That's right.

Mr. Keffer: A light green, from three hundred and twenty to three hundred and forty, and then a light blue, lighter than the previous blue that we referred to, is three hundred and forty to three hundred and sixty, and then, what is that, Mr. March—Mr. March says it is a brownish green. I guess that's just as good as any, is three hundred and sixty to three hundred and eighty, and then a pink from three hundred and eighty to four hundred, and then a yellow above four hundred pounds pressure.

Q. Now, will you examine that map generally, Mr. Hammer, and tell me if it is a rather accurate presentation of the pressure differentials existing in the field as of July 1, 1939?

Mr. March: Now, if it please the Examiner, we don't object to this witness answering any question in regard to the entire Panhandle field. We don't even object to the witness being cross examined about the porosity thickness method which he did not use, but we do object to this witness being cross examined about an exhibit that he did not prepare, and an exhibit which has not even been marked for identification or been offered through a witness in this hearing room—

Mr. Keffer: It has been marked for identification and I am not cross examining him on the exhibit.

Mr. March: And in so far as any testimony on this exhibit, which is not Mr. Hammer's exhibit, we think it is unfair to cross examine in regard to it and we absolutely object to such cross examination.

The Trial Examiner: I think, Mr. March, that we have a precedent. Mr. Keffer says that he is not going to cross examine Mr. Hammer on that particular exhibit, but I think we have a precedent for just such procedure established by Commission's counsel. I can recall of Commission's counsel putting on Map 95, I believe it is, and using that very map to cross examine Mr. Watson.

Mr. March: Well, that was with the consent—I mean,

he was testifying in regard to those particular—in regard to Exhibit 95 that is—is that this large exhibit here?

The Trial Examiner: That is right.

Mr. March: That was their own map.

Mr. Keffer: That is not our map at all.

Mr. March: That is their own map, their outline furnished by them to the Federal Power Commission, and as far as Mr. Watson being cross examined about that map, he was not. He was asked to designate on that map, which is merely a map of the Canadian River leases, upon which leases they were going to drill wells.

This is entirely different. There was no cross examination in regard to this exhibit here. We put a witness on and he was cross examined. He merely designated it.

Now, I don't object to Mr. Hammer coming up here and putting crosses on this map that certain leases are designated here and certain blocks and surveys and all of that, but when you take this map that was not put in through our witness and attempt to cross examine our witness in regard to it, that is something unheard of. It is something that we object to most strenuously.

The Trial Examiner: I hadn't heard of it either, Mr. March, but you have done it. It was done in regard to the examination of Mr. Watson. I don't recall whether there was another witness on it or not, but it was done on Exhibit 95, Mr. March. It is just as fair now as it was then.

Mr. March: All he did was mark on there which leases they were going to drill on, and you stopped him on that. You said it would be better for us to have our men do that because there might be some difficulty about that. We stopped that practice and didn't require him to complete marking things. We aren't relying on any markings that Mr. Watson put on Exhibit 95. Our own men took the thing—you ruled that our own men should do it and they did do it, and that is what happened, and there is not a mark on this exhibit, the map, No. 95, by Mr. Watson, that we are relying on.

The Trial Examiner: Perhaps, Mr. March, my memory is short and we will let the record speak for itself, but I don't understand that Mr. Keffer is going to attempt to verify this map through Mr. Hammer.

Mr. Keffer: Not a bit. It is just a picture there that I want to ask him about with respect to the flow of gas as indicated on that particular map. Whether that map is right, I don't ask him to commit himself on it anywhere.

Mr. March: He is going to assume it is right in the first place and then say if it is true, won't this happen. There is the whole thing in a nut shell.

The Trial Examiner: Let's just wait until we get to that point, Mr. March.

Mr. March: All right, we'll see.

By Mr. Keffer:

Q. Now, Mr. Hammer, the map, Exhibit 187, discloses a low pressure area from a point considerably north of Borger that is an area of three hundred pounds or less which is the green pressure band around here (indicating), extending from that point entirely across the field to the southeastward, does it not?

A. According to your interpretation, yes.

Q. Yes, that is what the map shows, is it not? I am not asking you to verify the map; I am just asking you to say what the map shows.

A. Well, if the green, as you said it does, goes across the map as indicated.

Q. All right, and that shows—now, the area marked here in yellow and the area marked in pink, which I am pointing to here, is in the Canadian River block, is it not?

A. Yes, it is.

Q. That shows that to be the pink—I mean the yellow to be in the highest pressure area in the field, does it not?

A. According to the interpretation of that map I would say yes.

Q. Yes. Well, do you recall a Federal Power Commission map—if it doesn't show also that the Canadian

River area is situated in the higher pressure area of the field?

A. The higher, yes, but not the highest.

Q. That's right. When I say "your map," I refer to Exhibit 179. Well, it shows this area that I am pointing to here which is the Canadian River to be—much of it to be over four hundred pounds, does it not?

A. Yes, that is right.

Q. As a matter of fact, you run out even beyond four hundred, do you not?

A. That's right.

Q. All right, now, if you were to shut in every well in the field, what would happen to the pressures in that field?

A. Well, there is a big element comes in there.

Q. Just forgetting about the time element.

A. Now, wait a minute. I am answering the question. It would eventually have a tendency to equalize if given time enough.

Q. You say "tendency." Wouldn't it equalize?

A. If given time enough, yes.

Q. We're together on that. It would equalize, disregarding the time element. You mean by that that you don't know how long it would take, is that it?

A. Well, it would take a long long time.

Q. But you don't know how long and nobody else does.

A. And nobody else does.

Q. It would equalize. That fact is certain.

A. Eventually.

Q. That's right. Now, what do you mean by "equalize," Mr. Hammer?

A. Well, just as the term indicates so that the pressure would be equal.

Q. That means the gas from the high pressure areas would migrate into the low pressure areas until the gas in the two pressure areas were the same?

A. That's what equalize would mean.

Q. All right, now, we'll go ahead. Now we are assuming that all of the wells are shut in. The gas in the yellow area would first migrate to what area?

A. Well, part of it might migrate into that lower pressure area.

Q. The next—

A. No, I am talking about that other low pressure area you have got in the other part there.

Q. Over here (indicating)?

A. Yes, that's right.

Q. All right. The general movement would be where?

A. The general movement would be to the north and northeast.

Q. To the north and east. All right, we come up to this next pressure and which is the pink one, and what would be the movement out of that band?

A. In general it would be the same as the band we just described.

Q. That's right, and on and on and on and finally much of this gas would find its way over to Borger, wouldn't it?

A. Well, that is a question that is open to argument.

Q. What is the argument about it?

A. Well, a lot of it would never reach Borger.

Q. That's right, it would reach equilibrium before a lot of it reached there, wouldn't it? Isn't that right?

A. Well, now, that word "equilibrium," that is using another term.

Q. All right, what do you want to use—"equalize"?

A. No.

Q. All right.

A. I simply want to state that the intervening wells there would capture—use the word "capture"—a large percentage of that gas before it ever got over to Borger.

Q. If the wells were shut in.

A. No.

Q. I said if the wells were shut in.

A. Well, eventually, yes, it would go to the low pressure area.

Q. That's right, and keep going until that hole over at Borger was filled up, wouldn't it?

A. That's right.

Q. Now, will gas migrate more rapidly where the pressure bands are narrow or where they are wide?

A. Do you mean where the pressure differential between two of your isobars where it is narrow—

Q. Let me restate it, if you prefer it that way:

Will gas migrate more rapidly where the pressure differentials are high or where they are low?

A. Well, that is a question that is controlled—well, they would have that tendency, but the actual performance would depend in its entirety upon the permeability of the producing horizon at any given area under such a condition.

Q. All right.

Mr. Spencer: I don't believe the record is clear there. You say, "would have that tendency." I don't believe the record will be clear what you mean by a tendency—a tendency to what?

The Witness: Well, we were talking about migration. It would have a tendency to migrate more rapidly.

Mr. Spencer: That's right.

The Witness: Over areas of short horizontal pressure differentials than over wider areas, but the point I want to make there is that that thing is controlled very largely or at least to a considerable extent by the permeability of the producing horizon.

By Mr. Keffer:

Q. All right, do I understand that you mean that the more permeable the formation the more rapidly the gas will migrate?

A. Yes, that in general is true.

Q. Then does not wide pressure bands indicate a high degree of permeability?

A. No, not necessarily.

Q. Why wouldn't it?

A. Well, because a lot of those—a lot of that area is—it is dropping in pressure, it isn't dependent on migration at all except locally. It is dependent upon development that has taken place there, not some place else.

Q. How do you know that?

A. I know development occurred there.

Q. You also know that drainage has occurred, don't you?

A. We also know that drainage has occurred to reduce the pressure locally. For instance, out there in central Moore County, that low pressure out in there isn't due to any migration of gas over to the Borger area, it is due to

the migration—it is due to the gas that has been taken out of those wells locally.

Q. That is quite true. That is very true, but on the other hand where you do have the pressure differentials which exist in here and you have just said that if the wells were shut in there would be a migration of gas over to the Borger area, didn't you?

A. Yes, but we aren't dealing—have we got away from this shut-in yet?

Q. Not yet. We'll get away from it in a minute, but not yet.

A. I doubt very seriously, in fact, there wouldn't be anything to justify a statement that if the whole field were shut in there would be very much effect, we'll say, over in the central part of Moore County.

Q. I am not talking about Moore County. I am talking about Hutchinson County.

A. Well, you are talking about drainage, aren't you?

Q. Yes, but Hutchinson County. Just direct your statement to the thing I am talking about.

A. That's just the thing I was talking about.

Mr. March: He is explaining drainage. I realize you want the gas to move the other way.

By Mr. Keffer:

Q. You stated a while ago that it would move into the Borger area, didn't we? Do you want to take that back? Do you want to change your statement on that?

A. Well, in a closed-in condition which is an assumption that does not exist, and never will exist—

Q. Well, we have had shut-ins on a lot of wells in Texas. I have heard a lot about them.

A. It is purely hypothetical.

Q. Indulge me in that way, in that respect. The wells are all shut in, the gas is moving toward Borger. Do you still want to say that? You can change your answer if you want to.

A. No, if you would give it ample time, eventually it would equalize.

Q. All right, let's stay on Borger. We'll give you a chance to get into Moore County if you want to go up there after a while.

A. I have no desire to go up there.

Q. Those wells are shut in—I will restate it again. There is a general movement of gas into the Borger area from the southwest. That is right?

A. Under closed-in conditions.

Q. That's right.

A. You would also have it from the northwest.

Q. Answer me, if it wouldn't have moved from the southwest?

A. I said, "also," which means that you would have.

Q. I haven't asked you about the northwest.

A. I know, but I told you.

The Trial Examiner: We'll stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

Mr. March: May I ask one question here, Mr. Keffer?

Mr. Keffer: Yes.

Mr. March: Mr. Hammer, have you prepared an exhibit which shows drainage in the Panhandle field?

The Witness: Not with any particular reference to drainage, no.

Mr. March: Did you make any detailed careful study of the whole drainage problem—detailed problem of drainage in the preparation of your exhibit here, Exhibit 180 and Exhibit 186?

The Witness: No, I did not.

Mr. March: Do you feel that if you are going to testify in regard to the details of drainage that you would want to make a very careful study of that problem?

The Witness: Yes, I would.

Mr March: And which study you have not made?

The Witness: I have not made any particular study particularly in relation to this exhibit here. I would like an opportunity to go over that thing pretty thoroughly.

Mr. March: Before you would make any statement in regard to it?

The Witness: Before making any statements, that's right.

Mr. March: I think that is clear to Mr. Keffer and to the Examiner that the witness at least has not come up here to testify in regard to a drainage exhibit which is fundamentally an exhibit in regard to that, and it is unfair to cross examine the witness about that at this time.

The Trial Examiner: Mr. March, I don't intend to require Mr. Hammer to testify to something that he is not familiar with.

Mr. March: He is only familiar with this in a general way, and if he is going to be cross examined about the drainage he should make a careful study about it and come back here and be cross examined about it.

The Trial Examiner: I understood the other day that there was an exhibit to come in.

Mr. March: There may be an exhibit to come in. That has not been prepared. There was a mistake made about that in the record. It was my fault I think, because the way I saw this thing the whole case of the opposing side here as I see it offhand is that they are going to show that this whole field is going to blow up like a *baloon*, therefore, this drainage problem come in and plays an important role. Now, it may be that we will prepare and make a careful study of their exhibits and after that and studying the whole drainage problem, we may offer an exhibit. We haven't got one prepared now. The witness has not made a careful study of drainage in regard to these exhibits which he is offering here and I feel that when one of the geologists goes on the stand that he should be cross examined at least about the exhibit which he has prepared, not about something entirely different.

I don't feel that Mr. Hammer should be required to testify in regard to—especially in regard to a hypothetical exhibit like this, a hypothetical situation like this, on the spur of the moment without any preparation, without any study, just come in here and be asked "What do you think

of this?" on a bunch of hypothetical questions on drainage that doesn't pertain to this exhibit he is offering at all. It is unfair to the witness.

I will go one hundred per cent on everything and I believe I have, Mr. Keffer, but to take his exhibit and have a preview of his case through our witness, why, that is something that I don't feel that Commission's counsel can take the responsibility of insisting that the witness go ahead with.

Mr. Spencer: Mr. Examiner, this is very simple. All the witness has to do to stop this line of cross examination is to say, "I want to study that; I am not prepared to answer." That is all there is to it.

Mr. March: He has already said that.

Mr. Spencer: If he isn't prepared to answer questions on drainage, let him say so and we will stop. That is all there is to it.

The Trial Examiner: Well, let's go along to specific questions and if Mr. Hammer can't answer and doesn't feel that he can answer, he may say so. He is not required—I haven't required Mr. Hammer or directed Mr. Hammer to answer a question that—

Mr. Spencer: And certainly, Mr. Examiner, we don't want him to answer on anything that he isn't prepared to back up.

Mr. March: Here is the thing: When a man comes up here and introduces an exhibit on which he is prepared to answer and then he is required to answer questions on another exhibit which he hasn't studied carefully, why, naturally he is extemporaneously speaking and there are possibilities that the witness might make a mistake, and we wish to interpose the objection again. We feel that it is a serious proposition.

Mr. Keffer: If it would help Mr. March any, I don't know, I think much of it originated because I put the colored map up there, Mr. Examiner, and it is a little more tedious. I can go over the same ground with Mr. Hammer's map which shows identically the same thing.

Mr. March: All right, if you want to cross examine him about his own exhibit, that's all right.

The Trial Examiner: Now, Mr. March, I am not going to limit the cross examination to Mr. Hammer's direct examination: I haven't done it so far in this hearing and I don't intend to do it now.

Mr. March: I don't intend for you to.

The Trial Examiner: If this question of drainage comes up here and is illustrated by this particular map, I think it would be much more beneficial to all of us to visualize what they are talking about. Now, if Mr. Hammer can't answer, that is a different proposition. All he needs to do is to say so.

Mr. March: Do you know what this is, Mr. Examiner? This is really—by all fair procedure this exhibit should be put on by a witness. Let him testify as to his theory of drainage, whatever it is, and then if they want our witness to say what he thinks about it, they can ask about it, but here we come up with a map we don't even know who prepared. We don't know whether it is correct or not. We don't knew anything about the map. We haven't got a witness here who offered the map.

The Trial Examiner: Let's go along. Mr. Keffer hasn't endeavored to verify his map through Mr. Hammer.

Mr. Keffer: I think we will get along much faster if we just take this map down.

Q. Mr. Hammer, we were discussing a while ago what would happen to the gas in the Canadian River area, particularly, if all of the wells in the field were shut in, and you answered, I believe, that it would migrate northeastwardly toward the low pressure areas around Borger.

A. Now, I want to explain that situation a little bit.

Q. All right.

A. I believe I stated—if I didn't, I'll state it now—that one of the fundamental things in gas movement is pressure differentials. Now, distance is quite a factor in the movement of gas. Time is also a factor in the movement of gas. Gas will move more rapidly at areas of greater pressure differential. Now, as your pressures start to equalize under

your hypothetical setup, there would be a less and less tendency all the time for gas to migrate any considerable distance, and the most rapid movement would be during any of the time—would be at the point of greatest pressure differential. You must take into consideration the distance and variables in pressure differentials.

Q. Yes, that's right. Are you through?

A. For the present.

Q. Yes, all right. Now, the present pressure differentials you speak of do exist as shown by your isobar contour lines, all the way across there, don't they?

A. But you must—the differentials are local. Now if you will step back from those, you would have a less and less gas movement and as distance came into the picture, might eventually reach a point—as you reached the point where the field, for example, had almost equalized and your differential from one point to another became less and less and approached zero, you very probably would reach a point where, because of the condition of the sand and the permeability, particularly permeability, it might take almost an indefinite, inconceivable time for the thing to completely equalize.

Q. All right, let's get down to answering specific questions, if you please, Mr. Hammer.

Now, you stated a while ago that gas would move more rapidly through a highly permeable formation than it would through a formation of less permeability, didn't you?

A. Yes. If you have a similar pressure differential.

Q. If you have the pressure differential. Let's take a very crude—a very simple illustration. Let's take a large tank the size of this room, or the size of this court house, and let us fill it with water—or let us fill it with gas to make a more analogous situation. You put a pipe line over in one side of that tank, just one side of it, and you start taking gas out of that tank. What happens to the gas in the tank?

A. Well, that is not an analogous situation at all.

Q. Wait a minute. Answer my question.

A. I am going to answer it.

Q. No, you're not.

A. Yes, I am.

Q. I'm going to insist that you answer it.

A. I'll answer your question but I'll answer your question in my own way.

Q. Go ahead, then.

A. That isn't analogous of any underground situation of which you can conceive.

Q. Won't you let me develop it step by step? I know it is not. I am not that dumb.

A. All right, go ahead.

Q. All right. When you take that gas out of one side of that tank you get all of the gas, don't you, through that one pipe on one side?

A. Well, under a condition like a room here.

Q. Yes, that's what I'm talking about.

A. But as I stated, that is not comparable at all.

Q. I'll grant you that. Let's forget about that for the moment. Suppose that tank represented the whole Panhandle field, it was that large, and you had one pipe taking it out over here at Borger, what would happen to that entire field?

A. Probably two or three million years from now it might eventually equalize.

Q. If it was in a tank.

A. If it were in a field.

Q. I said in a tank representing the size of this field.

A. Well, if it were a tank, yes, it would equalize.

Q. That's right, it would equalize with very little pressure differential, wouldn't it?

A. In an open reservoir, yes.

Q. That's right, your pressure on the southwest side of that tank would not be more than a few ounces higher than it would be on the other side of that tank, would it?

A. Well, it would probably be the same.

Q. There wouldn't be enough that you could measure the difference?

A. In an open tank.

Q. Why? You have your one hundred per cent permeability there, don't you?

A. Yes, that's right.

Q. You have no restrictions to the flow of that gas from one side of that huge tank the size of this field to the other side of the tank, do you?

A. No.

Q. All right, now, let's build a dividing line in that tank

with very minute pores—very minute, porous spaces, and then take gas out over in the Borger area. If your pore spaces are fine enough you are going to have a pressure differential, aren't you?

A. Yes, as between the two.

Q. That's right, as between the two. Why is that?

A. Well, you have set up there a hypothetical factor that deals with a question of permeability.

Q. That's right, you have an obstruction there through which the gas will not travel as rapidly as it would if it was one hundred per cent void, haven't you?

A. That's right.

Q. That is it, precisely. All right, now, the greater that obstruction, the greater will be your pressure differentials on one side of the tank and on the other side, won't it?

A. You mean the more effective that that barrier would be?

Q. All right, let's take extreme cases all the way through.

A. Well, I think I answered your question.

Q. All right, we'll put a barrier through there that is absolutely impervious; that is, gas won't migrate through it at all; then your pressures over on this side would remain at 430 pounds, if that is what you start with, wouldn't it?

A. Yes.

Q. And you take all of the gas—you can take all of the gas out over on the Borger side, wouldn't you?

A. That's right.

Q. That's right. Now, if you open that up just a little bit, have just a few porous spaces through there, where just a little gas can get through and you keep taking it out over at Borger, you are going to have an increasing pressure differential, won't you?

A. No, you would have a decreasing pressure.

Q. All right, let's make the porous spaces through the center of that tank such that when you are down to a hundred pounds at Borger you are only down to 400 pounds over here in the southwestern part of the field in the Canadian River area. You have a great pressure differential there, haven't you?

A. That would be true.

Q. Is that right?

A. That is right.

Q. But gas is moving rather slowly because of the per-

meability, if you please, of that obstruction that you have through the center. Now, isn't that right?

A. Yes, that would be the case.

Q. All right, we'll punch more holes in that, increase its permeability, then what happens to your pressures?

A. Your pressure differential would become less.

Q. That's right, the gas would come out of this western part still faster, wouldn't it?

A. Under that hypothetical condition, yes.

Q. That's right, and there would be less difference between your pressure bands on the two sides of that obstruction, wouldn't there?

A. Yes, that is right.

Q. All right, punch more holes in it and gas goes out still faster. You are still reducing the difference in pressures on the two sides of that obstruction, aren't you? You are getting less and less? Less and less differential?

A. That's right.

Q. Is that not correct?

Mr. March: You mean assuming the thing is shut in?

Mr. Keffer: No, it is going out over here all the time. It works either way. It doesn't matter.

Q. All right, now, we started with a hundred per cent permeability and lost all of our gas through the Borger area, through the pipe line leading out of the big tank over there with a hundred per cent permeability, didn't we?

A. Yes.

Q. And no pressure differential at all?

A. Under your hypothetical case, yes.

Q. All right, then, we put an obstruction in there and we did reduce the permeability from one hundred per cent and we held some of the pressure over here—or, first, we put one through there that no gas could get through at all, had no permeability and lost nothing, that is right, isn't it?

A. That is what you stated.

Q. Then we started punching holes in there. The more holes we punched in it the more gas we lost, didn't we?

A. That's right.

Q. And the more holes we punched in that obstruction the less pressure differential we had on the other side of that obstruction, didn't we?

A. That is true.

Q. All right, then, doesn't it follow unavoidably that the greater your permeability, because we were increasing permeability every time we punched another hole in that, the greater your permeability, the less your pressure differential and the greater your drainage?

A. No, that is not true at all.

Q. Why isn't it?

A. You are disregarding entirely the question of distance.

Q. Tell me, why isn't it true?

A. You are disregarding entirely the question of distance and you are disregarding—I don't like to talk about hypothetical cases.

Q. The distance was just the same as on that field. We had assumed that.

A. You just put a barrier in there. That wasn't—

Q. The size of that Panhandle field.

A. That barrier of yours might have been the width of a sheet of paper or a hundred feet thick or five miles, you didn't state that.

Q. We'll state that—we'll put barriers in there all the way along, all the way across that field, every one an impervious barrier, then start punching holes all the way through those barriers, you are increasing your permeability, aren't you?

A. You are increasing the permeability, that is true, when you make more holes.

Q. All right, you are increasing your drainage, aren't you?

A. Yes.

Q. And you are lowering your pressure differential, aren't you?

A. That is right.

Q. Absolutely. All right, now, get back to the statement I made a moment ago, the greater your permeability the more rapid your migration and the less pressure differential you will have. I don't care what the distance is.

A. Well, of course, you increase your permeability and naturally you have an increase in flow.

Q. All right, and if you had that portrayed out on the map, the wider your pressure bands would be, wouldn't they?

A. Had what portrayed on the map?

Q. Just as you have your isobar lines on your map.

A. Now, I don't get your question exactly. What do you mean?

Q. All right, we have already agreed that the greater your permeability the greater—or the more rapid is the migration of gas from a high point to a lower point, even though the pressure differential is slight. If your permeability is there you are going to lose that gas with a minimum of pressure differential, if you have got your permeability.

A. Assuming an ideal condition, you might say, yes.

Q. Well, assuming any kind of a condition. Remember I said if you have permeability.

A. Well, you always have some permeability, naturally.

Q. I know, but the greater your permeability the greater your loss, isn't it?

A. The greater your permeability under equal pressure differentials.

Q. All right, the greater your loss.

A. The greater would be your flow.

Q. You can have greater loss of gas by drainage through a highly permeable formation with only ten pounds differential in pressure drop than you can have through a tight non-permeable formation or a formation with low permeability even though you may have sixty pounds pressure differential?

A. Well, I wouldn't answer that.

Q. I want you to answer it.

A. Well, I don't want to answer it. I am not prepared to answer it.

Q. Well, what preparation do you need to answer that?

A. I want to think it over.

Q. How long do you want to think it over?

A. Oh, tomorrow morning.

Q. You think you will have an answer then? Will it be all right if I ask you that question tomorrow morning?

A. You can ask it tomorrow morning.

Q. Will you promise to answer it then?

A. I will do my best.

Q. All right. I want to be sure. I don't want to lie awake figuring on this question if you aren't going to answer it.

All right, now, I think we have illustrated pretty well the part that permeability plays in drainage, don't you?

A. Well, it is somewhat illustrated, yes.

Q. All right. Now let's go to another phase of this thing. We are talking—we were talking a while ago about what would happen to the reservoir or to the field if all of the wells were shut in and producing no gas. Now, you didn't much want to answer that on the theory that isn't the case, that wells aren't shut in, they are producing gas; but let me ask you this:

With all of those wells producing as they are today and as they have been for some time past, this pressure differential has been created and continues to exist, is that not right?

A. Naturally you have to have pressure differential or you wouldn't have pressure at your wells, or you wouldn't have any flow.

Q. That's right, that's just at the well bore, but we have wide areas through that field represented by pressure differentials as shown by your map, your isobar contour lines show that beyond any question.

A. Oh, yes; there are pressure differentials there.

Q. That's right, and what has caused that pressure differential?

A. Gas withdrawals.

Q. That's right, heavy withdrawals along the northeast flank of that structure, isn't it?

A. That's true.

Q. And heavier on the northeastern flank relatively than on the southwestern flank, isn't it?

A. Heavier on the northeast.

Q. Relatively than on the southwestern per acre? Please state it that way.

A. Well, I'm just trying to get my geography.

Q. When I say "northeastern," I mean the northeast section of that reservoir, the northeast flank.

A. Well, I think we have already agreed there is no gas out there.

Q. I mean within the gas producing area as you have outlined it here.

A. Well, yes, the pressure differential also extends from the area to the northwest. It also extends—

Q. I know, but will you please answer my question, Mr. Hammer?

A. I am answering the question.

Mr. Keffer: Read the question, Mr. Reporter.

(The question referred to was read by the reporter, as set forth above.)

By Mr. Keffer:

Q. Now, can you answer that simple question?

A. You are talking about the northeastern flank of the entire fold?

Q. That's right.

A. That's right, I didn't understand you.

Q. And the gas withdrawals have been heavier along the low pressure areas existing along the northeast flank than it has been back farther to the southwest?

A. Yes, that is right.

Q. And that has caused these pressure bands, hasn't it?

A. Yes, that has caused your pressure differentials.

Q. All right, now, you started to state a while ago that there had been heavy production up in the north part. What did you want to say on that? I wanted this other question answered first.

A. What was your statement?

Q. You started a voluntary statement, not in answer to my question, and I wanted to give you the opportunity to state what you had in mind. What did you want to say on that?

A. Well, that came about by misunderstanding of what you were trying to get at in the succeeding question.

Q. Yes.

A. Now since we have understood and decided you meant as between the two sides of the field, why, then I don't have any statement to make.

Q That's all right. I wanted to give you an opportunity to state what you had in mind.

A. I didn't have anything in mind after we got that straight.

Q. All right, now, as a matter of fact, if gas had not been migrating from the southwestern to the low pressure areas in the Borger area, you wouldn't have had these pressure differentials ranging out to the southwest, would you?

A. No, nor I wouldn't have them to the northwest or locally there at the southeast.

Q. That's right, if there wasn't a migration of gas every place you have a well, you have a local low, just a circle around that well, and go over to another one, and just a circle around it, you would have a series of circles around that field, if no migration of gas except locally to local well bores, isn't that a fact?

A. You would have a condition similar to the condition that has developed and is developing up through central Moore County.

Q. All right, and instead of having—you mean you have two or three local lows?

A. That is right.

Q. Instead of having two or three local lows you would have two or three thousand local lows if there was no migration of gas from the general high pressure area to the general low pressure area?

A. No, I don't agree with that statement.

Q. Well, what's wrong with it?

A. As I said a while ago, you are trying to move gas in mass over long distances.

Q. No, I'm looking at a picture which you have drawn yourself.

A. So am I looking at that picture, and where is your rapid pressure differential? It is right there in the vicinity of Quadrant 1, Hutchinson County. Now, when you get away from that a very short distance, that rate of pressure differential rapidly changes and it flattens out, more or less, into a low—

Q. Wait a minute.

A. I haven't finished.

Mr. March: Let him finish his answer.

The Witness: It flattens out into a local condition extending from approximately here on (indicating).

Mr. March: Which way?

The Witness: To the west.

Mr. Lange: In Moore County?

The Witness: In Moore County. In other words, taking in approximately the center of Quadrant 1 in Moore County and a little piece of the center of Quadrant 6 in Moore County. From there on west the pressures have almost

flatténed out. Your movement of gas is dependent there in that case upon your local pressure differential from here on east (indicating).

Mr. March: Where on east?

The Witness: Well, from about the center of Quadrant 1 and Quadrant 6 in Moore County over towards the Borger area.

By Mr. Keffer:

Q. And over into the Borger area?

A. That's right, but it only extends into about the position of this here (indicating).

Mr. March: Which here?

The Witness: Into the position of the center of Quadrant 1 and Quadrant 6 in Moore County. The drainage is over in this part of the county due to gas withdrawals on the southwestern part, being taken out of there, and still being taken out.

Mr. March: The western part?

The Witness: The western part of Moore County.

By Mr. Keffer:

Q. How do you know that?

A. Well, I know it from my study of the pressure isobars over the period of the last five years in the construction of the maps.

Q. All right, I thought we just agreed after lengthy argument, almost, a while ago, that the greater your permeability the wider the pressure bands and the less pressure differential you had, didn't we agree on that?

A. No, I don't think we—as I understand you now, we did.

Q. How do you understand me now as compared to how you understood me then?

A. I don't know what you are driving at right now. You seem to be—

Q. Have we got to go through all that again?

A. I don't care if it takes a week.

Mr. Keffer: I don't either.

The Trial Examiner: I think, gentlemen, that the record, of course, will speak for itself and perhaps Mr. Hammer did not understand at the time of his previous answer, but my understanding of your response to Mr. Keffer was exactly the same as Mr. Keffer states it, and if that was incorrect, let's correct it and start over.

The Witness: Exactly as his statement concerning what?

The Trial Examiner: The statement he just made.

The Witness: What was the statement he just made?

(The record referred to was read by the reporter as set forth above.)

The Witness: Well, I think that the explanation I made there of the flattening out of those isobars explained that. It automatically shows a flattening of the pressure as you get away from the Borger area.

Mr. Keffer: Well, all right.

Q. Take the pressure bands which you have which is depicted on your map, on 179, and it shows a rather rapid decline in pressure between a point, we'll say midway, approximately, of Quadrant 3 in Hutchinson County and Quadrant 1 in Moore County, doesn't it?

A. Yes, locally that is true, in that area.

Q. All right, now, take your production over in Hutchinson County, has it been at a higher rate or a lower rate than the production out in immediately to the west in Moore County?

A. I believe that it has been at a higher rate.

Q. Higher rate, that's right; otherwise, you wouldn't have those pressures, isn't that right?

A. That is right.

Q. That is the thing that makes them.

A. That's right.

Q. All right, let's take a situation—let me ask you this: In your study of this field you studied your pressure declines primarily in making your estimate of gas reserves, didn't you?

A. We studied our weighted pressure decline.

Q. All right, did you find an area in Hutchinson County

in which the pressures generally were increasing in the wells in that area?

A. Over a five-year period I found no place where they were increasing but a local area where over the five-year period the pressures remained approximately static.

Q. Did you find any in the last three or four years in which they were increasing substantially as much as twenty pounds—twenty-five pounds?

A. No.

Q. You didn't find any of those?

A. No.

Q. Suppose you had found some of those, what would that have indicated to you?

A. Well, it might indicate several things. When you go to dealing with the pressure of an individual well,—

Q. I am talking about a group of wells in an area, not just one well.

A. You mentioned a well.

Q. I will change that, then, to a group of wells in an area.

A. Well, you would assume, of course, that in this group of wells that you are talking about there would be somewhat of an increase of gas to those wells.

Q. Of course, that is obvious, isn't it?

A. Sure.

Q. How do your suppose that gas got there?

A. Well, it probably migrated there from—not—

Q. Well, suppose, though, during all that time we are producing substantial volumes of gas, would that indicate anything to you?

A. Well, it all depends on the area you are considering.

Q. Well, any area.

A. All right. You know, of course, that there has been in that Borger area some repressuring?

Q. That's right. Yes, I know that, and that is the reason I am asking you these very questions.

A. Now, that repressuring automatically, while it was going on, at least—I don't know whether it is still going on or not—but while it was going on it automatically increased the pressure on the wells around close to it; that is, where the wells were utilized to put the gas into the ground.

Q. That's right, and that repressuring was going on while those wells in the Borger area were producing large volumes of gas.

A. Well, I don't remember now exactly when it was going on but I knew that did do some repressuring.

Q. You never knew any of them cutting down production particularly in the Borger area, did you; that is,—or, shutting them in,—I'll state it that way. They did cut it down some.

A. No, I think they are still producing.

Q. They are still producing and they were still producing during that time and today more gas per acre in the Borger area and Sanford area than they are in the Canadian River, aren't they?

A. Yes, that is true.

Q. All right, now, if they are producing that large volume of gas in the Borger and Sanford area, that general area of Hutchinson County, producing more gas per acre than they are out in the Canadian River area and in spite of that pressures are increasing or at least aren't decreasing, what is the only possible explanation for that phenomena?

A. I will answer that by a qualification. You are attempting to paint a picture here that all of the gas that is going into that Borger area comes from Canadian River acreage.

Q. No, no, I am not doing any such thing.

A. Why not mention the fact then, that it is coming in from the north and west.

Q. All right, where is it coming from?

A. The pressure isobars indicate where it is coming from. It is coming from the north, if it is coming at any particular rate. It is coming from the north, it is coming from the northwest and it is coming from the west.

Q. How about the southwest?

A. Well it is also coming from the southwest some.

Q. The whole point is, Mr. Hammer, that that gas into that area, at least, is necessarily migrating long distances, isn't it?

A. No, that is not true at all.

Q. All right, take the wells to the north and the northwest and the west and the southwest and you have heavier

production of wells in that area than you have back in Potter County and in Moore County, now, isn't that a fact?

A. That is true.

Q. All right, if that is true—

A. That is just the point I make.

Q. All right, fine.

A. If you have wells, say, up here in the northwest part of Quadrant 3 drawing gas out up there—

Mr. Lange: What county?

The Witness: In Hutchinson County, those wells locally there, are the reason why you get that pressure differential. It is not this area down here (indicating).

By Mr. Keffer:

Q. All right, how do those wells up there locally make that pressure differential?

Mr. March: What he means is down over here (indicating).

The Witness: I mean the Borger area.

By Mr. Keffer:

Q. Be more specific as to the pressure differential caused by production in the northwest part of your Quadrant 3 in Hutchinson County.

A. Well, I happen to know that there are wells up in there producing gas.

Mr. March: Quadrant 3, Hutchinson.

The Witness: And I happen to know that right across here in Moore County that there is a low pressure area. There has been a low pressure here for a long time. Now, the wells are taking gas out in there.

Mr. Lange: Where? Be specific.

The Witness: Just in this Quadrant 3, just across into Moore County, are the wells that are responsible for that pressure differential. It is not long migration down through to the Borger area.

By Mr. Keffer:

Q. The area you are talking about is a low pressure area. All right—as shown by your map, isn't it?

A. Yes, that is right.

Q. All right, now, certainly those wells from that area aren't feeding the Borger area, are they,—they couldn't be?

A. No, that is true.

Q. Of course not. We have eliminated the northwest part of your quadrant, haven't we?

A. Wait a minute. We haven't either.

Q. All right.

A. You come out this side and you still have a pressure differential.

Mr. March: Quadrant 3, Hutchinson?

The Witness: Quadrant 3, Hutchinson County. You come over here in Quadrant 4 Hutchinson County and you still have a pressure differential coming down into your Borger area.

By Mr. Keffer:

Q. Those pressures running back this way—

Mr. March: "Back this way," which way do you mean, Mr. Keffer—northward?

Mr. Keffer: Yes.

Q. All right, maybe we have spent enough time on that. Let's summarize a minute. You have wells in an area in Hutchinson County in which pressure is either holding its own or increasing somewhat, wells around it producing large volumes of gas and the gas is coming from somewhere to repressure those low pressure areas.

A. Yes and in a condition like that it is just as apt to be coming from pressure differentials in local areas, more apt to be than it is from long distances.

Q All right now, when you say "those local areas," you mean near by?

A. Near by.

Q. All right, if those nearby areas are themselves producing large volumes of gas, then the chances are they are just catching some of it as it goes by, isn't it?

A. Well, they have an effect, of course, on pressure, and they also, as stated, they capture a lot of the gas if it has a tendency to migrate back.

Q. That's right, and there is nothing as shown on your map or any other map that I have ever seen that would indicate that the acreage near by those areas that are being repressured is furnishing the gas for that repressuring?

A. I don't agree with that. I want to call your attention to just one thing here.

Q. All right.

A. Right up here in this part (indicating).

Mr. March: Now, be specific as to the designation, because the record won't show what you are pointing to if you don't.

The Witness: All right, Quadrant 6, Moore County, prior to 1939 there had been no wells drilled in this immediate area.

Mr. March: Which area is that?

The Witness: The southwest corner of Quadrant 6. There were some wells drilled in there in 1939. Prior to that time, because here was a low pressure area and some wells here—

Mr. March: Where is that?

The Witness: Along the eastern side of Quadrant 6, Moore County, and there were producing wells as far as Quadrant 6, Moore County, with no intervening wells. The only thing you could do was assume a gradual slope because you had no other data.

All right, in 1939, four wells were drilled here. I will give you the names of them. Now, after these wells came in I didn't have the pressures on the wells so a letter was written to the Texas Railroad Commission under date of March 20th, 1940 and they gave the names of these wells and their closed-in pressures. The wells are the O & H—no. the Panhandle Eastern, J. T. Sneed in Section 1—Sneed 1 in Section 3—Exhibit 95—In Section 3 on the O & H Lindsay Survey, Moore County. That well had an initial rock pressure of 350 pounds, completion date of September 19, 1939.

The other well is also on the Owen H. Lindsay Survey in Section 4—

Mr. Lange: What County?

The Witness: Moore County. That well was completed on October 11, 1939 with a pressure of 332 pounds.

The next well was the Shamrock Oil & Gas Company's J. T. Sneed, Sections 1 and 2, on the Joseph H. Johnson Survey in Moore County. That well came in on September 10, 1939, with a pressure of 370 pounds.

The last one was the Texamo Natural Gas Company's J. T. Sneed, 21-P in Section 72—I think that is Section 72,—the G & M, Block B-3, Moore County. That well had a pressure of 321 pounds.

Now, the point is that although there had been apparently greater distance extending into the low pressure area, the Moore County-Hutchinson County line, here was a well drilled in 1939 in Quadrant 6 that had a pressure of 50 pounds higher than wells to the west, which seems to indicate that a drainage in the past and drainage even now is not all in that direction.

Mr. Keffer: Let me ask you a question with respect to that, Mr. Hammer.

Q. Those wells that you have referred to were drilled in a larger area in which no wells had been drilled previously, that is correct, isn't it?

A. That is true.

Q. You had some pressures that were down to 320 pounds or 323 pounds, I believe, one of them—

A. That is right.

Q. And what is the pressure of one of the others?

A. The lowest was 321 pounds.

Q. 321 pounds?

A. Yes.

Q. That area had lost how much gas?

A. What?

Q. That well had lost how much gas up until it was drilled?

A. I don't know how much gas was lost. I know what the pressure drop was.

Q. All right, what was the pressure drop?
A. You mean from the original field pressure?
Q. That is right.
A. Well, it was 109 pounds.
Q. For all intents and purposes that is one-fourth of all of the entire gas that was there originally?
A. One-fourth of the original pressure.
Q. Wouldn't that be a fourth of the original amount of gas to zero, and not to your 25 pounds?
A. Well, I—
Q. Let's get at it this way: Your original pressure there was 430 pounds?
A. I assume it was.
Q. Haven't you made that assumption all over the field? You say so in your statement.
A. Yes, I assume it.
Q. You lost 109 pounds, didn't you?
A. That is right.
Q. That is more than a fourth of 430 pounds, isn't it?
A. All right—
Q. Wait a minute.
A. I am agreeable to that and in that same list—
Q. All right.
A. —you had a well with a 50-pound pressure and wells to the west.
Q. We will come to that in a minute. There is a tract of land that had never had a well on it—
A. No, it hadn't been drilled previously.
Q. It was the first well on the tract?
A. That is right.
Q. You drilled into that formation and found that more than one-fourth of your gas had gone somewhere, didn't you?
A. That is right.
Q. Where did it go?
A. It went to the closest well that could drain it.
Q. What were the closest wells that could drain it?
A. Well, I would have to check on that.
Q. All right.
A. These wells in this area over here in Quadrant 6, Moore County, would be one of them.
Q. In which portion?
A. Along the southeastern line.

Your next closest well to that would be slightly over a mile.

Q. What was the name of that well?

A. I was just going to give it to you.

Q. All right.

A. It was the Texoma Natural Gas Company, J. T. Sneed, 21-P, Section 17, G & M Survey, Block GM-3.

Q. All right, that is the well we are talking about?

A. Yes. Section 72 is correct.

Q. The question is, "Where did the gas from that well go?"

A. The closest well was down here about a mile and a half. It is on the Charles Ragsdale Survey in Moore County.

Q. All right, what is the pressure of that well? I believe the map shows it to be above 330 pounds. If that is true it couldn't have drained to that well, could it?

A. I couldn't read them off of this map.

Q. Let it go. Maybe we can straighten that out later.

The Trial Examiner: What did you say, Mr. Keffer?

Mr. Keffer: Just let that go. Maybe we can figure it out a little later.

Mr. March: Mr. Hammer will get that information for you, Mr. Keffer.

Mr. Keffer: That is all right.

The Witness: I can get the information for you but I can't tell right now.

Mr. March: Is that the Texoma well you are referring to?

The Witness: No, not this one. However, I am not sure of that because I can't check it from this map.

The Trial Examiner: You are sure of the well, Mr. Hammer, that Mr. Keffer asked about?

The Witness: Yes, I know the location of the well.

By Mr. Keffer:

Q. What is the next low pressure of the three wells you gave?

A. The next lowest pressure was 332 pounds.

Q. All right, that is the Panhandle Eastern, and where is it located?

A. No, that is the Shamrock Oil & Gas, J. T. Sneed 16.

Q. Will you locate that for us on the map? Can you state the location of it?

A. That well is in Section 4, the center of Section 4. It is on the Owen H. Lindsay Survey, Moore County, Texas.

Q. That acreage is demonstrated by the original pressures on that well having lost virtually a fourth of all of the gas that was there to start with?

A. Yes, approximately.

Q. In fact, more than a fourth, if you consider the 25-pound abandonment pressure?

A. It had—

Q. Wait a minute. Hadn't it?

A. It had lost—

Q. More than a fourth if you would consider the 25-pound abandonment pressure?

A. That is about right.

Q. And it had never produced a foot of gas, had it?

A. No.

Q. It had lost it all by drainage, hadn't it?

A. Yes.

Q. Where had it drained to?

A. The closest well to the west, being about two miles.

Q. Do you think it was lost to the west?

A. The closest well that is indicated where it could drain to would be to the south about three miles.

Q. Aren't you in the same pressure band when you go south? You don't get in the lower pressure band, do you?

A. Well, one of the wells is in this same pressure band—the same isobar, and the other one is on down a little lower.

Q. Which one is a little lower?

A. The one to the northeast. I would have to check those wells to tell exactly where they are.

Q. The one to the northeast could not drain to the south but a little lower?

A. The one to the northeast indicates that it drains locally to the north.

Q. As a matter of fact, if you will follow that out to the nearest well in the low pressure band, you go several miles from that point, don't you?

A. I want to find this description here.

Q. All right.

A. You failed to point out the high pressure wells.

Q. Wait until I get to it. Don't expect me to take all of this at once.

A. Over here is the Joseph Johnson—

Q. Wait a minute. You are getting into the high pressure wells and I am not wanting to get into that.

Mr. March: He is answering the other question.

The Trial Examiner: Why not let Mr. Keffer cross examine the witness in his own way, Mr. March?

Mr. March: I am, but he is coming in here and asking a general question as to where that gas drains to.

Mr. Keffer: When I asked him about drainage of a particular well I wanted him to confine his answer to a particular well.

* * * * *

Witness Hammer further testified on cross examination (Vol. 56, pp. 7785-7787,) as follows:

Q. Now, Mr. Hammer, just checking up a little on some of the matters that were covered generally yesterday, I believe I asked you if it was not very common in the oil industry to estimate reserves of oil-bearing sands based upon the potentials of the wells. When I say "potentials," I mean the producing ability of the wells; and as I use that term with respect to an oil well it is synonymous to open flow of a gas well.

A. No, I didn't—

Q. You don't know?

A. No.

Q. How long have you been in the oil business?

A. I started in 1912.

Q. All right, let me ask you this: Isn't it a fact that you have known many cases where oil production has been purchased—what I mean by that is that producing leases have been purchased—by persons experienced in the industry on the basis of so many dollars per barrel of potential?

A. Well, I wouldn't say yes. It has probably been done but that doesn't prove anything.

Q. Answer my question. Don't you know of many instances where it has been done?

A. On the potential of the well?

Q. So many barrels potential.

A. I think it has been done.

Q. Don't you know it has been done?

A. I never bought and sold—

Q. I know you haven't. I asked you if you didn't know of many many sales of that character.

A. I know of some.

Q. That has been spread over the entire period of the well?

A. Yes.

Q. The purchase of those properties were generally by pretty experienced oil men?

A. Yes, sometimes they were and sometimes they weren't.

Q. But they were generally?

A. Well, usually, yes.

Q. That is right. All right. Now, regardless of whether that was used to estimate reserves or not, it was used as a measure of value, wasn't it, of the potential of the well?

A. It was used as to what they thought the value was at that moment.

Q. And experiences have apparently justified that assumption, haven't they?

A. No, I don't think so, not in all cases.

Q. It has been done ever since 1912, hasn't it?

A. Yes, but I know of cases where wells have been bought on potentials that never even paid out.

Q. But still the practice is pursued, isn't it?

A. Yes.

The witness stated that he was also generally familiar with published reports on the Texas Panhandle Field which utilized the porosity sand thickness method for the determination of gas reserves, which reports were published in the American Association of Petroleum Geologists. He stated there is no absolutely perfect method for determining gas reserves. It is simply a question of the degree of perfection, and there is no method that he knows of that will give the correct answer. The witness believes that the pressure decline method has a decided advan-

tage over the porosity sand thickness method in the Texas Panhandle Field today. There was a time when the pressure decline method did not have an advantage over the other method, but he could not tell exactly when this was.

Witness began his study for the purpose of making the reserve estimate in 1935 and stated that if he had been making the estimate in 1935 and did not have dependable data prior to that date, he would still probably have attempted to use the pressure decline method, but with the understanding that his results would not have been very accurate, and from his viewpoint neither the pressure decline method nor the porosity sand thickness method would have been very accurate prior to 1935, and that prior to that time any estimate on the reserves of the Texas Panhandle Field would have been pretty much of a guess.

The witness stated that his method of determining the reserves for each quadrant wouldn't show the most prolific areas within that quadrant as compared with the less prolific areas, but would show some variation as between quadrants. For example, Moore County, Quadrant 2 was given an acre pound drop of 36.82 where Carson County, Quadrant 4 was given an acre pound drop of 81.43, which would indicate that Carson County Quadrant 4 was more than twice as productive as Moore County, Quadrant 2.

The witness Hammer further testified (Vol. 56, pp. 7802-7943) as follows:

Q. Mr. Hammer, you probably think you have already explained how you balanced your quadrants. You make a statement in your written statement that you did balance the quadrants—

A. Well, "balance" might not be the right term.—

Mr. Spencer: Let Mr. Keffer finish the question.

The Witness: —as it is really a grouping of the quadrants.

By Mr. Keffer:

Q. I would like to have you go somewhat into detail as to the manner in which you accomplished that.

A. Well, let me finish my answer.

Q. I beg your pardon.

A. Taking, for example, the one quadrant 3 used for illustrative purposes, that will explain it. The map shows that if you take Quadrant 3, Potter County, there is indicated by the isobaric lines a local movement of gas from Quadrant 3 in Moore County and Quadrant 2 in Moore County into the area in Quadrant 3, Potter County.

Now, you could not just utilize that area and make your calculation, so what we did—this is also indicated in the southeastern part of Hartley County into Quadrant 1—Quadrant 3, Potter County, a movement of gas down into Quadrant 3, Potter County, from Hartley County. There is also an indicated movement based upon the isobaric lines from Potter Quadrant 3 into Potter Quadrant 2; also there is an indicated movement of gas from both Quadrant 2 and Quadrant 3 in Potter County to Quadrant 2 in Moore County.

Now, obviously, to get a fair picture of what you would expect in this quadrant—

Mr. Lange: You mean Quadrant 3?

The Witness: Quadrant 3, Potter County, yes.

—you had to utilize Quadrant 2, Potter County; Quadrant 2, Moore County, and Quadrant 3 in Moore County, but that part of the field in Hartley County and Quadrant 3 in Potter County, by grouping those I arrived at a figure for the entire area; that is, the production per acre pound.

Mr. Lange: Which entire area?

The Witness: The entire area of the quadrants just named.

Then having arrived at that production per acre pound decline, I then took the weighted pressure, the difference between the weighted pressure of '39 and what I called the functional pressure, or the difference between the weighted pressure and the well head pressure of 25 pounds abandonment, and applied that weighted pressure—that weighted production per acre pound against the weighted pressure for this area.

By Mr. Keffer:

Q. That being true, why wouldn't you get the same per acre pound drop in each of the five quadrants we have been discussing?

A. You mean as finally arrived at?

Q. Yes.

A. I can explain that very easily.

Q. All right.

A. When we moved—take Moore County, Quadrant 2—

Q. All right.

A. When we moved over to Moore Quadrant 2 I eliminated this Hartley County and I simply took those quadrants adjacent to Moore Quadrant 2—

Mr. Lange: Which one?

The Witness: That would be Moore 3; Potter 2 and 3; Moore Quadrant 1; Quadrant 1, Potter, and Moore Quadrants 4, 5 and 6, and utilized those quadrants to get a factor for Quadrant 2.

Mr. Lange: Moore County?

The Witness: Quadrant 2 in Moore County.

Then I stepped over to the next one and I eliminated all of this over here (indicating).

Mr. March: What do you mean by "this"?

The Witness: All of these quadrants over here (indicating).

Mr. March: You mean to the west?

The Witness: And to the west.

And took in those adjacent to this quadrant.

Mr. March: Which quadrant?

The Witness: Quadrant 1, Moore County.

I utilized those surrounding it to arrive at this in Quadrant 1 and so on. In other words, that system was progressing clear across and eliminating continuously those at the west that had no particular bearing and couldn't have any particular bearing on the quadrant in question.

By Mr. Keffer:

Q. Now to get down to specific cases, when you figured Hartley County, Quadrant 3 in Moore, Quadrant 2 in Moore, Quadrant 2 in Potter, and Quadrant 3 in Potter, in order to find the acre content decline in pounds—in Potter Quadrant 3—what composite figure did you get before you made any adjustment?

A. That composite figure is a composite figure that is shown here on Table 3—

Mr. March: Exhibit 180?

The Witness: Exhibit 180.

By Mr. Keffer:

Q. You got 36.82?

A. That is right.

Q. I was looking for a cross on the exhibit here.

A. Which one are you talking about?

Q. I am talking about these five; that is, Hartley, Moore County 3; Potter County 2 and Potter County 3. I guess that is this figure here?

A. No, this is Hartley County. The next one is Potter 1.

Q. Well, now, let's get back to this. We are talking about this Hartley County area, particularly Quadrant 3 in Potter County.

A. All right, that is 35.1—

Q. That is right.

A. —per acre pound.

Q. 35.1., All right. When you figured these five quadrants we are talking about you didn't get 35.1, did you?

A. Absolutely. That is what this figure is here.

Mr. March: Where is that—in Exhibit 180?

The Witness: That is right.

By Mr. Keffer:

Q. That is the table for Quadrant 3?

A. It is the table from the calculation of the areas adjacent to Quadrant 3 applied to Quadrant 3.

Q. Let me see if I get that straight.

In determining the acre pound drop in Quadrant 3 you figured in the Hartley County quadrant, Moore Coun-

ty Quadrant 3, Moore County Quadrant 2, Potter County Quadrant 2, Potter County Quadrant 3, and you got a composite figure for acre pound drop in pressure which was 35.1?

A. That is right.

Q. You got that as applicable to the whole area and applied that to Quadrant 3, is that right?

A. That is right.

Q. I understand now. I thought you had another step in there in which you made some further adjustments with respect to Quadrant 3—

A. No, that is the entire procedure.

Q. When you did that you didn't figure in any other surrounding quadrants other than those just named?

A. Other than those adjacent to the quadrant for which we wanted to make our determination.

Q. Now, as a matter of fact, Mr. Hammer, when you did that you gave some weight in Quadrant 3 to producing areas in other quadrants, didn't you?

A. Yes, you take those all into consideration.

Q. And let us assume that Quadrant 3, for the purpose of this statement, is a very lean quadrant with a small amount of gas per acre; let us assume also that some of these other quadrants are very much richer per acre with a lot of gas in place, then haven't you unduly intensified Quadrant 3 with respect—

A. Let's make one more assumption you left out.

Q. All right, your answer would be no?

Mr. March: Just a minute. He is answering now. He hasn't said no yet.

The Witness: I will say no.

Mr. Keffer: You will say no and then go ahead and make your explanation?

The Witness: Here is an area—

Mr. Keffer: "Here," what do you mean by that?

The Witness: Wait a minute. You fellows don't give me a chance to answer a question.

Mr. Keffer: Mr. March was in on this, too.

Mr. March: You will have to describe the areas better.

The Witness: I will.

Here is an area in Quadrant 4 in Moore County, and here is another, Quadrant 3 in Moore County, extending over into Quadrant 3; Hartley County. I think this will clear up something that was confusing you yesterday. At any time you include an area where there has not been any actual or indicated decline in pressure in a calculation where it goes back, we will say, to the original pressure, and you have no indicated pressure decline as shown by your isobars, if you include that as against the production coming out of the areas around it, you then have a very minimum estimate of reserves in that area.

Taking the minimum there it would more than off-balance any other area that would enter into this calculation—

Mr. March: You said, "there"—

By Mr. Keffer:

Q. That is a matter of judgment?
A. It is somewhat a matter of judgment.
Q. Isn't it entirely so?
A. No, it isn't entirely so.

Mr. Keffer: All right. Go ahead, Mr. March.

Mr. March: I don't think you identified that last statement.

The Witness: It is Quadrant 3, Moore County.

By Mr. Keffer:

Q. What quadrants did you use on Hartley County in figuring the reserves there, Mr. Hammer?
A. (Pause).
Q. It doesn't have a number? It is called HA Quadrant, isn't it?
A. There is only one there.
Q. Yes, that is true.
A. I used Hartley, Potter 3—I notice there is a mistype here. That should be "Moore 3" instead of "Moore 2".

Mr. Lange: What table is that?

The Witness: That is on Table 3.

Mr. Lange: Exhibit 180?

The Witness: Yes, sir, that is right.

Mr. Lange: We might be able to make that correction at this time.

The Witness: The correction is that instead of being Moore 2 as it is typed here it should be Moore 3.

Mr. Lange: Where should the correction be made on Table 3?

The Witness: In Column A, right after "M-2." That should be "M-3."

Mr. Lange: Under "Hartley"?

The Witness: Under "Hartley."

Mr. Lange: The second line under Hartley that says M-2, should be M-3?

The Witness: That is right.

Mr. Lange: Mr. Examiner, can that correction be made in the exhibit?

The Trial Examiner: That correction will be made.

Mr. Hammer, I gather that these capital letters appearing under Hartley and Potter 1, 2 and 3 and Moore 1, represent the county?

The Witness: That is right.

The Trial Examiner: The county for each particular quadrant?

The Witness: That is right.

Mr. Lange: That correction can be made, then?

The Trial Examiner: Yes, sir. We will have the reporter make that correction.

By Mr. Keffer:

Q. You stated, I believe, after the correction was made, considering the Hartley County area, that you considered Potter County 3, Moore County 3, and Moore County 4; is that right?

A. And Hartley.

Q. And Hartley?

A. That is right.

Q. What was the occasion of using all of those on your Hartley County quadrant, Mr. Hammer?

A. Well, it occasionally was, as I mentioned a while ago, that there the isobars indicate a drainage from Hartley County down into Potter County, Quadrant 3. The similarity of the characteristics as nearly as we could tell them, as far as pressures were concerned and the drainage away from the area in Quadrant 3, Moore, and also in Hartley County, for that reason we used the adjacent Quadrants to determine what we considered a fair production per acre pound for Hartley County.

Q. All right, that doesn't apply to Quadrant 4 in Moore County, does it?

A. Well, there is a new development down there that comes up against the corner of Quadrant 4, and in Hartley County in the northeast part of that productive area. There is some new development there and any gas that will move from there does have a bearing on the southwest or would have some bearing on the southwest part of Quadrant 4, Moore County.

Q. Has there been any production from that well?

A. I would have to check on that as I don't remember.

Q. Isn't it your offhand recollection there hasn't been?

A. I would say that that is possibly true, although I wouldn't want to state.

Q. Is that the Phillips Petroleum Company's well that was drilled in there a year or two ago?

A. I would have to check it as I don't remember it.

Q. Let's come back to the map.

A. Yes.

Q. So far as your isobaric lines are concerned, it doesn't indicate any drainage from Hartley County quadrant into Quadrant 3, Moore County, does it?

A. Well, it is difficult to say.

Q. You take the thing we agreed upon. Your drainage patterns are at right angle to the isobar lines?

A. Yes, as a general rule.

Q. And your isobaric lines in there run generally east and west so you get about the same pressure on the west side of Quadrant 3 as you do on the east side of Hartley County quadrant, isn't that correct?

A. That is in general true.

Q. That is exactly what your map shows?

A. Yes.

Q. And if that is not right, your map is wrong, is that the point?

A. Yes.

Q. Come down to the Potter County quadrant. How much drainage do you show out of Hartley County into Potter County? How does it get in Potter County?

A. It comes down, hits a barrier where it can't go on, and it moves in this direction.

Mr. March: Which direction?

The Witness: Southeast along the fault line. You have a lower pressure area down here than you have up there (indicating).

Mr. March: What do you mean?

The Witness: In the north extreme western part of Potter County, Quadrant 3.

By Mr. Keffer:

Q. Of course, it shows your isobaric lines the same, 390 in Potter County and 390 in Hartley County?

A. Yes, and that would mean that gas would migrate.

Q. From 390 to 380?

A. From 420 to 410 and 390. It means there is migration there. It is moving down into this point of Quadrant 3 (indicating).

Q. What part would this well right on the fault line play in that?

Mr. March: Describe it.

Mr. Keffer: It is a well in Hartley County, Block 2, —I can't read the section number—being the only well in Hartley County within an eighth of a mile of the fault line, that is, that is designated on the map.

Q. What effect would that well have?

A. It would have some effect, unquestionably.

Q. But you think some gas would still migrate into Potter County?

A. I think so.

Q. Take up in Quadrant 4, where do you get your drainage—Moore County?

A. I will agree the map in this particular instance shows no drainage from that into quadrant—I mean into Hartley County, or vice versa.

Q. Or vice versa?

A. Yes, but let me point this out: As I explained a while ago, by utilizing an area of original field pressure at 430 pounds, if I included that area I have then had an actual minimum of gas to apply to the Hartley County area.

Q. What do you mean, that you would have a minimum?

A. Well, you can't draw isobars out into territories clear away from where there are producing wells and then include those outside areas. If you include them you are bound to get a minimum production per acre pound, depending upon the size of the area.

Q. Wouldn't it be just the opposite? Wouldn't you get a maximum where you were taking in a quadrant virtually virgin in pressure throughout?

A. No, you are getting back to that remaining reserve per acre.

Q. Yes, possibly so, but tell me why you wouldn't get that.

A. I have already explained it.

Q. Let's try it once more and I can possibly get it.

A. As I explained a while ago, this question of remaining reserves per acre hasn't anything to do with the calculation of the reserve question at all.

Q. Let me approach it in another way: To do so I will assume this: If as a matter of fact Quadrant 3 in Moore County is more productive per acre than Hartley County quadrant then you have increased your production per acre in Hartley County by figuring Quadrant 3, Moore County, into it?

A. Let's see. You say that if Quadrant 3, Moore County, is more productive—

Q. Per acre, than Hartley County quadrant, then when you average Hartley County quadrant in with Quadrant 3, Moore County, you have necessarily increased the calculated acre content in the Hartley County quadrant?

A. No, you are still confusing those remaining reserves.

Mr. Keffer: Let's don't talk about it.

The Witness: That is what we are talking about. I don't propose to have remaining gas reserves confused at all.

Mr. Keffer: We are not confusing them.

The Witness: No, we are not.

Mr. Keffer: That is entirely out of my mind. I don't want you to figure on remaining gas reserves. I want you to figure on original gas reserves. There isn't any need for there to be any confusion unless you deliberately talk about one thing while I am talking about another.

The Witness. I want to get it straight. This remaining reserve per acre in Mcf. is an after thought and it was simply illustrative.

Mr. Keffer: Just forget about it.

The Witness: All right.

Mr. Lange: In order to identify it, you are referring to the remaining reserves per acre as set forth in Exhibit 186?

The Witness: It is also set forth in Exhibit 180.

Mr. Lange: Both of them?

The Witness: Yes.

Mr. Keffer: That is all I am trying to do, just trying to illustrate as you were in the other instance.

The Witness: Suppose we wait until we get the original reserves for the various quadrants before we go into that.

Mr. Keffer: If that is satisfactory to the Examiner it would be satisfactory with me, but I don't like to leave this subject now and come back to it later.

The Trial Examiner: Perhaps we might take a short recess at this time.

Mr Keffer: I would prefer to do that rather than go into something wholly unrelated and then come back to this at a later time.

The Trial Examiner: We will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

Mr. Keffer: Mr. Examiner, I can proceed for a little while with Mr. Hammer, even though we don't have the information that was requested. However, I can only go to a certain point. It may take until the noon hour to reach that point, I don't know, but I would like to have it understood that if I do get some of these other matters out of the way rather expeditiously, and it isn't quite the noon hour, that I would like to wait until the additional information is available before proceeding further.

The Trial Examiner: Very well, Mr. Keffer. You can go as far as you can and we will recess through the lunch hour. Perhaps the papers that could not be found by Mr. Hammer can be located by him during the lunch hour.

Mr. Spencer: Mr. Lange advises me that he has some other things he could fill in with to facilitate our running until the lunch hour.

The Trial Examiner: Very well.

By Mr. Keffer:

Q. Mr. Hammer, we were discussing primarily the Hartley County quadrant at the time we recessed. Now, I will still have some other more or less general questions regarding your method of computing reserves which I can develop at this time. I will try not to get too much into the question of remaining reserves or original reserves or acre per pound drop until we get that additional information. It may come in at times but I will stay away from it as far as I can until we do get that information. Is that satisfactory?

A. Very well.

Q. Mr. Hammer, when you figured Quadrant 2, Moore County, just what quadrant did you take into account then?

Mr. Lange: Which table in Exhibit 180 are you referring to, Mr. Keffer?

Mr. Keffer: I am referring to the table on the back of Page 5—.

Mr. Lange: Table 3, Page 5?

Mr. Keffer: That is right. I am referring to Moore County No. 3 quadrant.

The Witness: You are referring to Moore County, Quadrant 3?

Mr. Keffer: That is right.

The Witness: Hartley County, Potter 2, Moore 2, Potter 3, Moore 3, Moore 4 and Moore 5.

By Mr. Keffer:

Q. Now, in figuring Quadrant 3, Moore County, you have taken in just one additional quadrant, haven't you, and that is Quadrant 2 in Moore County?

A. One additional—

Q. That is, one additional quadrant in addition to those you did consider while you were figuring the Hartley County quadrant?

A. No, that isn't true. In Hartley County I used Hartley, Potter 3, Moore 3 and Moore 4.

Q. All right.

A. That is 1, 2, 3, 4, 5, in Moore 3—

Q. It is just 4, isn't it?

A. 4, that is right. In Moore 3 I used Hartley, Potter 2, Potter 3, Moore 2, Moore 3, Moore 4 and Moore 5.

Q. Yes, and you added Moore 2 and Moore 5?

A. That is right.

Q. I didn't think you had used Moore 5 but I hadn't checked.

I will ask you again, looking at your isobaric lines and assuming that your gas flows at right angles to your lines, how did you figure that any gas out of Quadrant 3, Moore County, got into Quadrant 5 or vice versa?

A. I didn't figure it, but it did get into Quadrant 3.

Q. How is that?

A. I didn't figure there was any out of Quadrant 3 that got into Quadrant 5.

Q. Or vice versa?

A. Not from Quadrant 3, but from Quadrant 4.

Q. Quadrant 4?

A. In that case the isobars indicate the pressure differential between 4 and 5.

Q. What does that mean?

A. It means probable local migration into Quadrant 5.

Q. But we are not figuring Quadrant 5, we are figuring Quadrant 3.

A. All right. What we are doing is balancing it up. Let's get this straight. If I take a quadrant, any one of them where I utilize them in this group and assume that there is more production and more reserve, if I utilize one with a less reserve and I take the total acreage, why, it makes the lesser one greater and the greater one lesser, so you get a balance.

Q. Let's go just a step further. Doesn't your map indicate some drainage out of Quadrant 5, Moore County, into Quadrant 6, Moore County?

A. Very very slight, if any.

Q. All right, doesn't it indicate some drainage out of Quadrant 2, Moore County, into Quadrant 1, Moore County?

A. No.

Q. None at all?

A. No.

Q. Well, what is this isobar here—your 360?

A. That is 380.

Q. 380?

A. Yes.

Q. What is the next lower one, or is that a lower one?

A. That is your 360.

Q. 360?

A. Yes.

Q. Wouldn't gas flow from 380 to 360?

A. All right, here is a 380 again—

Mr. March: Where is that?

The Witness: Quadrant 1. It is in the western part of Quadrant 1.

By Mr. Keffer:

Q. Take the big area south of that high you might have there, what do you have then?

A. There is nothing there to indicate any drainage from 2 to 1.

Q. We have in your first isobaric line near the east central part—your isobaric line is in the east central part of Quadrant 2, 380 pounds contour line, directly east of that, and in Quadrant 1 we have a 360-pound line—

A. Yes and here we have 380 pounds.

Mr. March: Where is that?

The Witness: In the western part of Quadrant 1 you have an equal pressure here (indicating). You don't have a decline here (indicating). If there were any particular drainage at that point it would be north but the distance here (indicating) is so great—the pressure is an equal pressure—but you don't have over five pounds differential; until you get over here it doesn't amount to anything. Here you would have ten pounds but it is all close together, but over in Quadrant 1, Moore County—

By Mr. Keffer:

Q. You have 20 instead of 10?

A. No, these are ten isobars (indicating).

Q. I thought you said 360.

A. This is 360 and this is 380 (indicating).

Q. You outline the higher pressure which we have been referring to north of the drainage area we have been speaking—a little north of the drainage you have been speaking of as having no influence on it at all?

A. What pressure are you referring to?

Q. The one you have been referring to.

A. Certainly it has a distinct bearing. Gas won't flow against a pressure that is higher.

Q. I am talking about the flow from 380 to 370, Mr. Hammer What is that pressure up there?

A. This is a 370 instead of a 380. It is this isobar that cuts the end of the northeast corner of Quadrant 2, goes into Quadrant 1, Moore County, and extends in a general southeasterly direction across the quadrant. That is a 70 and not an 80.

Q. What is that—an 80? Where do you get your 80 on there?

A. Well, it is from the pressure on that well there.

There is a well here in Section 46, T & N O Survey, Block 16; that has a pressure of—as I read it on this map here it is 380. You would then have a 380 isobar between those two wells.

Q. You show that as a very localized condition, don't you?

A. Well, it covers quite a little area.

Q. It covers a little more than a Section, say a thousand acres at the outside?

A. All right.

Q. That is a very little estimate, isn't it?

A. You made the estimate.

Q. I am talking about an area about a mile or two south of that, south of even where you have your lines drawn. Let's stay with that area down there.

A. All right. You were talking about the distance east, weren't you?

Q. No.

A. You mean the distance over here from—

Q. I am mentioning the differences between pressures—

A. All right, I know you are.

Q. Go ahead.

A. But here you have 1, 2, 3, 4 miles, and in that four miles you only have a difference of pressure in the amount of ten pounds. If through four miles of the character of material of which that is composed—

Q. What is the character of the material?

A. I don't think anybody knows, but we do know they—

Q. All right, go ahead.

A. We know the permeability varies to beat the band. Over an area of four miles with a ten-pound differential you wouldn't have very much drainage, if any.

Q. How do you know you wouldn't?

A. It is just common sense.

Q. You don't even know the kind of material it is going through, yet you say there wouldn't be any drainage?

A. We do know the whole formation has variable characteristics both as to permeability and as to porosity.

Q. Certainly. There isn't any question about that, but you don't know the kind of formation you have there or any other place in the field, do you?

A. I do know if you only have a 10-pound differential in four miles you are not apt to have very much drainage.

Q. Let's take a pipe line with ten pounds differential. Would gas go through that line?

A. There isn't any comparison—

Q. Answer my question.

A. A pipe line is an open tube without any restrictions in it, and here you have an infinite number of pores.

Q. How do you know you have?

A. It is characteristic of all formations.

Q. Well, some are more permeable than others, aren't they?

A. What?

Q. Some are more permeable than others, aren't they?

A. Well, yes, naturally.

Q. You paid no attention to the permeability?

A. The fact remains you can't make a comparison as between any underground formations in a pipe line.

Q. Again you have stated here, and you stated yesterday a number of times you knew nothing about the formations and made no particular study of porosity or permeability?

Mr. March: He never stated that.

The Witness: I never said that.

Mr. Keffer: Let the witness answer the question.

The Witness: I said I made no study of porosity or permeability.

Mr. Keffer: We will limit it to porosity or permeability.

The Witness: That is right.

By Mr. Keffer:

Q. Then you don't know what the porosity is across the four miles and what the permeability is across the four miles?

A. It really doesn't make any difference. Any geologist who knows anything at all about production horizons knows that in four miles with only a 10-pound differential in pressure between the two points that you are not apt to have any appreciable movement.

Q. You are now hedging on me a little. Go ahead.

A. That is all.

Q. Oh, that is all? You could have a highly porous and highly permeable situation there and you would have a substantial movement of gas with a 10-pound differential, wouldn't you?

A. No, not necessarily.

Q. That is your answer?

A. Yes, that is my answer.

Q. We will let it stand.

Now, Mr. Hammer, getting back to where we were before recess—during recess I got off of the thing I hadn't completed on the Hartley County area—I believe you admitted that while we were on that, as far as your map disclosed, there wasn't any drainage from Hartley County into Moore County Quadrant 4, or vice versa?

A. I think that is true.

Q. Yet you did use Moore County Quadrant 4 in figuring out Hartley County?

A. Yes, and by using it I gave a lesser reserve to Hartley County Quadrant 1 than if I hadn't used it.

Q. You have some pressure drops in Hartley County, didn't you?

A. Yes, some.

Q. You had over 80 per cent or more of Moore County Quadrant 4 where you didn't show any appreciable drop?

A. That is right.

Q. When you averaged those high pressure areas of Quadrant 4 in Moore County with your lower pressure area in your Hartley County quadrant, now as a matter of fact, didn't that give you a higher pressure over the two quadrants than you had originally in Hartley County?

A. No, not—it gave you a higher pressure but it didn't give you a higher production per acre pound; it gave you a smaller one.

Q. It gave you a smaller production per acre pound, that may be true, if you take the same volume of gas and increase your acreage. That would be inevitable, wouldn't it?

A. Yes. The point I am trying to make is that it gives you a minimum reserve.

Q. What does it do to Quadrant 4?

A. Well, it also gives that—when you calculate that thing out it gives it a minimum reserve.

Q. What does it do to all the rest of them?

A. The point I made a minute ago—

Q. Answer my question, please.

A. I am going to answer it.

Q. All right.

A. If you take an area of larger size and take the gas from it alone and apply the gas removed from it to a larger area—larger acreage, and particularly to an acreage where you have no indicated decline at all, then you are going to very materially decrease the production per acre pound decline.

Q. Now, if those additional acres that you would add were not very productive acres, and you added it in with this acreage down here in Quadrant 4 and then you averaged them out, don't you get a distorted figure in both quadrants?

A. No, not particularly, because I am averaging the principal—

Q. You are just averaging, is that all you are doing?

A. No, grouping.

Q. What is the difference between grouping as you do it here and averaging?

A. Call it averaging if you want to. I won't argue with you.

Q. Isn't that what it is? If it isn't averaging, I don't want you to say it.

A. It is a utilization of a quadrant and those immediately adjacent to it to determine the average production per acre pound for the area and then applying it to the area in question.

Q. All right. Now, when you took that Hartley County quadrant and you averaged all of those other quadrants in here that you talked about, you had a calculated per acre pound decline of 34.43 pounds, didn't you?

A. That is right.

Q. In all of the quadrants that you figured?

A. Yes, for the group.

Q. And you added to that one in Hartley quadrant and you had the same figure in Moore County 3, didn't you?

A. For the entire group used.

Q. And Potter County 3 and Moore County 4?

A. All right.

Q. You had that 34.43 pounds?

A. That is right.

Q. Then when you came down to figure Potter County 3, what did you get when you figured that one again?

A. 35.1.

Q. This time you got 35.1 in Quadrant 3, the other time 34.3—

A. Wait a minute. The 34.43 was the grouping for the entire area.

Q. And that is a part of the area?

A. Yes, but I did not when I arrived at the production per acre pound for Quadrant 3, Potter County, use the quadrants I used in the determination of it for Hartley County.

Q. And you got a different value for Quadrant 3?

A. Yes, because I eliminated the one adjacent to it.

Q. Certainly, there is no question about it.

Now, when you figured Quadrant 3 in Potter County, you took Quadrant 2 in Potter County into account?

A. That is right.

Q. And for the area, which included Quadrant 2, you got 35.1 pounds, didn't you?

A. Quadrant 2, Potter County?

Q. Yes.

A. When I calculated the area for Potter Quadrant 2?

Q. No, when you were figuring on Quadrant 3 you got 35.1 pounds in Potter County 2 because it was part of the area you figured—

A. Taking in the whole area?

Q. That is right.

A. That is right.

Q. You got 35.1. Well, what did you get in Quadrant 2 when you figured it?

A. Well, the whole point is that I did not—

Q. Answer my question, please.

A. I am answering your question.

Q. No, you're not.

A. I am, too.

Q. Just give me the pounds you got.

The Trial Examiner: Give him the pounds, Mr. Hammer.

The Witness: All right.

Mr. March: He can make any explanation he wants to.

Mr. Keffer: That's all right, let him answer my question.

The Witness: You wanted to know in Potter 2?

By Mr. Keffer:

Q. That's right.

A. All right. 42.71.

Q. The other time you figured it you got 35.1, when you figured it the other time?

A. No, you can't compare the two, because I used different acreage.

Q. Let me ask you another question: When you were determining the per pound drop in Quadrant 3 you determined Quadrant 2?

A. That's right.

Q. And over the whole area including Quadrant 2, you got 35.1 pounds?

A. That's right.

Q. Then when you came over to Quadrant 2 and took in a little different area, then you got on Quadrant 2, 42. plus pounds?

A. That's right.

Q. When you figured Quadrant 2 you took in Quadrant 1 in Potter County, didn't you?

A. That's right.

Q. You necessarily got 42 plus something in Quadrant 1 in the whole area, didn't you?

A. Not in Quadrant 1 in the whole area.

Q. All right, when you came down and figured Quadrant 1 together with other acreage, what did you get?

A. Quadrant 1 which?

Q. Potter County.

A. 58.97.

Q. 58.97. All right, you get a different answer every time you make a different calculation in each quadrant, don't you?

A. That is because—it is easily explained. We are making a progressive determination eliminating areas that aren't adjacent to the areas. When you take in new areas with different characteristics you are bound to take—you are bound to get new answers.

Q. And you do get new answers for every Quadrant every time you make an additional calculation?

A. No, that isn't true at all.

Q. Let's run through.

A. All right.

Q. All right. Take Quadrant 2 in Moore County. When you figured it in with Quadrant 3, you got—Moore County—you got on it 34.58 pounds, didn't you?

A. You are talking about what—Moore 3?

Q. I am talking about Moore 2.

A. Moore 2.

Q. When you figured it in with Moore 3 you got a weighted average of 34.58 pounds per acre pound drop?

A. Well, you are talking about Moore 3.

Q. No, I'm talking about Moore 2. When you figured it in with Moore 3.

A. You have got the wrong figure. It is in the column above. Moore 2 is above 3.

Q. Oh, we'll go through the whole thing again. When you were determining the remaining reserves as you have it here on this map of Quadrant 3 in Moore County, you included among other quadrants, Quadrant 2 in Moore County, didn't you?

A. That's right.

Q. All right, now, you figured, then, the acre pound drop for the area which included Quadrant 2, Moore County, 30.58 pounds, didn't you?

A. In arriving at a production per acre pound for Quadrant 3.

Q. That's right. You included Quadrant 2 and got 30.58 for the whole area?

A. That's right.

Q. Then when you came down to figure Quadrant 2, you had a little different area. What did you get then for Quadrant 2, Moore County?

A. Under the group determination I got 36.82.

Q. 36.82. You got still a *differn* figure.

A. Sure.

Q. All right, now, let's come back to Hartley County. When you figured it out the first time you got 34.43, didn't you?

A. Using the group.

Q. By using the group, that's right. When you made a separate calculation on Quadrant 3, Moore County, it included Hartley County, didn't it?

A. Yes.

Q. That time you got 36.58, didn't you?

A. For the entire group, yes.

Q. For the entire group which included Hartley County?

A. That's right.

Q. So now you have got two figures depending on which way you figure it in Hartley County, haven't we?

A. No, we haven't.

Q. Well, we had 34.43 one time and I believe 30.58 another time, different figures.

A. You are confusing the group production per acre pound as determined as against the production per acre pound utilized in determining the reserves of a particular part of that group.

Q. Here is what I am doing, and see if this is not a fair statement, Mr. Hammer:

I go out with you and I tell you that I want to buy all of the acreage in Quadrant 3, Moore County, Texas, and I want you to tell me the value of it. You go ahead and figure that value out and you get it predicated upon 35.58 pounds, per acre drop in pressure and you figure back your reserves from that.

Mr. March: Now, just a minute, Mr. Keffer.

Mr. Keffer: Let him answer. Wait until he answers and then you can talk all you want to.

The Witness: That's right.

By Mr. Keffer:

Q. All right, then you get that 30.58 that we just referred to.

A. That's right.

Q. All right, I'll ask you, Mr. Hammer, how you got that—well, you say that the average of all those surrounding quadrants—well, I have got that. Then I decide I will buy Quadrant 2. Now, you gave me a figure which is 30.58 for all the quadrants, average, and I go out to buy Quadrant 2 on that and I will get into a mess, won't I?

A. No, you won't, not if you are employing me you won't.

Q. All right, now, go ahead.

A. I will eliminate Hartley entirely when I get over to Quadrant 2 and I will utilize the surrounding areas to find out what the proper figure for that is, and naturally I will get another figure because I am using different data.

Q. All right. Suppose I want to buy Hartley County, Moore 3, Potter 3, how do you do that?

A. Just as I did in this estimate.

Q. Would you just eliminate those outside lines of those quadrants?

A. I haven't done it in any case.

Q. Suppose I wanted to buy all those surrounding quadrants how would you figure that?

A. Buy all the surrounding quadrants?

Q. Yes, together—the whole works, I want to buy all of Moore and Hartley and Potter County.

A. Well, just by the method used I would give you the reserve.

Q. Slip over and take these adjoining ones in Hutchinson County and Carson County.

A. That's right.

Q. Supposing I wanted to buy those two, then how would you figure it?

A. Well, if you wanted to buy the whole field—

Q. I haven't got enough money quite yet to buy the whole field.

A. I would figure the same just as I have figured this thing. Naturally, as I have stated a while ago, we used a process of eliminating and we followed that thing clear through the field from end to end.

Q. Yes.

A. All right. That ought to explain it.

Q. Well, if you will answer my question, maybe that will explain it to me better. If I wanted to buy all of Moore and Potter Counties plus the adjacent quadrants in Carson and Hutchinson County, how would you figure it? You would take the eastern quadrants in Hutchinson and Moore County and figure them all in?

A. That's right.

Q. You go right down the line until you have covered the whole field?

A. Why, certainly, I have just said that.

Q. All right, then, you have got a fieldwide figure in effect, or figured the field in whole in effect when you considered Canadian River, didn't you?

A. No, I didn't have to at all. I will tell you why I didn't have to. I considered—

Mr. March: Where is that?

The Witness: Now, wait a minute. I considered Quadrant 3 in Carson County. Now, there is nothing there on that map or any map over a five-year period that indicates any possibility of any drainage eastward from Quadrant 4 over into Quadrant 2 in Carson County. Therefore, utilized Quadrant 3 and grouped it around Quadrant 4 in Carson County and there was no need of going any further east than that. That gave me all of the data I needed to calculate your reserves.

Q. All right, now, let me see, Mr. Hammer. You say you figured Carson 3, Quadrant 3, Carson County, in with Quadrant 4, Carson County?

A. That's right.

Q. And you got a weight for Quadrant 3 and Quadrant 4 and those others that you might have considered, didn't you?

A. Yes.

Q. As applying to all of them?

A. Or the group around that.

Q. All right, now, just take that just a step further. Quadrant 3 at the very time you were making that calculation had been losing gas by drainage to Quadrant 2, Carson County, hadn't it?

A. Well, yes, probably, but very little.

Q. Well, but it had been losing some by drainage?

A. So small a part in relation to the whole, it would be insignificant.

Q. How do you know it is small?

A. Well, take the area—come over here in the eastern part of 3 and the configuration of isobars there show that your drainage will go straight north. Now, when you get over to the east in the last two sections you might have some slight drainage, but it is so small it is insignificant.

Q. How about this part (indicating)?

A. That is not—it doesn't affect it at all.
Q. Why doesn't it?
A. Well, look at the isobar.
Q. What is that number?
A. Well, that is—
Q. No. 370.
A. 370.
Q. That is the next one northeast.
A. 360.
Q. All right, why isn't there drainage from 370 to 360?
A. I didn't say there was none. I said very very small, if any.
Q. You said there was none at all in the south part, that what little there was up in the east central part.
A. Well, that is a relative term, but I stated that there is nothing in that picture or any picture over a five-year period that indicates any appreciable drainage at all except possibly along the extreme eastern edge.
Q. What is the permeability and the formations there?
A. The same as any other.
Q. Then it is common over the field?
A. I don't know the permeability nor neither do you or anybody else, nor do I know the porosity.
Q. All right, now, when you figured Quadrant 3, what did you take into consideration in Carson County, Mr. Hammer?

The Trial Examiner: You mean what quadrants?

Mr. Keffer: Yes, what quadrants?

The Witness: Those immediately surrounding.

By Mr. Keffer:

Q. All right, then you did take into account quadrant 2, didn't you?
A. That's right.
Q. There was no drainage, you say. Then, why did you do that? Why was there necessity to do that?
A. Well, I said there was some slight drainage, yes.
Q. But you said a while ago there wasn't enough to make any difference when figuring back west, but when figuring east it makes a lot of difference, is that your point?
A. No.

Q. All right, state it.

A. My position is that in Quadrant 3, Carson County, over a five-year period there is nothing to indicate any drainage—I mean the configuration of the isobars are such that you would have no drainage from Carson 3 into Carson 2 except along the eastern portion, and it would be small.

Q. But you did figure that it was enough drainage in computing Quadrant 3, don't you think you ought to consider also Quadrant 2?

A. Yes, that's right.

Q. All right. Now just drive a peg there and hold it there a moment, but when you are figuring Quadrant 4 to the west you took in Quadrant 3 in getting your composite figure for all of the quadrants considered, but you gave no consideration to Quadrant 2, Carson County. Now, isn't that right?

A. I think that is right, and the reason for it is that as I have stated here three times in succession and I will state it a fourth—

Q. All right, I am asking you.

A. That any drainage of Quadrant 3 into Quadrant 2, Carson County, would be such a minimum amount, based upon an opinion of the five years of isobars, that it would be insignificant as far as anything affecting Quadrant 4 is concerned in Carson County.

Q. Now let's get Quadrant 2, Carson County, that has affected Quadrant 3 of Carson County, else you wouldn't have used it when you were computing Quadrant 3, would you?

A. It had some effect on Quadrant 3.

Q. All right, now, the effect, whatever it had—whether it was great or little—was not taken into account when you figured Quadrant 4 and weighted Quadrant 3 into it.

A. Well, there might be a slight—there would be possibly a slight amount there but it would be so small it would be insignificant.

Q. "Might be"—isn't it postive that it is? Is there any question about it?

A. I say, if it is, it is so small that it is insignificant.

Q. All right, you do admit there was an error in that respect?

A. Well, I recall it.

Q. That is where a matter of judgment came in?
A. That's right.
Q. The other day you said judgment didn't come into this.
A. I said I used the same judgment in minor instances. Let's go a little further on this thing, Mr. Keffer.
Q. All right.
A. I previously stated that we balanced these things out clear across, using adjacent quadrants. I presume that if I continued on to balance those things clear on out over here into Wheeler County that you would say that it had an effect on your reserve over here?
Q. Well, wouldn't it?
A. No, not at all. I might just as well explain that now as any other time.
Q. That's right.
A. The Texas Railroad Commission itself and I think most of the geologists that have done any work in the field recognize the fact that here in the vicinity of Lefors in Gray County they make a separation between the fields. They call—the Texas Railroad Commission always refers to that as the east sweet field, and they refer to this on this side as the west sweet and the west sour field, so when you get beyond that point in there some place, all of the rest of that from the vicinity of Lefors on east is the eastern field.

I take this position: The reason why that is done is that there is no chance at all in the opinion of the Texas Railroad Commission of any direct connection between the east field and the west field.

Q. What do you mean, "any direct connection"?
A. Well, as far as any gas movement is concerned.
Q. There is a direct connection?
A. Well, as far as any gas movement is concerned, that is the reason the Texas Railroad Commission did it.
Q. What do you mean by the opinion of the Texas Railroad Commission?
A. Well they established the line.
Q. Can you quote anything that they ever said in writing?
A. No.
Q. Did you ever see anything anywhere that they made the statement you just made?

A. I have taked with their engineers and other folks too. I don't know that they have published it, but the fact remains that they did it.

Q. Don't you know the facts why they cut that off and called that the east field and the west field?

A. Well, just as I stated.

Q. Do you know when it happened?

A. I know that in the opinion—in my opinion and in the opinion of lots of folks I have talked to, as far as any economical consideration is concerned there is no likelihood of any gas moving from that eastern part of the field that would affect anything in an economic sense in the western part of the field.

Q. All right, let me state it this way: Do you know that that east part of that field was cut off—I say, "cut off"—was considered separately from the standpoint of proration only and that was the only reason for it?

A. Well, I don't know that, no.

Q. You don't, and do you know that tracts, and do you know that tracts in the eastern counties usually are small, a lot of 160-acre tracts and 160-acre leases, that the tracts and leases are bigger in the west field and the Commission wanted to zone the field so as to establish a different spacing rule in Wheeler County in the east field than what they had in the west field? Don't you know that to be a fact?

A. I don't know what their opinion was. I do know that the acreage in Wheeler County is in smaller farms—in smaller areas.

Q. All right, do you—you do know that in every published report that you ever saw concerning the Panhandle field, included Wheeler County wells along with the rest of the field, didn't it?

A. Yes, but the Texas Railroad Commission's reports always referred to it as the east and west field.

Q. In giving the weighted pressures for the Panhandle field, does the Texas Railroad Commission take Wheeler County into account?

A. Yes, I believe it does.

Q. Therefore, the Railroad Commission considers it all one reservoir and considers the pressures in Wheeler County have something to do with the pressures in the rest of the field, is that not correct?

A. Well, you will have to get that from the Railroad Commission.

Q. All right, we'll go back. You got a lot of things from the Railroad Commission and I thought maybe you got that, too. They do in weighting out pressures for the field consider the whole field in giving the weighted pressure for the Panhandle field?

A. I believe that is true.

Q. All right, now, Mr. Hammer, you might have to draw on your imagination to say that a cubic foot of gas—a small particle of gas—that started moving out here in Hartley County would end up over here in Wheeler County? Now, that is the point you were trying to make a while ago.

A. The point I was trying to make?

Q. Yes. It would just get lost before it got to Wheeler County, or just get tired moving and stop before it got that far.

A. Well, it would probably meet one of these hypothetical barrier or actual barriers you set up yesterday, and couldn't go any further.

Q. I am going to agree with you. I am not a geologist, bear in mind. It would be unreasonable to expect a minute volume of gas like—say a drop of gas—that isn't a very good word, but we will say a cubic foot of gas—that started over here in the tip of the field over in Hartley County would finally be produced out of a well in Shamrock over in Wheeler County?

A. That would be true.

Q. That would be too much to expect?

A. That is true, and it would be equally true if you had an infinity of those little particles.

Q. All right, but when a movement starts over here, you get a low pressure area and it draws from the higher pressure area in the west of it, doesn't it?

A. No, only locally.

Q. All right, let's get our stock illustration. We can go better at Borger. You have a low pressure area at Borger, haven't you?

A. Yes.

Q. It takes from the next higher pressure to the southwest?

A. And to the northwest and southeast.

Q. But it does come from the southwest?

A. Yes, and from the others too.

Q. All right, when it takes from the southwest it reduces the pressure in that band, doesn't it?

A. Now, let's see if I get what you mean. I am not sure —you talk about bands—

Q. I am talking about a pressure band, the bands between your contour lines—isobar lines.

A. Repeat that question.

(The question referred to was read by the reporter, as set forth above.)

By Mr. Keffer:

Q. The next higher band.

A. Yes, that is the natural thing.

Q. All right, then, what happens to that next higher band? The pressure has become lower and it takes some gas from the next higher band, doesn't it?

A. That is where the pressure always comes from.

Q. All right, that band becomes lower and it takes some gas from the next higher band, doesn't it?

A. That is a natural assumption.

Q. That band becomes lower and it takes some gas from the next higher band, doesn't it?

A. Qualifiedly, yes.

Q. What is the qualification?

A. You reach the point after while where, as your isobars get farther and farther apart on any given map, it becomes less and less and less all the time.

Q. All right, we'll come to that in a moment. Those things do exist.

A. Oh, yes, they do exist.

Q. All right, by reason of the low pressure in Borger you would have a displacement of gas back in the Canadian River reserves without the necessity of gas actually starting its movement in the Canadian River reserves and actually ending up over at Borger, wouldn't you?

A. What is the point of Canadian River area—reserves your are talking about?

Q. Any part of it.

A. Oh, that is not true.

Q. All right, what's wrong with it?

A. Well, I think it is just about time to get some facts in here.

Q. I do, too. Go ahead.

A. Now, Mr. Examiner, Mr. Keffer has been laying great stress on---

Mr. Spencer: Wait a minute.

The Witness: —on Quadrant 3 in Hutchinson County.

Mr. Spencer: I thought maybe the witness was going to make an argument to the Examiner.

The Witness: I want to point out the reason for my statement.

Mr. Spencer: All right.

The Trial Examiner: Let me say this, Mr. Hammer, you must remember that Commission's counsel will take you back on redirect. Now, if what you are about to say is an explanation of what you have been asked on cross examination, why, perhaps you should go ahead, but if not I think we would move along much faster—

The Witness: Well, then, I think we better leave it for redirect, then, Mr. Examiner.

Mr. March: Mr. Hammer, your statements aren't complete, though, unless you make this explanation.

The Witness: That is true.

Mr. March: I think in that sense, Mr. Examiner, it is very definitely a statement which the witness wishes to make in explanation of his answers to Mr. Keffer's previous questions.

The Trial Examiner: In that situation it is perfectly all right, but I thought we might hurry this thing along a little.

Mr. Keffer: All right, if Mr. March or Mr. Lange wants to take the witness on that subject and let us have him back, why, all right. You can have your redirect now on that particular phase of it, if you want to get that in.

Mr. March: I wouldn't want to interrupt your cross examination.

Mr. Keffner: That's all right, you go right ahead.

Redirect Examination.

By Mr. March:

Q. You may make the explanation you had in mind.

Mr. Keffer: Well, that's just the same as though we had gone ahead in the first place, Mr. March. I thought you wanted to cross examine.

Mr. March: Do you want me to ask a whole bunch of little questions?

The Trial Examiner: Well, let's go ahead, Mr. Keffer, and bear this in mind, Mr. Hammer, that if you have an explanation to make, you can make that explanation, but this matter of volunteering information, I just want to call your attention to the fact that Commission's counsel will take you back on redirect and I am sure they will not overlook any of these matters.

The Witness: I think it would be better to have it that way.

The Trial Examiner: I think we will get along better.

Mr. Keffer: We really would make time, Mr. Hammer, and Mr. Examiner. There is no question about that.

Mr. March: However, Mr. Examiner, the witness can always feel free to make any explanation of his answers if he sees fit.

The Trial Examiner: That's just what I have advised him, Mr. March.

Mr. Keffer: We have always been very cooperative, I think, in allowing witnesses to make explanations when so desired.

Recross Examination (Continued)

By Mr. Keffer:

Q. All right, Mr. Hammer, you made a statement a while ago that where your isobar lines were wide and there wasn't much differential in pressure that there wasn't much migration of gas, didn't you?

A. Over long distances that is true.

Q. Well, if the isobar lines are wide apart, that follows, doesn't it?

A. What follows? What do you mean?

Q. That they are a greater distance apart than when they are close together.

A. That's right.

Q. All right, now, that depends on porosity and permeability of your formation, doesn't it, entirely?

A. Yes, on the two factors.

Q. That's right, and you don't know what either one of them is—you have said that?

A. No, I don't.

Q. And you don't know where—you don't know whether the gas migrates rapidly or not at all in that area, that you just spoke about, do you?

A. Well, the question of the rate of gas migration is a rather intricate problem.

Q. I grant you that, but you made a positive statement a while ago that it did not do a certain thing.

A. What statement?

Q. That there was no appreciable migration of gas where your isobar lines were wide as between 10-pound intervals.

A. Well, that was on the basis that your pressure differential is so small, when you consider distance, that under any ordinary conceivable condition you wouldn't have.

Q. That's right. You have admitted that if you have the porosity and the permeability you are going to get the drainage even if there is a small pressure differential?

A. That is also a relative proposition.

Q. Certainly, and you have no idea what either one of them are, either porosity or permeability, and not knowing either of them you make the positive statement that you just know that drainage doesn't occur?

A. Well, I know it, Mr. Keffer, from a configuration of a study of the isobars over a period of five years. Now, we have agreed that when that occurs it usually occurs at right angles, generally, to the horizontal position of the isobar lines themselves. Over a period of our study of the thing there is nothing to indicate in this particular case any longer period or continuous period of migration except the possi-

bility of it just along the eastern line of Quadrant 3 in Carson County over to Quadrant 2 in Carson County.

Q. All right, then it is your position that the configuration of your isobar lines indicate to you that the drainage matter is just now hitting Canadian River?

A. Why, Canadian River hasn't any acreage over in there.

Q. In Carson County—

A. In Quadrant 2 and 3, Carson County.

Q. Well, I am—no, not in 2 and 3, that's quite right. We were over at Borger a while ago, coming back towards Canadian River and I thought that we were yet. I hadn't left that area yet. Let's get back to the Canadian River area. That's what we are talking about. We left the other long ago.

There is drainage from Canadian River to the northeastward. There can't be any question about it on your isobar lines, can there?

A. Well, they indicate a lower pressure in that direction, certainly.

Q. The gas travels from high pressure to low pressure areas, doesn't it?

A. That again is a relative proposition.

Q. Did you ever know it to fail to do it?

A. Well, but the rate is a relative proposition.

Q. All right, the rate depends upon porosity and permeability and pressure differential, doesn't it?

A. That's right.

Q. You know what pressure differential is; you haven't any idea as to permeability or porosity?

A. No.

Q. You have only one of the three things you must know to determine that, haven't you?

A. Well, I think that question will be answered later.

Q. Why not answer it now?

A. Well, because I would just request to come back here and reserve a statement.

Q. Do what?

A. Reserve a statement.

Q. What do you mean by reserve a statement?

A. Well, the Examiner himself suggested that I reserve a statement—

Mr. Keffer: I don't quite—

The Trial Examiner: You understand at that time, Mr. Hammer, I qualified that to the extent that I thought it would be best for you not to volunteer information which Mr. Keffer had not inquired on; that is, on matters on which Mr. Keffer had not inquired, but he is getting down to it now.

The Witness: No, that's just the point, he hasn't got down to it.

Mr. Keffer: Read the question.

(The question referred to was read by the reporter, as set forth above.)

The Witness: Except certain definite facts, aside from the question of permeability or pressure.

By Mr. Keffer:

Q. All right, what are those certain definite facts?

A. That's the thing I was going to do a while ago and I will do it now.

Mr. March: He may mention them now.

By Mr. Keffer:

Q. All right, go right ahead.

A. Now, the facts of the case are, and we have agreed on it, that—

Q. Who—you and me?

A. You and I.

Q All right.

A. —that the Borger area was originally discovered around the fall of 1925 and the active development started in 1926.

Q. That is true, we are agreed.

A. And that it continued and spread out from that point, that it was a big prolific field. We admit that during that time there was a lot of wastage of gas. We have had no argument on that. We also agreed that because of that wastage and subsequent withdrawals there had been a low pressure area developed.

Now, we have agreed on that. There is no argument about that.

Q. That's right.

A. But here is something that is very important, and that is this: Notwithstanding the fact that that low pressure area was in existence there, starting in 1926—well, I wouldn't want to say what year—it reached its maximum, but for many years it has existed there as a low pressure area and notwithstanding that fact, right here in your Quadrant 1 in Potter County in 1935 you still had a weighted average pressure in that quadrant of 419.8 pounds, and also in 1939 as of August, 1939, you still had a weighted average pressure for that quadrant of 402 pounds, a drop as between 1935 and 1939 in weighted pressure of only 17 pounds, or an average annual drop of 3.4 pounds.

Now, from 1922 when Canadian River first started to take gas—

Q. Canadian River? No, they didn't start then.

A. Well, Amarillo Oil Company.

At least, regardless of the company, when gas first started to be taken out of there, naturally I think we will all agree that the pressure was 430 pounds. Now, by 1935, or from 1922 to 1935, there had only been a pressure drop—I am talking about weighted pressure now all the time—of 13.2 pounds over a period of 13 years, or an annual drop of 0.78 pounds per year—7/10ths of a pound, from the beginning up to 1935.

Now, from 1922 to 1939 and taking your original field pressure at 430 pounds, there had been only a total drop in weighted pressure from field original pressure to 1939 of 27.2 pounds, for a period of 17 years, or an average of 1.6 pounds per year.

Now we'll take the same general condition for Hutchinson, Quadrant 3. We can't start in 1922 because we have to start at the period of development and for the purpose the tabulation I have just used 1926 because that is virtually when it started. In Hutchinson 3, Quadrant 3, the original pressure we'll say before the discovery well was 430 pounds. In 1935 the weighted pressure was 295 pounds, a difference in

pressure of 1935 pounds over a period of 9 years, or an average annual decline in weighted pressure of 15 pounds.

Now, between 1926 and 1939, assuming the original field pressure at 430 and the terminal areal pressure—or the areal pressure, weighted pressure for 1939 at 270.6 pounds.

Q. Where?

A. We are talking now about Hutchinson, Quadrant 3—or a difference of 159.4 pounds in weighted pressure over a period of 13 years, or an average annual decline in weighted pressure of 12.26 pounds.

Now we will take the same period that we took in the other one, I mean that we took in reference to the other one. We utilized the 1935 to 1939 data. In 1935 the weighted areal pressure for Quadrant 3, Hutchinson County, was 270.6 pounds—no, I beg your pardon. The weighted pressure for 1935 was 295 pounds and the weighted pressure for 1939 was 270.6 pounds, or a decline of 24 pounds over a period of five years, or a decline of 4.9 pounds average over a period of five years.

Now, the point there is, and the reason the tabulations have been made is that notwithstanding that we have agreed and know there is a low pressure area that has continued to exist there and that is still there, that over the period from the beginning of the field up to 1939 it had had no appreciable effect whatsoever on the decline in weighted pressure for the area in Potter Quadrant 1

Q. Is that all of your statement?

A. That's right.

Q. All right. Now, you were talking about what quadrant in Hutchinson county?

A. 3.

Q. 3. You didn't take Quadrant 2 in Hutchison County, did you?

A. No, not in this case.

Q. No, that's right. What do your isobar lines show with respect to Quadrant 3 in Hutchison County?

A. Well, it shows that the pressure is toward the low pressure area.

Q. That's right, that it is losing some gas into the Borger area, isn't it?

A. No, not over the five-year period that we studied.

Q. Well, what would you get right up that way?

A. That's what I pointed out the other day, that between the Borger field proper and Sanford area over here, that area in between those two, the pressure has remained practically at a constant—yes, the pressure isobars have remained almost constant over a five-year period.

Q. Well, what's that?

A. And the drainage—

Mr. March: When you say "what's that?" what do you mean, Mr. Keffer?

Mr. Keffer: He knows.

Mr. March: I know, but the record won't show it.

Mr. Keffer: I know, but I didn't want it to show. I was calling Mr. Hammer's attention to a matter which he had overlooked and I didn't want to embarrass him by putting it in the record. Now since you have brought it out in the open I will state that I was pointing to the very definite drainage from Quadrant 3 in Hutchinson to Quadrant 2 in Hutchinson County, and Mr. Hammer just said there was none and that the reason—

The Witness: Did I say there was none whatsoever?

Mr. Keffer: I understood you to.

The Witness: What does the record show?

(The record referred to was read by the reporter as set forth above.)

By Mr. Keffer:

Q. Well, that is indicating drainage in Quadrant 3 into Quadrant 2 in Hutchinson County, was it not?

A. Indicating the position of the isobars.

Q. Well, then, the position of the isobars indicated drainage, did it not, as I have just stated?

A. The position of the isobars do indicate drainage but the position of isobars do not always indicate drainage over any large distance, and in this case it is true there are wells between two indicated points that they themselves are taking gas out of the reservoir. Because you happen to have

an indicated decline in isobars or pressures doesn't necessarily mean that that gas is all migrating across. These wells intervening always get their share of the gas and are largely responsible for the pressure decline.

Q. How do you know they are largely responsible?

A. Well, they take out a lot of gas.

Q. That's right, but how much more gas is passing through?

A. Well, in an intensely drilled area such as that Borger area there isn't a great deal of chance of long distance migration.

Q. Well, what determines how much gas is passing through?

A. Well, that is indeterminable.

Q. No, what are the factors that cause it to pass through and influence the rate?

A. Well, we have repeated that so many times.

Q. One more time, please.

A. It is always a pressure differential, of course—

Q. Pressure differential, porosity and permeability, isn't it?

A. Yes, relatively speaking, yes.

Q. All right, under here you have a pressure differential here, haven't you (indicating)?

A. Where are you talking about?

Q. The southeast part of Quadrant 3 in Hutchinson County and the southwest part of Quadrant 2 in Hutchinson County.

A. Yes, the isobars are relatively close together there.

Q. All right, then, what do you say about your permeability, then, and porosity? You don't know, do you?

A. I do say this, though.

Q. Answer my question first. Do you know what the porosity and permeability is there?

A. I don't and neither does anybody else.

Q. All right, and you made no effort to find out?

A. No.

Q. All right, go ahead.

A. But as far as migrating from this corner here (indicating) into the Borger field proper, here is a highly developed area in the southwest corner of Quadrant 2, Hutchinson County. There are a large number of wells in there,

closely spaced, which would probably take care of any drainage at all that might come from Carson—the western part of Quadrant 3 in Carson, or from Quadrant 3 in Hutchinson, the southwest corner of Quadrant 3 in Hutchinson to that area, so that local migration of that type does affect the situation.

Q. All right, that's all I want to know. There is drainage out of Quadrant 3 into Quadrant 2. It doesn't matter which wells they drain to, there is drainage from one quadrant to the other?

A. Well, over a period of years that condition has not materially changed and it is a minor consideration.

The Trial Examiner: Well, is there drainage, Mr. Hammer?

The Witness: Well, it is very questionable whether there is any. It is entirely, Mr. Examiner, a question of relative interpretation.

By Mr. Keffer:

Q. Mr. Hammer, you just said the drainage was coming from Quadrant 3, Hutchinson, and Quadrant 3 in Carson, was being caused by wells in the southwest portion of Quadrant 2.

A. Wait a minute, let's localize that statement. I didn't indicate the whole quadrant in either case.

Q. No, I know you didn't.

A. I stated that in the extreme southeastern corner of Quadrant 3 in Hutchinson and the extreme northwestern corner of Quadrant 3 in Carson there was indicated drainage there locally into a highly developed area in the southwest corner of Quadrant 2 in Hutchinson County.

Q. All right, then, your answer is there is drainage from Quadrant 3, Hutchinson, to Quadrant 2, Hutchinson?

A. In a minor part, in relation to the entire quadrant, yes, but it is a minor consideration.

Q. All right. Now, you don't know what the porosity or permeability is that might influence it in there? I think you already answered that. Strike it. I won't embarrass you by asking you the same question.

A. You aren't embarrassing me any.

Q. Now coming to Quadrant 3 we have a very much different situation, haven't we?

A. Quadrant 3 where?

Q. Hutchinson, as compared to Quadrant 1 in Moore County.

A. Well, different in one respect, between what?

Q. Your isobar lines.

A. Well, you are comparing the two. You say we have a different question—

Q. I said compared to Quadrant 1 in Moore County.

A. Well, now you are comparing what—Quadrant 3 in Hutchinson and Quadrant 1 in Moore?

Q. I say, we have a much different situation with respect—I will illustrate it this way—with respect to drainage in Quadrant 3, Hutchinson County, out of Quadrant 1, Moore County.

A. Compared to what?

Q. Compared to drainage out of section—out of Quadrant 3, Hutchinson, into Quadrant 2, Hutchinson, or vice versa.

A. Yes, there is a difference. There is a different condition there.

Q. Well, it is rather substantial, don't you think?

A. Well, there is a different condition.

Q. Just tell us what condition you find there?

A. As to the position of the isobars—

Q. Well, let me state it. I think it would save time.

You take Quadrant 3 of Hutchinson County. You find a very decided pressure differential between that area generally and Quadrant 1 of Moore County to the westward, don't you, a difference I would say of at least 70 pounds starting from about the center where the word "three" is written on the Canadian River of Quadrant 3 over to the west line of the county, a distance of maybe four or five miles?

A. That is what the map shows.

Q. That is what the map shows. All right, you get on out into Moore County and you have 1, 2, 3, 4, 5, 6, 7,—well, we'll say 7—a difference of 70 pounds from the east side of Quadrant 1 in Moore County out to about the center of it generally, about where the figure 1 is. Does that seem to be about right?

A. Well, if you counted them right.

Q. All right, will you count them? I counted them hurriedly.

A. I would say that there are seven isobars.

Q. Yes. I counted seven but counted them hurriedly.

So you have a pressure differential about the center point east and west of Quadrant 1, Moore County, to about the center point east and west of Quadrant 3, Hutchinson County, of perhaps 140 pounds, haven't you?

A. With the exception that you have in Quadrant 1, Moore County, and in Quadrant 4—no, Quadrant 6, Moore County, two local high pressure areas which in both cases have arrested the movement of gas eastward and at least part of the gas is draining into low pressure areas to the west.

Q. All right, this high pressure area you refer to in Moore County, Quadrant 1, is very isolated, very small, isn't it?

A. Well, it exists and it is still there.

Q. I know, but as you show it on the map, you show it less than 640 acres in extent, don't you?

A. The fact remains that it is a barrier there locally.

Q. Answer my question.

A. Nearly. Approximately.

Q. Near the west side of the quadrant. How is that going to affect the drainage from the center?

A. It is not going to affect the drainage. The point is it does affect it in the northern part.

Q. Very little in the northern part because it is so small.

A. It has been there consistently over a five-year period and it is still there, or was still there when we made this map.

Q. All right, don't you know what this is?

A. Well, it is a high pressure area.

Q. How's that?

A. Well, the well is a high pressure well.

Q. Do you know what a "tight" is, a little local "tight"?

A. Yes.

Q. All right, you get a big well here and then drill over there 330 feet and maybe get a small well. What ordinarily

in a field of the characteristics of the Panhandle, what does that mean?

A. In general you would say it was an area of low permeability.

Q. All right, and then you go on. This was the big well. I said 330 feet, I'll make it 660—was a small well, and then beyond that was another big well, another 660 feet. Now, what would that indicate to you?

A. Well, it would indicate an area of perhaps—relatively speaking, it would indicate an area of larger permeability.

Q. Yes, but that well in between that small well where you hit what oil men call a "tight" spot, since you have got big wells around it would indicate a very small, tight area there, wouldn't it?

A. That's just the point. That's important there. If you have—

Q. Wait a minute. Answer my question first. You say yes?

A. I say yes, and that is very important there.

Q. All right.

A. If that is an area of low permeability, certainly gas is not going to migrate across it rapidly to the east.

Q. That's right, and if it covers less than a section, as your map shows, and I presume you made it as big as you conscientiously could—a section in a county is not very much, is it?—a section in a quadrant isn't very much?

A. No, not very much.

Q. Well, all right, now, you do have a very decided migration of gas as shown by your isobar maps from Quadrant 1, Moore County, into Quadrant 3, Hutchinson County?

A. In the northern part of the quadrant, no.

Q. All right, the south half?

A. In the south half there is an indicated gradient in that direction.

Q. Rather substantial?

A. It is rather substantial.

Q. All right. When reading your pressure declines in Quadrant 3 a while ago, that meant absolutely nothing.

A. What?

Q. Reading pressure declines over a period of years in Quadrant 3 in Hutchinson County, isn't that what you did?

A. I don't get your—

Q. When you made that speech of ten minutes a while ago, reading all those pressure declines into the record on Quadrant 3, Hutchinson County, making quite a point of it. Well, there wasn't any point to it, was there?

A. Yes, there was, and I can do the same thing, and I intend to do the same thing for the quadrant you are talking about.

Q. All right, that will be very interesting, Mr. Hammer.

If I can show you areas in Quadrant 3, Hutchinson County, a number of wells where the pressures are actually increasing while those wells are producing substantial volumes of gas, then that would mean to you, I think you said the other day, that that would mean that those wells were being repressured by drainage from other sources?

A. No, I didn't make that statement. I made the statement about repressuring that the Huber Corporation had done some repressuring in that area.

Q. Oh, we weren't talking about the same thing. Where did they get the gas to use?

A. They took it out of the ground and put it back in locally.

Q. Took it out of wells 600 feet away and put it in this one?

A. Locally, that's right.

Q. How can you figure by any stretch of the imagination that it is going to affect the pressure there by taking it out of one well and putting it back into another?

A. It simply means that if there weren't withdrawals, that they took the gas out and naturally when they took the gas out there was a proportionate decline.

Q. Going right back immediately?

A. All right, then they put the gas back in.

Q. Yes.

A. Having done that it will help to maintain that pressure in there. Certainly when you put gas back into the ground it helps to maintain the pressure.

Q. I see what you're talking about. All right. If I can show areas in there where that is not happening, where there is no mechanical repressuring, and wells that are producing lots of gas and you had increase in your pressure,

then what would that mean to you? Wouldn't that mean that they were being repressured by natural means by reason of drainage from some other source to the point of production?

A. It might entirely be a local source.

Q. What do you mean, a local source?

Other wells are producing down there, too. Keep your story straight, Mr. Hammer.

You get to the point many times, we'll say this isobar line where it is caused by local sources and then you get down here into another situation where there is drainage and then you say that is entirely local.

Now, those two things are rather inconsistent, aren't they?

A. No, I don't think so.

Q. All right, we'll let the record stand in that respect.

I believe, Mr. Examiner, that if we might recess for the noon hour that perhaps I could expedite the matter somewhat.

Mr. Lange: That is agreeable.

The Trial Examiner: Very well, Mr. Keffer.

The hearing will stand in recess until 2:00 o'clock this afternoon.

(Whereupon, at 12:30 o'clock, p. m., a recess was taken until 2:00 o'clock p. m., of the same day.)

Afternoon Session, 2:00 p. m.

The Trial Examiner: The hearing will be in order.

Mr. Lange: Mr. Examiner, we have some corrections that have been signed by counsel covering all of the volumes through XL.

The Trial Examiner: Fine, Mr. Lange.

Whereupon—

A. A. HAMMER, the witness on the stand at the time of

adjournment, having been previously duly sworn, resumed the stand and testified further as follows:

Mr. March: Now, Mr. Examiner, Mr. Keffer made two requests for information to be furnished by this witness. The first was that Mr. Keffer wanted to know as to any statement made by the Railroad Commission of the State of Texas regarding the east and west field.

Will you read what you have from the annual report of the Texas Railroad Commission regarding that, Mr. Hammer, stating what report you are reading from and the page number?

The Witness: This is the Railroad Commission's report, of Texas, Ernest O. Thompson, Chairman; Lon A. Smith and C. V. Terrell, Commissioners. It is entitled "Annual Report on the Panhandle Oil & Gas Field, July 1938," by Oil and Gas Division, Engineering Department, November 1938, V. E. Cottingham, Director of Production.

On Page 4 of that report the following statement is made:

"An intervening structural restriction does not permit the free intermingling of gas, and the corresponding equalization of pressures, between the east part of the field and the west part of the field.

"This structural restriction resulted from a down-faulted block that occurs south of an east-west fault which roughly coincides with the north boundary line of the ACH & B Survey, and extends for a distance of approximately ten miles.

"Along the south side of this fault, the corresponding pay horizons have been faulted down below the water level, thus preventing the migration of gas through this down-faulted block from one field or zone to the other. North of this fault is a narrow strip of production which has been drilled to a density of approximately one well to ten acres.

"As a result of the heavy withdrawals from these oil wells, a low pressure area has been established which effectively impedes the flow of gas through these formations between the east and west zones.

"All of the gas in the east zone or field is sweet. The gas in the west zone is both sweet and sour, with sour gas occurring along a belt skirting the north flank of the Panhandle structure."

Mr. March: There was another request made by Mr. Keffer. Will you state what that is and state the information you were able to get?

The Witness: Please read that question.

(The question referred to was read by the reporter as set forth above.)

The Witness: As I understood Mr. Keffer's request, he wanted a statement of the ultimate reserves—when I say "ultimate," I mean the original reserves at 430 pounds pressure.

The Trial Examiner: The original reserves in place?

The Witness: Underneath the acreage, yes.

I have a tabulation here that I made some time ago showing not only the original reserves underneath Canadian River's acreage but the original reserves underneath the entire quadrant or quadrants in which the Canadian River has acreage. I noticed when I finally found this tabulation today at noon that the ultimate reserve by quadrants is calculated down to zero pounds. In other words, zero well head by quadrants, but there is a calculation of it, of the total of all quadrants down to 25-pound well head gauge. That is for both the Canadian River acreage and the total acreage in all of the quadrants in which Canadian River owns acreage.

Recross Examination (Continued).

By Mr. Keffer:

Q. Will you let us have that statement Mr. Hammer?
A. Yes.
Q. Will you let me see the Railroad Commission's report you just read from, Mr. Hammer?
A. Yes.
Q. That report was for what year?
A. 1938.

Q. 1938?

A. Yes.

Q. Now on the report that you just read from Mr. Hammer, there is nothing in that that shows that the east part of the Panhandle field and the west part of the Panhandle field are separate fields, is there?

A. It shows to all intents and purposes that they are separate fields.

Q. You didn't even draw your isobar lines showing separate fields, did you?

A. No, I didn't.

Q. And the Railroad Commission doesn't do it either?

A. I don't recall.

Q. You have seen their pressure map, Mr. Hammer?

A. Yes, but I wouldn't recall exactly.

Q. All right, you say there is a fault in this area indicated as ACH & B in Gray County?

A. Yes.

Q. It dips down where you have water encroachment?

A. Not necessarily water encroachment.

Q. How do you account for this producing horizon you show along the south of that?

A. As a matter of fact up to the time of 1939 in August while there were a few wells drilled in there, it is my very definite remembrance—I think I can truthfully say that there were none of these wells connected—

Mr. March: Identify that, please.

The Witness: That's in Gray County, Quadrant 5, and the area lying south of the structural depression as indicated on this isobaric map.

By Mr. Keffer:

Q. Well, now, the map shows very clearly that there is a connection between the east and the west field south of the fault, even though the statement you read from the Railroad Commission report indicated there was not?

A. No, it doesn't at all.

Q. I thought it indicated that. Well, you have read it. It speaks for itself.

Well, then, there is a connection—

The Trial Examiner: Pardon me, Mr. Keffer. Mr. Hammer, were you speaking of the map or of the report?

The Witness: At first I read the report to state exactly what the Railroad Commission said about it.

By Mr. Keffer:

Q. I know, but the Railroad Commission wasn't as clear to my mind at least as it might be. All right, now, we were talking about the fault along the south side of this fault that is this way (indicating).

Mr. March: Which way?

Mr. Keffer: South, as shown on the map, toward the bottom, the fault is indicated, that has the word "Gray" written in there on the map, Exhibit 179, indicated as a barren island in there, so to speak.

The Witness: Structural depression.

By Mr. Keffer:

Q. Yes. Now, that is the fault the Railroad Commission is speaking about?

A. No, the fault they are speaking about is this one up here, this line, as they state, through ACH & B Survey.

Q. Then south of the fault, if you go far enough south, there is a connection between the east field and the west field?

A. I think it is very definite, Mr. Keffer, that if the Texas Railroad Commission had thought that there was a passage for gas through there they would have so stated and they did not.

Q. I grant you that. I am taking your own map, Mr. Hammer, and asking you what it shows.

A. It shows that what few wells were drilled in there were wells of such character that no one having a pipe line felt justified in connecting them up.

Q. Why?

A. Well, because of low permeability, perhaps.

Q. What is low permeability? What does low permeability mean?

A. Wait a minute. I want to finish answering this question. Also this area right through here running from

Lefors south is structurally in relation to the west part of the field and the east part of the field, is a structuraly low area. Now, I did not make a structure map, but I did take enough logs in this general area to indicate to me that there is a low structural area there, a higher structural area here, over in Wheeler County, and another structurally high point beginning west of this area south of Lefors and extending on west until the high point is reached some place in Moore County.

Q. All right, Mr. Hammer. Now back again to the area—what is this quadrant?

A. That is Quadrant 5.

Q. That includes the barren space as well as that below?

A. Yes.

Mr. March: In Gray County.

The Witness: I might say, Mr. Keffer, in arriving at the area this was drawn out. It was not included.

By Mr. Keffer:

Q. You did not count the acreage as shown in the white?

A. No.

Q. But down where your isobar lines are you did compute that acreage and that is in Quadrant 5?

A. That is right.

Q. Now, you said those wells were small. I thought you said a number of times you didn't know the size of the wells in the Panhandle field and paid no attention to them.

A. That was an abstract thing. In certain cases like this when you want to find out reasons for some certain thing, why, naturally you would pay some attention.

Q. I thought so.

A. But as to the whole field, that was a different problem. Here was a special problem.

Q. You weren't interested in any part of the field, interested enough to observe potentials except that part in Gray County that you have referred to, is that right?

A. Except in an abstract way.

Q. What do you mean, in an abstract way?

A. Just in a general way.

Q. How was that?

A. I said, just in a general way.

Q. Generally, then, you know where the large wells are in the field, don't you?

A. In a general way, yes.

Q. Well, you know specifically in that spot?

A. Yes, and there was a reason for finding that out.

Q. Well, if you found areas where there were big wells, wasn't there some reason to find out why they were big?

A. No particular reason.

Q. Why wouldn't there be just as much reason to find out where there was a big well why it was big as to find out on a little well why it was little?

A. Well, the whole point is that I knew about this statement that was made by the Railroad Commission and I wanted to check to see additional reasons, if any, why they were, and I found them. Now, as I stated a while ago, if the Texas Railroad Commission had believed that there was any chance of gas passing across this area of low permeability south of that depression they would have so stated.

Q. All right, now you stated this morning that you weren't going to hazard a guess what the Texas Railroad Commission believed about anything. You absolutely refused to do that. Now you are quoting their belief.

A. I said if they believed it they would have so stated.

Mr. March: Let the record show a request was made to prove where the Railroad Commission made any statement in regard to the separation of the east and west field.

Mr. Keffer: All right, I appreciate that. I am trying to run the thing on down, Mr. March, that's all.

Q. All right, now I take it that if you were interested in five small wells in Quadrant 5 in Gray County you were interested in small wells all over the field.

A. Not particularly. I wasn't interested in them all over the field particularly. I was interested in certain small wells in Wheeler County. In areas, for example, where the wells had not been connected up, and naturally when I came to a thing like that I would wonder why.

Q. That's right.

A. And I would try to check to find out.

Q. All right, now, you found small wells out here in Potter County near the fault line, didn't you?

A. I don't recall any from memory, those wells, no.

Q. You found small wells down in Hartley County, didn't you?

A. Again I say I don't recall as to the potentiality of those wells.

Q. You found some small wells up in northwestern Hutchinson County, didn't you?

A. I don't remember the open flows up there.

Q. You just remember them in one spot, but you have got a pretty good recollection of them there, is that the status of the matter?

A. It was the only place where I had any reason to.

Q. All right now, Mr. Hammer, you stated that this was an area of low permeability.

A. I said indicated low permeability. At least that's what I meant to say.

Q. You think that it is, is that your opinion about it?

A. Yes.

Q. What do you base it upon?

A. Well, I base it largely upon the fact that the wells in that area are very very small.

Q. Suppose they had been very very large, then what would have been your opinion?

A. Well, if they had been large wells they would have been connected up, unquestionably.

Q. I am talking about permeability, I am not talking about connections.

A. Well, if the wells had been large the permeability might have been small or the permeability might have been large.

Q. Now, let's be consistent about it. If a small well indicates low permeability, why wouldn't a big well indicate a high permeability?

A. Well, in general a big well will.

Q. Now, in general—don't you know that you would have to have high permeability to have a big well, Mr. Hammer?

A. Immediately surrounding the particular well, yes.

Q. All right. Then, if you found—of course, you didn't make any study and didn't find,—but if you found in the south part of Moore County and the north part of Potter County big wells, what would that indicate as to perme-

ability? Just follow your question on out. Don't change your answer on it.

A. Well, it would have indicated that those wells were in an area of relatively large permeability surrounding each well.

Q. That's right. Then if all of them generally are large, why, the area then has a rather high permeability, doesn't it?

A. That would be a fair assumption.

Q. Well, isn't it a correct assumption?

A. Well, not in all cases, I wouldn't say that it was.

Q. All right, if you don't want to say so—now, if that is an area of high permeability then gas migrates at a more rapid pace than it does in a field where the permeability is low, doesn't it?

A. Again that depends upon the question of pressure differential.

Q. All right, take a given pressure differential, and pressure differential you want to take, just so it is constant.

A. It also depends on—

Q. Answer my question.

A. What is his question?

(The question referred to was read by the reporter, as set forth above.)

The Witness: Again I use the word "relatively," yes.

By Mr. Keffer:

Q. All right, that is as strong as you want to go?

A. That is as strong as I will g..

Q. I suspect that's strong enough, anyway.

Now, Mr. Hammer, I went into a matter this morning as to Gray County more or less at random, and I want to take one of the quadrants in Moore County and go into it more specifically. Will you take your exhibit—I guess it's 180—and look on Page 5, Table 3?

Before I get to that, I really hadn't finished Wheeler County, but I am coming to that next. You say that the area south of the fault which you have referred to and which the Railroad Commission has referred to in Wheeler County—north of the fault, let's take that area just north

of the fault which I take it is included in your Quadrant No. 7, Gray County, is that correct?

A. Yes, that is correct.

Q. Now, as a matter of fact, the area north of that fault line has been an area of high gas production, has it not?

A. Yes, it has produced a lot of gas.

Q. They have big wells in there, haven't they, a number of them, at least?

A. Yes.

Q. And they have produced large volumes of gas.

A. In times past, yes.

Q. Yes, that is in the Lefors area, the casing heard carbon black center in the Panhandle field, isn't it?

A. I think there used to be; some of them are gone now.

Q. Why gone?

A. Well, because the gas in that particular local area probably is exhausted.

Q. Now, you have a low pressure area in there, haven't you?

A. That's right.

Q. All right, now, gas drained from west of that low pressure area from the westward into it—

A. From the westward of that low pressure area from—from the westward of Lefors?

Q. Yes, out in here. You don't show any line in there at all, it is so low, across here?

A. That would be a very questionable assumption.

Q. What's questionable about it?

A. Well, here is a higher pressure area just north of this fault line and coming up against the fault line, higher than the north of Lefors.

Q. What would be the direction of the migration of gas from this higher pressure area you are talking about into the lower pressure area?

A. It would be going into the north.

Q. Migrate into it, wouldn't it?

A. Yes.

Q. And we have a situation where gas to some degree at least could migrate from the west area into the depression around Lefors and could likewise migrate from the east-

ward into the depression around Lefors. It can come both ways. It has to meet from the two sections.

A. However, it is the opinion of the Texas Railroad Commission that gas from the east of that area doesn't move over to the west.

Q. The Railroad Commission didn't say that?

A. Oh, yes, it did. Read it.

Q. All right, here's what they say:

"As a result of heavy withdrawals from the oil wells, a low pressure area has been established which effectively impedes the flow of gas through these formations between the east and west zones."

A. All right, it says it effectively impedes.

Q. All right, we weren't talking about gas going across it. We were talking about gas going into it from the east and also coming into it from the west. Now, there is nothing in there that says that doesn't happen, is there?

A. In a purely localized condition it would happen.

Q. You say "localized." You have been using that a lot. Just what do you mean by "localized"?

A. Well, just as the isobar there indicates, a local condition.

Q. Define that local condition.

A. Well, actually the great number of oil wells that exist in this area, that have not been isobarred—

Mr. March: Describe it a little more fully.

The Witness: That is in the southwest part of Quadrant 7, Gray County, and the southeast corner of Quadrant 8, Gray County, and the northeast corner of Quadrant 4 in Gray County.

By Mr. Keffer:

Q. Why didn't you run your isobar lines on out there?

A. Because there were no details given in the Texas Railroad Commission—no data to work on.

Q. This is a new gas field and as you stated large volumes of gas have been produced?

A. That's right.

Q. All right, I think that is enough on that.

Now, referring to your Exhibit 180, Mr. Hammer, let's look again at Quadrant 1 in Moore County—no, Potter County.

All right, I had it almost right—going to Potter County, 1, the area that I am pointing to here on the map, when you considered that quadrant as such you got a weighted—that is, an acre pound factor of 58.92, didn't you?

A. Potter 1?

Q. 58.92.

A. 58.97.

Q. All right, that's near enough, 58.97. When you considered Moore 1 in connection with Potter 1, you got what—47.88, wasn't it?

A. 47.88, that's right.

Q. And when you considered Moore 2 in connection with Potter 1 you got in Potter 1 36.82, didn't you?

A. Now, wait a minute. Let's see if I understand what you want.

Q. Just what I asked.

A. Now, I don't understand.

Q. All right, when you were determining what was in Moore 2 you also considered Potter 1?

A. It was grouped together.

Q. That's right. At that time you gave Potter 1 a value of 36.82, didn't you?

A. You are talking about Potter 1?

Q. That's right, yes, sir.

The Trial Examiner: What you are asking for is the Moore 2?

Mr. Keffer: No, I am asking the different weights that he gave Potter 1 each time he made a different calculation.

The Trial Examiner: For another quadrant?

Mr. Keffer: That's right.

The Trial Examiner: I don't think he understands that.

Do you understand that, Mr. Hammer?

The Witness: No, I don't. I think there is some confusion here but I don't get it.

Mr. Keffer: Let's straighten it out. We'll wait until you get it.

The Witness: In the final analysis, on Page 6, Tables 4 and 5, Exhibit 180, the production per acre pound there for Potter 1 is 58.97.

By Mr. Keffer:

Q. In consideration with what?

A. What?

Q. In consideration with what?

A. Well, that is the production per acre pound that was arrived at by grouping the—by the group method of arriving at a fair figure for production per acre under—

Q. I know, but that isn't what I have been asking you.

A. That is the condition, whether you have been asking it or not.

Q. Well, let's start all over again. Maybe I can simplify it a little bit.

How many times did you use Potter County 1 when you were computing the value of other quadrants?

A. It was utilized on five occasions.

Q. That's right. All right, now, when you were arriving at what its relative weight was, or its per acre content, or acre pounds decline was—I'll get it right yet—when you were figuring for Potter County 1 as such, you got 58.97, didn't you?

A. That's right.

Q. And when you were figuring Moore County 1, you gave Potter County 1, 47.88, didn't you?

A. No, I didn't do that at all.

Q. All right, what value did you give to the area which included Potter 1 when you were figuring the Moore 2?

A. All right.

Q. Just answer my question. That's all I want.

A. I am going to.

Q. No, you got 47.88. Say "47.88," then you have answered my question.

A. For what?

Q. For what you gave to the area which included Potter 1, which included every acre in Potter 1—47.88.

A. In Potter 1?

Q. Potter 1.

A. No, 58.97.

Q. No, that was Potter 1 considering it alone, not alone, but considering or determining the remaining reserves in Potter 1. That's what you figured it was based on, a factor of 58.97.

A. That's right.

Q. You can follow me on this. It isn't difficult.

Now, when you came back to determine what it was in Moore County 1, just to the north of it, then you gave Potter County 1 a different value, didn't you?

A. No, no, no, no, no, I didn't do anything of the kind.

Q. All right, you gave the area a different value, didn't you?

A. I simply utilized Quadrant 1 in Potter 2—

Q. Let's don't go over all that again.

The Trial Examiner: Mr. Hammer, there is no necessity for going through all that again. What Mr. Keffer is trying to get at now, you have used Potter 1 on five occasions when you were determining reserves under the quadrant—

The Witness: Under adjacent quadrants.

The Trial Examiner: That's right, and what he wants to know is not what reserves you assigned to Potter 1, but what reserves—or what reserve was attributed to Potter 1 as a part of the total area you considered as apart in reaching your result on these other quadrants.

The Witness: That's just the point.

The Trial Examiner: That is not what you are doing.

The Witness: That is the point I am trying to make, that each one of these, the value for each quadrant was calculated independently by taking the summation of the factors in adjoining quadrants.

The Trial Examiner: The record is very clear on that.

The Witness: We didn't use any independent—we didn't group these after we had got a production per acre pound. We used them before that independently and arrived at a production per acre pound for each quadrant in relation to its adjacent areas. Now, I don't find any such figure that Mr. Keffer is talking about.

By Mr. Keffer:

Q. You will find it exactly as I will state it to you. You follow me.

Mr. March: Not the description that you give.

Mr. Keffer: Maybe you can help on the description. I would appreciate it.

Mr. March: Maybe you can describe the figure and maybe he can answer it right off. Come and show him the figure you want. Take the exhibit.

By Mr. Keffer:

Q. You have considered Potter, Quadrant 1 on five different calculations, as you have stated.

A. It has been grouped with that many.

Q. Five different groupings, I'll put it that way.

A. All right.

Q. All right. Now, when you were considering Potter 1 as such you got a factor of 58.97, didn't you?

A. Yes, 58—considering it as such.

Q. As such, yes.

A. That is the figure at which we arrived from the grouping of the acreage to apply to Potter 1.

Q. That's right. I understand that perfectly. Now, when you made your next calculation on it which involved Moore County, Quadrant 1, that time the acreage in Potter County, Quadrant 1, had a value of 47.88.

A. No, that is not at all right.

Q. Well, tell me what's wrong with it.

Mr. Spencer: All the acreage in the quadrant including that in Potter 1, had that value?

The Witness: Yes, the grouped acreage.

Mr. Spencer: That's right.

By Mr. Keffer:

Q. That's right. Well, that included Potter 1, and Potter 1 had the same value on your computation as all of the acres in the group, in that particular computation, didn't it?

A. No, not at all.

Q. Well, Mr. Hammer, when you figured Moore County 1, you took into account Potter County 1, didn't you?

A. Yes.

Q. And Moore County 2?

A. That's right.

Q. And Hutchinson County 3?

A. That's right.

Q. And Moore County 6?

A. That's right.

Q. I don't know whether you took in Potter County 2 or not.

A. I did.

Q. I take it that would be all of them. I am not checking it from the record but just looking at the map here.

All right, what was the value of all of the acreage in that group of quadrants?

A. To arrive at a production per acre pound for Moore Quadrant 1.

Q. 47.88, wasn't it?

Mr. March: Let him answer it.

The Witness: Well, let's see—47.88.

By Mr. Keffer:

Q. Now, you assigned that value in order to get your value of Moore County 1 to every acre in that group of quadrants, didn't you?

A. No, I arrived at that figure as the average for the total group.

Q. That's right, and applied it to every acre in the group without any distinction in making your average to get a figure for Moore County 1?

A. That's right.

Q. Then you necessarily in that computation assumed that Potter County 1 had 47.88?

A. No, I didn't, no, not at all, because you lose sight of these various groupings that were utilized.

Q. No, I don't lose sight of them at all.

A. When you throw out—

Q. If you don't like the manner in which I stated the question, let me state it this way:

When you made your computation and got your average that applies for the purpose of that computation, you applied it to every acre in those group quadrants?

A. It was the average production per acre pound determined for that group.

Q. That's right, that's what I have been talking about, that is, for every acre in the group the average, taking all of the acreage in the group?

A. That's all right as far as this particular quadrant is concerned.

Q. All right, you are asking the answer for quadrant 1, I know, but you had to find the average weight in all those quadrants and that figure was 47.88?

A. All right, that applies as far as arriving at that is concerned.

Mr. March: Identify it.

Mr. Keffer: Wait a minute—on the average, as a whole, which included Potter County 1, you necessarily in that computation assigned 47.88 to Potter County 1?

The Witness: That's all right, I'll agree that that was arrived at for that particular thing.

Mr. March: When you say "that particular thing," you mean Potter County 1?

The Witness: That's right, in arriving at a production per acre pound for that alone.

Mr. March: That's right, none of the rest.

The Witness: No, we simply utilized the others to arrive at that figure.

By Mr. Keffer:

Q. All right, then when you came down to computing Moore County, Quadrant 2, you used Potter County 1 again, didn't you?

A. Yes.

Q. And that time your overall average figure was 36.82, wasn't it?

A. You are talking about Potter 2 or Moore 2?

Q. I am talking about Moore 2.

A. 36.88, that's right.

Q. 36.82; then you utilized Potter County 1 again in figuring Carson County, Quadrant 4, didn't you?

A. Yes.

Q. And that time you got an overall weighted figure of 81.43, didn't you?

A. That's right.

Q. And when you came down to figuring Hutchinson County 3, you used Potter County 1 again, didn't you?

A. That's right.

Q. By that time you had an overall figure of 45.94, didn't you?

A. That's right.

Q. Now, in the various calculations made from time to time and in which Potter County 1 figure was utilized, the figure has varied from 36.82 to 44.95?

A. Not at all.

Q. The figures that you utilized in these various computations?

A. That isn't a fact at all.

Q. What is the correct assumption?

A. Well, I have explained dozens of times and I will do it again—

Q. We don't want to go into it again.

Mr. March: Let him go ahead. It might be helpful.

By Mr. Keffer:

Q. He can go ahead if he wants to. I don't want to burden him with too many things.

A. As I have stated on previous occasions, we used the principle of taki.. ; any given quadrant on which we wanted to determine the production per acre pound and we used the adjacent quadrants to that. In other words, the summation of the data is what it amounts to for the entire area, and then from that determined a production per acre pound for the quadrant in question. Then we applied that to the weighted average pressure as of 1939.

All right, if we move over, we'll say from Quadrant 2, Moore County, to Quadrant 1, Moore County, we didn't utilize Hartley, Quadrant 4 or Quadrant 3, Potter, for the reason that they weren't adjacent to it. Then we took the areas immediately adjacent to Quadrant 1, Moore, and arrived at a production per acre pound for that area; then if we moved over here to Quadrant 3, Potter, we utilized the areas adjacent to that and arrived at a production per acre pound for that, in Quadrant 3.

Similarly we did that throughout the entire area. Now, it is obvious that in arriving at a figure to apply to a given area where you used different areas and different production, you are bound to have a different production per acre pound. Now, that's the whole story.

Q. I understood that perfectly, Mr. Hammer.

Now, Mr. Hammer, just one more time, and try to follow me, please, on this and let's don't spend all afternoon on it.

Now, when you got your figure in Potter 1, which is a figure that you assigned to it which you state is the correct figure of 58.97, now, that figure was an average of that quadrant with surrounding quadrants, wasn't it?

A. That's right.

Q. That's right. All right. When you came down to figure Moore County 1 you again got an average of surrounding quadrants, didn't you?

A. That's right.

Q. Which includes Potter County 1?

A. That's right.

Q. The average at that time was 37.88?

A. It included the original data.

Q. Well, I know it included the original data.

A. Before any production per acre pound had been calculated.

Q. But every time you get a different grouping you get a different average for the quadrants within the group which necessarily assigns to the quadrant we are speaking of a different value each time you make a different calculation?

A. Let's see, repeat that.

(The question referred to was read by the reporter, as set forth above.)

The Witness: Well, that is because you take in different areas each time.

By Mr. Keffer:

Q. Granted.

A. Certainly you do.

Q. But you get a different figure?

A. You get a different figure because you have different data to work on.

Q. And the original figure which you take is the correct one is also determined by averaging in others?

A. The summation, yes, of all of the quadrants around a given quadrant and the quadrant itself.

Q. Now, Mr. Hammer, can you go this far with me on

production. The best production in the Panhandle field is generally found through the axis portion.

A. Well, there are some qualifications to that.

Q. Generally that would be true?

A. Generally I would say that would be true.

Q. How did you figure out your quadrants?

A. Well, we attempted to lay them out so they would give as fair a representation as possible of all of the factors considered in the area in which we were interested.

Q. You say "we laid them out." Whom do you mean by "we"?

A. My boys were working under my direction.

Q. Who were the boys that were working under your direction?

A. I have had eight at different times, but the final decision was up to me.

Q. I know, but did all of you get together and work the thing out and determine where each quadrant was going to be?

A. I wouldn't say that, but we discussed it at different times.

A. You actually put them on, is that right?

A. Physically, no. I outlined them.

Q. What were the determining factors in placing the quadrants on your map?

A. Well, trying in the first place—there were two determining factors.

Q. All right, name them.

A. The original maps were on a scale of 4,000 feet to the inch. If my remembrance is right this is a reduction of one-fourth. We laid those quadrants out so that the arm of the planimeter we were using would cover an area without moving the instrument.

In addition to that we tried to so fit those areas that it would take into consideration as near as we could use what appeared to be the factors that would more nearly represent the area as to drainage, either to or from a given area.

Q. All right, on your Moore County Quadrant 1, you just missed that a long ways from the drainage standpoint, didn't you?

A. No, I don't think so.

Q. Well, look at your isobar lines.

A. As far as any effective drainage in Moore County—

Q. Oh, I am talking about the field as a whole. You have got your quadrants all over the field.

A. All right, I think it is fairly representative for the reason that there has existed up here in Moore 6 prior to 1937 a low pressure area in that district.

Q. All right, let's take Carson County 3, Quadrant 3, you missed it on that one, didn't you?

A. What?

Q. You missed the drainage question on that one, didn't you, Carson County 3?

A. No, I don't think so.

Q. You don't.

A. No.

Q. Do you think there is no drainage out of that quadrant?

A. I said this morning only a very very minor amount.

Q. I don't care—

A. There is some there, yes.

Q. Probably some—don't you know that there is a lot?

A. I don't know that it can be measured.

Q. All right, I'll say, could you have made a worse choice possibly than that one as shown by your isobar lines if you were trying to limit it to areas that reduced drainage in or out to a minimum?

A. Could I have done what?

Q. Could you have missed it more any place in the field that you did right there?

A. I think that is perhaps the best that could be done under existing conditions.

Q. When you drop down like that, taking just about the south half of it and leave out that northern line where your lines are going down so rapidly?

A. Well, that wouldn't have made any particular difference.

Q. All right, now, just be frank with me, Mr. Hammer. When it gets down to it, your quadrants were put on there as a matter of convenience and that's all.

A. Not necessarily.

Q. The only thing you have given—you have ignored drainage completely?

A. No, I haven't.

Q. Well, why should you draw the Carson County Quadrant 2—3, rather, as you did, if you are keeping the drainage question in mind?

A. Well, because the only effective point where the configuration of the isobars indicated drainage to the north.

Q. Well, it is drainage regardless of which way it goes?

A. Let me finish.

Q. All right.

A. Was that area in Carson adjoining an area to the north in Hutchinson where conditions were similar.

Q. All right. The north part of this block is similar to the conditions in Hutchinson County, isn't it, yet how about the south part of it?

A. Well, that isn't—

Q. It is all in the quadrant.

A. I know, but in making the determination, that isn't important at all.

Q. But you said the matter of drainage is important. You said that was one of your predominant motives.

A. I didn't say that it was one of my predominant motives. I said it was one of the factors taken into consideration.

Q. You took that and the matter of convenience in running your planimeter around. I cross examined you on that. I took it at face value. I want to know how much consideration you have given the drainage, that's all.

A. As a matter of fact, we didn't give an awful lot of consideration to drainage farther than it affected the grouping of these quadrants to arrive at it.

Q. Precisely, you gave your consideration to it when you made your computation, as you stated a number of times.

A. It was all balanced in.

Q. You gave little, if any, consideration to the drainage problem when you were seeking where the quadrants were going to be and where the boundary lines were going to be?

A. We gave it consideration.

Q. You just thought about it, is that the consideration you gave it?

A. Well, you must remember this, or anybody must, that this map here is a composite of a lot of larger maps, and we worked the thing out the best we could for the counties and then joined them together and we found out when we did that that they tied up nicely along the county line.

Q. All right, let's come over to Quadrant 2 in Carson County. You didn't pay much attention to drainage there, either, did you, as shown by your isobar lines?

A. Well, when we got that far away we didn't—

Q. I am talking about the field. Forget about Canadian River.

A. When we got that far away the only consideration just as I stated before was the balancing of that as against the other.

Q. When you got that far away from what?

A. From the position where Canadian River has acreage.

Q. Forget about that. When you selected these quadrants all over the field, you covered one end of the field to the other. We are talking about the field with reference to your selection of quadrants.

A. Well, and when we came to the point of arriving at a production per acre pound those were balanced in.

Q. I am not asking you that, Mr. Hammer. My point is, you didn't—you gave very little, if any, consideration to drainage in determining where those quadrants would be on your map?

A. That is true. We weren't making a drainage study. We were only making a study for reserves.

Q. You could have said that right at the start and saved a lot of questions. I think that's enough on that.

One other thing I almost forgot here. In balacing your quadrants, as you go down the structure, and especially in the western part of the structure, you necessarily include those quadrants along the center in more computations than you do the computations out on the edge, don't you? You use them more times?

A No, I don't think so.

Q. All right, let's just figure them out and see if you

don't. They are contiguous to more quadrants, aren't they?

The Trial Examiner: Perhaps, Mr. Keffer, you might save a little time if you would specifically designate the quadrants that you have reference to.

Mr. Keffer: Well, I didn't have reference to any particular one. We'll take Moore County 1, as an example.

Q. How many times have you used that one?
A. Moore 1?
Q. Yes, in your various computations.
A. If I have counted correctly, five times.
Q. Five—is that all?
A. That's right.
Q. All right, how many times did you use Hutchinson County 3?

The Trial Examiner: Mr. Keffer, was the first one Moore 2?

Mr. Keffer: Moore 1, Moore 2, Quadrant 2.

The Trial Examiner: Did you give your answer for Moore 2? Was that five—does that apply to Moore 2?

The Witness: Yes, I think so.

Mr. Keffer: Oh, the first one I asked him was 1. The one we are working on now is 2. I beg your pardon, Mr. Examiner, I misunderstood you.

The Witness: If I understood you correctly, you asked for Hartley 3.

By Mr. Keffer:

Q. Oh, there isn't any Hartley 3.
A. I mean Hutchinson 3.
Q. I did, yes. I asked you for Moore 1, Moore 2—
A. No, you started—
Q. Maybe—I believe you're right about that—sure as the world, I think you are. I'll be corrected on that.

Now, let's count them. I think we can count them right here on the map. You used Moore County 1 when you were figuring its own value you assigned to it, didn't you?

A. I used the original data, yes.

Q. That's one time.

A. Yes.

Q. Then you used in figuring Potter County 1, you used it, didn't you?

A. Now, we are talking about Hutchinson 3?

Q. No, we are talking about Moore 1, how often you used it.

A. Yes.

Q. You used it on Potter County 1. That's two, isn't it?

A. That's right.

Q. You used it on Potter County 2, that's three, isn't it?

A. That's right.

Q. You used it on Moore County 2, that's four, isn't it?

A. That's right.

Q. You used it on Moore County 6, that's five, isn't it?

A. I didn't calculate it on this down here—oh, in arriving at Moore County?

Q. Your field reserves.

A. Yes.

Q. What do we have there—six or five?

The Trial Examiner: Six.

By Mr. Keffer:

Q. You used it again over here when you were figuring Hutchinson County 3, didn't you?

A. Yes, that's right.

Q. That makes seven, and you had two others. You would have to check to be sure—Hutchinson 4 and Moore County 5. I don't know whether you used either one of those or not, but we do have seven definitely.

Mr. Spencer: They used Carson 4, they say, so that would make eight.

By Mr. Keffer:

Q. Now, does that appear to be right to you, Mr. Hammer?

Mr. March: I'll tell you, Mr. Keffer, I think you slipped up one. We can have him make a check on that during the recess and bring in what it is exactly on all of them. These gentlemen here said you slipped up one.

Mr. Keffer: I tried to count them.

Mr. March: We can check those.

Mr. Keffer: In fact, it doesn't make so much difference over here. It runs in practically—

Mr. March: We can have the witness check—

The Trial Examiner: Mr. Keffer, perhaps if you will specifically designate the quadrant that you desire that information on—

Mr. Keffer: Moore County 1, Moore County 2 and Hutchinson County 3. I think that would be enough to illustrate the point.

The Trial Examiner: Those are the quadrants that you desire, Mr. Keffer?

Mr. Keffer: Yes. It will be a very small matter to compute it.

The Witness: It would.

The Trial Examiner: He wants it for those three.

Mr. Keffer: I want it to illustrate and to show particularly what it is in the west part of the field.

The Witness: Did someone make a note of that? I didn't get those written down.

By Mr. Keffer:

Q. That was Moore 2, Moore 1 and Hutchinson 3.

You might take one other—take Hartley County, also, and one more, Wheeler County 1, also.

A. Are we going to have a five-minute recess here?

Mr. Keffer: I am not going to add any more here. Take Wheeler County 1. I would like to see what it shows.

The Witness: I am not sure that I have here the information on Wheeler County.

Mr. Keffer: Just give us what information you have on it, Mr. Hammer, and that will be all right.

The Witness: It will be entirely from memory because if it needs to be exact I would want to check it.

Mr. Keffer: That's all right. We might have a recess at this time.

The Trial Examiner: Very well, we will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Keffer:

Q. Have you computed the use of the various quadrants referred to and the respective various computations, Mr. Hammer?

A. Yes, I have rechecked them. I will just read them and give them to you.

Q. That will be perfectly all right.

A. I used Moore County Quadrant 1, six times; used Moore County quadrant 2, seven times; used Hartley County Quadrant three times; used Hutchinson Quadrant 3, four times.

Q. Well, now, you are just including Canadian River's computations there?

A. That is what I utilized in my exhibit.

Q. I know, but I was asking for the field as a whole, Mr. Hammer.

A. That wasn't my understanding at all.

Mr. Spencer: That is the last thing we said.

Mr. Keffer: I intended certainly to make that very clear.

The Witness: I understood his last statement was that he wouldn't ask me for anything but Wheeler 1.

Mr. March: That was what it was. I remembed it distinctly. We will be glad to figure this out for you, but in the five-minute recess we had he was unable to define any more. We will compute the others after the recess this afternoon.

By Mr. Keffer:

Q. You used Moore County 2, seven times, as you gave it there?

A. That is true.

Q. You used it again in figuring Quadrant 5, Moore County, didn't you?

A. I presume so but I would have to check it.

Q. It is just broadside against it. I think you would be safe in saying that.

A. I would say that was right.

Q. I think on your basis you used it in computing Moore County 4, didn't you?

A. You are talking about Moore 2?

Q. Yes, you used Moore 2 when you computed Moore County Quadrant 4?

A. I believe so, but that—

Q. Of course, your isobaric lines would indicate a drain from Quadrant 4 to Quadrant 2?

A. I believe that is true.

Q. That would make Moore County 2, nine times. You can check that, if that is not correct, and correct it. That would make it nine times, wouldn't it, as we have discussed it?

Come over to Hutchinson County Quadrant 3, you would have used it again in computing Moore County 6, wouldn't you?

A. I believe we did.

Q. And in computing Hutchinson County Quadrant 5?

A. No, Quadrant 4.

Q. Oh, I see. Quadrant 4?

A. That is right.

Q. That would be two more times, Hutchinson County 2?

A. I imagine it would be.

Q. That would be three more times?

A. That is right.

Q. And possibly Carson County 3—you will probably want to check on that.

A. I would want to check on that.

Q. Anyway, that would make Hutchinson County 3, seven times and possibly eight times, is that correct? You can check it tonight.

A. I would want to check it.

Q. Now, you have used those quadrants along your axis more than you have the quadrants out on the edges on either side in the west part of the field, haven't you?

A. Well, before I would want to answer that I would want to check the rest of these quadrants. We have just picked out a few here.

Q. All right, you might check them on either side and see what the difference is, if any.

A. I wouldn't want to make a definite statement until I could check them.

Q. It stands to reason where you have a quadrant that is entirely surrounded you necessarily use it more times than a quadrant out on th edge of the field and where you just have quadrants on three sides of it. That would almost certainly follow, wouldn't it?

A. I imagine that is true. I would want to check it.

Q. All right, you check that and tell us if that isn't absolutely true. You can do it without much difficulty, can't you?

A. I can do that tonight.

Q. Now, Mr. Hammer, we had something about Wheeler County 1. What was your information on that?

A. Well, on Wheeler County 1 our information was that—well, in 1939 there were really no gas wells in Quadrant 1, Wheeler, and apparently the past history was such that the operators, outside of a couple of little oil pools that were in there, hadn't thought enough of the territory to drill it for gas, so we didn't consider Wheeler County Quadrant 1 as really being commercial gas territory.

Q. Well, then, how did you figure the reserves in it?

A. We didn't give it any reserve.

Q. None at all?

A. No.

Q. You just figured it out?

A. Threw it out.

Q. You didn't figure it in with any other reserves?

A. I don't believe so, no.

Q. Now, how many wells did you say were in that?

A. In Quadrant 1?

Q. Quadrant 1 of Wheeler County.

A. My remembrance—you are talking about gas wells?

Q. Gas wells, that is right.

A. I don't recall offhand but I think there were no gas wells that were hooked up. My remembrance is that there weren't in that area to exceed two wells that were even

considered as gas wells and they were very small wells quite a long distance from the pipe lines, and it was my opinion that that area over there in Quadrant 1 of Wheeler County really shouldn't be considered as productive territory.

Q. You did have some oil wells in there that had produced some substantial volumes of gas, hadn't you?

A. Well, it probably had, but the oil wells themselves didn't amount to very much. As compared to the rest of the field, they were small wells.

Q. Had there been much pressure decline in that area?

A. Well, around those pools, as nearly as we could get the information, there was considerable decline. I would say this, that of all the area in the entire field there was less data upon which to base anything in Quadrant 1, Wheeler County, than in any of the rest of them.

Q. Then the upshot of it is, whatever it might be worth, there are some areas in the field even today where you don't feel justified in applying pressure decline methods?

A. Or any other method.

Q. Why didn't you try the sand thickness porosity method on that for a little diversion to see how you came out?

A. I didn't have any time to waste.

Q. Are there any more quadrants like that in the field?

A. Well, there are some that approach close to it.

Q. What are they?

A. I would have to do a little checking on that.

The Trial Examiner: Do you mean, Mr. Keffer, Quadrants which he had disregarded or had similar characteristics?

Mr. Keffer: That had similar characteristics to Wheeler County 1. He might not have disregarded them but as a matter of fact, I don't think he did.

The Witness: I may have some notes on that. Does someone have available that exhibit that we put in on the reserves for the entire field?

Mr. Lange: Yes.

The Witness (Examining document): Wheeler 1 on Exhibit 186, on that you will notice it was assigned no reserve

at all. You will also notice on the same exhibit 186 that Wheeler Quadrant 5—

By Mr. Keffer:

Q. Which one?

A. Wheeler 5.

Q. Wheeler 5?

A. Yes. We could only give that a remaining reserve per acre of about 2,921 Mcf., which is very small for productive territory.

Q. Is that per acre or for the Quadrant?

A. No, that is 2,121 Mcf. per acre. Of course, what I am talking about are the figures on remaining gas reserves per acre. Actually you will notice that the highest assigned to any of the quadrants in Wheeler County is 6,980 Mcf. per acre.

Q. Remaining reserve?

A. That is right.

Q. Down to the 25-pound abandonment pressure?

A. That is right. That shows that there are some areas there, particularly Wheeler 5, that if you had to drill them today you probably wouldn't drill them because of the small amount of gas per acre.

Q. Take Wheeler County 5, what is the pressure on that, Mr. Hammer?

A. You mean the weight of the pressure?

Q. Yes.

A. Well, I don't know that I have that with me. I really don't believe I have, Mr. Keffer.

Q. Well, you can tell by looking at the map it is very, very low, can't you?

A. I think that is right.

Q. Do you know how low it is?

A. I wouldn't want to say until I checked it.

Q. Sir?

A. I wouldn't want to say until I checked it.

Q. Let's look at the map, Exhibit 179. I think it will indicate that.

A. It will show the isobars.

Q. Wheeler County 5 starts with the pressure on the south side, having a pressure of about 200 pounds?

A. That is correct.

Q. Then it varies from about 90 to 200 pounds.

A. Yes, from 200 at the high to about 90 for the low.

Q. Are there any other quadrants in the field you find in about that situation, Mr. Hammer?

A. No, in general I wouldn't say there is.

Q. How about the quadrants over in Gray County, Quadrant 2?

A. Well, that appears to be, although the pressure is relatively high there, this has been assigned to a low amount of gas per acre.

Q. A what?

A. A low amount of gas per acre.

Q. You show better than 8,000,000 feet per acre remaining?

A. Yes.

Q. That is down to 25?

A. Yes.

Q. Isn't that a pretty substantial volume of gas?

A. It might be under certain conditions.

Q. Has there been any production much from that quadrant?

A. No.

Q. No production from them?

A. There has been—their production has been very small.

Q. How did you get your estimate on it? Did you use the porosity sand thickness method on that one?

A. No.

Q. Tell us how you did it?

A. Well, by balancing or grouping—I am talking from memory because I don't have these groupings here.

Q. I understand.

A. My remembrance is that we used Quadrant 1 and Quadrant 4 in Gray County, Quadrant 5, Gray County, and Quadrant 4, Gray County. In other words, we grouped this area right across here south of the structural depression.

Q. I am not sure that I understand you. Rather than use the porosity sand thickness method you threw that in with another quadrant, didn't you, and considered it all as one quadrant? Didn't you throw that in with Quadrant

5 of Gray County and ignore your boundary lines between quadrants?

A. No.

Q. You didn't do that?

A. No. I feel quite sure—as I said, I would want to check that.

Q. In weighting that number 5 down there with the others when you had no production, how did you reach out and get a weighting figure, a figure you used in your weighting process?

A. Well, there was production on both sides of it, both to the east and to the west.

Q. You took the production in other quadrants and determined that that ought to be the production in Quadrant 2, Gray County, is that right?

A. Well, we assigned—

Q. Sir?

A. We grouped that just as we have grouped the others except that we couldn't group anything to the north of it, so that is my remembrance, we grouped it to the east and west of it.

Q. We may be talking about the same thing, Mr. Hammer, but the whole point is that on Quadrant 2 in Gray County you didn't have enough data to figure it by itself?

A. That is true.

Q. Now, in order to get enough data to figure it you had to go out and throw it in with some others and get an average figure, an average of what they all showed, and bring it back and assume that would be the figure on that before you started your averaging process, is that correct?

A. I don't think you could say we assumed anything. We simply took both areas and used the same process there.

Q. But in these county quadrants we have been talking about, except Wheeler 1, you had basic data you could utilize in each of the quadrants, and now you come down to Quadrant 2 in Gray County and you don't have that basic data. From what source did you get it?

A. I said that my remembrance is we took the data from Quadrant 1 and 4—no, Quadrant 1 and 6 in Gray County and Quadrant 4 in Gray County.

Q. All right. Now let me restate it.

You took what value you had in Quadrant 4, Gray County; Quadrant 1, Gray County; Quadrant 6, Gray County, and averaged that up, is that right?

A. Yes, we utilized those entire areas. That is my remembrance.

Q. Then you took that figure, whatever it was, that average figure, and arbitrarily applied it to Quadrant 2 to supply the missing data?

A. That is right.

Q. I thought we understood each other.

Now, as a matter of fact, Mr. Hammer when its gets right down to it you could have missed on your pressure decline quite a little, couldn't you?

A. Well, the data aren't as good as they are elsewhere.

Q. That is right, and you have already said with the pressure decline to be really good you have to have data behind it.

A. Yes, that is right.

Q. And the more data you have the better it is?

A. That is right.

Q. Now you have answered, I believe, or have shown us the acre content of that quadrant, that is, the remaining pressure to the 25 lb. abandonment, and I presume since there has been that little production the original reserves would be very similar to the remaining reserves?

A. No. Regardless of how small a permeability you might have, there would be bound to be some movement to nearby wells. In other words, I can't illustrate an area entirely because you don't know the extent—in other words, there hasn't been enough development in there to give you sufficient data.

Q. There hasn't been enough to get even the rock pressure there?

A. No.

Q. I mean the sand thickness porosity there.

A. No.

Q. So you are both about in the same boat from that viewpoint?

A. I think so.

Q. Now, to get over in Gray County, quadrant—just

south of that high spot in Gray County Quadrant 5, I guess it is—

A. That is the one we have been talking about?

Q. Sir?

A. Isn't that the one we have been talking about?

Q. Just a minute.

We were talking about the same quadrant after all?

A. Yes.

Q. Now let's go to Quadrant 5. What is your treatment of Quadrant 5, Gray County?

A. In general it is the same treatment for that as in the quadrant we had been talking about previously.

Q. Now, I believe you stated you had sufficient interest in that area which would be Quadrants 5 and 2, Gray County, being the area just south of the Gray County faulting, which we referred to earlier this afternoon, to make a much closer check on that than you did on other parts of the field, is that corerct?

A. In general as to the wells, I would say that was true.

Q. What did they show in there as to the number of wells and the size of them, Mr. Hammer?

A. I don't have that data with me but from memory it showed the wells were of very small potential.

Q. Yes, I believe you stated that earlier, didn't you?

A. Yes.

Q. Did it show a number of dry holes in there?

A. I would have to check that, Mr. Keffer.

Q. Do you have data with you whereby you can check the dry holes on that area?

A. I doubt it. I don't know whether I could or not.

Q. What attention do you pay to a dry hole in applying the pressure decline method?

A. Sir?

Mr. Keffer: Read the question, Mr. Reporter.

(The question referred to was read by the reporter as set forth above.)

The Witness: Well, a dry hole automatically indicates that immediately around the hole there isn't any—in other words, it is so tight, to use the oil field expression, that gas can't get into the part of the formation penetrated by the bit.

By Mr. Keffer:

Q. Suppose you found a good many of them in Quadrant 5, particularly in Gray County, and some of them in Quadrant 2, what would that indicate to you?

A. Well, under reservoir conditions as they seem to be and the character—I will put it another way. The character of the producing formation in the Texas Panhandle would be—I think I can best illustrate that, Mr. Keffer, the point I am trying to make, by telling of an occurrence that happened to me elsewhere.

Q. All right, go ahead.

A. We were drilling a hole for the Northern Pacific Railway Company in the state of Montana and a bunch of school teachers came out to—

Q. To tell you how to do it?

A. —to see this drilling rig. They said to the driller, a man by the name of George Waldrip, "How much territory will this hole condemn down there when you hit that sand at about 4500 feet?"

Without hesitation he said, "Madam, six inches, four thousand feet underground."

That is the point I wanted to bring out here.

Q. I get your point exactly.

Let's apply it both ways, Mr. Hammer. Coming back to the leases you were talking about so much this morning and which you held down to about 640 acres, why didn't you hold them down to about six inches there each way around the hole? They were tight spots and we agreed on that.

A. Well, you are coming to the question of the variables of permeability.

Q. But if a dry hole in a tight spot over here condemns practically nothing, then a small well in a tight spot over in the west part of the field which creates a higher pressure area there which you referred to would mean nothing or little, wouldn't it?

A. No, I wouldn't agree to that.

Q. All right.

A. Because—

Q. That is all right.

Now coming back here to Gray County again, figuring

your acreage in there, you ran your isobaric lines as you showed them there and figured in dry holes?

A. I took the entire area.

Q. You didn't count anything out for the dry holes on the theory you figured six inches was all that was condemned anyway?

A. That is right.

Q. That would give you possibly an exaggerated figure down there of acre content in that area?

A. Well, I think that is a good point there to illustrate. If you utilize an area like that with other areas you automatically, because you do use it, create a lower reserve in another area.

Q. Why do you?

A. Well, because you are taking into account bigger acreage for the same amount of gas that has come out.

Q. You figured those areas right close to eight million feet, two of them, I expect, per acre, so that is a pretty high figure to start with for dry holes?

A. What two are you talking about?

Q. Quadrant 2 and 5, Gray County.

A. Well, the point there—You mean just those two?

Q. Sir?

A. You mean just those two?

Q. Yes.

A. Well, it is possible that—I will put it this way, if I may answer the question in my own manner.

Q. All right, go ahead.

A. Under present conditions of supply in that territory it might not be economical to drill or try to produce from that area, but there may come a time when economic conditions change and when it would be profitable to operate in that territory.

Q. I take it you mean by that when you get a great deal more for your gas than you can get today?

A. That time will eventually come. It has every other place.

Q. In other words, though you are not producing much gas you are getting more per thousand *cubic* feet, for example, and maybe the time will come sometime in the distant future when somebody will drill it?

A. I think that if that area there, for example, were in the Appalachian field they would be drilling wells in it.

Q. I wonder if we could move it over there? Do you know any way we could do it? I wonder if we could drill our wells over there instead of in Gray County?

A. I think that is it.

Mr. March: Another one of your affiliates are doing that, Mr. Keffer.

Mr. Keffer: I don't understand that, Mr. March.

Mr. March: I think another one of your affiliates are doing that.

Mr. Keffer: All right.

Mr. Spencer: I didn't know Mr. Keffer had any affiliates. I am glad to know that.

Mr. Keffer: That is right. I have a wife and daughter. I guess they are affiliated.

Mr. March: I was speaking professionally.

Mr. Keffer: All right.

I have one further question along that line, Mr. Hammer.

Q. The area we have been speaking of, Quadrants 2 and 5, particularly, in Gray County, hold pretty well true to the conditions you found there in the southern portion of Quadrant 4, Gray County? You didn't find much deviation there, did you?

A. Well, I wouldn't say that would be a true statement of the situation.

Q. I will qualify it to the degree you think it ought to be qualified.

A. I would say that the southwestern part of Quadrant 4 and the northwestern part of Quadrant 3 in Gray County would probably be better territory than that to the east.

Q. Very much better?

A. It is better.

Q. Can you find any connected well in that area?

A. Yes, there has been some production out of that territory.

Q. Did you find any dry holes in that area?

A. I believe that there were one or two that I remember.

Q. Well, did you find the wells in that area were generally small, this additional area you described or referred to?

A. You mean the area to the east?

Q. Yes. Were these generally small wells?

A. I think in general that is true, that is, along the extreme edge at that particular point.

Q. What is the pressure generally prevailing in that area as shown by your isobar map, Exhibit 179?

A. Which area, Mr. Keffer?

Q. In areas designated by Quadrants 2 and 5, Gray County, and 3, and the south part of Quadrant 4 in Gray County.

A. There is one well just south of this depressed area here situated in Quadrant 5, Gray County, that was reported by the Texas Railroad Commission to have a pressure of 435 pounds in 1939.

Q. In Quadrant 4 the pressure in the south part would be from 380 pounds upwards, would it not?

A. No, because in the southeastern part of Quadrant 4, Gray County, with the northeast Quadrant part of Quadrant 3, the pressures there got down to 360 pounds—

Q. That is the result of one well, isn't it?

A. No, I think there are two wells there.

Q. Two wells pulled it down but otherwise the pressures will run from 380 pounds up to virgin rock pressure, or near that, to 430 pounds, is that correct?

A. The Texas Railroad Commission in 1939 reported the pressure there at 435 pounds.

Q. 435 pounds?

A. Yes.

Q. That would be true of the wells in Quadrant 2, Gray County, and Quadrant 5, Gray County?

A. That is right.

Q. And in Quadrant 3, Gray County, except for that area of two wells that you spoke of, is that correct? In fact, this Quadrant 3, except for that area, consists of wells 400 pounds and above? I mean except the isolated area of the two wells which you referred to.

A. Yes, that is right.

Q. So the area prevailing in there is much higher—I mean, the pressure in that area is much higher than the general average pressure of the field?

A. Yes, that is true.

Q. Now, Mr. Hammer, in applying your pressure decline method—strike that.

You made a statement that it might take a million years for the field to equalize?

A. I think I made such a statement.

Q. How did you figure that out? How did you calculate it?

A. It was just an expression.

Q. As a matter of fact, it has only taken about fifteen years at the outset for it to get in this shape, hasn't it?

A. That is quite a different problem, Mr. Keffer. The thing that put—

Q. Just answer my question. It has only taken it about fifteen years to get in this shape, hasn't it?

A. That is right.

Q. Then gas will continue to flow as it has in the past and if it ate its way back to this position in fifteen years, isn't it reasonable to assume that something like that time or not much longer would cause it to equalize if those wells were shut in?

A. No, I don't think so. You see you are overlooking, Mr. Keffer, the fact that the thing that produced that low pressure area was gas that came out of the ground, vertically against—or, rather, vertically through conduits that had no *resistence* as far as permeability was concerned. That is quite a different problem from—

Q. What conduits are you talking about?

A. The tubing and the casing.

Q. I surely agree with you, but that is where you get into that six inch situation again?

A. Yes, but those casings come vertically out of the ground to the surface.

Q. Yes, I understand that, but how does that gas get to the casing in order to come out? What must it do first?

A. It has to have a pressure differential, of course.

Q. What does it come through to get to that casing?

A. The producing formation.

Q. The producing formation?

A. Yes.

Q. What does it go through when it is going to equalize across there?

Mr. March: You are presuming—

Mr. Keffer: I am not presuming a thing on earth, Mr. March. Mr. Hammer has testified it would equalize.

Mr. March: But he hasn't testified in equalization it would all run to the Borger area. It would be a hot spot in Borger if it all went over there.

Mr. Keffer: Go ahead and answer the question.

The Witness: Please read the question.

(The question referred to was read by the reporter as set forth above.)

Mr. Keffer: I will add "from the low pressures to the high pressure areas."

The Witness: Of course, it could only pass through the reservoir.

By Mr. Keffer:

Q. Every foot of gas that has ever been produced has passed through the reservoir at some distance or other to get to the well?

A. Certainly.

Q. If it didn't do that you would just produce the six inches that the casing uncovered?

A. Certainly.

Q. Now to go to these Panhandle Eastern Shamrock wells we talked about a little yesterday afternoon. We found there when a well was first drilled in that area that one-fourth of the pressure was gone, didn't we?

A. We found out the pressure had been reduced. I don't remember the exact amount.

Q. We figured out 109 pounds was the pressure in one case and it was a little over 100 pounds in another case, which would be more than a fourth, figuring down to your 25-pound abandonment pressure which you have figured. That pressure had lost 25 per cent of it in how long? How long did it take it to do that?

A. Well, that is a question that is largely—I don't believe it can be answered unless you knew the dates of all of the wells that had been drilled close to them and I don't know them.

Q. Let's assume they were drilled within the past two or three years, what would your answer be then?

A. They haven't been drilled within the last two or three years.

Q. How do you know that?

A. I know that in that area there within two or three miles of where those wells are that there hasn't been any wells drilled because they were drilled in 1939.

Q. 1939?

A. Yes.

Q. That has been less than a year?

A. Yes, since they were drilled.

Q. Did it lose that 25 per cent in a year's time across that two or three miles?

A. No, they—what time are you talking about—between when they were drilled and now?

Q. Yes.

A. I don't have any pressure as of this date.

Q. Do you know when the wells were drilled—the last wells are what we are talking about. They were drilled in an area which had lost through drainage, we will say, roughly 25 per cent of the gas then?

A. Yes, they had lost some gas.

Q. My point is, how long did it take that particular area to lose that 25 per cent of the gas?

A. Well, you tell me when this area up in the east part of Quadrant 6, Moore County, developed, and I can give you an answer.

Q. I will give you that in just a moment. However, before I give you that, let me remind you that you had all that drainage down to the south and the southeast, and not up to that spot at all.

A. When?

Q. Yesterday afternoon when we were discussing those wells.

A. Oh, no.

Q. I asked you where the gas went and you figured out a well down here in the Charles Ragsdale Survey as to where the gas would drain in the area where those wells were drilled.

A. I don't think the record shows that. I said "locally." I am talking about the local load down there.

Q. You tried to leave the impression, or you did leave the impression with me, that the drainage was caused locally by those wells inasmuch as they were nearest to the southeast.

A. The point is that this area here in Quadrant 6, Moore

County—I don't recall the exact date—has been a low pressure area there for a number of years and the chances are that any gas from the area where these wells were drilled in 1939, there would be the lowest low pressure area and it would have the most direct effect upon it. That would be to the northeast.

Q. Why were you stating yesterday evening that the drainage was caused locally by the wells to the southeast?

A. Here is your low pressure area right in here between the high pressure area and another high pressure area at a higher pressure area down here (indicating), local low pressure area. Here is a low pressure area (indicating). Naturally you are going to get local drainage into the local low pressure area.

Q. You want to say now it is drained over to the Byrd-Armstrong pool in Quadrant 6?

A. I think that would have the greatest effect upon it.

Q. It is about six miles on an average?

A. No, it is about three miles.

Q. From where are you measuring to?

A. I am measuring from the high pressure area and from the high pressure wells. You can pick out any sections you want to down here and it will measure three miles.

Q. You took the high pressure wells. What I want to know is about those low pressure wells that had lost 25 per cent. It is altogether a different question. Those low pressure wells wouldn't drain across the high pressure well you measured in between and the low spot around the Byrd-Armstrong pool, would they?

A. No.

Q. Then when you said they lost their gas from the southeast you really meant that, didn't you?

A. I want to qualify that, Mr. Keffer.

Q. All right, qualify it.

A. This is only one map out of the five that we made. I would have to recall some way what the previous year's configuration showed.

Q. Do you have those other maps so that we can take a look at them?

A. They are in Washington, D. C.

Q. Does Mr. Roosevelt have them, or somebody up there?

A. They are all ready if somebody wants to look at them.

Q. Well, I won't go get them. The fact remains there has been drainage; let's agree on that.

A. We will agree on that.

* * * * *

Witness HAMMER further testified on cross examination, Vol. 57, pp. 7949-8107, inclusive, as follows:

The witness stated that the diverse conditions prevailing throughout the field and in particular areas in the field were not taken into account precisely in laying out his quadrants; that each quadrant contained various characteristics. There was a great variation in some of them in the producing ability of wells, particularly in Quadrant 2, Potter County. The variation was also great in Moore County Quadrant 2.

The witness also explained in this connection that a planimeter, which had influenced him in laying out the quadrants, was a device for measuring areas on a map and computing acre content.

The witness made no study of dry holes generally and did not remember whether Canadian's wells near the fault line were small or not. He just wasn't interested in the open flows of the wells at all. He stated that the southern and eastern sides of Wheeler County did not look good to him from a producing standpoint because the dolomite sections in those areas were not thick. He also stated that northern Hutchinson County was an area of low or slow open flows. He did not particularly remember the size of the wells in northern Gray County and Carson County along the limits of the field.

It didn't make any difference to him about the variation in open flows and other producing characteristics in his method of determination. This he says was all weighted out and eliminated by a process of grouping and averaging surrounding quadrants. He did this by starting from the west and going east, and says, he automatically took these things into consideration progressively.

For example, he took into account but four different quadrants in estimating the acre-content of the Hartley County Quadrant, but if these four quadrants had just been one area or one quadrant, then in order to determine the acre content he would have balanced this one large quadrant

with all adjoining quadrants. He would not have just taken the one large quadrant and figured the data on this quadrant alone because to have done so he would have eliminated other quadrants that would have a greater bearing on the matter. For example, Quadrant 3, Moore County, also Quadrant 2, Moore County; Quadrant 5, Moore County and Quadrant 2, Potter County, and if all of these quadrants were eliminated it would affect his result. Also, in figuring the Hartley County Quadrant as he did figure it, he gave no weight at all to the quadrants last mentioned.

A prior series of maps, prior to Exhibit 179, were taken into account in his reserve study, but these maps were not available for checking.

The witness further testified as follows (Vol. 57, pp. 7980-8016):

Q. Mr. Hammer, we were discussing quadrants generally in the western part of Moore County and the western part of Potter County, weren't we?

A. Yes.

Q. And I asked you if you could not have made your estimate just as well and gotten the same result in so far as Hartley County quadrant was concerned by considering only Potter County 3, Moore County 3, Moore County 4, and Hartley County all as one quadrant and one area.

A. And my answer was that this map doesn't represent what has happened over the five-year period that we utilized. This is a map for one year. There were changes some places.

Q. Well, obviously, you admit whether based upon this map or upon other maps that Moore County 4, Moore 3, Potter County Quadrant 3 all affected Hartley County quadrant, and as you say, you averaged them—that is not the word—

A. Grouped them.

Q. You grouped them?

A. Yes, that is true. I also stated that we had utilized it necessarily because it existed—a large area in Quadrant 3 and Quadrant 4, Moore County, which hasn't at any time indicated any drop in pressure. In other words, it is virtually virgin territory, but because we had utilized it, the resulting reserve was a minimum.

Q. I know you stated that. I believe it will be higher,

but we will argue that later. I think our position is clear in that respect.

Now, you just stated Quadrant 4 in Moore County; Quadrant 3 in Moore County, were virtually virgin pressures, I believe?

A. Part of them, that is right.

Q. Take them as a whole, they are all very high pressure areas?

A. Yes.

Q. And a great part of it is virgin pressure?

A. That is right.

Q. Are there any wells much in Quadrant 4 and Quadrant 3 in Moore County?

A. Well, there are a good many wells in Quadrant 3, Moore County.

Q. Where are they?

A. There is a well in Section 18, Block G & M Survey; there is another well in Section 22; there is a well in Section 23; there are two or three wells along the southern border in Block 019 in Quadrant 3.

Q. That makes about six wells?

A. So far. I am not through—

Q. Go ahead.

A. There are several wells along—

Q. Let's be specific. Let's don't say "several."

A. All right.

There is one well in Section 76. I think that is the EL & RR, Block P Mc Survey. There is another well in Section 73, G & M Block 2.

Q. Let's say that consists of two wells. Go ahead.

A. There is a well in Section 30—

Q. Let's check that well. It is very close to the edge, isn't it?

A. All right. There is another well in Section 22, EL & RR Survey, Block P MC. There is a well in Section 21 for the same survey—of the same survey. There is a well in Section 18 in the same survey; there is a well in Section 20 of the same survey.

Q. That would be seven of them.

A. There is a well in Section 14 of the same survey.

Q. Eight.

A. Mr. Keffer wants me to mention this dry hole in Section G & M Survey.

The Trial Examiner: As a well?

The Witness: He wanted me to and I told him it was a dry hole. I believe that is all except—I think those are all of the wells in there.

By Mr. Keffer:

Q. What about the next quadrant, Quadrant 4, Moore County?

A. That has little development.

I think it only has one well in the northwest corner in Section—

Q. Section 308, Block 44?

A. Section 308, Block 44.

Q. Now, Mr, Hammer, the one well in Quadrant 4, Moore County, which you referred to is in the very northeast section of the quadrant, isn't it?

A. Yes, that is right.

Q. Just as completely in the corner as it is possible for a well to be so far as the section is concerned?

A. It couldn't get much farther in the corner.

Q. All right. Now, of the eight producing wells you mentioned in Quadrant 3, two of them are right on the south line; that is, they are on Sections that really dip over a little into Quadrant 3, Potter County, aren't they?

A. They are right along the county line.

Q. That is right, right on the very south boundary line of your quadrant?

A. That is right.

Q. And the other six producing wells that you mentioned are right along in the southeast corner of the quadrant, aren't they?

A. In general they are in the southern part.

Q. That is right, and the farthest one away from your east quadrant line is about a mile and a half?

A. That is about right.

Q. There is an area, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20—no, I got down too far.

Well, we'll take this Quadrant 4 first. Quadrant 4 is ten miles long by 9 miles wide, that's 90 square miles, isn't it? Answer my question first.

A. Well, that's right, but a great part of it is outside Quadrant 4—is outside the limits of the field.

Q. That's right, I would say about half of it, roughly.

A. Well, my guess would be more than that.

Q. Well, if you started here with a straight line and came out over here (indicating), you would have about half.

A. Well, call it half.

Q. I think that would be a pretty close estimate, half of it.

We had 90 square miles, so we have got 45 square miles in there with one well, haven't we?

A. That's right.

Q. All right, now, we'll take this other quadrant, this Quadrant 3. It is about 9½ miles north and south and 9 miles east and west. Call it 9 miles square, that's 81 square miles, I believe, with eight producing wells.

A. All right.

Q. And those eight producing wells are all close to the south edge or the southeast line of the quadrant.

A. All right, that's true.

Q. And all of that is in the producing area as you have it outlined?

A. That's right.

Q. So you have there 81 square miles plus 45, that's 126 square miles, with 9 producing wells, all of them near the edge of the area, haven't you?

A. That is true, as far as you have gone, but—

Q. Yes, all right.

A. But you have left out of your consideration Potter Quadrant 3.

Q. I don't know whether I want to come to it or not, but I haven't come to it yet.

A. There are quite a number of wells down there.

Q. But the statement I have just made with respect to Quadrants 3 and 4, Moore County—

A. In general that is true.

Q. Now, don't you have far more wells per acre, far closer spacing of wells in Quadrant 5 and Quadrant 2 in Gray County than you have in Quadrant 3 and Quadrant 4, Moore County?

A. Read that question, please.

(The question referred to was read by the reporter as set forth above.)

By Mr. Keffer:

Q. Far more?

A. No, I would say there were fewer wells.

Q. Per acre, if you are considering the acres?

A. Fewer wells.

Q. Well, how many wells do you find in those two quadrants, including your dry holes?

A. Well, I find, as near as I can tell from the map, six wells. I can't say whether they are dry or not from the map.

Q. All right. Now, take the area that we have referred to, Quadrant 5, Gray County, and Quadrant 2, Gray County, limiting it to the confines of the field, taking your scale, don't you find at least twice as much area out here in Quadrant 3, Moore County, and Quadrant 4, Moore County, than you find in Quadrant 2 and Quadrant 5, Gray County, this area right in here (indicating) than in this area (indicating)?

A. Yes, the acreage is larger.

Q. So you really have more wells per acre, closer spacing of wells over in that quadrant—that is, Quadrant 5 and Quadrant 2, Gray County, than you have in Quadrant 3 and Quadrant 4, Moore County, haven't you?

A. Compared to acreage that is possibly true.

Q. Now, I think you will find more wells over there, Mr. Hammer. I am not assuming that you counted all the wells. It is hard to do it on this map. I appreciate that the scale is so small, but that is enough to illustrate the very thing that I have in mind.

I believe I asked you that the wells are better grouped over Quadrant 5 and Quadrant 2, Gray County, than they are over Quadrant 4 and Quadrant 3, Moore County?

A. You don't mean better grouped—

Q. I mean they cover the area—they are better distributed—that's the word.

A. Yes, that is true.

Q. That is correct. Now, if you didn't have enough data to figure Quadrant 5 and Quadrant 3, Gray County, which you said yesterday that you didn't have, and had to take the figures from some other counties to get that—some other quadrants to get that—then you didn't have enough out here to figure Quadrant 3 and Quadrant 4, Moore County?

A. That is an analogy that doesn't exist.

Q. Tell us why.

A. Over in the quadrant we are talking about in Moore County with the exception of that one dry hole, the Brown I believe you call it, there haven't been any wells, at least to my memory, to indicate that the development would not continue on to the west. In other words, you have over here in Hartley County a gas well. All right, now, you have a gas well over here and you have a series of gas wells over in Quadrant 2 and you have some gas wells in Quadrant 3, and you have gas wells in Quadrant 5, Moore County, and you have a gas well in Quadrant 8, Moore County. There isn't any reason to suppose but what this territory across here is not all productive territory.

Q. That may be very true, but that still doesn't answer my question. You have had that same situation over in Gray County, didn't you?

A. Well, but the point is that we have more reason to believe that conditions are similar in Moore County.

Q. No, I don't believe you understand my question. You had wells that were located pretty generally over Quadrant 2 and Quadrant 5, Gray County, enough to give you, I should say, a very good picture of those two quadrants.

A. None of those wells, as I stated, and as I think you agreed, had been connected up. They had not given out any production. The wells over in Moore County have.

Q. All right, but the wells have been giving up the production; they weren't in the area that you were estimating?

A. No, naturally; part of that area has not been drilled.

Q. Now, you take Quadrant 4 and Quadrant 3, great areas in which no wells have been drilled, and a great, major portion of that area which has not been drilled is 430 pounds virgin pressure, as you have figured it?

A. Yes.

Q. As you have figured it, and all of them are high. Now necessarily when you were averaging those quadrants in with Quadrant 5 and Quadrant 2, we'll say, Moore County, to get the production out there in Quadrant 4 and Quadrant 3, and your rock pressure was one of the most important things in that average, you have actually taken wells, very largely over in 5 and 2—Quadrants 5 and 2, and assigned to them the rock pressures on Quadrants 4 and 3 in your averaging and got a distorted figure, didn't you?

A. You have left out an equally important factor.

Q. All right, you name it.

A. That is the acreage involved.

Q. That is important. Now, you go ahead and answer it.

A. Well, now, by the very method—let's take for example one example and I think it will suffice.

Q. All right.

A. We have mentioned before and I will try to explain it again, if you take Quadrant 2, Moore County, and just assume that there is no production at all in Quadrant 3, and you make your determination on Quadrant 2 alone, then using the same production in Quadrant 2, if you then embrace all of the acreage in 3 and combine the two, the result will be a minimum result because you have taken in so much more acreage.

Q. There would be a minimum result per acre?

A. Minimum result per acre pound.

Q. Per acre, I'll grant you that.

A. Per acre pound.

Q. But doesn't necessarily result in the minimum per billion cubic feet in the area reserves?

A. Yes, it does.

Q. You tell us how.

A. If you get a minimum production per acre pound and you apply that to the acreage—

Q. I know, but you have got twice as many acres or maybe three times. That is the catch in the whole thing?

A. Well, the point is that—this whole thing is based on the production per acre pound. Now, if you get a production per acre pound—

Q. When you get a production per acre pound, in order to get the production for the area you would multiply it by the acres, wouldn't you?

A. Well, when you get the production per acre pound that is the first thing that is determined.

Q. Oh, of course, and then the next thing, you multiply it by the acres and the more acres you have got the more reserves you have got?

A. By acres and by pounds.

Q. You have already had your pounds.

A. And by the volume of gas. You have three factors.

Q. Well, no, the volume of gas is what is your answer. You don't assume what that is before you start your calculation. That is what you end up with.

A. No, but you determine first your production per acre pound.

Q. Surely.

A. All right, then, and assume that you would double your acreage, it would cut your production per acre pound decline in half.

Q. Of course, but still you would have twice as much acres in the reservoir because you double your acreage

A. Well, you would have a larger amount, that's true.

Q. All right. We had a big argument on that the other day and I think we finally settled it.

The Trial Examiner: We will take a short recess.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Keffer:

Q. Just another question or two, Mr. Hammer, on the things we were discussing, to gather up some loose ends.

You have originally your virgin pressure and comparatively little production in Quadrants 3 and 4, Moore County.

A. In general that is true,

Q. You have more production in Quadrant 5, Moore County, and Quadrant 2, Moore County, which is just to the west of 4 and 3.

A. Just to the east.

Q. I mean just to the east.

A. That is true.

Q. Now, it was necessary as a matter of fact—as a matter of fact, it just resulted, in the way you did it, that you take production pretty well, almost entirely, in Quadrant 5 and Quadrant 2 to determine your values in Quadrants 3 and 4?

A. Yes, they were grouped in, that is true.

Q. And the grouping resulted, since most of your production was in 5 and 2, most of your pressure drop was in 5 and 2, you evidently had to take—or in your adjusting,

you necessarily gave effect to those factors in 5 and 2, to determine your reserves in 3 and 4?

A. Yes, that is right.

Q. That's right. Now, in 3 and 4, if it should develop into a lean area—remember they are on the edges of the field there—although the pressures are relatively high, then you have got too high a figure for 3 and 4. That would follow, wouldn't it?

A. If they should develop to be lean, that is true, but we haven't any reason to suspect that they will.

Q. Did you examine the sand thickness on that—porosity?

A. Hardly.

Q. All right, now, if you had done that you would have gotten some idea of that, wouldn't you?

A. Sir?

Q. If you had done that you would have gotten some idea about it, wouldn't you?

A. No, I believe it wouldn't have helped any to speak of.

Q. You don't?

A. No.

Q. If you had studied the geology of the field and found that where your formations are dipping downward that your production begins playing out, just as you found over in Gray County and Wheeler County—

A. That isn't—

The Trial Examiner: Wait until he finishes the question.

By Mr. Keffer:

Q. —you would then have considered from that factor that the areas in Quadrant 4, Moore County, and much in Quadrant 3, Moore County, would have been light areas—lean acreage, wouldn't you?

A. If the assumption you make is true, it would be true, but you are comparing something over in Gray County with something over in the northwest part of Moore County.

Q. Oh, no, I'm not.

A. —and right along this edge of Moore County is a highly prolific area.

Mr. March: Quadrants—

The Witness: Quadrants 7 and 8, and down on the edges of the field.

By Mr. Keffer:

Q. That is the exception in the Panhandle field.

A. It is the closest to the area we are discussing.

Q. Well, now, let's see if it is. How about this right here, this right in the corner of Quadrant 3, along Potter County, you find small wells there.

A. I'll agree that there are small wells there but there are large wells here in northern Moore.

Q. Even those large wells don't go right out to the boundary lines of the field.

A. They exist just the same.

Q. They may be a little closer than in some other place, but that tapering off even begins there, doesn't it?

A. I wouldn't say that from memory that it did.

Q. As a matter of fact, isn't the reason they come out close and taper off so quickly that you have a very definite pronounced down-dip there that you don't have around here?

A. Well, I started to make a structural map of the field and never had time to complete it.

Q. You just don't know, then?

A. I wouldn't know as to the local dips there, no.

Q. Now, just what effect, if any, then, have you given to the degree in which one quadrant affects another quadrant, Mr. Hammer?

A. Well, there are various—when you use "degree," there are various degrees, so it is difficult to—couldn't you be more specific? I don't know that I understand you.

Q. Well, maybe so. One quadrant you say does affect another quadrant.

A. I said that there is some effect, that is the reason they were grouped.

Q. Now the degree may be different in each—in different cases. Now, what effect do you give to the variance with which one quadrant might affect another as compared to any other grouping?

A. Well, I think the method we used in balancing these out fairly took care of all of—of any variables in degree as between quadrants that were utilized.

Q. I know you think that, but I am asking you to give the reasons why you think that, is what I am really after.

A. Well, as I have repeated several times, it is a question of balancing and grouping areas adjacent to the quad-

rant in which we wanted to get a production per acre pound from which we could calculate.

Q. As you have explained heretofore?

A. That's right.

Q. That is the only method you have used?

A. That is right.

Q. Now I come back, Mr. Hammer, to large wells you referred to in Quadrant 8, Moore County, maybe some of them Quadrant 7, also Moore County. How do you know those wells are large?

A. Well, suppose I answer that this way—I will have to look at the map.

Q. My point is—I might explain it a little more fully—you state a number of times you paid no attention to the size of the wells, that's the only thing.

A. I said as to individual wells.

Q. Well, those are individual wells, aren't they?

A. Well, it is just another case where I know from having looked at a few of the open flows and having discussed the area that it is a highly prolific area and having even read since I left there of some very large wells being drilled in there, I just naturally know that it is a highly—an area of high potentiality.

Q. Yes, all right. Then you do definitely associate productivity with the size of wells in that area?

A. I said potentiality—

Q. All right.

A. Open flow. I know that the potential there is high.

Q. And you have also said that is a prolific area. Then you associate the two—in that particular spot, I am talking about?

A. Well, there is an association there, yes.

Q. How's that?

A. There is some association, that's right.

Q. That's right. I think there is a very definite association, don't you, between the two?

A. No, I wouldn't say it is very definite.

Q. Now, Mr. Hammer, let's be perfectly frank. Every time you want to make a point by associating them you do, and when you would rather not associate them because it might go the other way, you don't.

Mr. March: I object to that remark by counsel.

Mr. Keffer: Wait until I finish.

Q. Isn't that your reaction to the whole thing?

A. No, that's not my reaction.

Mr. March: I object to the question and move that it be stricken because it is apparent here that the witness testified that when he made this estimate of reserves he didn't have to give that consideration, that he did have some general knowledge of the field, but in the preparation of this exhibit he did not have to locate the wells of large open flow throughout the field.

I realize, Mr. Keffer, you have gone to a great deal of pains here to try to put the witness in the position of accusing him as you have right now. I move that the question and answer be stricken.

Mr. Keffer: I will permit it to be stricken. I have no objection to the question and answer being stricken if you want it that way.

The Trial Examiner: Very well.

Mr. March: You realize I want you to have free cross examination, but not to the extent of deliberately—well, I won't say that. We'll strike that, too, because we might get into a large discussion here. You understand my position, Mr. Keffer.

By Mr. Keffer:

Q. All right, now, refer to Page 14 of your statement, Mr. Hammer. Now, I read from your statement as follows, Page 14:

"Furthermore, it is axiomatic that in anything made up of components having diverse characteristics, an average based on the whole is fallaceous and invalid for the reason that it does not weigh in the characteristics of its diverse component parts."

Now, that being true, you didn't take the field as a whole, did you?

A. That's true.

Q. That is apparent in many, if not all of your quadrants, isn't it?

A. That's right. It was balanced out, not for the field as a whole.

Q. When you balanced out, you mean just what you have said heretofore about balancing?

A. That's right, grouping.

Q. Grouping, that's right, and you had those diverse characteristics in some groups, too, didn't you?

A. Yes, but—

Q. But, nevertheless—oh, pardon me.

A. —in the system of grouping that we used we attempted in every way possible to take into consideration those diverse characteristics locally.

Q. All right, now, right there—but assuming that you did just that, did everything that you could, yet what you did in the various groupings was merely to take an average, wasn't it, that was the best you could do?

A. Well, weighting, yes.

Q. All right, your weighting was your average?

A. Yes, it amounted to an average for each quadrant.

Q. Which is the very thing you say in the statement you can't do without getting a false answer, isn't it?

A. No, I don't think you understand what I meant there.

Q. Yes, I understand perfectly what you said there in your written statement and what you said in answer to my question a moment ago.

A. The point is that we didn't take into consideration the whole. That's the thing—the whole field. We took into consideration the various parts of it locally.

Q. I understand that perfectly, but the various parts that you did take into consideration have the self same diverse characteristics that you have been talking about, that's the only thing I'm asking.

A. They do have diverse characteristics and in the method we used locally, we weighted them out by grouping the areas.

Q. You weighted them out by averaging them?

A. Well, I suppose you can call it averaging if you want to.

Mr. March: By that you mean an arithmetical average?

The Witness: Well we grouped them and took the—

Mr. March: Or weighted average?

The Witness: The weighted average, that's what it was.

Mr. March: As distinguished from an arithmetical average?

The Witness: That's right, a weighted average.

Mr. Keffer: Is that all?

Mr. March: Yes: I beg your pardon.

Mr. Keffer: That's all right.

Q. The weighted average is, of course, as you have already described many times?

A. Yes, sir.

Q. You could have done that for the field as a whole, couldn't you?

A. You couldn't have—no, I wouldn't say you could. You couldn't have applied the—and that's just the point I want to make. You couldn't have applied the characteristics of Moore County and weighted them against the characteristics of Wheeler County, for example, and have got a correct answer for either one.

Q. All right, why not just cut off Wheeler County and figure the two separately?

A. Well, I think as far as Wheeler County is concerned, we took into consideration the local variations and they were weighted out.

Q. All right. Now, we have spent a lot of time on that, Mr. Hammer, and I am going to move on.

As a matter of fact, how do you know you couldn't apply it to the field as a whole? Did you make any effort to?

A. Yes, I made an effort to.

Q. What figure did you get when you did that?

A. I don't remember that. I know it was a figure that—well, I just did it roughly in about an hour one morning.

Q. An hour?

A. Yes, with some figures I had, and it seemed to me that it wouldn't give—well, I just felt that it wasn't right.

Q. It just didn't give you the answer you were looking for?

A. That is not true at all.

Q. Didn't it give you substantially less than you got when you hit upon these quadrants?

A. No.

Q. It didn't?

A. I don't believe it did. I don't remember the figure. I just say I decided that this was the better way to do it and I have stated why I thought it was a better way to do it.

Q. I know you have, but my question is, when you disregard your quadrants and figured the field as a whole you got a substantially less figure than you did when you set up those quadrants and figured them in and then totaled up *you* quadrants. I am asking you that pointed question.

A. As I say, I don't recall what the figure was.

Q. Will you look in your working papers and find out what your figure was?

A. No, as I say, I threw that in the waste basket.

Q. Threw what in the waste basket?

A. What little calculation I had. I didn't even consider it.

Q. Well, how do you know it was wrong?

A. Because we decided that we would get a whole lot more accurate answer—

Q. How did you know what was an accurate answer?

A. Well, we decided we would get a whole lot more accurate answer if we worked the thing out by the local characteristics from one and to the other and then took the summation of those, and that is what we did.

Q. And you didn't even check by applying it to the field as a whole to see if there would be any difference in your answers?

A. Not in general; no.

Q. You didn't check it by any other method?

A. No.

Q. You just shut your eyes to everything except just what you did here?

A. We used this method throughout.

The Trial Examiner: What process, Mr. Hammer, did you go through to make this calculation?

The Witness: Oh, I just had a few figures and I said, "Well, if such and such were true, such and such would be true," and I said, "Well, after all, it seems to me that here we have a great field 120 miles long with all sorts of

characteristics from one end to the other, variables in potential, variables in production per acre pound decline, variables in regional sand characteristics, and if you tried to weight out or utilize the whole field, that would never get a figure that you could apply locally to determine the reserves in any given area that would mean anything."

The Trial Examiner: Well, now, if through a matter of curiosity the Examiner decided that he would calculate the reserves in this field on the basis of the whole field, are there figures now in the record which the Examiner could take and make the calculation that you have just stated you have made?

The Witness: —I believe—well, I wouldn't want to say. I would have to look to check. May I see that sheet, please?

(The document referred to was passed to the witness.)

No, I don't believe they are.

Mr. March: By that you don't mean to say that you haven't presented an exhibit which shows the reserves in the whole field?

The Witness: No.

Mr. March: You have an exhibit which shows the reserves of the entire field, the exhibit marked for identification as Exhibit 186?

The Witness: That's right.

Mr. March: But what you are trying to say is—as I see what the Examiner is getting at is this: that could he take your figures as you have them here in your exhibit and apply another method which would be to take the whole field as a whole, without disregarding all quadrants and arrive at an answer.

The Witness: No, I don't have.

Mr. March: He might arrive at some figures but the figure in your opinion that he would arrive at would be an unsound method and be inaccurate?

The Witness: That is my opinion.

Mr. March: Here is the thing, the witness was asked about the Phillips Petroleum Company and he answered the question.

Mr. Keffer: Who asked him about Phillips?

Mr. March: You did.

Mr. Keffer: He volunteered the statement. I asked him nothing about it. The statement was volunteered on that.

Mr. March: We'll check the record on that.

Mr. Keffer: All right, check it.

Mr. March: The Examiner will remember distinctly that it was agreed by both Mr. Hammer and Mr. Keffer that there was a difference in the application of the quadrants. That type of method was not used in the Phillips—

Mr. Keffer: Let's stay with the record. There was nothing said about any quadrant being used.

Mr. Spencer: Mr. Examiner, perhaps we can shorten this. Let me ask you this, Mr. Hammer: If you handed back to us your working papers on the entire field, we would then have sufficient data to take, to make that computation?

The Witness: I do not have them here. The only working papers that I have is the tabulation that I turned in. I don't even have the working papers for the entire field, I mean outside of the working papers that you have already had.

Mr. Spencer: If you will hand us back the working papers that you gave us prior to the commencement of your cross examination, we will attempt to supply the Examiner with the figure from his working papers that you were asking about.

The Trial Examiner: I don't know that it is necessary, Mr. Spencer. I was merely curious to determine whether or not I could make that calculation on the basis of the figures that are contained in these present exhibits and not a necessary or important thing so far as the Examiner is concerned.

Mr. Spencer: I would put it on this basis: I have more than curiosity on it. I would like to do it.

Mr. March: As a matter of fact, you have already started to do it, haven't you?

Mr. Spencer: You can read my mind pretty well, Mr. March, but not quite that well.

The Witness: Mr. Spencer, may I suggest this: You will recall that I had some difficulty trying to find the tabulations that I turned in. Now, before you go to that trouble or ask anybody else, let me have a chance to search and see if I do have. Now, I don't know that I do have.

Mr. Spencer: That's all right.

Mr. Keffer: Are you through, Mr. March?

Mr. March: Certainly. Pardon me, Mr. Keffer.

By Mr. Keffer:

Q. Mr. Hammer, regardless of the merits or demerits of the pressure decline method, if you take the whole field as a whole, then there would be no question of balancing one quadrant against another in many different groupings and in many different combinations in determining drainage and things of that sort?

A. Read the question, please.

(The question referred to was read by the reporter, as set forth above.)

The Witness: Well, as far as the question of drainage is concerned, I previously testified that I have not made a particular study of the drainage.

By Mr. Keffer:

Q. That's right. Now, just a moment, there. You did say that was the reason you had to balance one quadrant against another, to adjust drainage in and out.

A. Local, yes, but not drainage for the entire field as a whole.

Q. What's the difference, if there is drainage, whether it is local or regional?

A. A big difference.

Q. All right, if you think there is a difference we will let it stand there, but regardless of that, if you had taken the field as a whole, all of those questions certainly would

have been eliminated because there was no drainage into the field or out of the field.

A. Well, I would agree with you that if you had taken it that way that that might have been true.

Q. It would absolutely be true?

A. All right.

Q. Do you want to cut the "might" out of your answer?

A. No, I think I'll let it stay there.

Q. All right. Well, now, Mr. Hammer, in computing your reserves I believe you stated you had to have production figures?

A. That's right.

Q. Even in that one hour's calculation you had to have some production figures to make that one, didn't you?

A. That's right.

Q. And you got those figures, I believe, from the Texas Railroad Commission?

A. Yes, they were taken from the records of the Commission.

Q. But at the time you—well, I'll ask you this: Do you know to what extent that those records might have been incomplete?

A. From 1935 on I think they were quite complete.

Q. They were complete as to metered gas?

A. That's right.

Q. You do know that gas is used in flowing wells?

A. That's right.

Q. Gas is lost in drilling wells?

A. That's right.

Q. And various losses of gas of that character which is not reported to the Railroad Commission?

A. I think that is true.

Q. That's right. What is reported is the metered production?

A. That's right.

Q. All right, don't you think it might have been well to have made some inquiry to determine about how much of that gas was going that way, for the sake of accuracy in your figures?

A. Well, it might have been advisable, but after you had done it you couldn't be at all sure of the figures. It wasn't metered. It would be someone's guess.

Q. I appreciate that, but couldn't you have made a conservative guess on it? You knew it was something.

A. I doubt if you can make a conservative guess on an area as large as that. The point there, Mr. Keffer, is this, that the very fact that we didn't utilize that wasted gas is an added factor why our reserve tends to be a minimum reserve.

Q. That could be very true, but it might show some other things, too, mightn't it, Mr. Hammer?

A. I don't think it would show anything. In other words, the percentage of gas that has been wasted over the last five years and utilized for other purposes than unmetered gas would be so small in relation to the whole that it wouldn't be important. Now, prior to 1935 that's a different story.

Q. But you didn't consider any of it prior to 1935?

A. Well, I didn't consider anything prior to 1935.

Q. That's right, you started with 1935?

A. That's right.

Q. But if those factors, had they been considered, would have developed some other matters pertinent, do you think it would be certainly permissible for us to take that into account, wouldn't you?

A. What things are you talking about?

Q. This gas that you didn't take into consideration that went into the air, and unmetered.

A. I don't understand the question.

(The question referred to was read by the reporter, as set forth above.)

The Witness: Well, I am not judging what you may take into account in your consideration.

By Mr. Keffer:

Q. Oh, I understand, but you as a geologist wouldn't say that would be farfetched?

A. I would say it would be better if you had them, but not being able to have them and making an estimate or a guess from this fellow and another fellow, you might get four or five different fellows and get four or five different answers.

Q. You looked at that sort of like dry holes in as much

as you don't know of more than six inches being dry, you just ignored it.

A. Yes, realizing when I did ignore it that it would have a tendency not to inflate the reserve factor.

Q. You have the acre factor; you have to multiply the acres, it would have to some extent.

A. No.

Q. Now, Mr. Hammer, during the pariod from 1935 to 1939 there were some wells that were not connected to gasoline plants that were producing casing head gas and blowing it into the air. Did you make any investigation of that?

A. During the years 1935 to 1939?

Q. Yes, in the gas area.

A. No specific investigation of gas blown, because—

Q. If there was any of that you have ignored that?

A. We were informed by the engineers of the Texas Railroad Commission that while in the early part of 1935 and running on, we will say, into 1936, there was, but that practice by the time 1938 or 1939 came about had largely ceased to exist.

Q. Well, it was very much less but it still existed to some extent, didn't it?

A. Well, that is all right—no, again that would be a guess.

Q. In other words, you more or less assumed it didn't exist and didn't make any particular investigation of it?

A. I think that is true.

Q. All right.

A. If that is true that would give us a factor that would tend to reduce the estimate of reserve.

Q. That might be very true, but again I say it might show some other things also?

A. I don't know as to that. I doubt it.

Q. All right. I believe you have already stated that you did not obtain any figures for gas used for fuel and drilling operations?

A. Metered gas reported to the Commission was what we used.

Q. Ordinarily gas used for drilling operations is not metered, is it, unless you are buying it from some other producer?

A. I don't know what the practice is. If you buy from another producer, unless you buy it on a flat rate basis, it is metered.

Q. That is right. Frequently that happens, it being charged for at the rate of so much per day?

A. That is sometimes done.

Q. It is so much on a rotary operation and so much on a standard operation?

A. Sometimes it is metered.

Q. Sometimes it is metered?

A. Yes.

Q. And I take it you made no particular inquiry into that?

A. No, we didn't use that figure.

Q. Did you make any inquiry as to what it was?

A. I think we have seen some figures, maybe, during one year or two that somebody had estimated, estimating the amount of gas for those purposes, but as a general thing we didn't try to get it.

Q. If you had all of those volumes of gas and knew pretty well what they were and you were deducting that from the original reserve as you found it, you would have a smaller figure than deducting the figures which you have compiled, wouldn't you?

A. If I deducted—you mean—

Q. Just as a matter of subtraction.

A. From the original?

Q. From the original.

A. Yes, you would have a smaller figure.

Q. That way you could give a lesser figure rather than a higher figure for remaining gas reserves?

A. That isn't the method we used.

Q. I appreciate that, but maybe somebody might use the other method, and I want the record to show this gas and your omission of it. That is all.

A. Your statement under that condition, if you had a lesser amount that actually came out of the ground, it would make a difference.

Q. All right, now, would it interest you to know that in 1935 gas blown into the air, gas used in drilling, casing head gas not treated and blown into the air, ran as high as seven per cent of the total field production?

A. It would be interesting, but may I ask this: What percentage of that came from the area in which the Canadian River's acreage is situated?

Q. We are talking about the field-wide figure.

A. I would be interested more to know what percentage of that gas came out of those quadrants in which Canadian River Gas Company has its acreage.

Q. Well, what makes a difference where it came from? It came from the reservoir, didn't it?

A. It makes a lot of difference.

* * * * *

The witness stated that he was pretty certain there had been more drilling in Moore and Potter Counties in recent years than in other portions of the field and that usually when there is more drilling you have more production and that as you have more production you have more rapid pressure declines in the future that you had in the past, and that he would expect the pressure decline in Moore and Potter Counties to accelerate.

The witness was then asked that if you had a pressure decline of so much per year for the past five years that this is not very positive proof that there is not going to be a greater pressure decline for the next five years, or any number of years in the future, and he answered that he was not endowed with power to look into the future to see what would happen.

The witness then stated that if he had factual data for another five years perhaps his present estimate would be altered.

The witness stated that when an averaging process was utilized, whether in a quadrant or in the field as a whole, in which areas of prolific production are averaged with areas of lean production, you get a false answer if the variations are very great. If you have absolutely the accurate pressure at a given date, and you have the given pressure at another date, and you have the volume of production during that intervening period, you have all of the tools you need to apply the pressure decline method. If the conditions were ideal you would get the same production per pound loss in pressure for any given period. If you had a reservoir where there was no factor of permeability, such as a room full of gas and draw it out, you would be approaching ideal conditions but those conditions do not exist in the Texas Panhandle Field. The witness stated, however, the pressure decline method might be utilized notwithstanding the absence

of ideal conditions because the divergent conditions were all weighted out.

The witness did not agree that if you got a different rate of production for every pound lost in pressure for each period that this demonstrated that the pressure decline method was not working properly, but said you would get the same answer every time if you had a fully developed field where every one of the wells was finished. You would have a better condition and would get a better answer. He acknowledges that his estimate is not perfect, but does think it is the best method and approaches more clearly the true condition than any other method of estimating reserves.

It is his opinion that if the basic data is correct, there is not going to be any great variation in the estimates from year to year as compared to production and pressure drops.

Every time you drill in a new well you get an added pressure, that is, an added pressure point you never had before. You also get an added potential that you never had before. You start taking gas out and you get an added volume of gas, and as time goes on you do have these changes, but they should weight out very closely in the method I have employed.

If you computed the reserves last year, for example, and got the correct answer, then you could drill wells from now on until "dooms day" and that answer wouldn't change if everything was perfect, that is, if you had an ideal situation.

The witness realizes that a slightly different answer is obtained each year that the pressure decline method is applied, but states that you cannot take one year or two years in the Texas Panhandle Field and even hope to use the pressure decline method. You must have a longer period, and the longer the period the better, and it will not be long until you will obtain a curve that will stand up throughout the life of the field. We have not reached that situation yet because there are certain areas that have not been drilled. This has an important bearing. If a well is drilled in a 435 pound area and you start producing gas, a new condition locally is created which will have its effect. It gives you another factor and the application of it will give you a more nearly correct answer. It is the witness' opinion, however, that the undrilled acreage that has a pressure of 430 pounds

is relatively unimportant when compared with the field as a whole.

The highest pressures at this time are in Moore and Hartley Counties, all along the southwestern part of the field and up around the western portion until you get near the northern part of Moore County, all around the edges.

Going all along the southern line of the field, starting from Wheeler County, going west and including an area along the edges of the field, back several miles, and continuing until you reach the northern tip of Moore County, a distance of probably 175 miles, you have an area of high pressure in general—much higher than an average of the field as a whole, which includes all of the area which witness admits is of doubtful productivity. That is, the area in question includes the area in which the volume of gas in place is doubtful—an area of doubtful productivity, and it also includes the area of high pressure.

The witness then testified with respect to the weighting process he used in determining the average weighted pressures and explained what he meant in stating that all of the diverse factors were weighted out in his process. He did this by taking the area between each of the isobars in a given area. He computed the area as accurately as he could and then took the average pressure for the area between two of the isobars and mutiplied the average pressure by the area. He then took the summation and divided that sum by the total acreage in a quadrant, and when he did that he got an average weighted pressure for the quadrant.

This was illustrated by referring to Quadrant 1, Potter County. The area included within the 430 pound isobar lines was computed as to acres and the number of acres in this area was multiplied by 430. The 430 pound acreage is in the southern part of the quadrant. He made the same computation for the area between the 360 and 370 pound isobar lines in the northern part of the quadrant. He determined the acreage in this particular segment and multiplied the pressure obtained by the number of acres, but refused to state that he got a bigger product, acre for acre, in the 430 pound zone than he did in the 360 to 370 pound zone. This was then illustrated by assuming that the northernmost area which lay between isobar lines 380 and 370 contained 1,000

acres, and that the average pressure in the area was 375 pounds. This 375 multiplied by 1,000 would give 375,000 as a factor. The southernmost segment which had a pressure entirely above 430 was also assumed to contain 1,000 acres, and he arrived at his factor by multiplying 430 by 1,000 and got 430,000. The witness said that this is what he did.

He was then asked which segment contributed the most weight acre for acre, the north or south. He answered that neither one contributed more than the other but stated that they both contributed the same notwithstanding the fact that after his arithmetical process had been completed one had a factor of 375,000 and the other 430,000, but he said that when you add all of these up and divide by the total acreage, then balance these against the entire acreage, you would get an average figure for all of them. The average pressure in the illustration given would be 402½ pounds weighted average pressure in accordance with the witness' method of averaging, being 375,000 plus 430,000 divided by 2,000, the total acreage. The witness insisted however that neither segment contributed more than the other to the total weighted average because the inconsistencies were weighted out by his method.

With further reference, by way of illustration, to Potter County, Quadrant 1, the southernmost segment in this quadrant contains a 430 pound pressure, while the northernmost segment lies between the 370 and 380 isobar lines, which gives an average pressure of 375 pounds. The weighting process utilized by witness was to multiply the acreage by the average pressure in each segment and then add up the products and divide by the total acreage in the quadrant to secure the total weighted average pressure for the quadrant, and the weight that was given the northern segment in the averaging process was the actual acreage times the actual rock pressure and that was true of every other segment in the quadrant, and the weight that was given the southern segment referred to in Quadrant 1 was the actual acreage times the actual rock pressure. The witness then stated, however, that this did not mean that the higher the pressure the more weight was given to the acreage in any particular segment, but again reiterated that as to each segment he multiplied the pressure by the

acreage, and that he did this for each segment in each particular quadrant, but again stated that it doesn't follow from this that the segment with the higher pressure contributes more to the total than the segment with the lowest pressure.

The witness then again outlined his method for determining weighted average pressure and that was by simply taking the areas in acres between the isobars and multiplying the acreage by the pressure which gave a pressure acreage factor. He then added or totaled all of these products for each segment in a quadrant and divided that figure by the total acreage in the quadrant which he said weighted the thing out completely and gave an average figure for the entire area in the quadrant. The procedure was then illustrated by assuming a quadrant contained a total of 2,000 acres, 1,000 acres having a pressure of 200 pounds, and the other segment, being the remaining 1,000 acres, having a pressure of 400 pounds. In order to get the average weighted pressure the 200 pound segment is multiplied by 1,000, giving 200,000, and the 400 pound segment is multiplied by 1,000, giving 400,000. This totaled 600,00. This was then divided by 2,000, the total average in the quadrant, which gave an average pressure of 300 pounds, and under this hypothetical case, the 400 pound segment contributed just twice as much in the weighting process as the 200 pound segment. The witness further stated, however, that this gave an erroneous figure, but if they are cut down to 10 pound differentials in pressure the error could not be more than 5 pounds.

The matter was then illustrated by assuming a quadrant with a 10 pound pressure differential, each segment containing 1,000 acres and ranging from 200 pounds to 400 pounds with 10 pound differentials all the way through, that is, starting at the lowest, 200 pounds with 1,000 acres, 210 pounds with 1,000 acres, 220 pounds with 1,000 acres, and so forth in the same manner until 400 pounds is reached, which also contains 1,000 acres. The witness then figured all the way through and arrived at the weighted average pressure by multiplying the pressure in each segment by 1,000 acres, being the area of each segment, then totaling the various products and dividing by the total acreage in the quadrant in order to get his total weighted

average pressure. By this method of calculation, which was the method used by the witness in making his reserve estimates, it was demonstrated that the 200 pound segment contributed 200 times 1,000, or 200,000 in the weighting process, and the 400 pound segment contributed 400 times 1,000, or 400,000 in the weighting process.

The witness stated that of course if you consider only the two segments you would have a distorted figure for the reason that one would have contributed twice as much as the other, but this had no application to the actual problem because he didn't take just two segments in making his reserve estimate but averaged all of them, from 200 to 400, and got a weighted average figure and in this manner assigned the same value to all of them, and thus weighted the entire error out of it. He says that when each segment was considered as above outlined, one segment had no more effect upon the final answer than any other segment because they each had the same value after he had averaged or weighted the various factors for each as stated. He was then asked if the 210 pound segment didn't contribute a little more to the final answer than the 200 pound segment, and the 220 pound segment a little more than the 210 pound segment, and so on all the way up the scale to the 400 pound segment, and he stated that that was correct, but again stated that notwithstanding this the 400 pound segment did not contribute twice as much as the 200 pound segment because they were weighted in with all of the other segments.

Quadrant 1, Potter County was again referred to for illustration. The witness stated that the northern segment of Quadrant 1 had 270 pounds pressure and the southern segment 430 pounds pressure, which is shown by map, Exhibit 179. The witness was then asked whether, if, as a matter of fact, the 270 to 280 pound segment in this quadrant was highly productive, and the 430 pound segment right down on the edge of the field in the southern part of the quadrant was very lean, this would not result in unduly stressing the lean acreage. He said this was not true because in considering all of the intervening segments he had weighted out the difference and flattened out the pressures for the entire quadrant. He stated it was true that even in this process the southernmost segment

(which was assumed to be lean) counted much more, acre for acre, than the northernmost segment (which was assumed to be rich) but that when all of them were averaged in they were all weighted out and had the same value.

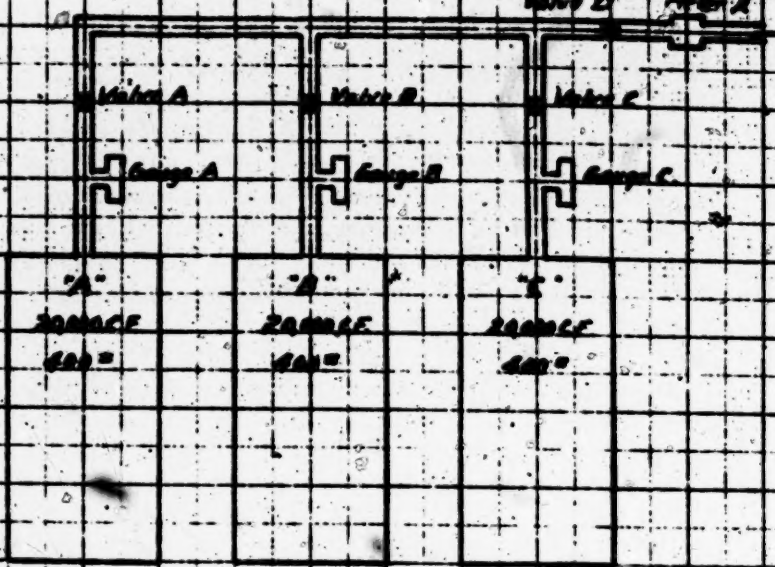
He was then asked if his answer would not be correct only on the theory that the acre content of the gas in place was just the same in each segment because then if this were true he would get a correct average, but only if this were true, and that in that case of course the 400 pound segment would be given just twice as much weight as the 200 pound segment, but would be entitled to just twice as much because the original acre content was just the same and the pressure was twice as great. The witness stated, however, that this was not correct and said it would work even if you had drilled a dry hole in some of the acreage because this was all weighted out in considering each of the segments as hereinabove explained. He stated that in other words, you simply took the high pressure area and balanced it against the low pressure area, and the low and balanced it against the high, and got the weighted average.

The witness was then asked that in the application of the pressure decline method if he applied it and got a certain pound drop in pressure for so many billion feet of production which came mostly from the rich areas of the field, and then averaged that in with the lean areas that had a high pressure, but which had had no production and had not been affected by drainage, that this would necessarily give him a distorted figure. He answered that you would not get a distorted figure because the high pressure areas had been averaged in with the more prolific lower pressure areas in the balancing and weighting process as above outlined.

There was marked for identification Exhibit 188 which was later received in evidence.

For Demonstrating Pressure-Decline Method.

Chart 1.



AL POWER COMMISSION
No. G 118-121-124
Ex No. 188
troduced

Total Assumed Quantity of Gas

Container "A" 20,000 C.F.
" "B" 20,000 "
" "C" 20,000 "
Total 60,000 "

POWER COMMISSION DOCKET NO.
NO. 188 (FOR IDENTIFICATION)
NTIFIED

In the accompanying example all pressures are assumed to be absolute. Deviation from Boyle's Law is ignored, and the space in the connecting lines, gauges, and meter is considered to be negligible.

C. Ray Hughes.

Exhibit 188 is a drawing portraying three containers, each of which contains 20,000 cu. ft. of gas at 400 pounds pressure, and each contains the same surface area, assumed to be 1 acre. If 5,000 feet of gas were withdrawn from each of them this would reduce the pressure one-fourth in each of them. This would give a pressure of 300 pounds in each, which would be the weighted average pressure.

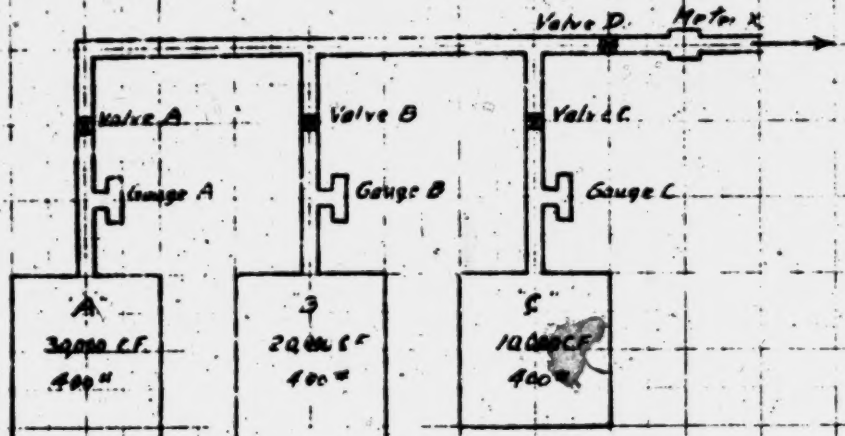
Still referring to Exhibit 188, the matter of pressure decline was again illustrated by producing the entire 15,000 feet of gas from Container A. It had 15,000 feet to begin with and would have 5,000 feet left. Three-fourths of the gas had been produced and, therefore, only one-fourth of the gas and one-fourth of the pressure would be left, or 100 lbs. pressure. The other two cylinders had no gas produced and were still at the original 400 pound pressure. The average pressure for the three would be 300 pounds. In producing 15,000 cubic feet of gas 100 pounds of pressure was left. Each pound of pressure lost represented, therefore, 150 cu. ft. of gas. There was a 400 pound pressure to start with. Therefore, to determine the original content 150 would have to be multiplied by 400 which would give a total of 60,000 cu. ft. This is the known original content in the three containers. This problem demonstrates that it doesn't make any difference how you take the gas out of the containers if the containers are all of equal size. It was the witness' thought, subject to further check, that you could take any other combination of containers of equal size and you would always come out with the same answer on the application of Boyle's Law. The containers, of course, represented a perfect condition and the answer was absolutely correct. It was the witness' opinion that it would work almost as well with respect to conditions that actually exist in the field, that is, if there was a variance in the acre content it would still work if the variance was weighted out just as he had done it and as he had theretofore explained.

There was then marked for identification Exhibit 189, which was later received in evidence.

Exhibit No. 189

For Demonstrating Pressure Decline Method

Chart 2.



Total Assumed Quantity of Gas

Container	A	30,000 C.F.
"	B	20000 "
"	C	10000 "
	Total	60000 "

In the accompanying examples all pressures are assumed to be absolute, deviation from Boyle's Law is ignored, and the space in the connecting lines, gauges and meter is considered to be negligible.

C. Dee Hughes.

RAL POWER COMMISSION. DOCKET NO.
BIT NO. 189 (FOR IDENTIFICATION)
IDENTIFIED

RAL POWER COMMISSION
No. G-118-121-124
g. Exhibit No. 189
troduced

Exhibit 189 illustrates 3 containers, A, B, and C, Container A having 30,000 cubic feet; Container B having 20,000 cubic feet; and Container C having 10,000 cubic feet. Each have a 400 pound pressure and each have the same areal surface, which was assumed to be an acre in each case. The witness stated that the variance in the Texas Panhandle Field as to acre content was certainly as great as the content assigned to each container and that, as a matter of fact, his investigation showed that the actual variance per acre content in the field was greater than that shown in the illustration.

Another illustration was then made with respect to the containers in Exhibit 189. This illustration assumed that 15,000 cubic feet were taken out of Container A, which left in it a pressure of 200 pounds. Nothing was taken out of the other two containers. The witness then arrived at an average weighted pressure for the three containers; that is, by taking the 200 pound weighted pressure in Container A, the 400 pound weighted pressure in Container B, and the 400 pound weighted pressure in Container C, the average weighted pressure would be 333 1/3 pounds. The original pressure in each container was 400 pounds, therefore, there was a total loss of 66 2/3 pounds in weighted average pressure. There had been 15,000 cubic feet of gas produced, or 225 cubic feet for each pound drop in pressure. It follows, therefore, that one pound of pressure represented 225 cubic feet of gas, and that in order to determine the original content in the three containers this 225 cubic feet would be multiplied by 400 which gives a total of 90,000 cubic feet as an estimate of the gas in place based upon the application of weighted average pressure to production.

As a matter of fact, the containers contained originally only 60,000 cubic feet, and therefore the estimate was just 50% greater than the actual volume of gas in place.

The witness stated that the error came about by reason of the fact that gas was withdrawn only from one of the containers, but he would like to have a little time to think the matter over.

Where the volume of gas was just the same in each of the containers the pressure decline method, or the appli-

cation of Boyle's Law, worked to perfection, but when the containers contained different volumes of gas and the average pressure was obtained by weighting one surface area, as in Exhibit 189, the pressure decline method, or Boyle's Law, gave an erroneous answer.

The witness stated, however, that in the example the weighting was unity against unity, but it was not always unity against unity in the field in so far as acreage was concerned. He said he used unity against unity, unity being quadrants, in estimating the field, but not in the sense that he was talking about, the difference being that you can only go out so far, and if you weight in acreage from which there has been no production, you are bound to get a lesser weighted production per acre pound than if you don't use it, but in making the estimate for the field the witness stated that he did weight in acreage that didn't have production and then upon being asked if that wasn't what was done in the example, he stated that he desired to reserve his answer.

The witness then stated, after a short recess, that he desired to make an additional explanation, and that was that the container example was not representative of the conditions in the field. If the three containers were connected, then it would approach field conditions, otherwise it would not be representative at all. The witness then stated that if the three containers were connected it would, in general, represent the conditions in the field.

Another example was then given. The containers were all connected as requested by the witness, and some gas taken out of each container. It was assumed that 15,000 cubic feet of gas was produced out of container A, 5,000 cubic feet out of Container B, and 2,000 cubic feet out of Container C. Each container was opened up and this was the total volume produced from the three containers, representing the field as a whole. The witness then solved this problem by determining the weighted average pressure on the three containers by weighting on areal surface alone as he did in making his reserve estimates. This indicated a weighted average pressure of 273.3 pounds, or a loss in pressure of 126 2/3 pounds. There had been a total aggregate production of 22,000 cubic feet, which resulted in 173 feet per pound loss of pressure. This then, multiplied by

400, the original equilibrium pressure, would result in a total estimate of gas in place of 69,200 cubic feet. The actual content was known to be 60,000 cubic feet. The estimate, therefore, was erroneous.

The witness then stated that instead of having three containers in the field, there were an infinite number of containers.

The witness then stated that the last problem represented a situation where the pressures were different in different areas and the quadrants were different with respect to the volume of gas in place in each quadrant, and that where this situation exists you can take any set of figures you desire and you will never get the right answer.

The witness then stated that the containers represented different reservoirs of certain sizes, which situation also existed in the field. It was then explained to the witness that the only difference in the illustration and the actual field condition was that the correct answer was known and advanced for the purpose of checking or testing the method where you have quadrants that vary as to productivity and where pressure differentials exist at the same time from one side of the field to the other. The witness stated that there was a further difference and that was that you have an infinity of reservoirs in the field.

The witness was then asked if the result would have been precisely the same if each container had been assumed to have 500,000 surface acres instead of one, thus giving the total acreage a figure that corresponded approximately with the total acreage in the field. The witness again stated that even under that situation that would still not take into consideration the infinity of reservoirs in the field. It was then called to the attention of the witness that there were wide areas in the field from which a single cubic foot of gas had never been produced and that this was shown by his Isobaric Map, Exhibit 179, and that was the basis for the first illustration given where some gas had not been produced from some of the containers. His attention was then called to the fact that the witness had stated in effect that the problem could be solved correctly if some gas was taken out of each container, and that a problem had been worked out on this basis but still an erroneous answer

had been reached. His attention was also called to the fact that the range in pressure in the example given, which was from 200 pounds to 320 pounds, constituted a much less differential than the actual differential existing in the field, and that the range per acre content only varied in the ratio of three to one, where the actual range in the field ran as high as six or seven to one, and that if actual field conditions had been taken, the answer would have been more erroneous than it was. The witness answered that he didn't think so, although he did say in this connection that actual pressures in the field ranged from about 90 to 430 pounds, and the per acre productivity was in excess of three to one.

The witness then was handed a set of calculations made from the witness' working papers and he was asked to verify the figures contained in the calculations. He could not verify the figures on the witness stand but stated that he would do so later. The witness did admit, however, that the basic figures from which the computations were made were all taken from his working papers. These calculations were later introduced in evidence and marked for identification as Exhibit 264.

Witness HAMMER further testified on cross examination, Vol. 58, pp. 8110 to 8253, inclusive, as follows:

The witness read into the record the weighted pressures for the entire field for the period from 1935 to 1939, inclusive, and also the total cumulative production during that period, which was as follows:

Year	Pressure	Cumulative Production
Aug. 1, 1935	369.25	
Aug. 1, 1936	360.74	615,778,940 Mcf.
Aug. 1, 1937	352.02	1,215,791,981 Mcf.
Aug. 1, 1938	343.01	1,832,231,200 Mcf.
Aug. 1, 1939	332.98	2,430,370,036 Mcf.

The witness stated that the pressure for each year was determined as of August 1 of that year, and that the production figures were from August 1 of one year to August 1 of the next. For example, the 1936 production figures represent the metered production from August 1, 1935, to August 1, 1936. The production figures were also cumulative for the period, that is to say, that the 1937 produc-

tion was added to the 1936 production and so on through the period, and that to obtain the production for any one year it would be necessary to subtract the cumulative figure from the next following cumulative figure. The pressure base was 14.65 pounds per square inch absolute, and the calculations did not include Wheeler County Quadrant 1. The total acreage for the field as determined by the planimeter calculation was 1,478,143 acres. The witness then stated that his estimate for the field of original gas in place, calculated to an assumed abandonment of 25 pound gauge at the well head, was 29,277,000,000 Mcf., but he had not calculated it to zero pounds well head, but stated that the original figure to zero pound well head could be determined by dividing the figure above given by 465 and multiplying the result obtained by 430, the original virgin pressure in the field, which would give approximately 31.046 trillion cubic feet of the original gas in place to zero pounds which would be all of the gas in place before there was any production on a 14.65 pound pressure base.

Witness HAMMER further testified (Vol. 58, pp. 8115-8141) as follows:

Before I get into that, let's go back again just a moment to the examples that we were working on yesterday. I will go back to the last example I gave you yesterday which was based upon Exhibit 189, being Chart 2 of the illustration demonstrating application of the pressure decline method. I believe on that last computation—

A. Just a moment. I will have to locate my papers.

Q. All right.

A. All right.

Q. Rather than the last illustration I gave you I think I will go back to the first one I gave you on that exhibit in order to facilitate the computation. The one I gave you on the spur of the moment figures out in some odd figures and it takes quite a little while to compute it, but I think this will illustrate the point just as well.

On that first one I gave you—

A. That is one hundred—

Q. I gave you two on 189; the first illustration was where all of the production was out of A, and the second one was where some of it was out of A, some of it was out of B,

and some of it was out of C. I am going back to the first one I gave you. That was 15,000 cubic feet production as I recall it, out of A, A alone, was it not?

A. I believe that is true.

Q. I am sure that is right. When you computed that out on the pressure decline method and weighted them through you got a total content of 90,000 cubic feet against a known content of 60,000 cubic feet, didn't you?

A. By your method of computation.

Q. And by your method, too?

A. No, I followed your method of computation.

Q. Was anything wrong with my computation?

A. Several things.

Q. I thought we had settled all of those things. What was wrong with it?

A. Well, now, we are referring to where you only take gas out of the one place?

Q. That is right.

A. Well, here is one thing that is wrong with it—

Q. How's that?

A. Here is one thing that is wrong with it—

Q. All right.

A. —and it is this: When a certain amount of gas is withdrawn from a cylinder the same *same* cubical content of gas remains in the cylinder but at a reduced pressure. In order to apply a 400-pound factor to calculate back to original volume it would be necessary to withdraw all of the gas from the container; the pressure decline would then be from 400 pounds to zero.

Now, in your case I didn't draw all of the gas out, and you utilized 400 pounds. What you should have utilized was your 200 pounds and you didn't do it.

Q. Do I understand—

A. In other words, you were using a factor to get your—it was about twice as large as it should have been.

Q. Will you explain what you mean by that?

A. I have just explained it. If you take the gas out of the container and you get your 200 pounds—

Q. That is right.

Mr. March: Go ahead and illustrate it. Go ahead and complete your answer.

The Witness: To use your 400 pounds you would have

to take all of the gas out because that is the total pressure originally in it. To use your 400 pounds you would have to take all of the gas out and multiply by 400.

By Mr. Keffer:

Q. You are trying to say you can't compute that until all of the gas is taken out?

A. No, not at all. What I am saying is that you used the wrong factor—it was just half the size you should have had.

Q. I started out with a 400-pound pressure all the way through.

A. Yes, you took out half of the gas and had 200 pounds left and then multiplied that by 400.

Q. Multiplied what by 400?

A. The amount of gas you had taken out.

Q. How is that?

A. The amount of gas you had taken out.

Q. Mr. Hammer, let's take that container. Let us assume that you don't know how much is in it to start with and you have taken out 15,000 feet and you have 200 pounds—you had 400 pounds pressure to start with and you have 200 pounds pressure left.

A. All right.

Q. You tell me how much was in there to start with. You don't know that and you are to calculate that from the tools I have given you.

A. Now, your statement was that I had 400 pounds to start with there?

Q. 400 pounds to start with.

A. And you take out gas enough to bring it down to 200 pounds?

Q. No, we took out 15,000 feet of gas and we took our pressures again and found they were 200 pounds.

A. All right.

Q. You tell me how much gas was in there to start with, calculated out just as though you didn't know the answer before you started.

A. Are you utilizing one cylinder alone and paying no attention to the others?

Q. No. A is the one I gave you.

A. Well, you have taken out 15,000 cubic feet.

Q. That is right. We agree on that.

A. You had a drop in pressure of 200 pounds.

Q. That is right.

A. You multiply that 15,000 by 2 and you get your 30,000, your original—

Q. You do what?

A. You get your 30,000—wait a minute.

Q. Can't you figure that out in your head, Mr. Hammer, in about thirty seconds?

Mr. March: Now, Mr. Keffer, quit haranguing the witness. If you want him to figure out the problem, give him sufficient time to do so.

The Witness: I can't figure that out in any short time. If you will give me a little time I will do it.

By Mr. Keffer:

Q Let me figure that for you. I believe I am better on those things than you are. We had 15,000 feet that went out of the area. We knew that as we have that figure. Isn't that true?

A. You took out 15,000.

Q. We knew we had 400 pounds to start with, didn't we?

A. That is right.

Q. We knew we had 200 pounds left, didn't we?

A. Yes, if you took out half of the gas.

Q. We knew we lost 200 pounds pressure, didn't we?

A. Yes.

Q. We knew for every pound of pressure left we had to produce 75 cubic feet of gas, didn't we?

A. That is 15,000 divided by 200.

Q. 15,000 divided by 200. We had 15,000 lost in cubic feet and 200 pounds lost in cubic feet and so it is just 200 divided into 15,000, isn't it? Is that 75 pounds or is it 750? Is that right?

A. I thought you had figured it out and I wasn't working on it.

Q. I will divide it out and see what it is. I may have left a cipher off.

A. It is 75 cubic feet.

Q All right. Then would we multiply that by—we would mutiply that by what to find the original content?

A. By the pressure of 400 pounds.

Q. By 400, wouldn't we?
A. Yes.
Q. And you would get what?
A. 30,000.
Q. So you do multiply by 400 after all, don't you?
A. Yes, under a condition like that.
Q. Yes, that is right.
A. That isn't analogous to our field problem.
Q. All right, we will get to that again. I thought we had covered that. That is a very simple application of Boyle's law?
A. For that application.
Q. And any high school student who had a very elementary course in physics could work that problem during an examination period, couldn't he?
A. Well, that statement is open to question.
Q. All right, we will let you question that one.
A. It is a problem in physics and not ordinary mathematics.
Q. How's that?
A. It is a problem in physics and not ordinary arithmetic.
Q. It is a problem in physics?
A. The only place physics comes into that is where you learn about Boyle's law, how Boyle's law applies.
Q. There isn't any question about the very simple problem we solved there, is there?
A. Not as it applies to the one cylinder.
Q. And we did have to multiply by 400 after all, didn't we?
A. For that particular case.
Q. That is right. So you want to retract the statement a while ago that when I multiplied by 400 I should have multiplied by 200; that was an erroneous statment, wasn't it?
A. Talking about this individual cylinder now?
Q. How's that?
A. Talking about this individual cylinder now?
Q. Yes, this individual cylinder—"quadrant," I believe is the name. I like that word better.
A. You can call it anything you want to.
Q. It my child; I can name it anything I want to.

A. I am still not sure—I would like to reserve my answer to your question.

Q. All right, how long do you want to reserve your answer, Mr. Hammer?

A. Well, I don't know. It will be just as soon as we have a five—or ten-minute recess so that I can get in a corner and figure it out.

Q. We will probably recess after while and then you can see if you can find a different answer to it.

Now, Mr. Hammer, let's take another very simple problem. You have this container here where you—this quadrant. I am going to insist upon if being called a quadrant—where you had a 400-pound pressure to start with. You know it has produced 15,000 cubic feet of gas, and you know you have 200 pounds of pressure left. Those are all definite figures and there isn't any estimate about them. Now, I want you to figure for me just how you would determine the remaining content of the gas in that quadrant. You have all the figures you need to determine that, haven't you?

A. You are talking about what?

Q. Just one cylinder, Quadrant A.

A. Well, you have to weight the problem against your acreage factor.

Q. All right, we will say it contains one acre or a hundred thousand acres or a million acres. You can compute any acreage you want to.

A. Will you read that question again, please?

(The question referred to was read by the reporter, as set forth above.)

The Witness: Now, let's get this problem straight.

By Mr. Keffer:

Q. All right, let's get it perfectly straight.

The Trial Examiner: Mr. Hammer, maybe I can help you.

The Witness: All right.

The Trial Examiner: On this previous computation you just made for Mr. Keffer I believe you arrived at what Mr.

Keffer seems to call "Quadrant A of reserves in place, the sum of 30,000 cubic feet original reserves in place." Now, you have produced 15,000 cubic feet and I believe Mr. Keffer's question is "what is the remaining reserves?"

Mr. Keffer: No, it isn't quite that. The question is, having those three known factors which I gave, that is, the original pressure, 400 pounds, the pressure of 200 pounds, the production of 15,000 cubic feet, then what would he do or how would he compute the remaining reserve today? He did that over the whole Panhandle field and I want to see how he did it on this particular area.

Mr. March: That is your assumption. You are taking this problem now.

Mr. Keffer: It is the principle that is involved.

The Witness: It isn't an analogous case, it is your problem, not mine.

Mr. March: We are working on your problem, these three cylinders, now.

Mr. Keffer: I want to have the witness tell me how much gas I have left there. I have to know that.

The Witness: Well, now, to zero, that is what you are after?

By Mr. Keffer:

Q. Remaining zero gas well head.

A. You would take out an additional 200 pounds—

Q. How's that?

A. An additional 200 pounds—I say, if you take out an additional 200 pounds of pressure—

Q. You wouldn't have anything left, would you?

A. That is right.

Q. Still you haven't answered my question. I am going to make a contract to serve Denver with gas when this present one expires and I want to know if I have enough gas there to do it. That is a very important problem to me and I want you to tell me as I have employed you as my geologist.

A. Well, if you are going to take all of your gas out of this one cylinder—

Q. Yes, that's all I have. That's the only reserve I have.

A. That all comes out of this one cylinder.

Q. That's right.

A. And you weight it against your one acre, your unity acre

Q. Yes, one acre or a hundred thousand acres. You can put any acre on it you want to.

A. On the decline there you would have just 15,000 cubic feet.

Q. We knew the answer to start with. I want to see the calculations that you go through to get that answer. Just explain briefly what you did to arrive at that 15,000.

A. Well, you do the same as you did in the first part of your withdrawal.

Q. Just give it to us step by step.

A. All right, when you draw out your 15,000, you had the drop of 200 pounds pressure.

Q. That's right.

A. Out of this one cylinder.

Q. That's right.

A. Then if you draw out all of it and get zero, assuming that you can get to zero, and you have taken out all the gas—

Q. That's right.

A. Why, you would have an additional drop of 200 pounds.

Q. That's right.

A. And at whatever pressure base you use in your calculation you would have the same 15,000 cubic feet.

Q. Now, is that the way you figured the Panhandle field?

A. Well, we figured the Panhandle field according to principles of Boyle's law, yes.

Q. Now, the only thing—that is the thing. You don't have to do any weighting here because you have got just the one quadrant. You don't have to do any weighting or balancing and the pressure is unifrom over the entire quadrant. Now, that is the only difference. I just saved you a little extra figuring there since you don't have anything to balance.

Now, that is the Panhandle field, we'll call it, and you

go ahead, step by step, and figure the remaining reserves there, just as you did in the Panhandle field precisely.

Mr. March: You haven't got enough tanks here, Mr. Keffer.

Mr. Keffer: Yes, we have.

Mr. March: You use several tanks—

The Witness: The whole point is you can't calculate the reserves of the whole Panhandle field or even part of it on that basis

By Mr. Keffer:

Q. All right, now, Mr. Hammer; then I have another field. If you don't want me to call it the Panhandle field, I'll call it some other field. I'll call it the Keffer field. I don't have one named for me, but maybe we can get one started.

Now, you have just figured the Panhandle field.

A. No, I haven't.

Q. How's that?

A. Not on your supposition I haven't figured anything.

Q. You gave us the figure you had arrived at for the Panhandle field.

A. But it wasn't arrived at by your method.

Q. All right. Now, we have this Keffer field here and you have just finished the job for the Power Commission on the Panhandle field and I have employed you to figure my field. Now, you go ahead and figure it. This is my field here and I have employed you. I want you to figure it using the same principles you used in figuring the Panhandle field.

A. I would have to have all your factual data. What is it?

Q. I just gave it to you. I had 400 pounds to start with. I have produced 15,000 feet. I have 200 pounds left. That's all you need, isn't it?

A. No, that isn't all you need in that.

Q. You can't figure it from that at all?

A. No, it isn't analogous. You recall that yesterday when we were discussing this same thing—

Q. Yes, I recall.

A. —I made the statement that in the Panhandle field that instead of one reservoir we had an infinity of reservoirs. You are talking about, and we proved yesterday in taking your three, that if you utilized just your three that you would only get 9,000 cubic feet above. Now, you go to work and add infinity of reservoirs to that and calculate it down, and as you approach infinity you will get the correct answer, but to take one reservoir and try to calculate it for the Panhandle field is absolutely impossible.

Q. All right, instead of putting one acre on that problem that I gave you, let's put 500,000 on each of them. That would be a million and a half acres and your figures on the Panhandle field is a million and some four hundred thousand odd. Let's put 500,000 acres on each one of them and then you will have that infinity, if that's what you called it there.

A. Yes.

Q. Would that make any difference?

A. You put 500,000 acres on what?

Q. On each one of those quadrants instead of just one acre.

A. You would still have your infinity of reservoirs regardless of how much you took.

Q. Sure. I got a million and a half acres and you had a million and four hundred thousand. I have more infinity than you have.

Mr. March: But you have still got three tanks, Mr. Keffer. That's right, isn't it? Do you want 500,000 tanks? We'll get down to business now.

Mr. Keffer: Just let him answer the question.

Mr. March: I am trying to clarify it.

The Witness: You have an infinite number of tanks—

By Mr. Keffer:

Q. What do you mean by an infinity of tanks?

A. Just what the word implies.

Q. I am not sure I know what it means.

A. So many that no one knows what they are, they approach infinity.

Q. I gave you a million. I gave you slightly more in acres when I gave you a million and a half acres, didn't I?

A. But that's a long ways from infinity.

Q. Well, but a million four hundred thousand is still further away from infinity, isn't it?

A. Well, yes.

Q. In other words, I am nearer infinity than you are when I gave you a million and a half acres, when your Panhandle field only had a million four hundred thousand some odd.

A. But in that extra million you had the added number of infinities on and beyond the million four hundred thousand; so all you have done is add a lot more infinitesimal spaces that didn't exist before.

Q. All right, what are those spaces?

A. Ordinarily, under any condition they would be the small reservoirs in which the gas exists.

Q. Well, I thought we had agreed way back—

A. In other words, it would be your porosity you are talking about.

Q. All right, supposing we put a little sand in these containers and create some porosity and permeability. Would you have any different answer?

A. Well, if you put some sand in this container you are talking about you couldn't have as much gas in there as you say you have.

Q. Well, take one where we will have the same amount of gas, then would that change the figure any?

A. Not as far as your reservoir is concerned because in your case you just have one.

Q. All right, now, Mr. Hammer, I didn't put any sand in that illustration to show porosity or any permeability because you said that didn't make a bit of difference on earth and you didn't figure any one of them when you were computing this acreage. Now, you have said that many times during this cross examination.

A. I said it was not necessary in the calculation. That hasn't anything to do with my statement.

Q. That's the reason I didn't put them in here.

A. I still adhere to my statement that you have an infinity of reservoirs and if you calculate by separate reservoirs as you have started out you will eventually approach the correct answer.

Q. All right, how many reservoirs did you figure in the Panhandle field when you applied your principle?

A. Actually each interval between the isobar lines for practical purposes is a separate reservoir. Now, if it had been possible and we had had maps big enough to have used one-pound isobars instead of ten, we would have very materially increased the separate tanks, you might say, that we would have utilized and we would have approached very much closer, or somewhat closer, at least, to the true figure than we now have.

Q. All right, now, Mr. Hammer, do you mean to say this: On the application of Boyle's law, that the bigger the reservoir and the greater the pressure differential the more accurate becomes the application of Boyle's law? Is that what you mean to say?

A. No, not at all.

Q. In fact, just the contrary is true, isn't it?

A. No, that is not true, either.

Q. Well, what is true, then?

A. Read that question.

(The question referred to was read by the reporter as set forth above.)

The Witness: No, that hasn't anything to do with it. Boyle's law. You can take any container, if it is large enough to calculate, and have the necessary known factors, and you can calculate Boyle's law.

By Mr. Keffer:

Q. Well, Mr. Hammer, do you mean to say that Boyle's law won't work in every instance regardless of the size of the container?

A. No, I didn't make any such implication.

Mr. Keffer: Well, read the answer that he gave. I guess I misunderstood him.

(The record referred to was read by the reporter, as set forth above.)

By Mr. Keffer:

Q. All right, do you mean to say that you have to have a big container to calculate Boyle's law?

A. That wasn't the intent of that at all.

Q. What was the intent, then?

A. Any given reservoir where you have a measured, a known pressure, and a measured volume of gas coming out, you can utilize Boyle's law.

Q. That's right, and that is precisely what we have had in every one of these illustrations, isn't it?

A. As far as a particular illustration is concerned.

Q. That's right. Does the principle ever change? Does Boyle's law become one thing on this illustration and something else on the Panhandle field or any other field?

A. Yes, as far as the field is concerned.

Q. All right, what does Boyle's law become, then, in some other field? What changes occur in the law?

A. No changes occur in the law at all. A change in the conditions—in other words, in the field. You are using one reservoir. In the field you have a multiplicity of reservoirs of different content.

Q. All right, now, do you say it works better where you have a lot of reservoirs than it does where there is just one?

A. As far as its application to the field is concerned, I wouldn't say it worked better, but we are talking about a practical thing.

Q. That's right, but where I gave you one container, where Boyle's law would have to work with one hundred per cent accuracy, as you take more and more containers and get diverse conditions in which you throw out of line, you might say, the application of Boyle's law, the more of those conditions the more accurate it becomes; now, isn't that correct?

A. Not—there would be some effect, but not where I have just stated a while ago. If we divide this thing into containers as we have, using 10-pound isobars, we are approaching awfully close.

Q. Well, you don't say that is as accurate as these illustrations as I gave here, do you?

A. I don't know of anything in actual practice in any sort of thing that is ever as accurate as a theoretical thing taken care of in a laboratory.

Q. You mean to say that the illustrations we have been working here aren't absolutely one hundred per cent accurate?

A. A theoretical thing of that type, yes.

Q. Well, practically—

A. Well, you could calculate Boyle's law there accurately by the condition you set up, certainly.

Q. You are trying to say that Boyle's law is some high-flown theory that doesn't amount to anything?

A. No, I wouldn't have used it—

Q. That's just the answer. Now, we have given you perfect conditions here for the operation of Boyle's law and it doesn't come out right, does it, as you have applied it to the Panhandle field under perfect conditions?

A. The point is, as I have repeated, you don't have one reservoir, you have a multiplicity.

Q. All right. I say, then, if we have a small reservoir anywhere, in the Panhandle field or anywhere it might be, which covered a thousand acres, you couldn't apply Boyle's law to it because you had just one reservoir?

A. Oh, yes, you could.

Q. All right, then, the fact that I used one reservoir in some of these illustrations doesn't make it any different, does it?

A. Well, it isn't pertinent to the field conditions.

Q. I think we agreed yesterday, Mr. Hammer, that when I gave you the problem that a certain portion of gas out of each of the three reservoirs that we show on Exhibit 189, that you agreed with me that the problem that I gave you was more favorable from your standpoint than the actual problem you had in the Panhandle field.

A. No, I never made any such statement. The record will show what I said.

Q. All right. The record will show this, that the variation in rock pressures on the problem that I gave you was less than actually exists in the Panhandle field. The record will show that, won't it?

A. What was that question, please?

(The question referred to was read by the reporter, as set forth above.)

The Witness: The variation in pressures?

By Mr. Keffer:

A. Yes, in your theoretical illustration, that's right.

Q. It was less. All right, and the content of the various reservoirs varied less than is actually true in the Panhandle field. In other words, you have a greater variation in the Panhandle field as to content than we had in the illustration that I gave you?

A. Yes, that is true

Q. All right. Now, that being true, if it would not work on the illustration I gave you, how on earth could it work in the Panhandle field where the diversity is much greater?

A. All right. You go ahead and add, and start with 3, and 5, and 10, and 20, and a thousand and a hundred thousand and up into the trillions or maybe quadrillions of little reservoirs and apply your problem to it and you would get the right answer, but if you want to do that, that will give you the right answer.

Q. Well, I'll let you do it.

A. I have done too much of your figuring already.

Q. All right, now, let's take just another minute or two on this. I have used three quadrants. Let us assume that this were your Panhandle field. Your three quadrants, 1, 2 and 3 in Potter County, at the same time had the same variations which I gave you in the problem which we solved yesterday and you applied that to those three areas. Do you think you get the right answer?

A. As you have used it in this illustration?

Q. Taking the basic facts which I gave you—no, not as I used it, as you used it

Mr. March: You mean taking the cylinders, too?

Mr. Keffer: Well, I don't like to just play on words. We'll call this one cylinder A, if you want to call it that; this one cylinder B, and this one cylinder C (indicating).

The Witness: All right.

By Mr. Keffer:

Q. All right, the diversity between the three cylinders as to acre content and pressures is precisely as I gave it to you in that problem; then could you apply Boyle's law to that and get anywhere nearer the right answer than you got here?

A. Very much nearer, because this is divided into a whole series of containers as outlined by your isobars.

Q. All right. What is the occasion to have the isobars at all?

A. The isobars give you your variables in well head pressures.

Q. That's right. Now, if the variation—if you constructed your isobars to where you had three groups in which they varied just as I did in the problem here, then what would be the difference?

A. Read that, please.

(The question referred to was read by the reporter, as set forth above.)

The Witness: Well, the difference is that you are trying to apply an ideal theoretical condition there when as a matter of fact that condition does not exist in actual field conditions.

By Mr. Keffer:

Q. Now, Mr. Hammer, the only reason on earth that you draw your isobar lines and weight them in as you have explained many times is to get your weighted pressure, isn't it?

A. Yes, that is right.

Q. If you didn't have to get a weighted pressure you wouldn't have to have your isobar lines, would you?

A. That's right.

Q. All right, you had your weighted pressure here to start with. I gave you that to start with, didn't I, in the problem we have been working?

A. That's right.

Q. There would be no occasion to draw any isobar lines on this because you have your weighted average to start with.

A. That's right, in your picture.

Q. Then why talk about your isobar lines, because if you drew isobar lines the only thing you would be working to would be the very thing that you started with?

A. That's true as far as your cylinder is concerned, but it doesn't apply to the field condition.

Q. Now, Mr. Hammer, as a matter of fact, your pressure decline method will work properly, if the pressures of your field were uniform, won't it?

A. It will work properly under conditions under which it has been working.

Q. Well, answer my question.

A. If you had ideal conditions, yes.

Q. If you shut the Panhandle field in and let the pressures equalize and then apply your Boyle's law, then you get the right answer, approximately, wouldn't you?

A. You would get a close answer, yes. You would probably get the best answer, I will say that.

Q. Or if the entire field was of equal productivity, every portion of it, and every area of it and you applied Boyle's law you would get the right answer, wouldn't you?

A. That is not necessary.

Q. Wouldn't you get the right answer?

A. If you had that condition.

Q. But neither one of those conditions exists in the Panhandle field, do they?

A. That is true.

The witness was then referred to some figures in Exhibit 182 which were compiled by Commission Witness Stevens, and he stated that the pressure decline, as determined by Stevens on an arithmetical average of wells as to the quadrants in which Canadian River owned acreage, was 15.6 pounds from midyear 1938 to midyear 1939, and on this basis the life expectancy of the Canadian River reserves would last for 21.3 years from August 1, 1939, to a 25 pound abandonment pressure. He stated, however, that this exhibit was predicated upon the volume of gas that each well would produce, and it was his opinion that the present wells would not produce the entire volume of gas now in place.

Gas will migrate more rapidly under similar conditions as to permeability at high pressure differentials than it will at low pressure differentials. The witness was then asked if it wouldn't be possible for gas to migrate more rapidly with low pressure differentials where the permeability was high than it would in the case of high pressure differentials where the permeability was low. He stated that the question of infinity of conditions again comes into play, and it is a difficult question to answer for that reason, but that it is possible to have a situation where the formation is so permeable that gas will migrate from one part

to the other with practically no pressure differential. Gas will migrate more rapidly through a 50% permeable formation with a 10-pound pressure differential than it will through a 10% permeable formation and a 10-pound pressure differential.

The witness stated that the lowest pressures in the Texas Panhandle Field exist along the northeast side of the field and that this is due to heavy gas withdrawals in that area. There is no particular water drive in the Texas Panhandle Gas Field.

The area around Borger and Sanford, in Hutchinson County, which is in Quadrants 2 and 3 in Hutchinson County, presents a situation where the pressures have remained approximately stationary over the five-year period studied by the witness. However, the average for Quadrant 3 shows a decline by reason of the fact that it extends northward into a high pressure area in which pressures are declining.

If an area is increasing in pressure while it is producing substantial volumes of gas, the only logical conclusion to make is that such area is receiving gas from other areas by drainage, and the same thing is true for areas where the pressure is declining but where the decline in pressure is not as rapid as related to the total amount of production as was true in the earlier producing history of the wells. In other words, this would indicate either drainage into the area or water encroachment which was reducing the size of the reservoir, but the witness stated that, in his opinion there is no water encroachment in the Texas Panhandle Gas Field. If there was, Boyle's Law could not be applied at all, and if there was just a little water encroachment or water drive this would throw you off to some extent in the application of Boyle's Law.

The witness did not know that after the carbon black law was passed, that is, the law which permitted sour gas to be utilized in the manufacture of carbon black, there was a very definite increase in the production of sour gas in Moore County. The witness, however, has not compared sour gas with sweet gas production on a reserve basis and does not know the difference in the sour gas portion of the field and the sweet gas portion of the field. His map,

however, does show the approximate division line between the two portions of the field. The witness was not interested either in the area with respect to sweet or sour gas.

The witness stated that if the sour gas area did not contain more than one-half of the acreage of the sweet gas area, and the production in the two areas was about the same, this would in time affect the sweet gas area and would in time have a tendency to set up a low pressure area in the sour gas area; that if production in northern Moore County continued at a higher rate than the production in the sweet gas area this would have a tendency necessarily to cause a migration of gas from the sweet gas area to the sour gas area. When the pressure differentials are set up this will have a tendency to cause the sweet gas to drain into the sour gas area.

The area just north of the Canadian River leases in Moore County has had a very intensive development. The extent of development of Canadian River's acreage has been about one well to 2,300 acres, while just to the north of the Canadian River acreage and adjacent, the development has been on the basis of about one well to every 640 acres.

Witness called attention to the fact that in an area embraced in Quadrant 1, Moore County, and Quadrant 3, Hutchinson County, Canadian River Gas Company has 30% of all of its wells located on 14% of its acreage, and for this reason he felt the Company was situated so as to amply protect itself from drainage. Witness also called attention to the fact that the Company proposed to drill some additional wells in this area.

The witness stated that notwithstanding the above, it still appeared that the pressures were higher on the Canadian River Wells in that area than were the pressures on the offsetting wells, and that notwithstanding the heavy production of Canadian River Gas Company in the area referred to, they were still unable to reduce the pressures on their leases sufficiently to prevent some drainage of gas away from their acreage to the north and northeast. The witness did insist, however, that this was a question of degree, but unquestionably there is drainage there. He didn't know how much, but it was his impression that it was not long distance or mass drainage, although he didn't know.

The witness further testified (Vol. 58, pp. 8178-8182) as follows:

Q. That's right. Even with those large number of wells that you speak of, of Canadian River Gas Company, located near the outside limits of their reserve, still the pressure on Canadian River wells in that very area you refer to is higher than the pressure on the offsetting wells to Canadian River reserve. Now, isn't that a fact?

A. Well, I would have to check.

Q. Let's check it right now. Here it is right here (indicating).

A. You mean isobars?

Q. Well—

A. I think the way to answer that is that the pressure according to this isobaric map in general is slightly lower to the north of your acreage.

Q. And to the northeast?

A. Yes, that is true as far as the map is concerned.

Q. All right. Notwithstanding the heavy production of Canadian River in the areas which you spoke of, they are still unable to reduce the pressures on their leases so as to prevent drainage of gas to the north and to the northeast? That is absolutely correct, not just approximately, isn't it?

A. Well, it is a question of degree.

Q. That wasn't my question.

A. Well, now, wait a minute.

Q. All right.

A. I'll answer your question. I said it is a question of degree and yet unquestionably there is some migration, but it is a question of degree of migration.

Q. That's right, you don't know how much?

A. No.

Q. You know there is some?

A. Yes.

Q. You know as a matter of fact that Canadian River, concentrating their production as they have in the area which you say they have, that if they were successful in preventing migration you wouldn't have the isobar lines stepping down ten pounds just consecutively one after the other toward the low pressure area, would you?

A. Well, unquestionably there is drainage there, but

it is my impression that it is not long distance or mass drainage.

Q. Just a minute. You said you didn't know.

A. I said it was my impression. You can have an impression without knowing.

Q. You still don't know, is that right?

A. I don't know anything about the volume and I don't believe anyone else does.

Q. Now, you don't want the Examiner to take your impressions on this, do you?

A. If you insist, Mr. Keffer, I will say that it is my opinion that there isn't any way to prove—

Q. Just how much drainage?

A. That's right.

Q. All right. Well, I think that's good enough. All right, now, you do know this, Mr. Hammer, that there is a great deal more gas per acre being produced adjacent to and just beyond Canadian River acreage in Quadrant 1, Moore County; Quadrant 2, Moore County; Quadrant 3, Hutchinson County, and Quadrant 4, Carson County, than is being produced from Canadian River acreage per acre, don't you?

A. Well, no, I don't know that.

Q. Well, didn't you check that?

A. I didn't segregate to find out. I wasn't interested in what the individual operators were producing.

Q. In other words, you weren't interested in whether we were suffering drainage or not, is that your position?

A. All I was after, Mr. Keffer, were the reserves of gas in place underneath your acreage as of a certain date.

Q. As of a certain date, regardless of drainage in or out?

A. Well, I said, as of a certain date.

Q. Well, that's all right. All right, now, the average weighted rock pressure of Canadian River acreage is much higher than it is for the field as a whole, you do know that? You had to find that out, didn't you?

A. Yes, I think that is correct.

Q. And greater than it is in the surrounding acres to the northeast and northwest?

A. Right.

Q. We are also agreed that gas migrates from high pressure areas to low pressure areas so that migration would necessarily have to come from whose land?

A. Well, you have got to go a step further.

Q. Sir?

A. You must go a step further to get a true picture. It is also true that there is a high pressure area to the north of this intensive area you are talking about, and gas, if it is coming at all, it is also coming in from the north.

Q. Into Canadian River?

A. No, into this low pressure area you are talking about.

Q. It may be coming both ways.

A. That is right.

Q. In fact, your map shows it certainly is coming from Canadian River.

A. Well, it also shows that it is coming in from the other direction.

Q. I don't know that I am prepared to agree with you. Regardless of that, I am talking of Canadian River. It shows definitely that it is flowing from Canadian River into that area.

A. But to paint a true picture, you have to have both sides of the picture.

Q. Not to show that we are losing gas. The fact that we are losing gas doesn't give us much consolation if Mr. Lange is also losing gas. We are still in a bad way, isn't that right?

A. That is true.

The witness then stated that although in his direct examination he had used the expression that the Canadian River reserves would last 73 years, this was intended simply as a statement of what would happen if conditions remained just as they are at this time.

Witness HAMMER further testified (Vol. 58, p. 8187) as follows:

Q. All right, but this graph that you are talking about is consistent with your 73-year estimate, isn't it?

Mr. March: We object to that question—

The Witness: No, it is not.

By Mr. Keffer:

Q. I thought it was.

A. No, it isn't at all.

* * * * *

The witness further testified (Vol. 58, pp. 8190-8210) as follows:

By Mr. Keffer:

Q. Mr. Hammer, just as we recessed for the noon hour we were discussing I believe your Exhibit 180.

A. I believe that's right.

Q. Now, the three small points on that—Page 4B—

A. 4B?

Q. Yes, sir. The first point on that which represents approximately 425 pounds pressure, as I read it—

A. Slightly less than that.

Q. Not very much—do you know what it does represent?

A. I can tell you in a minute. It represents 422.7 pounds.

Q. 422.7. Now, what is that figure and where did you get it?

A. That is the weighted areal average pressure for the group of quadrants used in the determination of the factor 35.01 production per acre pound decline for application to Quadrant, Potter 3.

Q. Now, Quadrant 3, Potter County, I believe the record shows commenced production a long time before 1935, didn't it? This pressure was the pressure for 1935 as I take it.

A. That's right. Yes, this figure is 1935, that's right.

Q. Now, Quadrant 3, Potter County, came into production a long time before 1935, didn't it?

A. Well, I presume it did because there had been some production taken out.

Q. There had been some pressure drop?

A. Yes, there had been some pressure drop in that area.

Q. I will ask you if it had not come into production as early as 1928 or 1929.

A. I wouldn't know, Mr. Keffer, exactly.

Q. You didn't check as to that?

A. No, I didn't.

Q. Now, if it did come into production as much as six years earlier than what your line shows there, you would have virtually a straight line back from the line you do have for six periods, wouldn't you?

A. Read that question.

(The question referred to was read by the reporter, as set forth above.)

The Witness: Back to what year—1929?

By Mr. Keffer:

Q. 1929, that is what it would run to, yes.

A. Yes, I think that is true.

Q. All right, then, your curve, if you plotted that on your curves you show on Page 4B of your Exhibit 180, then you would have practically a straight line back to the left for as long a line as you have a dropping line to the right, wouldn't you?

A. Well, you know, as I said this morning, the actual question of time isn't the controlling factor in this. The controlling factor is the volume of gas removed.

Q. I appreciate that.

A. Regardless of time.

Q. But if you wanted to get an absolutely correct line, a graph from the time that quadrant came into production, you would for a period of five years have almost a straight line. It would be dropping a little bit, but not very much, until you got up to 1935, then it would be dropping more. You would have a line coming over sort of like that (illustrating), wouldn't you?

A. No, I don't think so.

Q. Why, it is so obvious, Mr. Hammer, I wish you would explain to me why you wouldn't have.

A. Well, you would have a straight line.

Q. Sir?

A. You would have a straight line.

Q. That is, a horizontal line, practically—not quit, but almost?

A. Horizontal?

Q. Yes.

A. No.

Q. It would be much more horizontal than the one you have plotted here.

A. No, I don't think that is true.

Q. In the same period, a five-year period, you go from 422 something—is that what you had?

A. Yes.

Q. —down to right at 400. You went down 22 points there; didn't you—a little more?

A. Yes, 402.8.

Q. According to your graph.

A. Yes.

Q. Then if you extended that graph on back to the time when the quadrant came into production, over a six-year period, you would have dropped only about seven pounds, wouldn't you?

A. Well, that just brings out the point I was talking about. Time doesn't enter into it.

Q. You would have had, wouldn't you—

A. Yes, if you do that, but time doesn't enter into it. It is the volume of gas taken out, regardless of time.

Q. What was the volume of gas taken out prior to 1935?

A. I don't know.

Q. It could have been a big volume so far as you know.

A. Yes, it could have been.

Q. That's right. Then if you were wanting to give absolutely an accurate picture you would have started back at the beginning instead of in the middle, wouldn't you?

A. No, not necessarily.

Q. You say the longer the period the more accurate your calculation, yet you didn't take as long a period as you could have taken.

A. I will say this, that if the data had been of such character that you could have utilized it with any degree of accuracy—

Q. What was wrong with the data in Quadrant 3, Potter County?

Mr. March: Let the witness finish.

Mr. Keffer: I think he had.

Mr. March: No, he was right in the middle.

The Witness: —that is just one of the several quadrants you utilized to arrive at the total reserve for Canadian River acreage.

By Mr. Keffer:

Q. Oh, I appreciate that. The question I asked you was what was wrong with the data on Quadrant 3. Please answer that simple question.

A. Well, it would be impossible to take one quadrant and go clear back when you couldn't get the data on all the rest of them.

Q. I know, Mr. Hammer, but if you will just answer my question we can get along much faster.

A. What was his question?

The Trial Examiner: What was wrong with the data on Quadrant 3, Moore County.

Mr. Keffer: No, Potter County.

The Witness: Well, the point is that we had a great group of acreage here. Now, if you couldn't get data back to the same point on all of them that were dependable it would have been useless to take it on one or two that might be dependable.

By Mr. Keffer:

Q. But you still haven't answered my question, Mr. Hammer.

A. Read the question.

(The question referred to was read by the reporter as set forth above.)

Mr. March: He has told you that. I want to bring it out in the record. He stated that his answer to that is that he couldn't get the data on all the rest of the quadrants, therefore, there wouldn't be any use, it would be impractical to take Quadrant 3 alone.

Mr. Spencer: You answered it just the same way he did, and just as well.

Mr. March: Thank you.

The Trial Examiner: The question pertains to the data in the particular quadrant, Mr. Hammer.

The Witness: Well, I don't have all of the data on Quadrant 3 back to the beginning as a separate quadrant. I only utilized that for the same period of time that we were forced to use all the rest of it. It might have been good. I think perhaps it was, but as I stated, it you couldn't get good data on all the areas that you could rely on it wouldn't do any good to take all the data on one of them.

By Mr. Keffer:

Q. Well, then, your answer is, I take it, that there was nothing wrong with the data on Quadrant 3 so far as you know?

A. So far as I know that is right.

Q. You have no reason to suspect that there was anything wrong with it?

A. That is right, as far as I know.

Q. All right. Now, that is the only quadrant you show, isn't it?

A. That's right.

Q. Now, you didn't go back to the beginning of production, then, on a single quadrant in which Canadian River Gas Company has acreage, did you?

A. You mean to the beginning of the life?

Q. That's right, the beginning of production.

A. No.

Q. Well, why didn't you do it?

A. I have just explained why I didn't do it.

Q. All right, was there anything wrong with the data on any of the Canadian River quadrants?

A. Well, I think Mr. Spencer will recall that there were a great many letters written to him during 1939 asking for this and that and the other thing. I feel relatively sure that after the work that we did in collecting data from the Railroad Commission in Texas plus the information we got from Mr. Spencer, I believe that we got a fairly accurate picture of the gas that came from all of the Canadian River acreage. I think we did.

Q. All right, the only picture you got is the different periods, the different markets, the different pressure bases that were used, isn't that the net result of it?

A. What was that question?

(The question referred to was read by the reporter as set forth above.)

The Witness: Well, I don't have all that data, but I do know that we got certain data from him and I do know that he told us in a letter that as near as he could give it to us that certain gas, and I believe he went to work and tied it down to particular wells as far as he could—as I re-

call it, he told us that the gas had been metered at four—I believe it was—four different pressure bases.

By Mr. Keffer:

Q. And gave you what those bases were?

A. That's right.

Q. Then, so far, at least, as Canadian River acreage is concerned you could have gone back to the beginning of production?

A. Yes, I could have done that.

Q. But you didn't do that because you couldn't do it for the field as a whole?

A. Not for the field as a whole but even in the areas where Canadian River has its acreage I couldn't do it.

Q. You couldn't have done it?

A. No.

Q. Which quadrant are you speaking about?

A. Well, I would say Quadrant 1, Moore County—

Q. All right, what was wrong with Quadrant 1, Moore County?

A. —and Quadrant 3 in Hutchinson County, and as I remember it, Quadrant 4 in Carson County.

Q. What was wrong with Quadrant 1 in Moore County?

A. Well, there have been a lot of wells drilled in there prior to 1935.

Q. Who drilled them?

A. Well, if I had time enough I could tell you who drilled them, but I think Canadian River drilled part of them.

Q. That's right, and you had all the information on them and—

A. Yes, I think that is right, on the Canadian River wells.

Q. Texoma drilled a few prior to 1935. You had the information on those, didn't you?

A. Yes, I think that is right.

Q. Wasn't that about all that was drilled before 1935 in that quadrant?

A. I would have to check. I don't remember.

Q. Well, would you say you could have gotten good information on Quadrant 1, Moore County, back to the beginning?

A. I wouldn't want to say. It is my remembrance—

Q. You just made no effort to determine, is that right?

A. Well, the whole point is that in the areas embraced in that part of the field where the Canadian River has its acreage there was so many records that weren't dependable that we just felt it was not—well, it was impossible to rely on them.

Q. All right, then, we'll go from that. This method of least squares that you have been utilizing, you could have a curve that goes up and down and up and down and up and down, peaks and valleys in it, and you could still straighten it out by that method, couldn't you?

A. That's right.

Q. If you had a curve that made an arc sort of like a half-dollar, the outer edges of it, you could straighten one of those out, couldn't you?

A. I never had occasion to apply it to a hyperbolic curve, no.

Q. It would work, wouldn't it?

A. I have never used that way. I suppose it might.

Q. In fact, it doesn't make any difference what kind of curve you have, you can always straighten them out by applying this least squares theory?

A. Well, I wouldn't want to go so far as to make a general statement of that kind.

Q. Where did you get that theory, Mr. Hammer?

A. Well, I knew that—I have known for a good many years that the method was applied to the projection of certain curves by—oh, statisticians and by certain chemical formula and general things of that type where the points did not—through which they wanted to draw a curve that did not fall in exactly a straight line and it has been utilized for that purpose.

Q. Well, I have seen lots of lines for long periods of time that weren't straight and I am wondering if this line ought to be straight, if in straightening it out you stayed with the tools which nature had given you up there to work out this problem.

A. Why, certainly it ought to be straight.

Q. How's that?

A. Certainly it ought to be straight.

Q. Ought to be?

A. Certainly.

Q. Why ought it to be straight?

A. Well, that is absolutely according to the principle of the Boyle's law. If you take out so much gas and you calculate your thing properly, why, you will get a straight line projection.

Q. Yet we didn't get it here, did we?

A. Oh, yes, we did.

Q. No, when you applied Boyle's law you didn't get a straight line. That's just what I'm talking about. You had to go to something else to get your straight line.

A. No, I didn't.

Q. All right, if you apply Boyle's law and plot your points there which you have, it wouldn't be the kind of a line you have got, would it?

A. Yes.

Q. Look on your map—on your graph and see if it would.

A. All right, which graph?

Q. The one on page 4B.

A. Yes, you would have a straight line.

Q. What makes it straight? If you are drawing from the center of one point to the center of another, do you have a straight line?

A. Oh, well, what we are doing is drawing a weighted curve through points of different values.

Q. Right. You weighted everything you can on your method of weighting, applied Boyle's law to it and didn't get a straight line; then you went to this least squares and you straightened out Mr. Boyle's line. Now, isn't that just what you did?

A. No, that is not a true statement of it at all.

Q. Well, I wish you would state it absolutely as you did it.

A. We utilized the five years of weighted pressure decline and production and for each year of the five years that was calculated and the curve represents, not one year or not a point from one year to two years, but a weighted curve for all of the years. That's what your production per acre pound decline is based on, not one year.

Q. I understand very well, Mr. Hammer. Now, let's go back to 4B, to the curve which you have extended out there across your paper three times. Isn't that the curve that Boyle's law gave you as you applied it?

A. Yes, it is.

Q. Well, let's look at it.

A. All right.

Q. Here on Page 4B, if you drew a line from the center of your first point to the center of the second point, which you didn't do, it would drop down from the way you have it, isn't that right?

A. Yes, but it wouldn't mean anything.

Q. You just answer my question.

A. I said yes.

Q. Then you draw a straight line from the middle of that point to the middle of the next one and it would be slightly below where you have it there?

A. That is true.

Q. Then you draw a straight line from that point to the next point and it would end up slightly above where you have your line, wouldn't it?

A. That is also true.

Q. And if you draw from there to the next one it would be slightly below?

A. That is also true.

Q. That is the curve of the line you got from applying Boyle's law?

A. No.

Q. How did you get it?

A. The line we got from applying Boyle's law is the line upon which these larger points are projected.

Q. Where did you get the line as we have reconstrued it, drawing it from the center of one point to the next? Where did you get that line?

A. I didn't get any line drawing from the center of one point to the other.

Q. If you had plotted it accurately that is the point you would have gotten?

A. It is not, or any other method under Boyle's law, where you are weighting out several years.

Q. Look here, Mr. Hammer. You have a pressure drop It takes you down to this point here, starting here (indicating), and you draw a straight line across there and you have a pressure that takes you down like that and you plotted it in and it comes out like that and you plot it in and comes down like that and you plot it in. Can you see that line? (Indicating in Exhibit 179.)

A. I can see it approximately.

Q. That is precisely what you get when you take the data which you have and plot it on a curve, isn't it?

A. That is the curve you get when you plot your pressures against your accumulated production.

Q. All right, isn't that what you are doing here?

A. Yes, but all of the things you are talking about have been weighted in and in a determination—

Q. As you have described it heretofore, in getting your points to construct this irregular line you have indicated there?

A. I had all the data, yes, and utilized it.

Q. And you did all of your weighting then, too, didn't you?

A. When I arrived at the production per acre pound decline.

Q. That is right, you had all that, didn't you?

A. It is all weighted in.

Q. And you had that when you reconstructed this irregular line, didn't you?

A. (Pause).

Q. Will you answer my question?

A. I had all the data, naturally, from the beginning.

Q. It has been suggested that you might not understand my question.

If you are plotting it by year like the one we are talking about—the one we were talking about was in your Exhibit 180—

A. If you plotted your accumulated production against—

Mr. Spencer: By years—

The Witness: —your pressure decline.

By Mr. Keffer:

Q. That is right, year by year.

A. Or any period. It just happens that year to year was used.

Q. When you did that you had an irregular line instead of a straight line?

A. Certainly.

Q. Well, I guess we are talking about different things.

When you make that irregular line a straight line, how do you do that?

A. That is where we utilized this simultaneous equation as shown on Page 3.

Q. Sir?

A. That is where we utilized this simultaneous equation shown on Page 3, Exhibit 180.

Q. How many other fields have you used that simultaneous equation on, Mr. Hammer?

A. I haven't used it on any others.

Q. I see. Do you know any other field—strike that.

It is the first time you have ever tried it?

A. Well, it is the first time I have ever tried it for a particular case like this.

Q. And you haven't any experience to know whether it is going to pan out or not; you are going to have to wait until the field is exhausted before we can tell, is that right?

A. No. It has already been proven. The curve right here (indicating) proves it.

Q. You have a straight line. You will have to get a straight line when you apply that formula, no matter how crooked it was?

A. Yes, and it checks in with your accumulated production as against your pressure decline. What better proof do you want?

Q. How do you mean it checks?

A. It draws the best possible curve that you could get through those five divergent points.

Q. Do you have the charts on the other quadrants you made your basic line from?

A. It wasn't necessary to make one. I just made one by point of illustration. When you get your production per acre pound that is equivalent to a curve.

Q. Well, as I recall, when we got our production per acre pound on various quadrants every time we had a different grouping we got a different figure.

A. Well, when we grouped different acreages and the factors contained in those different acres, why, naturally we would get a different figure.

Q. But not from the particular quadrant? The gas didn't change in place under that quadrant, did it, just

because you made a different grouping of some other quadrant?

A. No.

Q. The gas didn't know you did that?

A. But the weighted pressure—I thought I explained that sufficiently. Just take your Quadrant 3 here—

Q. Sir?

A. The whole idea—I think it is sound—I think it is sensible and I think it is fair—is to take instead of one quadrant alone where there is indication of the movement of gas either to or from a five-year period—the quadrant upon which you want to make your determination in those adjacent quadrants, and from a group arrive at a production per acre pound.

Q. Yes, I know that.

A. It can then be applied to the quadrant in question.

Q. All right. Now, you have drawn a line on Quadrant 3, Potter County, and you have drawn a master line for all of the quadrants in which Canadian River acreage is located, based upon Quadrant 3, Potter County, is that right?

A. No.

Q. Why did you show Quadrant 3 in Potter County?

A. I have just finished explaining that every time you make a calculation for production per acre pound decline it is equivalent to drawing a curve.

Q. Suppose it wasn't per acre pound decline, just a decline of so many pounds per so many billion feet of production, what is the difference?

A. There is a lot of difference.

Q. Tell me the difference.

A. What?

Q. Tell me the difference.

A. Well, this whole thing is a weighted proposition. You have to weight it against your acreage and you have to weight it against your pressure decline and in doing that we had to construct these isobars in order to get the proper weighting. Now, those factors are all weighted in. You can't just grab a lump figure out of the air and utilize the same principle.

Q. When you get your acre pounds that is just a matter of weighting your basic segments, isn't it?

A. When you get your isobar segments?

Q. That is all you do?
A. That is right.
Q. And that is all there is to it?
A. As far as the acre pound is concerned.
Q. That is right, as far as the acre pound is concerned. If you took your isobar lines or segments all the way across the field as you have drawn them here and get a weighted average pressure for the fields, you would have the same thing, wouldn't you, expressed in a different manner?
A. Yes, that is the basis upon which I gave you those weighted pressures.

The witness stated that you could calculate production per acre pound for the entire field in the same manner that he calculated production per acre pound for each local area (quadrant), and that if one wanted a picture of what was actually happening in the field he could plot the weighted pressures as against production for each yearly period, and this would show what the field was doing with respect to decline in rock pressure as related to production.

He stated the picture would probably be accurate, but it wouldn't be practicable to apply the results to any local area in the field, but still it would be accurate in so far as the application of Boyle's Law to the field-wide picture is concerned.

The witness further testified (Vol. 58, pp. 8212-8213) as follows:

Q. I mean when you plot your pressure drops against production you don't have a straight line?
A. As I have said before, and I think your own men will agree with me, they have seen, literally speaking, probably hundreds of curves plotted, each on individual wells, and there is always variation, more or less. If they plotted the curves themselves they would try to plot that mainly so it would go through those points and give the best straight line.
Q. But when you are extending it, giving the best straight line, that is when you are using your own judgment?
A. No, you are not. You are projecting into that in the future as to the history it has shown in the past.
Q. Suppose you had used your last two points on plotting your straight line on Page 4B, it would have been slightly a different line, would it not?

A. Page 4B?

Q. Yes.

A. Yes, and if you had used your 1937 and 1938 you would have had another line.

Q. And if you had used the 1935 and 1936 you would have still had another one?

A. There is no argument on that.

Witness had left out Wheeler County Quadrant 1 in determining his weighted average pressures, and gave as his reason the following:

> "Certainly if I had reason to believe, or if any other engineer happened to believe that a certain area, although some railroad commission or somebody might have included it in an area, that that particular area was not productive and had no value, I think you would be wrong in including it. That is my position on it."

Witness stated that if Boyle's Law were working perfectly you could not take any year, or any other period, and get the same results because the data might vary from time to time but that if you had accurate information the results would check. For example, the estimate would be the same if the data for the period from 1935 to 1936 only were considered, or from 1938 to 1939, or any other yearly period, if the data was perfect and if you had absolutely ideal conditions. The witness means by an ideal condition —an experimental application of Boyle's Law, such as a laboratory experiment.

Again referring to the original of Wheeler County Quarant 1 in his estimate of field reserves, the witness stated that he had not utilized it because there was no recorded production that the railroad commission had during the five-year period he considered. It was then called to his attention that his work sheet showed that during that period there had been produced from this quadrant 523,042,000 cubic feet. Witness insisted, however, that even so, this was not much gas and still insisted that the quadrant was largely exhausted of its gas. He was then asked if his computations on the Wheeler County Quadrant 1 did not give an acre pound factor of 30.24, and he could not recall whether it did or not, but that the figure of 30.24

was reached by him by the application of the least squares theory and subject to check.

The witness further testified with respect to Wheeler County Quadrant 1 (Vol. 58, pp. 8233-8236) as follows:

A. But when we found out that the area looked like it was depleted as far as any oil or gas was concerned, and particularly as far as gas was concerned, there was no reason for utilizing and figuring the future reserves if there wasn't any gas left there. I mean, of course, you might drill a well and get a show of gas, or a small well, but for all practical purposes we considered it a depleted area.

Q. All right, but you got this 30.24 by the application of this least squares theory, didn't you, when you worked it out?

A. Yes.

Q. And that gave you an original acre content of better than 13 million feet per acre, didn't it?

A. I would have to check that. I don't recall that.

Q. And that is the reason you threw it out?

A. That is not true.

Q. You knew that answer you got was out of all proportion than from what the physical conditions showed as being there; you threw it out definitely because your system wouldn't work and you didn't want it to come out in this case?

A. That is not a true statement.

Q. Give a true statement.

A. I have already given it.

Q. All right. When you applied your pressure decline method in the least squares, Quadrant 1, Wheeler County, as you applied it to the field you got an acre content of 13 million cubic feet per acre; that is right?

A. I say it is right, subject to check.

Q. You knew there was a field that was depleted and you had five hundred million cubic feet in figures, a difference of 26 to 1, and you knew you couldn't come into this case with a discrepancy such as that?

A. Well, that statement that you are making is absolutely untrue.

Q. You did have that discrepancy?

A. I have stated that we found out that the area was depleted and we decided not to use it. I stand on that.

Q. All right, it did show 13 million feet per acre, as you computed it?

A. I don't recall.

Q. Will you check your working papers?

A. Yes, I will check them.

Q. You knew it didn't have anything like that, didn't you?

A. Well, I don't remember whether it was that or whether it was something else. I want to check that whole situation.

Q. You have stated many times it was worthless; therefore, you didn't include it?

A. I think you are in erorr as far as that 13 million cubic feet is concerned.

Q. You can check that to see if I am in error.

A. Yes, I will check it.

Q. Now, if you made some particular effort on the field-wide figures to have gone back to the beginning of production, you would have had a lot larger volume of gas to have considered and a lot larger producing history to have considered, wouldn't you, Mr. Hammer?

A. That is true, if it had been possible to get it.

Q. But even with some diligent work you could have gotten pretty accurate figures on that?

A. I doubt it very seriously.

Q. You didn't try?

A. I asked a lot of questions—

Q. But you really didn't get down and try to get the figures, did you?

A. When folks like Phillips Petroleum Company who have been in there from the beginning and who had probably more scouts in the field than anybody else and had made an effort to keep a record of all of the wasted gas and all of that sort of thing, will tell you that they are not sure of their estimates, I would like to know how anyone else could do it with any degree of accuracy.

Q. Can you ever be sure of an estimate?

A. You never can be sure on estimates of that type.

Q. You have made an estimate of the field here, haven't you?

A. Yes, on data and records.

Q. You are not sure of it?

A. Yes, I am relatively sure.

Q. I thought we agreed several times that no one could be certain about that.

A. Of course, there is never one thousand per cent accuracy. Your men don't have one thousand per cent accuracy.

Q. I will grant you that.

Since we can't be certain about any of these things, it is obvious we should be as certain as we can?

A. That is right.

The witness further testified (Vol. 58, pp. 8241-8246) as follows:

Q. Mr. Hammer, just another question on your Wheeler County Quadrant 1. You gave us one of the reasons why you didn't use the production history, and you had a production from that quadrant of 523,000,000 cubic feet of gas. Now, I will ask you if you have other quadrants in the field in which you had less production even than that and which you did use.

A. I couldn't answer that from memory.

Q. Let me ask you this and you can check it: Didn't you have from Gray County 1, a production of 80,513,000 feet? Look at your papers and see if you didn't.

A. I don't have that statement for the whole field. I don't have it here.

Q. Don't your papers there show that? Don't you have that in your working papers? You don't have a single thing which you can check that with? It would be a most obvious figure. You ought to have something there, because that is the thing you had to have as the very basis of your calculations. Did you look in your suitcase—your briefcase to see if you don't have that? Do you have your working papers?

A. I have looked and I don't have my working papers here in the hearing room, not on the total field. I assumed that you were through with those. I didn't want to load this thing down and I took some of this out.

Q. Well, will you check that and see if that isn't a correct statement, and in Gray County, Quadrant 2, you had production up to August 1, 1939 of 240,300 cubic feet—Mcf. That's 240,300,000 cubic feet.

A. What were those?

Q. The previous one was 80,513,000 cubic feet, not Mcf.

A. What quadrant was it you wanted checked?

Q. Quadrants 1 and 2, Gray County.

A. Quadrants 1 and 2, Gray County, and what else?

Q. Well, let me check that—yes, that's what it shows.

A. Just those two quadrants, 1 and 2—1 and 5, Gray?

Q. That's right—well, you got those for 1 and 2, haven't you, Gray County?

A. Yes.

Q. And your figures to verify?

A. 1 and 2, yes, that's right.

Q. That's right.

A. Those are the two you want?

Q. That's right. You might verify the figure we gave you on Wheeler County which is taken from your working papers. That's Wheeler County 1.

The Trial Examiner: What was that figure, Mr. Keffer?

Mr. Keffer: That figure was 523,042,000 cubic feet.

The Witness: All right, I'll check that one.

By Mr. Keffer:

Q. Now, Mr. Hammer, I asked you the other day if your figuring this field by quadrants didn't give you a bigger figure—a bigger reserve than you would have gotten if you had figured the field as a whole and you said you didn't know.

A. No, I don't think I said I didn't know. I said my remembrance—my remembrance is that I said that I thought that the calculation of the field by the quadrant system would give me a more accurate result than if I tried to do it by the whole area.

Q. I know, but the question I asked you was if it didn't give you a higher result and that is what you weren't certain about.

The Trial Examiner: Mr. Keffer, when that came up yesterday, wasn't it decided to let Mr. Hammer see if he couldn't find that figure in his working papers?

Mr. Keffer: I believe it was. Mr. Hammer hasn't given us a figure, however, the other figures which he has given us this morning I think will demonstrate that figure.

The Trial Examiner: I believe you brought that up yesterday.

Mr. Keffer: That's right, either yesterday or the day before.

The Witness: It was my understanding that I have given you all that you asked for. If I overlooked something, it wasn't intentional.

Mr. Keffer: I think we have it with what you have given us. I think the figure will work out.

Q. Now, you gave your weighted pressures this morning at the various years. Those figures were 369.25 pounds for August 1, 1935.

A. That's right.

Q. That is correct; then at August 1, 1936 it was 360.74 pounds.

A. That is correct.

Q. At August 1, 1937, 352.02 pounds.

A. 352.02.

Q. August 1, 1938, 343.01 pounds.

A. Right.

Q. August 1, 1939, 332.98 pounds.

A. That's right.

Q. All right, now, if—relating that back to your production figures for each year, Mr. Hammer, you had the period 1935 to 1936, 620,404,940 Mcf., did you not?

A. No—you mean from August 1935 to August 1936?

Q. Yes.

A. Well, the figure there is 615,778,940.

Q. Oh, yes, I see the difference. If you included Wheeler County 1, you would have had 620,404,940. You would have five million more there.

A. I hadn't made the addition. I assume if you added that five that it would give you something like that.

Q. But the figure you did give was 615,778,940 Mcf.

A. That's right.

Q. And you had a pressure decline that year, that is, from 1935 to 1936, on your pressures as you have figured them of 9.24 pounds.

A. No, it is 8.51 pounds.

Q. All right. I have the figures with the Wheeler County quadrant in. That's where we are off. I thought the adjustment had been made here, but it has not. Just one second and we'll take those figures with the Wheeler County quadrant out.

Mr. Keffer: I believe, Mr. Examiner—Ithought we were in position to go into the matter, that the matter had been computed and the figures worked out, but with Wheeler County quadrant left out, but those figures are in. In the figures that were presented this morning the Wheeler County quadrant was left out and it has thrown our figures a little bit haywire and it is going to take a little time to figure the matter and that being true, and, further, the fact that the large sheet that was handed Mr. Hammer yesterday for verification has not yet been verified.

Mr. March: We'll stipulate that it is correct.

Mr. Keffer: How's that?

Mr. March: We'll stipulate for the record that that is correct.

Mr. Keffer: That sheet is?

Mr. March: Yes.

Mr. Keffer: All right, that's fine.

Mr. March: We haven't checked it, but we will stipulate that it is correct.

Mr. Keffer: That's right, we do get back to the Wheeler County matter again.

Witness HAMMER further testified on cross examination, Vol. 59, pp. 8298-8466, inclusive, and particularly pp. 8309-8359, as follows:

Q. Mr. Hammer, I asked you yesterday for another computation for the production figures on Gray County, Quadrants 1 and 2. You said that you couldn't give me that at that time but that you would get it. I wonder if you would do that now?

A. I have the production figures here for Gray—let me explain this. I have them separated all right, but in utilizing—

Q. Just answer my question.

Mr. March: He is going to answer it.

The Witness: I want to make an explanation.

Mr. March: He is going to give you the production figures.

The Witness: While I set out two quadrants—I call them Quadrant 2 and Quadrant 5 in Gray County, because of the size and the position of it I utilized Gray County 5 and Gray County 2 together. I have separate figures for Quadrant 2 and Quadrant 5 but in the compilation I threw it in all as one quadrant because of its position.

By Mr. Keffer:

Q. All right, give me the figures on Quadrant 2 and Quadrant 5, Gray County.

A. The year ending August 1, 1935, zero production—

The Trial Examiner: From which—

The Witness: This is Quadrant 2, Gray County, 1936.

By Mr. Keffer:

Q. Just give the total figure.

A. For the four-year period?

Q. Yes.

A. For the four-year period, 865,360 Mcf.

Q. Now, just a minute. What quadrant was that?

A. Quadrant 2, Gray.

Q. All right, give me by years, then—let's see how you get that figure.

A. 1936, 144,465 Mcf.; 1937, 1938 and 1939—

Q. No, give it just for 1937.

A. Well, I'm going to give them to you. For some reason that I don't remember, we got a figure from the Commission records of a total of the last three years and we simply divided that equally for the three years of 24,300 Mcf. In other words, the tabulation would be 243 hundred; 243 hundred; and 243 hundred for each year consecutively for 1937, 1938 and 1939. I don't recall exactly where—how we happened to get that lump figure.

Q. Sir?

A. I don't recall how we happened to get that lump figure and divided between the three years.

Q. Could we have your working papers just a moment on that, Mr. Hammer? You don't want to change your answer on that?

A. Let me see those working papers a moment.

Mr. Spencer: Mr. Examiner, while they are looking at their working papers, may we have an exception to the Examiner's ruling a few moments ago?

The Trial Examiner: Yes.

By Mr. Keffer:

Q. Do you have them?

A. That's right.

Q. Now looking at your work sheet covering Quadrant 5 and 2, Gray County, what is the total figure that you have at the bottom?

A. That total figure that you would have at the bottom there isn't representative of 2 and 5 alone.

Q. Oh, what does that represent?

A. Well, you see in here is 2, 4, 5 and 6.

Q. All right.

A. I just picked off there—

Q. Let's take Gray County 4, for the purpose of illustration. What was the production from it for four years? Where are your years on that? I can't see it. What was the production in Gray County 4, 1936?

A. 14,718,527 Mcf.

Q. All right, what was the production in 1937?

A. Four?

Q. Yes, the same one.

A. 30,026,866.

Q. All right, what was the production in 1938?

A. 45,181,050.

Q. All right, what was the production in 1939?

A. 58,446,879.

Q. All right, now will you turn to your work sheets and show me what you show as the total production from Gray County 4 during those years?

A. That seems to be the only tabulation in these working papers that gives it.

Q. That gives it?

A. Yes.

Q. All right, where is it? Give me the figure.

A. Well, it would be the summation of these that I have just read.

Q. All right, just read your summation on it.

A. I would have to add it up.

Q. Haven't you got it already summed?

A. No, not individually.

Q. Let's go back, then, to that original sheet we were looking at on Gray County 2 and 5.

A. Well, this sheet right here.

Q. All right. You show me the accumulated production on Gray County 4 and you show it on the sheet you are now examining.

A. Again, that is the group accumulated there.

Q. I know, but you have it for each quadrant in the group, don't you?

A. Yes, but again I would have to pick it out and make an addition.

Q. Well, let's look down here. What is the figure—Gray County 4? Just read the figure there.

A. Wait a minute, I want to do a little checking here.

The figures that have already been read into the record are the correct figures for the four years.

Q. How do you mean, correct figures for the four years?

A. Well, I mean I have checked them. Those are the production by year.

Q. All right.

A. Now, to get the total I would have to add those together.

Q. All right. Turn to your Hartley County quadrant.

A. No, I'm going to finish this. Why hop to Hartley? Do you want this figure?

Q. All right, go ahead. I was just trying to help you a little and save a little time.

The Trial Examiner: Do you want the record to show that?

Mr. Keffer: It is already in the record. It doesn't make any difference.

The Witness: The figures are in the record.

The Trial Examiner: Very well. Go ahead, Mr. Keffer.

By Mr. Keffer:

Q. Well, let's turn to the Hartley County quadrant, Mr.

Hammer. Give me your annual production figures on that one.

A. All right, the 1936 figure, 793,677 Mcf.; 1937, 3,322,690 Mcf.; 1938, 5,112,209 Mcf.; 1939, 6,785,156 Mcf.

Q. All right, now, will you total those and tell me what the total production has been from that quadrant during that period?

A. The total figure there, unless I have made a mistake in addition, is 16,013,732 Mcf.

Q. That's right.

A. Or 16 billion—

Q. 16 billion plus as the total production from the quadrant for those four years.

A. That's correct.

Q. Now, again, you are trying to run into the word "approximately" there. That is the figure unless you have made some slight error in addition?

A. All right.

Q. Mr. Hammer, is that true of all your quadrants? Have you figured them that way in getting the total production in order to get your acre pound?

A. Yes, we got the total production by years.

Q. And then added them all up?

A. And then took the summation of the totals.

Q. And it is upon that basis that you determined your acre pounds, is that correct? by relating your pressure decline to your production figures?

A. Yes, annually; that is, taking it five years through.

Q. Well, now, those figures that you have there, as you have computed it there, if they are erroneous, then your acre pound figure would be entirely out of line, wouldn't it?

A. Those are the figures we got from the Texas Railroad Commission. If the Railroad Commission didn't have them correct, why—

Q. But even so, if you made an erroneous calculation there, then your acre pound answer would be an erroneous answer, wouldn't it?

A. Will you read that question, please?

(The question referred to was read by the reporter, as set forth above.)

The Witness: If you made an error, yes.

By Mr. Keffer:

Q. That's right, and in the approach you make of this field—the pressure decline approach is primarily a mathematical approach, isn't it?

A. It is an approach from the standpoint of mathematics and physics, that's right. It is a mathematical calculation.

Q. It has nothing to do with geology as such—it is a mathematical problem?

A. That's right.

Q. Now, Mr. Hammer, you feel that you did that correctly, of course, because in applying your formula if you didn't do it, why, your whole figure on a quadrant or on a field would be an erronebus figure, would it not?

A. If the formula were in error and was not applicable, of course, that is true.

Q. You would get an erroneous figure, but even if the formula were correct and you made an improper application with the figures you had you would still get an erroneous figure, would you not?

A. That is true. I don't think I did, but if I did I would have.

Q. I appreciate that, but in making a study of the character you have, you have to be very careful to be sure that you don't make a mistake in arithmetic?

A. Yes, where you have used as many figures as we have.

Q. Now, Mr. Hammer, what would you say if I told you you had made a very *grevious* mistake in the calculations you made there?

A. You would have to prove it to me.

Q. Would you be hard to convince?

A. I don't know as to that.

Q. All right, now, I am going to prove it to you. Now, I take it if I prove it to you on this you will agree with me that you might have made a lot of other mistakes and your figures would be all haywire, wouldn't they?

Mr. March: I object to that—

Mr. Keffer: I'll withdraw it.

The Trial Examiner: He withdrew it, Mr. March.

By Mr. Keffer:

Q. Now, Mr. Hammer, will you look at your Exhibit 180, Table 1, Page 5, and tell me what you show as the total production from the Hartley County quadrant?

A. 5, you say?

Q. Yes. The page is on the back. It is the tabulation you have there just following your statement—wait a minute. It's 2. Read the figure you see there set out already.

The Trial Examiner: What was that, Mr. Keffer? Hartley?

Mr. Keffer: Hartley quadrant. That is the one right at the top of the page.

The Trial Examiner: Yes, I see.

Mr. Keffer: The total production since August 1935 as shown on that schedule.

The Trial Examiner: Do you want him to read that into the record, Mr. Keffer, for the five years?

Mr. Keffer: That's right.

Q. Just read it in.

A. All right, I want to do some checking about the other figures I put in.

The Trial Examiner: Follow Mr. Keffer and then if you wish to expand on it or explain it, Mr. Hammer, you will be given an opportunity to do so.

The Witness: All right, though I want to explain it the minute I get through.

The Trial Examiner: That's all right, but follow Mr. Keffer.

The Witness: The figures on Table 1, Page 2 of Exhibit 180, 793,677—

By Mr. Keffer:

Q. I want you to give me, Mr. Hammer, if you have it there—

A. That's what I am doing.

Q. —the total production from the Hartley County quadrants covering the periods which you testified about a while ago.

A. Do you want that added up again?
Q. No.
A. Well, it has to be.
Q. What do you say at the top of that column?
A. I say, "Accumulated Production."
Q. What does that mean?
A. All right—
Q. All right, go ahead, then, and do it your own way.
A. All right, this is accumulated production.
Q. All right.
A. 793,677 for 1936.
Q. Now, let's go slow.
A. —and 3,322,690 for 1937; 5,112,209 for 1938; 6,785,156 for 1939.
Q. Those are Mcf. figures?
A. Yes, those are all Mcf.
Q. Now, do you want to add them?
A. No. The figures that I previously read into the record as being annual production figures were in reality accumulative production figures. In other words, I didn't notice "accumulated production" at the top of the column of the work sheet when I read them in, the figures that I gave

The Trial Examiner: Let's see, that was the figure for Hartley County, previously?

The Witness: That's right.

Now, in Table 1, Page 2 of Exhibit 180, the figure given there for 1936 is 793,677.

Mr. Lange: That is Column G?

The Witness: That's right.

All right, come down to 1937 and the figure on the tabulation just mentioned is 3,322,690. It is the same figure on the work sheet that was read into the record. Take 1938, the figure on Table 1 is 5,112,209. It is the same figure that is on the work sheet. Take 1939, Table 1 shows 6,785,156 Mcf., and it is exactly the same figures as shown on the work sheets; so the figures check.

By Mr. Keffer:

Q. All right, you do want to correct your statement, I take it?

A. As to those originals being yearly figures?

Q. That is right. I asked you right at the start if they weren't accumulative figures and you were very positive they were not.

A. That is correct.

Q. So an eminent scientist in mathematics where he has a mathematical problem may make a mistake?

A. I suppose that is true. It has been done.

Q. And even a rather simple problem?

A. Yes, that is true. It can be done.

Q. Now let's get back to Gray County and let's give the correct figures on Gray County quadrant which I was asking you about a while ago. You made the same mistake in Gray County that you made in Hartley County, didn't you?

A. I don't know.

Q. Check it and see.

A. Mr. Keffer, which quadrant were you referring to in Gray County?

Q. Quadrant 1 and Quadrant 2, the ones we were talking about.

The Trial Examiner: Is that Gray County, Mr. Keffer?

Mr. Keffer: I am sure that is what it is. It is Gray County, Quadrant 1 and Quadrant 2. If I made a mistake in stating it I want to correct that.

The Witness: I didn't know what I was checking.

By Mr. Keffer:

Q. I want them separately, Mr. Hammer.

A. Well, Gray County 1 is the small quadrant—the quadrant that has the small area inside the boundary.

Q. Well, here, isn't this the top boundary line I draw my pencil across?

Mr. Spencer: Across where?

Mr. Keffer: I can't read the map. I can't read the figures here on the map.

Mr. Lange: It is Quadrant 6, Gray County.

By Mr. Keffer:

Q. Just give me the acreage. That is a better way than any to determine the size.

A. If I have the acreage here I will give it to you. I don't know whether I have it available or not.

Q. Go ahead. We can look up the acreage later.

A. All right. That area down there didn't start to produce gas until 1939.

Q. All right, then, you had zero 1936, zero 1937, zero in 1938, is that right?

A. Yes, and it started to produce in 1939.

Q. All right, what did you have in 1939?

A. 80,513 Mcf. in that year.

Q. All right, give Quadrant 2.

A. The only figure I seem to have here is the accumulative figure.

Q. All right, read the accumulative figures year by year. You can determine by subtraction then what the production has been each year, can't you?

A. It could be done.

Q. Read the accumulative figure. Just read them. You have them there in front of you.

The Trial Examiner: Can you find the figures, Mr. Hammer?

The Witness: I can find the figures, but you see the thing that makes it difficult is that two of them have been combined.

Mr. Keffer: You had them all set out separately when we were looking at them on your work sheets.

The Witness: Yes, but what I am trying to do is to check back as to whether they are actually accumulative or are actual production.

Mr. Keffer: You can read the figures readily. I thought we decided what they were.

The Witness: Well, I want to do a little checking.

The Trial Examiner: We will stand in recess for five minutes.

(At this point a short recess was taken, after which the proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Keffer:

Q. All right, Mr. Hammer, will you read the yearly accumulative production figures on Quadrant 2, Gray County?

A. Yes.

Q. All right.

A. In 1936 it was 144,465 Mcf. Apparently—well, it is certain in 1937 some time there was a production of 95,385. The two added together would give you the total accumulated in the amount of 240,300 Mcf.

Q. That was accumulative production in what year?

A. Well, that came in in 1937.

Q. All right, give your figures for 1938.

A. No, I want to make this statement—

Q. Give the figures and then make the statement.

A. For 1938?

Q. Yes.

A. Well, of course, that was an accumulative figure taken through to get it.

Q. Just read it.

A. 240,300.

Q. That is what I wanted. Now read the 1939 figure.

A. 240,300.

Q. All right, that is what I wanted. Now go ahead and make your explanation.

A. All this discussion of this production in Quadrant 3 or in any other quadrant in arriving at, for the record here, the production figures, has made no difference and has made no error whatsoever in the calculations to arrive at the production per acre pound to be applied. It is simply an error in reading from the wrong column in the work sheets.

Mr. March: The figures in the exhibit are correct?

The Witness: That is right.

By Mr. Keffer:

Q. You told me a while ago there wasn't any error in the figures you were reading of annual production, didn't you?

A. Well, I have corrected that.

Q. Yes, that is right. And if you made a mistake in this other you reserve the right to correct it, too?

A. You mean in the calculation?

Q. Yes.

A. They were checked so many times I don't believe there were any errors.

Q. These were checked, too, weren't they?

A. Well, they were checked here *hurridly* on the witness-stand, yes. There is quite a difference between that and checking a bunch of figures yourself and having three or four other fellows check them over a period of three or four months.

Q. Did you yourself compile those figures and write them into your work sheets, Mr. Hammer?

A. Not all of them, no; very few of them, as a matter of fact, as far as the work sheets are concerned.

Q. Who prepared those figures?

A. Well, I had—I can't recall. I think principally as far as the compilation of these figures was concerned, it was done by two different men.

Q. Who were they?

A. A fellow by the name of Jack Daugherty and *Charels* Pettingall. I do remember very distinctly that in all cases they checked back against each other. In other words, I required if one figured out a bunch of calculations that the other would take those and then check them and they were checked and rechecked back and forth that way.

Q. They prepared your working papers, then, on your accumulative production figures and annual production figures, is that correct?

A. That is right.

Q. You had nothing to do with it?

A. Except that they would come to me and we would go over it. If there was an error I would say, "You check this and see that you are right. You check this and see that you are right."

Q. What part did Mr. O'Connor and Mr. Stevens have to do with the preparation of that?

A. The work sheets?

Q. Yes.

A. None whatever.

Q. How's that?

A. None whatsoever.

Q. I noticed Mr. O'Connor and Mr. Stevens were in conference with you to help you straighten out the mistake you

made during the recess. If they had nothing to do with the preparation of the papers, how did they know anything about it?

Mr. March: I object to that question. That presumes that Mr. O'Connor and Mr. Stevens did straighten him out on something. That hasn't been proven. Why don't you ask him whether he did?

Mr. Keffer: I will ask that very question.

Mr. March: You ask that very question.

By Mr. Keffer:

Q. Did Mr. O'Connor and Mr. Stevens assist you in properly interpreting your working papers?

A. Properly interpreting—

Q. Yes.

A. I wouldn't use the word "interpreting."

Q. What would you use?

A. They called my attention to certain things.

Q. I see.

A. That put me straight. Your men would do the same with you.

Q. Surely. Hadn't I already called your attention to the very thing?

A. Yes, I think you had.

Q. Then you already knew it, didn't you?

A. I didn't understand you.

Q. Oh, I see. All right, I am sorry, Mr. Hammer, if you didn't understand me.

Mr. March: As a matter of fact—

Mr. Keffer: What's that?

Mr. March: Do you want to know? If you want to go as far—

The Trial Examiner: I don't believe at this point the record reflects accurately just what figures you referred to as having been read into the record that were erroneous, Mr. Hammer.

The Witness: I will give you my remembrance and if I am not right, Mr. Keffer can check me.

Mr. Keffer: All right.

The Witness: I think it referred to arriving at the right accumulative production figures for Hartley County and arriving at the correct accumulative production figures for Gray Quadrant 2, and Gray Quadrant 1.

Mr. Spencer: I think there were also some figures in there with respect to Quadrant 4 that Mr. Keffer asked you about. I think that is what the Examiner has in mind. You did give some figures on Quadrant 4, Gray County, and I think the same thing would apply to those.

Mr. Keffer: Quadrant 4, Gray County, was where I was checking you on another work sheet, Mr. Hammer.

The Witness: That is correct.

Mr. Spencer: With the inclusion of that one, I think you have named them all.

The Witness. Those were the figures that we read off—well, those figures that were read off on Gray Quadrant 4 were also accumulative figures.

By Mr. Keffer:

Q. The answer you gave originally was erroneous as to those?

A. That is right.

Q. Getting back to Wheeler County, Quadrant 1—

Mr. March: Before we go further I want to make this observation: It has been intimated that Mr. Hammer has made some improper use of his associates—

Mr. Keffer: I made no such intimation and if it is so considered I will apologize to Mr. Hammer and everyone else. Is that sufficient?

Mr. March: When Mr. Rhodes was on the witness-stand he frequently conferred with his associates and we made no objection.

Mr. Keffer: I made not the slightest character of a suggestion—

The Trial Examiner: I recall very pointedly you made it on the record, Mr. March.

Mr. March: I might have done that but I never intimated Mr. Rhodes didn't prepare his own exhibit.

The Trial Examiner: I don't think Mr. Keffer intended to make any such intimation.

Mr. Keffer: I certainly did not.

Mr. March: That is satisfactory, then.

Mr. Keffer: I am simply trying to find the facts and that is all.

Q. Now, Mr. Hammer, when you excluded Quadrant 1 in Wheeler County, did you have much higher production in that quadrant than you had in Quadrants 1 and 2, Gray County, combined?

A. What is that accumulated figure for Quadrant 2, Gray County?

Q. Quadrant 2 has the figure of 240,300. I am quoting it from memory. Quadrant 1 was 80,513.

A. Yes, over a total period—

Q. A total period for the two quadrants, Quadrants 1 and 2, Gray County, amounting to something more than 320,000 Mcf., slightly more than that, is that correct?

A. 320,813.

Q. What was the production in the same period in Quadrant 1, Wheeler County? Give it by years.

A. This is for 1936, 79,105 Mcf.; 1937, 212,266 Mcf.; 1938, 316,324 Mcf.; 1939, 523,042 Mcf.; a total of 1,130,737 Mcf.

Q. Well, then, you had a lot more production from Quadrant 1 in Wheeler County than you had from Quadrant 1 and 2 in Gray County, didn't you?

A. That is right.

Q. As a matter of fact, Mr. Hammer, I am going to help you. Haven't you made the very mistake on Quadrant 1, Wheeler County, that we have been talking about on all these others, mistakes favorable to me? I am going to give you a chance to correct them so that the record may properly reflect the actual figures.

A. Will you read that question—not the statement but his question, if he had one?

(The record referred to was read by the reporter, as set forth above.)

The Witness: I don't understand that statement "favorable to me."

By Mr. Keffer:

Q. All right. If you had a great big production in Wheeler County, wouldn't that be one more reason to consider it in Wheeler County Quadrant 1?

A. You can't answer that categorically for the reason that here is a case where we are taking Quadrant 1 and Quadrant 2 in Gray County where new wells have been drilled and production has started to come out. For instance, we don't know yet what Quadrant 1 in Gray County would have produced over the same period of years to compare with this.

Q. I know that. Now let's get back—

A. You can't make a categorical answer because—

Q. I appreciate you can't, but if you had a quadrant in Wheeler County that was producing substantial volumes of gas today and had produced over a trillion feet of gas—

A. A what?

Q. A trillion feet of gas.

A. Oh, no, not a trillion feet.

Q. What was that figure you gave, the final total figure?

A. That is a billion cubic feet of gas.

Q. That is right, a billion feet of gas.

Still you couldn't have given a very good reason for leaving it out, could you?

A. Well, I think so. Let me analyze that a little bit.

Q. All right.

A. Here is a four-year period of production. Over that four-year period of production in that area there was only 282,678 Mcf. produced annually. That is the average. You take that 282,678 and divide it by 365, the average production that came out of that quadrant over a four-year period was only 774,000 cubic feet a day.

Q. What was it in Quadrant 2, Gray County, per day over the four-year period? It was a whole lot less, wasn't it?

A. But Gray 2 and Gray 1, particularly Gray 1, are new developments. You haven't any method of comparison. You haven't any method of comparison. You have no way to compare it.

Q. All right. You just had one year's production on Gray 1, didn't you?

A. I don't know whether it started in January or December.

Q. But you just had one year's production?

A. All right.

Q. Is that right?

A. That is right.

Q. And in Gray County 2 for the last three years you didn't have a foot of production, did you?

A. All right.

Q. You didn't, did you?

A. No.

Q. Yet in Wheeler County 1 you had production every year during that period, didn't you?

A. That is right.

Q. All right, and you had more production, not only did you have it every year, but you had more production from Wheeler County 1 than you had from Gray County 1 and 2 combined?

A. There is no argument about it.

Q. All right, I guess that answers the whole thing as I view it, at least, Mr. Hammer. Is that about correct?

A. As you view it, I think that is correct.

Q. Now, Mr. Hammer, if as a matter of fact we hadn't caught the error a while ago which you did mak and which you later corrected, it would have shown a much better picture for Gray Quadrants 1 and 2, wouldn't it?

A. What do you mean, it would have shown a better picture?

Q. It would have shown a continuous production every year and a substantial increase in the rate of production, and it would have shown substantially more production for the period, wouldn't it?

A. You mean if they had produced all the way through? Is that the intent of your question?

Q. If they had produced that as you originally said they did before you discovered your error?

The Trial Examiner: You mean had they produced those amounts each year?

Mr. Keffer: That is right, which he originally stated.

The Witness: Yes, that correctly stated that—

By Mr. Keffer:

Q. I say, you would have had a much better picture if you hadn't discovered your error?

A. No.

Q. Why wouldn't you?

A. In the method we employed that error wasn't made.

Q. Mr. Hammer, I am talking about one thing and you are talking about another. You said yesterday that you left Wheeler County quadrant out because it wasn't worth anything any more; it was depleted; there was no production in it, isn't that right?

A. I said it was my remembrance that it was—that there were a lot of dry holes in there.

Q. And there is no production now, is that right?

A. Did I make such a statement?

Q. I think you did. I think that is the very reason you gave for leaving it out.

A. The intent was that—I believe I put it that way—

Q. I think you did.

A —that there wasn't enough in there to warrant the assumption that it would amount to very much as a gas producing area.

Q. Notwithstanding the fact it had produced substantial volumes of gas and was previously producing substantial volumes of gas?

A. Well, I left it out and I stated my reasons for leaving it out.

Q. That is right.

A. All right. What more is there to say about it?

Q. Nothing, except when we come over to Gray County Quadrant 2 we have much less production and we have a period of three years where it hadn't produced a foot of gas, yet you kept that one in for the same reason, I take it?

A. No, no, no. I utilized that with Quadrant 5 and called it one quadrant in my calculation.

Q. But you utilized it?

A. Yes, I utilized it.

Q. You could have utilized Quadrant 1, Wheeler County, the same?

A. Yes, I could.

Q. Surely. When we come to Quadrant 1, Gray County, that had only 80,000 cubic feet of gas and one year's history behind it, you used that one, didn't you?

A. Yes.

Q. If the reason you gave for excluding Wheeler County, Quadrant 1, is a good reason, then you also for the same reason should have excluded Quadrants 1 and 2, Gray County.

A. That is a matter of judgment.

Q. That is right. We will let it stand that way. That is my judgment of it, nevertheless. You grant me that right, don't you?

A. You can have that judgment if you want to.

Q. All right. Now, Mr. Hammer, let's go back for just a moment. You have given us, I believe, the average weighted pressures for the field year by year as taken from your working papers, is that correct?

A. Excluding—I don't recall—no, those included Wheeler Quadrant 1, I believe.

Q. No, they did not include Wheeler Quadrant 1, the figures that you gave us for the year.

A. That is right. The first figures I gave you—

Q. Sir?

A. The first figures I gave you didn't include—

Q. Did not include Wheeler Quadrant 1, that is right.

There seems to be some confusion. Do you have the same figures for the field including Wheeler Quadrant 1?

A. Had you asked me for them?

Q. I thought I had.

Mr. Spencer: I asked you last evening for them.

The Witness: Didn't I give them to you, Mr. Keffer?

Mr. Keffer: No, you didn't. You gave me the 1935 figures but no more than that.

Mr. March: He didn't use Wheeler Quadrant 1, of course, in this exhibit.

The Trial Examiner: He was talking this morning—

Mr. March: If he has it, I don't object to him letting him have it, but if he doesn't have it, I object to his having to calculate it.

Mr. Spencer: No one has asked him to calculate it, Mr. March.

The Witness: That isn't necessary. I am quite sure that in my notes some place in the last year or two I have seen those for the entire field, including—didn't I supply you a figure last night?

Mr. Keffer: You gave me the figure for 1935 but said you would be unable to include any more, which included Wheeler Quadrant 1.

Mr. March: I think he explained all that. When we found he was going to use it, I think he explained that several times.

The Witness: I think that is true. I coudn't find the figure last night for the entire field, taking in Quadrant 1, Wheeler County—I couldn't find anything except 1935 weighted pressure.

Mr. Spencer: What did you have reference to a moment ago, Mr. Hammer, when you said within the last two or three days you had seen or had those figures available in your notes?

The Witness: What I started to say, Mr. Spencer, was, there has been some misunderstanding on my part in exactly what Mr. Keffer wants. It might be—I don't know, but in going over my papers last night I could only find the one. If I had been able to find the other I would have been glad to have given them to him.

Mr. Keffer: All right. I have one more question before we leave that.

Q. The fact that you left Wheeler County, Quadrant 1, out of your calculations for the field necessarily changed your estimate of the field, didn't it, Mr. Hammer?

A. Yes, it did.

Q. Very much?

A. Oh, for the entire field, in round figures, it made a difference of 720 billion cubic feet.

Q. 720 billion cubic feet?

A. Yes; out of the total ultimate field reserves which is very small in the—roughly about two and three-quarters per cent, or something like that.

Q. That 720 billion is as much gas as the Canadian River Gas Company produces in how many years? Is it about fifteen years? Wouldn't it be about fifteen years on a 14.65 basis?

A. That is true.

Q. That isn't such an insignificant volume, after all, is it?

A. But from my viewpoint, Mr. Keffer—you have expressed your viewpoint; may I express mine?

Q. Yes, however, I have just one more observation on that.

During the entire producing history of the Canadian River Gas Company and its predecessor companies that have been referred to, all of them combined haven't produced half that much gas up to this day, have they?

A. Well, up to August 1, 1939, I think your statement would hold. I wouldn't want to stretch it up until the present time.

Q. They have produced more than 300 billion—less than 400 billion, in their whole producing history. I have forgotten the exact figures used in these different pressure bases, but on a 16.4 basis during that period it was 328 billion, or something like that. Is that your recollection?

A. Up to August 1, 1935?

Q. August 1, 1939.

Mr. March: Are you using Mcf. or cubic feet, Mr. Keffer?

Mr. Keffer: Mcf. However—it would be 328 billion cubic feet.

The Witness: I think I have the figure in my notes. I don't know whether I have it here or not but I will agree.

By Mr. Keffer:

Q. Have you figured it? I see Mr. O'Connor has been shaking his head.

Mr. March: Mr. O'Connor didn't have anything to do with this exhibit.

Mr. Keffer: I thought Mr. O'Connor did, the way he was grinning.

Mr. March: He doesn't know what the figures are.

Mr. Keffer: That is all right. The record will speak for itself. It isn't so important except for comparative purposes.

Q. Will you give me again the difference it made in your field estimate of—it was 700 and how many billion?

A. 720 billion.

Q. 720 billion?

A. That is right.

Q. I want to write it down here.

The Trial Examiner: Cubic feet?

The Witness: Cubic feet.

By Mr. Keffer:

Q. 720 billion cubic feet?

A. Yes, sir.

Q. Did that increase your estimate for the field 720 billion up or 720 billion down?

A. It was 720 billion lower.

Q. Lower?

A. Yes.

Q. You got a lower figure than you otherwise would have gotten if you had included it?

A. That is true.

Q. Well, how did you arrive at that figure?

A. What figure?

Q. This figure that made a difference of 720 billion cubic feet.

A. Since this question has come up I have gone back and made a calculation—that is, utilizing the field as a whole by this method of calculation, not by the summation, but by taking the field as a whole, using Wheeler County. That is how I arrived at it.

Q. That is about the only way you could do it, isn't it?

A. Certainly.

Q. I was certain of that but I wanted to know what tools you used in making that calculation.

A. What tools?

Q. Yes.

A. You have your calculation there.

Q. What rock pressures and what production figures did you use?

A. Well, I used the same tools as I have used for the entire thing.

Q. I know. If you will just go through, briefly, your calculation and give me the rock pressures you used and the production figures you used, that is all there will be to it, Mr. Hammer.

A. I simply made a tabulation here and gave the comparative figures.

Q. I know—

A. I didn't attempt to—

Q. I know, but when you figure the field with Wheeler County, Quadrant 1 in it you had to have certain rock pressures and certain production figures, didn't you?

A. Yes.

Q. I want to know what the rock pressures were and what the production figures were. That is all I am asking you for.

A. Well, as I said, I don't have them here.

Q. Can you get those for me, Mr. Hammer?

A. I'll try to get them for you, yes.

Q. Well, you just worked it out last night.

A. No, I didn't say I worked it out last night.

Q. I thought you did. I thought you said since this came up. This came up yesterday.

A. No, I said since I came up.

Q. Came up where?

A. Up to this country. That's been about four months ago.

Q. Then you do have the figures in Denver?

A. Well, I did have them, but I say, I can't find them. That's what is worrying me. I don't know where they are.

Q. What was the idea of working this out since you came up rather than before this came up?

A. If you will recall, Mr. Keffer, when this question of total field reserve came up I utilized an expression that I believe some of your legal staff did not like, an expression that used the word—

Mr. Spencer: Do you want me to tell you?

The Witness: Yes.

Mr. Spencer: Academic?

The Witness: Yes, that's it academic. One of the reasons why I used that word "academic" was—and I am still of the same opinion that as far as utilization of anything way over in Wheeler County in connection with Canadian River problems is an academic problem and that was my meaning in that case.

By Mr. Keffer:

Q. Well, all right—

A. It had been an academic problem ever since almost I started to work with the problem, that anything way in the eastern end of the field in my opinion—or, rather, in our opinion, hadn't any bearing on the Canadian River situation and it was, therefore, an academic figure.

Q. Alright, now, I take it, then, that since this is an academic approach to the problem that we have here that that is the reason that you used the mathematical angle rather than the geological angle, is that correct?

A. I don't know how to answer that.

Q. Well, all right. Now, Mr. Hammer, I think it will clarify one thing, at least, and that is this coming up proposition that we are talking about. It just happened a lot later than last week, didn't it, this question of the academic problem coming up instead of you coming up?

A. The whole question there, Mr. Keffer, is this: In a problem of that kind and where I devoted most of my time because I had to in working out the problem relative to the western part of the area in which Canadian River has its acreage, there always was a question in the back of my head whether I should use that or whether I should not use it, and that was another point of this academic thing we are talking about, whether to use that figure or whether to not use it was an open question.

Q. Yes, but the point is you have computed the entire reserves of the field with Wheeler County quadrant in, included in the last ten days.

A. No.

Q. About how long ago was it?

A. Oh, I don't know. I have worked at it off and on whenever I could find time and gather a little information, pick it up here and there, and could get it together. I wouldn't know how long.

Q. Well, this thing just came up, I should say not more than ten days or two weeks ago at the outside.

A. Well, it has always been a problem.

Mr. March: I object to counsel arguing with the witness. I don't object to him asking the witness questions, but this is argument. The witness stated at the beginning with regard to Wheeler County when he asked him to give what the field reserve would be he said way back yonder he might have made the calculation but he couldn't tell, he didn't know. He has been doing some thinking about that and all these things are argumentative.

Mr. Keffer: All right. All right, if you will stop, I will.

Mr. March: All right.

By Mr. Keffer:

Q. All right, now, you have given us the weighted average pressures as you have computed them, Mr. Hammer, during the period which you covered in your study. Now, you check with me. It was yesterday that you gave these, your pressure—

A. May I see your sheet a minute so I can see what you are talking about?

Q. It is the weighted average pressure for the five points; that is, five pressure dates.

A. I gave those to you, all right. They are in the record.

Q. Yes, I just wanted to remind you what the figures were.

A. But I don't think I have the sheet I gave them to you from.

Q. You might take the figures down, then, as I read them back to you, because I want to make a similar calculation. All right, we'll take the weighted average pressure as you calculated it, Mr. Hammer, on August 1, 1935. That's the 369.25 pounds. Now, this is for the field as a whole with the Wheeler County quadrant out.

A. That's right.

Q. On August 1, 1936, 366.74.

A. All right.

Q. August 1, 1937, 352.02.

A. All right.

Q. August 1, 1938, 343.01.

A. All right, that's right.
Q. August 1, 1939, 332.98.
A. Read that again, please.
Q. 332.98.
A. That's right. That sounds right. They were read into the record. I read them in myself, I think.
Q. Now, from 1935 to 1936—August 1, 1935 to August 1, 1936, that gives you a pressure drop of 8.51 pounds, wouldn't it?
A. Just a minute, Mr. Keffer. I happen to remember that I do have the figures here and I just want to check them from my other notes.
Q. All right.
A. Yes, those are correct.
Q. All right, and the pressure drop from 8-1-35 to 8-1-36 would be 8.51 pounds, is that correct?
A. 8.51.
Q. 8.51?
A. That's right.
Q. And from August 1, 1936 to August 1, 1937, 8.72.
A. That's correct.
Q. August 1, 1937 to August 1, 1938, 9.01.
A. 1937 to 1938?
Q. That's right.
A. That's right.
Q. August 1, 1939—August 1, 1938, rather, to August 1, 1939, 10.03?
A. That's right.
Q. Now, that shows an acceleration in drop from year to year, doesn't it, Mr. Hammer?
A. Yes, it does there.
Q. Each year the pressure drop has been a little more than it has the year before, hasn't it?
A. Yes.
Q. All right, could you not expect the pressure drop to be a little more the next year than it has been this past year?
A. It all depends on the question of withdrawals.
Q. The question of what?
A. Withdrawals, gas taken out.
Q. Yes. Well, just what do you mean by that?

A. I wouldn't want to guess what it would be in the future.

Q. Well, say the production is the same as it was from August 1, 1938 to August 1, 1939.

A. If it would get back and settle down to a more or less definite withdrawal over a period of years, I think that that annual differential would also settle down to a very definite figure.

Q. Well, what do you mean by a very definite figure?

A. Well, I can't tell, whatever it would be.

Q. You just don't know, then? Is that right?

A. Well, I know what happened here.

Q. That's right.

A. All right. The point I make is that you have had an increasing withdrawal there for those years.

Q. And you account for those increasing pressure drops solely from increasing withdrawals, is that correct?

A. I think that is the largest factor.

Q. Well, then, I take it if production would go up, certainly you agree with me on that, then your pressure drop would increase, wouldn't it?

A. It might. It probably would. That's right, on the average.

Q. Well, now, do you want to say it would or it probably would or approximately so, or which?

A. Read that.

(The question referred to was read by the reporter, as set forth above.)

The Witness: Well, I'll tell you. I'll answer that this way; When you go from year to year over that short a period of time in a field as large where you take a field as large as the Panhandle field and you take out a lot of gas during one year, when you consider the field as a whole you will probably have, and in fact I am sure you do have, certain areas where because of low permeability factors the gas pressure does not build up rapidly in the wells; so to go to work and make a general assumption on what might happen in the future when you have all the factors entering into it, as far as I am concerned, I am not making any such statement at all. There are just too many unknowns that enter into it. There is nobody can predict what is going

to happen, but on the average it is true that withdrawals have their effect, but that is not only the effect; so that I won't predict what is going to happen in the future.

For instance, some of you fellows might suddenly decide it would be a good idea to go up to Hugoton and start taking a lot of gas and you might not take so much out of the Panhandle. You would have a different picture. There are so many factors that I am not predicting.

Q. You are not predicting that we are going to do that, are you?

A. I wouldn't be surprised.

Q. Now, do you want to base any of your estimates on that prediction?

A. No.

Q. Well, that's just an observation which has no particular weight in this record, is that correct?

A. That's right.

Mr. March: The same as the question. The answer was the same as the question.

Mr. Keffer: All right, Mr. March.

Q. Now, just taking that a step further, you do know, don't you, Mr. Hammer, that as pressures go down from year to year at an accelerated rate that you can expect that acceleration to continue in future years?

A. No, I won't—

Q. How's that?

A. I won't adhere to that assumption at all for the reasons I have explained. These pressures here are—some of them—these drops in pressure are probably artificial. In other words, you take an area of low permeability and you draw heavily on that well and what do you get? You get a low pressure. It may not have taken out a very large volume of gas because the gas couldn't move into it fast enough.

Q. All right.

A. The result is you get an artificially low pressure which would be reflected on this, so that you can't predict—

Q. All right, now, are you stating that as a fact?

A. I am stating that as a fact.

Q. All right, give me the wells in which that happened.

A. I can't give you the wells but I can give you localities.

Q. Do you know what pressure is subnormal—

A. What was that?

Q. How do you know that an accurate pressure as reflected by the pressure figures that you got from the Texas Railroad Commission are accurate?

A. Read that question.

(The question referred to was read by the reporter, as set forth above.)

The Witness: I recall definitely that on your own leases on your quadrants right down here in Moore County, in the center of that quadrant—

Mr. Spencer: Moore County?

The Witness: Potter County. I beg your parden—Quadrant 1, Potter County, in 1936 the pressure around your wells in the center of that went away low and what happened, it took almost the entire year for those to get back up to anything like normal, and what is the ultimate result? That low that developed in there in 1935 and 1936 was not entirely up and it took a long time for that gas to move in to build that pressure back up.

By Mr. Keffer:

Q. Now, will you please answer my question, Mr. Hammer, which is this: Do you know of any well in which the pressure which you utilized was not the accurate pressure? That was my question.

A. No, not the accurate pressure at the time it was taken, but it did not represent the true condition.

Q. Well, wait a minute. What sort of a pressure represents the true condition?

A. Well, if you took a well just as I have explained there—

Q. Yes.

A. Or an area or a group of wells—

Q. That's right.

A. —and you pull heavy on them and your pressure goes way down, then you follow that thing through and find out it takes a long time for that pressure to build back up. The answer is that that local pressure did not reflect the pressure of that area at all.

Q. All right, and threw you off on your pressure decline application?

A. No, it didn't at all.

Q. Why didn't it?

A. That was all weighted out.

Q. How do you mean, it was all weighted out?

A. Just as explained before. There is no use to go into all that again.

Q. All right, in your own assumption. Going back to the question I asked you some fifteen minutes ago, if you have the progressive declines in pressure accelerating from year to year, then it does mean something, on your own statement, because you said you have weighted it all out.

Mr. Lange: I object to that question because it presumes that the witness states, and which he did not state, that the pressures declined at an accelerating rate, which the witness has denied. The witness has denied that. You have assumed in your question that he has first answered the question affirmatively and I object to that question and ask him to reword his question for this reason. He can ask the witness whether they are accelerating or declining or not.

Mr. Keffer: I didn't think he had. I will ask him that.

Q. Are the pressures declining at an accelerated rate in the Panhandle field from year to year?

A. The records indicate that they are.

Q. They are? I thought so.

Now, Mr. March, do you want to apologize to me or not?

Mr. March: I thought you meant incremental pressures.

Mr. Keffer: I don't know what you mean by incremental pressures. Watch my questions and you will get what I mean, I think.

Q. All right, then, since they are dropping progressively from year to year, is it not a fair assumption that that will continue?

A. Well, as I said a while ago, I don't want to predict what is going to happen to pressures.

Q. Well, don't you have to predict that to apply your method and test it?

A. No, not into the future, not as far as pressures are concerned.

Q. All right, your method assumes that the condition is not going to change doesn't it?

A. My method?

Q. Yes, sir, the application of the pressure decline method.

A. No.

Q. All right, what changes have you assumed, then, for the future in the application?

A. I have assumed that gas withdrawals will continue according to straight line calculation. In other words,—

The drop in pressure in relation to the volume removed will in the average continue as it has in the past.

Q. Well, do you mean to say by that, then, that your drop in pressure must be geared entirely to production figures and that is the thing that determines the drop? Is that what you are trying to say?

A. Well, I am trying to say that, as I have already mentioned, that there are other things that throw your pressures off.

Q. But you said you had weighted all those out.

A. All, right, I have weighted them out and in my calculations the future is a straight line. It is not an incremental curve that goes down.

Q. That's quite true.

A. All right.

Q. Now, if the past is not a straight line, why would the future be a straight line?

A. The past is a straight line as far as the proper interpretation of the data is concerned.

Q. Well, the past isn't a straight line as a matter of fact, when you plot it on a paper, is it?

A. If you just take pressures alone, and I haven't plotted the thing—wait a minute.

Q. Be careful what you are doing.

Mr. March: We went over all that once. Does the Examiner want to hear it all over again?

The Trial Examiner: That's about what I was going to say, Mr. Keffer. Didn't we also cover this yesterday on cross examination? I don't want to interfere but—

Mr. Keffer: I don't think we did as applied to specific pressure data. I don't think so.

Mr. March: Oh, yes, you did. You took this big curve here.

Mr. Keffer: All right, then, if we have we will eliminate that. That was on Canadian River. I am talking about the field now.

Mr. March: Well, he doesn't have a curve on the whole field.

The Witness: Yes, I remember that in my notes here—I just happened to recall that I have got a curve for the field—I don't mean that, but I have a curve here covering 1935, 1936, 1937, 1938 and 1939, with the accumulated production for the entire field plotted against it, and I submit to anybody that that thing follows almost a straight line when plotted through those points, when you plot your pressure drop against your accumulated production.

Mr. March: Is that in your working papers?

The Witness: That is in my working papers. It is some notes that I had here and I happened to remember that I had that with me.

Mr. March: That is not a part of your exhibit?

The Witness: That is not part of my exhibit.

Mr. March: We haven't offered that as an exhibit?

The Witness: No.

Mr. March: There is no use talking about it, then, Mr. Examiner.

Mr. Spencer: The witness wants to talk about it, Mr. March. Let him go ahead.

The Trial Examiner: He brought it up, Mr. March.

Mr. March: Go right ahead, then.

The Witness: This particular thing I wanted to bring out, it wouldn't go clear on out, but it does prove that the—if you take these pressure declines he is talking about and plotted them against the accumulated production, there is your story, and it is a straight line.

By Mr. Keffer:

Q. Now, you said "straight line." It is a straight line because you drew it straight, isn't it?

A. Well, any engineer would draw it that way.

Q. Answer the question.

A. That's right.

Q. It is a straight line because you drew it that way, isn't it?

A. Any engineer, including myself, would do it.

Q. And if you went through the center of your points it would not be a straight line, isn't that a fact?

A. Yes, if you went through them, but that is not the way it is done. It is not the way anybody would do it that knows anything about his business.

Q. Let me show you another curve that is drawn exactly on the points and look at that and compare it with yours.

A. That is on pressure only.

Q. What's yours?

A. Mine is pressure against accumulated production.

Q. All right, where is your accumulated production?

A. It shows here. You can read it off the bottom, "The accumulated production, August 1, 1935, in Mcf."

Q. Well, what is it?

A. All right, this line here is 250. This would be something like 240 something. In other words, if you will check it you will find that figure I gave you at 240.

Q. What? thousands, millions, billions, or trillions?

A. It is in billions of cubic feet.

Q. Well, then, that's two trillion five hundred some odd, as you have it there.

A. Two trillion, five hundred billion, that's this particular line here, yes.

The 1935 to 1936 production was 650 billion cubic feet with a 8.51 pound drop in pressure. The next year, 1936 to 1937, the production was 600 billion cubic feet, and the witness would have expected the pressure drop to have been a little less, but, as a matter of fact, the pressure drop was a little more.

The next year the production was 616 billion cubic feet which should have indicated a little increase in the drop from the year before, and, as a matter of fact, there was a little increase, and the next year, 1938 to 1939, there was a production of 598 billion cubic feet. This production

was considerably less than the 616 billion cubic feet for the year before and was the smallest production for any of the periods. This being true, the witness would have expected a still smaller pressure decline when the matter is viewed from year to year, but, as a matter of fact, the loss in pressure was 10.03 pounds, the greatest drop for the entire period.

The witness further testified (Vol. 59, pp. 8368-8404) as follows:

Q. Then, production didn't determine pressure drop, did it?

A. There is no use to go into it again, but we will go into it again—

Q. You said a while ago it did.

A. I said there were qualifications—

Q. You got the qualifications into the record, I take it?

A. I said there were qualifications on this point.

Q. And the record speaks for itself. Let us have the record stand as it is.

When you plot a straight line, however you determine it, when ever you take the actual data you have here, you couldn't have a straight line regardless of what your paper shows there?

A. No, that isn't true.

Q. We will let the record speak for itself.

A. That is right, I can't calculate from year to year and get anything like a fair figure.

Q. All right, would you mind extending this curve for me about five or six years?

A. No, not unless the Examiner orders me to do so.

Mr. March: We object to that. We have gone far enough. This comes up and shows exactly what he has been getting at here. This is "Annual Pressure Drop, Panhandle Field, Excluding 1, Hammer's Data, Years." Now, he wants us to come along and he already thinks he is getting this exhibit put in through our witness, these curves plotted with our witness' data. Now, he wants the curve fixed up a little further along that line. We object. That is exactly in point with the Examiner's ruling. We have gone over fifty-five per cent of the way—

Mr. Spencer: Fifty-five per cent of the way?

Mr. March: One hundred per cent of the way.

Mr. Keffer: Most everyone has seen this chart. I will show it to the Examiner.

Mr. March: That is what you say it looks like.

Mr. Keffer: So does Mr. Hammer.

Mr. March: No, the witness didn't say that. You are plotting year for year—

The Trial Examiner: Never mind. The record will speak for itself.

Mr. Keffer: I will ask Mr. Hammer one more question.

Q. As a matter of fact, if that had been plotted against production as you say you did it, it would have been more extreme than what is shown in there, wouldn't it, Mr. Hammer?

A. No, that is not true.

Q. You are getting an increased drop with less production.

A. Yes, but as I have just stated, you can't do that from year to year.

Q. That is what you did?

A. No. I took a five-year period here.

Q. Five years?

A. I put those points on this curve pressure decline against accumulated production.

Q. That is right.

A. All right.

Q. If you put them on this curve against accumulated production you would have a curve dropping faster than this one?

A. No, that is not true.

Q. Take the last year, in 1938-1939, that is the fastest dropping point on the curve?

A. For one year only.

Q. That is right, and that was the least production?

A. All right. I have just explained how the—where you take the pressure on a group of wells you don't get a true pressure factor.

Q. But you have already stated you weighted all that

in, accounting for all of that, so there isn't any error in your own statement—

A. Yes, and I got a straight line curve through because I did it.

Q. What are we talking about?

A. You are taking something entirely foreign where you haven't used accumulated production—

Q. The point is—

A. —and where you haven't weighted out anything except for one year. You haven't taken an average of what happens over four or five years.

Q. We have the whole thing. So, yours is based on an average, is that it?

A. It is based upon an accumulated production as determined—

Q. Averaged out over the period?

A. No, it is worked out exactly with the same principle with the field as a whole on this curve, as it has been used on all these quadrants, that is all.

Q. Now you say—

A. You get the best slope through a series of divergent points.

Q. The whole point is—that is all right. I won't go into that any further.

Mr. Hammer, you say that low pressure areas throw you out of line somewhat, is that the point?

A. What I mean is this—yes, and no.

Q. Which one?

A. Wait a minute.

Q. All right.

A. In the study of this pressure situation we noticed that where wells in areas of low permeability have been pulled on heavily that there would be a rapid pressure drop clear out of line with anything else around in the same territory and it might take some little time for that to build up. Well, now, if the Railroad Commission's men had happened to come along and take those pressures on those wells right after there had been heavy withdrawals locally, they would have had a pressure that wasn't at all indicative of what that should have been.

Q. Is that what the Railroad Commission did?

A. In relation to the volume removed.

Q. Is that what the Railroad Commission did?

A. There is some evidence, yes, in places where they did do that.

Q. What is the evidence?

A. I don't have all those things here.

Q. Give me just one or two of them as illustrations.

A. I gave you one in your own acreage.

Q. That wasn't in 1939, was it?

A. When?

Q. That wasn't in 1939, was it?

A. No.

Q. All right, what did it represent to you? What did it tell you?

A. Do you mean during when you had that extremely low pressure?

Q. When you say "extremely low," how low was it? That is a relative term.

A. It is a relative term.

Q. How low was it?

A. I would have to get that information.

Q. It was about 380 pounds, wasn't it?

A. Well, what I meant there by "relative," was that it was extremely low as compared with the area immediately adjoining it.

Q. Several miles away from there you had a pressure of around 390 or 400 pounds?

A. Yes, they are high in close to it.

Q. How close?

A. Oh, I would say—let's put it this way. Just assume—I don't remember—that your pressure was 380 that you took.

Q. I think some was more than that.

A. For the purpose of illustration I will assume it was that.

Q. All right.

A. If you take a 10-pound isobar, say, take your 390, the total slope where you would get up to—rather, the pressure differential gradient wouldn't extend out, according to my memory of it, to exceed two miles from the well at the most.

Q. You say that is from your memory. How good is your memory on that?

A. Well, I think that is about right.

Q. As a matter of fact, didn't it extend out several miles?

A. No, I don't think so.
Q. You don't think so?
A. No.
Q. Didn't it extend out several miles as shown on the Railroad Commission's map?
A. That isn't the way it looks when you get a map on 10-pound isobars.
Q. I am just looking at one here and I don't see anything about it.
A. That is for 1939. I was talking about 1935.
Q. It was the one you left in Washington, I take it?
A. That is right.

Mr. Keffer: That is all for the morning session, Mr. Examiner.

The Trial Examiner: The hearing will stand in recess until 2:00 o'clock this afternoon.

(Whereupon, at 12:30 o'clock, p. m., a recess was taken until 2:00 o'clock, p. m., of the same day.)

Afternoon Session—2:00 P. M.

The Trial Examiner: The hearing will be in order. Whereupon—

A. A. HAMMER

the witness on the stand at the time of recess, having been previously duly sworn, resumed the stand and testified further as follows:

Cross Examination (Continued)

By Mr. Keffer:

Q. Mr. Hammer, we were discussing a while ago the pressure drop field-wide in the Panhandle, it was increasing from year to year, that is, during the entire period covered by your study the pressure drop increased in every instance, in no one year greater than it had increased the preceding year, is that correct?
A. There had been an increase.
Q. That is right. That happened without an increase in production. In fact, your greatest pressure drop in any one year, which was the last year, showed the smallest production in the period, didn't it?
A. I think that is true.

Q. All right. Now, you have tried to draw a straight line reflecting that matter when as a matter of fact your actual factual data doesn't show a straight line, does it?

A. It does when properly drawn.

Q. Well, it is properly drawn when you put it right on your ordinate points, your graphic point, isn't that true? That is proper and that is actually what it is, isn't it?

A. Yes, it is, the way I drew a curve. That is actually what it is.

Q. That is actually what happened in the field?

A. Yes, where I plotted my dropping in pressures against the accumulated production, that over a five-year period is actually what is happening to the field.

Q. As you plotted it you didn't show an accelerated drop from 1938 to 1939, did you?

A. On the actual points, if you take it from one year to the next without consideration of anything else, it showed it there. In other words, if you draw one of the crooked curves you are talking about, to which I don't agree, but if you drew it that way you would have a curve that followed divergent points.

Q. You say if I drew it my way. My curve on the exhibit presented to you was represented by actually what happened in the field. There wasn't any judgment about it. That is exactly what it was.

A. You are talking now about the curve you drew?

Q. Yes.

A. You left out one of the very important factors there in the projection of the curve.

Q. What?

A. You simply drew a curve on pressures against years.

Q. The pressures against years, that is true. It showed what was happening each year.

A. As far as pressures alone are concerned, I will agree with you.

Q. All right. Since the production from August 1, 1938 to August 1, 1939 was the smallest production in the volume of the entire period covered by your study, and since the pressure drop without production being considered was the greatest, and the production had been plotted in there, too, as you did it, the slope of the line from August 1, 1938 to August 1, 1939 would have been more decided than what I showed, wouldn't it?

A. If you take one year, but I have repeatedly said that it isn't a fair way to judge a field of this type or any other field.

Q. Well, I know you have said that.

A. It is true.

Q. If you take a period of years and you get a trend and you see that each year is getting more and more and more, then do you think you can ignore that trend?

A. I haven't ignored it. All I have done is to weight it out and get a fair curve.

Q. What you did was to just draw a straight line through that?

A. It is a straight line, that is true, and that is the line it should be.

Q. You say it should be. How do you know it should be a straight line?

A. That is the way any engineer in the world would draw it?

Q. Why should it be a straight line?

A. Because in order to get a fair answer you must take into consideration not what happens in one year but what happens over a period of years.

Q. Take it over a period of years, still you don't get a straight line, except you arbitrarily make it a straight line with a straight-edge ruler.

A. That comes right back—

Q. You take your own points. You don't get a straight line if you connect your points—

A. If you connect it from point to point, of course you don't.

The Trial Examiner: Through the center?

Mr. Keffer: Through the center.

Q. How do you know that line ought to be straight?

A. It has to be straight.

Q. Why?

A. Any line has to be straight under conditions and under the method which we have employed, that is, the application of Boyle's law.

Q. Why does it have to be straight? Please answer my question.

A. The volume removed always bears a direct relationship to the drop in pressure.

Q. Yet it isn't straight when you connected it from point to point and center to center?

A. Well, those divergent things always come in in any field, but it has always been the practice, and it is the practice now of the great majority of geologists and engineers who employ the pressure decline, to utilize that same principle of arriving at a slope for their curve.

Q. What principle?

A. Well, the principle of getting the best slope that you can through a bunch of divergent points.

Q. The principle of getting a straight edge and drawing a straight line through there where you want it to come out?

A. That is not true.

Q. Isn't that what you actually did?

A. I drew it where the average weighting of the four years of pressure and the five years of production said it was the closest possible to get it.

Q. And you ignored the accelerated drop from year to year?

A. Let's go back a minute. If you had drawn a curve between 1937 and 1938 you would have had a slope that would have given you a different one, wouldn't you? Certainly it would. It would have given a very much larger indicated production than would be the true figure, taking it over a period of years.

Q. Tell me what that would have given you. Would that have given you the indicated production if you had drawn the slope between 1937 and 1938?

A. Well, you would have had a less drop in pressure—

Q. I know, but I want you to give me the figure. It is a very easy figure to get. I can work that problem myself.

A. Between 1937 and 1938, you say?

Q. Yes.

A. Well, your actual drop between 1937 and 1938 was 9.01.

Q. All right, 9.01. What is your production for that period?

A. I believe I gave you the accumulated production.

Q. The accumulated production for that year?

A. May I have that document you have there? I don't seem to have mine with me.

Q. I will give it to you. It is 616,439,219.

A. Read that back to me. I couldn't keep up with you.

(The question referred to was read by the reporter, as set forth above.)

Mr. Keffer: All right.

Q. Now divide your 9.01 into your production for that year.

A. May I leave off the .01? It would be easier to use just the figure 9.

Q. I will tell you what we have done. We have figured it out accurately here, Mr. Hammer, and to save time let's get it into the record and the basic figures can be checked very readily.

You divide 9.01 into the 616,439,219 and you get an average production per pound drop in pressure of 68,417,227 cubic feet. That is not Mcf. but cubic feet. You multiply that by 430 and get a calculated original field reserve of 29,000,407,610 Mcf.

In other words, it is 29 trillion plus.

A. Yes.

Q. Let's look at your graph again.

A. My graph won't take that in because it was only illustrated to cover the five-year period.

Q. I understand that. What calculated field reserve does your graph show?

A. I said this isn't projected on through.

Q. Project it on through and see what it shows.

Mr. March: We object to that, if the Examiner pleases. That is another little mathematical problem he wants him to work out for him.

Mr. Keffer: Anybody can project it. It is perfectly a straight line and all you have to do is to run it out.

Mr. March: I guess if anybody could, you could bring a witness here and have him do it.

Mr. Keffer: Even you could do that, Mr. March.

Mr. March: We object to that, Mr. Examiner.

The Trial Examiner: What was the statement you were about to make, Mr. Hammer?

The Witness: This only illustrates that if you could properly project that curve not into the future but through the five years of data that we used, it follows a straight line. That is the object of putting it in properly projected. It wasn't ever projected into the future. It would take a lot of additional and coordinate paper and different scales, and it would be a job that would have to be done all over.

By Mr. Keffer:

Q. As a matter of fact, Mr. Hammer, as you did on some of the Canadian River's exhibits, all you have to do is come back and keep drawing straight lines and you would have it there. You haven't any deviation in it and you say it is already figured out correctly.

A. It would take quite a little time to do that. I doubt whether the scale laid out here—no, I know you couldn't get it on there. You wouldn't have room.

Q. Does that include Quadrant 1, Wheeler County, as you have the line drawn there?

A. Well, I don't know whether it does or doesn't from looking at this sheet. I think we can check it from those accumulated figures in the field which I gave you.

Q. Tell me how you constructed it. That would give the facts.

A. This was constructed in Washington from the field data and I might have already given you that accumulative production.

Q. Go back in your working papers and get the basic data for that graph and see what it is. See if it is interpreted the same as those figures you gave me.

A. That would take time.

Q. You would just have to read a page, that is all. That is a very small thing to do. Just look in your working papers and see what pressure you had here rather than looking on this graph. See what your production figures were.

Mr. March: If the Examiner pleases, it may be that we will offer this as an exhibit. This has nothing to do with the computation of the reserves and the exhibit which has been offered. That merely is something that is illustrative of the results. It has no bearing upon arriving at the results. It is a check. This whole discussion was volunteered by Mr. Hammer in regard to the whole field and it wasn't

prepared as an exhibit. Commission's counsel hasn't offered it as an exhibit, however, at which time it does you will be entitled to all of the data surrounding it just as you have been entitled to the data surrounding Exhibit No. 180.

In Exhibit 180 the same type of curve is found on Page 4-B which the witness has been cross examined about, and there is a sheet in there giving the details as to how that curve was arrived at. I will assure Mr. Keffer that when that is offered as an exhibit he will be entitled to test it completely. That was something volunteered by this witness which Commission's counsel did not offer as an exhibit.

There is another one just like it in the other exhibit you have already asked him about, Mr. Keffer, Exhibit No. 180, involving the Canadian River's acreage.

By Mr. Keffer:

Q. Mr. Hammer, we were discussing this matter yesterday and you gave your original field per acre as 72.2 billion cubic feet per pound drop in pressure, didn't you?

A. For what?

Q. For the entire period which you have considered.

A. Well, I don't know offhand. The record will show what I said or what was brought out. I don't remember it now.

Q. All right, you gave us a figure—your ultimate reserve figure, as you call it—at 25 pounds abandonment as 29,277,—

A. Yes, that is my recollection.

Q. You don't know whether that included Wheeler County quadrant?

A. From memory, I don't.

Q. You don't recall?

A. It would only make 700 billion difference anyway.

Q. Yes, you said that. That 29,277,000,000,000, the round figure you gave, represented a production of 405 pounds out of the reservoir down to the 25-pound abandonment?

A. Yes, if you take 430 as the original pressure.

Q. Isn't that correct? Isn't that what you have taken?

A. That is what I have used. There has always been a doubt in my mind whether it is true, but I have used it.

Q. You have used it?

A. That is true.

Q. You divided 405 into 29,277,000,000,000 and you got 72.2 billion?

A. I haven't divided it out.

Q. The round figures were given here and it is a very simple calculation to divide it out. See if you can't do that.

A. What are the figures?

Q. I think you did it yesterday and I think the record already shows it.

A. 29,277,000,000,000?

Q. That is right.

A. Divided by what?

Q. 405.

A. It is 72 plus.

Q. I have 72 plus, too. Does that look about right? I think that is about where you would hit it.

A. It is closer to 72 plus.

Q. 72 plus 2. All right, that is the production per pound pressure drop that you got on your calculation; it might have included Wheeler County quadrant or not. That is the only questionable thing about it.

A. It is so small in relation to the whole it wouldn't make much difference.

Q. All right, let's keep that figure in mind, Mr. Hammer, and go back to that pressure drop from 1937 to 1938 where you had a 9.01 pressure drop which the record shows. If we divided that into the production of that year of 16,439,219 Mcf., would we have gotten the pressure drop of 68,417,227 as against your 72 million plus?

A. That would be right if you want to make that comparison.

Q. All right, then, we go back to the year 1936-1937 when you had an 8.72 pressure drop as against 600,013,041 Mcf. and divided your 8.72 into that. You get a production per pound pressure drop there of (copy illegible) 68,808,835 Mcf., is that right?

A. I don't know whether it is right as I haven't figured it.

Q. Anybody can figure it from the record. All of the basic figures are there.

Mr. March: Mr. Examiner, this is doing exactly what I said was going to be done and I think it is contrary to

the Examiner's ruling. He has taken his computations and is trying to get this witness to agree to them.

Mr. Keffer: I have taken the basic figure which we agreed upon and I have given him my computation.

Mr. March: That is the point. The Examiner's ruling was he would have to do it through his own witness.

You went half-way with Commission's counsel, Mr. Examiner, in stating that you would instruct the witness to check the actual figures that were taken off of his working papers, but you would not require the witness to approve or disapprove or compute the computations made by counsel here and his associates as to the results therefrom.

Mr. Keffer: I gave an assumed figure which he can come back to later.

Mr. March: I object to that line of cross examination because it is improper and it doesn't mean a thing in the world. This witness can't compute all this on the stand here. If he wants to bring in this other estimate, if he wants to do it a different way, he can bring it in here through his own witness.

Mr. Keffer: I am doing it Mr. Hammer's own way. I have been trying to point it out all the way through this cross examination. These are his figures.

Mr. March: That is the point, Mr. Examiner. In spite of the Examiner's rulings he will say that all of this is Mr. Hammer's computations, the results therefrom, he approved everything, which is not the correct situation.

The Trial Examiner: I think, of course, the important thing is that the computations be correct.

Mr. Keffer: They will be self-evident, Mr. Examiner. All of the figures are there where anybody can divide it out.

Mr. March: Mr. Hammer's working papers are not in the record.

The Trial Examiner: I don't know, Mr. Keffer. It seems to me that it is rather burdensome to the witness to have to check those amounts.

Mr. Keffer: May I make this statement, Mr. Examiner?

The Trial Examiner: Yes.

Mr. Keffer: Assuming my calculations are correct, the figures are in the record where the Examiner, Mr. March, or anybody can check to see whether I made them accurately, just as though I would say we have 2 and 2 over here and it makes 4. Mr. Hammer doesn't want to say that 2 and 2 makes 4 but the record is clear and that is precisely—

Mr. March: He takes a piece of wood from over here out of this wood and takes a piece of wood out of here and makes this building but it is his child and not our child. It is not proper cross examination, Mr. Examiner. It is contrary to the Examiner's ruling that was made today.

Mr. Keffer: These pressure declines and production figures are the identical figures which Mr. Hammer has already given. There is nothing to assume about those as they are in the record.

Mr. March: We may want to cross examine the man who says they and his results—

Mr. Keffer: That is the same. Your own witness gave them.

Mr. March: That is the point. They can put on their case when they come back on. This witness can be cross examined on this exhibit but when they bring up a new exhibit, one of their own brain childs, and cross examine our witness in regard to it, attempt to have him stipulate as to the computations—we will stipulate as to it when they take his figures off the working papers—but when you go to computing from their exhibit it goes beyond the realm of proper cross examination.

The Trial Examiner: I do think this: The basic figures, you have verified those through Mr. Hammer. Now, as to the computations made from those figures, I am not inclined to view them as improper or erroneous, but at the same time I am hesitant to thrust that burden upon Mr. Hammer to satisfy him—

Mr. Keffer: I wouldn't ask Mr. Hammer to do that. It will be entirely up to him as to whether he wants to do that.

Mr. March: He wants to put the witness into a position

of where he has to say yes or no to something he shouldn't even be cross examined about, a new exhibit that is different altogether. He wants to come through the back door and put in an exhibit which is not ours. If he wants to put in an exhibit, let him bring his own witness in here.

Mr. Keffer: Let me make one statement, Mr. March. I could have said it in half this time, half the time we have been talking here. Mr. Hammer has made the statement many many times that he has taken a conservative course. In one or two more questions I can prove not only that he did not do that but he took the highest figure he could get out of a group and didn't average anything. If that isn't legitimate cross examination I don't know what is.

Mr. March: That is his argument, that he did, and Mr. Hammer denied he did. If he has any witnesses, which he has, let them figure that out. If those geologists use Mr. Hammer's figures and figure it out that way, in all righteousness he should have nerve enough to put those geologists on the stand here and let us cross examine them.

Mr. Spencer: We have plenty of nerve, Mr. March.

Mr. March: I will say you have.

The Trial Examiner: I take it, then, Mr. Keffer, for the purpose of further cross examination it will be necessary that this computation that you speak of be used?

Mr. Keffer: I am not sure that I understood the Examiner precisely. The only figures we need, Mr. Hammer has already given us. I am cross examining him as to the accuracy of those figures. He has given them and I am taking those figures. It is a mere matter of taking a certain figure by the pressure therein and multiply by 430, which he said was the way to do it, which the Examiner could do—any of us could do that, and I am putting those basic figures in and saying that this is what it shows. It is there for anyone to check who questions it. I am not asking Mr. Hammer to do a thing.

Mr. Spencer: Mr. Examiner, before you rule, may I put it another way. Mr. Keffer has tried to expedite this hearing but suppose Mr. Keffer would ask the witness this question: "Mr. Hammer, take your rock pressure decline for a specific year, also your production for that year, and

tell me what the indicated reserves are for the field base upon that year," would the Examiner rule that question was not relevant and not material? It is using his own figures for that year, asking merely the question as to what the indicated reserves are for the field, based upon that year.

Mr. March: The way he figured—now he is cross examining the Examiner.

Mr. Spencer: That is what we are getting down to.

The Trial Examiner: I think I have expressed myself on that before, Mr. Spencer, the relevancy of that particular thing, but we are coming now to a point as I see it—maybe I have the wrong slant—where Mr. Keffer I believe requested Mr. Hammer to make a certain calculation—

Mr. Keffer: I am not going to ask him to make a calculation.

Mr. March: Some calculations have already been made by him. It is the same old horse.

The Trial Examiner: In order to verify the calculations—as I say, I don't feel it is improper cross examination, but at the same time I am not concerned about Mr. Hammer having to verify—not "verify," but having him to affirm a figure that is submitted to him.

Mr. Keffer: I am not asking him to affirm a figure.

The Trial Examiner: Just what are you asking him, Mr. Keffer?

Mr. Keffer: Let's proceed—

Mr. March: Let's don't proceed. After the horse gets out of the corral there is no use of corraling the horse.

Mr. Keffer: In order to protect our record I am going back and ask these questions one by one, and since the objection has been made that they don't want any calculation, I am not going to give a calculation I have made but I am going to ask Mr. Hammer to make a calculation in order, as I have stated, to protect our record in this matter. I am perfectly willing as far as I am concerned—

Mr. March: Either way is the same.

You ruled this morning, Mr. Examiner, that you would permit him to verify any of his actual figures taken from his actual working papers, but when it came to making him calculate or verify calculations from those figures furnished by counsel here, you said that was something that you would not insist the witness comply with.

The Trial Examiner: I believe I said, Mr. March, that I would not require him to affirm the accuracy of the calculations made on the particular sheet to which you were referring this morning. Let's go along and see what develops, Mr. Keffer.

Mr. Keffer: All right.

Q. The pressure drop as you have heretofore stated, Mr. Hammer, from August 1, 1935 to August 1, 1936 is 8.51 pounds average for the field?

A. Yes, that is right.

Q. The production from August 1, 1935 to August 1, 1936 was 615,778,940 Mcf. as you have stated?

A. I don't have the figure but I will assume that is correct.

Q. Now, Mr. Hammer, what was the production for that year per pound pressure drop?

A. Well, I didn't write that figure down. I didn't know what was coming up here. You didn't say you wanted it calculated so I didn't write it down.

Mr. Spencer: I think the other method would shorten this a great deal.

Mr. March: I object to that. I want the Examiner's ruling so the record will be clear as to his calculation. I understand that the Examiner's ruling is that he could calculate it—

The Trial Examiner: I haven't ruled anything.

Mr. March: He is just about to start so we want to get our objection in now.

Mr. Keffer: I have asked a question of counsel—

Mr. March: We object. May we have a ruling Mr. Examiner, before he calculates it?

The Trial Examiner: Mr. Reporter, please read back the record starting with that question.

(The record referred to was read by the reporter, as follows:

"Q. The production from August 1, 1935 to August 1, 1936 was 615,778,940 Mcf. as you have stated?

"A. I don't have the figure but I will assume that is correct.

"Q Now Mr. Hammer, what was the production for that year per pound pressure drop?

"A. Well, I didn't write that figure down. I didn't know what was coming up here. You didn't say you wanted it calculated so I didn't write it down.")

The Trial Examiner: You may answer.

The Witness: Am I to calculate it?

The Trial Examiner: You understood what he has requested you to do, Mr. Hammer?

The Witness: Yes, he wanted me to divide this production from August 1, 1935 to August 1, 1936 by the drop in weighted pressure.

The Trial Examiner: I think I will take a short-cut on this thing. It seems to me like we are wasting quite a bit of time in going through this thing step by step.

Mr. Keffer: That is the only step there is to it.

The Trial Examiner: All right, then.

Mr. Keffer: Did you mean to ask if there would be other questions, Your Honor?

The Trial Examiner: That is what I meant.

Mr. Keffer: Yes.

The Trial Examiner: But you will ask the witness to make the calculation year by year?

Mr. Keffer: I will state what it is and he is to divide 9.81 into that to see that it is correct.

The Trial Examiner: It would seem to me that it would be unnecessarily taking up quite a bit of time on this particular matter as they will be the figures we were discussing a short time ago. As a short-cut to this particular question,

I wish you would again ask it and I will give Commission's counsel an opportunity to object.

Mr. Keffer: All right. Going back, then, to production for the period August 1, 1935 to August 1, 1936 of 615,778,940, Mr. Hammer's figure, the pressure decline weighted for the field is 8.51; divided into the production gives the total of 72,359,452,000 cubic feet per pound pressure drop. That is all the whole thing is right there.

The Trial Examiner: That is your question, then.

By Mr. Keffer:

Q. Let us assume, Mr. Hammer, that that is correct—

Mr. March: To which we object

The Trial Examiner: Objection overruled.

The Witness: I haven't calculated it.

The Trial Examiner: It will be understood, however, that that figure, in the event it is determined it is erroneous, is subject to correction.

Mr. Keffer: Of course, I am taking that chance.

Mr. March: Also, he is assuming his method is correct.

The Trial Examiner: Irrespective of the method, I mean that the figures should be subject to correction in the event they are found to be incorrect.

Mr. March: We don't want anything to do with these figures.

The Trial Examiner: I understand, Mr. March.

By Mr. Keffer:

Q. Mr. Hammer, that computation was for the year 1935 to 1936. We had already computed it for the years 1936-1937 and 1937-1938 and in each of those years it was 68 billion, plus, as I stated the computation to be, is that correct?

A. Yes, that is what you said it was.

Q. Just one more question and we will be through.

The year from 1938-1939, the pressure drop that years was 10.03 as you gave it?

A. That is right.

Q. And the production for that year was 598,138,886 Mcf. as you gave it?

A. I assume it is. I don't have the figure.

Q. You gave me that figure

A. Well, all right, I don't have the—I don't have anything to check it against.

Q. I wouldn't think you would want to check your own figure. Dividing 10.03, the pressure drop, into the 598,138,886 it gives a production per pound pressure drop of 59,634,979. We will assume that divides out that way, Mr. Hammer.

A. That is your division.

Q. That is right. Upon that assumption when you calculate yours, the basis upon which you calculated the field reserves, you get a pressure drop—I mean, you get a production per acre pressure drop of 72, billion, don't you, plus 72.2 billion?

A. Well, I didn't carry it out. I would say it was 72, plus.

Q. That is right. Now, the calculations we have just made, assuming that they were made correctly, shows your very highest production figure per pound pressure drop to be 72 billion, plus, doesn't it? That is assuming that I calculated it correctly.

A. Assuming that your method of arriving at it was calculated correctly, yes, sir.

Q. And it drops down each year progressively, doesn't it, until in the year 1938-1939 it reaches 59 billion, plus?

A. That is what your tabulation shows.

Q. Assuming that I have figured that correctly, when you say that you took an average of them and came out with 72 billion, that could not possibly be correct, could it? Isn't that obvious?

A. If your calculations are correct there, it would be.

Q. That would be correct?

A. I said it would be obvious if your method is correct.

Q. I used the same method you used a while ago, precisely.

A. No, you did not.

Q. What was the difference?

A. That 29 I gave you as a figure was arrived at by the summation of the calculated reserve by all of the quadrants in the field.

Q. I know. You have stated that a number of times, but still when you calculated the per pound pressure drop, production per pound pressure drop, it was the equivalent of 72 billion per pound pressure drop, wasn't it?

A. Yes, it was 72 according to those—

Q. The statement I made was, if my calculations are correct it is still sound and it was a correct statement?

A. Well, we will say until they are checked that it is.

Q. Let's go to one other phase of this matter, Mr. Hammer. You have already checked your data as to acres and quadrants and as to acre pounds in each year, which was taken directly from your working papers in so far as the Canadian River's area is concerned?

A. I checked all except the totals.

Q. That is correct?

A. I assumed they were correct.

Q. Now, to get the weighted average pressures from year to year of Canadian River, you divided your number of acres into your acre pounds for each year?

A. That is right.

Q. For 1935 that gives you 39.92. That is arrived at by dividing 443,691, the total number of acres in those various quadrants, into 177,440,264 acre pounds?

A. Yes, that is the way you would calculate it.

Q. Then if you had the weighted pressures from year to year on Canadian River's reserves—I don't see how you could fail to have them—we could short-circuit a lot of this, that is, if you will just give them to us, because you had to have them, certainly, when you figured this Canadian River picture, otherwise you couldn't have done it. These are the entire quadrants that the Canadian River acreage is in, which is the way you approached the problem.

A. Well, the weighted average pressures for 1939 are on Table 4.

Q. That is for Canadian River's acreage alone?

A. No, no, that is for the quadrants in which Canadian River's acreage occurs.

Q. I think you are wrong—

A. I know I am not.

Q. Those are weighted pressures for each quadrant but they are not weighted for the area? It is impossible to tell the weighted pressures for the area without weighting those as to each quadrant, that is correct, isn't it?

A. What do you mean by the area?

Q. The quadrants which you considered in making the Canadian River's reserves estimate.

Mr. Spencer: All of them.

The Witness: I never made any such computation.

The Trial Examiner: You mean by that, Mr. Keffer, the group he used in determining one quadrant?

Mr. Keffer: The groups the witness took into account in his balancing operation as stated, to find the Canadian River reserves.

Mr. March: Mr. Examiner, that is all contained and written out in the exhibit.

Mr. Keffer: That is just the point, it isn't.

Mr. March: It isn't?

Mr. Keffer: No.

Mr. March: Why don't you ask the witness whether it is or not?

Mr. Spencer: He has been asking him that.

Mr. March: Did he say it wasn't?

Mr. Keffer: How's that?

Mr. March: He didn't say it wasn't in there.

Mr. Keffer: Yes, he did.

The Witness: I did not. You didn't give me time.

Mr. Keffer: You said you had the weighted average for each quadrant.

The Witness: You didn't give me time to go through it.

Mr. Keffer: I beg your pardon, I thought you were through answering me.

The Witness: They are in Table 3.

The Trial Examiner: Exhibit 180?

The Witness: Exhibit 180.

By Mr. Keffer:

Q. They are separated again. That is the point, they are not weighted. You had them for each separate quadrant but not for the area as a whole?

A. No, I never did that.

Q. On the schedule which I hand to you and which you have already verified, you got it from the group of quadrants by simply dividing the acreage in the total group into the acre pounds?

A. Yes, you could arrive at it that way.

Q. Isn't that the only way you could?

A. Yes, if these calculations are right, you could.

Q. Of course, they are your calculations. You are pretty sure they are right?

A. I am talking about the totals.

Q. Sir?

A. I am talking about the totals.

Mr. Keffer: If the Examiner pleases, in order to have a basis for this calculation I am going to have the tabulation marked as—I don't care whether it is marked as an exhibit. It could be handed to the stenographer to be copied into the record. That is probably the better way to do it.

Mr. March: If there is any exhibit to go into the record that will be identified, we are going to place it in the record. This is the same line of cross examination we objected to a while ago. He even wants to go further. He wants another computation into the record. We wish to interpose an objection to it being placed in the record. It is not being done either in courts or in administrative procedure.

The witness then testified further with respect to the quadrants containing Canadian River's acreage, and there was identified through him and placed into the record the following data taken from the witness' working papers:

		Acres	Acre-Pounds 1935	1936	1937	1938	1939
Hartley	HA	32,906	14,113,298	14,112,147	14,047,499	13,952,964	13,928,532
Potter	I	57,588	24,176,000	23,961,000	23,815,000	23,582,000	23,196,000
	II	44,937	18,966,000	18,869,000	18,628,000	18,497,000	18,191,000
	III	33,389	14,198,000	13,985,000	13,938,000	13,847,000	13,607,000
Moore	I	62,173	23,819,359	23,364,975	23,115,452	22,704,031	22,108,761
	II	61,866	25,624,302	25,396,197	24,933,023	24,248,578	23,238,433
	III	56,614	24,212,903	24,061,291	24,005,464	23,878,600	23,574,156
Hutchinson	III	53,967	15,920,702	15,708,405	15,259,718	15,010,397	14,601,992
Carson	IV	40,251	16,409,700	16,175,600	15,929,200	15,472,200	15,160,100
		443,691	177,440,264	175,633,615	173,671,356	171,192,770	167,605,974

The witness stated that the acre pound factor for each quadrant was determined by taking into account not only the production and pressure drop, but by taking into account also the same data for all surrounding quadrants.

The witness stated that the average weighted pressure of all of the quadrants in which Canadian has acreage may be obtained by dividing the total acreage into the total acre pounds, and that if this is done, assuming the calculation is made correctly, the total weighted pressure for 1936 would be 395.85 pounds; for 1937, 391.42 pounds; for 1938, 385.84 pounds; and for 1939, 377.75 pounds, which would show a pressure drop as follows:

1935-1936	4.07
1936-1937	4.43
1937-1938	5.58
1938-1939	8.09

The witness further testified (Vol. 59, pp. 8418-8429) as follows:

Q. For 1937, making the same calculation, it gives you a decline of 4.43 and for 1938 it gives you a decline of 5.58, and for 1939 it gives you a decline of 8.09. Those are based upon the calculations which the record will show. Assuming that those are correct calculations, Mr. Hammer, is it not true that the pressure decline in the Canadian River area is accelerating also?

Mr. March: I object to that question, if the Examiner pleases. Whatever conclusion can be drawn from that, the Examiner can draw it. Counsel not only wants him to go along with the computation but he wants him to make a conclusion, draw a conclusion from those computations and that is additional grounds for objection upon our part.

The Trial Examiner: Objection overruled.

By Mr. Keffer:

Q. It isn't a conclusion in the true sense of the word. You do have accelerated pressure drop, don't you?

A. The figures indicate that.

Q. And plotting that for each year, letting your coordinate points represent each year during that period, it

shows a very decided acceleration in the decline of that pressure?

A. You can take a group of points of that type and it all depends upon the subdivision that you make on your co-ordinate paper. You can draw any sort of a picture you want to.

Q. You can do that on yours, too, can't you?

A. You can't, no.

Q. All right, now, Mr. Hammer—

A. You only have one factor to consider the way you draw those curves—pressure and years—

Q. Pressure and years are two different factors. I don't see any use of discussing that curve. You have said that it wasn't indicated, haven't you?

A. Those figures you put in indicated it.

Q. Don't you know it is true?

A. I haven't checked those figures.

Q. Don't you know it is true anyway?

A. No, I do not know it isn't true.

Q. Don't you know anything about this after a year and a half work on it?

A. Yes, sir.

Mr. March: I object to the question. This witness has been harangued enough, if the Examiner pleases. A remark like that in the record is not justified and I ask that it be stricken.

Mr. Keffer: I will agree with counsel.

The Trial Examiner: He has agreed to strike it.

By Mr. Keffer:

Q Now, let me ask you a very simple question. The increase in pressure drop from 1938 to 1939 was almost sixty per cent greater than it was from 1937 to 1938, isn't it?

A. I don't know. I haven't calculated it.

Q. Look at it. Assuming my figures are correct, then, it is about sixty per cent greater.

A. I will say that it is, but it doesn't in my opinion mean anything.

Q. All right, it does mean something if the production did not increase anything like sixty per cent during that period, doesn't it?

A. No, I don't think it does.

Q. Well, why doesn't it? Suppose the production did not increase at all, yet your pressure drop did increase sixty per cent, would that mean anything to you?

A. All right. A curve of that type doesn't mean anything unless you bring into it the volume of gas removed.

Q. That's just what I'm doing, and you won't let me.

A. No, you aren't, you're plotting pressures against time.

Q. But now we are bringing production in, Mr. Hammer. Listen to me. That was the basis of the question that I asked you, the production angle. Now, if you have a decline in one year from 1937 to 1938 of 5.58 pounds and then you have a decline from 1938 to 1939 of 8.09 pounds, and if you had no increase in production, if you have had the same production figure for each year, then would a decline like that mean anything to you? That was my question. You have got the production in it.

A. Well, there are so many factors the way you have put that figure, it would have to be checked. You have made a statement there as far as I see it, Mr. Keffer, that there actually has not been any increase in withdrawals from time to time. I don't—I can't look at a thing like that and check it here on the witness-stand when you are talking about—

Q. Now, listen, Mr. Hammer, and listen to this question carefully and see if you can't get it. Let me repeat it again. We have a production decline from 1937 to 1938 of 5.58 pounds. We have a production decline in the same area from 1938 to 1939 of 8.09 pounds. Now, assuming—

Mr. Spencer: You meant "pressure decline" instead of "production decline"?

Mr. Keffer: Yes, that's right.

Q. Now, assuming that the actual production for each of those periods was the same, would that increase in pressure decline mean anything to you. Now, that's a simple question. See if you can't answer that.

A. If the production remained constant?

Q. If the production remained constant for each year.

A. It would indicate something, yes.

Q. All right, what would it indicate?

A. It would indicate greater withdrawals from—

Q. If the production was constant.

A. You didn't let me finish.

Q. All right.

A. That's just one of the things I've been talking about. Locally around the various areas we took into consideration just the thing that you are talking about there, that there was local gas movement from one area to the other.

Q. And we have included all these areas, remember that.

A. No.

Q. All areas in which Canadian River had a foot of acreage is included.

The Trial Examiner: You are speaking, Mr. Keffer, of this calculation which you have just recently gone through?

Mr. Keffer: Yes, sir, that's right. That was the average weighted pressure and the pressure declines from year to year in the group of quadrants in which Canadian River has acreage.

The Witness: Well, let me say this, that I don't believe that that method that you have used there, Mr. Keffer, is—

By Mr. Keffer:

Q. Mr. Hammer, can't you answer a simple question just once in five days?

A. Yes, if I'd answer them the way you want me to.

Q. Answer it some way. Just answer it.

A. All right, I was going to answer it. What I started to say, that drawing this curve as you have drawn it and using the data as you have figured it out, why, the curve is probably—it probably indicates a drop from year to year there. That is to be expected. You get a drop, but the question of the increment of increase of drop this curve doesn't represent.

Q. Just forget about the curve and go back and answer my question some way. Let's dispose of the question by having an answer to it.

The Trial Examiner: Mr. Hammer, he has gotten away from the curve now. Read the last question, please, Mr. Reporter.

(The question referred to was read by the reporter, as set forth above.)

By Mr. Keffer:

Q. Now, will you please answer that question?

A. Well, assuming that your calculations are correct, it would mean an increase in gas taken out of the ground other than the metered gas that we used.

Q. Would it indicate depletion, an increase in depletion at the same volume of production?

A. I don't figure that way, but if you want to figure it that way, it would.

Q. Answer yes or no. Would it or would it not?

A. I don't think you can figure depletion from one year to another. If you want to figure it that way, yes it would.

Q. Could it possibly mean by any stretch of the imagination, Mr. Hammer, that maybe some of the gas going out of those areas underground is a result of drainage?

A. Well, it could mean part that and it could mean something else. In our case if could mean some of the unaccounted for gas; that is, gas other than metered gas that we didn't take into consideration.

Q. You mean they lost all that in blowing wells?

A. No, I didn't say that. I said some of it.

Q. All right.

A. Now, let me finish my answer. There are some wells that I remember in that territory where they were drilled too deep and unless they have been repaired, those nonproductive sands and gravels down in the granite wash have been acting as thief sands to take some of that gas out. How much, I don't know, and no one else knows, but they are factors to consider.

Q. All right, now, Mr. Hammer, you are reaching out, grasping at straws, aren't you?

A. No, I am not grasping at any straws, I am telling you facts.

Q. Isn't the most plausible explanation, the only one that has any reason back of it at all, that in addition to the gas that is coming out through your well bores you are also losing gas by migration from that area, from that group of quadrants to another which has resulted in a larger pressure drop than the same volume of gas had indicated theretofore?

A. I at no time since I have been on this witness-stand denied that there was some local *draiage*. I don't deny it now.

Q. Well, then, I take it that you have finally answered that in all probability it is caused by drainage, is that correct?

A. A part of it could be. I have explained that there are reasons—

Q. How much of it do you think would be caused by drainage?

A. I have no idea, but the causes are there that could account for it.

Q. Well, do you think that the operators in that field are so extravagant that they waste anything like that much gas in blowing wells, for example, which is not metered?

A. I have no idea of what they do in that field on wasted gas.

Q. Let me ask you another thing: Look at your map over here. Could that not also result, as your lower pressures eat back into the higher pressure areas and you get into high pressure areas that were high the year before but are lean, don't have much gas in them, and where a little gas will drop the pressure more than it did back here in the more productive areas? Now, couldn't that have happened?

A. Read that question. I don't think I understood what you are trying to get at.

(The question referred to was read by the reporter as set forth above.)

The Witness: There are so many angles to that question—you are trying, as I see the question, Mr. Keffer, to bring into that question several factors such as drainage and permeability and what-not.

By Mr. Keffer:

Q. No, just one simple factor, whether or not a given production of gas will result in a higher pressure drop in a lean area than it will in a much more productive area. That is all the element there is to that.

The Trial Examiner: That is your question, now?

Mr. Keffer: Yes, it could be stated that way. Really that would hardly be an intelligent question within itself. You would have to read the two together. It is rather an explanation of my former question.

The Witness: What was that question?

Mr. Keffer: It has been suggested that I restate the question.

Q. That larger pressure drop which we have been discussing which occurred in 1938 and 1939 could have been influenced to some degree by the fact that as pressures eat back further and further and further, that is, lower pressures eat back further and further into a high pressure area and began reducing the pressures in areas in which much gas is not to be found, that that fact within itself would have a tendency to reduce the pressures with the same volume of production, is that not correct? It is somewhat in the nature of a statement. It is hard to state it otherwise.

Mr. March: Assuming, Mr. Keffer, of course, that they were eating back.

Mr. Keffer: Well, his own map shows that.

Mr. March: Well, that is a conclusion on your part.

Mr. Keffer: No, that's his conclusion. He made the map, I didn't.

The Witness: Well, I don't know. I am really honest when I say that I can't figure out how to answer that question because I don't understand it.

Mr. Keffer: Well, just strike the question, then. I'm too tired to take any more time on it.

Q. Now, Mr. Hammer, if you have this accelerated drop on Canadian River's acreage which has increased practically sixty per cent from 1938 to 1939 as compared to 1937 to 1938 and which has been increasing every year over the period, would you or would you not expect that acceleration in decline to continue into the future?

A. I have stated previously I do not know what is going to happen in the future. If present conditions continue to exist as they are now, I wouldn't anticipate that it would

materially increase. I would anticipate that it might decrease. I am not going to predict what is going to happen.

Q. What could happen that would cause it to decrease?

A. Well, they might quit drawing so much gas out of that territory.

Q. I am assuming the same volume of production to make it easy for you to answer.

A. Well, even then, not on one year's history, I wouldn't assume any such thing.

Q. I know, but you have a continuous decline for the entire period that you studied.

A. I'll tell you what I'll do, I'll agree to this maybe, that it is a whole lot closer if you would go back over all of your years and figure out what the increment of increase is rather than to take just one year, why, we might be getting closer together, but to take just one year I wouldn't agree to that at all because it isn't fair.

Q. One year doesn't mean anything, I take it.

A. Not when you have a life history of several more years, no.

Q. All right, does five years mean anything?

A. Yes, it means more.

Q. That's what you took.

A. It means more, that's true.

Q. Yet you have a curve that gets a little more sloping each year, each year during that period.

A. The way you have drawn it, that is true.

Q. And it would be that way if you drew it, wouldn't it?

A. Well, I don't think I would draw a curve like this.

Q. No, you wouldn't. You wouldn't draw the curve as it actually happened. You would draw a straight line across there which shouldn't be a straight line.

A. I would draw a curve, using the data necessary.

The Trial Examiner: I think the record is certainly full of that, Mr. Keffer.

Mr. Keffer: I think it is, too. I wonder if we might take a short recess.

The witness stated that although he had used the word "academic" with respect to his fieldwide estimate, there was nothing academic about it in so far as his estimate was

concerned but it was a real figure, and it was his thought that its relationship to the reserves of the Canadian River Gas Company might be largely academic.

The witness had made some references to a 73-year life for the reserves of Canadian, but the figure was used only in an illustrative manner and it was not his conclusion as to the life of Canadian River's reserves because he didn't know what would come in the future.

He was then asked the following questions:

"Q. What is your definite conclusion?

A. I haven't arrived at any.

Q. You just don't know how long it is going to last?

A. All I have attempted to do in this whole thing is to arrive at a reserve beneath the Canadian River acreage.

The Trial Examiner: As of—

The Witness: As of August 1st, 1939.

Q. Do you mean to say in your testimony that the Canadian River will recover that entire figure which you set out there as its reserve as of that date?

A. That question is a question that isn't a question directly associated with an estimate of reserves.

Q. Oh, I'll grant you that, except this, that you have to consider those angles in making your estimate, don't you?

A. No; not in making an estimate of reserves.

Q. In other words, you didn't try to make an estimate of recoverable gas, but rather the gas that is in place there today?

A. That's right.

Q. Without any conclusion that you might recover that much gas or more than that, or what-not.

A. That's it. This whole reserve study, and a reserve study in any case is to arrive at the gas in place on a given date as near as you can.

Q. Well, then, your figure which you use of 3,645,213,000,000 cubic feet as of August 1, 1939 was not intended as a figure representing recoverable reserves, but rather remaining reserve in the ground as of that date?

A. That's right, remaining reserves down to 25 pounds well head gauge."

The witness had computed his reserves down to an assumed abandonment of 25 pounds gauge pressure at the well head, and for the purpose of illustrating the point, stated that the virgin pressure was 430 pounds and in calculating the remaining reserves to 25 pound abandonment he would simply subtract 25 from 430 and determine how much gas there was in place with 405 pounds pressure.

The witness stated that the 25 pound abandonment pressure utilized by him was not intended to be representative of the actual economic abandonment pressure because he did not know what the economics of the thing would be. It is his opinion that the proper abandonment pressure is an economic question and that it will be solved in the light of economic conditions and situations existing at the time the problem presents itself.

He had made no study of the economic situation that might prevail at that time.

The witness was then examined with respect to the matters mentioned in his original statement which tended, in his opinion, to make his estimate a minimum one. He stated that his estimate represented a minimum figure because the pressures of the wells in most cases were not permitted to build up to a normal pressure, but stated, on the other hand, that if the pressures of 1935, for example, were not entirely stabilized, and if the pressures for subsequent years were not entirely stabilized, then this would make no particular difference, but he didn't know whether the proportion of low pressure was any greater in one year than another. His premise assumed the pressures were O.K. in 1935, but began getting too low after that. The witness stated, however, that it might be true that the errors inherent in the pressures for each year might wash out, but he does not know precisely how the closed in pressures would vary from year to year. For example, if the pressures, as actually gauged, were low in 1935, he couldn't assume they might also be low in the same proportion for 1936, but if this were to be assumed, then the drop would be just the same and his estimate wouldn't be affected. He also stated there would be a tendency for the same

error in taking pressures to occur each year and that it would be fair to assume that some error would occur each year, but he couldn't say how much, but if the same error did occur each year, it would completely wash out, and that the overall pressure differential would be the same.

The witness further testified (Vol. 59, pp. 8447-8465) as follows:

Q. All right, now, let's go on to No. 3. Well, we'll take No. 2. You say you haven't considered unmetered gas that was wasted. Do you mean by that, gas used in blowing wells, in wells of that type?

A. Yes, only gas that was metered and reported to the Texas Railroad Commission.

Q. Yes. Now, I can understand very well how that—the fact that you did not consider that might give you a lower production per pound drop in pressure. That is quite true, but on the other side of that thing; if you had considered these sloping lines that we are talking about when you consider production against them, they might have been more slanting than they are, isn't that a fact?

A. No, that is not true.

Q. It isn't?

A. No, not at all.

Q. All right. One further question on that. The fact that you haven't considered it in making your estimates, also if you try to get field life by dividing into those estimates the total production, and you don't count this unmetered gas, that would have a tendency to give you a bigger figure for the life of the field, wouldn't it?

A. You mean if you had this wasted gas in your calculation?

Q. If you left it out of your calculations in the second place just as you did in the first place.

A. Well, now, let's see.

Q. All right, I'll give you a simple illustration on that. Your estimate—oh, we'll say in round figures—well, I don't like to use yours because we may get some confusion in the record—suppose your estimate was a trillion feet and suppose you had a billion feet per year of metered gas. A billion into a trillion goes a thousand times, doesn't it?

A. That's right.

Q. All right, that would give you a life of a thousand years, wouldn't it?

A. That's right.

Q. But if in addition to that billion feet of metered gas there was 250 million unmetered gas which you did not take into account, which if you had added to that metered gas to divide into our reserves would give you a life of, instead of a thousand years, about 800, wouldn't it?

A. No.

Q. Why wouldn't it?

A. Because it wouldn't. The more gas that you take into consideration when you utilize the decline method as against any given set of pressure drops, the greater will be your reserve.

Q. Oh, I understand thoroughly, but I was going to the next point. I was beyond that. When you have your reserves and you want to determine life by dividing into the reserves the annual withdrawals, but you take only the metered withdrawals and not the unmetered withdrawals, then that gives you a bigger figure for life than you would have gotten if you had added the unmetered gas to the metered gas and then divided. Now, that is perfectly obvious.

A. I see what you mean. In other words, you are getting to the point that if you utilized or if you knew all of the gas when you are figuring life—now, mind you, in figuring reserves it is quite a different thing from figuring your life.

Q. I appreciate that, yes.

A. If you knew all of the gas that had not been metered, it would have a tendency to give you a lesser life.

Q. That's right, so that again, figuring from those two angles, one sort of washes out the other, doesn't it?

A. No.

Q. Now, get me straight.

A. Not at all.

Q. I am talking from the standpoint of determination of life in years and not reserves.

A. I have stated a while ago and I will repeat again that in the estimation of a gas reserve of this type I did not take into consideration anything except to determine the amount of gas in place in the ground as of a given date.

[Further Testimony of the WITNESS HAMMER, continued.]

Q. I appreciate that, and that gave you a little lower reserve than you would have gotten if you had taken this other gas into account.

A. That's right.

Q. I understand that perfectly. Now, let's leave that and go over to the point where we are trying to determine life of the field; then, when we divide only metered production into the reserve figure, you would get a longer indicated life than you would get if you divided the metered gas plus unmetered gas into that reserve figure.

A. Yes, that's all right.

Q. Obviously.

A. I will agree with you on that.

Q. That is, from the standpoint—looking at it from the determination of the life of the field, then one certainly would have a tendency to wash out the other, wouldn't it?

A. Well, as I have said, I haven't made a study of the life of the field particularly.

Q. All right, then, we'll go on to the next one. Now, you say that the pressures were not calculated to reservoir conditions, but were well head gauge pressures. Well, I think I understand that, but after all, if you compute down to an abandonment point of 25 pounds well head pressure, why, that is just what it is. You started with a 430-pound well head pressure, didn't you?

A. Yes.

Q. You didn't compute that 430 pounds well head pressure back to reservoir pressure, did you?

A. No, I didn't calculate the reservoir pressure.

Q. And then that one washes out completely, doesn't it, because you started with a well head pressure, so you had to end up with a well head pressure.

A. The point there is, though, that by utilizing this 25 pounds in order to have that 25-pound abandonment pressure at your wells you necessarily have to have a differential pressure in undrilled areas as against where the wells are.

Q. I understand that.

A. Therefore, you do have a larger amount of gas than is indicated, assuming a 25-pound—

Q. That comes under 4. We are talking about No. 3. We haven't got to 4 yet.

A. Oh, I see. Read that question.

(The question referred to was read by the reporter, as set forth above.)

By Mr. Keffer:

Q. Isn't that right?

A. Yes. I started with 1 and ended up with 1, but we must consider that thing when we go on to 4.

Q. Well, I know, but we haven't got to 4 yet. 3 standing alone is not a good reason for a minimum estimate, is it, not a valid reason?

A. It is not particularly pertinent to the thing, anyway.

Q. Well, it just isn't any reason at all, getting right down to brass tacks on the thing.

A. I think I have answered it.

Q. The point is, I want the record to be clear on that. You didn't start with reservoir conditions in your estimate.

A. No.

Q. But you started with 430 pounds well head gauge pressure, as virgin.

A. As virgin, yes.

Q. Yes.

A. That's right.

Q. All right, now, if you had transported that 430-pound well head pressure to a reservoir pressure you would have gotten considerably more than 430 pounds in the reservoir, wouldn't you?

A. Oh, yes.

Q. And then if you would have come back and figured well head pressures in your calculation to get your drop in pressure, you would have a lot bigger drop than what you did have, wouldn't you, if you startted with reservoir pressures and then ended up with well head pressures, you would have a much bigger pressure drop than actually existed, wouldn't you?

A. If I had used reservoir pressures?

Q. Yes, as your starting point and then deducted from that your lower well head pressures taken at a later date, you would have had a much greater pressure differential, wouldn't you?

A. As between original field pressure.

Q. That's right, and the pressure at any given date later.

A. Yes, using well head pressures would give you a greater differential than it would if you used reservoir pressures.

Q. That's right, so as a matter of fact if you had gone back to reservoir conditions as your beginning point you would have had a lot smaller reserve than the one that you did as you calculated it, wouldn't you—very much smaller because you would have a much greater pressure drop?

A. Restate that for me, will you? Read it, please?

(The question referred to was read by the reporter as set forth above.)

The Witness: Well, let's see, we started with reservoir conditions.

By Mr. Keffer:

Q. That's right, and if we would end with reservoir conditions then it would wash out, wouldn't it?

A. That's right.

Q. But if you started with reservoir conditions and end with well head conditions, or pressures, it wouldn't wash out, would it?

A. But if you start with a well head condition of 430—

Q. And end up with a well head condition at whatever it is, 360 or 350 or what have you.

A. The two methods should almost parallel each other.

Q. That is it exactly. That is the whole point I have been trying to make; so reason 3 as to why your reserve estimate is a minimum one just goes completely out the window, doesn't it?

A. Well, we have to tie that in to 4: so let's go into 4 and then I'll answer it.

Q. We haven't come to 4. We'll take No. 5 and come back to 4. You say: "Consideration was given to the deviation from Boyle's law, but was not applied. Its utilization would have given a somewhat higher result."

Now, let me ask you this in connection with that: When you take into consideration deviation from Boyle's law,

must you not also consider your temperature factor and give consideration to that?

A. Yes.

Q. All right, you gave no consideration to temperature, did you, temperature variations from reservoir conditions and well head conditions?

A. Well, I know the difference between temperatures, while it does have a bearing, is so seldom used in a calculation of reserves unless you want to go down and calculate that reserve to reservoir conditions, at the well head that factor is such a variable that you would have to have a recording thermometer on them all the time to tell what they were.

Q. That is precisely correct. All right, but your failure to consider temperature deviations or corrections for temperature washes out your failure in effect to calculate deviation from Boyle's law; now, isn't that correct?

A. I wouldn't want to agree to that statement. I would want to check it if I possibly could. It is my opinion that it does not.

Q. It does not? Say your average pressure in the field in August 1939 was 332 pounds ,approximately,—331, plus—what is the deviation from Boyle's law at 331 pounds?

A. Well, I don't know that I could give you that offhand.

Q. All right, do you know what the difference in temperature would be of reservoir conditions and well head conditions if you adjusted for that?

A. Well, not offhand.

Q. Well, do you know this? Can you answer me this, Mr. Hammer? I am not going to spend much time on it. Can you tell me whether or not engineers and geologists generally consider that in this reservoir that failure to correct for temperature just about offsets failure to consider the deviation from Boyle's law?

A. Well, I wouldn't know what the general opinion is.

Q. Haven't you ever figured that out to find out just what the difference would be?

A. No, I never figured it out.

Q. All right. We'll go ahead. You don't know, then, for sure whether one would offset the other or not?

A. I doubt if they would.

Q. But to approximate it you—

A. I wouldn't even want to say that without—

Q. I thought you liked that word "approximate," and maybe you would use that one all right.

Let's come back to 4. Are you ready for 4?

A. Oh, I've been ready for a long time.

Q. All right, now, I don't understand you on 4 at all.

A. I didn't think you would.

Q. Tell me about it. Maybe we ought to get into the record. You say, giving an added reason in Paragraph 4, that "Utilizing a 25-pound abandonment pressure well head gauge, necessarily means a higher weighted pressure, because there would be no such well head pressure if there were no higher pressure at undrilled points. In other words, to have 25 pounds well head gauge pressures at abandonment, necessarily indicates a pressure differential between the face of the producing formation in the well as against undrilled areas."

I think that explains the thing.

Q. Well, let me ask you some questions, then. Now, you told me a while ago very definitely and very positively that when you figured this 25-pound abandonment pressure, that that represented what was left in the ground at 25 pounds, didn't you?

A. Well head abandonment.

Q. That's right, and you also figured—you took that 25 pounds from 430 and you had 405 pounds left, didn't you, to produce? Now, isn't that right?

A. Well, if you want to figure it back to original reservoir conditions, yes.

Q. All right, now you have produced 405 pounds, haven't you, when you get down to 25 pounds? You just said that.

A. Well, no. The point is that you are dealing here in one case with a well head pressure and there is a reserve left in the producing formation above that.

Q. I understand that. I am going to agree with you on that.

A. All right.

Q. But wait a minute, we aren't quite ready for that yet. Remember you have got a calculated figure here, haven't you?

A. Yes, that's right.

Q. And that figure is calculated down to 25 pounds abandonment on the theory that you have produced 405 pounds, down to that point, isn't it?

A. Yes, but you are overlooking the fact that there is still a lot of gas in that formation above 25 pounds.

Q. We are going to get to that in a minute. From the standpoint of your calculated figure, if you have produced 405 pounds, and that is what your figure is calculated upon, then from the standpoint of calculations, you have a 25-pound pressure straight across from the standpoint of your calculations, as a matter of fact. Now, isn't that true?

A. No.

Q. Now, tell me how on earth you can get any different result than that.

A. We are talking about a reserve in the ground.

Q. I know we are.

A. And in the other case we are talking about an abandonment pressure.

Q. That's right.

A. The two aren't synonymous at all and one is not dependent upon the other.

Q. Let's go over it again, Mr. Hammer. Remember we aren't going down three thousand feet under the ground and actually measuring this gas, are we? We are calculating it, aren't we, from the top of the ground?

A. That's right.

Q. All right. Now, the figures which you have when you assume a 25-pound abandonment, and you have said it a number of times, you calculate your production, your reserves, down to 25 pounds by taking 25 from 430 which was your virgin pressure and assuming, then, if you are going to produce to 25-pound abandonment, that you are going to produce 405 pounds and you make your calculations on that basis. Now, that's right, isn't it?

A. But you have got to consider that you have a lot of gas left in the ground when you get down to 25 pounds.

Q. Well, that reserve left in that, above your 25 pounds, is still a part of your reserve. I will agree with you on that.

Let's take another angle on that. If, then, you are going to leave some of that in there, you aren't going to produce 405 pounds. That would have to follow, wouldn't it?

A. No, it wouldn't have to follow at all.

Q. How on earth are you going to produce 405 pounds out of 430 pounds and have more than 25 pounds left? Now, you tell me that.

A. We are talking about a well head abandonment pressure.

Q. I know we are.

A. All right.

Q. That's the way we have figured always on well head abandonment.

A. I have said before and I repeat again that in order to have that you must have a lot of gas. The whole reservoir away from your wells must necessarily have a pressure above it. How much above it, I don't know and neither do you. All of the gas that is in that reservoir above the 25 pounds is still a part of your reserve.

Q. Surely. Is that all?

A. Yes, that's all there is to the question.

Q. All right, the only difference between you and me—we agree on the facts, Mr. Hammer, entirely so. I agree that for you to have 25 pounds well head pressure you have got to have a higher pressure back from that well, and that is what your argument is based upon, isn't it? I agree with you thoroughly on that.

A. All right.

Q. There isn't any question about that.

A. All right.

Q. The only difference between you and me—

A. You aren't assigning—the only difference between you and me is that you are not allowing or assigning any reserve to that reservoir above 25 pounds.

Q. Yes, I am. There is where you are wrong. We are right together until we get right down to the point of whether we add or whether we subtract. I say we ought to subtract and you say we ought to add. That is the only difference between us.

A. And I am not going to agree with you.

Q. I believe you will. I still don't think you say it. I made a promise a while ago and I am going to live up to it, anyway.

Now, here, let that very true figure represent your reservoir—is that all right, Mr. March?

Now, you are going to produce that. You are going to produce 405 pounds of that, aren't you?

A. No, —now, wait a minute.

Q. Now, wait, don't you change on me, you have said that too many times.

A. Well, I have been referring back to well head, to what you would get at 25-pounds abandonment, well head.

Q. That's right.

A. Now you come along here with a picture illustrating a reservoir, or attempting to illustrate a reservoir, and the condition is not synonymous at all.

Q. Well, now, listen to me, Mr. Hammer. Please don't back up on me this late in the game. You have said two or three times that in your calculated figure the figure which you used in calculating your reserves down to 25-pound abandonment, that you used the figure of 405 pounds that would be produced and made your calculations on that basis. Now, that is a fact, isn't it?

A. Yes.

Q. And you couldn't do it any other way, could you?

A. But—

Q. Now, wait just a minute. Give me this indulgence here. Now, from a calculated standpoint that is what we are talking about. You calculated 405 pounds produced; so from a calculated standpoint you couldn't have more than 25 pounds left because you only started with 430. Now, isn't that just as simple as it can be stated?

A. No, that is not true at all. You are confusing reservoir conditions with well head conditions.

Mr. March: Mr. Keffer, haven't you made a mistake?

Mr. Keffer: No, I haven't.

Mr. March: You have deducted the 25 pounds from 430 instead of the present weighted pressure.

Mr. Keffer: How's that?

Mr. March: You have deducted it from—didn't you do this? Didn't you deduct it from 430 instead of your present weighted pressure?

Mr. Keffer: I didn't deduct from any sort of weighted pressure. I am assuming virgin pressure.

Mr. March: Which the witness has not done for this purpose.

By Mr. Keffer:

Q. Then take your present weighted pressure and deduct 25 pounds from that and tell me what you figured it on. If Mr. March would rather have it that way, we'll do it that way.

Mr. March: Weighted pressure.

Mr. Keffer: Give me that figure.

Mr. March: You are asking the questions. You can find out what it is.

Mr. Keffer: How do you know it is 430, then?

Mr. March: I know it isn't 430.

Mr. Keffer: All right, 333, we'll say, approximately.

Q. We'll say 333 to start with and you are going to produce it down to what?

A. 25 pounds well head pressure.

Q. You are going to produce how much? —let's see 5 from 5 is nothing, 2 from 3 is 1—you are going to produce 310 pounds, aren't you? I used 335. That's all right, that's near enough.

A. You are going to use that pressure?

Q. That's right, and from the standpoint of your calculation you are just going to have 25 pounds in your reservoir from the standpoint of calculations, arithmetic, I am talking. That's what you are going to have.

A. I am talking about reserve.

Q. That is right, from the standpoint of your calculation you are just going to have 25 pounds in your reservoir?

A. I am talking about reserve.

Q. All right. In that reserve you are going to have 25 pounds less?

A. No, that isn't true at all.

Q. All right, I will go ahead.

It is going to hustle me to make this thing good, but I am going to make this stand. If you have 25 pounds left in the reservoir as a calculated figure, yet actually you have

more than that because the pressure is higher between wells than it is at the well head, then the natural result of that it you have got to make some allowance from that and you have to deduct something from your original reserve because you have something there you are never going to produce. It is subtraction and not addition?

A. No.

Q. All right, that is all. I am not going to argue that any longer. It is too obvious.

Witness Hammer further testified on redirect examination, Vol. 60, pp. 8467-8530, inclusive, as follows:

Q. Since you mentioned here Wheeler County, Quadrant 1, I will ask you to turn to your Exhibit 180, Table 1. I believe it was Hartley County 1 you had a particular discussion in regard to.

Now, there was some indication during the cross examination by counsel that you had in this exhibit erroneously added accumulated production to accumulated production to get your figures there, 6,785, for 1939, in Column G, Accumulated Production.

Now—in other words, instead of adding up your production you just added accumulated production to accumulated production to get your erroneous answer here. It ran around something like sixteen million, I think, instead of what you have here. Now, you didn't do that at all, did you, Mr. Hammer?

A. Why, no. That was brought about by the confusion in attempting to get figures together hurriedly. The actual figures used were the figures that are here on Table 1 in Exhibit 180, in Column G, and those are accumulated figures from year to year.

Q. Yes, in order to get that figure you didn't add up your 5,000 and 3,000 and your 7,000—I beg your pardon, your 5 million, your 3 million and your 793,000?

A. No, not at all.

Q. And the exhibit is absolutely correct in that regard?

A. The exhibit is correct in that regard.

Q. The only difficulty in the cross examination, as I understand it, was the fact that you took off of your working papers rather absentmindedly the figures and added them up?

A. That's right. Naturally, I had to do some of that stuff hurriedly and that error was made, but the correct figures used are those figures shown under Hartley, under Column G of Table 1, Exhibit 180.

Q. Now, that was the only direct implication made with regard to that in this exhibit—

Mr. Keffer: If the Examiner please, I don't know what Mr. March is talking about when he says "implications." I think the record is clear that the error was made. I called it to Mr. Hammer's attention. It was just an erroneous calculation, is all it was.

Mr. March: There was quite a point made of it at the time that the exhibit was wrong.

Mr. Keffer: Don't pick out implications where there were none.

Mr. March: If none was intended, I will assume there were none.

Q. All of this came up over a question as to why you left Wheeler County out down here, Quadrant 1. Then the controversy came up in regard to that in an attempt to show that the production in Wheeler County 1 was higher than Hartley County quadrant here (indicating), and therefore, in the same line of reasoning you should have left out your Hartley County quadrant. That is my understanding as to why this arose. Is that your understanding?

A. It is difficult for me to say what was had in mind. The idea I got was that I had deliberately left that out for an ulterior reason.

Q. Yes. That was your impression, and it was my impression, too, that the reason you left out your Wheeler County 1 was that in order to leave out Wheeler County 1 it would necessarily in doing that increase your estimate of reserve?

A. That was the implication as I got it.

Q. And a great deal of argument as I recall followed and you said that was not true?

A. That's right.

Mr. Spencer: May I interrupt you just a moment, Mr. March?

Mr. March: Yes.

Mr. Spencer: Only for the purpose of suggesting this, that the illustrative quadrants used were for the purpose of analyzing Wheeler County Quadrant No. 1 were Gray County Quadrants 1 and 2, and not Hartley.

Mr. March: I am coming to Gray 1 and 2 in a minute. Hartley was mentioned in that connection, too. The record will so show.

Q. Now, I believe that you stated as your principal reason for leaving out Wheeler County 1 was because you didn't have the production data on that county accurately and reliably.

A. I think it was because of inadequate production data.

Q. You went ahead and gave other reasons but that was the principal reason?

A. That was largely and principally reason for leaving out Wheeler County, that is true.

Q. You recall the other night going over your working papers with me and we noted a very significant thing on those working papers. Will you turn to Wheeler County 1? Now, have your turned to Wheeler County 1 in your working sheets here?

A. That's right.

Q. Now, I will ask you if that is your handwriting on that work sheet?

A. It is not.

Q. That is one of your assistant's handwriting?

A. That's right.

Q. Now, I will ask you what is the notation above—below the compilation on that work sheet?

A. The notation says: "Insufficient production data," and down in the corner, "Not used."

Mr. Spencer: Hadn't we ought to identify that?

Mr. March: I am going to.

Mr. Spencer: You should do that before reading it in.

Mr. March: The witness is identifying it first, and then I will identify it.

Mr. Examiner, I would like to have identified for the record the work sheet, Wheeler County 1—Wheeler Quadrant 1, as Exhibit No.—

The Trial Examiner: Do you wish to have it marked as an exhibit, Mr. March?

Mr. March: Yes. The reason I do that is because any court of law would recognize that a notation made in the course of business in the compilation of an exhibit would be the best evidence of the intentions involved.

The Trial Examiner: It will be marked for identification as Exhibit 191.

(Exhibit 191, Witness Hammer, marked for identification.)

Mr. March: I will have to secure copies of this.

The Trial Examiner: What would you title that sheet, Mr. March?

Mr. March: I would entitle it "Work Sheet, Wheeler Quadrant 1, Texas Panhandle Field."

Q. It was brought out in the record here and I believe you agreed in the record here that by using Wheeler County 1—by not using Wheeler Quadrant 1 you increased your estimate of reserves?

A. It showed an increase above that which would have been if I had used Quadrant 1.

Q. A slight increase as compared with the total?

A. That's right.

Mr. Spencer: Excuse me, Mr. March, you didn't understand me before. If you are going to have it identified and if it is going in the record, why not identify the assistant that made the notation at this time?

Mr. March: This witness' assistants that made these notations are in Washington. They are nothing more or less than Mr. Hammer's assistants and a man when he prepares an exhibit has a right to have assistants working under his direction. Every exhibit which the companies have offered here—Mr. Rhodes' exhibit—none of those working papers are in his handwriting. This man had these working papers made in Washington under his supervision. He couldn't make every notation on there.

Mr. Spencer: Granted. All I am asking you is the name of the assistant that made the notation.

Mr. March: Well, I'll give you that.

Mr. Spencer: I want it in the record. That's what I said five minutes ago.

Mr. March: Before I do that—I don't want to be diverted on this point here:

Q. As I said, Mr. Hammer, as you recall, we agreed that by excluding Wheeler Quadrant 1 you slightly increased your estimate of reserves by the pressure decline method?

A. That's true.

Q. Now, there was a great deal of argument that the production in Gray Counties 1 and 2 was slightly less than Wheeler County 1, and then why didn't you take out Wheeler Counties—Gray Counties 1 and 2? Well, now, if you had eliminated Gray County Quadrants 1 and 2, would not that have likewise increased your estimate of reserves?

A. Yes, it would have, on the same principle.

Q. On the same principle?

A. That's right.

Q. And if you had eliminated Hartley quadrant over here it would likewise have increased your estimate of reserves?

A. That's right, for the area considered. In each case, for the area considered.

Q. And you felt that you had here in Wheeler County a unique situatron in the entire field, Wheeler County, Quadrant 1?

A. Yes, it seems that way to me, that's right.

Q. And in your best judgment it could very well be left out in your estimate of reserves?

A. It was a matter of judgment and I felt that way about it.

Q. In other words, that illustrates the point that when you spread this estimate of reserves out over some of these not so productive acreages it has the general effect of decreasing your estimate of reserves, if anything?

A. That's right, because you have taken more acres into consideration.

Q. That's right. In any case, the thing is weighted out, so that when you weight your really productive acreage in with your less productive acreage, the whole thing weights

itself out and gives a fair estimate of the reserves for the entire area?

A. That's right.

Q. Now, Mr. Hammer, there has been some indication here during your cross examination here that you have been coached here from the sidelines. Was this exhibit prepared by you and under your direct supervision?

A. Absolutely.

Q. And the persons working under your supervision were all of lower grade than yourself?

A. Well, that term—

Q. In the classified service of the Federal Power Commission?

A. That's right.

Q. And will you indicate the individuals as near as possible from your recollection who assisted you in this project?

A. Well, do you want me to name all of them?

Q. All of them you can remember, yes.

A. There were A. R. Algier, an associate engineer; Fred Grote—I don't remember his rating—

Q. You don't have to give the titles.

A. Jack Dougherty; Charles Pettingall, and in the compilation of data up to the time when we started the actual estimate of reserves, Mr. H. F. Stevens helped us assemble and get the data together. That's all I can remember.

The Trial Examiner: The same Mr. Stevens that has heretofore testified in this proceeding?

The Witness: That's right. That is all I recall at the moment.

By Mr. March:

Q. Mr. Stevens was an associate of yours in general in this work?

A. In general, that is right.

Q. He is the only person in this hearing room that had anything whatsoever either direct or indirectly to do with this job?

A. That's right.

Q. Besides yourself?

A. That's right.

Q. And when it came right down to making decisions as to how this thing was to be put up, the method employed

and the way it was employed and those decisions, those were made by you?

A. They were my decisions entirely.

Mr. Spencer: Are you all through with the assistants, now, Mr. March?

Mr. March: I am getting to this thing that you wanted.

Mr. Spencer: All right.

Mr. March: I don't want to rush things here.

Mr. Spencer: The only reason I am interjecting is, if the questions and answers with reference to notations on that sheet of working paper relating to Wheeler County, Quadrant No. 1, is not connected with the party that made it, so we can cross examine him, I want to move at the proper time here to strike both questions and answers. That is why I kept interrupting.

Mr. March: You can make your motion at the proper time and we can argue it then.

Mr. Spencer: It was probably proper right after it was done, only I am just waiting.

By Mr. March:

Q. Do you know whose handwriting that is, Mr. Hammer, in the exhibit which has been marked for identification as Exhibit No. 191?

A. To the best of my memory and because it has the initials up here in the corner "C.E.P.," I believe that it is Charles Pettingall's handwriting.

Mr. Spencer: I didn't get that name, Mr. Hammer.

The Witness: Pettingall.

Mr. March: Does that meet with your approval, Mr. Spencer?

Mr. Spencer: Yes. I would like to know what position he occupies or did occupy when he made the notation.

The Witness: I don't recall what his classification is.

By Mr. March:

Q. He was working, though, under your supervision?

A. That's right.

Q. And you did not use Wheeler County Quadrant 1 in your estimate of reserves?

A. That's right.

Q. It was not used in connection with this Exhibit 180 and 179?

A. Well, that is true as far as Exhibit 180 is concerned. In the preparation of 179, why, naturally we isobarred the area. That was the first job, but in 180 we didn't use it.

Q. And you didn't use it in your estimate of reserves?

A. That's true.

Q. You left it out?

A. That is right.

Q. Now, Mr. Hammer, there was quite a bit of discussion here about some cylinder diagrams that had been marked for identification as Exhibit 189. Will you turn to that sheet, prepared by Mr. Hughes?

Now, say we withdraw, as Mr. Keffer had you do, 15,000 from Container No. A, and make your computation as it should be made from there, as you think it should be made, and explain them.

A. This is the problem where you withdraw gas from Cylinder A only?

Mr. Spencer: Which exhibit would that be tied into, Mr. Hammer?

Mr. Lange: 189.

The Witness: That is right. That is the problem that you asked about where you draw from one cylinder only?

By Mr. March:

Q. Yes, sir. I want you to compute your original reserves.

A. Well, if you take the three cylinders, Cylinder A having 30,000 cubic feet; Cylinder B, 20,000, and Cylinder C, 10,000 cubic feet, and you withdraw 15,000 cubic feet out of Cylinder A, you would reduce the pressure from 400 pounds to 200 pounds. Then in order to calculate that back and take into consideration all three cylinders it would be necessary to weight the pressures against the volumes, having in mind that Cylinder A after the withdrawals still

contains 30,000 cubic feet, but at a reduced pressure. You would weight the problem as follows:

30,000 cubic feet times 200 pounds remaining pressure would give 6,000 Mcf. 20,000 cubic feet at 400 pounds pressure would give 8,000 Mcf., and 10,000 cubic feet of gas at 400 pounds pressure would give 4,000 Mcf., or a total of 18,000 Mcf. Then if you calculate that 18,000 Mcf., if you take that and divide it by the 60,000 feet of total gas, you will get a weighted average pressure of 300 pounds. You must bear in mind that the total volume has been reduced from 60,000 cubic feet to 45,000 cubic feet, or 15 over 60, or 15 divided by 60, is one-fourth; also, that the pressure has been reduced from 400 pounds to 300 pounds or 100 divided by 400, or one-fourth. Therefore, the proportion of gas taken out is equal to the proportion of gas—the proportion of pressure taken out, which is equivalent and proves Boyle's law, and, furthermore,—or on a pound loss basis, if you will divide 15,000 cubic feet by 100 pounds loss you will get 150 cubic feet per pound in decline. Then if you will multiply that 150 cubic feet by the pounds in decline you will get 60,000 cubic feet, or the original gas in all three containers.

Q. That is assuming that they are all three inter-connected?

A. That is right.

Q. But that would not satisfy Mr. Keffer. He has another hurdle for you to jump here. That is this: As a matter of fact, that works out, as I understand it—I want to get it straight here first. What you have done is to weight pressures both as to area and content?

A. That's right.

Q. And when you do that you get the right answer?

A. That's right.

Q. But Mr. Keffer would say that the Panhandle field is—you don't have an equilibrium pressure there and these three containers here—and your inter-connected three containers and your pressures are allowed to equalize and you don't have in the Panhandle field—you do not have strictly from Boyle's law standpoint an equilibrium pressure, do you?

A. Not entirely so, no.

Q. In other words, if you secured an equilibrium pressure in the Panhandle field you would have to shut the whole field down for an indefinite period of time?

A. That's right.

Q. And let the pressure equalize?

A. That's right.

Q. And that is both impossible and impractical?

A. Well, under existing conditions that would never be done.

Q. Yes, so you had used the figure which was equivalent to the equilibrium pressure and which will give you substantially the same result, did you not?

A. I used the figure that was the closest approach possible to arrive at the equilibrium pressure, in my opinion.

Q. And what was that?

A. That was the preparation of these maps on isobars of ten-pound intervals and if we had been able to take them on down to five-pound or even on down to one pound, we would have very closely or more closely approached an equilibrium pressure.

Q. In other words, you had the weighted average pressure, as I understand it?

A. That's right.

Q. And the way you have applied that and weighted the whole thing out over your area here, although it is not a perfect answer, it is your opinion that it gives you an answer that for all practical purposes is the correct answer?

A. That is right.

Q. Since you mentioned these 10-pound isobars that you used, will you explain the advantages of using a 10-pound isobar over a 50-pound isobar or a 20-pound isobar?

A. Well, that's just what I had in mind a moment ago. The smaller pound interval you use the more closely you can approach the proper answer. Now, if you took and used 20-pound isobars there are local and sometimes relatively large areas of pressure between that, where you draw a 10 and 20, which would indicate on your ten but which would not show up or be indicated at all if you used 20 or larger.

Q. In other words, when you go down on your isobars to smaller intervals you get a more correct answer?

A. You get a better picture of the areal distribution of pressure.

Q. As a matter of fact; in this exhibit here, by using 10-pound isobars you go further as far as you know in this refinement than anyone else that you know of?

A. I think I have gone farther. I don't know of anyone else that has ever used 10-pound isobar intervals.

Q. What does the Railroad Commission use?

A. I think ordinarily they have used 50 pounds.

Q. Now, since we are on this isobar business, this 10-pound interval, you will recall that Mr. Keffer went at great lengths here to recite to you these pressures beginning at 200 pounds and going up to 400 pounds, at 10-pound intervals. He went over a whole list there. For example, he said from 200 to 210 and from 210 to 220 and right on up the line, and he attempted to show, as you will recall, that 400-pound pressures had just about twice as much weight as the 200-pound pressures.

A. Yes, I recall that.

Q. Assuming all the pressures there in one isobar. Now, as a matter of fact, Mr. Hammer, is this statement not true? If it is not true I want you to tell me.

Mr. Keffer: Just ask the witness a question.

Mr. March: I will ask the witness the questions as I see fit, unless the Examiner rules otherwise.

Mr. Keffer: Mr. Examiner, Mr. March has no right to lead the witness.

Mr. March: I don't have to lead the witness. There is no rule of evidence in the court that I can't lead the witness to a certain extent on redirect.

The Trial Examiner: He is your own witness, Mr. March. However, I will say—

Mr. March: Well, go ahead, make your ruling.

The Trial Examiner: May I rule now?

Mr. March: Yes.

The Trial Examiner: Let me say this, that so far as your leading questions are concerned, the witness is a responsible witness and I don't feel that it is harmful, and

perhaps it will expedite the hearing, and I am sure that Mr. Hammer appreciates the obligation of his oath.

However, I think, Mr. March, that you should bear that in mind and when it is at all possible to let the witness give the facts in the case, and I think you should proceed on that basis. I am not going—

Mr. March: Mr. Examiner, thus far this has been the only question that has been objected to, and it doesn't make any difference how strict the rules are applied in regard to us, we will not lead the witness directly or indirectly in this regard if the Examiner feels that way about it.

The Trial Examiner: I haven't said you could not lead the witness, Mr. March.

By Mr. March:

Q. What have you got to say about that, Mr. Hammer?

A. About that question of 200 and 400 pounds?

Q. That's right.

A. I think the best way to illustrate and define that situation is to state that in any case a segment having 400 pounds pressure considered in that light alone would contribute twice as much to the total factors as would the 200 pounds, but that each of the segments contribute equally to the average and that would hold true of any *infinitecimal* amount of segments.

Q. In other words, it would be likened to a scale, when balanced out it would level itself off?

A. That's right.

Q. Mr. Hammer, there has been some question raised as to whether or not the method which you employed here in estimating reserves has ever been employed before.

A. That question was asked me.

Q. Yes. You recall first that there was a great deal of questioning, though, in regard to the porosity pay thickness method of estimating reserves and you recall that the first question was asked you as to whether or not you recalled an estimate made by C. Max Bauer.

A. C. Max Bauer.

Q. Around 1931 and 1932, I forget which it was, and you said you did, did you not?

Mr. Keffer: Just a moment, Mr. March. Mr. Hammer volunteered the statement about Max Bauer.

Mr. March: You asked him first as to whether or not he knew of any estimates being made by the porosity thickness method in the early days and he answered the question.

Mr. Keffer: He said he understood that Max Bauer made one.

Mr. March: You asked the question and he answered it.

Mr. Keffer: Just a moment, that question was based upon the early porosity thickness method, or was it an estimate?

Mr. March: You can have a chance with the witness on recross. You can ask him about that on recross examination.

Mr. Keffer: I think it was on an early field estimate, regardless of the manner employed to make the estimate. That is rather my definite recollection of it. I could be wrong about it.

Mr. March: The record will speak for itself in that regard.

Q. You do recall a discussion about it?

A. Yes.

Q. You do recall quite a number of questions as to the soundness of the porosity sand thickness method in estimating reserves?

A. That's right.

Q. And I believe your opinion was that in regard to that—

A. That as far as the Texas Panhandle field is concerned it would give an erroneous answer and it really was not applicable in my opinion to an estimation of reserves in that field.

Q. Because you couldn't get adequate cores?

A. Because you couldn't determine the porosity adequately.

Q. You recall thereafter the question was asked you as to any estimate of reserves which had been made previously in which your method was employed or any portion of your method was employed?

Mr. Keffer: I never asked any such question as that.

Mr. March: I suspected Mr. Keffer would raise up and object to this, so I just got the record out here.

Mr. Keffer: All right.

Mr. March: So I want to read exactly what happened.

Mr. Keffer: You read just exactly what happened.

Mr. March: I will read the record on Page 7950. First I will begin reading on Page 7949;

"By Mr. Keffer:

"Q. Mr. Hammer, we were discussing yesterday the matter of quadrants and the way in which you have utilized them. I will ask this in that connection, if your approach to this problem in the application of the pressure decline method has been the orthodox approach to a problem of this character by utilization of that method."

Mr. Keffer: That's right. I asked that question. That isn't the one you asked.

Mr. March: Mr. Keffer, I've got the floor here and you will have the witness on recross.

Mr. Keffer: You state it the way I asked him the question and there will be no objection from me.

Mr. March: "A. Well, it has been used by others in similar proceedings.

"Q. You mean the dividing of a field such as this into quadrants?

"A. Into areas. They didn't call them quadrants, but it has been done."

Q. Now let's take the next question that Mr. Keffer asked:

"Q. Where has it been done?

"A. That has been done in the case of the recent estimate by the Phillips Petroleum engineers and geologists."

Then Mr. Keffer asked the question:

"Q. They didn't divide them into quadrants like you did, did they?

"A. Areas.
"Q. Didn't they follow contour lines pretty well?
"A. In certain instances but not in all instances.
"Q. And you haven't followed them at all?
"A. No."

Then the cross examination in regard to that continues on.

The Trial Examiner: Now what is your question?

Mr. March: I am just getting to it.

Q. You recall that, do you not, Mr. Hammer?
A. Yes, I recall it.
Q. Did the Phillips Petroleum Company use a similar method to yours in estimating the reserves of the Panhandle field?
A. They did, very similar.
Q. And just approximately how did their estimate of reserves compare with yours?

Mr. Keffer: Just a moment, just a moment. If they want to prove the Phillips Petroleum Company's estimate, let them have the man that made the estimate come in here and withstand cross examination. You can't prove a reserve estimate by any such indirect method as that.

Mr. March: We aren't attempting to put on an estimate of reserves of Phillips Petroleum Company. We are attempting to show that the method employed by Mr. Hammer was a well-established method, that it had been used previously, been tried, and that the results were not unlike his. I haven't asked him for the specific estimate of the reserves.

The Trial Examiner: You are objecting to the question, Mr. Keffer:

Mr. Keffer: Yes, I am.

The Trial Examiner: The objection will be sustained.

By Mr. March:

Q. Do you recall as to whether or not Phillips Petroleum Company in its estimate of reserves attempted to employ the porosity thickness method?

A. They did not.

Mr. Keffer: Now, if Your Honor please, even on that, that is a pretty broad question. Mr. Hammer may know and he may not, I don't know, but certainly whether or not they attempted to use the porosity thickness method, the man that did the estimating is the one to answer that. It is wholly hearsay.

Mr. March: This quesion is entirely different—

The Trial Examiner: Mr. March, the witness has answered the question. It can do no harm in the record.

Mr. Keffer: As it stands now, I don't see as it would, really. It is rank hearsay and hearsay testimony I believe proves nothing. I think the courts have held that, and with that thought in mind, it makes no difference, if the Examiner agrees with me.

By Mr. March:

Q. Mr. Hammer, do you know whether or not the Phillips Petroleum Company have substantial acreage in the Panhandle field or not, of your own knowledge?

Mr. Keffer: If the Examiner please, just there, again, this is going far into the night, probably, on this line of—

Mr. March: I have only a few questions here I am going to ask on this.

Mr. Keffer: Whether the Phillips Petroleum Company has much acreage or little acreage could have no possible effect on an estimate of reserves made by them or anyone else. That doesn't affect the reserves to the slightest extent and I, therefore, object to that question as wholly irrelevant, incompetent and immaterial.

The Trial Examiner: Well, if the witness knows—the witness has gone over the field—he may answer.

The Witness: Well, I did have occasion, Mr. Examiner, to check roughly the acreage that the Phillips Petroleum Company have in the Texas Panhandle field in connection with the application of the Independent Natural Gas Company that was made to the Federal Power Commission. At that time I was requested to check the acreage that they

held in the Texas Panhandle field. I don't recall offhand the figure at which I arrived, but I do know that they have a very large and substantial acreage in the Texas Panhandle field.

By Mr. March:

Q. Mr. Hammer, I am going to read you a quotation and I am going to ask you if you agree with it. If you don't agree with it you can say you don't agree with it. This quotation is one I will read to you. It is contained in the physical transcript of the record in the matter of Independent Natural Gas Company, Docket No. G-178, Federal Power Commission, Page 305 and 306, and I just want to know whether or not you agree with that portion of the testimony of Mr. C. E. Turner. Do you know who Mr. C. E. Turner is?

A. I know he is an engineer with the Phillips Petroleum Company.

Mr. Spencer: Now, Mr. March, before we start reading into the record—

Mr. March: We can always strike. If the Examiner rules, it will be stricken. I have a right to ask the witness whether he agrees with a certain statement or not.

Mr. Spencer: We are getting right down to the thing the Examiner ruled on.

Mr. March: It is not getting to the estimate of reserves at all. I am just reading from this authority here and asking him if he agrees with the authority. That's all I'm doing.

Mr. Spencer: Well, I think very early in these proceedings we had a discussion about reports made by experts and as I recall you objected, that you did not have any opportunity to cross examine the expert and the Examiner agreed with you.

Mr. March: That's right.

Mr. Spencer: Now, we do not want you to read anything into the record from any expert on this subject that we cannot cross examine.

Mr. March: There has been read into the record here and prepared in exhibit form even quotations from tax reports in regard to technical matters. This porosity thickness method is a technical matter, and anybody can read from the sworn statement of an expert and ask a witness on the stand whether he agrees with him or not. I am not putting in evidence here the testimony of a witness here which is not permitted to be cross examined. I am merely asking him whether he agrees with this expert or not.

The Trial Examiner: Let's get this straight, Mr. March: You are trying to put into the record in a backhanded manner testimony of some other witness before the Federal Power Commission. Now, the Examiner is not going to permit it and there is no use of taking up time on matters of that nature.

Mr. March: The Examiner can say so and that is all there is to it. However, it was not with the intention of putting in evidence in a backhanded manner. Commission's counsel accedes to that because it was merely an attempt to here quote from an expert just like I would quote from a text book. I can quote from text books here by any individual as to the definition of permeability and porosity, can I not? I want to know because I may want to take a quotation from a text book and ask him if he agrees with that definition.

Mr. Spencer: A recognized text book is a whole lot different than reading out of another proceeding before the Federal Power Commission. The testimony is for one purpose and the text book is for another.

By Mr. March:

Q. Mr. Hammer, on yesterday we went over in the record—Mr. Keffer went over in the record a long series of reasons you have—five reasons you have on Page 15 of your written statement as to why this reserve figure that you have up here is a minimum estimate of reserves. Will you get your written statement out so we can go over those points at this time? Have you got those out, Mr. Hammer?

A. I have.

Q. Now, I believe the first reason here that you gave as

the reason for this minimum estimate of reserves is (1) "Stabilization of pressures are seldom if ever reached during the 'closed-in' period prior to determination."

A. That is the first one.

Q. Will you explain it just exactly for the Examiner—simply show everybody here just exactly what you meant by that.

A. Well, I meant, as I stated yesterday, that closed-in pressures in a field are seldom if ever obtained up to the maximum that might be delivered. I mean the maximum pressure that might be obtained at the well head when all other wells are producing gas or in the immediate vicinity of the wells where the pressure is being taken, and the location of the wells. There are all sorts of variabilities in the permeability fa[illegible]r.

Pressures might build up rapidly in one area and take a longer time to build up in another area because of the permeability factor. Under conditions of that type the wells never are on the average allowed to remain closed sufficiently long to get a real stabilized pressure. Now, if you take the question as it was discussed yesterday as to the fact that the isobars which we used based on closed-in well head pressures and as to whether the curves that we projected were based on minimum pressures, that is true, but that is just the point I want to make and I thought I had made it yesterday.

If your isobars are low and if a pressure decline curve is low, the facts are that if you had the better pressures, then they would be—your curves and your isobars would be drawn on that higher pressure. Now, you project a curve—

Q. You so projected a curve for illustrative purposes here?

A. I have projected a curve for illustrative purposes, yes.

Q. Let's describe your curve that you have drawn.

Mr. Keffer: Let him finish his statement.

Mr. March: I object to the interruption by opposing counsel. I want to ask the witness to illustrate this curve here. I have asked him whether he drew the curve or not.

Mr. Keffer: You broke in in the middle of the witness' answer of the other question.

The Trial Examiner: Had you completed your statement, Mr. Hammer?

The Witness: Well, will you go back and see when I quit?

(The record referred to was read by the reporter as set forth above.)

The Witness: I will make just one more short sentence to finish that statement: You project a curve on the higher pressures and its intersection will hit farther out, always, on your volume ordinant.

By Mr. March:

Q. Now, as I understand this, Mr. Hammer, in regard to your first reason here you have, we'll say right here in the middle of this piece of paper a well, and you have formations all out around that well. You tell me whether I am right or not—formations all out around the well. You have gas in that formation.

A. That's right.

Q. As I understand it, when you gauge these pressures you don't shut the well in and let the field equalize. You don't have an equilibrium pressure?

A. Not a true equilibrium pressure.

Q. That's right. As I understand it here—

Mr. Keffer: If Your Honor please, I don't know what he is leading to. I don't think it makes a lot of difference, but I want to call the Examiner's attention and Mr. March's attention to the fact that he is making a statement and putting the answer in the witness' mouth. So far it doesn't hurt.

The Trial Examiner: Go ahead, Mr. March.

By Mr. March:

Q. As I understand it, in view of the fact as you have stated here that you don't shut in the wells and let the pressures all equalize, that the pressures in these surrounding formations are always higher than the pressures are at the bottom of the hole.

A. In general I think that is true.

Q. And so even if you take your measurements by dead weight measurements, which is actually absolutely accurate, assuming that, the measurement of the gas pressures at the bottom of the hole here would be lower than in this surrounding—in these surrounding formations, is that right?

A. Yes, if your pressures had not reached stabilization, that would be true.

Q. And they haven't reached stabilization in the Panhandle field to your knowledge, have they?

A. I am speaking now about where you take pressures locally in a given area of two or three miles around a well. In discussing the thing with engineers of the Texas Railroad Commission I got the impression that they did not close wells down over great areas in order to take their closed-in pressures, and if they didn't close in considerable areas all at one time, their closed-in pressures as taken would be a minimum.

Q. And the pressures here at the bottom of the hole would be naturally, since they weren't allowed to equalize and come up in the hole, would be lower than in the surrounding formations?

A. That would be true.

Q. In other words, as I understand it, in every case that is the reason you stated that in practically every case you would get a minimum pressure?

A. That is I think true.

Q. Now let's go to this diagram which you say you have drawn here which illustrates that very well, as to the results as I understand it, and you may explain that as to what type of diagram you have here and what it illustrates.

A. Well, it is simply illustrative. I have just projected two lines, one representing a curve drawn on the pressures, say, that we took, and one drawn at a pressure somewhat higher, the lower one representing the pressures as we realized them and the upper one representing the pressures that would approach more closely to stabilization. In other words, the higher pressures.

Now, if you project a curve, using the somewhat lower pressures, it will hit at a less distance from the zero point

on the volume ordinant than it will if you utilize the higher pressures that would exist. In other words, your point using the higher pressures would hit the volume ordinant at a greater distance from zero, giving you in volume a larger reserve.

Q. In other words, you have drawn a diagram there which, as I understand it, and see if I understand you correctly, on which you have your pressures and production applied against your pressures.

A. Diagrammatically, yes.

Q. Diagrammatically, and roughly for illustrative purposes?

A. That's right.

Q. And then you have that diagram there and you extend a line diagonally down across this paper making a rectangle. The line which you extend down is illustrative of the pressures actually taken at the lower levels?

A. That is right.

Q. In other words, the pressure taken without shutting in the whole field or the whole surrounding territory and allowing them to equalize which would naturally, as you state, be a lower pressure?

A. A lower pressure, that's right.

Q. Now, if the field had been shut in or if the pressures had been allowed to equalize, as I understand it, you state that the pressure at the bottom of the hole in the well would have been higher, therefore, you would draw another line to illustrate these entire pressures?

A. The pressures at the well head or the bottom of the hole, each one would have been higher.

Q. That's right.

A. The point is that with those higher pressures plotted against whatever accumulated production you would have, you would get a greater distance projected out on the volume ordinant of your coordinate paper, thus on pressures alone giving you a greater reserve.

Q. And so that is the reason why, as you have stated here in your point 1 that this is a minimum estimate of reserves?

A. That would be one of the reasons.

The Trial Examiner: We will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. March:

Q. Mr. Hammer, in my question a few minutes ago I spoke of the bottom hole pressure. What I meant I think was—tell me whether I am right or not—well head gauge pressure.

A. That is what I used throughout, well head gauge pressure.

Q. That is the correct terminology?

A. That is right.

Q. I was mistaken on the bottom hole. Now, Mr. Hammer, your second reason here as to why this is a minimum estimate of reserves, Page 15 of your written statement, as I read it is as follows:

"During the period used for determination of reserves, only metered gas was employed. No estimate of wasted gas was made."

Now, will you explain what you mean by that in your own words.

A. Well, just exactly what the thing itself states, that we did not take into consideration anything except metered gas. Now, anyone who has studied the Panhandle field knows that there was an enormous wastage of gas beginning probably in its worst state—oh, between the years of 1926 and 1929, and that it became so bad that the Texas Railroad Commission felt justified in doing something about it and in 1935 they took steps to try to prevent that sort of wastage.

Now, as I understand it, while the orders promulgated by the Texas Railroad Commission were effective as of August 1, 1935, that actually the wastage continued throughout, but maybe with somewhat less degree, throughout the remainder of 1935 and well into 1936 and it took some time after that before the wastage was eliminated. In fact, even as late as 1939 there was considerable gas reported as gas that was not metered, by the Texas Railroad Commission.

The point I am trying to make is that even after, or during the period from 1935 to 1939, there was a considerable amount of gas which no metered record existed, but the only thing we took was the metered record, and any amount of gas coming out of the ground unmetered, if we had utilized that gas in our estimate of reserves we would have undoubtedly had a larger estimate that we have submitted.

Q. Have you prepared a diagram similar to the diagram that you had a few moments ago which illustrates generally and roughly just exactly why this is an estimate in that respect because of that reason?

A. Yes, I have.

Q. Will you describe it and discuss it here?

A. Well, I have drawn an illustrative curve showing that although—if it had been possible for us to get the more accurate pressure and would have projected that through with some more accurate pressures, yet if we did not have the total gas withdrawn, that the accumulated points on the volume ordinant in the projection of a curve at the same pressures would have extended further out on the ordinant from zero and when projected through would have given you a very much larger estimate of reserves.

Q. Now, let's see if I understand this: Here you have drawn a rectangle, as I understand it—

A. No, it is a triangle.

Q. I mean a triangle, with pressures on the left-hand side and your volume at the base of the triangle.

A. One is the pressure ordinant and the other is the volume ordinant.

Q. This line runs across intersecting the two ordinants. The first line here represents roughly the production figure that you did use, just for illustrative purposes.

A. That represents—that line represents an accumulated production against a pressure decline.

Q. Was that the recorded production?

A. The lower one would represent the recorded production.

Q. And the higher one represent the—

A. Would represent roughly the condition that would exist if you had taken into consideration all unmetered gas.

Q. In other words, as I understand you to say there

that there has been considerable gas produced since 1935 which has gone unmetered, there is no record of it.

A. I think that is a true statement.

Q. Some of it has been blown into the air and *other* disposed of without any reliable data as to the accurate amount.

A. That's right.

Q. And it is simply your contention here that this is a minimum estimate of reserves because if you had had those figures, the complete figures as to all the gas which had been produced, your estimate of reserves would have been higher?

A. That's right.

Q. Now, is it your position, though, that since 1935 there has been such reliable data as to production that you are enabled, taking the five-year period, to make an accurate estimate of reserves by the pressure decline method?

A. As I see it, we made an estimate based on metered gas only which in my opinion gives us a minimum estimate.

Q. However, Mr. Hammer, what if you had—oh, yes, I believe you testified on cross examination that you did not take the period beginning 1928 and extended to 1939 because of the unreliable information back of 1935, is that right?

A. That is right.

Q. That is still your opinion?

A. That is still my opinion.

Q. And you have made some effort to ascertain whether or not you can get reliable data prior to 1935?

A. I think I have made as much of an effort as anybody could.

Q. And would you yourself as a geologist and engineer want to rely upon an estimate of reserves by the pressure decline method taking the entire production of the wells—

A. From the beginning?

Q. Yes, with the data that is available.

A. No, I would not. That is the reason I didn't use it.

Q. Well, then, Mr. Hammer, I want to dispose of the other three. You have three other reasons here, three more, as to why you consider this a minimum estimate of reserves.

Now, what have you got to say about those three reasons? There has been some confusion about those three reasons on cross examination—three, four and five, Page 15.

A. Well, those three are not the important three. Really the two reasons obtaining the minimum estimate are those covered under Items 1 and 2. I put them first because I felt they were the important ones.

Q. So far as you are concerned, the last three reasons there can be disregarded?

A. That's right.

Q. In other words, then, as I understand here as your testimony, you consider that you have given sufficient reasons in 1 and 2 to sell this proposition?

A. I think so, with the exception, Mr. March, I think that the information contained in one or two instances, one in particular, and I think in another, are the annual reports of the Texas Railroad Commission which indicate rather definitely something about the wastage of gas during the—particularly during the latter part of 1935 and the first part of 1936. For instance, in the 1937 annual report of the Railroad Commission of Texas and on the sheet following Page 14 of that report under the general heading of disposition there is a series of graphs—or, rather, a graph that shows that the Commission's orders for the utilization of available casing head gas did not occur until April or thereabouts in 1936 and that during the latter part of 1935 and up to about April 1936 there was a lot of gas blown into the air. This is simply in the form of a graph. It shows the withdrawals to be estimated in millions of cubic feet representing one ordinant of the graph and the years and months representing the other ordinant of the graph.

Now, it does show the reason is due to carbon black beginning in 1935 and going on through, but it also shows that during the latter part of 1935, particularly, that there was a considerable amount of gas which was not utilized even for carbon black. I can't state definitely how much of the gas that came from the ground actually was blown into the air during that period of time, but the interesting thing is that the Commission's orders for the utilization of available casing head gas apparently weren't issued until about April of 1936; so during the time between August 1935 and April 1936 there was unquestionably a lot of gas that was not metered and of which we had no record.

Mr. Keffer: May I make a statement with respect to the graph?

Mr. March: Go right ahead, Mr. Keffer.

Mr. Keffer: As a matter of fact, Mr. Hammer—

Mr. March: Are you going to cross examine the witness?

Mr. Keffer: I am just going to call his attention to what the map shows.

Mr. March: Well, you can do that on recross.

Mr. Keffer: All right.

The Trial Examiner: Did you state the year of that report, Mr. Hammer?

The Witness: Yes, August 1937.

Mr. Lange: You mean the date of the Railroad Commission report itself—November 1938.

Mr. March: You can ask one question, Mr. Keffer. A series of questions is what I had reference to.

Mr. Keffer: As a matter of fact, doesn't the graph show that the gas blown into the air started down *precitously* from shortly before October, probably about the middle of September 1935?

The Witness: No, I think you are a month or two off—well, it would be up here some place in November.

Mr. Keffer: All right, November 1935, and hit the bottom in April 1936 and then started up a little.

The Witness: Yes, that's what the graph shows.

Mr. Keffer: And from November 1935 to April 1936 the volume of gas blown into the air decreased from more than 600 million in November of 1935, to probably no more than a hundred million in April 1936?

The Witness: That is true.

Mr. Keffer: All right, then, the statement that you just made that it didn't start until April 1936 is hardly a correct statement.

The Witness: I made no such statement. I said the

Commission's orders were to put into—were exercised about that time.

Mr. Keffer: What started it down back in April of 1936—

Mr. March: All right, I object to that. I was only consenting to a question here. If you want to argue with the witness you can argue with him when I am through.

Mr. Keffer: All right.

By Mr. March:

Q. I gather that all of those reasons are to be applied under your No. 2.

A. That's right.

Q. In other words, your position is that even since 1935 there has been a considerable wastage and unrecorded volumes of gas which you did not consider in your estimate of reserves?

A. That is absolutely true.

Q. Now, in regard to the statement you make on Page 15 of your written statement, they are merely observations as I gather it, are they not?

A. That is right.

Q. They are not an essential part of your estimate of reserves, are they?

A. No, they are not.

Q. All right, I next direct your attention to Exhibit 180, to the diagram on Page 4-B, entitled, "Illustration that Calculated Pressure Decline Conforms to the Pressure Decline Plotted Against Accumulated Production."

Have you turned to that yet?

A. Yes.

Q. Do you recall the discussion in regard to that, with Mr. Keffer, in regard to making a straight line—I mean a crooked line straight? You recall those discussions, do you not?

A. Yes, sir, very well.

Q. All right, Mr. Hammer, I will ask you with regard to that top line extending across the diagram there, from which side of the paper you started drawing that line?

A. Well, in this particular instance I plotted those points giving the slope of the curve on the calculated accumulated

withdrawals as against pressure declines, the calculated accumulated withdrawals being computed by the factor of 35.1 Mcf. per acre pound decline as applicable to the area covered by this curve.

Q. My question was, from which side of the paper you started drawing that top line extending across the diagram there.

A. It doesn't make any difference. I simply drew the curve through those points established by the method as I have indicated.

Q. Yes.

A. Then later on I plotted on there the actual accumulated production against the weighted pressure decline and the points thus plotted fell at their proper position on the curve.

Q. Those latter are represented by those little dots, is that right?

A. That is right.

Q. And the large circles represent your previous calculation?

A. That's right.

Q. So as a matter of practice, while it does not make any difference whether you start drawing the line—actually, you started, did you not, and you tell me whether I am right or wrong, from the right-hand side of the page and extended it over to the left-hand side of the page?

A. As I say, that makes no difference. The point is that I could have plotted those points on the production—the accumulated production—against the weighted pressure decline, either before or after the production projection of this curve and you would have had the same result.

Q. I notice all the large circles, they go right through the center.

A. That's true.

Q. Why is that?

A. Because the calculation of those points is an accurate mathematical calculation.

Q. Which is well established in the engineering fraternity?

A. That's right.

Q. Mr. Hammer, have you had a great deal of experience in calculating just such sorts of graphs such as this here?

A. I have made a great many graphs over a long number of years.

Q. In your experience have you had any graph that comes out any more nearly in a straight line than this graph comes out—I mean the points plotted there on that, speaking of the left-hand side, the little points up there?

A. No, that is the reason we utilized the method that we did use, and that was to eliminate the personal element in the construction of a curve and relied solely on the mathematical determination of the proper slope.

Q. In other words, on the left-hand side of the page the little dots, although they do not fall exactly through the center, the line doesn't—as I understand it—that is, as I observe the thing here, every one of them at least touches the line?

A. They fall in their proper position to the line, either above or below.

Q. Now, why would you say that they did fall, some just slightly off the center of the line?

A. For the reason of the variations in the actual accuracy factors entering into the problem from time to time.

Q. In other words, on the left-hand side of the page here as I see it you have an indicated slope here which in so far as these mathematical calculations are concerned, they are used in the engineering fraternity, it is an excellent slope from which to determine—to project an accurate line?

A. I say, that it is the best slope that it is possible to devise to a given set of points that do not fall on a straight line.

Q. Now, you recall yesterday that there was a graph drawn for you by opposing counsel on which he plotted his pressure on one side of the rectangle and on the bottom of the rectangle he plotted years. Now is that sort of a graph in any respect comparable to this sort of a graph?

A. No. As I stated yesterday, from any practical standpoint on the question of estimation of gas reserves, the plotting of pressure points against time alone is of no value.

Q. This chart doesn't do that, doesn't attempt to do that?

A. No, not at all.

Q. Now, is this diagram here on Page 4-B a part of your estimate of reserves?

A. No. It wasn't necessary at all to even construct that. The only reason for constructing that was to illus-

trate the method used to determine a proper slope of a curve, and if that were calculated out it would give the proper answer as determined mathematically. It is simply illustrative of the method used. It was not necessary.

Q. You merely prepared this as a matter of accommodation?

A. That is right.

Q. To simplify the understanding of what you had done, and the same is true in regard to 4-C, is that right?

A. That is right.

Q. Now, Mr. Hammer, we have heard a great deal about drainage here. As I understand your position, and I think you have stated it several times in the record—if I am not right in my understanding I want you to correct it—that you did not consider separately and specially the problem of drainage in this exhibit. However, you had to, as I understand it, in drawing isobars, you automatically took into consideration dranage.

A. Well, the isobars is a misconception. There is a misconception about what isobars are. Isobars simply show lines of equal pressure. Now, when you step from one isobar line to another, either up or down, it simply shows the differential in pressure between those two isobar lines. If one will keep in mind the fact that you must make an estimate of reserves as of a certain time, then in utilizing the isobars in the determination of reserves as of a given time, it is not necessary to take into consideration, except as it may affect things locally, the question of any regional drainage.

Q. You recall that there was some discussion about this Lefors area, I believe it is, up here in Quadrant 6. I believe as I recall, and you correct me if I am incorrect, that you testified and you and Mr. Keffer agreed that there is a low pressure area there caused by excessive withdrawals, is that correct?

A. Yes, in the Lefors area there has been enormous withdrawals of gas and the pressures as of 1939 were quite low.

Q. Why, Mr. Hammer, if the gas moves freely from the high pressure to the low pressures, as Mr. Keffer assumes, why is it that this Lefors area in your opinion did not maintain its pressure? In other words, why didn't it drain to terrtory surrounding it and maintain its high pressures, and the high pressures be reduced around there?

A. That is simply—I think we can clarify that somewhat by stating that we take the area just along west and southwest of the town of Lefors. Now, it is a noticeable fact that although there have been enormous withdrawals of gas out of that area just west of the town of Lefors due to the large number of oil wells that exist there, it is a noticeable fact that the pressure gradient up against that low pressure area has been a steep gradient over a period of years, for several years, and that there still remains relatively high pressure areas up close to it.

In other words, it did not all rush into that area just west of Lefors because of a great pressure differential that existed there. It is a case, I think where the history of the last five years at least is that that pressure gradient has maintained approximately the same position throughout the five years, although there has been a decline for the region.

Q. So if there had been a free movement of gas in this one case here; for example—just take that exception—from the high pressure to the low pressure, then as the gas is withdrawn from this low pressure zone here causing the low pressure zone, the high pressure should have been maintained there because the gas would be coming in from all directions there?

A. The point there is that if there had been rapid gas migration the areas of low pressure would not have reached the low pressure that now exists because gas would have moved in and replaced it.

Q. All right, now, Mr. Hammer, would you say that this area down here in the east end of the field could drain gas from the Canadian River acreage?

A. Most certainly not.

Q. Would you say that it could drain gas from the west end of the field at all for any practical purposes?

A. Not at any time when any of ourselves would be living, no, or maybe a good many generations.

Q. Your position is—is it your position that for all practical purposes in estimating reserves that so far as Canadian River acreage is concerned that you can forget all about the eastern part of the field?

A. Oh, yes. It hasn't any bearing on it whatsoever. I agree with the position of the Texas Railroad Commission that for all practical purposes there is no direct actual con-

nection between the two, between the area from Lefors east and Lefors west.

Q. Is that your principal reason for stating that in estimating the reserves for the Canadian River acreage which is in the west part of the field that it is not necessary to make an estimate of the reserves of the entire field?

A. That is true.

Q. Now to bring this drainage problem home, Mr. Keffer tried to, when he said the Borger area here caused this—indicated on your map, Exhibit 179—the pressures in the Borger area were substantially lower than the pressures in the Canadian River acreage, that that was according to your map an indicated drainage, and as I recall you stopped him at one place and went over to the map here and pointed out that as a matter of fact—actual fact, the pressures in some of the Canadian River acreage was being maintained in practice in spite of the pressure differential.

A. I pointed out certain factual things there.

Q. You don't have to go over them. Is that generally true?

A. That is true.

Q. And in regard to your general knowledge, would you say, or could you state as to whether or not that if pressures were being maintained—high pressures were being maintained reasonably well in this Canadian River acreage in spite of the pressure differential between some of it and the Borger area?

A. Read that question.

(The question referred to was read by the reporter as set forth above.)

Mr. Spencer: Before you answer, Mr. Hammer, we have no objection to the question, but can you make it a little more definite as to what you mean by "reasonably well," so there will be no misunderstanding later, Mr. March?

Mr. March: Well, I'll let the witness answer the question and then I will ask a question in that regard. He can answer the question, if the question is clear to him.

The Witness: A question of that kind is a question of several factors which must be taken into consideration to arrive at a proper answer.

By Mr. March:

Q. You don't feel, then, that you want to give it?

A. At the present moment I would rather reserve my answer on that question.

Q. Well, you will not be expected to answer the question because as I understand you have not made a detailed study of the drainage problem.

A. No, my study has been a reserve study.

Q. And you would rather just let your testimony stand specifically in regard to certain parts of this acreage which you have already given?

A. For the present, that is right.

Q. Now, Mr. Hammer, one other question on this and that's all I have.

Now, if in spite of the pressure differential down here in the Lefors area the pressures did not build up enough there to maintain the pressures and they were not substantial reductions in pressures all around there as a result of that low pressure, is it reasonable to assume—is it less reasonable to assume that there would be any different situation in regard to the Borger area draining the Canadian River acreage?

A. That is a comparison again of so many factors entering into an answer it would have to be a relative answer. I would say, as I have tried to say before, and on which point I have a very definite impression, that if it had not been for the development of gas back from these oil fileds and if the gas withdrawals from the oil fields alone had been taken—had been the only cause of pressure decline, a great part of the entire Texas Panhandle field in my opinion would still have its original pressure.

Q. That's all of that I want to ask you, but I want to ask you one question in regard to sour gas.

There has been some question indirectly raised about the commercial utilization of sour gas for pipe line purposes. Do you think that sour gas can be utilized commercially for pipe line purposes?

A. Oh, yes, it is being done.

Q. By what process?

A. Well, there are several processes.

Q. I mean, what general process—desulphurizing?

A. Desulphurizing.

Q. Where is that being done?

A. It is being done by the El Paso Natural Gas Company.

Q. In your estimate of the reserves, therefore, you have included both sweet and sour gas?

A. That's right.

Q. From your study of the Panhandle field, would you state that if conditions continue as they are, assuming they do, that less and less sour gas will be utilized for carbon black purposes and more for pipe line purposes?

Mr. Keffer: Now, if the Examiner please, I would like to now what—if the witness is qualified to express an opinion as to what is going to be the future of sour gas service.

Mr. March: No, I said "assuming." I didn't ask him to give any—I said "assuming," like you did here yesterday time and time again, assuming that conditions remain as they are today, assuming that the trend continues as it is today, as to whether or not it is reasonable—whether or not in his opinion it would be a reasonable assumption to assume that a larger volume of sour gas would be utilized for pipe line purposes and that less volume would be utilized for carbon black purposes.

As a matter of fact, your company is going to put in a desulphurizing plant.

Mr. Keffer: You are getting away from your assumption, Mr. March. You first start out with an assumption and then you ask the witness to make still another assumption.

Mr. March: Read the question.

Mr. Keffer: I think it follows that you cannot base an assumption on an assumption.

Mr. March: Let's read the question and see how many assumptions I have got in the question.

(The record referred to was read by the reporter, as set forth above.)

Mr. Spencer: Now, Mr. Examiner, he has assumed the

conditions will continue, but those conditions I assume involve the market for carbon black. If so, I would like to know what the witness knows about the carbon black industry.

Mr. March: You can have him on redirect, Mr. Spencer. You can ask anything he knows about the carbon black business and the weight can be given the testimony as the Examiner sees fit. He has been asked lots of questions about carbon black, where it is located, and he has been examined for days about some of these very things. They can ask the witness whether he knows anything about it.

As a matter of fact, he was even required to state the process for the manufacture of carbon black, going through the various steps.

Mr. Spencer: I object to the question until Mr. March lays a proper foundation as to the witness' qualifications to answer.

The Trial Examiner: Well, I question whether or not a proper foundation for the question has been laid. However, the Examiner is perfectly able to weigh the evidence and Mr. Hammer, if he has an opinion, he may state it.

The Witness: Well, actually, I thought I made that clear previously. I will admit that I would have liked to have had time to make a study of the carbon black industry but I did not have time to, so I don't propose to set myself up as an authority on the carbon black industry in the Texas Panhandle. That's my position exactly.

By Mr. March:

Q. And you would rather not answer that question for the reasons that you have given to Mr. Keffer from time to time as the reason for not answering questions about these particular matters?

A. That is right.

Q. In your study, as I understand it, you did not give any consideration so far as this exhibit is concerned, as to where the gas went to?

A. That's right. My problem was to take the gas as near as I could as it came from the wells regardless of the

disposition of the gas afterwards. I made no study of disposition of gas.

Q. Now, there has been some questions asked you about permeability and porosity here. In your opinion can you express one of those in terms of the other?

A. Not at all.

Q. In your opinion that would be ridiculous, is that right?

A. Yes. There is a relationship, of course, but you can't express one in terms of the other.

Q. That is a fundamental law of physics, is it not?

A. That's right.

Mr. March: Now, I am just about through, Mr. Examiner, but I want to get a final ruling here as to whether or not in spite of the fact that the witness was interrogated regarding the Phillips Petroleum Company estimate of reserves, the method employed; whether or not the ruling is that I can't ask any questions in regard to that.

The Trial Examiner: Well, Mr. March, there is no connection between the Phillips Petroleum Company and the respondents in this proceeding. It is my opinion that it is highly improper to take a proceeding—

Mr. March: I don't mean that. I am forgetting about that. I am talking about something else. In other words, the witness was asked questions as to the method employed as to whether or not they were the same method and whether or not the field was divided up into quadrants and, in fact, as I read a few minutes ago—I am not going to read any testimony. I accept the Examiner's ruling on that, but I want to find out the extent of the Examiner's ruling. I want to know if I am going to be precluded from going into these things I have mentioned on redirect examination.

The Trial Examiner: That is not the question. You haven't been precluded from going into the proper redirect, Mr. March. That is not the situation at all, but the question here is the propriety of the use of testimony.

Mr. March: I accept the Examiner's ruling on that. We have forgotten about that now. I want to know the extent of the Examiner's ruling. I didn't want to ask the witness until I found out because I thought it wise not to

impose on the Examiner in that regard if the ruling is that we are not to ask any questions in regard to the methods of the Phillips Petroleum Company estimating reserves in spite of the fact that those questions were brought up themselves by opposing counsel.

The Trial Examiner: Mr. March, it had been brought out that the Phillips Petroleum Company utilized the pressure decline method for estimating reserves in the field. At least, Mr. Hammer has testified to that. Now, if you have any redirect on that sort of thing, it is perfectly proper and the Examiner will go along with you on it.

* * * * *

The witness further testified on redirect examination, Vol. 61, pp. 8531-8540, as follows:

Q. Mr. Hammer, I believe you testified the other day that the Phillips Petroleum Company made an estimate of the reserves employing the pressure decline method very similarly to the way you employed it in your estimate.

A. That's right.

* * * * * *

Q. Mr. Hammer, do you know of your own knowledge of anyone since 1935 who has attempted—who has made an estimate of reserves of the Panhandle field on the porosity thickness method other than Mr. Peterson and Mr. Thompson who are in this hearing room right now?

A. To my knowledge I don't.

Q. There is one other question, I believe, Mr. Hammer that you were requested to give the Canadian River—give the Canadian River a statement of original reserves under the Canadian River's own acreage. I believe you did comply with that request, did you not?

A. Yes, I gave them a sheet in tabulated form.

Q. Have you got that here?

A. It is on a yellow sheet, a long yellow sheet.

Mr. Spencer: I don't seem to have it.

Mr. March: He can get along without it.

Q. Mr. Hammer, in spite of the fact that the figures which you say that you gave to the Canadian River in the hearing room, will you state for the record the original

reserves under the Canadian River acreage as you found them, such explanation in regard thereto as you see fit?

A. The calculated original reserves in place beneath the Canadian River Gas Company's acreage as of August 1st, 1939, is 4,058,700,000 Mcf.

Q. Do you desire to make any explanation in regard thereto, Mr. Hammer?

A. Yes, I would like to make a comparison.

Q. You may proceed.

A. The calculated remaining reserves beneath the lands controlled by the Canadian River Gas Company as of August 1st, 1939 was 3,645,213,000 Mcf. at 25 pounds abandonment pressure, and on a pressure base of 14.65 pounds per square inch absolute.

The calculated original reserves in place beneath the same lands at the same pressure base as of the same date of August 1st, 1939, 4,058,700,000 Mcf.

Now, there had been withdrawn metered gas from the Canadian River Gas Company and predecessor company wells on the Canadian River leases from the beginning of operations up to August 1st, 1939, a total of 379,085,559 Mcf. of gas, calculated to a pressure base of 14.65 pounds absolute per square inch.

The remaining reserves beneath the Canadian River Gas Company lands as of August 1st, 1939 are calculated by the summation of reserves of that company's lands in each quadrant in which such lands exist and is 3,645,213,000 Mcf.

Mr. Keffer: What was that again? I'm not sure that I understood you, Mr. Hammer.

The Witness: 3,645,213,000 Mcf.

Mr. Keffer: Oh, yes. That's the figure you gave a while ago.

The Witness: Yes. If there be added to this sum the total gas withdrawn up to August 1st, 1939, or 379,085,559 Mcf., there results an original estimated gas in place of 4,024,298,000 Mcf. To recapitulate the ultimate original reserves in place by calculation, that is, by the summation of the calculations of their lands in various quadrants, 4,058,706,000.

Then the ultimate original gas in place by adding the past withdrawals to future reserves, 4,024,298,000 Mcf., a difference of the ultimate reserve calculation of 34 billion cubic feet—the percentage of difference in the two methods of arriving at the original reserves in place is 85/100ths of one per cent.

By Mr. March:

Q. In your opinion, does that prove the accuracy of your method?

A. I think without any question it proves the accuracy of it. I submit that the method I have used is, therefore, accurate, fairly determined and that the principles used in the determination of the gas reserves are as accurate as it is possible to be done by the available supporting data. Had it been possible to get the past withdrawal from each total quadrant, or for the entire field, as in the case of the Canadian River withdrawals, it is my opinion that equally close results would have been attained. Now, that, I believe, sums up the accuracy of my calculation as far as reserves of Canadian River Gas Company are concerned.

Q. And, likewise, furnishes the information requested by the Canadian River Gas Company?

A. Well, I assume that that is what they want it for. I gave them the information, but this is my summation of what the data shows.

Now, with not so much certainty, but, nevertheless, with considerable accuracy, the same statement can be made as regard the reserves of the field as a whole.

Q. Is that all, Mr. Hammer?

A. No, I'm not through. As a matter of a similar check on the field as a whole, I wish to submit the following: The estimated future reserves by the summation of all quadrant reserves for the entire field, 22,599,000,000 Mcf.

Mr. Keffer: That's remaining?

The Witness: That's remaining, that's right. The estimated total withdrawals — no, the estimated total withdrawals for the entire field up to August 1st, 1935, amounts to a figure of 4,833,608,743 Mcf. The total withdrawals from the field from August 1st, 1935 to August 1st, 1939, amounts to 2,430,370,036 Mcf.

Now, if we will add the future reserves plus the estimated field withdrawals to August 1st, 1939, plus the withdrawals from August 1st, 1935 to August 1st, 1939, the sum of these three items amounts to 29,862,978,779 Mcf.

Now, the total estimated reserves by the summation of all quadrants, including Wheeler County 1, is 29,979,000,000 Mcf., a percentage difference between the two methods of computation of 38/100ths of one per cent.

Now, there is one point here that I want to clear up. The total field withdrawals—I beg your pardon. The estimated total withdrawals for the entire field up to August 1st, 1935, were—or, rather is an estimate that I secured from the Phillips Petroleum Company late in 1940 at the time I was sent to Bartlesville for the purpose of investigating certain records in connection with the application of the Independent Natural Gas Company. That figure was taken from their records with a photo record machine and the data I give here were taken from an enlargement of the photo record taken from the Phillips Petroleum Company.

The Trial Examiner: Are you sure you gave the right date there, Mr. Hammer? Did you mean 1939 or 1935?

The Witness: Total withdrawals, 1935, from the beginning up to 1935.

The Trial Examiner: You said 1939 and I thought that—

The Witness: That's right. Now, it is my opinion that having checked ultimate reserves in two cases, one by the summation of the ultimates for individual quadrants and the other by adding past withdrawals to future reserves, eliminates the possibility of any great error in my estimate.

Mr. March: That's all.

* * * * *

The witness explained that in order to get a calculated reserve figure he takes the drop in pressure between any two given points and divides this into the production for the same period, which gives him the volume of production represented by each pound lost in pressure, and then multiplies this by 430, the original virgin pressure in the field. The acre pound factor is simply a factor for weight-

ing the pressures and pounds, but it is also necessary to multiply by 430 after the value of each pound of pressure has been determined in order to get the original reserves.

Witness stated that he procured the Phillips figures in 1940, and also he had not used the Phillips figures in any manner in making his estimates. He did not know how he would have checked his work if he had used them. He stated that if he had used the Phillips figures he would have gotten about the same answer, but in that event his calculations would have had to check with the Phillips figures. In other words, if the Phillips figures had been utilized to determine the production per pound lost in pressure and then multiplied back by 430, the original field pressure, the matters would necessarily have checked because they were based upon the same thing whether the calculations were right or wrong.

The witness then stated that the assumption of accurate production figures in the Texas Panhandle Field from the beginning to August 1, 1935, was a theoretical thing because data was not available during that period, but assuming that the figures were available and had been utilized in making his estimate, his calculation figure as to past production would have to check with the actual figures of past production and neither could be a check upon the other because they are the same in both cases.

Witness further testified on recross examination (Vol. 61, pp. 8562-8576) as follows:

Q. That's the whole point. All right, now, when you get down to the point where you have one pound, weighted the way you have weighted it, one pound represents so much production; then if you had 430 pounds to start with, the original reserve would have to be 430 times that. It just couldn't be anything else but that, could it?

A. You have got to have in there the acreage, though.

Q. How do you mean, "the acreage"? The only thing you used the acreage for was in your weighting process. Now, we have the weight. You have used your acreage for that. Now we are beyond that.

The Trial Examiner: Mr. Hammer, for example, if you wanted to go back and ascertain the original reserves, what would be the last step in your method of computation?

The Witness: Well, we would take the difference in pressure between any two given periods of time and on the determination of the production per acre pound for the area considered we would utilize the difference in pressure, weighted against the acreage involved and from that determine the ultimate reserves in place.

By Mr. Keffer:

Q. All right, just take a very simple example and illustrate it, will you please, Mr. Hammer? I think we can all save time and all understand it better.

A. Well, the whole thing is that you have to have the difference in pressures, and you have to have the amount of acreage. Now, if you will multiply your acreage by the difference in your pressures and then multiply that by your production per acre pound decline, you will get your figure.

Q. Will you take just one of the Canadian River quadrants—any one you want to select, and show us just how that works on there, one that will work out the easiest?

A. There is an illustration right there all worked out in my exhibit.

Q. Not to get back to original reserves, Mr. Hammer. I am quite certain of that.

Mr. Spencer: Mr. Hammer, while you have been testifying here I have gone through these papers that Mr. Keffer has and I believe I have located the schedule that you handed to us, if it will help you any in this.

The Witness: That's it.

By Mr. Keffer:

Q. All right, now, let's take Hartley County, unless you would rather take another one—Hartley County. If it would work on one, the same thing would work on all the others, I take it. Now, show me how you got that original reserve figure.

A. Well, it is very plain here just as I described it. You have your Canadian River acreage; then you have your acre pounds as of 430, original.

Q. As of 430?

A. Yes.

Q. How would you get that as of 430?

A. Well, when you get—that means the difference between the pressure as of 1939 and the original pressure.

Q. All right, but you had to multiply somewhere in there by 430 to get that, didn't you?

A. Oh, no, you didn't.

Q. How did you get it?

A. By plain unadulterated subtraction.

Q. All right, subtraction from what?

A. The difference between the weighted pressure for 1939—August—and the original field pressure of 430 pounds.

Q. All right, we have 14,358 acres—Canadian River acreage, County 1, is that right?—Hartley County 1.

A. That is right.

Q. All right, then you have acre pounds of 430 in your next column, which is 6,173,940. Now, I want to know how you got that figure.

A. I have explained that so many times I don't think it is necessary.

Q. If you will just be patient with me, I'll try to be patient with you.

A. Well, in this particular case here it was calculated from 430 to well head abandonment, I think.

Q. That's right.

A. And in that case it would be your acreage and your difference between 430 and 25.

Q. Well, now, you just did that and didn't get the right answer, did you, Mr. Hammer?

A. Well, in that Hartley there, there is apparently a slight error.

Q. Multiply the 430. I don't know what you get. Let's try it. You got close on 405, you might get it on 430 if you multiply that. I don't know that you would. I haven't tried it.

A. That's right, I see where the error is.

Q. Then you do admit you multiplied by 430?

A. That gives it down to zero well head.

Q. That's right, that's what we have been talking about.

A. That's right.

Q. Well, then, are we agreed that even on your method you have got to multiply in there somewhere by 430 to get your original content at zero well head pressure?

A. That's right, you multiply. The only confusion here was that I thought it was down to 25, you see.

Q. I see.

A. And actually that column is to zero.

Q. Yes.

A. And then that zero was calculated back to 25.

Q. All right. Then when you get your pressure drop as related to your production and divide your pressure drop into your production you multiply back by 430 to get original content, zero well head pressure?

A. That's what this amounts to. Of course here after you get your acre pound factor, then, of course, you have to multiply that by your production per acre pound.

Q. That's right.

A. And that gives you your answer.

Q. Your acre pound is just the method you have of weighting the pressures, isn't it?

A. Weighting the pressures and the pounds.

Q. And getting your pressure drop with respect to your pressures.

A. That's right.

Q. But you always have got to come back and multiply by your 430 when you get that down to one pound pressure drop whether you do it one way or the other way?

A. You have to utilize, of course—if you are figuring back to any place you have got to utilize that pressure.

Q. We're together on the thing we have been arguing about most of the morning, I guess.

A. If you state your problem a little more clearly—

Q. I stated it as clearly as I could. I'm sorry if you didn't understand it.

The Trial Examiner: We'll stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

There is no question pending, is there?

Mr. Keffer: No. I thought that Mr. Hammer was figuring something. That's the reason I hadn't asked a question.

Q Are you ready?

A. Yes, I guess so.

Q. Now, Mr. Hammer, we have got some of the underbrush out of the way. Let's go back to this original matter.

When you get your pressure decline over a period, whatever that period is, and if it is over several periods, and average them in, or weight them in as you have done and get your average weighted pressure decline and have your production for that period, you divide your pressure decline into your production and get the pressure decline, or get the production, rather, per pound decline, don't you, and multiply that by 430 and you have got your original reserves at zero pound well head?

A. I think that's what I have done here, that's right.

Q. That's right, all right. Now, the next question—then if you had gone back to the beginning of the field and taken Phillips' figures, for example, as the production prior to 1935 and taken your figures for production since 1935, thus having total production for the field as you have taken it and applied your method which you have done, I take it you would have come out with about the same figure that you have had?

A. I imagine I might have. The point there is, of course, I couldn't for the reason that the great part of all the calculations were completed before I ever got hold of the Phillips estimate of past withdrawals. I didn't get it until late in 1940 and the utilization of that was an afterthought, after I had secured the others—the principal calculations were all complete.

Q. Then, if you had done that, how would you have checked your work?

A. I don't know. I never used it.

Q. Well, I know, but if you had taken that figure and run it through together with your figure which you did, that is, the estimate for those prior years, plus your actual production figures as you have them for the later years, that is, from 1935 on to 1939; then on your theory, assuming that your method is right, you would have still come out with about 29 billion plus at 25 pounds abandonment, wouldn't you?

A. I think that is right.

Q. That's right.

A. The point is I didn't have them so I didn't use them.

Q. I know, I appreciate that. Now, that gets right down to this point: Then I take it you would have taken the

Phillips figures plus your own figures since 1935 and added them together and then added that to your remaining reserves on August 1, 1939 and you would have gotten the same figure, wouldn't you?

A. Well, now, aren't we getting a calculation and a summation mixed up?

Q. No, I don't think so. Maybe I can make it a little more clear to you. I have been trying to save time and take shortcuts. I'll break it up into sentences. All right, we'll take the Phillips production of—I mean the Phillips estimate which you have used here which is 4,883,680,740—somebody add that for me as we go along—up to August 1, 1935, and then we'll take your production figures as you have arrived at them since August 1, 1935 which is 2,450,370,036. Both of those are Mcf.

Now, the product of those two are what? That is, the sum is what? —All right, the sum of those two, someone tells me here, is 7,263,978,779. Now, that would have been your production figure as related to your pressure decline, wouldn't it?

A. From the beginning to—

Q. From the beginning to 1939, August 1, 1939.

A. If that figure is right, yes.

Q. All right, then, you have got your production per pound decline pressure drop; you have taken your decline over that period, weighted as you have weighted it, divided it into that 7,263,978,779, plus, Mcf., and you would have gotten your production per pound drop in pressure, wouldn't you?

A. That's right, taking into consideration all of the factors including your acreage.

Q. Then you would have multiplied back by 430, wouldn't you, to get your original zero pound content of the reservoir or the quadrant, or whatever you were working on. In this case it would be the reservoir.

A. In other words, we are now talking about taking the production from the beginning to 1939?

Q. That's right, 1939.

A. And arriving at a factor there instead of using the latter part.

Q. That is it exactly.

A. I think in general—I think that is a true statement.

Q. All right, then you have come out—

A. If you were sure of your original data, or could be reasonably sure.

Q. Oh, yes, I understand that. All right, now, suppose that came out in round figures, to make it easier to keep in mind, 29 billion Mcf., when you multiplied back by 430. All right, when you made your original estimate of remaining reserves in 1939 you would still have had approximately—these are round figures—22 trillion remaining reserves, wouldn't you?

A. I think that's right.

Q. That's right. The difference calculated, we'll say, is 7 trillion, but the figure that you based the calculation on was also 7 trillion, wasn't it?

A. Under the conditions you are using, that is right.

Q. Under the conditions that I named. You based your calculation on 7 trillion, didn't you?

A. Under the conditions you mentioned, that's right.

Q. That's right, so, therefore, your calculations, right or wrong, would have to check with that method of checking, wouldn't it?

A. Under the assumption you are making, that's right.

Q. All right, have I made an unfair assumption?

A. I wouldn't say you had made an unfair assumption, but in this particular case and under the method that we have used, we could not arrive at the figure according to that method, because it could not—this production we are talking about prior to 1939 is a lump sum thing and could not under any conditions be properly allocated to the areas from which it came. In other words, it is a lump sum figure rather than a figure that can be properly distributed to the areas.

Q. I understand you could have broken it down had you been sufficiently interested to have gone back—

A. No, it couldn't have been done.

Q. Well, why couldn't it?

A. Well, that is a lump sum figure.

Q. All right, I don't know that that is so important anyway.

Now, this is the whole thing about it, Mr. Hammer: Let's assume a situation where you do have accurate figures from the beginning; you use those accurate figures as related to

your pressure decline. In other words, you divide your pressure decline into those accurate figures and you get so many billion feet for each pound loss in pressure; we multiply that back by 430 and get the original content of the reservoir at zero pounds well head; then that figure that you have used as a basis of that calculation, whether it is 7 trillion, whether it is 10 trillion; or whether it is 5 trillion, or whatever it is, is a constant figure in there, isn't it?

A. If you assume a theoretical proposition where you—

Q. I am not assuming a theoretical proposition, I am assuming a situation where you do have accurate records from the beginning, that's all I am—

A. As far as the Texas Panhandle field is concerned, it amounts to the same thing. It is a theoretical thing because you didn't have that data.

Q. If you want to call it theoretical, then we'll call it that, but that figure which you utilized to determine original content as well as remaining reserves, is the same figure, wasn't it? It is the only figure you had.

A. Yes, that is true.

Q. So when you added in the one case to original reserves to get original and deducted it in another from original content to get remaining reserves, the thing has got to balance one thousand per cent if you made your multiplication and division correctly?

A. If you did that, and not subject to any further check, I think that is true.

Q. That's right. All right, then you at least agree with me that on my theoretical figures here, as you prefer to call them, that you are comparing similar things and neither certainly could be a check upon the other since they are the same in both cases?

A. Under that sort of a condition I think so.

Q. That would be right?

A. I said it would.

Q. I beg your pardon, I didn't quite get it.

Then, if we assume for the sake of argument, which is a matter that, of course, will have to be determined in this hearing among others, that the pressure decline method does not operate properly in the Texas Panhandle field and gives you an erroneous figure, then the check which we have used here would not disclose the error, would it?

A. Under the method that you have set up, that is right.

Q. That is right. All right. Now, you have already stated, I believe, Mr. Hammer, that you did not consider any of the early estimates reliable; that is, estimates of production up to August 1, 1935.

A. In general that is true.

Q. Well, I take it that follows for the Phillips, or does it? Do you make an exception as to the Phillips?

A. That is simply a general check. I am not certain of it. No one can be certain of it but the position I took there was this: that if there is anybody operating in the Panhandle field that should have a fairly accurate check, I don't know how accurate it is, it would be the Phillips Petroleum Company.

Q. How about Canadian River? Don't you think we are pretty good, or not?

A. They're pretty good operators, I think.

Q. That's right.

A. The only thing is, though, that their interests are not scattered so thoroughly over the field and they are not in the same line of business in a big way that the Phillips are.

Q. But if the Canadian River had tried awfully hard over a period of years to get accurate figures on the field, you would think that they are entitled to some consideration, wouldn't you, Mr. Hammer?

A. Well, yes, perhaps some, but not as much as an operator where they had been operating in all phases of the industry right from the beginning.

Q. Well, suppose Canadian River had put more time on it than Phillips had, would you still think that bigness ought to control over the little pebble on the *beech*, such as Canadian River?

A. Not that, but the point is that—I remember very well at one time the Phillips Petroleum Company had the largest number of men employed in—what they call scouts, watching every conceivable condition throughout the field—the largest number of any company in there, and talking to these fellows, they admit that while theirs is the best that they can get, it is a long way, one way or the other, from being an exact figure.

The witness further stated that he could not be certain

about the Phillips figure for production prior to August 1, 1935, and that, as a matter of fact, Phillips admits that the figure is a long ways from being exact.

The witness stated that the east Texas Panhandle field was much more nearly depleted than the west Texas Panhandle field, but he did not think that operators in the east portion of the field would move to the west portion of the field for a supply of gas, but would more likely go to Hugoton, Kansas.

Witness further stated that he knew very little about conditions in the west Texas Panhandle Field with respect to shifting production from the eastern areas into the western areas, and that he did not know that as gas pressures became low along the northeastern flank of the structure that there was not enough gas produced in those areas for carbon black, and stated also that he did not know whether carbon black production in Moore County had increased since 1935. He just didn't check the carbon black production.

The witness further testified on recross examination (Vol. 61, pp. 8582-8588) as follows:

* * * * *

Q. All right, you don't know. Now, Mr. Hammer, you made the statement on your redirect examination on Saturday that every segment between your isobar lines contributed equally to the total average for each particular quadrant; that is, total weighted pressures for each particular quadrant.

Mr. March: I object to that. The question I asked was, on your hypothetical illustration of isobars every ten pounds on a hypothetical situation, not on this map up here.

Mr. Keffer: Your question was hypothetical.

Mr. March: Why, your original question was hypothetical and my questions here are hypothetical.

The Witness: May I explain what I think that was?

Mr. Keffer: All right.

The Witness: The only place where I utilized that expression as I remember was where we had that container

and were taking out a half of the gas and we got 200 pounds and 400 pounds and the point there was that they both contributed equally.

Mr. Keffer: I think that came later. I could be wrong about it, but I am just speaking entirely from memory. I haven't checked the record on it, but as I recall from your cross examination, I went into some detail and used Quadrant 1 of Potter County, not a hypothetical quadrant at all, Mr. March, but the actual quadrant with the isobar lines drawn on it just as Mr. Hammer drew them.

Mr. March: Oh, no, that wasn't the intention of the question at all. Here is what I really asked, if you want me to give it to you in the record to straighten it up. You will recall, Mr. Keffer, you said, "Let's assume that we have a quadrant with isobars on there all the way from 200 pounds to 400 pounds."

Mr. Keffer: That's right.

Mr. March: "And that you go in between 200, 210—" you recited the whole group in the record there.

Mr. Keffer: And which was Potter County Quadrant 1 as taken from his map.

Mr. March: I never used that at all.

Mr. Keffer: Those were the figures taken right off the map here.

Mr. March: Here is what I really asked him: The point was there that I was bringing out in the 400-pound segment that it contributes twice as much to the total factors as does the 200-pound segment, but each segment contributes equally to the average and you can read the record on that, and that is what I was bringing out.

Mr. Keffer: That's right. Now I want to take that up and see if it is. Now, a 400-pound segment—in fact, you have 430 in the southernmost segment of Quadrant 1 of Potter County—would contribute considerably more than the segment from 370, or 360 I should say, to 370 in the northeast corner of that segment, wouldn't it, simply because the pressures are greater; you have got a bigger multiple.

The Witness: It isn't comparable because you are leaving out a lot of other things there.

By Mr. Keffer:

Q. I am taking your segment here. By the way, before I forget it, I want to correct a statement. The 200 to 400 was not identical with the Potter County Quadrant 1. It runs, it looks to me like here, 360 to 435. There is that variation.

A. No, there is no 35 on there.

Q. I mean 430, I beg your pardon. Now, the higher the pressure in your quadrant—I mean in the segment, between isobar lines, the greater the, acre for acre—the greater acre for acre factor you would have for the—no, strike that. I'm getting a little balled up.

This is what I am trying to state: If you assume an equal number of acres in any particular quadrant—I mean in any particular segment of the quadrant, then the higher the pressure the greater will be the weight given to a particular segment?

A. No, they are all weighted out so that the segments contribute equally to the average.

Q. I know that is what you stated on your redirect Saturday. However, two or three days ago, after spending two or three hours on it, I think you finally said that a segment containing a thousand acres with 400 pound pressure would contribute just twice as much to your total aggregate figure as a segment of a thousand acres containing 200 pounds pressure, and we worked it all out to demonstrate it for your satisfaction.

A. That was your demonstration. As a matter of fact, the same statement would hold true there that while the 400 might contribute more, but when you come to the average of your 400 and your 200, they both contribute equally.

Q. Oh, I'm glad you made that statement. Then they both contribute 300, is that right—4 and 2 is 6, divided by 2 is 3.

A. That's right.

Q. All right, but in getting that 6 you multiplied your 200 by a thousand acres, you multiplied your 400 by a thousand acres, didn't you? You had, say, 400,000 in one, if it figures out that way, and 200,000 in the other, being 600,000 in all with an average of 300,000.

A. In your theoretical proposition, that is true, but as a practical matter in this Quadrant 1 you are talking about, or any other quadrant, it is not applicable.

Q. All right, now, just why isn't it?

A. Well, you are leaving out all of those intervening pressures there.

Q. I know, and that is what you said the other day.

A. I still say as far as I am concerned there is no use to argue about that.

Q. So we took time off, I went—I took segment after segment with 10-pound intervals and had you figure it all out and then had you compare the 200 with the 400 and it showed for the same acreage that the 400 was contributing twice as much to your total down there as the 200 was didn,t we?

A. Yes, but these are all weighted averages.

Q. I know, but if you will just follow me—but the 400 did contribute twice as much as the 200 to the product from which you obtained the average?

A. Yes, but each contributed equally to the average.

The Trial Examiner: How could they?

Mr. Keffer: How's that?

The Trial Examiner: I asked Mr. Hammer how could they.

The Witness: Well, if you—

The Trial Examiner: Assuming, now, that your acreage is the same.

The Witness: Well, take—

The Trial Examiner: I think what you have in your mind, Mr. Hammer, is that by taking your 10-pound steps the degree of difference is not so great as when you jump from 200 to 400, but it remains that if your acreage is the same that your acreage with the 400 pounds pressure contributes twice as much to your total as the acreage with the 200 pounds pressure

The Witness: Isn't it also true that if you strike an average, they both contribute equally?

The Trial Examiner: They may contribute equally in this way, that—

Mr. Spencer: They both give all they have.

The Trial Examiner: That's just the point. Isn't that the point, Mr. Hammer?

The Witness: Well,—

The Trial Examiner: But you feel that because you have taken these 10-pound steps that your weighted average brings the proper average, but nevertheless, it is also true, is it not, that your acreage with 400 pounds pressure contributes twice as much to your total as the acreage with the 200 pounds pressure?

Mr. March: Mr. Examiner—well, pardon me, you're not asking me the question.

The Witness: Well, I think perhaps the best way to answer that is this: We'll go back to Mr. Keffer's cylinder, and you take out—assume that cylinder was a thousand acres, and under his theoretical setup, you took out 1500—15,000 cubic feet and you had a pressure left of 200 pounds. Now, that 15,000 cubic feet was half of the gas. There also remained in that one-half of the gas, but at a changed pressure.

Now, the same amount of gas was in that container, but a changed pressure from that which had been drawn out of it; so the remaining gas in that contributed equally to the gas withdrawn.

Mr. March: Mr. Examiner, in your question did you assume that there would be more 400-pound acreage than 200-pound acreage?

The Trial Examiner: No, assuming the same acreage, a thousand acres.

The Witness: Does that clarify the situation?

The Trial Examiner: It doesn't clear it to me, but you can go on. Go ahead, Mr. Keffer. Pardon me.

The witness again stated that there was a great deal of unmetered gas in 1935 and 1936 which was not reflected in his production figures for that period, but that all of the gas shown by the Railroad Commission report for 1937 was metered gas.

The witness further testified on recross examination (Vol. 61, pp. 8590-8603) as follows:

A. I don't know how much of that gas from gasoline plants was going into the air. I do know that, except a lot of gas that was wasted, that the gas that went to the gasoline plants was, I think, without exception metered gas. The point is, though, that what I wanted to illustrate there was that although this order came into effect in 1935 and the law came into effect—I simply wanted to use this as an illustration—that it took from 1935 way over in to 1936 and then declining on beyond that, to the point where the Railway Commission had got more or less control of the situation. Now, during that early time while all of the gas to the gasoline plants—I think out of necessity was metered, at least the greater part of it was, there was also during that time a continued great wastage of gas that wasn't metered because control had not been had of the situation. Now, that's all I had in mind to illustrate.

Q. All right, then, to clarify the record, the chart which you referred to in the Railroad Commission report of 1937 and the observations you made with respect to the total volume of gas that was going into the air, had nothing to do with your estimates.

A. No, except that I wanted to illustrate that the Railway Commission, although it took some time after they had put in both of their orders, before they got control of the situation and during that time, outside of the gas that was metered, there was a very large wastage of gas.

Q. But all of the gas shown on the graph which you are referring to was metered gas?

A. I think that is true.

Q. In other words, they couldn't have shown it if it hadn't been, could they?

A. The point I wanted to make is to illustrate that they didn't get control of the situation.

Q. Well, I don't hardly see how that has anything to do with the problem. The impression I had, Mr. Hammer, and that is the only reason I went into it, was that you were referring to that large volume of gas as an evidence of great volumes that you had not taken into account in arriving at your estimate which would have a tendency to make it more conservative.

A. I think if you will go back over that, I attempted to correct that impression but the questions were shot at me so fast I was never given an opportunity.

Q. Well, I am sorry that I misunderstood. The whole point is that the gas you are referring to in the graph in the 1937 report was metered gas?

A. That is true.

Q. And, consequently, was considered in your estimate?

A. Yes, it was, but as I said, the thing was that it was during that period that there still was great wastage that was not metered gas.

Q. Now, as to the gas that was wasted into the air, unmetered gas, that was wasted during that period, do you have any idea about how much there was of that?

A. I haven't been able to check it out accurately. Sometimes the reports of the Commission give you figures that you can take off and sometimes the way they are set up they are so confusing that at least I haven't been able to interpret accurately what they mean.

Q. Well, all right. Now, you used Quadrant 3 of Potter County, Mr. Hammer, in constructing the curve which you have in your Exhibit 180, I guess it is.

A. Yes.

Q. Now, why did you pick out Quadrant 3, Potter County, upon which to construct that curve?

A. No particular reason that I remember. We just said, "We'll take Quadrant 3. It's as good as any."

Q. Take what?

A. We said, "We'll just take Quadrant 3 for example," and that's all.

Q. Did you try it on any of the rest of them before you selected Quadrant 3?

A. No, I'll tell you, we didn't have time to do a lot of trying.

Q. I see.

A. We just picked out a quadrant and worked it through.

Q. Now, the fact that Quadrant 3 has had a rather even decline in pressure would tend to make your line which you have drawn on the graph a straight line where some of the rest of them wouldn't, wouldn't it?

A. I don't think that is true.

Q. Well, isn't that obvious?

A. No, I don't think it is even obvious.

Q. Oh, it isn't. Well, tell me why it isn't, then.

A. Well—

Q. I say, if your pressure decline in Quadrant 3, Potter County, was more or less on a straight line, of course, when you plot it out it would give you a straight line, wouldn't it?

A. Well, the same thing would apply to any of the rest of them.

Q. If you had another quadrant that didn't plot out on a straight line, but a crooked line, with a curve tending to go down, down, down, much more than Quadrant 3, Potter County, you would have a harder time at least getting a straight line out of it, wouldn't you?

A. No, we are coming back to that old curve idea of yours about plotting pressure drop against time and that, it seems to me at least, is not applicable to a determination of gas reserves.

Q. Well, if you will answer me just this one question, we'll leave it. If you could pick out a quadrant where the decline did give you virtually a straight line and I could pick out a quadrant where the decline didn't give virtually a straight line, why, then there would be something there, wouldn't there?

A. Well, what do you mean, "be something there"?

Q. You would have a straight line in your case and a crooked line in mine.

A. No.

Q. Wouldn't we?

A. Of course, if you drew them you might, but not if I drew them.

Q. You can always draw a straight line even though it's a crooked one, is that the point?

A. Well—

Mr. March: I object to this line of questioning. We have gone far enough, I believe, with this fun. I'm having a lot of fun out of this myself.

By Mr. Keffer:

Q. As I understand, you didn't draw any curves on any of the rest of them?

A. Oh, yes, on two or three, just as a test, sure, but I

couldn't go ahead and project a curve on every darn group.

Q. How's that?

A. There is no necessity of going ahead and projecting a curve on every group. The only reason one was picked out was by way of demonstrating the method used.

Q. That's right. Of course, just as between you and me, we don't agree even on the one you picked out. That's clear to both of us, I guess.

A. You mean as between you and I?

Q. Yes, that's right.

A. I don't think—that isn't pertinent to the question.

Mr. Keffer: The only point, Mr. Examiner, I think the record is clear on it—I have contended that Mr. Hammer doesn't have a straight line even though he has drawn one, that he has ignored the points in order to draw a straight line and he says he hasn't, and there the record stands and there I am willing to leave it.

The Trial Examiner: Are you going to leave it there, Mr. Keffer?

Mr. Keffer: Yes.

The Witness: That's all right with me.

Mr. Keffer: All right. Now we'll go to something else.

Q. Now, Mr. March went into some detail with you on the matter of the Lefors area in Gray County, Mr. Hammer, with respect to the drainage question, do you recall that?

A. Well, there was some discussion about that, yes.

Q. That's right. You stated that the Lefors area had a very low pressure existant at this time.

A. That's right.

Q. And I believe either you or Mr. March stated, one or the other—I am pretty sure it is in the record—that there was no more reason for gas to drain from the Canadian River in the low pressure Borger area than it was for the Lefors to be repressured from the surrounding—

Mr. March: Let's get the record straight. I tried to get the witness to make that statement.

Mr. Keffer: Now, you did make the statement, I believe, also, Mr. Hammer, that if there had never been any produc-

tion in the Panhandle field except from the oil wells and other gas wells, some of them would be gas wells but primarily oil wells along the northwest flank of the structure, that there would today be great areas in the field that have virgin pressures, is that right?

A. Yes, I made that statement.

Q. And did you or did you not make the further statement that those pressures would always remain high in the absence of production, back in the higher pressure areas?

A. No, I don't recall making such a statement.

Q. All right, you do think, then, that even though there might have been high pressure areas in portions of the field that the production—heavy production along the northeast flank which created low pressures in that area, would in time have eaten its way back and destroyed the high pressures back to the southwest, even though there had never been any production from that area?

A. There the question of relative time comes in. Let me answer that this way: Ordinarily I wouldn't even have referred to the thing, but in this hearing so far I have heard so many judgment figures put in that I didn't see where it would do any harm for me to put in a judgment figure. Now, that was simply a judgment figure.

Q. And you yourself wouldn't want to rely much on it?

A. Well, that is my judgment, just like it is any man's judgment, and to go ahead and elaborate on it, I don't think it is necessary to elaborate on a person's judgment on a problem of this kind.

Q. Even though the judgment is bad?

A. I think it is better than some other judgments that have been put in this hearing.

Q. Well, if somebody expresses a bad judgment, still since it is his judgment, should it stand there at its face value?

A. Yes, it is his judgment, whatever it is.

Q. All right, now, when you did express that judgment, though, you were expressing some judgments about drainage, weren't you, unavoidably?

A. Yes, certainly.

Q. Now, you state that you made no study of drainage, and where it gets into other portions of the field you say you just can't answer because you haven't studied drainage.

A. That was just a general statement that anyone could go up there and study this thing a while and arrive at a judgment and say, "That's my idea."

Q. That is the very point I am coming to. Since it is a judgment figure as you have stated and not based upon any study, then you wouldn't expect the Examiner to take it as evidence. Now, isn't that a fair statement of your position?

A. Well, I think this, to be absolutely frank with you, that after having worked approximately two years on a program of this kind and whether or not you made a study—a particular study of drainage, you simply got certain impressions during that time of conditions that exist. You couldn't help it and I got a certain impression about a lot of things that aren't included in my estimate of reserves.

Q. I understand, but you, as an engineer—and an engineer must not make too many mistakes, to say the least of it—as an engineer, would not ask the Examiner or the Federal Power Commission to take your offhand impression as to what would happen to this high pressure?

Mr. March: Now, Mr. Examiner, at the very beginning of this cross examination he asked him if he made any special study of the drainage problem and the witness said no, yet Mr. Keffer is asking him what his opinion would be.

Now, Mr. Keffer has asked for his offhanded judgment and he has got his offhanded judgment and I will say that can stand in the record for what it may be worth in the Examiner's consideration. That's all anybody can do. If he is going to—maybe he will prepare an exhibit in rebuttal to your drainage exhibit, I don't know what he will do, but this drainage problem has nothing whatever as a separate problem to do with the exhibit under consideration here. The witness has said he has taken it into consideration in his isobars automatically. I object to any further questioning along that line, Mr. Examiner.

Mr. Keffer: I feel very much gratified that I have been referred to in a general way as Mr. March. Now, Mr. March said that I got that question out of the witness. As a matter of fact, it was Mr. March on his redirect examination, and that is the only reason that I am going into it. I didn't elicit it. Mr. March on Saturday morning in his redirect

examination got an answer from Mr. Hammer, if my memory serves me correctly, to the effect that if there had never been any production except along the northeast flank of the Borger area that great areas in the Panhandle field today would have virgin pressure.

The Witness: I think, Mr. Keffer, that I can clarify that.

Mr. Keffer: Sir?

The Witness: I think I can clarify that.

Mr. Keffer: All right.

The Witness : And I believe my clarification of this will relieve all stigma from either you or Mr. March. I volunteered it myself and no question was asked.

By Mr. Keffer:

Q. But Mr. March was asking the questions when you volunteered that, isn't that right?

A. Yes.

Mr. March: But you already asked a dozen questions about the same thing.

The Trial Examiner: Perhaps we can strike it and go on.

The Witness: As far as I am concerned, it can be struck out. I wasn't asked a question. I volunteered it, as I remember.

Mr. March: Let him stand on his own statement in the record.

Here it is on Page 8523 in the record:

"I would say, as I have tried to say before, and on which point I have a very definite impression, that if it had not been for the development of gas back from these oil fields and if the gas withdrawals from the oil fields alone had been taken—had been the only cause of pressure decline, a great part of the entire Texas Panhandle field in my opinion would still have its original pressure."

The Trial Examiner: Is that the statement you are referring to?

Mr. Keffer: That's right. That is the one I was examining him on.

Mr. March: We will agree that that may be stricken if there will be no more cross examination about drainage here in regard to this exhibit.

Mr. Keffer: I'm not going to make any agreement such as that.

Mr. March: All right. We object to any further cross examination about drainage.

The Trial Examiner: Well, the situation, Mr. March, is that this did creep in on redirect examination and I can't cut Mr. Keffer off on cross examination.

Mr. March: All right, we'll leave this right here, then, as far as we are concerned. We'll let it stand like it is in the record.

Mr. Keffer: All right. It is in and out and in and out and now it is in?

Mr. March: Now it is definitely in as far as we are concerned.

Mr. Keffer: All right.

Q. Now, Mr. Hammer, we can finish that in just a statement or two, I think. As I understand, you have already stated that that is based on no particular study on your part, purely an offhand impression.

A. That's right, a judgment figure like Mr. Rhodes put in and these others.

Q. But there was no study behind the judgment?

A. That's right, the same as in the other case.

Q. It's just like somebody out in the street or a tool dresser or somebody else might make the same statement, it gets down to about that point?

A. It is comparable to statements that were put in by Mr. Watson and Mr. Rhodes.

Q. By whom?

A. Mr. Watson and Mr. Rhodes' judgment figures.

The Trial Examiner: Never mind that, Mr. Hammer.

The Witness: All right, strike that out.

Mr. March: The question was asked whether or not it

was just like a tool dresser—in regard to a tool dresser in the oil field. He asked for that sort of an answer.

The Trial Examiner: Perhaps that question was out of place.

Mr. Spencer: I suggest that they both be stricken and let Mr. Keffer start again.

Mr. March: That is satisfactory.

The Trial Examiner: Very well.

The witness then again referred to the container examples and solved the problem contained in Exhibit 189 correctly by going back first to the original volumes and then using original volumes as the weighting medium and not the surface area, and also his computations were based on the known original content. He said it was not necessary to know this in estimating the future reserves in the Texas Panhandle Field.

The witness was then asked to solve the problem just as he did in estimating reserves in the field, which was as follows (Vol. 61, pp. 8607-8648):

Q. Now, Mr. Hammer, on redirect examination you worked one of the problems that I gave you but let the other one go unsolved. The other one was this, referring to Exhibit 189. I gave you a situation—

A. Just a moment until I get the exhibit out.

Q. The problem was this, take each of the three quadrants shown on Exhibit 189, and you had this problem: From Quadrant A there had been produced 15,000 cubic feet and there was 200 pounds remaining. In Quadrant B there had been produced 5,000 cubic feet and there was 300 pounds remaining. In Quadrant C there had been produced 2,000 cubic feet and there was 320 pounds remaining. Your original pressures in all three quadrants, your virgin pressure, was 400 pounds. Now, I want you to solve that problem just precisely as you solved the problem on the Panhandle field, with those known factors.

Mr. March: I object to that question: The witness has said a dozen times that these three containers aren't comparable to the detailed method with which he solved the problem. He can apply the principles he applied to the

whole field but to say he went through every movement he made in computing the reserves of the entire field would be to put the hypothetical to the real on which there has been an argument and haranguing about that for at least a half day on that very proposition.

Mr. Keffer: Let him apply the principles that he applied to the field.

Mr. March: In any case, it is clear in the record already that he is not going to be drug into a statement here that this is the field here, these three containers.

The Trial Examiner: I think the record is quite clear on that, Mr. March, and as I understand it, Mr. March, it is the mechanics of the calculation that Mr. Keffer wants.

Mr. Keffer: That is it exactly.

The Trial Examiner: Well, now, Mr. Keffer, didn't he work that very same problem for you on cross examination?

Mr. Keffer: He did, and he got an erroneous—I say, "an erroneous" answer, he got an answer of 69,000 plus where the answer only ought to be 60,000.

Mr. Spencer: 60,000.

Mr. Keffer: 60,000, yes. On redirect he didn't take up that particular problem but he did take up another one, and I am wondering if the same principle he used in the other one would apply to this one.

The Witness: I have that problem worked out.

By Mr. Keffer:

Q. How's that?

A. I have it worked out.

Q. Just like you worked it on the field?

A. Just as I would apply it to the problem you submitted.

Q. No, just apply the same principles you applied on the field.

Mr. March: Mr. Keffer is trying to force this witness to say that he is making the application as if he were making it to the field. Now, he will work the problem out—

The Trial Examiner: I think it is clear, Mr. March.

The Witness: Now, this is the problem where we had three cylinders?

Mr. Keffer: Quadrants.

Mr. March: Cylinders, we'll call them.

Mr. Keffer: Go ahead.

The Witness: —of different sizes, but with unknown content.

By Mr. Keffer:

Q. That's right.

A. But which have known original pressure.

Q. That's right.

A. And known pressure after the gas had been withdrawn.

Q. That's right.

A. 15,000 cubic feet withdrawn from Cylinder A; and the pressure gauge shows 200 pounds instead of 400 lbs. There has then been a decline of 200 pounds against a withdrawal of 15,000 cubic feet, or 75 cubic feet for each *pound* decline. 200 times 75 equals your 15,000 cubic feet. One-half of the pressure has been used; so there must be 200 pounds remaining or a volume of 2 times 15,000 or 30,000 at original pressure of 400 pounds. From Cylinder B—

Q. Now, wait just a moment. You are to apply the same principles you applied on the field and that is weighting them all in one against the other, Mr. Hammer.

A. That's what I'm getting to, but you must let me go through and arrive at this thing.

Q. Is that the way you did the thing on the field?

A. According to my own method of determination.

From Cylinder B there have been removed 5,000 cubic feet with an original pressure of 400 pounds and the metered pressure of 300 pounds. In that case one-fourth of the pressure, or one hundred pounds had been lost; then 5,000 cubic feet divided by 100 pounds equals 50 cubic feet per pound of pressure drop; then a hundred times fifty is 5,000 cubic feet. The remaining pressure is 300 pounds; then 300 times 50 is 15,000 cubic feet remaining. Then 15,000 cubic plus 5,000 cubic feet equals 20,000 cubic feet in Cylinder B at original pressure at 400 pounds.

In the case of Cylinder C there was also an original pressure of 400 pounds, the volume unknown, 2,000 cubic feet of gas was the remaining pressure gauge—no, and the pressure gauge showed 320 pounds or a decline of 80 pounds from the original pressure of 400 pounds. Then 2000 cubic feet divided by 80 pounds is equal to 25 cubic feet per pound pressure decline. 80 times 25 is 2,000. The gas withdrawn is then equivalent to the pressure loss. 80 pounds equals one-fifth of the original pressure, four-fifths or 320 pounds remain. 320 times 25 cubic feet equals 8,000 cubic feet which added to the 2,000 cubic feet withdrawn gives the 10,000 cubic feet originally in Cylinder C at 400 pounds.

We are back now to the point of where we know the original volume. We know the original pressure. It then resolves itself into this: We have three cylinders, one of 30,000 cubic feet, one of 20,000 cubic feet and one with 10,000 cubic feet or 60,000 cubic feet in all. From one—from the —well, I think I'll refer to these as A, B, and C, and that will keep it straight.

From Cylinder A we drew 15,000 cubic feet or the equivalent of withdrawing 15,000 feet from them. From Cylinder B we drew 5,000 cubic feet and from Cylinder C we drew 2,000 cubic feet. Now, all cylinders have their original volumes, but at a reduced pressure; hence, to properly solve the problem we have to weight each original volume against the reduced pressure as follows:

30,000 times 200 equals 6,000,000;

20,000 times 300 equals 6,000,000; and

10,000 times 320 equals 3,200,000, or a total volume pound factor of 15,200,000. Now, 15,200,000 divided by the 60,000,000 cubic feet originally in all three cylinders gives the weighted average pressure.

Then, 400 pounds minus 253.33 is equal to 146.666, or the weighted average pressure decline. The total gas withdrawn against this pressure decline is 22,000 cubic feet, which divided by 146.666 equals 150 cubic feet per pound pressure decline. Then 400 pounds times 150 cubic feet equals 60,000 cubic feet, the original gas in place at original pressure.

Q. All right, Mr. Hammer. You took each quadrant

separately and worked back to get its known content; then you took the known content and averaged it in, didn't you, to get the correct answer?

A. Let's see, now, you mean—

Q. In fact, you already had the correct answer way back in the middle by taking each one of them separately, didn't you?

A. No, I didn't. Taking each one of them separately I just had—

Q. Now, then, you got back to the original content and then you averaged the known original content, didn't you, of each quadrant?

A. No, of each cylinder.

Q. All right, of each cylinder, isn't that right?

A. No, in weighting them I weighted them all together.

Q. I know you weighted them all in on a volume basis and not on a pressure basis on this case here, yes.

A. On both a volume and pressure basis.

Q. Now, let's take that a step further and do it. Now, that isn't the way you did it in the Panhandle field, is it, or in any particular quadrant of the field, as you have explained many times?

A. Eventually we arrived at the future production, the future reserves, and in arriving at the future reserves by the method we used, it was not necessary to know the original content.

Q. That's right, and shouldn't be necessary here to know it, should it?

A. Well, it was my impression that you wanted this same figure back to original.

Q. I want the same principles that you applied in the Panhandle field with known pressures and known production records and known original pressures and see if you came back to the right answer, applying exactly the same principles you did on the Panhandle field, and that way we can test your principles as applied to the Panhandle field. That's all there is to it.

Mr. March: Is there a question pending?

Mr. Keffer: Yes, an explanation by Mr. Hammer.

Mr. March: What do you want him to explain?

Mr. Keffer: I want him to solve the problem exactly as

he solved the reserve problem on the Panhandle field and not in some other way.

Mr. March: This is his problem, of the Panhandle field. He has solved the problem on the Panhandle field here in his exhibit. He has testified time and time again as far as these three cylinders are concerned. That's just a hypothetical problem. Now, if you want to know his result of the entire field on the pressure decline method—you have been looking at this exhibit now for a week here, and you can look at it. We object to any further questioning along that line.

By Mr. Keffer:

Q. Mr. Hammer, let us take any quadrant—I am pointing to Quadrant 1 in Potter County, and we'll say—we'll say "cylinders" as a *compplimeni* to you, and Mr. March, on the exhibit 189 that you were looking at. Let's say those three cylinders constituted one quadrant all interconnected.

Now, I want to get the weighted average pressure in that quadrant just as you did on Potter County 1.

Now, what you did there, as in all quadrants, was to take the area in each segment between each isobar line and multiply it by the pressure, wasn't it?

A. Yes, that is right.
Q. And you added them all up together, didn't you?
A. That's right.
Q. And then you divided by the acreage?
A. That's right. It gave you a—
Q. Weighted pressure?
A. That's right.
Q. Now, do that on this problem, just precisely that way.

Mr. March: I object to that. That has all been gone over before, Mr. Examiner. Even Potter County 1 was mentioned in this hypothetical situation. He has worked his hypothetical problem here for him and now he wants through implication and other direction, he is attempting to lay down a hard and fast rule covering this exhibit here, as a matter of fact where the exhibit speaks for itself.

Mr. Keffer: There is no question about the method. He is applying that method precisely to this problem that I have given him here, that's all there is to it, Mr. March.

Mr. March: He is computing the reserves in each one of these, in each one of—the reserves for each one, that's all been gone over.

The Trial Examiner: The objection will be overruled.

Mr. Keffer: Sir?

The Trial Examiner: The objection will be overruled.

Do you recall the question, Mr. Hammer?

The Witness: You want those weighted in?

By Mr. Keffer:

Q. Yes.

A. You mean to find the—

Q. Weighted average pressure just as you did on the Panhandle field.

A. I am assuming that each of these areas as we originally assumed is of equal size in acres.

Q. That's right.

A. Then, of course, it would be equivalent to multiplying each of them by one.

Q. That's right.

A. Which would give your acre pound factor.

Q. That's right.

A. Then I divide that—no, I take the summation of those acre pound factors and I divide it by the three acres which gives 273.33 as the weighted pressure.

Q. As the weighted pressure of the three?

A. Of the three.

Q. That's right. Now, you had 400 pounds pressure to start with, didn't you?

A. Yes.

Q. And 273 1/3 from 400 gives you 126 2/3 left as your weighted decline in pressure, doesn't it?

A. Covering that problem, yes, that is the difference.

Q. You have an average weighted decline of 126 2/3 and you have a total production of 22,000, don't you?—15 in A, 5 in B, and 2 in C?

A. Yes.

Q. All right. Then to get your production in pound decline you would divide your decline in weighted pressure, which is 126 2/3, into 22,000, wouldn't you?

A. By that method of calculation—if I have made my

calculations right, it would come out approximately 107—is that right?

Q. 107—173, isn't that right?

A. I hadn't carried it on out.

Q. Well, you can look at it. It ought to be 173.

A. Wait a minute, it is 107.

Mr. Spencer: Oh, no, it isn't.

Mr. Keffer: Oh, no, it wouldn't be 107.

Q. 173 cubic feet of production per pound decline in pressure as weighted, is that correct?

A. That is the way it figures out in that problem.

Q. Then to get your original content you would multiply that 173 by 400, wouldn't you?

A. Yes, on that problem.

Q. And that would give you a total of 69,200, wouldn't it, cubic feet original?

A. Yes, that comes back to the old thing, though, that we are only dealing with three of them here and there is an infinitesimal number of them in the field.

Q. Now, it is admitted, of course, that we are only dealing with three. Now, the way you have those averaged, those three, is just the way you averaged 789 or 10 in Quadrant 1, Potter County, isn't it?

A. Yes, against the acreage.

Q. And if you had only three quadrants—I mean, segments in that quadrant, then it is this—certainly as to the number, it would have been identical, wouldn't it?

A. Yes, but that's just the point. They weren't identical and they weren't—they aren't identical.

Q. Sir?

A. They weren't identical and they aren't identical, because if you go ahead and take enough of these containers or segments you eventually get to your—to the same figure. In other words, it will check out. It is not synonymous at all.

Q. I will ask you just one more question, Mr. Hammer:

If the principle would work on 10 it would work on 3, wouldn't it?

A. Yes, but you go on through with that to an infinity of containers and you will gradually approach—you will eventually approach a true figure.

Q. Well, now, as a matter of fact, I have given you in this assumed problem figures that do not vary as widely as the conditions in the field vary. I think you admitted that the other day when we were on it.

A. Well, that is an assumption. I don't think you can fairly draw a parallel.

Q. You don't think what?

A. I don't think you can draw—you can fairly draw a parallel.

Q. Well, the variation in pressure here was only from 200 to 320 and it is far more than that in the field, isn't it—pardon—more than that in practically every other quadrant up there?

A. If you are looking over a wide area proposition, yes, but of a local condition, no.

Q. Well, do you refer to a quadrant as a local condition?

A. Well, the term is relative. What I am talking about is a field-wide proposition without local areas. There are so many factors there, when you consider the thing as a whole, that aren't applicable local areas.

Q. Well, how did you take those different problems into consideration?

A. Just as I have previously, by grouping and by process of eliminating everything except adjacent areas eventually cover the whole field.

Q. That's right. Well, isn't that just all there is, haven't you gone the whole route now?

A. No.

Q. All right, what—

A. Oh, we are coming back to the number of these cylinders that you have to weight.

Q. Weight in—well, you say, then, that Boyle's law will not work on three cylinders but will work on ten, is that the point?

A. No, I made no such implication.

Q. What did you mean to say, then?

A. Just as I said before that you take enough of these things, of the so-called cylinders, and eventually weight them out properly as against the acreage and you will approach a true answer and eventually get it.

Q. How many do you need?

A. Well, I don't know. I never figured it was necessary to figure out how many you would need.

Q. Well, do you think five would do the job?

A. I don't know.

Q. Would you like to try it on five? Well, we can both do that some time when we have more time. I am willing to let the record stand on that as it is, Mr. Hammer.

Now we'll go on to one or two other matters. You made the statement—I'm not sure whether it was Saturday or whether or not it was some time during the course of your testimony—yes, I believe it was Saturday—that pressures were taken on wells sometimes before they had a chance to build up.

A. Yes, I think I made that statement.

Q. Now, in what kind of formation does that most likely occur?

A. Well, in general in an area of low potentiality I would say.

Q. That's right. The reason they don't build up is because of the tightness of the producing formation and maybe permeability or both?

A. And draw gas out rapidly and it takes a long time to get it back.

Q. It takes a long time to build it back up, doesn't it?

A. Yes.

Q. Now, does that indicate that those areas aren't as productive as some others?

A. No, not necessarily.

Q. What does it indicate?

A. It just indicates an area of low permeability.

Q. How is that—just an area of low permeability, is that your answer?

A. Yes.

Q. Does that indicate to you that the areas around the well are rather lean?

A. Well, it just indicates that.

Q. If permeability and porosity vary directly, it would indicate they were rather lean, wouldn't it?

A. Well, I have stated before that while there is a general relationship you can't convert one to the other. They aren't similar. They are two different things entirely.

Q. What is going to happen when the production shifts to those particular areas, Mr. Hammer?

A. Well, several things may be. Among other things, the first thing they will probably do on all those wells is

acidize all of them to increase the permeability around the hole.

Q. They didn't seem to see fit to do that over in Gray County as yet, I take it?

A. I don't know as to that. I think there has been some of it done, but I don't recall exactly the locality.

Q. Then apparently it would work?

A. I wouldn't say that.

Q. Well, you have that Gray County Quadrant 2, I believe it is, or 1. It is one of the other, Gray 1 or 2, that for the last three years of your study there hasn't been a foot of gas produced from it, yet there were wells there, isn't that true?

A. I think that is true maybe. My remembrance of it—

Q. Yes, I think that is very definitely the record in that case; so they haven't been able to do anything about it, or at least haven't done anything about it, have they?

A. Well, I think it was partly a case of where there wasn't any immediate demand.

Q. Well, of course, they drilled the wells for something, I take it, for some reason.

A. Well, naturally they were looking for gas. Probably some of them were looking for oil, I don't know.

Q. All right, let me state it this way, then: Those areas that you are speaking of where your pressures have not built up, the pressures have all gone down so rapidly with the production of gas, haven't they?

A. Yes, I think that is probably true.

Q. As a matter of fact, that is the reason they haven't built up, isn't it?

A. It indicates—it would indicate a slow movement of gas.

Q. All right, then; if you go to withdrawing heavily from those areas, won't your pressures drop more rapidly than would be true in the more prolific areas?

A. Well, I would say there that what you would have to do would be to drill more wells in an area of that kind.

Q. Well, the more wells you drilled the still more rapidly your pressure would drop?

A. It would all depend on your withdrawals.

Q. How's that?

A. It would all depend on your withdrawals.

Q. Well, I know. Maybe we were together. If you had

100,000 acres here in this tight formation and you pulled, say, a hundred million feet of gas out of it over a period of time and the pressures dropped very rapidly and never did build up—

A. They eventually build up.

Q. I know, but they build up slowly and drop rapidly.

A. All right.

Q. Then, if you had a well on every section in that one hundred thousand acres, wouldn't they drop more rapidly and build up still more slowly?

A. No.

Q. Why not?

A. If you took the same amount of gas out of each well—

Q. Why doesn't it drop more rapidly if you only had one well in that wide area?

A. Because you would be distributing the take from one well rather than from one or two.

Q. I don't think you understood. I am assuming the same volume of gas out of each well, not out of the area.

A. Well, you had not stated that.

Q. Well, I intended to. I thought you misunderstood me, the way you answered it.

A. Well, that's a difficult question to answer directly for the reason that you don't know and I don't, and no one knows what those wells are going to be until they are drilled.

Q. Oh, I know. I mean that judging from the wells we have. That's the only thing we can adjust it by.

A. Well, there has only been one or two places where wells have had much production taken out of them. I don't feel in position to judge what would happen to the others.

Q. Well, assuming that the others were of the same characteristics as the one well that you predicate your opinion upon; then the more wells you had in a given area the faster would be your production drop. Certainly it wouldn't be any slower.

A. If you took an equal amount of gas out of each well.

Q. That's right.

A. The drop would probably be more rapid ordinarily.

Q. And the buildup would be slower, too, wouldn't it?

A. Yes, I think that is true.

Q. So the net result of the whole thing is, when those areas come into production you are going to have a more

rapid pressure drop than you have in other areas where that situation does not exist. That is an *inescapible* conclusion, isn't it?

A. Well, as far as discussing that area down there, well, yes, that's all right.

Q. Wouldn't that apply to any other lean area of the field which has high pressures today?

A. Probably would.

The witness further testified (Vol. 61, pp. 8644-8648) as follows:

Q. All right, Mr. Hammer, the fact that in balancing your quadrants and to figure them out you necessarily use the inner quadrants sort of down the axis of the field as you referred to a while ago, which is admitted as the most productive area, wouldn't that have a tendency to make your reserve a little high?

A. There is a point where I can't agree with you.

Q. All right.

A. I have made a check on the famous Quadrant 2 that you mentioned in your previous questions, and if I have checked them properly, and I believe I have—

The Trial Examiner: Quadrant 2 where?

The Witness: In Moore County.

Mr. Spencer: Moore County or Potter County?

Mr. Keffer: Moore.

The Witness: Moore. Well, I can't find it, but I do recall this, that I think the record shows that you pointed out that I had used Quadrant 2, I believe.

Mr. Lange: Moore County?

The Witness: I think the record said nine times.

By Mr. Keffer:

Q. I think that's right.

A. Now, every time I used Moore 2, and not considering the quadrants in Potter County, but just the others, I use what you term the outside lean, ten times. Now, if I would use the Quadrants 1 and 2, say, in Potter County, I would have used the outside quadrants in my grouping more than

I did Quadrant 2. In other words, I would have used the leaner one more than I did the richer one.

Q. All right, now, just there, can you give any reason why you got a larger remaining reserve in Potter 1 and 2 than you have in Moore 1 and 2?

A. Well, that is because, particularly because of the lack of withdrawals. Those are future reserves only.

Q. High pressures, isn't it?

A. Yes, higher pressures.

Q. In weighting the higher pressures in there with large volumes of production up in 1 and 2 Moore County, now, isn't that the answer?

A. No, I don't think that can be interpreted that way.

Q. How would you intepret it?

A. Just as I have interpreted it in my—

Q. All right, now, you didn't apply a recovery factor to your figures. Wouldn't that have a tendency to make your figures too high?

A. Recovery factor isn't necessary when you are—there's no need of applying a recovery factor when you have already taken care of it automatically.

Q. I want to go a little further with that, Mr. Hammer. It has just been suggested that I should have asked you what outside quadrant did you use ten times. I believe you made that statement.

A. I didn't say I used any particular one, but I said I used outside ones, not necessarily the same one, but outside ones, what I think you considered and have mentioned as lean quadrants.

Q. Well, you used, then—it is all right, just so the record is clear—you used no particular outside quadrant, then, ten times that you know of?

A. I wouldn't want to say that I have without checking that.

Q. I don't see how you could, hardly.

A. But it doesn't make any difference whether I used a particular one or not if every time you used one of your what you term a rich one, you also used a lean one. It wouldn't make any difference whether it was the same one or not.

Q. All right. I don't mean to say I agree with you on that, but again I am letting the record speak for itself.

A. All right.

Q. So we can hurry on.

Now, on this recovery factor that we touched on just a moment ago, you said you didn't have to apply a recovery factor where you have an abandonment pressure.

A. As high as 25 pounds.

Q. And yet in your own written statement you have stated that 25 pounds at the face of the well, you are going to have considerably more pounds out away from the well, didn't you?

A. Yes, that is true.

Q. So in producing to 25 pounds at the well, you are going to have a lot more gas left in the reservoir than what that 25 pounds straight across would indicate, wouldn't you?

A. The estimate as set up here is an estimate of recoverable reserves to 25 pounds abandonment.

Q. Down to 25 pounds?

A. Well head gauge.

The witness further stated on redirect examination (Vol. 61, pp. 8653-8654) as follows:

Q. You remember that last little container problem that Mr. Keffer brought up, do you not?

A. Yes.

Q. I believe you stated time and time again that those little container problems that applied to your estimates here, it was ridiculous to make the application with them?

A. That is my judgment on it, that is right.

Q. Can you state in just a few words, not going into detail, just exactly and finally what that is?

A. Actually, by utilizing ten-pound isobars and using every effort possible to balance out and carefully weigh all of the factors affecting a given quadrant, every time we utilized a group of them it had the effect of reducing any infinity of these tanks to one tank, so that ultimately it came down to the problem of being comparable to a one-tank problem. It then simply became a problem of gas out as against the pressure drop. Every time we moved from one to the other to determine one group, or, rather, to determine the reserves for one quadrant in a group, it was equivalent to setting up a new one-tank problem. By the process of elimi-

nation we automatically carried out tanks step by step across the field and every time we worked out a problem we had a one-tank problem and it was just as though in applying the production per acre pound factor, you had taken a small part of a large tank and applied that to the weighted pressure for the quadrant in question. That is the whole thing and that is all there is to it.

The witness further stated that when lean areas come into production the pressure drop will be more rapid than in the case of areas of higher productivity.

The witness then gave the production figures on Wheeler County Quadrant 1 which had been requested, and which were 523,042 Mcf. for the four years ending Aug. 1939 (p. 8628). The production figures, acreage and acre pound factor of this quadrant are shown by Commission Exhibit 191, which is as follows:

4091

Exhibit No. 191

FPC Form No. P. G. 102
FEDERAL POWER COMMISSION

CALCULATION SHEET

Date _____ No. _____

Refers to WHEELER I — To Be Thrown Out

Made by CEP

Checked by _____

Q	PQ	Q^2
5568133	2.046846×10^9	3.100411×10^{13}
10403940	3.780118	10.824197
16420066	5.272483	26.961857
21369790	6.564799	45.666792
53.761.929	17.364246×10^9	86.553257×10^{13}

$1721.9 = 5a + 5.376193 \times 10^7 b$ $\quad 1.075238 \times 10^7$

$17.364246 \times 10^9 = 5376193 \times 10^7 a + 86.55325 \times 10^{13} b$
$18.5145 \times 10^9 = \quad 57.8069$

$1.1503 \times 10^9 = \quad 28.7464 \times 10^{13} b$

$$-\frac{1}{Ab} = \frac{28.7464 \times 10^{13}}{1.1503 \times 8.2636 \times 10^{13}} = 30.24$$

FEDERAL POWER COMMISSION DOCKET NO.
EXHIBIT NO. (FOR IDENTIFICATION)
DATE IDENTIFIED .....

: Insufficient Production Data

FEDERAL POWER COMMISSION

Ex. No. .....

Introduced .....

Not used

This is the best this can be photographed because it is very tightly bound

Form No. F. P. C. 101
FEDERAL POWER COMMISSION

Exhibit No. 191

CALCULATION SHEET

Date _____ No. _____

Made by _____

Checked by _____

Refers to WHEELER I

	ACREAGE	G. EV. LBS.		PRODUCTION
WI	23576	10026800		
WII	59060	22326000		
	82636	32352800	391.5	
WI		8533900		79105
WII		21840300		5489028
		30374200	367.6	5568133
WI		7903400		212266
WII		19740100		10191674
		27643500	334.5	10403940
WI		7551000		361324
WII		18979500		16058742
		26530500	321.1	16420066
WI		7137400		523042
WII		18246500		20846748
		25383900	307.2	21,369,790

This is the best this can be photographed because it is very tightly bound.

The production for each yearly period may be determined from the above Exhibit. The total acreage in the quadrant is 23,576, and the acre pound value for the quadrant is 30.24.

The witness was excused.

Some three days later the witness was again placed on the stand by Commission Counsel and gave some further testimony with respect to the question of reserves, and over the objection of counsel for Canadian River, the following proceedings were had (Vol. 64, pp. 9187-9188):

"Q. (Mr. March Commission Counsel) Mr. Hammer, does your Exhibit 180 show in your opinion the remaining recoverable reserves of the Canadian River acreage?

A. I think so. That is what I intended. As a matter of fact, I think the record will show that Mr. Keffer asked me on cross examination the other day if I considered a recovery factor and at that time I said I considered that by choosing an abandonment pressure that that abandonment pressure automatically took care of recovery factors and I hadn't used one.

Q. I understand your estimate of reserves is not only the remaining reserves that the Canadian River has under its acreage but likewise reserves which could be recovered?

A. That was the intent of the entire thing, the recovery to 25 pounds.

Q. I would like to ask you the same question in regard to your exhibit which shows the estimate for reserves in the field as a whole.

A. That would apply the same."

Thereafter the witness HAMMER identified his Exhibit No. 294, entitled "Basic Data on Quadrants in which Canadian

River Gas Company Leases are Situated," and Exhibit No. 295, entitled, "Production Data, Hartley, Moore, Potter, Hutchinson and Carson Counties, Texas," which exhibits were subsequently admitted in evidence.

Exhibit 294 contains all of the wells in Canadian River Gas Company quadrants up to August 1, 1939. Exhibit 295 contains a breakdown by years of the production data which is recorded in previous exhibits.

The witness testified with respect to Exhibits Nos. 294 and 295 (Vol. 101, pp. 15567-15591) as follows:

BASIC DATA On QUADRANTS

IN WHICH THE CANADIAN RIVER GAS COMPANY LEASES ARE SITUATED

Name of Company (1)	Well Name and Number (2)		Year of First Withdrawals (3)	Total Metered Gas All Time To August 1, 1939 (4)	Total Gas Metered August 1, 1935 To August 1, 1939 (5)	Metered Gas Prior to August 1, 1935 (6)	Location Sec. (7)	Block (8)	Survey (9)	Pressures* 1935 (10)	1936 (11)	1937 (12)	1938 (13)	1939 (14)	1940 (15)	1935** Potential MCF (16)	1939** Potential MCF (17)
																	Quadrant No. 1 Potter County
Canadian River Gas Company	Bivins	C-1	1923	8,060,120	1,230,290		106	46	HATC	421	424	418	416	411	409	9,383	10,078
" " " "	"	A-3	1923	15,249,436	4,956,986		30	B-20	GAM	402	342	-	392	385	379	18,341	14,433
" " " "	"	C-4	1924	3,115,153	682,809		103	46	HATC	420	418	-	406	405	392	5,520	4,547
" " " "	"	L-3	1923	4,544,833	878,678		15	B-20	GAM	409	411	401	399	390	378	9,765	8,483
" " " "	"	A-16	1936	3,825,095	3,325,095		33	M-20	GAM	-	345	-	390	390	378	18,575	12,895
" " " "	"	A-18	1937	3,341,288	3,341,288		17	M-20	GAM	-	-	-	397	391	386	15,933(2)	13,630
" " " "	"	A-19	1937	3,068,214	3,068,214		29	M-20	GAM	-	-	-	397	386	381	17,279(2)	13,597
" " " "	"	A-20	1938	1,909,551	1,909,551		35	M-20	GAM A	-	-	403	397	385	380	11,507(2)	7,432
									M	-	-	401	398	390	390	5,450(2)	4,837
" " " "	"	A-23	1937	424,170	424,170		8	22	KLRR M	-	-	-	415	343	365	10,137(3)	6,013
									B	-	-	-	-	-	400	-	-
" " " "	Masterson	B-3	1939	17,533	17,533		42	3	GAM	-	-	-	-	385	372	-	37,924
" " " "	"	B-5	1922	1,738,904	0		31	3	GAM	411	416	414	-	408	400	5,458	5,265
" " " "	Warrick	A-1	1929	4,254,420	1,114,281		16	Y-2	TTRR	364	375	372	369	365	352	50,701	58,076
" " " "	McBride	A-1	1931	1,017,522	590,141		98	46	HATC	411	406	400	395	386	377	37,213	35,507
" " " "	Allison	A-1	1930	906,166	114,755		1	WT	Palmer Sur.	382	380	374	369	365	356	26,244	23,276
Total				51,472,405	22,183,791	29,288,614										181,300	257,093
Mandle Eastern Pipeline Co.	River Bed	1	1931	1,979,173	1,555,510		106	46	HATC	425	422	420	416	409	397	10,893	21,216
" " " "	Weymouth	1-37	1931	3,069,702	1,961,062		37	B-10	KLRR	416	411	409	404	388	379	31,552	28,721
" " " "	Rock Well	1-102	1931	1,239,065	899,809		102	46	HATC	416	408	393	394	394	380	8,275	8,126
" " " "	McBride	1	1935	2,098,079	2,098,079		100	46	HATC	-	-	395	393	393	378	45,231	30,546
" " " "	McBride	1-104	1938	665,794	665,794		104	46	HATC	-	-	-	-	404	390	-	38,207
Total				9,051,813	7,180,254	1,871,559										95,952	126,816
Canadian River Gas Company	Bivins	A-1	1926	2,466,194	1,070,564		42	B-20	GAM	404	399	393	385	375	370	12,564	12,139
" " " "	"	B-1	1927	1,800,372	1,214,069		39	M-20	GAM	409	404	400	392	382	374	32,678	24,674
" " " "	"	A-2	1929	4,890,510	3,477,107		39	L-20	GAM	408	404	399	392	383	374	58,995	50,458
" " " "	"	A-6	1935	873,125	869,929		37	M-20	GAM	412	406	404	394	384	379	13,817	8,689
" " " "	"	A-7	1935	2,111,996	2,102,752		38	L-20	GAM	409	405	401	392	383	376	28,737	24,574
Total				12,142,097	8,734,442	3,407,655										146,791	120,684
GRAND TOTAL				72,666,315	38,098,487	34,567,828											
																	Quadrant No. 2 Potter County
Canadian River Gas Company	Masterson	C-1	1923	559,816	170,875		65	O-13	D&P	410	410	400	405	396	391	1,592	1,900
" " " "	"	C-3	1923	7,406,511	2,249,464		102	O-13	D&P	416	417	416	415	403	401	-	7,367
" " " "	"	D-4	1922	30,746,151	11,103,576		108	O-13	D&P	415	405	398	388	385	377	156,371	92,150
" " " "	"	E-2	1923	1,168,039	479,510		70	O-18	D&P	403	403	400	398	393	386	2,688	2,743
" " " "	"	F-1	1925	779,377	506,772		14	3	GAM	419	418	412	415	413	405	4,250	3,752
" " " "	"	G-2	1925	1,100,779	541,103		10	3	GAM	402	375	390	386	390	375	6,642	5,126
" " " "	"	H-1	1925	1,092,166	823,613		2	B-11	KLRR E	412	413	-	-	-	-	1,300	-
									M	416	418	396	414	407	402	2,552	2,167
" " " "	"	I-1	1925	1,293,374	920,987		20	3	GAM	419	419	413	412	409	404	28,830	24,815
" " " "	"	J-2	1929	1,879,973	733,091		69	O-19	D&P	419	416	410	410	395	399	8,165	6,166
" " " "	"	K-1	1929	2,087,963	1,350,861		65	O-13	D&P	406	418	401	403	390	384	8,993	8,225
" " " "	"	L-1	1928	634,762	502,327		82	3	GAM	407	403	392	395	397	396	2,479	2,474
" " " "	"	M-1	1930	2,670,967	2,588,350		17	3	GAM	418	415	407	405	404	380	22,541	24,205
Total				51,309,858	21,970,489	29,339,369										246,411	181,090
Mandle Eastern Pipeline Co.	Masterson	1-85	1931	880,688	692,613	188,075	85	3	GAM	414	415	410	404	397	388	3,981	10,293
GRAND TOTAL				52,190,546	22,663,102	29,527,444											

* Well head gauge closed in pressures from Texas Railroad Commission official records.
** Well potentials (open flow) from Texas Railroad Commission official records.
All volumes of gas in MCF. Prior to August 1, 1935 pressure base unknown. Subsequent to August 1, 1935 all gas on a pressure base of 14.65 lbs. per sq. in. absolute.

1936 marked (1) First pressure and potential.
1937 " (2) " " " "
1938 " (3) " " " "

BASIC DATA ON QUADRANTS

IN WHICH THE CANADIAN RIVER GAS COMPANY LEASES ARE SITUATED

Name of Company	Well Name and Number		Year of First Withdrawals	Total Metered Gas All Time To August 1, 1939	Total Gas Metered August 1, 1935 To August 1, 1939	Metered Gas Prior to August 1, 1935	Location			Pressures*			
							Sec.	Block	Survey	1935	1936	1937	1938
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Canadian River Gas Company	Bivins	A-6	1936	1,966,554	1,966,554		32	B-11	ELRR	424	407	403	414
" " " "	"	A-15	1936	1,523,385	1,523,385		76	2	G&M	-	413	406	411
" " " "	"	A-17	1936	859,827	859,827		73	2	"	-	416	417	413
" " " "	"	A-24	1939	1,369,446	1,369,446		23	P.Se	ELRR	-	-	-	-
" " " "	Billgore	A-1	1930	3,720,129	3,657,456		18	"	"	421	402	408	405
" " " "	"	B-1	1931	2,201,736	1,475,053		22	"	"	419	418	416	411
" " " "	"	A-2	1937	2,657,367	2,657,367		20	"	"	-	-	409	392
" " " "	Seay	1	1929	856,477	471,302		85	2	G&M	421	418	414	411
Total				15,154,921	13,980,390	1,174,531							
Texas Natural Gas Company	J. W. Moore	1-P	1935	6,288,497	5,845,580	442,917	14	41	H&TC	413	407	404	399
GRAND TOTAL				21,443,418	19,825,970	1,617,448							
Canadian River Gas Company	Bivins	A-7	1936	4,368,070	4,368,070		7	21	ELRR	-	423	421	414
" " " "	"	A-8	1929	2,261,507	2,236,583		BH	4	25	ELRR	-	-	-	-
							M			426	427	425	424
" " " "	"	A-9	1929	76,819	48,508		BH	6	21	CSS	-	-	-	-
							L			422	422	-	415
" " " "	"	A-10	1930	78,760	33,803			18	2	G&M	425	425	-	305
Total				6,735,156	6,686,964	98,192							
Canadian River Gas Company	Bivins	A-2	1925	7,284,740	4,056,889		13	0-18	D&P	402	373	386	385
" " " "	"	A-4	1928	868,651	707,138		24	0-18	"	407	358	381	385
" " " "	"	A-5	1929	5,237,627	4,204,491		25	0-18	"	418	407	-	395
" " " "	"	B-1	1929	3,396,371	1,504,269		27	0-18	"	421	423	411	412
" " " "	"	A-13	1936	353,176	353,176		7	0-18	"	422	420	423	427
" " " "	"	A-14	1936	11,074,381	11,074,381		26	0-18	"	-	420	393	406
" " " "	"	A-25	1939	60,816	60,816		2	0-18	"	-	-	-	-
" " " "	Crawford	B-1	1932	3,115,157	1,182,443		78	0-18	"	420	422	416	415
" " " "	Coughlin	A-1	1937	531,901	531,901		BH	1	0-18	"	-	-	405	416
							L				-	-	400	416
Total				31,922,820	23,675,254	8,247,568							

* Well head gauge closed in pressures from Texas Railroad Commission official records.
* Well potentials (open flow) from Texas Railroad Commission official records.
Note: All volumes of gas in MCF. Prior to August 1, 1935 pressure base unknown. Subsequent to August 1, 1935 all gas on a pressure base of 14.65 lbs. per sq. in. absolute.

1936 marked (1) First pressure and potential
1937 " (2) " " " "

Exhibit No. 294

BASIC DATA ON QUADRANTS

IN WHICH THE CANADIAN RIVER GAS COMPANY LEASES ARE SITUATED

	Year of First Withdrawals	Total Metered Gas All Time To August 1, 1939	Total Gas Metered August 1, 1935 To August 1, 1939	Metered Gas Prior to August 1, 1935	Location Sec.	Block	Survey	Pressures* 1935	1936	1937	1938	1939	1940	1935** Potential MCF	1939** Potential MCF
	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Quadrant No. 3 Moore County															
A-6	1936	1,966,554	1,966,554		32	B-11	ELRR	424	407	403	414	388	387	9,903	6,267
A-15	1936	1,523,385	1,523,385		76	2	GAM	-	413	406	411	403	394	6,230(1)	10,456
A-17	1936	859,827	859,827		73	2	"	-	416	417	413	414	409	5,025	2,400
A-24	1939	1,369,446	1,369,446		23	P.Sc	ELRR	-	-	-	-	403	396	-	30,395
A-1	1930	3,720,189	3,657,456		18	"	"	421	402	408	405	384	372	34,336	22,663
B-1	1931	2,201,736	1,475,053		22	"	"	419	418	416	411	404	390	8,352	5,033
A-2	1937	2,657,367	2,657,367		20	"	"	-	-	409	392	390	385	23,367(2)	14,901
1	1929	856,477	471,302		85	2	GAM	421	418	414	411	403	396	10,486	8,563
		25,154,921	13,980,390	1,174,531										68,102	100,678
1-P	1935	6,288,497	5,845,580	442,917	14	44	HATC	413	407	404	399	387	-	31,273	18,616
		21,443,418	19,825,970	1,617,448											
Hartley County															
A-7	1936	4,368,070	4,368,070		7	24	ELRR	-	423	421	414	415	407	20,546	19,658
A-8	1929	2,261,507	2,236,583		Bk M 4	25	ELRR	- 426	- 427	- 425	- 424	428 - 423	- 420	- 43,477	9,500 8,000
A-9	1929	76,819	48,508		Bk L 6	21	CSS	- 422	- 422	- -	- 415	423 429	419 419	- 8,818	8,586 1,230
A-10	1930	78,760	33,803		18	2	GAM	425	425	-	385	382	391	3,294	1,574
		6,735,156	6,686,964	98,192										76,133	48,548
Quadrant No. 3 Potter County															
A-2	1925	7,284,740	4,056,889		13	0-18	D&P	402	373	386	385	386	368	17,988	16,528
A-4	1928	868,651	707,138		24	0-18	"	407	359	381	385	356	365	5,900	1,333
A-5	1929	5,237,627	4,204,491		25	0-18	"	418	407	-	395	400	399	12,634	11,579
B-1	1929	3,396,371	1,504,269		27	0-18	"	421	423	411	412	412	406	30,657	28,686
A-13	1936	353,176	353,176		7	0-18	"	422	420	423	427	414	411	5,291	4,449
A-14	1936	11,074,381	11,074,381		26	0-18	"	-	420	393	406	405	400	43,320	39,037
A-25	1939	60,816	60,816		2	0-18	"	-	-	-	-	410	403	-	27,790(Ennis)
B-1	1932	3,115,157	1,162,143		78	0-18	"	420	422	416	415	413	404	10,427	9,287
A-1	1937	531,901	531,901		HE L 1	0-18	"	-	-	405	416	413	404	4,645(2)	4,571
								-	-	400	416	412	412	16,260(2)	14,116
		31,922,820	23,675,254	8,247,568										126,217	157,375

m Texas Railroad Commission official records.
Railroad Commission official records.
August 1, 1935 pressure base unknown. Subsequent to August 1, 1935
lbs. per sq. in. absolute.

1936 marked (1) First pressure and potential
1937 " (2) " " " "

BASIC DATA ON QUADRANTS

IN WHICH THE CANADIAN RIVER GAS COMPANY LEASES ARE SITUATED

Quadrant No. 1
Moore County

Company	Well Name and Number		Year of First Withdrawals	Total Metered Gas All Time To August 1, 1939	Total Gas Entered August 1, 1935 To August 1, 1939	Metered Gas Prior to August 1, 1935	Location Sec.	Block	Survey	Pressures* 1935	1936	1937	1938	1939	1940	1935** Potential MCF	1939** Potential MCF
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
River Gas Company	J. T. Sneed	A-D	1926	1,179,300	561,493		42	[illegible]	[illegible]&O	403	403	390	389	376	361	7,206	6,057
" " "	Sneed	10	1930	731,564	523,427		46	[illegible]	T&NO	401	403	394	392	386	372**	17,168	11,972
" " "	Masterson	A-1	1929	6,922,082	2,739,539		40	3	G&M	386	336	380	378	366	360	12,276	14,061
" " "	"	A-2	1929	26,838,874	10,095,127		40	3	"	392	347	-	377	369	360	37,584	32,003
" " "	"	B-1	1929	17,733,730	9,547,886		43	3	"	-	-	390	380	374	366	45,347(2)	46,523
" " "	"	M-1	1930	2,818,395	1,545,834		1	[illegible]-10	ELE&R	400	400	392	390	390	368	5,561	4,988
" " "	"	A-3	1936	8,214,508	8,214,508		45	3	"	-	320	389	378	369	359	41,296	26,695
" " "	"	A-4	1939	499,005	499,005		33	[illegible]	E&LER	-	-	-	-	385	371	-	55,508
" " "	Sivins	1-A	1933	2,625,697	1,282,683		93	46	H&TC	372	364	362	352	343	342	34,410	23,766
" " "	"	1-B	1933	2,764,732	1,363,527		95	47	"	382	370	369	360	360	353	26,710	21,968
" " "	"	I-1	1934	4,012,479	1,611,541		4		Coleman	379	381	373	367	363	356	27,591	27,398
" " "	"	J-1	1933	5,997,479	4,000,451		54	47	H&TC	391	389	379	372	369	359	60,543	60,401
" " "	Warrick	A-2	1930	3,023,330	1,213,115		92	46	"	376	-	370	360	353	349	70,140	50,930
" " "	Read	C-1	1930	3,137,683	762,163		14	B-12	D&P	385	-	385	385	370	358	12,285	11,272
" " "	"	A-2	1938	205,937	205,937		47	3	G&M	-	-	-	331	375	364	54,593(3)	50,374
" " "	(Perkins)Fee	A-1	1930	4,744,552	1,765,215		76	3	"	335	376	331	365	369	359	36,001	26,458
1				91,221,308	46,239,511	44,681,797										388,710	479,273
Natural Gas Company	Sneed (Est.)	1-P	1932	3,049,320	1,959,277		32	6-T	T&NO	370	401	384	384	372	359	9,396	51,987
" " "	"	2-P	1932	10,290,184	5,823,137		19	"	"	-	353	344	343	327	324	17,372	27,134
" " "	J. T. Sneed	3-P	1935	4,990,520	4,015,200				McGeorge	352	341	333	327	320	315	17,261	18,870
" " "	"	4-P	1935	3,215,104	2,922,052		54	3	G&M	347	347	334	326	323	319	10,486	11,966
" " "	"	5-P	1937	3,696,390	3,637,551		7	B-12	D&P	371	374	347	339	331	329	18,282	12,662
" " "	"	P-6	1938	4,107,249	4,107,249		38	6-T	T&NO	-	401	397	387	377	368	58,928	44,364
" " "	"	10-P	1937	987,742	987,742				Magsdale	-	-	349	343	342	335	8,079(2)	5,433
" " "	"	11-P	1937	3,511,470	3,511,470		8	B-12	D&P	-	-	359	342	337	334	49,091(2)	27,311
" " "	"	13-P	1938	612,430	612,430		2	"	"	-	-	-	347	337	330	10,083(3)	10,268
" " "	"	14-SN	1939	1,264,281	1,264,281		22	6-T	T&NO	-	-	-	-	366	357	-	55,501
" " "	"	15-SN	1939	228,346	228,346		9	B-12	D&P	-	-	-	-	331	328	-	27,001
" " "	"	17-SN	1939	76,631	76,631		31	6-T	T&NO	-	-	-	-	373	362	-	13,178
" " "	"	19-SN	1939	321,304	321,304		6	B-12	D&P	-	-	-	-	327	322	-	25,390
" " "	"	P-1	1938	3,443,155	3,443,155		35	6-T	T&NO	-	352	344	331	329	319	10,268(1)	10,082
" " "	"	D-2 Sr	1938	676,948	676,948		26	"	"	391	398	398	395	383	368	11,904	9,765
1				40,440,772	33,440,381	7,000,391										143,529	360,912
Western Pipeline Co.	Sneed	1-23	1931	1,551,953	1,394,995		23	"	"	409	413	399	395	378	364	6,826	10,538
" " "	"	1-45	1931	1,141,875	1,151,01		45	"	"	414	420	408	377	367	350	5,274	16,047
" " "	"	1-33	1932	2,639,731	1,491,148		33	"	"	417	-	395	-	375	359	5,581	16,865
" " "	"	1-28	1937	859,430	859,430		28	"	"	-	-	334	373	343	334	7,300(2)	17,332
" " "	"	1-43	1938	753,390	753,390		43	"	"	-	-	400	388	363	352	18,491(2)	26,825
" " "	"	1-44	1938	1,045,400	1,045,400		44	"	"	-	-	394	376	354	351	3,644(2)	30,155
" " "	"	1-25	1939	294,605	294,605		25	"	"	-	-	-	-	353	339	28,278(3)	28,366
" " "	"	1-27	1937	920,163	920,163		27	"	"	-	-	400	377	356	347	10,240(2)	26,142
" " "	Coffness	1-55	1931	1,355,352	1,162,134		55	"	"	413	409	395	395	378	364	16,386	11,567
" " "	"	2-55	1942	6,741,247	6,610,810		55	"	"	404	408	392	385	377	364	86,758	71,138
" " "	Masterson	1	1930	760,248	760,248		36	3	G&M	-	-	-	400	390	370	33,170(3)	29,179
				17,[illegible],630	13,[illegible],68	3,[illegible],794										120,825	286,154
[illegible] Gas Company	J. T. Sneed	1	1937	1,733,769	1,733,769				John Griffin	-	-	399	384	377	367	26,527(2)	43,524
" " "	"	3	1938	2,185,402	2,185,402		47	6-T	T&NO	-	-	398	383	378	368	131,869(2)	94,378
" " "	"	4	1939	571,409	571,409		39	"	"	-	-	388	383	373	362	10,987(2)	8,455
" " "	"	5	1938	1,063,847	1,063,847		40	"	"	-	-	366	364	354	342	35,635(2)	31,459
" " "	"	7	1938	211,269	211,269		3	M-3	Orler	-	-	-	382	371	363	19,897(3)	16,881
" " "	"	8	1938	543,098	543,098		41	6-T	T&NO	-	-	-	373	356	342	31,645(3)	30,253
" " "	"	11	1939	448,930	448,930		29	"	"	-	-	-	-	358	350	19,555(3)	17,818
" " "	"	12	1939	1[illegible],455	1[illegible],455		Tr.5		Leichman	-	-	-	-	306	304	-	26,781
" " "	"	13	1939	91,460	91,460		6	"	"	-	-	-	-	312	313	-	21,771
				7,288,109	7,288,109	0										0	293,320
[illegible] Company	Shelton	1-A	19[illegible]	[illegible],966,938	3,256,568		52	3	G&M	376	372	371	366	351	346	56,742	59,405
" " "	"	2-A	1940	2,010,499	2,010,499		52	47	H&TC	-	-	-	373	366	357	18,626(3)	15,790
				[illegible],976,938	5,267,067	3,707,351										58,742	75,195
Natural Gas Company	Sivins	1-B	1936	988,560	988,560	0	93	46	H&TC	384	378	367	360	358	350	24,681	21,152
1				166,339,197	106,900,904	59,438,293											

BASIC DATA ON QUADRANTS

IN WHICH THE CANADIAN RIVER GAS COMPANY LEASES ARE SITUATED

Name of Company	Well Name and Number		Year of First Withdrawals	Total Metered Gas All Time To August 1, 1939	Total Gas Metered August 1, 1935 To August 1, 1939	Metered Gas Prior to August 1, 1935	Location Sec.	Block	Survey	Pressures* 1935	1936	1937	1938
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
dian River Gas Company	T. Thompson	A-1	1929	3,482,844	1,595,223		24	26	ELKR	391	406	393	374
" " "	"	A-2	1930	2,495,376	1,272,027		19	44	H&TC	408	406	393	383
" " "	"	B-1	1929	2,048,145	625,460		22	26	ELKR	363	-	-	362
" " "	"	B-2	1936	3,744,453	3,744,453		17	44	H&TC	-	407	385	383
" " "	Sneed	1-A	1927	6,544,125	4,274,587		51	6-T	T&NO	410	408	392	390
" " "	"	1-B	1930	3,904,332	2,223,007		58	"	"	405	407	391	386
" " "	Crawford	1-A	1929	2,067,755	1,174,622		26	P-Mc	ELKR	419	417	413	413
" " "	Masterson	J-1	1928	5,302,697	3,256,560		59	O-18	D&P	406	383	-	409
" " "	Bivins	A-21	1938	5,641,847	5,641,847		33	P-Mc	ELKR	-	-	-	391
Total				35,231,574	23,307,786	11,423,788							
a Natural Gas Company	Coon-Sneed	2-M	1938	3,362,388	3,362,388		151	44	H&TC	-	-	-	376
" " "	Coon-Sneed	3-M	1938	630,674	630,674		17	6-T	T&NO	-	-	-	-
" " "	R. S. Coon	4-M	1932	3,857,795	2,728,930		103	44	H&TC	419	414	-	399
" " "	R. S. Coon	7-M	1937	2,183,290	2,183,290		102	"	"	-	413	407	398
" " "	R. S. Coon	11-M	1939	223,477	223,477		105	"	"	-	-	-	-
" " "	Killgore	2-G	1932	3,145,884	1,945,460		26	P-Mc	ELKR	-	400	405	400
" " "	Hass	1	1935	3,927,929	3,478,336		30	"	"	419	414	411	400
" " "	Sneed (Est.)	2-P	1936	1,673,275	1,673,275		19	6-T	T&NO	357	404	400	338
" " "	T. Thompson	1-P	1935	8,963,250	7,675,479		61	44	H&TC	414	403	398	388
" " "	"	2	1936	3,639,767	3,639,767		62	"	"	-	401	350	341
" " "	"	3	1936	2,280,247	2,280,247		60	"	"	-	403	395	388
" " "	"	4	1937	3,160,657	3,160,657		28	"	"	-	-	398	389
" " "	"	5	1939	1,613,684	1,613,684		29	"	"	-	-	-	-
" " "	"	6	1939	445,745	445,745		30	"	"	-	-	-	-
" " "	"	7	1939	120,021	120,021		31	"	"	-	-	-	-
" " "	Johnson	1-P	1938	4,019,551	4,019,551		2	P-Mc	ELKR	-	-	-	401
Total				42,647,634	37,580,981	5,066,653							
rock Oil & Gas Company	A. Sneed	1	1938	944,513	944,513		32	6-T	T&NO	-	-	392	383
" " "	"	2	1938	1,539,018	1,539,018		21	"	"	-	-	395	383
" " "	Thompson	1	1937	1,571,695	1,571,695		23	44	H&TC	-	-	386	383
" " "	J. T. Sneed	2	1937	1,087,178	1,087,178		50	6-T	T&NO	-	-	395	385
" " "	Thompson	2	1937	1,051,064	1,051,064		21	26	ELKR	-	-	396	386
" " "	J. T. Sneed	8	1938	872,362	872,362		48	6-T	T&NO	-	-	-	386
" " "	"	10	1938	1,177,541	1,177,541		49	"	"	-	-	-	386
" " "	Neild	1	1937	1,794,499	1,794,499		20	26	ELKR	-	-	382	377
Total				10,060,370	10,060,370								
ndle Eastern Pipeline Co.	J. T. Sneed	1-6	1932	1,145,362	831,998		5	8-10	ELKR	411	415	404	392
" " " "	"	1-48	1931	1,729,489	1,417,398		48	6-T	T&NO	413	410	394	384
" " " "	T. Thompson	1-63	1937	1,343,611	1,343,611		63	44	H&TC	-	401	400	400
" " " "	brown	1-22	1936	2,842,782	2,842,782		20	44	"	411	-	39	392
" " " "	"	1-36	1937	1,961,504	1,961,504		36	6-T	T&NO	-	402	395	390
" " " "	Thompson	1-25	1938	696,972	696,972		25	44	H&TC	-	-	-	380
" " " "	Neild	1	1938	1,624,478	1,624,478		18	"	"	-	-	-	380
Total				11,544,198	10,718,743	825,455							
TOTAL				99,511,776	83,195,890	16,315,886							

Well head gauge closed in pressures from Texas Railroad Commission official records.
Well potentials (open flow) from Texas Railroad Commission official records.
All volumes of gas in MCF. Prior to August 1, 1935 pressure base unknown. Subsequent to August 1, 1935 all gas on a pressure base of 14.65 lbs. per sq. in. absolute.

1936 marked (1) First pressure and potential.
1937 " (2) " " " "
1938 " (3) " " " "

BASIC DATA ON QUADRANTS

IN WHICH THE CANADIAN RIVER GAS COMPANY LEASES ARE SITUATED

Quadrant No. 2
Moore County

	Year of First Withdrawals	Total Metered Gas All Time To August 1, 1939	Total Gas Metered August 1, 1935 To August 1, 1939	Metered Gas Prior to August 1, 1935	Location Sec.	Block	Survey	Pressures* 1935	1936	1937	1938	1939	1940	1935** Potential MCF	1939** Potential MCF
	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
-1	1929	3,482,844	1,595,223		24	26	ELRR	391	406	393	374	366	353	68,932	60,410
-2	1930	2,495,376	1,272,027		19	44	H&TC	408	406	393	383	373	362	88,624	84,286
-1	1929	2,048,145	625,460		22	26	ELRR	363	-	-	362	362	364	3,853	1,201
-2	1936	3,744,453	3,744,453		17	44	H&TC	-	407	385	383	352	349	54,579(1)	35,991
-A	1927	6,544,125	4,274,587		51	6-T	T&NO	410	408	392	390	378	368	30,995	26,262
-B	1930	3,904,332	2,223,007		58	"	"	405	407	391	386	381	366	36,006	28,686
-A	1929	2,067,755	1,174,622		26	P.S.L.	ELRR	419	417	413	413	404	396	11,016	9,907
-1	1928	5,302,697	3,256,560		59	0-18	D&P	406	383	-	409	367	363	11,692	9,454
-21	1938	5,641,847	5,641,847		33	P.S.L.	ELRR	-	-	-	391	356	386	44,126(3)	48,771
		35,231,574	23,307,786	11,423,788										251,118	304,968
-M	1938	3,362,388	3,362,388		151	44	H&TC	-	-	-	376	410	352	41,163(3)	29,800
-M	1938	630,674	630,674		17	6-T	T&NO	-	-	-	-	362	355	-	6,317
-M	1932	3,857,795	2,728,930		103	44	H&TC	419	414	-	399	387	377	6,583	11,217
-M	1937	2,183,290	2,183,290		102	"	"	-	413	407	398	386	377	16,518(1)	12,779
-A	1939	223,477	223,477		105	"	"	-	-	-	-	366	373	-	6,195
-G	1932	3,145,884	1,945,460		26	P.S.L.	ELRR	-	400	405	400	373	373	10,293	29,878
1	1935	3,827,929	3,478,336		30	"	"	419	414	411	400	391	391	51,875	44,726
-P	1936	1,073,275	1,073,275		19	6-T	T&NO	357	404	400	388	376	362	17,372	11,727
-P	1935	8,963,250	7,675,479		61	44	H&TC	411	407	398	388	377	368	37,564	23,362
2	1936	3,639,767	3,639,767		62	"	"	-	401	390	381	355	348	29,844(1)	24,035
3	1936	2,280,247	2,280,247		60	"	"	-	403	392	388	379	368	17,205(1)	13,799
4	1937	3,160,657	3,160,657		24	"	"	-	-	396	385	374	366	14,820(2)	14,421
5	1939	1,613,684	1,613,684		20	"	"	-	-	-	-	366	366	-	87,044
6	1939	445,745	445,745		[illegible]	"	"	-	-	-	-	383	372	-	49,948
7	1939	120,021	120,021		59	"	"	-	-	-	-	358	339	-	42,384
-F	1938	4,019,551	4,019,551		23	P.S.L.	ELRR	-	-	-	401	393	385	63,617(3)	65,789
		42,647,634	37,580,981	5,066,653										123,707	473,421
1	1938	944,513	944,513		32	6-T	T&NO	-	-	392	383	372	359	32,234(2)	30,160
2	1938	1,539,018	1,539,018		21	"	"	-	-	395	383	370	358	31,830(2)	75,705
1	1937	1,571,695	1,571,695		23	44	H&TC	-	-	386	383	371	364	12,228(2)	36,192
2	1937	1,087,178	1,087,178		50	6-T	T&NO	-	-	395	385	376	367	45,936(2)	41,482
2	1938	1,051,064	1,051,064		21	26	ELRR	-	-	396	386	376	368	26,540(2)	20,602
6	1938	872,362	872,362		48	6-T	T&NO	-	-	-	386	377	368	84,448(3)	83,334
0	1938	1,177,541	1,177,541		49	"	"	-	-	-	386	376	367	134,987(3)	120,376
1	1937	1,794,499	1,794,499		20	25	ELRR	-	-	382	377	367	366	58,360(2)	53,486
		10,088,370	10,088,370	0										0	461,337
1-6	1932	1,145,362	831,998		6	B-10	ELRR	414	413	404	395	378	372	6,931	7,875
1-48	1931	1,729,489	1,717,398		48	6-T	T&NO	413	410	394	394	377	369	13,392	25,667
1-63	1937	1,343,611	1,343,611		63	44	H&TC	-	401	400	400	385	374	27,028(1)	11,136
1-22	1936	2,842,782	2,842,782		22	44	"	411	-	396	392	377	363	53,739	34,674
1-36	1937	1,961,504	1,961,504		36	6-T	T&NO	-	402	395	390	377	362	53,731(1)	32,756
1-25	1938	696,972	696,972		25	44	H&TC	-	-	-	380	378	360	-	22,502
1	1938	1,624,478	1,624,478		18	"	"	-	-	-	380	367	360	-	53,486
		11,544,198	10,713,743	825,455										74,112	108,096
		99,511,776	83,195,880	16,315,896											

exas Railroad Commission official records.
lroad Commission official records.
gust 1, 1935 pressure base unknown. Subsequent to August 1, 1935
. per sq. in. absolute.

1936 marked (1) First pressure and potential.
1937 " (2) " " " "
1938 " (3) " " " "

Exhibit No. 294

BASIC DATA ON QUADRANTS

IN WHICH THE CANADIAN RIVER GAS COMPANY LEASES ARE SITUATED

Quadrant No. 3
Hutchinson County

Name of Company	Well Name and Number		Year of First Withdrawals	Total Metered Gas All Time To August 1, 1939	Total Gas Metered August 1, 1935 To August 1, 1939	Metered Gas Prior to August 1, 1935	Location Sec.	Block	Survey	Pressures* 1935	1936	1937	1938	1939	1940	1935** Potential MCF	1939** Potential MCF
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Canadian River Gas Company	Bivins	B-1	1925	12,025,697	1,571,821		43	3	GAM	367	365	360	365	349	341	36,084	34,291
" " " "	"	B-2	1926	6,486,331	148,471		90	46	HATC	325	318	313	312	308	303	40,690	37,595
" " " "	"	B-4	1929	10,131,979	1,378,227		13	Y-2	TTRR	-	352	-	348	-	333	43,152	-
" " " "	"	B-5	1929	3,174,719	79,913		88	46	HATC	242	246	247	244	243	241	13,725	14,216
" " " "	"	B-6	1929	11,659,623	1,373,985		90	46	HATC	350	345	340	337	335	326	44,960	37,351
" " " "	Johnson	1	1924	2,703,718	789,628		4	Y-2	TTRR	345	335	322	319	311	302	6,664	5,369
" " " "	Dunaway	A-1	1930	1,619,592	297,112		5	Y-2	TTRR	356	346	342	339	334	326	32,607	26,927
" " " "	Bost	A-1	1931	1,721,975	98,397		6	Y-2	TTRR	355	351	344	341	335	329	26,012	21,101
" " " "	"	B-1	1931	1,297,061	384,987		9	Y-2	TTRR	356	361	353	346	345	338	11,107	5,039
" " " "	"	C-1	1932	1,225,775	403,377		10	Y-2	TTRR	360	358	353	345	342	335	12,116	11,058
" " " "	Bivins	F-1	1932	3,434,632	1,050,139		13	Y-2	TTRR	371	368	363	357	350	346	22,927	22,503
" " " "	Dunaway	B-1	1932	1,674,924	161,082		5	Y-2	TTRR	316	313	310	311	303	295	21,725	18,451
" " " "	"	A-2	1933	229,082	132,613		5	Y-2	TTRR	342	336	328	328	324	318	28,397	20,921
Total				57,385,138	7,872,757	49,512,381										340,166	254,722
Phillips Petroleum Company	Sanford (McMillan)	1	1928	2,151,288	1,400,821		82	46	HATC	193	202	209	215	216	216	15,674	15,405
" " "	M.K. Johnson	1	1930	2,139,863	436,210		3	1	B&B	-	-	250	241	236	232	1,734(2)	1,757
" " "	Sanford	1	1928	11,390,001	6,424,438		82	46	HATC	195	-	208	208	213	-	27,450	15,300
	(Operators - Continental)																
" " "	Land	1	1933	3,395,671	803,726		83	46	HATC	-	-	-	213	217	219	12,621(3)	8,800
" " "	"	2	1933	16,469,515	3,683,051		83	46	HATC	-	-	-	213	212	219	65,628(3)	60,845
" " "	Clair	1	1932	1,584,463	671,727		Tract #1, Tomlinson Survey			346	343	349	349	342	336	2,963	2,750
" " "	Operators	2	1932	4,224,676	1,650,667		82	46	HATC	165	201	205	204	221	-	5,532	5,130
" " "	McMann	1	1932	7,730,903	837,840		83	46	HATC	-	-	-	214	217	219	19,653(3)	20,300
" " "	"	2	1932	3,349,138	632,297		83	46	HATC	-	-	-	217	222	221	8,575(3)	7,800
" " "	Bivins	1	1932	2,265,875	599,200		84	46	HATC	189	211	218	221	222	222	8,086	10,156
" " "	Pool	2	1933	4,747,762	1,085,786		82	46	HATC	-	-	-	211	217	218	14,384(3)	13,500
" " "	Pool	1	1934	2,597,499	746,102		82	46	HATC	-	-	-	211	-	218	10,015(3)	8,700
" " "	Otis	1	1933	3,382,114	1,291,730		82	46	HATC	132	199	206	210	215	215	13,[illegible]	15,000
" " "	Jay	1	1935	5,195,814	2,695,001		40	47	HATC	-	219	220	223	224	223	15,505	9,200
" " "	Sanford	1	1934	3,794,849	2,147,434		1	1	B&B	-	271	265	261	253	250	14,338	5,900
" " "	Yantes	1	1935	2,148,746	586,557		8	Y-2	TTRR	227	263	264	269	248	245	16,043	8,390
" " "	Williams	1	1934	4,342,038	2,254,322		43	47	HATC	-	-	253	247	239	234	10,486(2)	7,700
" " "	Andorf	1	1935	862,479	679,980		80	46	HATC	212	205	210	211	212	213	2,728	3,730
" " "	Yake	2	1934	3,617,096	2,173,221		36	47	HATC	207	209	211	217	217	213	17,425	9,800
" " "	"	3	1935	413,989	268,284		36	47	HATC	204	198	212	218	215	-	2,176	2,988
" " "	Mudget	1	1933	1,589,258	552,695		85	46	HATC	200	230	235	230	232	228	6,200	4,770
" " "	Yake	4	1936	2,131	2,131		36	47	HATC	215	-	-	-	-	-	-	-
" " "	"	5	1936	2,545,985	2,545,985		35	47	HATC	-	47	215	214	230	217	214	25,926	2,050
" " "	E. Williams	1	1936	3,205,067	3,205,067		42	47	HATC	-	243	247	251	237	233	22,828	4,770
" " "	Burl	1	1934	1,622,965	787,815		4	1	B&B	250	240	236	235	232	226	10,082	8,983
" " "	Cecil	1	1933	737,045	285,110		85	46	HATC	212	230	235	230	-	-	3,270	-
" " "	Eagle	1	1933	944,444	659,729		86	46	HATC	-	231	232	232	231	228	9,474	11,880
" " "	Addy	1	1936	1,490,345	1,490,345		3	1	B&B	-	-	271	271	259	257	11,220(2)	10,345
" " "	Fromme	1	1936	736,116	736,116		2	1	B&B	-	302	296	287	275	262	24,300	8,140
" " "	Hopp	1	1936	587,330	587,330		15	40½	H&GB	-	256	253	251	242	232	11,687	4,490
" " "	Cattle	1	1936	2,257,609	2,257,609		2	B	B&F	-	265	260	258	248	244	13,363	7,000
" " "	Chapp	2	1934	744,717	357,265		78	46	HATC	200	186	-	195	204	208	1,199	2,630
" " "	Johnson	1	1934	208,991	207,064		1	In	H.Tomlinson	-	325	303	306	291	285	2,969	2,666
" " "	Snow	1	1937	898,103	898,103		44	47	HATC	-	-	271	265	248	241	22,922(2)	19,755
" " "	Snow	2	1937	850,138	850,138		47	47	HATC	-	-	274	270	-	254	19,106(2)	14,988
" " "	Wild Bill	1	1937	456,983	456,983		53	47	HATC	-	251	252	317	-	276	12,950	-
									(H.Sikes)								
" " "	Otis	2	1933	1,430,825	796,492		82	46	HATC	191	195	207	214	215	216	7,450	8,000
" " "	Glass	1	1933	2,905,331	1,344,571		80	46	HATC	188	197	199	204	204	213	7,073	1,300
" " "	Chapp	3	1934	1,199,915	580,049		78	46	HATC	201	189	-	196	207	214	2,560	16,300
" " "	Cecil	2	1933	725,884	3,379		85	46	HATC	210	-	-	-	-	-	5,190	Dead
" " "	M. Byrd	1	1934	1,301,685	1,228,091		SW/4 D, Luce Survey			-	-	311	298	281	270	5,669(2)	3,800
" " "	Yake	6	1938	331,582	331,582		35	47	HATC	-	-	-	218	215	215	5,902(3)	5,100
" " "	B. Redord	1	1937	882,226	882,226		4	Y-2	J.Poitevent	-	-	302	293	276	274	10,151(2)	6,895
" " "	Snow	3	1937	931,987	931,987		58	M-23	TCRR	-	-	274	266	-	273	25,894(2)	-
Total				114,770,461	52,966,236	61,804,225										384,988	376,446

This is the best this can be photographed because it is very tightly bound.

BASIC DATA ON QUADRANTS

IN WHICH THE CANADIAN RIVER GAS COMPANY LEASES ARE SITUATED

Quadrant No. 3
Hutchinson County

Name of Company (1)	Well Name and Number (2)		Year of First Withdrawals (3)	Total Metered as all Times To August 1, 1939 (4)	Total Gas Metered August 1, 1935 To August 1, 1939 (5)	Metered Gas Prior to August 1, 1935 (6)	Location Sec. (7)	Block (8)	Survey (9)	Pressures* 1935 (10)	1936 (11)	1937 (12)	1938 (13)	1939 (14)	1940 (15)	1935** Potential MCF (16)	1939** Potential MCF (17)
rporation	Sanford	G-1	1943	5,165,951	4,672,688		79	46	44TC	201	200	205	209	214	213	29,683	15,600
"	Grudgington	1	1933	4,526,418	1,131,391		7	Y-2	TTRR	300	324	296	294	303	303	21,876	17,506
"	Sanford	1	1927	6,567,461	4,103,550		80	46	HATC	197	200	205	208	213	217	27,660	19,600
"	"	1-A	1931	6,564,197	2,013,162		73	46	HATC	192	190	200	-	210	210	13,587	7,800
"	"	S-1	1931	5,997,370	2,149,146		81	46	HATC	190	199	204	-	216	219	12,866	9,600
"	Dunaway	A-1	1934	1,251,409	842,825		7	Y-2	TTRR	300	305	324	305	297	297	10,983	10,050
"	"	2	1936	699,434	699,434		5	Y-2	TTRR	324	324	306	314	313	313	22,437	9,360
"	Herring	3	1937	1,159,752	1,159,752		7	J	HAGN	-	-	334	318	315	291	31,552(2)	5,090
"	"	1	1927	1,185,822	1,185,822		6	S	HAGN	-	-	333	314	292	280	29,780(2)	3,550
"	"	4	1937	1,049,492	1,049,492		7	J	HAGN	-	-	348	332	308	288	33,192(2)	5,630
"	"	7	1936	951,837	951,837		8	J	HAGN	-	-	-	384	313	285	12,908(3)	4,600
"	"	8	1940	121,008	121,008		Sec. D. Luce Survey			-	-	-	-	300	277	-	3,730
"	"	9	1937	208,664	208,664		" " "			-	-	-	-	313	293	-	4,500
"	"	10	1940	116,081	110,081					-	-	-	-	325	305	-	3,800
"	River Bed	3	1938	661,492	661,492		79	46	HATC	-	-	-	209	212	212	10,386(3)	7,400
	Texas Herring	1	1940	531,008	531,008		8	J	HAGN	-	-	-	-	304	289	-	5,800
tal				39,773,642	21,608,282	18,165,360										139,071	139,756
	Sanford	F-1-G	1927	523,174	351,327			403	HOAB	-	-	-	200	211	215	5,750(3)	4,600
Estate	Sivins	1	1929	17,665,189	3,744,248		91	46	HATC	362	358	-	350	340	339	30,733	24,054
	Sanford	C	1931	13,240	0		82	46	HATC	Cannot identify wells in T.&P. Rec. report - no production recorded since 1935.							
ntal	Reimer	1	1947	73,340	0		82	46	HATC								
ir-Prairie	Merchant	1	1930	8,696,290	3,272,215		87	47	HATC	207	206	221	220	217	211	31,277	28,300
	Sanford	1	1931	11,366,436	2,193,028		86	46	HATC	-	200	210	208	216	220	18,733	2,450
t-Gulf	Sanford	1-A	1930	616,987	581,352		8	46	HATC	-	200	207	210	213	216	8,477	15,091
t (Now Phillips)	Ingerton	1-A	1929	5,501,502	4,726,934		41	47	HATC	210	250	234	-	231	230	19,949	18,500
t	Byrd	1	1930	1,317,719	1,605,612		56/G	D. Luce Survey		-	354	328	343	302	283	11,499	4,900
t (Now Phillips)	Ingerton	A-2	1930	1,385,800	1,381,129		41	47	HATC	247	240	232	-	231	230	8,723	3,500
" "	"	1-B	1936	1,644,392	1,644,392		327	A	TCRR	-	242	235	-	237	232	12,249	2,200
	Sanford	2-B	1932	2,114,390	2,050,065		81	46	HATC	-	199	206	213	216	215	15,549	14,800
l Company	Johnson	A-1	1933	2,178,904	258,814		1	X03	HAOB	-	-	-	211	206	210	3,455(3)	2,790
ir-Prairie	C. Merchant	2	1933	6,021,346	1,865,839		37	47	HATC	254	178	220	221	219	215	17,260	13,300
	Reed	1	1930	2,983,519	605,943		Center SW McDonald Survey			296	290	-	281	272	260	10,475	8,181
l Company	Johnson	1-B	1933	1,631,342	277,648		SE Gammell Survey			-	-	-	205	180	217	1,018(3)	545
" "	"	1-F	1934	2,376,374	619,548		15	X03	HOAB	255	235	241	234	231	221	5,149	6,047
ie	Sanford	1	1933	4,326,249	1,411,600		82	46	HATC	191	202	208	213	210	216	12,210	9,400
ne	Sanford	1	1933	6,731,303	1,607,588		83	46	HATC	-	-	-	210	224	-	23,495(3)	15,800
bin	Sivins	1	1934	164,773	21,678		86	46	HATC	-	245	235	150	175(BH)	175	983	1,578(BH)
ir-Prairie	Rubin	2	1934	2,687,977	158,434		81	46	HATC	-	-	-	224	218	-	5,615(3)	4,980
	C. Merchant	1	1933	748,884	366,308		37	47	HATC	262	210	175	165	-	-	2,032	-
	" "	3	1933	1,233,643	656,633		37	47	HATC	266	223	213	212	220	234	3,097	1,704
	" "	V-3	1934	863,309	473,573		37	47	HATC	257	225	201	192	220	172	2,318	2,125
	" "	V-4	1935	775,309	619,216		37	47	HATC	255	221	-	219	221	236	1,905	1,530
illiams	Sanford	1	1933	10,014,345	3,640,644		30	46	HATC	190	190	-	205	209	213	20,165	16,387
bin	Rubin	3	1933	5,641,787	1,843,931		85	46	HATC	194	226	236	-	223	229	19,435	31,358
"	"	4	1934	6,828,316	1,504,678		85	46	HATC	190	232	230	-	223	220	20,137	6,334
Deal	Sanford	1	1933	14,499,346	6,898,746		81	46	HATC	-	200	212	210	220	-	39,048	46,000
"	"	2	1934	772,176	78,033		81	46	HATC	Nothing in Texas R. R. Commission report							
il	Jameson	1	1936	547,487	547,487		A. Dubois Survey			350	-	290	281	275	271	4,748	1,450
ol	Johns	1	1933	1,861,251	472,130		1	X04	HOAB	-	-	-	215	213	214	3,453(3)	3,010
t (Now Phillip	Ingers	C-1	1937	878,474	878,474		1	B	BSAF	-	-	-	287	285	267	261	14,819(2)	13,360
ir-Prairie	Johnson	D-1	1935	1,281,654	803,573		8	Y-2	TTRR	240	232	264	261	237	241	21,105	8,753
	"	1	1933	3,421,854	1,164,340		84	40	HATC	-	-	-	218	223	223	12,399(3)	12,200
	-Herring	2	1937	732,291	732,291		SA/L Matts Survey			-	-	323	295	275	255	12,355(2)	5,730
	" Merchant, Cal.	1	1937	554,482	554,482		99	47	HATC	-	-	-	235	239	225	16,358(3)	11,600
	-Herring	3	1937	758,288	758,288		5	J	HAGN	-	-	335	310	285	248	11,802(2)	3,360
Merchant	"	2	1934	106,812	51,147		38	47	HATC	143	-	-	178	176(BH)	176	-	139(BH)
"	"	3	1934	42,615	15,002		38	47	HATC	-	-	-	165	163(BH)	163	-	192
Sanford	"	1	1938	81,185	81,185		78	46	HATC	-	175	201	-	-	-	50(1)	-
"	"	1	1934	4,400,325	1,283,637		83	46	HATC	-	-	-	216	221	-	18,149(3)	11,200
"	"	2	1933	13,429,830	2,226,634		83	46	HATC	-	-	-	211	221	-	32,468(3)	33,000
ir-Prairie	Merchant	V-5	1938	675,401	675,401		37	47	HATC	-	-	-	217	223	215	32,970(3)	26,500
y-Cabot	Herring	B-1	1938	671,936	671,936		3	J	HAGN	-	-	326	295	243	236	24,156(1)	3,340
	Yake	A-1	1937	622,610	622,610		2	J	HAGN	-	-	300	284	257	245	9,397(2)	3,440
	"	B-1	1937	700,083	700,083		1	J	HAGN	-	-	290	282	263	243	23,134(2)	13,600
	"	C-1	1937	736,536	786,536		4	J	HAGN	-	-	316	295	-	-	17,205(2)	-
lind	Merchant	4	1937	349,094	349,094		38	47	HATC	-	-	-	210	212	208	5,394(3)	4,000
ation-Danube	Wheatley	1	1934	10,092,077	2,993,737		2	Y-2	TTRR	-	-	-	337	331	313	38,512	28,768
Total				197,210,963	59,544,953	97,665,910										XXX 914	470,096

BASIC DATA ON QUADRANTS

IN WHICH THE CANADIAN RIVER GAS COMPANY LEASES ARE SITUATED

Name of Company	Well Name and Number		Year of First Withdrawals	Total Metered Gas All Time To August 1, 1939	Total Gas Metered August 1, 1935 To August 1, 1939	Metered Gas Prior to August 1, 1935	Location Sec.	Block	Survey	1935	1936
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
rson (H.A.)	Sanford	1	1934	6,979,831	2,454,215		85	46	H&TC	210	230
rson-Antelope	"	4	1933	3,199,541	568,691		82	46	H&TC	-	194
rson-Alamosa	"	B-5	1935	5,054,382	2,942,191		85	46	H&TC	205	232
rson-Antelope	"	1	1932	450,479	164,893		82	46	H&TC	-	-
"	"	3	1932	1,511,411	472,422		82	46	H&TC	-	198
"	"	2	1932	2,486,445	763,072		82	46	H&TC	-	205
rson-Alamosa	"	1	1933	2,685,908	884,682		82	46	H&TC	172	201
"	"	2	1933	3,177,227	753,907		83	46	H&TC	-	203
"	"	3	1933	4,196,665	890,650		83	46	H&TC	187	208
"	"	4	1933	4,175,644	1,413,062		85	46	H&TC	193	213
rson-Great Plains	"	1	1933	9,410,458	4,156,836		87	46	H&TC	230	240
rson	Whittenberg	2	1934	4,055,373	1,447,723		1	Yantis	Survey	-	208
rson-Continental	"	1	1934	5,880,088	2,577,633		1	Yantis	Survey	205	205
Total				53,263,502	19,494,980	33,768,522					
	Cart. Johnson	1-P	1931	2,040,450	723,722		1	Y-2	TTRR	348	342
	Deahl	1-E	1938	258,474	258,474		3	3	[illegible]	-	-
	Johnson	1	1934	1,714,724	843,941		2	Y-2	TTRR	348	338
	"	A-1-G		3,662,264	1,528,200		1	Y-2	TTRR	351	346
ount	Sanford	1	1934	2,507,450	1,237,143		82	46	H&TC	183	12[illegible]
	"	2	1933	12,896,466	7,797,713		82	46	H&TC	190	202
	"	3	1933	9,781,521	4,997,720		82	46	H&TC	-	-
Total				32,861,349	17,386,913	15,474,436					
ndle Eastern	Bost	1-9	1931	2,130,365	1,098,282		9	Y-2	TTRR	355	349
" "	"	1-14	1931	1,993,435	995,419		14	Y-2	TTRR	37[illegible]	360
" "	Bivins	1-91	1931	845,955	467,559		91	46	H&TC	326	313
	Sanford	1	1932	8,782,320	2,125,329		83	46	H&TC	-	-
Total				13,812,075	4,646,599	9,165,476					
GRAND TOTAL				469,077,030	183,496,080	285,580,950					
Less Repressure Gas					11,046,772						
					172,449,308						

Well head gauge closed in pressures from Texas Railroad Commission official records.
Well potentials (open flow) from Texas Railroad Commission official records.
Wells probably have been transferred to some other company - do not have any record; therefore, cannot identify well in Texas Railroad Commission report.

All volumes of gas in MCF. Prior to August 1, 1935, pressure base unknown. Subsequent to August 1, 1935, all gas on a pressure base of 14.65 lbs. per sq. in. absolute.

marked (1) First pressure and potential.
" (2) " " " "
" (3) " " " "

Exhibit No. 29A

BASIC DATA ON QUADRANTS

IN WHICH THE CANADIAN RIVER GAS COMPANY LEASES ARE SITUATED

Quadrant No. 3
Hutchinson County

Year of First Withdrawals (3)	Total Metered Gas All Time To August 1, 1939 (4)	Total Gas Metered August 1, 1935 To August 1, 1939 (5)	Metered Gas Prior to August 1, 1935 (6)	Location Sec. (7)	Block (8)	Survey (9)	Pressures* 1935 (10)	1936 (11)	1937 (12)	1938 (13)	1939 (14)	1940 (15)	1935** Potential MCF (16)	1939** Potential MCF (17)
				85	46	H&TC	210	230	232	213	230	233	13,006	13,968
1934	6,979,831	2,454,215		82	46	H&TC	-	194	208	208	224	-	7,885(1)	6,800
1933	3,199,541	568,694		85	46	H&TC	205	232	220	231	222	202	30,334	10,383
1935	5,054,382	2,942,191		82	46	H&TC	-	-	-	198	211	213	2,618(2)	1,787
1932	450,479	164,393		82	46	H&TC	-	198	-	204	210	-	1,982	4,540
1932	1,511,411	472,422		82	46	H&TC	-	205	196	202	-	-	5,891	-
1932	2,486,445	763,072		82	46	H&TC	172	201	210	225	-	-	5,513	-
1933	2,685,908	884,682		83	46	H&TC	-	203	-	222	204	-	8,492	5,400
1933	3,177,227	753,907		83	46	H&TC	137	208	-	220	222	-	11,376	10,500
1933	4,196,665	890,650		85	46	H&TC	193	213	226	224	220	221	8,344	6,301
1933	4,175,644	1,413,062		87	46	H&TC	230	240	240	239	237	237	27,039	27,010
1933	9,410,458	4,156,836		1	Yantis Survey		-	208	220	218	220	-	14,940(1)	6,334
1934	4,055,373	1,447,723		1	Yantis Survey		205	205	227	224	221	231	11,853	6,638
1934	5,880,088	2,577,633												
													123,830	99,661
	53,263,502	19,494,980	33,768,522											
				1	Y-2	TTRR	348	342	339	335	328	321	11,600	11,955
1931	2,040,450	723,722		3	3	ABAM	-	-	-	339	330	322	8,858(3)	8,612
1938	258,474	258,474		2	Y-2	TTRR	348	338	335	331	323	316	11,994	10,159
1934	1,714,724	843,941		1	Y-2	TTRR	351	346	343	339	331	323	15,984	14,657
	3,662,264	1,528,200		89	46	H&TC	183	12[illegible]	205	204	•••	•••	4,271	•••
1934	2,507,450	1,237,143		92	46	H&TC	190	202	212	216	•••	•••	19,445	•••
1933	12,896,466	7,797,713		82	46	H&TC	-	-	208	209	•••	•••	20,905(2)	•••
1933	9,781,521	4,997,740												
													63,258	45,383
	32,861,349	17,386,913	15,474,436											
				9	Y-2	TTRR	355	349	340	345	336	327	30,128	19,004
1931	2,130,365	1,093,282		14	Y-2	TTRR	37[illegible]	360	350	352	349	336	19,314	23,777
1931	1,993,435	955,419		91	46	H&TC	326	318	310	312	312	300	9,563	15,656
1931	845,955	467,559		93	46	H&TC	-	-	-	214	223	-	33,570(3)	24,900
1932	8,782,320	2,129,329												
													59,005	83,337
	13,812,075	4,646,599	9,165,476											
	169,077,030	183,496,080	285,580,310											
		11,046,772												
		172,449,308												

ilroad Commission official records.
ommission official records.
r company - do not have any record; therefore, cannot identify well in Texas Railroad Commission report.

35, pressure base unknown. Subsequent to August 1, 1935, all gas on a pressure base of 14.65 lbs. per sq. in. absolute.

BASIC DATA ON QUADRANTS

IN WHICH THE CANADIAN RIVER GAS COMPANY LEASES ARE SITUATED

Name of Company	Well Name and Number		Year of First Withdrawals	Total Metered Gas All Time To August 1, 1939	Total Gas Metered August 1, 1935 To August 1, 1939	Metered Gas Prior to August 1, 1935	Location Sec.	Block	Survey
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
an River Gas Company	Sanford	A-1	1930	4,219,682	3,292,789		11	3	ABAM
" " "	Bivins	B-3	1929	12,865,144	1,750,913		15	Y-2	TTRR
" " "	Poling	A-1	1929	3,367,999	83,057		12	Y-2	TTRR
" " "	Bost	C-2	1932	963,074	365,579		10	Y-2	TTRR
" " "	Bost	D-1	1932	697,539	567,844		1	2	H&GN
otal				22,112,838	6,060,182	16,052,656			
ver Gas Company	Deahl	1-A	1930	2,520,832	1,273,328		5	5	B&B
" " "	Bivins	A-3	1931	2,889,767	1,532,068		43	M-20	GH&H
" " "	Bivins	A-4	1935	1,135,909	1,132,692		44	M-20	"
" " "	Bivins	A-5	1935	3,042,093	3,021,529		45	M-20	"
" " "	Deahl	1-B	1936	861,316	861,316		7	5	B&B
otal				10,449,957	7,820,933	2,629,024			
	Poling	1-A	1930	6,478,809	3,390,447		22	Y-2	TTRR
	Poling	3	1930	6,253,946	3,275,473		22	Y-2	TTRR
otal				12,732,755	6,665,896	6,066,859			
rn Natural	Poling	1	1932	2,137,201	1,658,106	479,095	24	Y-2	TTRR
Corporation	Chapman	1	1934	5,400,115	2,168,767	3,231,348	7	3	ABAM
dle Eastern Pipeline Co.	Sanford	1-12	1938	442,307	442,307		12	3	ABAM
" " " "	"	1-13	1938	826,644	826,644		13	3	ABAM
" " " "	"	1-14	1938	657,054	657,054		14	3	ABAM
" " " "	"	1-15	1938	750,790	750,790		16	3	ABAM
otal				2,676,795	2,676,795	0			
Service	Fugua	3	1931	9,020,730	1,516,949		18	3	ABAM
"	"	4	1931	1,207,567	933,025		6	S	H&GN
"	"	1	1930	4,568,496	1,500,999		17	3	ABAM
"	"	2	1930	7,512,931	2,349,529		19	3	ABAM
"	"	5	1938	1,643,770	1,643,770		5	S	H&GN
"	"	6	1938	769,150	769,150		4	S	H&GN
"	"	7	1938	974,323	974,323		7	S	H&GN
"	Poling	1	1929	8,205,610	2,471,954		26	Y-2	TTRR
"	Bennett	1	1931	2,287,452	1,198,611		6	5	B&B
"	C. E. Deahl	1	1930	1,772,262	892,044		21	Y-2	TTRR
"	"	2	1930	2,271,016	905,133		2	2	H&GN
"	"	3	1930	16,112,596	9,986,024		23	Y-2	TTRR
"	O. W. Deahl	1	1930	4,069,961	1,596,597		3	5	B&B
"	"	2	1931	5,233,024	2,602,624		25	Y-2	TTRR
"	"	3	1936	6,580,143	6,580,143		15	3	ABAM
"	"	4	1937	1,671,940	1,671,940		20	3	ABAM
"	"	5	1937	1,486,961	1,486,961		4	5	B&B
"	"	6	1937	664,574	664,574		3	2	H&GN
"	"	7	1937	536,478	536,478		4	2	H&GN
"	"	8	1938	606,219	606,219		6	3	ABAM
"	Noel	1	1932	2,338,744	1,040,819		41	4	I&GN
al				78,933,997	42,227,866	36,706,131			
TAL				134,443,658	69,278,565	65,165,113			

head guage closed in pressures from Texas Railroad Commission official records.
potentials (open flow) from Texas Railroad Commission official records.
ll volumes of gas in MCF. Prior to August 1, 1935 pressure base unknown. Subsequent to August 1, 1935
ll gas on a pressure base of 14.65 lbs. per sq. in. absolute.

1936 marked (1) First
1937 " (2) "
1938 " (3) "

BASIC DATA ON QUADRANTS

IN WHICH THE CANADIAN RIVER GAS COMPANY LEASES ARE SITUATED

Exhibit No. 294

Quadrant No. 4
Carson County

Total Metered Gas All Time To August 1, 1939 (4)	Total Gas Metered August 1, 1935 To August 1, 1939 (5)	Metered Gas Prior to August 1, 1935 (6)	Location Sec. (7)	Block (8)	Survey (9)	Pressures* 1935 (10)	1936 (11)	1937 (12)	1938 (13)	1939 (14)	1940 (15)	1935** Potential MCF (16)	1939** Potential MCF (17)
4,219,082	3,292,789		11	3	ALaM	397	395	383	375	371	359	14,599	10,064
12,865,144	1,750,913		15	Y-2	TTRR	373	368	365	361	352	-	33,200	26,947
3,367,999	83,057		12	Y-2	TTRR	377	368	363	358	353	344	13,006	11,376
963,074	365,579		10	Y-2	TTRR	366	363	355	357	350	339	24,685	16,796
697,539	567,644		1	2	H&GN	357	334	346	346	340	333	12,668	8,624
22,112,838	6,060,182	16,052,656										158,152	133,847
2,520,832	1,273,328		5	5	B&B	403	399	393	385	372	369	9,672	7,549
2,889,767	1,532,068		43	M-20	G&M	405	401	395	388	379	-	23,940	17,875
1,135,949	1,132,692		44	M-20	"	408	402	396	389	380	-	17,826	12,975
3,042,093	3,021,529		45	M-20	"	408	403	399	-	-	-	32,678	-
861,316	861,316		7	5	B&B	-	402	395	388	378	365	11,100	8,680
10,449,957	7,820,933	2,629,024										95,216	47,079
9,478,809	3,390,417		22	Y-2	TTRR	405	-	382	382	373	371	13,536	12,213
6,253,946	3,275,479		22	Y-2	TTRR	400	-	384	382	375	71	15,279	15,300
12,732,755	6,665,896	6,066,859										28,815	27,513
2,137,201	1,658,106	479,095	24	Y-2	TTRR	417	401	392	386	377	369	16,403	11,401
5,400,115	2,168,767	3,231,348	7	3	ABAM	400	390	390	372	365	361	23,555	18,634
442,307	442,307		12	3	ABAM	-	-	-	385	375	364	17,279(3)	14,227
826,644	826,644		13	3	ABAM	-	-	-	381	377	366	36,297(3)	29,212
657,054	657,054		14	3	ABAM	-	-	-	-	379	369	-	36,182
750,790	750,790		16	3	ABAM	-	-	-	394	377	367	46,159(3)	21,896
2,676,795	2,676,795	0										0	101,547
8,020,730	1,516,949		18	3	ABAM	407	402	396	389	380	372	9,423	5,375
1,207,567	933,025		6	8	H&GN	403	394	397	387	380	372	4,319	2,939 BH 76 SM
4,568,498	1,500,999		17	3	ABAM	405	399	393	388	382	370	11,685	8,137
7,512,981	2,349,529		19	3	ABAM	407	401	395	387	380	373	19,125	14,600
1,643,770	1,643,770		5	8	H&GN	-	-	395	386	377	372	20,787(2)	13,534
769,150	769,150		4	S	H&GN	-	-	-	383	377	374	8,565(3)	5,624
974,323	974,323		7	S	H&GN	-	-	-	391	383	375	8,139(3)	8,243
8,205,610	2,471,954		23	Y-2	TTRR	406	402	398	385	380	374	7,707	5,033
2,387,452	1,196,611		6	5	B&B	406	401	395	387	379	372	8,139	6,428
1,772,262	892,044		21	Y-2	[illegible]	371	360	360	356	350	343	5,400	3,450
2,271,016	905,133		2	2	HGN	365	357	355	351	345	339	9,675	6,400
16,112,596	9,986,024		23	Y-2	TTRR	406	397	390	383	376	371	54,836	34,307
4,069,961	1,596,597		3	5	B&B	404	400	393	383	375	369	10,940	8,591
5,233,024	2,602,624		25	Y-2	TTRR	404	399	392	384	377	371	15,504	12,099
6,580,143	6,580,143		15	3	ABAM	-	401	395	387	379	373	46,457(1)	42,327
1,671,940	1,671,940		20	3	ABAM	-	399	394	386	378	371	13,800(2)	11,900
1,486,961	1,486,961		4	5	B&B	-	-	393	384	377	372	17,363(2)	12,264
664,574	664,574		3	2	H&GN	-	-	386	376	369	364	8,632(2)	6,250
536,478	536,478		4	2	H&GN	-	-	383	376	368	361	5,900(2)	5,200
606,219	606,219		6	3	ABAM	-	-	-	340	312	309	10,858(3)	8,563
2,338,744	1,040,819		41	4	I&GN	304	384	251	270	260	256	13,507	11,770
78,933,997	42,227,866	36,706,131										170,200	253,798
134,443,658	69,278,545	65,165,113											

n official records.
al records.
ase unknown. Subsequent to August 1, 1935

1936 marked (1) First pressure and potential.
1937 " (2) " " " "
1938 " (3) " " " "

He explained Exhibit 294 as follows:

Going from left to right by columns, the first column gives the name of the Company, well name and the number, and the year of first withdrawals. It must be remembered, however, that these data and schedules are all based upon the period from August to August, rather than by calendar years. Column 4 shows the total gas metered from the beginning of production to August 1, 1939. Column 5 shows the total gas metered from August 1, 1935 to August 1, 1939. Column 6 shows the gas metered prior to August 1, 1935. Column 7 shows the section upon which the well is located. Column 8 shows the block number, and Column 9, the survey. Columns 10 to 15, inclusive, represent the pressures of the various wells listed from 1935 to 1940, inclusive. Column 16 shows the well potentials as of 1935. Column 17 shows the well potentials as of 1939. Statement 1 in the footnotes to the Exhibit refers to the first pressures and potentials that were recorded in 1935 and 1936. Statement 2 of the footnote refers to the potentials and pressures first recorded in 1937. Statement 3 in the footnote refers to the first pressures and potentials recorded in 1938. The pressure base was unknown prior to August 1, 1935, but subsequent to August 1, 1935, the volume of gas is shown on a pressure base of 14.65 lbs. per square inch absolute.

The witness then testified further with respect to Exhibit 294, as follows:

"Q. (Mr. March) I notice there is another footnote at the bottom. What is the significance of that?

"A. (Hammer) Well, the significance of that is this: I had no definite information and could secure no definite information on the pressure base prior to August 1, 1935 and that footnote was put in there to segregate the 1935-1939 data from that prior to 1935.

"Q. I believe you have heretofore made explanation in regard to that data prior to 1935, have you not?

"A. I have.

"Q. As I understand it, this exhibit contains all of the wells in the Canadian River Gas Company's quadrants?

"A. To the best of my knowledge and belief, it contains all of them, that is right. Those are all of the

wells upon which I could secure data up to August 1, 1939.

"Q. All of the gas wells?

"A. Yes.

"Q. Do you make any inspection (construction), interpretation or argument in regard to the significance of any of this data?

"A. No. None whatsoever. * * *" (P. 15569).

Hammer again testified as follows:

"Q. Mr. Hammer, do you make any constructions, interpretations or arguments as to the significance of the data contained in Exhibit number 295?

"A. None whatsoever." (P. 15572).

On Tuesday, March 21, Counsel for Canadian requested that cross examination be deferred on the exhibits until the recessed hearing in Washington. Mr. Marsh, Commission counsel, objected to this, his objection (Vol. 101, pp. 15574-15582) being as follows:

Mr. March: Now, Mr. Examiner, I would like to state for the record before cross examination of the witness by Mr. Keffer that I discussed the matter with Mr. Spencer, having given him the exhibit last Saturday. Arrangements between counsel was the cross examination would be had and the Examiner would act upon the exhibit with the understanding that after it is cross examined upon that a motion to strike would be in order.

In other words, if there are any errors contained therein, it can be brought to the attention of the Examiner.

The Trial Examiner: You mean by that, Mr. March, errors in calculations, for example?

Mr. March: There are no calculations there. In other words, the company will have a complete opportunity to check it to see if there are any errors in it. We don't think there will be but there may be.

The Trial Examiner: It just isn't clear to me, Mr. March, as to what you intend to do here.

Mr. March: This exhibit was handed to Mr. Spencer Saturday. The arrangement was for cross examination to be had upon this exhibit and if the Examiner admits it into

evidence, the motion will be reserved—there will be a reservation made to make a motion to strike when this has been thoroughly checked by counsel.

Mr. Keffer: I am wondering, Mr. March, if we wouldn't arrive at the same conclusion, if ruling is just suspended on it until later.

Mr. March: We object to that. That is not the arrangement at all.

Mr. Keffer: Please let me finish, Mr. March, and then you can talk all you want to.

I understand in substance that the agreement was made between Mr. Spencer and Mr. March, as Mr. March has just stated, and I am not going back on any agreement. What I am getting to is the cross examination of this witness. I didn't understand that that was a part of the agreement. I don't know that it will even be necessary after this exhibit is checked, but, obviously, you can see by looking at either one of the exhibits that it will take almost as long to check it as it took Mr. Hammer to make it, because you have to go back and check every one of those wells. It is going to be a tremendous job. That checking may develop some matters we want to cross examine upon. I don't know that it will. The exhibits have been marked and they are in the record. If we can have until the next session to check it over, we believe it would facilitate things. We could do that, making some sort of a check on it, and then we could cross examine upon it then. It wouldn't embarrass or delay you any. In other words, in that manner you can accomplish the same thing.

Mr. March: We object to the withholding of the cross examination of this geologist until we get to Washington. This is the same type of exhibit as 259 was. I cross examined upon that without any delay. There were a bunch of wells, two or three hundred listed thereon. They obtained these exhibits Saturday and there is no reason we can't have the cross-examination upon them now. If we wait until we get to Washington, it may be reopened again. My arrangement with Mr. Spencer was, as I stated, clearly understood. There is a simple cross examination that should be had upon

it now. If there are any errors in here, a motion will be in order to strike if it is admitted in evidence. Commission's counsel absolutely takes exception to any dilatory delay in the cross examination. There is no reason for it.

Mr. Keffer: There is nothing dilatory about it, Mr. March, as I am trying to expedite the matter.

Mr. March: It is coming to the matter of a stall when another arrangement was made.

Mr. Keffer: Mr. March, there is no basis for that statement.

Mr. March: This is basic data. Mr. Peterson prepared an exhibit of gas produced by the field. I subsequently found that I forgot to ask him for the working papers that he used. I cross examined Mr. Peterson and I didn't hesitate about doing it, either. Our witness is not making any construction of the data. The interpretation there *speak* for itself.

The Trial Examiner: Well, I think perhaps, Mr. Keffer, if you have any questions of Mr. Hammer as to the foundation for the exhibit, you might proceed in that manner at this time. Then, as I understand it, if upon checking the data it is shown that an error has occurred, the error may be either corrected or stricken from the record. Is that the situation, Mr. March?

Mr. March: Or the correct figures may be given by Mr. Keffer.

Mr. Keffer: That is perfectly all right, Mr. Examiner, but my only thought was this: I didn't hear the agreement between Mr. Spencer and Mr. March, but as I understood it, as Mr. Spencer detailed it to me, there was to be no cross examination at this time.

Mr. March: Mr. Spencer has specifically stated that the Examiner would rule upon the thing and it was predicated upon a motion to strike. As a matter of fact, the only cross examination that would be appropriate would be where he got the information and data.

Mr. Keffer: I don't know that it will be, Mr. March.

Mr. March: That is an old thing, to delay this proceeding. The time has come that Mr. Keffer might cross examine here for a change. He has had since Saturday to look over this and if there are any errors, as I discussed it with Mr. Spencer, if any errors develop, they may be brought to the attention of the Examiner in Washington and a motion lodged to strike if the Examiner admits the exhibits in evidence. It is perfectly in order, and for Mr. Keffer to try to keep this geology open and hold up the cross examination of one of our witnesses, Mr. Hammer, we most vigorously except and we urge that Mr. Keffer proceed with the cross examination. That was not my agreement with Mr. Spencer.

Mr. Keffer: My only point is this: I can't tell whether there would be any cross examination upon this or not but I think it is obvious to anyone looking at those two exhibits, to have checked them since Saturday—that is preposterous. I think Mr. Hammer will agree with me on that. My only thought is, I certainly wouldn't want to waive the right to cross examine. Everything else is perfectly satisfactory to me. There may not be any cross examination on this exhibit or these exhibits, but I can't tell as I haven't the slightest thought on the matter at this time.

The Trial Examiner: Well, Mr. Keffer, supposing if you have any questions as to the foundation, you ask those now and the Examiner will then act upon the offer of Commission's counsel, and the reservation that has been made may serve to eliminate any possibility of inclusion of errors in these particular exhibits. It seems to me on that basis there is really not much harm that could come from the exhibits themselves.

Mr. Keffer: I appreciate that. As I stated a moment ago, my only thought was, as we do get into checking these items it may develop from the Examiner's standpoint, as well as our own, to have some cross examination upon those things. The chances are there will be none. In fact, I can't see right now that there will be, but there might be, and it is a matter that I haven't explored yet.

Mr. March: As the Examiner can see, it is just like the other exhibits put in by counsel for the companies. It is just statistical data. In fact, some of the basis statistic data

was used in the estimate of reserves subsequent to 1935. There is no construction being made of this. The only type of cross examination there could be on exhibits of this nature would be as to the source of information and where he got the data. If there were errors made, there could be motions made to strike. To leave that open until we get to Washington and reserve Mr. Keffer the right to cross examine there, this thing might go on for weeks.

"What do you know about that well, Mr. Hammer? What is your construction of that well there, Mr. Hammer?"

Mr. Hammer hasn't made any construction of the exhibits. The figures speak for themselves, and there is no reason in the world why Mr. Keffer, as able a lawyer as he is, knowing about these wells and living in that vicinity, can't proceed with the cross examination here when I cross examined upon the other exhibits right off the bat.

Mr. Keffer: I'm not as smart as you are, Mr. March, and I can't do it that way.

I am going to cross examine, Mr. Examiner, reserving the right by reason of the matters stated here in open court, for future cross examination if an inspection and test of the exhibits would lead me to believe that further cross examination would be necessary or desirable.

Mr. March: We object to that. He can cross examine now and make his motion to strike in Washington if there appears to be errors in the exhibits.

Mr. Keffer: I don't see how we can make a motion to strike under the circumstances. Mr. Hammer has one set of figures here and should we say there should be something else and we should strike Mr. Hammer's figures?

Mr. March: You had six months to bring in the data on the wells. Why didn't you bring that data in here?

The Trial Examiner: I think we are spending considerable time on a matter that can be worked out to the satisfaction of all concerned. I don't think, Mr. Keffer, the Examiner is going to take any step that might jeopardize your rights in the proceeding. On that assumption, as I have stated, I think if you have any questions as to the founda-

tion, you may ask them and we will act upon the exhibit now and we will cross the next bridge when we come to it.

Mr. Keffer: All right.

Cross Examination

By Mr. Keffer:

Q. Now, Mr. Hammer, I note that you show production prior to August 1, 1935. When you were speaking about it a while ago, you were speaking a little low and I didn't quite hear you. You might have stated how you got that, but I didn't catch it.

A. All of the data on all of these sheets are data that were taken from the records of the Texas Railroad Commission.

Q. Well, take wells over in the Sanford area, for example, and perhaps some other wells which you have included on this statement where production records were not complete prior to August 1, 1935. How did you handle that?

A. The only thing is, these represent the records of the Texas Railroad Commission. If there were wells where the records weren't complete, naturally this doesn't show it.

Q. Did you find any that were not complete?

A. That would be a hard thing to answer on all of the wells there.

Q. But you spent quite a little time gathering this data and I wonder what you found in that respect.

A. I couldn't go back and give you definite information on wells and I don't intend to do that.

Q. I haven't asked you to do it. I am just asking what you found in that respect.

A. Unquestionably there are some wells upon which the data are not complete and I know that. I lay no particular stress at all on this data prior to 1935.

Q. The upshot of it is that you will acknowledge on your production records, at least, that your data is incomplete?

The Trial Examiner: Prior to 1935?

Mr. Keffer: August 1, 1935.

The Witness: Yes, there is that possibility.

By Mr. Keffer:

Q. Not only a possibility but a probability?
A. That is right.

Hammer again testified with respect to the production data as follows:

"Q. You did have complete production figures?

"A. I didn't have, no, and I have so stated to you.

"Q. Did you mean to say here that your production figures back of 1935 have no relevancy?

"A. Nothing particularly—no particular relevancy as far as these exhibits are concerned." (P. 15588).

Mr. Hammer again testified:

"Q. Mr. Hammer, I take it you yourself wouldn't want to rely upon those figures?

"A. Prior to 1935?

"Q. Prior to 1935.

"A. Well, I didn't." (P. 15589).

Mr. Hammer again testified on redirect examination (Vol. 101, pp. 15590-15591) as follows:

By Mr. March:

Q. Mr. Hammer, you did make an effort, did you not, to get reliable data prior to 1935?

A. I made every effort possible.

Q. You were unsuccessful?

A. That is right.

Q. You believe that the data which you got prior to 1935 is the best data that can possibly be gotten in regard to metered gas?

A. Yes, I do.

Q. Mr. Hammer, there have been some questions here raised as to the fact that you leave off certain pressures. As a matter of fact, the only thing you vouch for here is the figures you have recorded here?

A. That is right.

Q. In other words, if it should happen there are some pressures which are recorded by the Railroad Commission which you do not have, it would be merely an oversight on your part and you are merely testifying to the figures which you have here in the exhibit?

A. That is right. Where certain data isn't contained here, it is simply a case of where the records of the Texas Railroad Commission showed no data for those periods.

Mr. March: That is all.

Mr. Keffer: That is all.

The Trial Examiner: You may step down, Mr. Hammer.

(Witness excused.)

Mr. March: I move for the admission of the exhibits, Mr. Examiner—I think the relevancy is obvious of Exhibits 294 and 295—with the understanding that the motion to strike will be in order when we reconvene in Washington, as agreed by Commission's counsel and Mr. Spencer.

Mr. Keffer: I have no objection, Your Honor, to the admission of the exhibits as such, except as to the stock objection as to the relevancy and materiality, but with the reservation to cross examine further concerning them if upon further check it is deemed desirable.

Cotner and Crum Report

Commission Counsel introduced into evidence an article entitled, "Geology and Occurrence of Natural Gas in Amarillo District, Texas," by Victor Cotner and H. E. Crum in collaboration with other geologists, and which article was published in August, 1933, in Volume 17, Number 8, of the Bulletin of the American Association of Petroleum Geologists. This article has been designated as Exhibit 215. Said publication, in so far as pertinent in this proceeding, is as follows:

Volume 17 Number 8

Bulletin of the American Association
of Petroleum Geologists
August 1933

Geology and Occurrence of Natural Gas in Amarillo District, Texas*

Victor Cotner** and H. E. Crum***
Amarillo, Texas, and Charleston, West Virginia

Abstract

Natural gas is found throughout an almost continuous belt extending from central Beckham County, Oklahoma, northwestward to northern Moore County, Texas, and thence northward to and including Morton and Stevens counties, Kansas. This belt of productive gas territory is more than 200 miles in length and ranges from 5 miles to 40 miles in width and embraces an area of proved and semi-proved gas territory of more than 2 million acres, one of the largest and most important gas areas in the world. Gas is produced from beds of Permian and Pennsylvania age. Accumulation of gas is closely associated with deposition and folding of these beds in relation to a buried mountain range known as the Amarillo Mountains. Natural gas has been known to exist in this area since 1918. From that time it has developed in economic importance until today it occupies first place in production of natural gasoline and carbon black and is rapidly becoming the largest producer of natural gas for domestic and industrial use. Natural gas is now being transported from this district by pipe lines to such distant points as Chicago, Indianapolis, Denver, and Fort Worth. The writers discuss the geologic occurrence of the gas and set forth production data in connection with its utilization.

*Presented before the Association at the Oklahoma City meeting March 24, 1932. Manuscript received, March 10, 1932. Reprinted from Geology of Natural Gas, a special symposium on world occurrence and geology of natural gas which will include authoritative papers on the gas fields of North America, Europe, and Asia. Geology of Natural Gas, now in manuscript form, will contain more than a thousand pages.

**Columbian Carbon Company.
***Idem.

Acknowledgment

The following geologists have contributed material or criticism in the preparation of this paper, to all of whom the writers express their appreciation: L. M. Oles of the Prairie Oil and Gas Company; J. D. Thompson, Jr., consulting geologist; W. E. Hubbard of the Humble Oil and Refining Company; T. F. Newman of the Skelly Oil Company; Frank T. Clark of the Empire Gas and Fuel Company; and Richard W. Camp of the Consolidated Gas Utilities Company.

Introduction

The Amarillo district embraces the Hugoton district of southwestern Kansas, the Oklahoma Panhandle, the Texas Panhandle, and the Sayre district of southwestern Oklahoma. This area, with the exception of the Sayre district, lies in the High Plains Province. The Sayre district lies just below the rim rock which borders the High Plains Province on the east. The High Plains Province is an almost treeless plain covered with alluvial deposits except along the larger streams where erosion has cut deep canyons in which the underlying Triassic and Permian strata are exposed.

Production of gas in this district is closely associated with a system of buried mountains or granite ridges extending northwestward from the Wichita Mountains of Oklahoma. The sedimentary formations which overlie these buried mountains have been folded into an arch over the granite core and form an immense anticlinal fold into which the gas and oil have migrated and accumulated. From the crest of the anticlinal fold the beds dip away northeastward into the Anadarko basin, southwestward into the West Texas Permian basin, and westward in the Dalhart basin. Separate domes and basins occur within the area, but these features are probably related to the principal mountain system. On the northwest insufficient drilling has been done to define clearly the limits of the district. Figures 1 and 2 set forth these relationships.

Economic History

Gas in this district was discovered in northern Potter County, Texas, in December, 1918. This discovery was on a surface anticlinal fold surveyed by Charles N. Gould, geologist, and called the John Ray dome. Drilling of the

discovery well was recommended by Gould, and gas was encountered at a depth of 2,605 feet. The first commercial well in the Sayre district, Beckham County, Oklahoma, was completed in July, 1922, gas being encountered at a depth of 2,755 feet. Gas was discovered in Seward County, Kansas, in December, 1922, but not until May, 1927, when the first gas well of Stevens County was brought in by the Independent Oil and Gas Company at a depth of 2,617 feet, did this district become important. In 1925 and 1926 several gas wells were completed in Texas County, Oklahoma. All of the discovery wells were similar in that they started at or close to the same geologic horizon, penetrated similar strata, and encountered the first showings of gas in the dolomite series of Permian age. This similarity was readily noted at the time but that these wells had roughly defined the extent of the immense gas field which we know today was not recognized until long afterward. They were considered to have opened separate and local fields.

The discoveries of gas in this district were made during the search for oil, and the finding of gas was not hailed with enthusiasm. The search for oil continued with the result that the proved gas areas have expanded to their present known limits. Only since trunk lines have been laid to distant markets has an effort been made to develop the gas reserves. Immense volumes of gas were encountered in wells which succeeded in producing oil. In the early development of the oil fields, little effort was made to conserve this gas and the wastage was enormous. Later the operators adopted conservation methods of drilling through the gas strata with less wastage of gas.

There are now eight counties in the Texas Panhandle from which gas is being marketed, while in four others gas has been found in commercial quantities. Gas has been found in two counties in the Oklahoma Panhandle, one of which is marketing its product. The Sayre district, in Beckham County, Oklahoma, has been marketing gas in limited quantities since 1923. The Hugoton district, in southwestern Kansas, has many shut-in gas wells which are being connected to trunk lines. Lines are now carrying gas from the Amarillo district to such distant markets as Chicago, Des Moines, Indianapolis, Denver, Midland, Wichita

Falls, Enid, and Kansas City. This marketing development has taken place principally during the past four years. Lines under construction will soon extend the markets to include St. Paul and Minneapolis.

Geology Pertaining to Occurrence of Natural Gas

Regional Stratigraphy

Table I shows a correlation of geologic formations which are found in the Amarillo district and the neighboring districts. Gas occurs in the lowest formations of the Permian and the highest formations of the Pennsylvanian, these beds having been deposited in and along the southwest flank of the Anadarko basin and the north flank of the West Texas Permian basin. The Granite wash and the "Gray lime," both of Pennsylvanian age, show definite evidence of shoreline deposition. Along the flanks of the buried mountain range, there is a progressive overlap of formations against the granite core (Fig. 2). The "Gray lime" is confined, except in the low gaps, to the flanks of the ridge, while the dolomite and anhydrite series, both of Permian age, were deposited over the mountain ridges. There are two known possible exceptions where the granite peaks are found in contact with the "Red Cave" and even in these localities there is evidence that the dolomite and anhydrite have been removed subsequent to deposition. There is an unconformity at the top of the anhydrite and possibly an unconformity at the top of the "Gray lime."

Producing Horizons

The producing horizons of this district are the dolomite series of Permian age, the "Gray lime" of Pennsylvanian age, and the granite wash of Pennsylvanian age. Figure 2 shows cross sections of the gas-producing counties. These sections are built up from wells logs and sample data and show the structural attitude of the producing horizons, erosional and depositional features and their relation to the granite ridge.

The most widespread gas-producing horizon is the dolomite series, which is productive in the higher portions of the

Table 1
Correlation Table

	Eastern New Mexico	Texas Panhandle	Western Oklahoma	Southwestern Kansas
Tertiary	Caliche			
				Cretaceous
Triassic	Chinle Shinarump Moenkopi	Trujillo sandstone Tecovas shale		
Permian	Red Beds	Quarter-master	Quarter-master	Big Basin
	Rustler dolomite Salt series	Alibates Cloud chief	Cloud Chief Day Creek	Cloud Chief
	Anhydrite and sand	Whitehorse	Whitehorse	Whitehorse
	San Andres	Blaine	Dog Creek Blaine	Dog Creek Blaine
	Glorietta	San Angelo-Duncan	Chickasha-Duncan	Flowerpot Cedar Hills Salt Plains Harper
	Yeso	Salt series Red Cave	Hennessey-Garber	Hennessey Wellington
	Abo	(		Wellington
		(Anhydrite	Wellington	Marion
		(Dolomite	Stillwater	Chase
		(		Council Grove
		(		
Pennsylvanian	Magdalena	("Gray lime" "Big Lime"	Wabaunsee	Wabaunsee
		(		
		(		
		Granite wash		
Mississippian (?)		Chert and siliceous limestone		Boone(?)
Ordovician(?)		Frosted sands dolomite, and limestones		Simpson(?)

Amarillo arch and northward across the Oklahoma Panhandle and into the Hugoton district of Kansas. This horizon consists of buff to white crystalline dolomite interbedded with gray shale. The dolomite has an colitic phase throughout the Texas Panhandle, though in the Hugoton district sands appear locally at this horizon in this series.

The "Gray lime" is less widespread, being absent in the upper parts of the Amarillo arch, in the eastern counties of the Texas Panhandle, and in the Sayre district. In the western and northern counties of the Texas Panhandle this horizon is the source of the largest gas wells. Close against the Granite ridge it contains lentils of granite wash and in other localities it shows evidence of local fracturing, faulting, and solution cavities which when encountered yield the larger wells.

The Granite wash lies immediately over the granite mass except toward the basins, where it has been found to overlie beds of probable Mississippian or Ordovician age. Granite wash is the resulting material derived from disintegration of the granite mass following mountain-building movement. The granite gravels have been washed out from the main granite mass and have accumulated in the valleys and depressions and as alluvial deposits along the lower flanks of the mountain range. Local deposits of granite wash are found high on the granite slopes. Granite wash production is confined to the Texas Panhandle.

Gas wells have been found locally in fractures and the weathered surfaces of the granite core, the most notable being in Gray County, Texas.

Structural History

It is agreed by those who have studied the Wichita Mountains of Oklahoma and the Texas Panhandle that uplifting of this mountain system has occurred at several periods since the first movement in early Pennsylvanian time.

The uplift in the early Pennsylvanian was followed by partial erosion of pre-Pennsylvanian sediments from the uplifted portion. A barrier was formed separating the Anadarko and West Texas basins. Deposition in these basins continued until, in the later Pennsylvanian, another uplift

occurred along the mountain chain. Erosion following this movement completely denuded the granite ridge of Pennsylvanian and older sediments and the granite core itself was attacked by the forces of weathering and erosion. Oscillating shore-line conditions were brought into existence along the mountain front, and sands and arkoses from the granite ridge were being carried outward and intermingled with the shales and limestones being deposited in the basins. Arkosic limestones, shales, and dolomites are characteristic of the late Pennsylvanian sediments (Cisco-Wabaunee) close to the Amariflo Mountains.

Interfingering of arkosic material with basin sediments continued during the subsequent deposition of Permian dolomite and anhydrite until the granite peaks were entirely covered. By this time all but the very highest peaks on the ridge had been covered by dolomite.

Following the deposition of anhydrite which marked the close of the "Big lime" time another upward movement of less magnitude occurred which was accompanied by faulting and folding of the sediments. Subsequent erosion removed the anhydrite and dolomite from the highest peaks and removed part of the anhydrite from less lofty parts of the buried mountain chain. This erosion is testified by finding pieces of anhydrite and dolomite embedded in the lower part of the "Red Cave" section near and on the highest peaks. The cross sections of Figure 2 show that faulting occurred following "Big lime" time. Increase of the throw of those faults with depth indicates that this faulting occurred in the granite basement rocks during earlier movements and that the later faulting had occurred along the old lines of weakness.

The arching of Permian and Triassic beds into the anticlinal fold which is superimposed above the Amarillo Mountains has been brought about largely through subsidence of the basins and compaction of the basin sediments. Lesser movements along old lines of weakness are also indicated as having taken place during and following the deposition of these younger beds.

Structure

The structure of the sedimentary rocks which contain gas and oil in the Amarillo district consists of a broad arching of these beds over the buried Amarillo Mountains. Local structure is influenced by irregularities of the mountain range such as peaks, gaps, valleys, and fault scarps. The overlying sedimentary beds have been warped to conform with these irregularities upon which they have been deposited. The arching of the beds has been accentuated by successive uplifting of the mountains and by settling of the basins. Some minor folding along the flanks of the main uplift may be due to lateral pressures induced by the uplift of the ridge or by faulting at these periods. Figure 1 shows the regional structure of the district based on elevations on the top of the anhydrite series ("Panhandle Big lime"). Figure 2 shows cross sections of the various gas-producing counties.

It is a coincidence in the Amarillo district that the water level in each porous horizon occurs at or close to sea-level. Above the water level a band or zone of oil occurs and the upper portions of the anticlinal fold contain gas only. With this simple structural arrangement of the water, gas, and oil it is necessary only that the porous horizon lie above sea-level at the site of the test well in order to secure gas or oil production. The amount of production obtained in the proved area depends solely on the local porosity. Perhaps nowhere in the world is there an area of comparable magnitude in which oil or gas operators may proceed with their development with such assurance of obtaining the desired result. In the oil- and gas-producing counties of the Texas Panhandle, the ratio of dry holes to producing wells is 1:15; for the entire district, the ratio is 1:11. In the defined gas areas, the number of dry holes is practically negligible.

Along the general course of the main Amarillo anticline there are several local domes. The discovery well of the district was drilled on the John Ray dome in Potter County. The first oil well of the district was drilled on the flank of the 6666 dome in Carson County. The LeFors dome in Gray County is noted for its large gas wells, as is likewise the Lela dome in Wheeler County. Other domes which are

closely associated with the main uplift are the Bush dome, in Potter County, which is noted for its helium gas production, and the Sayre dome in Beckham County. The last named domes are separated from the main uplift by faults as shown by the cross sections. The Bravo dome, in Oldham County, has been tested by drilling and found to be nonproductive of oil or gas. The "Big lime" is entirely missing, the "Red Cave" resting on the Granite wash. It is an accepted belief that the Bravo dome was a land mass during "Big lime" time. Minor folds and flexures occur along the flanks of the main uplift, notably in southwestern Hutchinson County and eastern Moore County.

In the northern Texas Panhandle, the Oklahoma Panhandle, and the Hugoton district of Kansas no anticlinal folding is known to exist which is comparable in area or in structural relief with those here described. In these areas the structure appears to be monoclinal with the gas accumulating up-dip in porous dolomite or sandstones which lens out up the dip westward. However, further development of these areas and the drilling of magnetic "highs" may yet demonstrate some anticlinal folding.

In determining the location of buried granite ridges in this district the magnetometer has proved very accurate and, because of the close association of gas and oil occurrence with these granite ridges, this instrument has demonstrated its commercial value. Magnetometer surveys in the Amarillo district have not only delineated granite ridges, but they have also indicated the location of faults. The northern portion of the district has been mapped in great detail by the magnetometer, but insufficient drilling has been done to demonstrate whether the "highs" which have been found reflect the presence of similar granite ridges. South of the Amarillo Mountains several test wells have been drilled on magnetic "highs," but the drill failed to show other than normal conditions. Whether other influences than the granite basement were affecting the instrument or whether the interpretation of the readings in these early surveys was at fault is not known.

Reservoir Rocks

The reservoir rocks of the gas and oil fields of this dis-

trict consist of dolomite, limestone, sandstone, and arkose (granite wash). The dolomite is white to buff crystalline or colitic. It occurs as a blanket formation over almost the entire district, retaining an average thickness of 250 feet. In a driller's log the first recorded showing of gas generally marks the top of this formation. Because of the variability in thickness of the overlying anhydrite series, geologists are noting carefully this datum point for constructing contour maps. The largest production comes from the colitic zones. As shown by the cross section in Figure 2, the dolomite thickens basinward. The limestone is referred to locally as the "Gray lime." It lies next below the dolomite series in the geologic section. It does not produce oil or gas east of central Gray County, Texas. Production from the "Gray lime" is due to the presence of dolomitic and arkosic phases and to the occurrence of fractures. In Moore County this formation accounts for the oil production and for most of the gas production. This formation likewise thickens rapidly basinward.

The arkose in this district is known as Granite wash. It varies in character from fine granite sand to large granite boulders. Where most productive of gas and oil, it consists of coarse arkosic sand and gravel. Its porosity is highly variable along the flanks of the anticline, due to its being impregnated locally with red shales or lime cementing materials. Where no red shales or cementing materials are present, this formation is the most highly productive in the entire district. The gas of the eastern Texas Panhandle comes almost entirely from the Granite wash, because throughout most of this area the dolomite and "Gray lime" are missing at the gas-producing datum levels. The Granite wash is also important as a gas producer in northern Potter County. It is known to exceed a thickness of 700 feet locally.

Closely related to the arkose horizon, and difficult to distinguish from it, is the zone of weathered and fractured granite in place. A study of the granite surface at the outcrop in the Wichita Mountains of Oklahoma shows that

weathering has produced a large number of fractures and joints in the granite and also that leaching out of the ferromagnesian minerals has left cavities in the granite which are an ideal reservoir for gas and oil accumulation. Large wells have been encountered in this zone, notably in Gray and Wheeler counties.

A striking feature of the producing horizons is their remarkable continuity. The dolomite is practically continuous and its porosity is notably uniform throughout the area. The "Gray lime", although not present except locally over the ridges, produces gas or oil in a continuous band 60 miles in length. The Granite wash, although present only locally on the ridges, produces gas or oil in a continuous band for a distance of more than 70 miles.

Reservoir Cap Rocks

The reservoir cap rocks of the Amarillo district may be classified as primary. Gas or oil is found in the dolomite when the drill has penetrated through the impervious anhydrite series. In the "Gray lime" producing horizon, the gas is found usually beneath a bed of shale or dense limestone which constitutes the cap rock. As a general rule, the upper part of the Granite wash contains beds of red shale and it is only after the drill has passed through these red shales that oil or gas is encountered. It would seem, therefore, that the cap rock beneath which oil or gas is found in this district is in its original state and has not been altered to its present impervious condition.

Oil

In this district oil occurs within the same reservoirs as the gas and water, there being no classification of "oil sands," "gas sands," and "water sands."

To date no oil has been encountered in the Hugoton district, and the Oklahoma Panhandle has had but one showing of oil, while the Sayre district had two or three commercial wells during its early life. The Panhandle of Texas

has been a major oil-producing district since the fall of 1925. The oil is produced from twenty-seven localities or so-called "pools" distributed throughout a narrow band 90 miles in length and lying along the north flank of the Amarillo arch. One minor discovery of oil has been made on the south side of the arch in Carson County in close proximity to a probable fault. No oil has been found to date on the Bush dome in Potter County, but this is not conclusive evidence that oil will not yet be found on this fold. The encountering of a small quantity of oil in the dolomite close to the Potter County fault indicates that oil may yet be expected whenever further development is carried on.

Migration of Oil and Gas

From the fact that the Anadarko basin contains carbonaceous formations in the Pennsylvanian and in the older Paleozoic rocks, though neither the presence nor absence of such beds has been demonstrated in the West Texas Permian basin adjoining the Amarillo Mountains, it is assumed that the gas and oil have migrated into the anticlinal folds from the Anadarko basin. The further fact that all of the important oil fields of the Texas Panhandle lie on the flank of the arch toward the Anadarko basin supports this view. The reservoir rocks are of late Pennsylvanian and early Permian age and the principal uplifting and folding of these beds has occurred at various times since early Pennsylvanian. Considering the origin of the reservoir rocks, it seems plausible to assume that the accumulating gas has displaced water within the reservoirs.

* * * * * *

Volume

Many wells capable of producing large quantities of gas have been drilled through the gas to the oil "pay." In the following tabulation, only wells completed as gas wells are listed. Wells have not been segregated as to the different zones from which they may be producing. Initial open flows of gas wells vary from two million cubic feet in a few small wells to wells in excess of 100 million. The production is dependent upon local porosity. Wells near to each other may vary considerably in open flow volume, but their rock pressures are the same. Certain areas develop large open

flows, but almost in the center of such areas very small wells may be encountered, which is due either to a granite peak cutting out the porous zones or red shale cementing the Granite wash or the dolomite zone being less porous. The 703 gas wells of the Panhandle district show an average open flow of 26.8 million cubic feet per day.

Table II

Annual Completions, Texas Panhandle

Year	Number of Gas Wells
1926 and earlier	62
1927	92
1928	140
1929	144
1930	169
1931	69
1932	27
Total to date	703

Table III

Gas Wells in Panhandle Field as of December 31, 1932

County	Number of Wells	Initial Open Flow Thousand Cu. Ft. Per Day	Average Open Flow Per Well in Thousand Cu. Ft.
Carson	165	4,950,000	30,000
Gray	118	2,209,300	18,723
Hartley	7	119,500	17,100
Hutchinson	99	2,911,600	29,410
Moore	57	1,322,700	23,205
Potter	36	879,100	24,419
Wheeler	221	6,443,800	29,200
Total	703	18,836,000	26,793 average for field

Table IV
Estimated Gas Withdrawals from Texas Panhandle

Year	Thousand Cu. Ft. by Public Utilities Companies	Thousand Cu. Ft. Casinghead Gas Treated for Gasoline	Thousand Cu, Ft. Casinghead Gas Not Treated (Blown in Air)	Thousand Cu. Ft. Blown in Air During Drilling in Gas Wells	Thousand Cu. Ft. Blown in Air During Drilling in Oil Wells
1926 & earlier	15,725,533	34,300,000	92,000,000	17,200,000	88,200,000
1927	8,825,598	263,800,000	144,000,000	24,400,000	64,200,000
1928	39,987,176	330,500,000	114,000,000	30,000,000	19,500,000
1929	84,767,509	395,110,000	90,000,000	25,800,000	30,000,000
1930	81,175,878	412,796,000	70,000,000	27,800,000	24,800,000
1931	86,538,708	346,255,000	50,000,000	9,800,000	6,500,000
1932	x97,168,645	x281,524,155	32,940,000		
Total	414,180,047	2,064,285,155	592,940,000	135,000,000	233,200,000

Total estimated withdraws from field 3,439,405,202 thousand cubic feet.

During 1931 there were 69 gas wells completed for an average open flow of 26,262,000 cubic feet per well.

During 1932 there were 27 gas wells completed for an average open flow of 23,215,000 cubic feet per well.

Annual withdrawal figures are not available in accurate amounts. Many statements have been made as to gas flowing to waste in the Panhandle field, but, due to the large area included in the drilling operations, the figures have probably been only a rough estimate.

Table IV shows an estimate of the total gas withdrawn from the Panhandle field from its first development until January 1, 1933. The estimate presents an idea of the probable total amount of gas withdrawn from the field. Several of the items in the estimate are comparatively correct, but others are speculative and may vary considerably from the true amounts. Withdrawals by public utilities companies from 1932 show an increase over 1931 due to the completion of several major gas pipe lines during 1931. During the same period there has been a reduction in casinghead gas volume.

The producing area of the Texas Panhandle field is estimated at approximately 1,300,000 acres (Fig. 3). Of this amount, 100,000 acres has been drilled for oil production, although this has not been fully drilled up and may not all be productive of oil in paying quantities. Of the total gas area, that part on which initial volume of 10 million open flow per well or larger may be expected consists of approximately 896,500 acres. Initial volume contours of the field would show that a belt of small volumes extends around the outer edge of the producing area. Some small areas of less than 10 million volume exist within the larger open flow areas, being due to porosity factors previously mentioned.

Pressures

The rock pressure of Panhandle field is sub-normal, being less than half the normal hydrostatic head, and is uniform throughout the area, excepting the Bush dome in Potter County. The fact that pressure is equal and uniform in all productive zones indicates communication of the porous strata at the unconformity along the surface of the buried granite ridge.

The controlling pressure factor is not definitely known. The porous strata of the producing zones do not crop out at any known place in the form in which they are found in the wells. The character of the producing strata changes to shales and non-porous materials where their equivalents crop out. It is therefore assumed that at this time the producing zones are not exposed to a definite known hydrostatic head as a source of supply and that the pressure now existing was created when the producing zones were exposed to sea waters of former times. However, some geologists attribute the pressure to the hydrostatic head originating where the sedimentary rocks are in contact with the granite in the Wichita Mountains in Oklahoma at approximately 1,000 feet above sea-level.

The initial rock pressure of the Panhandle field was 430 pounds per square inch. Variations of 10 pounds have been noted on well completion records which may have been due to inaccurate gauges.

Decline in pressure is greatest throughout the areas developed for oil. This has been caused by the withdrawals of immense quantities of casinghead gas as well as gas wasted when drilling through gas strata to the oil "pay." From the developed oil fields the pressure increases rapidly into the main gas-producing areas.

The following data give some idea of the present rock pressures in the gas-producing areas. The pressures were taken in June, 1931, at gas wells only.

Most of the rock pressures in the producing oil areas are considerably lower than those given in Table V.

The Bush dome in Potter County had an original rock pressure of 723 pounds. The pressure in December, 1931, was approximately 710 pounds.

Table V

County	Maximum Pressure in Pounds	Minimum Pressure in Pounds	Number of Wells Gauged	Average Pressure in Pounds
Carson	430	300	88	353
Gray	425	245	32	355
Hartley	426	425	4	425
Hutchinson	410	155	28	363
Moore	430	374	33	420
Potter	428	400	33	418
Wheeler	430	314	86	386

Recoveries

The great variation of open flow of wells in the Texas Panhandle indicates considerable differences both in porosity and thickness of the pay strata. Porosity is the main factor. This is probably substantiated from well-log records on pay thickness. Also with the different pay horizons it can readily be seen that estimates of reserves in the field should be calculated by the pressure-decline method. With this method it will prove difficult to obtain accurate results due to the fact that the area of the field is so large that simultaneous records of the wells are difficult to obtain as to withdrawals and pressures. Many estimates have been made on recovery

per acre by engineers for the pipe-line companies, the more recent estimates ranging from 12 million to 17 million cubic feet per acre. In 1927 C. Max Bauer, assuming that the ultimate recovery would be 50 per cent, estimated the total recoverable gas in the reservoir at 4,436 billion cubic feet, but there are more data available at this time. Accordingly the Bauer estimate of total gas per acre was 9.2 million cubic feet.

As no water is present, on structure, in the gas pays or directly under them, the Panhandle field will no doubt have an ultimate recovery of all gas in the reservoir with the exception of a very small percentage.

It is now estimated that there are 896,500 acres in the Amarillo district in which wells will be completed with an average initial open flow of 10 million cubic feet or more; that the average thickness of "pay" is 65 feet; the average porosity is 20 per cent; and the initial reservoir pressure was 430 pounds per square inch. Reduced to a 2-pound base, the preceding data give an estimate of 15,289,000 cubic feet per acre, and an original reservoir content of 13,706,588.5 million cubic feet of gas.

In addition to the foregoing area, there are gas-bearing areas of smaller open-flow volumes and oil-field areas in the Amarillo district which must be considered. These areas are estimated to cover 403,500 acres. They include localities where wells are expected to produce less than 1 million cubic feet on completion. It is estimated that 6 million cubic feet of gas per acre will be recovered from these areas, giving an additional reservoir content of 2.4 trillion cubic feet, and a total original reservoir content of 16.1 trillion cubic feet or gas in the Amarillo fields.

The foregoing figures are simply an estimate and must be considered as such, but are given in order to show the tremendous amount of gas within this great reservoir.

If it is assumed that estimates of gas withdrawals in Table IV are approximately correct, there is now an approximate reserve of 12.7 trillion cubic feet of gas in the Panhandle field at this time, or about 79 per cent of the original amount.

Ultimate recovery per well will no doubt show marked variations. The following data are from a gas well in Gray County and are given as an example of recovery per well in an area where there are no near-by offsets. The records show that 4,327 million cubic feet of gas were withdrawn in a period of three years; rock pressure declined 20 per cent; and the open-flow volume declined 42 per cent. A gas well in Potter County has produced 14,840 million cubic feet of gas to date, while the pressure declined from 430 pounds to 395 pounds. A gas well in Wheeler County has produced 7,970 million cubic feet of gas to date. These wells are special cases and do not represent an average.

During 1931 the Panhandle field produced 21,137,355 barrels of oil. During 1932 it produced 18,014,920 barrels of oil making a total to December 31, 1932, of approximately 194 million barrels of oil produced from this field.

Utilization of Gas

Table VI shows that approximately 4,200 miles of major gas pipe lines have been built to take gas from the Panhandle. This does not include any lateral or branch lines. The major gas lines have an estimated daily capacity of 887 million cubic feet per day and the local lines a capacity of 80 million cubic feet per day, or a total pipe-line capacity of 967 million cubic feet per day.

There are several other smaller pipe-line companies serving local towns in the Panhandle district.

Gasoline Plants

Most of the casinghead gasoline plants are of the absorption type and are operated on direct well pressures and by compressors. On January 1, 1931, there were 50 casinghead gasoline plants in the Texas Panhandle, estimated to have a daily capacity of 1,024,500 gallons and capable of treating 1,407 million cubic feet of gas daily.* There are also 5 gas-

*Editor's Note.—According to testimony at a hearing before the Texas Railway Commission at Pampa, Texas, February 15, 1932, about 1 billion cubic feet of gas is passed through natural gasoline plants daily. About 530 million cubic feet of the residue gas is used daily for the manufacture of carbon black and sold to gas transmission lines, and approximately 470 million cubic feet of residue gas is wasted to the air or burned by flares.

Table VI

Pipe Lines Obtaining Gas From Panhandle Field

Company	Size in Inches	Length in Miles	Daily Capacity Thousand Cu. Ft.	Withdrawal for 1932 in Thousand Cu. Ft.	Terminal
Amarillo Oil Co.	12	45	30,000	1,545,278	Amarillo, T
Canadian River Gas Co.	22-20	340	125,000	12,170,499	Denver, Co
Central States Power & Light				504,172	Pampa, Tex
Cities Service Gas Pipe Line	20	400	125,000	27,677,064	Kansas City Mo.
Consolidated Gas Utilities	14	180	35,000	6,902,258	Enid, Okla.
Lone Star Gas Co.	18	200	50,000	7,318,658	Petrolia, T
Natural Gas Pipe Line of America	24	925	175,000	26,198,952	Chicago, Ill.
Northern Gas & Pipe Line Co.	24-20	850	150,000	1,836,679	Rochester, Minn.
Panhandle-Eastern Pipe Line	24-20	1,100	150,000	2,449,215	Indianapoli Ind.
Panhandle Power & Light Co.	8		10,000	279,181	Local—Tow in Panhan district
Public Service Corp.	6		7,000	357,806	Local—Tow in Panhan district
South Plains Pipe Line Co.	16	260	35,000	3,479,360	Midland, T
Shamrock Gas Co.	6		8,000	138,529	Shamrock, Tex.
United Gas Co.	16-14	170	42,000	4,655,581	Wichita Fa Tex.
U. S. Government	6		10,000	848,146	U. S. Helium Plant

oline absorption plants on natural gas lines in the district having a daily capacity of 357 million cubic feet.

Not all plants are now operated at capacity. Because of the decline of flush oil production, and proration of oil properties, the casinghead plants operated at only 4/5 of their rated capacities during 1931. Gasoline recovery plants on natural gas transmission lines operate according to gas passed through the pipe lines.

Carbon Black

The large quantities of casinghead gas being produced from the oil wells in the Texas Panhandle created a favorable condition for the manufacture of carbon black. During the early development of drilling wells the gas was blown into the air and wasted. Gasoline extraction plants were soon erected to extract the gasoline from this casinghead gas. The residue from the casinghead plants was used for fuel

Table VII

Casinghead Gasoline Plants in Texas Panhandle

County	Number of Plants	Daily Capacity in Gallons	Estimated Daily Capacity Thousand Cu. Ft. Gas
Carson	9	86,000	177,000
Gray	19	522,500	558,000
Hutchinson	18	386,500	610,000
Moore	1	3,500	9,000
Wheeler	3	30,000	53,000
Total	50	1,028,500	1,407,000

Line Gasoline Plants (Dry Gas)

County	Number of Plants	Daily Capacity in Gallons	Estimated Daily Capacity Thousand Cu. Ft. Gas
Wheeler	1	15,000	40,000
Potter	2	20,000	50,000
Moore	1	30,000	75,000
Hutchinson	1	75,000	192,000
Total	5	140,000	357,000

Table VIII

Gasoline Produced in Texas Panhandle

Year	Gallons	Estimated Total Thousand Cu. Ft. Gas
1926	13,209,047	35,600,000
1927	97,105,711	269,500,000
1928	123,900,155	343,300,000
1929	206,885,321	419,700,000
1930	317,733,716	439,600,000
9131	270,260,000	374,700,000
1932	226,779,672	352,887,000
Total	1,256,873,622	2,235,287,000

on the leases, but this required only a small fraction of the total. In September, 1926, the first residue gas was burned for the manufacture of carbon black. The carbon industry continued expansion during 1927, 1928, and 1929. The greatest construction program was during 1928. No new plants were built during 1931.

With the close of 1929 the production of carbon black had become equally as important, in the Texas Panhandle, as the production of oil and casinghead gasoline. At the close of 1930 there were 25 carbon plants in the Texas Panhandle with a combined daily capacity of 862,700 pounds of carbon black and capable of burning approximately 567,765,000 cubic feet of gas per day.

Carbon black plants in the Texas Panhandle comprise 58 per cent of the total capacity of all plants in the United States. In 1930 the Texas Panhandle plants produced 67.7 per cent of the total output of carbon black in the United States. About 1.5 pounds of carbon black are produced from 1,000 cubic feet of gas. Practically all of the plants are of the channel type. Only residue gas from casinghead gasoline plants is used in making carbon black.

Composition and Properties

The composition of natural gas in the Panhandle fields varies to some extent according to the reservoir and locality. Table X shows representative analyses.

Table IX

Carbon Black Plants in Texas Panhandle

Counties	Number of Plants	Daily Capacity in Pounds
Carson	2	86,800
Gray	8	301,400
Hutchinson	12	450,500
Wheeler	3	24,000
Total	25	862,700

Carbon Black Production in Texas Panhandle

Year	Pounds Made	Estimated Amount of Gas Used in Thousand Cu. Ft.
1926	2,566,000	1,890,000
1927	15,791,000	11,280,000
1928	60,228,000	43,020,000
1929	199,104,000	136,374,000
1930	254,844,000	168,104,000
1931	186,600,000	120,387,000
1932	177,812,000	118,591,000
Total	896,945,000	599,646,000

There are "sour" and "sweet" gases in the Texas Panhandle district. "Sour" gas is found largely in the line producing areas of the Borger district. "Sour" gas is also produced by some wells in Gray, Moore, Carson, and Potter counties. A "sour" gas contains from 5 to 200 grains of hydrogen sulphide per 100 cubic feet; a "sweet" gas contains 5 or less grains of hydrogen sulphide. Chemists state that most of the sulphur in the gas from the Granite wash zone is in the form of ethyl, prophyl, and butyl mercaptans rather than hydrogen sulphide. No "sour" gas is being taken by the pipe lines at this time.

The gasoline content of "lean" gas produced in the strictly gas areas of the Texas Panhandle varies somewhat. In general it can be stated that the lower a well is located on the north flank and the closer a well is to the oil-bearing areas, the higher the gasoline content of the gas. Natural gas

delivered to transmission pipe lines in the Panhandle district has an average gasoline content of 0.33 gallon per 1,000 cubic feet of gas.

Table X

Analysis of Panhandle Gas

	Composite Samples Wheeler County		Gas Well Carson County	Composite Sample Casinghead Gas, Gray County
	No. 1	No. 2		
Oxygen	0.22	0.40	0.40	
Carbon dioxide	0.00	0.10	0.30	
Nitrogen	1.59	2.10	1.80	
Methane	92.30	91.25	90.58	89.02
Ethane	3.09	2.80	3.70	4.02
Propane	1.81	2.09	1.37	4.20
Butane	.93	.82	1.08	2.90
Pentanes and heavier	.56	.44	.57	1.86
Gasoline content GPM	.329	.307	.342	1.068

The gasoline content of casinghead gas varies greatly, and seems to be partially reflected by the gas-oil ratio. The average gasoline content is about 0.75 gallon per 1,000 cubic feet. It ranges from 0.36 gallon to 2.00 gallons per 1,000 cubic feet.

Natural gas from reservoirs on the Bush dome in Potter County contains 2 per cent helium. This gas is treated at the United States Bureau of Mines helium plant for the recovery of helium.

Gas-Oil Ratio

Oil wells in the Panhandle have no uniform gas-oil ratio. The oil wells produce varying quantities of gas with the oil depending upon casing points and whether the gas strata are in contact with or separate from the oil strata.

Gas-oil ratios vary from 500 cubic feet of gas per barrel of oil to more than one million cubic feet of gas per barrel of oil. Data compiled in 1930 gave the western part of the Texas Panhandle fields a ratio of 29,450 cubic feet of gas per barrel of oil and the eastern part of the field a ratio of 9,780 cubic feet per barrel of oil. Average figures for such

a large area may be in error. We do not feel that an average gas-oil ratio can be applied to the entire producing area or even to individual pools.

Water

Surface water is generally encountered in the first 200 feet of formations drilled. Several other water-bearing horizons are encountered at various depths above the pay zones, depending on the location of the well. The first water-bearing horizon is encountered about 300-400 feet above the top of salt, and the second either in the top of salt or immediately above. No water is encountered from this last point to the oil bearing horizons unless it is pocket water, but water is uniformly encountered at sea-level depths. This lower water is known as bottom or edge water and is encountered around the edge of the oil-producing area. Where encountered about sea level the reservoir yields water freely when penetrated. It is a saline water high in chlorides and also contains some sulphates.

Status

There is an oil-water contact in the oil-producing areas along the north flank of the Amarillo structure and a gas-water contact exists along the west and south edges of the field. This was the original status when drilling began and only the oil-producing areas have been seriously affected by water encroachment and coning. Very little lateral encroachment has occurred except in areas depleted of oil and gas. Coning is the greater trouble in the oil areas due to too rapid withdrawals of gas and oil. There being no bottom water present high on the structure in the gas-producing zones, no encroachment and coning of water can occur as a result of rapid withdrawals and thus cause reduction of pressure.

The water level occurs in each producing stratum at or near sea-level.

Testimony of Harry F. Stevens

Available Reserves Under Present Canadian River Wells

Commission Counsel introduced testimony through Harry F. Stevens, Commission Engineer, with respect to the available reserves under present Canadian River wells.

Mr. Stevens is employed by the Federal Power Commission at Washington, D. C. in the capacity of Associate Engineer, and has been so employed since May 16, 1939. He stated his qualifications (Vol. 53, pp. 7366-7370) as follows:

"My college education consisted of three years at the United States Naval Academy, Annapolis, Maryland, and two years at the Colorado School of Mines, Golden, Colorado. I graduated from the latter in 1923 with a degree in Petroleum Engineering.

"My first employment after graduation, starting in June 1923, was with the Empire Oil & Refining Company at Bartlesville, Oklahoma, as a Junior Engineer. The plan of the Junior Engineering course was to provide experience in various branches of the oil and gas industry. My experience on this course consisted of assignments to various activities described briefly as follows:

"1. Keeping time and costs on a gas pipe line construction job in Kansas.

"2. Keeping time and cost on extension of city distribution system in Arkansas City, Kansas

"3. In charge of construction of a small oil pipe line near Cushing, Oklahoma. In addition to supervision, the work included the keeping of time and progress sheets, the book work related to the job, and testing of the line.

"4. Refinery assignments, Tulsa and Cushing, Oklahoma.

"5. General lease production work in the El Dorado field, Kansas.

"In June 1924, I was transferred to Henry L. Doherty Company, New York, where I remained until approximately March 1927. During this time, my work consisted principally

of statistical analysis and investigation of oil shale and oil shale processes.

"In March 1927, I was transferred to Empire Oil & Refining Company at Bartlesville, where for a year I was engaged in search and investigation of oil producing properties which might be repressured. Also during this year, I worked out a unit plan for production of oil and gas.

"In the first part of 1928, I was temporarily transferred to Cities Service Gas Company for the purpose of testing and reporting on the production of Missouri-Kansas Pipe Line Company. I was then permanently assigned to Cities Service Gas Company for the purpose of developing underground gas storage in depleted fields, for their system. During this period, extending to October 1936, I participated in every phase of this activity, from investigation through control of fields, testing of fields, and repair of wells to analysis of operation, and wrote approximately sixty engineering reports in connection with the work. During the work on gas storage, the company put into operation three gas storage projects at strategic points in its system for relief of peak load or emergency conditions. Its total capacity, I believe, was and now is the largest in the country for the purpose to which it is devoted. A fourth project was about to be put in operation at the time I left the employ of this company. During the period of work on gas storage, all methods of gas storage were investigated and reported. The analysis of gas storages dealt with inputs and withdrawals of gas and with the corresponding pressure changes, for the purpose of determining whether any gas was being lost from the structure. This analysis, each time it was done, constituted essentially an estimate of reserves. In the latter part of the period with Cities Service Gas Company I also made the monthly production report for the company.

"The companies listed in the foregoing covering experience from June 1923 to October 1936 were subsidiary companies of Cities Service Company, except Henry L. Doherty & Company, which was a management company for other Doherty interests.

"In October 1936 I went with Stanolind Oil & Gas Company, Tulsa, Oklahoma, as a Petroleum Engineer. My

work with this company consisted of preparation of engineering reports on petroleum engineering problems, described briefly as follows:

"1. Geological and engineering study of salt domes;

"2. Investigation of and recommendations for solution of current production problems from both physical and economic points of view;

"3. Recommendations for development, from both physical and economic points of view;

"4. Analysis of reports from field offices, and recommendations thereon;

"5. Analysis of well spacing problem—siliceous lime fields of Kansas;

"6. Investigation of and proposals for development of new oil fields with respect to economics of unitized development and to conservation of resources;

"7. Analysis of the unit principle of development with respect to equity of all parties concerned;

"8. Repressuring investigation of a Permian lime oil field, Texas;

"9. Proposals on exploitation of new markets for oil products.

"From May 16, 1939 to the present time I have been employed by the Federal Power Commission as Associate Engineer. My duties for this period include the following:

"1. Collection of the equivalent of approximately 30,000 pages of data on the Panhandle Texas gas fields, covering approximately six months;"

This parenthetically is the same work referred to by Mr. Hammer in his discussion of experience. We were both on that assignment.

"2. Discussion with representatives of numerous companies concerning various problems relating to the Panhandle gas field;

"3. Analysis of Panhandle field data, and preparation

of exhibits for the current hearings involving the Canadian River Gas Company and the other companies involved."

Q. Mr. Stevens, in connection with your qualifications, the last paragraph on Page 1 and continuing to Page 2, where you refer to your work in connection with the study of underground storage, where you speak of the storage gas, do you mean underground storage?

A. Yes.

Q. In natural reservoirs?

A. Yes.

Q. That work is still being carried on?

A. Yes, it is. They are using those projects.

Q. Of course, in your qualifications you spoke of storage and I want it clearly understood that it is underground storage of gas in natural reservoirs.

A. That is right.

Mr. Stevens prepared and submitted Exhibit 182, and testified with respect thereto (Vol. 53, pp. 7371-7386) as follows:

Q. I will ask you whether you have prepared an exhibit entitled "Estimate of Recoverable Gas Reserves"?

A. Yes.

Q. And when you speak of present wells, as of what time do you refer to?

A. I refer to December 31, 1939.

Q. Is this the exhibit I now show you?

A. Yes.

Mr. Lange: We would like to have this marked for identification.

The Trial Examiner: It will be marked for identification as Exhibit No. 182.

(Exhibit 182, Witness Stevens, marked for identification.)

By Mr. Lange:

Q. Mr. Stevens, will you turn to Exhibit No. 182, turning to the first page in that exhibit where you have included a written statement?

A. Yes.

Q. Will you read that statement into the record?

A. "This exhibit is prepared for the purpose of esti-

mating the reserves of gas that will be recovered by Canadian River Gas Company from their present wells, as differentiated from recoverable reserves under leases, the latter to be recovered by present wells plus future development.

"Recoverable reserves are estimated on production data for the last four years and pressure data for the last five years. In the matter of pressure, the 1935 pressure is, of course, the pressure point at which the 1936 production begins. The reason for adopting production data and related pressure data for the last four years is that for this period field data are considered to be the most dependable. The pressures are mid-year pressures taken by the Railroad Commission of Texas, and the production figures are for the year ending July 31, comparable to the time at which the pressures were taken.

"A general reason for considering the production and pressures of the total quadrants of which Canadian River wells have a part, is that in projecting into the future some weight is given to the interrelation of factors affecting production for any given part of the wells, such as the Canadian River wells.

"Recoverable reserves have been estimated by quadrants, the same method being used for all quadrants. The method is described as follows:

"1. The production for the total quadrant is accumulated by years for the last four years and plotted against corresponding pressures. The 1935 pressure is plotted against zero production. Through the points so plotted is drawn the mean curve which is extended to intersect a line drawn through the assumed abandonment pressure of 25 pounds gauge at the well head.

"2. The reading of this intersection on the horizontal scale is the estimated recoverable reserves for the quadrant as of July 31, 1935.

"3. To obtain the recoverable reserves for the wells as of July 31, 1939, we subtract the production for the period of July 31, 1935 to July 31, 1939, giving the future expectancy for the latter date.

"4. After consideration of the ratio of Canadian River well production to the total quadrant production, it was found that the overall ratio existing for the year 1939 was approximately the same as if the period of the last three years was considered. In any event it would appear that the 1939 ratio should be given major weight in determining what proportionality should be assumed for the future. The ratio of Canadian River production to total quadrant production was then assumed as that ratio which could be expected for the future on the premise that they would continue to capture that proportion of the recoverable reserves of the quadrant. This ratio was calculated from the two production data columns on the left side of the tabulation.

"5. The recoverable reserves, or future expectancy, of the quadrant was then multiplied by the ratio calculated as described, to obtain that share of the quadrant recoverable reserves that will be produced by the present wells of the Canadian River Gas Company. The curve showing the Canadian River recoverable reserves is drawn starting at zero, to provide direct reading without subtraction of any production. Any point o the Canadian River curve can be confirmed by applying the ratio to the value of a similar point on the quadrant curve after the quadrant production is subtracted.

"The quadrant reserves are totaled and shown at the bottom of the tabulation.

"A curve showing the composite recoverable reserve, or future expectancy, of all the Canadian River wells is included along with the quadrant curves.

"It will be noted that in the case of every quadant, the mean through the plotted points is drawn conservatively.

"That is, it would have been easily possible within the bounds of reasonableness to drawn our mean at a gentler slope, which would result in its intersection with the 25-pound line at a higher reading for recoverable reserves.

"The analysis carried out as described summarizes to the following conclusions:

"1. Recoverable reserves under present Canadian River wells, 2,186.7 billions of cubic feet. (14.65 pounds.)

"These recoverable reserves are as of July 31, 1939.

Three new wells have been drilled between this date and December 31, 1939. These wells have no production record on which to base an expectancy; therefore, they are estimated on the basis of the 91 wells operating as of July 31, 1939.

"The recoverable reserves of the three new wells on this basis is 72.089 billions.

"Total recoverable reserve, December 31, 1939, including production for August 1, 1939, to December 31, 1939, 2,258.789 billions."

Q. In each instance you mean cubic feet of gas?
A. Yes.

"Less Canadian River production August 1, 1939, to December 31, 1939, 19.940 billions.

"2. Total Canadian River recoverable reserves, December 31, 1939, 2,238.849 billions.

"The tabulations and curve sheets constituting part of this exhibit are listed below:

"Tabulation—Estimate of Recoverable Reserves.

"One curve sheet showing plotting and extrapolation of data for summation of the quadrants in which Canadian River Gas Company has production.

"Nine curve sheets showing plotting and extrapolation of data by individual quadrants.

"Each of the curve sheets includes a curve for the Canadian River wells alone."

Q. Now turn to the first curve sheet following this written statement, Mr. Stevens, and briefly explain it.

A. The group of two curves shows first the extrapolated production pressure plottings of all of the wells in all of the quadrants in which Canadian River Gas Company has wells. The solid curve is the curve for those total wells; the dashed line is the curve for Canadian River's share alone; the circled points represent the plotting referred to of accumulated production for the four years ending July 31st, 1939, against corresponding pressures for those years, the pressure data and the production data are mid-year

data; that is, for the year ending July 31st for the years in question.

Q. Now, you have following that the nine curve sheets referred to in your written statement. Can you give a brief explanation of all of those and the purport of those curves?

A. All of these curves comprising the nine curve sheets are calculated and plotted in the same manner. I will explain the first one. It is also illustrative of the other eight curves.

This curve sheet—the curves thereon are plotted and the data accumulated in exactly the same manner described for the composite curve with the exception that it refers to Carson County, Quadrant 4. That factor which you see at the top center of the page is repeated on all of them and is the ratio of Canadian River Gas Company's production in 1939 to the total quadrant production for that same year. That represents the relation between the dashed curve of Canadian River Gas Company alone to the total quadrant curve which is shown in solid.

Q. Did you proceed in the same fashion in the construction of the following curves? Maybe you had better explain the next one.

A. They were drawn in the same manner.

The next one is for Hartley County, Quadrant 1, that being the only quadrant in Hartley County. This curve presents a little different appearance than the other in that it has several lines back and forth across the page which is simply a method of parallel projection which will be evident upon inspection. You will notice in this case the dashed line representing Canadian River Gas Company's wells alone is parallel to the solid line, whereas in other cases it is not. The reason for that is that Canadian River Gas Company has all the wells in that quadrant and the factor is one.

After that first curve was drawn it would have been possible to leave it there without drawing the dashed curve, but it would have been necessary to subtract the accumulated production through 1939 from any total reading that you would read at the intersection of the 25-pound line. And the purpose in this case of drawing the dashed line was simply this, that by starting it at zero whatever reading is

read at the intersection of the 25-pound line is the reading of the recoverable reserve direct and does not require any subtraction of accumulative production through 1939.

Q. Now, the next curve sheet refers to the Hutchinson County Quadrant 3.

A. Yes.

Q. Will you read the description of that and its purport?

A. That refers, as indicated, to the third quadrant in Hutchinson County. It is of the same general nature as the other curves which have already been described. This sheet has a radically different pattern than the one described for Hartley County. You will notice the lack of parallelism between the dashed curve and the solid line; the reason for that is that Canadian River Gas Company's production in relation to the quadrant reserve is not one. It only represents a portion of the quadrant production which as you will see in the top center of the page is 1167 of the Canadian River Gas Company's production to the quadrant production for 1939 which ratio was applied to the quadrant curve to obtain the Canadian River Gas Company's curve alone. By "Canadian River Gas Company's curve," I mean the curve for wells that the Canadian River has in Quadrant 3, Hutchinson County.

Q. Each of those curves as situated in the extension?

A. Yes, sir.

Q. Turn to your next curve, Moore County, Quadrant 1.

A. This curve was constructed in the same manner as the others. There is really nothing new to describe except possibly to note that each of these quadrants has a slightly different pattern relation between the Canadian River's curve and the total curve. That is entirely a matter of what the factor is, the ratio of Canadian River's production to the total quadrant production.

Q. And the next is Moore County, Quadrant 2.

A. That curve sheet was built up in the same manner as previously described. There is really nothing more to say about that except that it has been constructed in the same manner.

Q. Is there any particular explanation that you deem necessary with reference to the three remaining curve sheets in the exhibit?

A. No, there is nothing with respect to those three quadrants that should be mentioned.

Q. Turn to the typewritten table that appears following the curve sheet and explain the contents and import of that in connection with your exhibit.

A. The tabulation simply represents the summary of data used in plotting and constructing the curve already described. You will note that it is divided by the quadrants. These quadrants are the same area divisions as adopted for studies previously submitted in the exhibit presented by Mr. Hammer.

The method of obtaining this ratio of Canadian River's production to the total quadrant for the year 1939 is shown by the first two columns, one being the production for Canadian River Gas Company and one being for the total quadrant and a simple division gives you the ratio which is shown in the next to the last column.

Q. That is the column headed "Ratio: Canadian River Gas Company Production to Total Quadrant 1939"?

A. Yes, starting with .05933 and the next one is 1.000.

The third column of figures, excluding the dates, consists of accumulative total quadrant production for the year noted in the first column. That gives the figure to be plotted against the pressures which are shown in the next column to the right. There is the essential data on which the solid line curve is plotted.

Q. You are referring to your solid line curve preceding this table?

A. Yes, sir, that is right. The next two columns refer to the number of wells. Those figures contained therein represent the number of wells for the years in question, both as to Canadian River Gas Company and for the total quadrant.

The next column to the right, headed "Future Expectancy, 7-31-35," is the intersection of the curve drawn on the data previously described with the 25-pounds assumed abandonment pressure line. That figure includes all production which has been involved in the plotting of the curve. That production is shown in the next column to the right headed

"Withdrawals, Total Quadrant, for the four years in question."

It is then necessary to subtract that figure from the "Future Expectancy" which has to be done to arrive at the future expectancy as of 7-31-39. That is shown in the next column to the right. It is to this figure that we applied the ratio of Canadian River's production to the quadrant production for 1939, this ratio having been already calculated from the first two columns on the extreme left.

Multiplication of the "Future Expectancy" of total quadrants, 7-31-39, by this ratio gives the last column of figure shown in the tabulation or the futures expectancy of Canadian River Gas Company wells as of 7-31-39. Those totals, as you will see in the lower right-hand corner, amount to 2,186.7 billion cubic feet. It is from this 2,186.7 billion cubic feet that we proceed to the end of 1939.

As stated, that calculation was accomplished by taking the average of the 91 wells which simply means dividing 91 into 2,186.7 billion cubic feet and multiplying it by 3 for the new wells that were added in the latter part of 1939, which figure is 72.089 billion cubic feet.

Q. You are now relating that fact to the third page of your written statement?

A. That is right.

Mr. Lange: The pages are not numbered. They should be numbered.

The Trial Examiner: The reporter will make the changes.

By Mr. Lange:

Q. I think I interrupted you, Mr. Stevens.

A. I believe we were at the point of adding the expectancy of three new wells drilled in the latter part of 1939 which figure was obtained by multiplying the average expectancy of 91 wells by 3, constituting 72.089, which added to the expectancy as of 7-31-39 gives 2,258.789 billions as of 12-31-39, but including the production for the year, including the production for that part of the year between August 1, 1939 and December 31, 1939 in the amount of 19 940 billions cubic feet.

Of the previously stated expectancy that is the amount that has already been used up by production, and, consequently has to be subtracted. That subtraction gives you 2,238.849 billion cubic feet which is the total of Canadian River Gas Company's recoverable reserves as of December 31, 1939.

Q. Recoverable reserves of gas?
A. Yes.
Q. As of December 31, 1939?
A. Yes.
Q. Now, in connection with this study, Mr. Stevens, I will ask you whether subsequent to the preparation of Exhibit 182 you prepared a page supplementing the study down through December 31, 1940.
A. Yes, I have.

Mr. Lange: I suggest, Mr. Examiner, that this document be marked for identification as Exhibit No. 182-A.

The Trial Examiner: It will be so marked.

(Exhibit 182-A, Witness Stevens, marked for identification.)

By Mr. Lange:

Q. Now, Mr. Stevens, will you please read this supplemental page identified as Exhibit No. 182-A into the record?
A. "Canadian River Gas Company, Supplement to Estimate of Recoverable Gas Reserves, Present Wells.

"The above named exhibit was confined to wells existing as of December 31, 1939."

Q. That refers to Exhibit 182?
A. Yes.

"Three new wells were drilled in 1940. The recoverable reserves or expectancy of these new wells should be added to that of the wells previously considered, as of December 31, 1939. The purpose of this supplement is to extend the scope of the estimate of recoverable reserves to December 31, 1940 by the addition of expectancy of the three new wells of 1940, followed by the subtraction of production from all wells during 1940.

"As the new wells have no production record on which to base a future expectancy, the expectancy of each will be considered to be the average of other Canadian River Gas Company wells. This assumption is considered very conservative, as the average capacity of the three wells is approximately 43 million cubic feet, which is more than twice the average capacity of the company's other wells.

"Total Canadian River recoverable reserves, December 31, 1939, 2,238,849 billions;

"Acreage recoverable reserve, 94 wells, December 31, 1939, 23,817,543 * * *"

Q. Shouldn't there be a period there between "23" and "817,543"?

A. If we are talking in billions, as these other figures are, the point is after the "23." It should read "23.817,543."

Q. Do you want to make that correction?

A. That is supposed to be a period.

Q. The period would be after the "23"?

A. Yes.

The Trial Examiner: There appears to be a period on my copy but perhaps the official copy may not show one. In any event, it will be corrected to correspond with the witness' testimony.

The Witness: "23.817,543 billions.

"Additional recoverable reserve, 3 new wells, 71.453 billions.

"Total Canadian River recoverable reserves, December 31, 1940, including production of all wells for 1940, 2,310.302 billions.

"Less Canadian River production, 1940, 49,000 billions.

"Total Canadian River recoverable reserves, December 31, 1940, 2,261.302 billions."

By Mr. Lange:

Q. Are there any further explanations you deem necessary in connection with this supplement?

A. I don't think so. It was calculated in the same manner from one date to the next—to the final date, the final

date being 12-31-40. It was calculated in the same manner as we went from 7-31-39 to 12-31-39. This procedure is necessary because before any new wells may be added in any interval for which there is no production, we must necessarily consider those new wells to be of average expectancies since they have no production record upon which expectancy can be predicted.

Mr. Lange: That is all for the present.

The Trial Examiner: Mr. Stevens, just to make this record a little clearer here, going back to that figure we were just discussing, there appears to be a comma between 7 and 5. That comma should be stricken out, shouldn't it?

The Witness: Well, to make it correct mathematically, it should be stricken; however, if the decimal is firmly established after 23, it sufficiently identifies the figure.

Mr. Spencer: You are carrying out the decimal point to six places?

The Witness: We did there. It isn't essential and—

Mr. Spencer: But you do that here—carry it out six places?

The Witness: Yes.

The Trial Examiner: I think that is understandable, then.

Mr. Lange: I think that is all for the present.

Mr. Stevens further testified (Vol. 62, pp. 8690-8697) as follows:

Mr. March: Mr. Examiner, in checking over the record we found that Mr. Stevens left out one essential explanation in his exhibit that he should have given on direct, and an explanation that we failed to ask him about. I might ask him that question with Mr. Keffer's consent at this time.

Mr. Keffer: All right.

Voir Dire Examination.

By Mr. March:

Q. Mr. Stevens, did you use the same quadrants in

figuring the reserves under wells of Canadian River's acreage as did Mr. Hammer?

A. In general, yes, and with one exception.

Q. You mean in general, with just one exception?

A. With one exception.

Q. What quadrant was that?

A. That was the Quadrant 3, Hutchinson County.

Q. Just how does your treatment of that quadrant so far as that is concerned differ from Mr. Hammer's? Just what portion of the quadrant do you not include in your exhibit, your calculations—in what portion of the quadrant?

A. Hutchinson Quadrant 3 is a long quadrant vertically laid out on the map, and the Canadian River's wells are in the southwest portion of that, and principally for that reason consideration was made of that part of the quadrant adjacent to and inclusive of Canadian River's wells, and that part of the quadrant so described was taken as the quadrant. In other words, it was really a new areal designation for Quadrant 3 with respect to Canadian River's wells.

Q. Because Canadian River's wells were not in the northern part of the quadrant?

A. That is right.

Q. And were confined to an area in more or less the southern or southwestern part of the quadrant?

A. Yes.

Q. You will have to read for the record just exactly the wells listed in your working papers you did take in that quadrant.

A. Those wells are as follows: Johnson A-1; Bivins B-1; Bivins B-2; Bivins B-4; Dunaway A-1; Bivins B-5; Bivins B-6; Bivins F-1; Bost A-1 and Bost B-1—

Mr. Spencer: Can I interrupt you a minute?

Mr. March: Yes.

Mr. Spencer: Those are all Canadian River's wells you have read into the record so far?

The Witness: Yes, they are, that I have read so far.

Mr. Spencer: When you come to wells that are not Canadian River's wells, will you so indicate so we can get

a list of those? We know our own wells but we don't know the other wells that you have.

The Witness: Dunaway B-1, Dunaway A-2. That is all.

Mr. March: Those are all of the wells in that quadrant you utilized?

The Witness: Yes.

Mr. Spencer: Do I understand you have used no wells except Canadian River wells?

The Witness: I have used no wells but Canadian River wells.

By Mr. March:

Q. Did you designate the approximate location of those wells—you have already done that?

A. I have already done that. However, it should be pointed out that in determining the ratio to be applied we did consider the ratio production in terms of the entire quadrant which amounts to .1167 fully finished. Those things as described are the essential differences from the areal designation of Quadrant 3 on the maps.

Mr. March: Mr. Examiner, I unthoughtedly proceeded without renewing our offer of Mr. Hammer's exhibits, which was to be acted upon this morning. We renew the offer of those Exhibits 179, 180 and 191.

The Trial Examiner: Let's get through with Mr. Stevens first.

Mr. March: It will probably take all day. We want to get rid of Mr. Hammer's exhibits.

Mr. Spencer: I would like to ask him a few questions about the very thing you have injected for the moment.

Mr. March: Mr. Examiner, do I understand that the Examiner is not going to rule on Mr. Hammer's exhibit today?

The Trial Examiner: Well, let's go along with Mr. Stevens and see how we get along. I would like to have all of this in one place in the record if possible.

Mr. Spencer: As a matter of fact, I think that might expedite the whole procedure because whatever objections we have will be aplicable to both exhibits taken at the same tme.

Mr. March: There is no relation as to the two exhibits. We don't think it will expedite things a bit. If that is satisfactory to the Examiner it will be satisfactory to us.

Cross Examination (Continued).

By Mr. Spencer:

Q. Mr. Stevens, you used only Canadian River's wells in computing reserves, is that the distinction you made here? You use all of the wells or production in determining the ratio and for determining reserves under Canadian River's wells?

A. There are some other wells in there. I didn't read the complete list here. On my next page is a recapitulation which does include the other wells. This tabulation here is only for Canadian River production and there are some other wells which I should add to that of other companies.

Q. Will you read those slowly so we can write them down?

A. Yes.

Mr. March: I will say, Mr. Spencer, when we went over this last night we didn't have the working papers to check it as we should have.

Mr. Spencer: That is all right.

The Witness: These are the additional wells of other companies: Phillips N. R. Johnson No. 1—

By Mr. Spencer:

Q. All right.

A. Texoma Johnson A-1-G; Panhandle Bost 1-9—that is Panhandle Eastern—Panhandle Bost 114; Panhandle Bivins 91; Texoma C. Johnson 1-P; Texoma Johnson 1; Phillips Claire 1; Danube Wheatley Johnson 1; Huber Crudgington No. 1—

Q. What was the last one?

A. Huber Crudgington No. 1

A. Yes. Huber Dunaway 1; Phillips Sanford A1; Phillips Sanford No. 1; Phillips Yantes No. 1—

Q. I beg your pardon?

A. Phillips Yantes No. 1.

Q. All right.

A. Huber Dunaway No. 2; Phillips Burl No. 1; Phillips Eddy No. 1; Phillips Fromma No. 1; Phillips H. E. Johnson No. 1; Sinclair Prairie Johnson 1-D; Phillips Snow No. 3; Texoma Deahl 1-E.

Q. Is that all, Mr. Stevens?

A. That is all in that area combined with the previously stated Canadian River wells.

Q. That gives you a total of how many wells that you used in that quadrant?

A. 35.

Q. And out of that how many belonged to Canadian River?

A. 13.

Mr. Spencer: We find a total of 34 but perhaps we missed one. We can check that with you later. It doesn't need to be done now.

The Witness: Well, now it is possible that I have 34.

Mr. Spencer: Well, we can check that later. It is just a difference of one well. We can check it with your working papers to see whether we have them all.

Mr. Examiner, I wonder if we could get Mr. Hammer's quadrant map back up on the board again?

The Trial Examiner: Let's see. That is Exhibit 180, is it not?

Mr. Spencer: Exhibit 180.

The Trial Examiner: All right, we will do that.

By Mr. Keffer:

Q. On Quadrant 3, Hutchinson County, Mr. Stevens, I believe you just stated that you considered only 35 wells in the area, is that right?

A. Yes, sir.

Q. How many wells are there in the total area that

A. I don't recall that.

Q. You know it is more than 35, don't you?

A. Yes, sir, it is a considerable distance from this area.

Q. Would you hazard a guess that there are as many a hundred wells?

A. I wouldn't hazard a guess, but it may be more less.

Q. I wonder if your working papers won't reflect t wells that you eliminated?

A. I have, I think, a list of those wells here in t working papers; however, it is immaterial to the proble The reason they were not considered—

Q. That wasn't my question. I want to know ho many wells are in the area, or in the quadrant as a whol as compared to the number of wells you actually used.

A. I don't recall that from memory.

Q. I am wondering if you couldn't get that figure fro your working papers.

A. I think I possibly could.

Exhibit No. 182

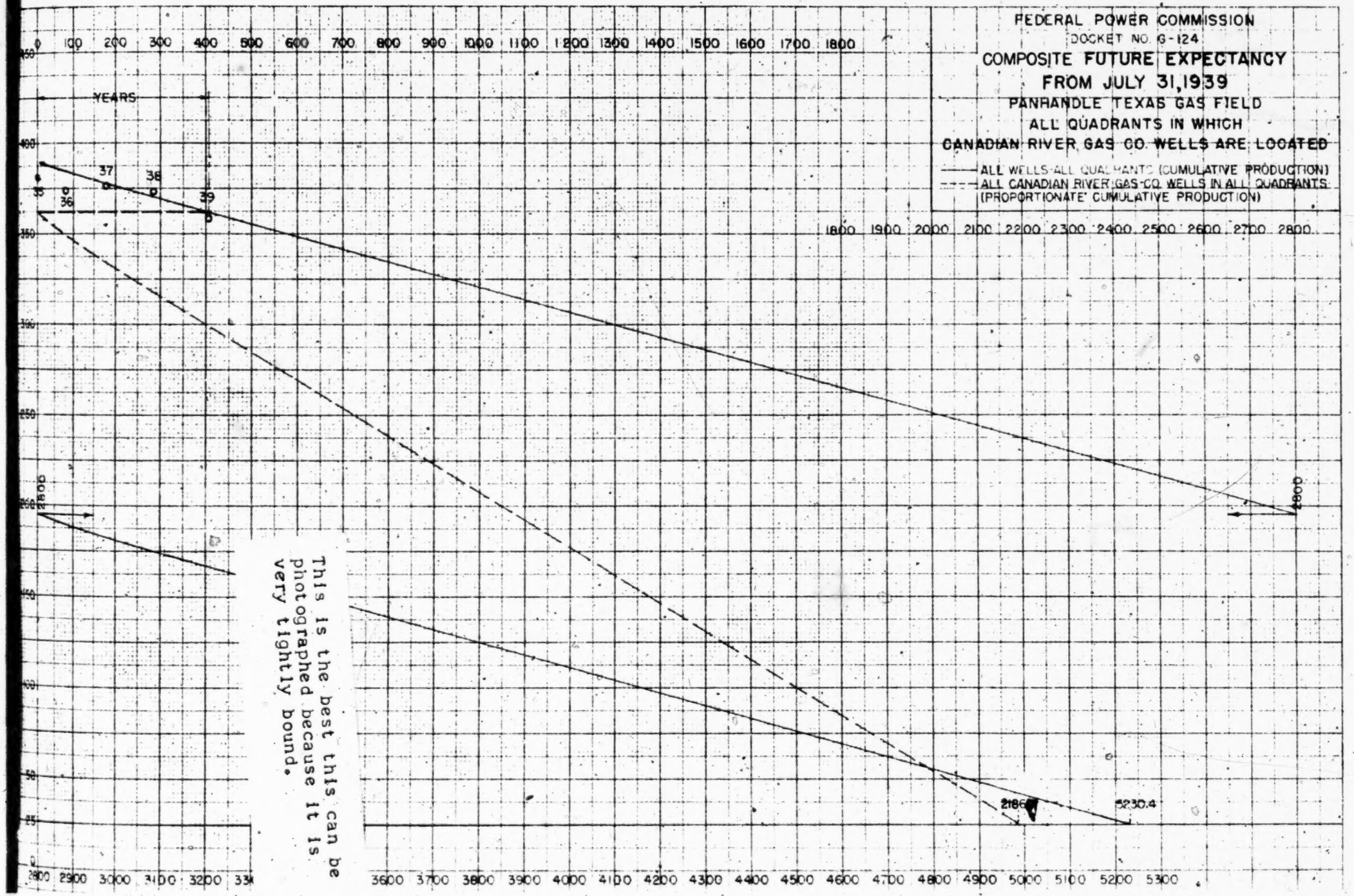


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Exhibit No. 182 [illegible]

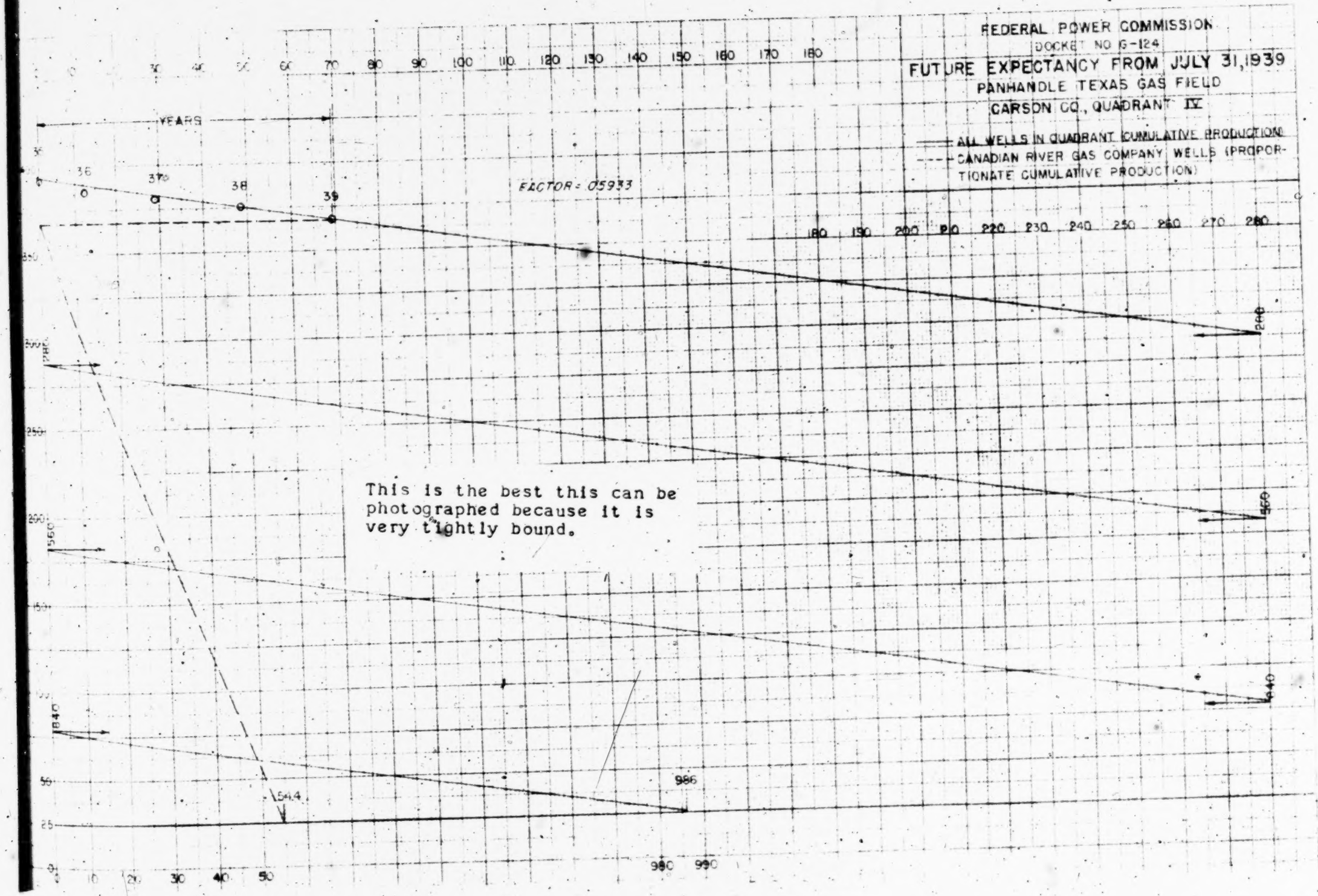
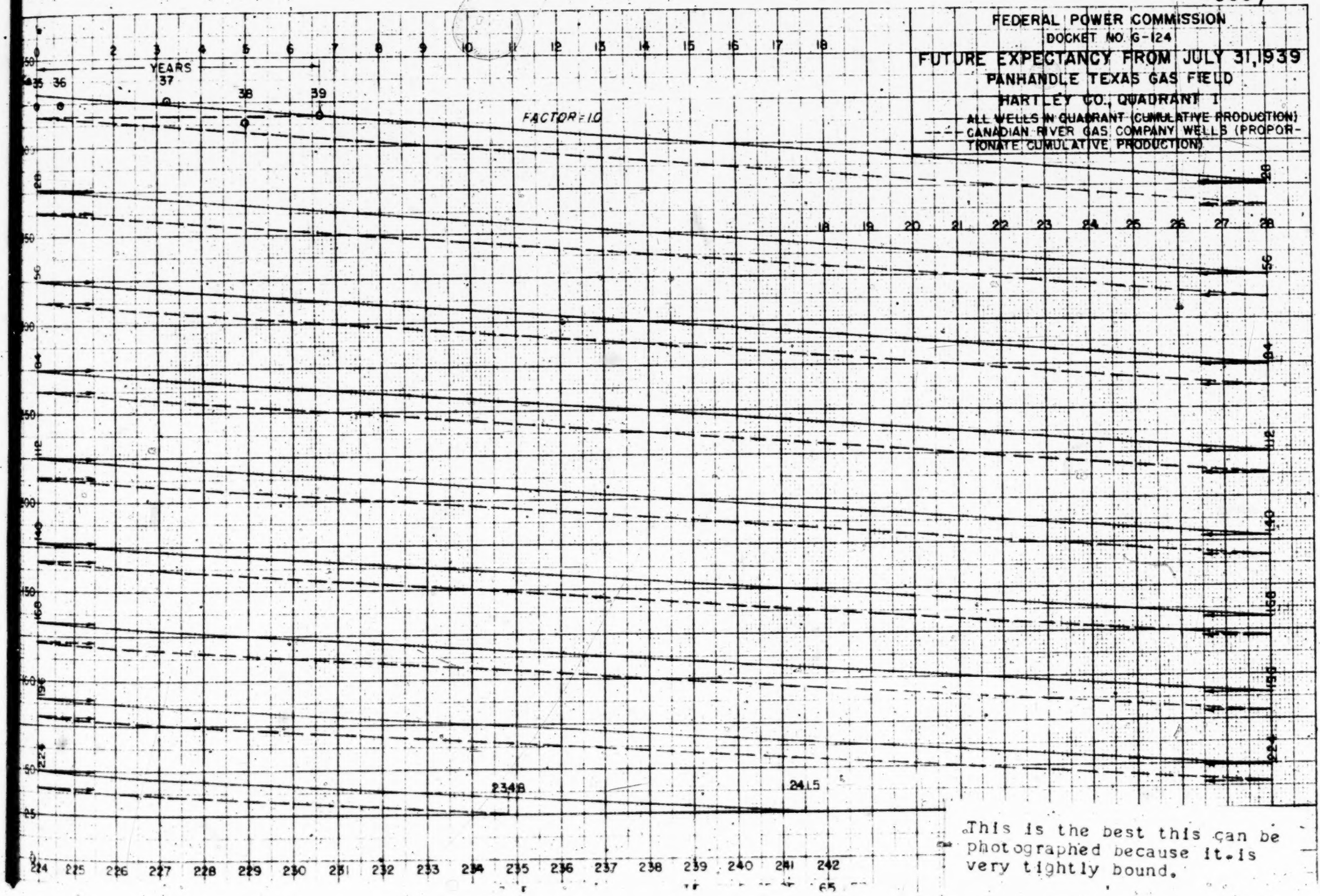


Exhibit No. 162 - 5037



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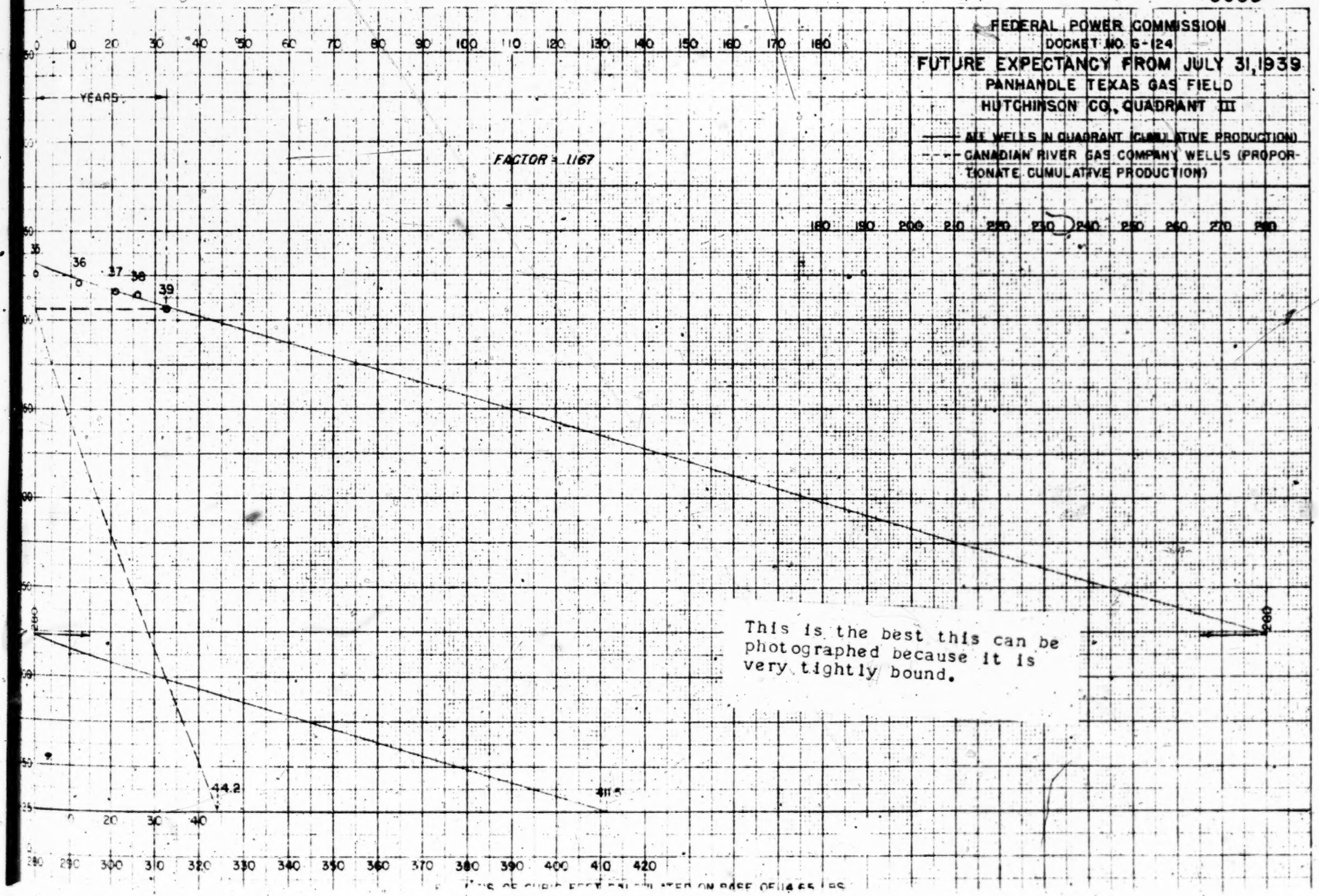
FEDERAL POWER COMMISSION
DOCKET NO. G-124
FUTURE EXPECTANCY FROM JULY 31, 1939
PANHANDLE TEXAS GAS FIELD
HUTCHINSON CO., QUADRANT III
ALL WELLS IN QUADRANT (CUMULATIVE PRODUCTION)
CANADIAN RIVER GAS COMPANY WELLS (PROPORTIONATE CUMULATIVE PRODUCTION)
YEARS
FACTOR = .1167
35
36
37
38
39
44.2
411.5
This is the best this can be photographed because it is very tightly bound.

Exhibit No. 18c 1502

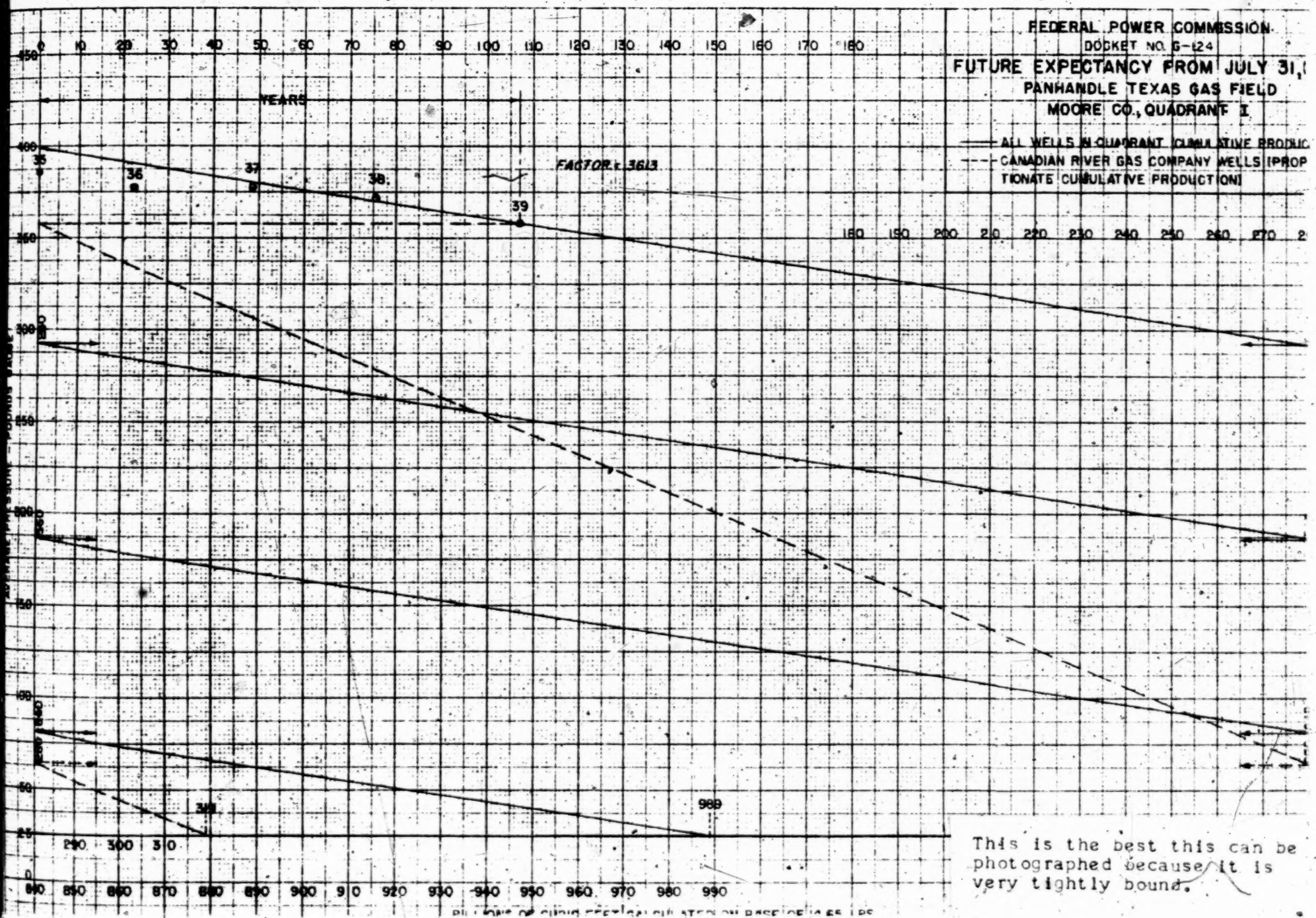

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Exhibit No. 132

FEDERAL POWER COMMISSION
DOCKET NO G-124
FUTURE EXPECTANCY FROM JULY 31, 1939
PANHANDLE TEXAS GAS FIELD
MOORE CO., QUADRANT II

——— ALL WELLS IN QUADRANT (CUMULATIVE PRODUCTION)
- - - - CANADIAN RIVER GAS COMPANY WELLS (PROPORTIONATE CUMULATIVE PRODUCTION)

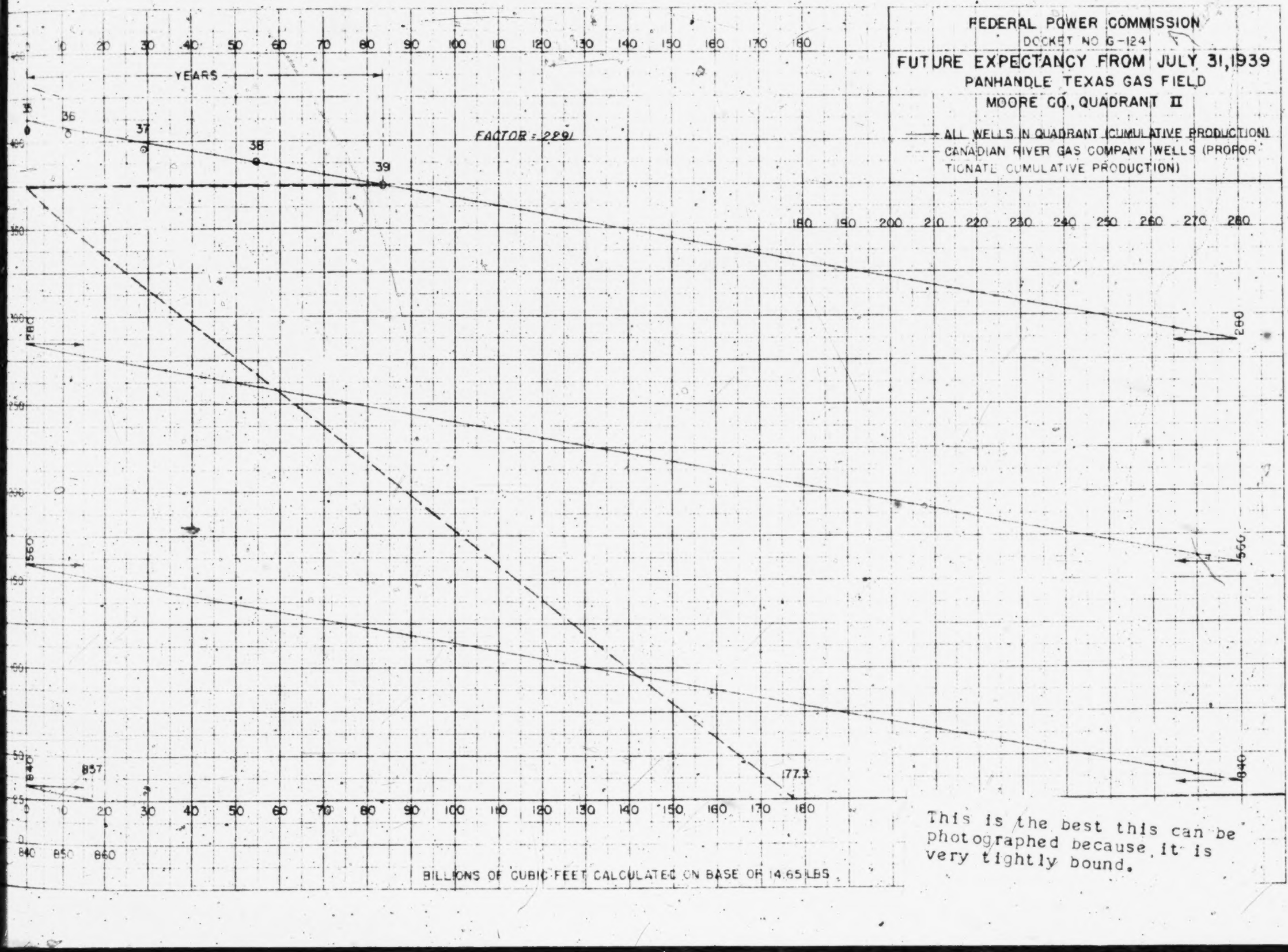

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Exhibit No. 12

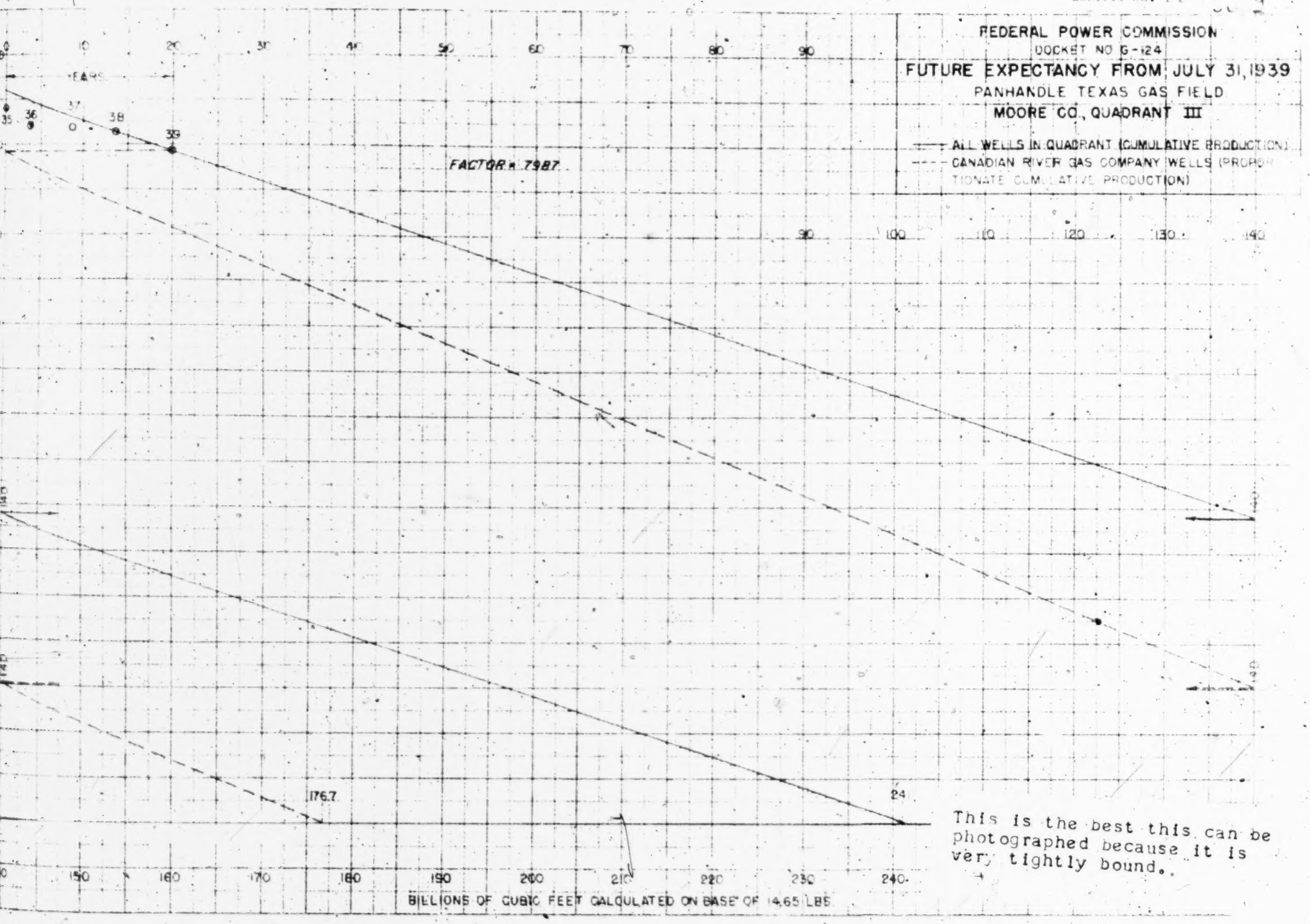

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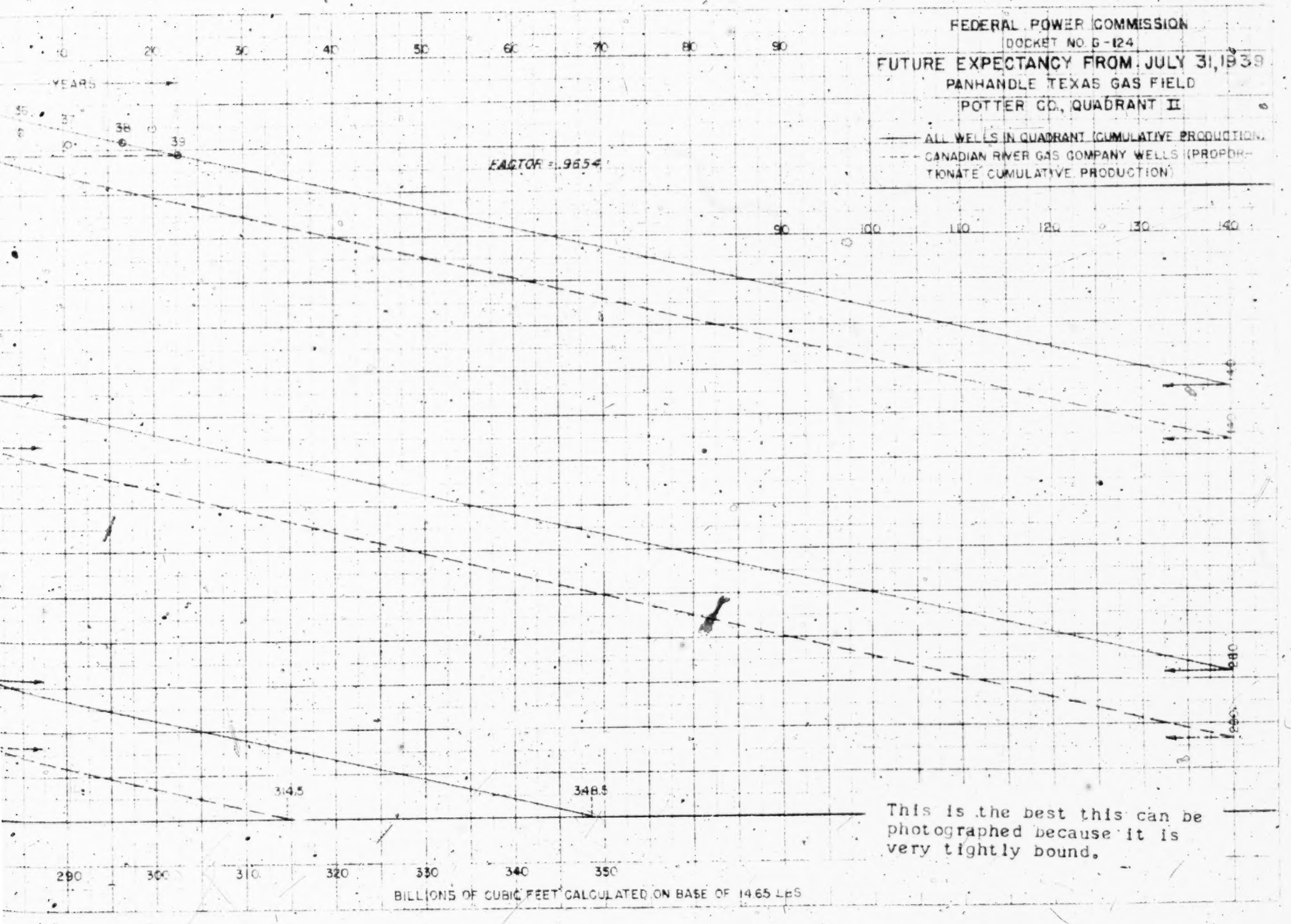
Exhibit No. 182



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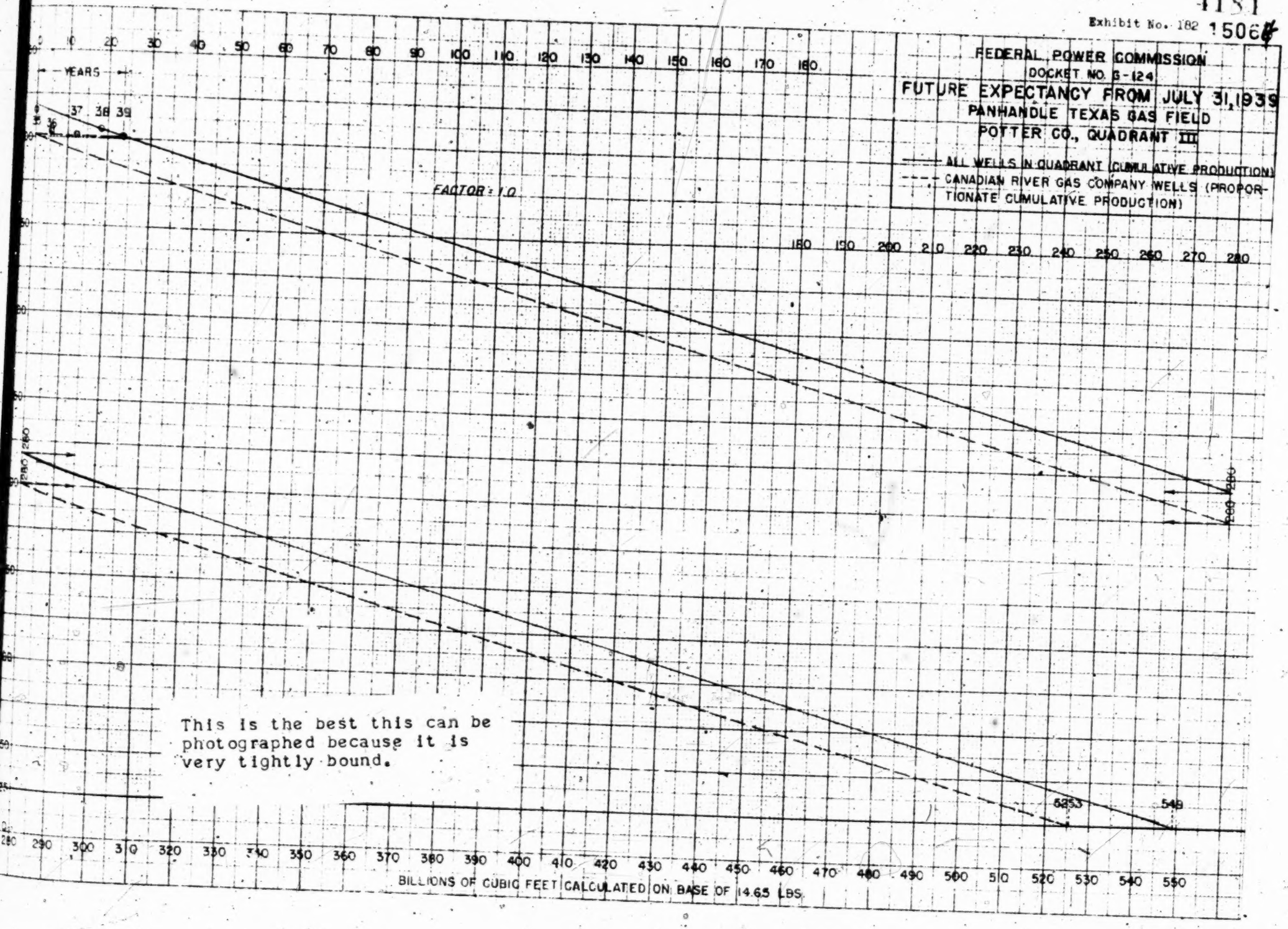

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Exhibit No. 28 [illegible]

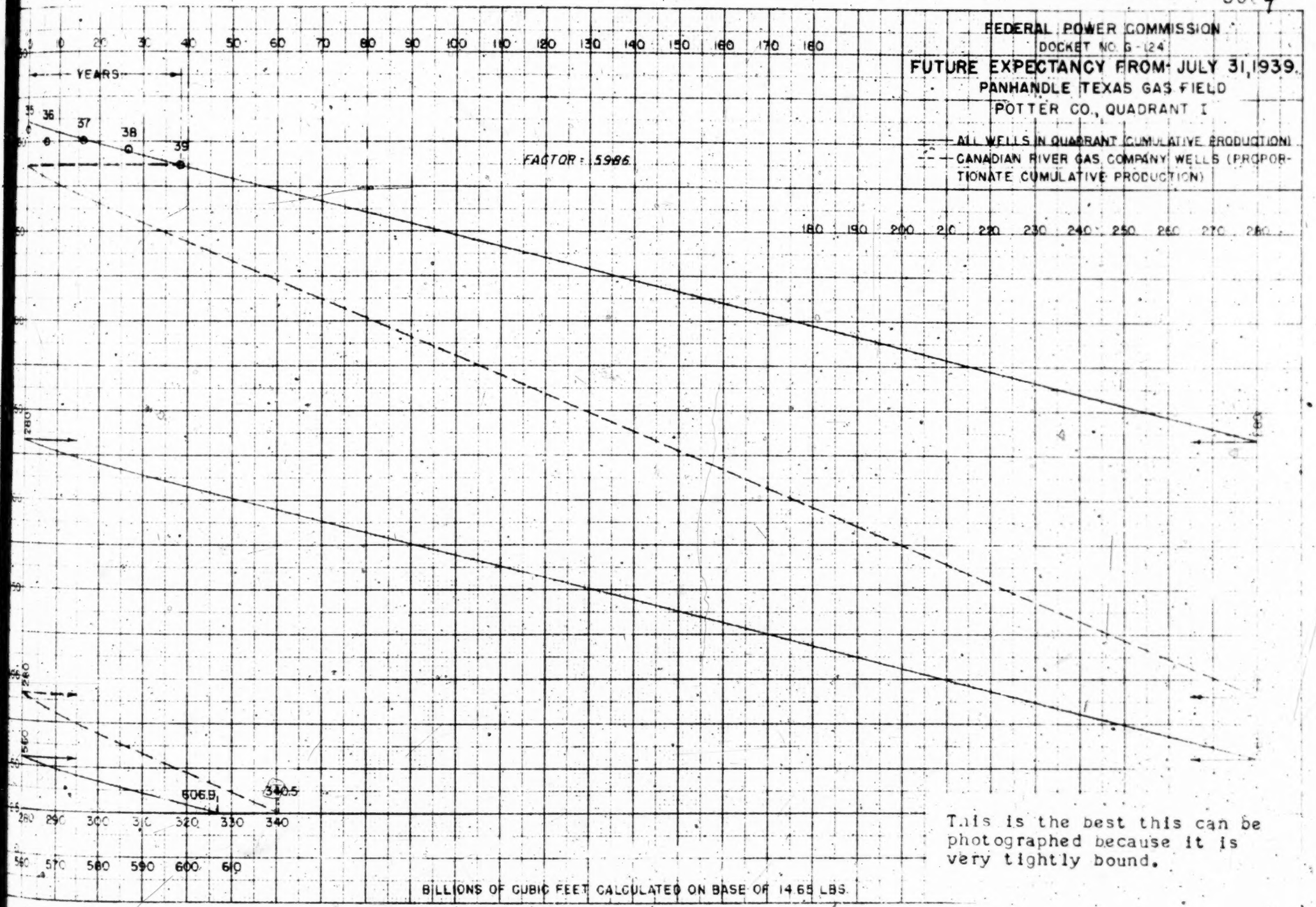

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Exhibit No. 182

ESTIMATE OF RECOVERABLE GAS RESERVES
CANADIAN RIVER GAS CO. - PRESENT WELLS - TO 28# WELLHEAD PRESSURE-GAUGE

Figures in Billions of Cubic Feet, calculated on base of 14.65 lb.

County and Quadrant		Production		Accumulated	Av. Well Pressures	No. of Wells		Future Expectancy	Withdrawals	Future Expectancy	Ratio: C.R.G.Co.	Future Expectancy
		C.R.G. Co.	Total Quad.	Total Quad.	Total Quad.	C.R.G.	Total Quad.	Total Quad. 7-31-35	Total Quad. 8-1-35/7-31-39	Total Quad. 7-31-39	Prod. to Total Quad. 1939	C.R.G. Co. Wells 7-31-39
Carson IV	1935			-	392.2	5	25					
	1936			12.423965	384.9	5	25					
	1937			29.186069	381.1	5	32					
	1938			48.732042	376.1	5	37					
	1939	1.219045	20.546603	69.278645	367.5	5	38	986.0	69.0	917.0	.06983	64.4
Hartley I	1935			-	424.3	3	3					
	1936			.695485	424.2	4	4					
	1937			3.234498	425.3	3	3					
	1938			5.014017	415.0	5	5					
	1939	1.672947	1.672947	6.686964	414.5	4	4	241.5	6.7	234.8	1.000	234.8
Hutchinson III	1935			-	328	13	31					
	1936			12.044676	321	13	33					
	1937			20.970881	316	12	34					
	1938			26.099478	314	13	36					
	1939	.747168	6.408080	32.501558	307	12	35	411.5	32.5	379.0	.1167	44.2
Moore I	1935			-	386	13	26					
	1936			22.420751	377	14	26					
	1937			48.575340	378	14	38					
	1938			75.542559	372	15	45					
	1939	11.329694	31.358345	106.900904	358	16	54	989.0	107.0	882.0	.3613	319.0
Moore II	1935			-	407.4	7	14					
	1936			11,292097	406.9	7	19					
	1937			28.889489	394.7	6	26					
	1938			54.733964	388.1	9	35					
	1939	6.820781	28.461916	83.195880	374.2	9	38	857.0	83.0	774.0	.2291	177.3
Moore III	1935			-	419.6	4	5					
	1936			3.687977	411.1	6	7					
	1937			8.812810	409.6	7	8					
	1938			13.616200	407.0	7	8					
	1939	4.959626	6.209770	19.825970	396.2	8	9	241.0	19.8	221.2	.7987	176.7
Potter I	1935			-	407	7	16					
	1936			6.350014	399	8	17					
	1937			16.118207	400	11	16					
	1938			26.884383	395	12	21					
	1939	6.712879	11.214104	38.098487	387	13	24	606.9	38.1	568.8	.5986	340.5
Potter II	1935			-	412	11	12					
	1936			5.139896	410	12	13					
	1937			10.662206	408	12	13					
	1938			16.471851	404	12	13					
	1939	5.977068	6.191251	22.663102	397	12	13	348.5	22.7	325.8	.9654	314.5
Potter III	1935			-	415	5	5					
	1936			5.107348	403	7	7					
	1937			12.490159	402	8	8					
	1938			18.423562	406	8	8					
	1939	5.251692	5.251692	23.675254	401	9	9	549.0	23.7	525.3	1.000	525.3
TOTAL	1935			-	380.8	68	137					
	1936		79.162108	79.162108	373.7	76	151					
	1937		99.767550	178.929658	376.0	78	178					
	1938		106.588398	285.518056	373.4	86	207					
	1939	44.390268	117.308648	402.826664	357.8	88	228	5,230.4	402.5	4,827.9	.4530	2,186.7

The witness considered the production and pressures of the total quadrants in which Canadian's wells are located (except that he did not consider all of Quadrant 3 Hutchinson County, but only a small portion in the southwest corner of such quadrant). (Vol. LXII, pp. 8789-8791.)

Recoverable reserves were estimated by quadrants. He accumulated the total production by years for each quadrant from mid-year 1935 to mid-year 1939 and from this a curve was plotted and extended to intersect a line drawn through an assumed abandonment pressure of 25 pounds gauge at the wellhead. The recoverable reserves are determined by reading from this curve. The first set of curves contained in Exhibit 182 represents a composite curve for the total quadrants as represented by the solid line, which represents the total expected recovery by all producers owning reserves in the various quadrants. The dashed line represents the estimated recoverable reserves of Canadian only from Canadian wells now drilled.

The witness determined the ratio that Canadian would recover from each of the various quadrants by considering the relation of its production in 1939 to the total production from the quadrants for that year, and assumed that in the future Canadian would continue to capture this proportion of the recoverable reserves of each quadrant. This ratio as determined by the witness averaged throughout all of the quadrants is 45.30%, or stated in another way, .4530 as shown by the twelfth column of the last table of Exhibit 182. The witness stated, however, on cross-examination that if quadrants had not been considered and the over-all ratio determined that this would have given a ratio of approximately 38% rather than the 45.30% utilized by witness. (Vol. LXII, p. 8781.) The calculation, as made by the witness, and which is shown by the dashed line on the composite curve, indicates that Canadian from its present wells will recover 2,186 trillion cubic feet to an abandonment pressure of 25 pounds.

The witness stated on cross-examination that although he had assumed a wellhead abandonment pressure of 25 pounds as the basis for his calculations, that this was predicated upon his belief that it would be physically possible to pro-

duce the wells down to 25 pounds wellhead gauge pressure (Vol. LXIII, p. 8991) but that he did not know much from actual experience about the correct abandonment pressure from a physical standpoint and that he did not know the number of wells that had heretofore been abandoned in the Texas Panhandle Field, or the pressures obtaining at the time of abandonment (Vol. LXIII, pp. 9013, 9014). The actual pressures at which wells will be abandoned will be determined by the economic conditions existing at the time, and he had made no particular study of this phase of the matter (Vol. LXIII, p. 8990) and he had made no assumption of the economic abandonment pressure at this time. (Vol. LXIII, p. 8991.)

Stevens stated that his calculations of reserves, as reflected by Exhibit 182, was simply the application of the pressure-decline method in principle to the estimation of reserves. He plotted the pressures and gave no consideration specifically to the amount of decline for any two successive years. (Vol. LXII, pp 8697, 8698.) He made no study of the geology applicable to the area and neither did he study permeability nor porosity nor sand thickness, but did consider permeability and porosity to the extent that there could be no production if there were not some porosity and some permeability. (Vol. LXII, pp. 8699, 8739-8744.) He did not study drainage. (Vol. LXII, p. 8812.)

He included in his study all of the wells located in all of the quadrants in which Canadian had acreage (except Hutchinson County, Quadrant 3). He did this to incorporate the effect of the production of other companies on Canadian wells—whatever the effect was. (Vol. LXIV, p. 9068.)

The solid line, being the top line on the first set of curves shown in Exhibit 182, represents the total recoverable reserves estimated as recoverable from the present wells in all the quadrants. This curve indicates that all of the wells in all of the quadrants will produce 5.2304 trillion cubic feet of gas to 25 pounds abandonment pressure. The points indicated by 35, 36, 37, 38 and 39, represent the pressures obtaining for the years 1935 to 1939 inclusive. The witness stated that he had his answer before the line was

drawn and he started at the accumulated production total of 5230.4 and drew his line backwards in order to get a straight line. (Vol. LXII, pp. 8868-8869, Vol. LXIII, p. 9059 and Vol. LXIV, p. 9172.) He stated that if his estimate had been made a year earlier and he had not had his 1939 pressure point that the curve would have been almost a horizontal straight line if he had given any weight to the 1935 and 1936 pressure points (Vol. LXII, pp. 8861-8862) and that if he had taken the pressure points for 1938 and 1939 only and had drawn a line from the center of the circle representing 1938 to the center of the circle representing 1939 that he would have had a much more precipitous decline than his curve shows as actually drawn. (Vol. LXII, p. 8863.) He stated, however, that he disregarded the 1935 and 1936 pressure points because waste was existing in the field at that time and he did not believe that these pressures represented a proper build-up. He says that the waste occurred where carbon black and gasoline plants were situated but further stated that he did not know of a single plant of either character located in the area in which he was studying and finally stated that whatever the reason was the pressures for 1935 and 1936 fell below the line as he had drawn it and he had, therefore, ignored them and it would have been just as well if he had not plotted them on his graph paper. (Vol. LXII, pp. 8836, 8846-8854.) He stated again that there was a reason for the 1935 and 1936 pressure points falling below the curve and that the reason, whatever it was, was unimportant. (Vol. LXII, p. 8860.)

The witness was then cross examined as to the curves drawn for each quadrant. He again stated that he had ignored the 1935 and 1936 points. He stated that nature determined the points and that they are good or bad depending upon the proximity of the points to a straight line and if a particular point was above or below a straight line that it should be ignored (Vol. LXII, pp. 8879-8880) and that he selected the points as the basis for his curves which would most nearly represent what the curve ought to be, (Vol. LXII, pp. 8885, 8886) and that the points did not determine his curves but did influence them. (Vol. LXIII, pp. 8895, 8896.) The witness stated that the curves as to

each quadrant were drawn about the way that he thought they ought to be. (Vol. LXIII, p. 8896.)

He stated again that the composite curve was drawn to the predetermined answer, (Vol. LXIV, p. 9172) and without regard particularly to the points and that it could have been drawn so as to more accurately reflect the 1937, 1938 and 1939 points, and if this had been done it would have shown a less reserve than the way it was drawn. (Vol LXIV, p. 9171.)

The witness stated that he had utilized only a portion of Hutchinson County Quadrant 3 because he secured a better looking curve by doing this. He had first drawn his curve for this quadrant and based the same upon the production and pressure data for the entire quadrant but this gave him a slightly ascending curve due to the fact that the quadrant as a whole showed a higher pressure in 1939 than in 1935. (Vol. LXII, pp. 8789-8794.) He stated that Hutchinson County Quadrant 3 was draining gas from Moore County Quadrant 1, and that the pressure of Hutchinson County Quadrant 3 had increased notwithstanding it had produced 172 billion cubic feet of gas over the four-year period studied and had produced more gas than any other quadrant under consideration and it increased in pressure notwithstanding it was also losing gas by migation to the eastward. (Vol. LXII, pp. 8795-8809.)

As heretofore stated the dashed line on both the composite curve and the curve for each quadrant represents the percentage of the total production from the quadrant as a whole and from each individual quadrant that the witness estimates will be produced by Canadian.

The witness stated that the ratio was determined by the summation of quadrants but that it wouldn't have made any difference if he had eliminated the quadrants entirely and had arrived at a ratio by considering the total over-all production of Canadian as related to the total over-all production from all the quadrants. (Vol. LXII, pp. 8776-8779.) This procedure gave a ratio of .4530, or stated another way, a percentage of 45.3%. (See tabulation last page of Exhibit 182.) He was then reminded of the fact that for the year 1939 his Exhibit 182 showed a total produc-

tion for Canadian of slightly in excess of 44 billion and that the total production from all of the quadrants was in excess of 117 million. He stated that this was true and that although he had arrived at a percentage figure of 45.3% based upon the 1939 ratio by means of the summation of the quadrants that he would only have gotten approximately 38% as the ratio or percentage applying to Canadian if he had disregarded quadrants and that this would have given an expected recoverable reserve for Canadian of approximately 1.820 trillion instead of approximately 2.186 trillion, as indicated by the summation of the quadrants. (Vol. LXII, pp. 8779-8782.)

The witness then read figures into the record showing the ratio for the various years of the entire period studied. The production figures, however, were apparently based upon calendar years. This testimony is set out as follows:

ar	Canadian Production	Total Production	Canadian Ratio
36	43.590,010 billion	79 billion plus	50% (Approximately 55%)
37	46.610,252 "	99 "	plus 47%
38	42.483,068 "	106 "	plus 40%
39	44. " plus	117 "	plus 37% plus

The witness then stated that the ratio of Canadian's production to the total production had gone down progressively from more than 50% in 1936 to slightly more than 37% in 1939, and that from the entire area Canadian was producing a smaller and smaller percentage of the total production. The witness ignored the very decided downward accelerated decline in the ratio but stated his ratio of .4530 was based on 1939 production and that it was a weighted ratio. The record does not reflect just what the weighting medium was. (Vol. LXII, pp. 8827-8832.)

The witness stated that although the ratio had been getting smaller and smaller for the past four years, he could not agree that it would likely be still smaller in 1940 and 1941 because the markets might increase (Vol. LXII, p. 8833) but that he had not investigated market outlets of other companies producing in the same area and that the curve representing the ratio was extended into the future without any changes whatsoever and was based upon 1939 performance.

(Vol. LXII, pp. 8834-8835.) He assumed that the present ratio would not change. (Vol. LXIII, p. 8900.) He also stated that although his calculations assumed that Canadian would continue to produce 100% of the gas in Hartley County, he knew that other companies had substantial acreage in that county but that much of the additional acreage was sour gas acreage and he had made no study as to carbon black markets. He assumed there would be no change in the ratio because he did not think it was within the realm of probability that the sour gas acreage would be developed. The Canadian also had a very high ratio, approximately 80% in Moore County Quadrant 3, and although he knew Canadian owns only about one-fourth of the acreage in this quadrant, still he did not consider that the ratio would change. He stated, however, that if the ratio did change in Hartley County and in Moore County Quadrant 3 that his factor of .4530 would change even though Canadian continued to produce the same volume of gas. (Vol. LXIII, pp. 8901-8911.)

The witness stated that as Canadian drilled additional wells it would increase its recoverable reserves and estimated that for three new wells added after mid-year 1939 that Canadian's recoverable reserves had been increased approximately 24 billion cubic feet per well. (Exhibit 182-A.) He stated also that his dashed curve, as shown in his various calculations, would be changed by the drilling of additional wells (Vol. LXIII, p. 8997) but then admitted that the drilling of additional wells would not change the dashed line no matter how many additional wells were drilled unless there was also a corresponding increase in market outlets or production (Vol. LXIII, pp. 9000-9002) and this being true one hundred more wells (or any number more) would not change his calculated reserve figure of 2,186 billion shown in the composite curve, Exhibit 182. (Vol. LXIII, p. 9004.) He also stated that neither any contemplated increase in production nor change in the ratio as represented by the various dashed lines had been taken into account in his study. (Vol. LXIII, p. 9005.) He said, also, that it was possible that conditions in the future might increase the present percentage assigned to Canadian, although he realized that at the present time it had been decreasing from year to

year. (Vol. LXIII, p. 9006.) Witness also stated that he had not changed his solid line being the composite curve as shown in Exhibit 182 by virtue of the drilling of additional wells in the entire area. He stated there were 178 wells in 1937 in the entire area, 207 in 1938 and 228 in 1939, and that although his solid composite curve was based upon 1937, 1938 and 1939 production figures that the line was not changed, or additional reserves indicated by reason of the drilling of the additional wells, and that if the conditions, as reflected by the producing data for those three years do not change in the future that the drilling of additional wells in the future will not increase the reserves (recoverable reserves), (Vol. LXIII, pp. 9006-9009); and finally, that unless additional wells did add additional reserves his estimate of 2.186 trillion recoverable reserves for Canadian would remain as the final figure. (Vol. LXIII, p. 8969.)

He also stated that the total loss in pressure for the year 1939 as shown by Exhibit 182 was 15.6 pounds and on this basis the present wells of Canadian would last approximately twenty years from August, 1939, and that the entire volume of recoverable gas would be produced by the end of that period. (Vol. LXIII, pp. 8970-8971.)

Stevens stated that Hammer's estimate of total reserves in Potter County Quadrant 3 was 448.272 billion, and that notwithstanding this fact he (Stevens) had calculated on his method that the present wells in Potter County Quadrant 3 would actually produce 525.3 billion cubic feet. He stated also that there were now 9 wells in Potter County Quadrant 3 and that the wells were spaced on the basis of one well to almost 4000 acres. (Vol. LXI, pp. 8671-8673.) He stated also that Quadrant 1 Potter County now had 24 wells with a spacing of one well to a little less than 2400 acres, and that everything else being equal the same number of wells in Quadrant 1 Potter County, should produce as much gas as an equivalent number in Quadrant 3 Potter County. (Vol. LXIV, pp. 9114-9118.) He also stated that Hammer's estimate of remaining reserves under Canadian acreage in Quadrant 1 Potter County, was 1,078,766,000 Mcf. while on the basis of Stevens' calculations the Canadian wells in this quadrant would produce only 340,500

billion cubic feet or but little more than one-third of the total remaining reserves owned by Canadian in this quadrant as estimated by Hammer. (Vol. LXIV, pp. 9142-9143.) He stated that drainage into Quadrant 3 was probably the reason that the present wells would produce more than Hammer's estimated reserves and that although he had not considered drainage he was of the opinion that drainage out of Quadrant 1 Potter County did not explain the fact that the present wells in that quadrant would produce less than Hammer's estimate of reserves. (Vol. LXIV, p. 9141.)

The reserve per acre in Potter County Quadrant 1, as estimated by Hammer, is in excess of 22 million per acre, while in Potter County Quadrant 3 the reserve estimate of Hammer is just a little more than 13 million cubic feet per acre. Stevens also stated that the richer the area the greater the production per pound loss in pressure. However, the figures showed this to be just the reverse in so far as these two quadrants are concerned. (Vol. LXIV, p. 9140.) He also stated that the larger the area the greater the production per pound drop in pressure and then stated that the area of Potter County Quadrant 1 was greater than the area of Potter County Quadrant 3 and that the production per pound loss in pressure from Canadian acreage was approximately 1.3 billion per pound in Quadrant 3 while it was but .61 billion per pound in Quadrant 1. (Vol. LXIV, pp. 9126-9134.) He finally stated that he didn't know why a well was producing so much more in Quadrant 3 with a wider spacing and in a less prolific area than it was in Quadrant 1, and he didn't care what the reasons were. (Vol. LXIV, pp. 9137-9138.) He did state, however, that migration of gas out of a quadrant would affect the pressure and the less the migration the less the drop in pressure for any given volume of production. (Vol. LXIV, pp. 9141-9142.)

He again reiterated that there were not enough wells in Quadrant 1 to produce the reserves under the Canadian leases, and that the only basis he had for making this statement was the fact that his calculations showed the present wells would produce only approximately 340 billion cubic feet while Hammer's estimate of reserves showed almost three times this much gas in place and that if the present wells

would produce only two-thirds of the gas remaining at this time down to a pressure of 25 pounds wellhead that this meant he would have to have two-thirds of his 1939 pressure left at that time, and he realized that it would be absurd to expect this. (Vol. LXIV, pp. 9144-9148.) He also stated that when all present wells had been reduced in pressure to 25 pounds at the wellhead that there would likely not be more than 50 pounds pressure left at any point within the quadrant. (Vol. LXIV, pp. 9076-9109.)

The witness stated that the 24 wells in Quadrant 1 were pretty well distributed over the Quadrant. (Vol. LXIV, p. 9114.) The witness did finally state, however, that when all of the wells in Quadrant 1 had reduced in pressure to 25 pounds wellhead there would be very little more gas left in the quadrant above 25 pounds. (Vol. LXIV, p. 9111.)

Stevens further testified (Vol. 62, pp. 8778-8794) as follows:

Q. Mr. Stevens, you stated, I believe, just before the noon hour recess that it wouldn't have made any particular difference whether you had compiled your data quadrant by quadrant or whether you had just forgotten all about quadrant lines and cut straight across.

A. I don't think it would have.

Q. Now, as a matter of fact, isn't it true, Mr. Stevens, that due to the fact that you did consider quadrant by quadrant that you got a higher answer than you would have if you just cut straight across—got a higher answer as to recoverable reserves?

A. I don't think so, if you consider a reasonable drawing or extension.

Q. How is that?

A. I don't think so if you reasonably extended or projected the data of production versus pressure.

Q. Well, you did just that, didn't you, when you took it quadrant by quadrant?

A. Yes.

Q. Yes, all right. Now, you came out as shown by the last page of your exhibit, with a figure 45.3 per cent, didn't you, as applicable to Canadian River?

A. That was the result of the summation of all the quadrants, yes.

Q. How's that?

A. That was the result of the summation of all the quadrants.

Q. That's right, and, now, if you had cut straight through there and had not considered your quadrants at all, you would have come out with a smaller percentage, wouldn't you?

A. What do you refer to specifically?

Q. Well, I'll state it this way, that 45.3 that you show there in total on the bottom of the page, on the last page of your exhibit on the line next to the last on the right—

A. Yes.

Q. You show .453.

A. Yes.

Q. You conclude from that, therefore, that the present wells of the Canadian River will produce 45 per cent of the recoverable reserves under present wells in all of the quadrants, don't you?

A. Yes.

Q. All right. Now, you did that by taking quadrant by quadrant, didn't you?

A. And summating, yes.

Q. That's right. Now, if you had eliminated quadrants entirely and gone straight through with the same data instead of getting a production factor of 45.3 per cent for Canadian River over the whole area, you would have gotten a production factor of approximately 38 per cent, wouldn't you?

A. Yes, considered in terms of the total quadrants as a whole.

Q. Well, now, I am not sure that the question has been answered. Is it correct that you would have gotten 38 per cent of the whole?

A. You tell me how you arrived at that and I think I can answer it a little more clearly.

Q. All right, that's arrived at by taking your rock pressure declines—yes, by taking—take the first column over there on the left. That's 44.390268. What does that represent?

A. That's the total of Canadian River production.

Q. That is the total of Canadian River production.

The next figure is the total production from all the quadrants, isn't it?

A. Yes, that is right.

Q. All right, now, the Canadian River total during the period that you have used is 44 billion plus, isn't it—a little better than 44 and a third billion, is that right?

A. Yes.

Q. And the production for the whole quadrant is 117 billion plus, or a little less than 117 and a third billion, isn't that right?

A. That's right.

Q. Now, what percentage does the Canadian River's production bear to the whole? See if that isn't 38 per cent.

A. That is approximately correct.

Q. All right, then, if you had gone straight through and eliminated your quadrant lines, your factor for Canadian River would have been 38 per cent instead of 45-3/10 per cent you used, wouldn't it?

A. That is approximately correct.

Mr. March: Wait a minute, he wants to make an explanation in regard to his answer.

The Witness: I do not. I wish to shorten that.

Mr. Keffer: All right, maybe if we would just let the witness answer we would get along faster.

Q. Now, applying that to the total there, then you would have come out instead of with 2,186,000,000,000 for Canadian River, you would have come out with 1,820,000,000,000, wouldn't you, as a total recoverable gas under present wells?

A. On the basis of that, that is the case. Is it all right to make an explanation?

Mr. March: Yes. As far as Commission's counsel is concerned, I am sure the Examiner did not intend to rule that you could not make an explanation after you had answered the question to the best of your knowledge and belief.

The Trial Examiner: There is no objection if the witness feels that an explanation is needed, he will not be curtailed

from making such explanation, but the thing I am interested in is to avoid unnecessary explanations.

Mr. Keffer: All right, Mr. Stevens. I might say, that is the position of counsel for respondents, also, Mr. Examiner.

The Trial Examiner: Very well, Mr. Keffer.

The Witness: When I stated this morning that you would get approximately the same answer, that approximately envisaged the difference between that percentage you arrived at of 38 per cent of 45.3. Now, if we consider—while it is not necessary, as stated, to confine ourselves to quadrants, it is nevertheless thought that by breaking up the area into reasonable parts and the reasonable parts were in this case quadrants for the reason of being consistent as much as anything else, we could have taken irregular areas of most any description as long as we were reasonable in taking those areas, but the point of view and the opinion on this splitting up of areas, while the total does give an approximate answer, approximately similar to that using these quadrants, we believe in principle that to split up areas and summate them as is done here is more representative—I shouldn't say representative, it more accurately brings into close association the factors operating in a given area, those given areas being quadrant areas or some other similar areas. We simply take quadrants to be consistent and the quadrants that we take are the same as outlined in previous exhibits, consistency being the essential factor.

Now, we didn't try any other assembly—didn't see any necessity for it. This .4530 that you see down here, due to the varying percentages that Canadian River production bears in these different quadrants to the total quadrant production, that variation is boiled down and incorporated in this .4530 which might be determined a sort of weighted ratio. That is really what it amounts to, and that division of total area into some areas, as we have done here, is believed superior to taking the whole thing at one bite, although the answer by taking it all as a whole is not the same, but I wouldn't call it a serious or great diversion

By Mr. Keffer:

Q. It is about twenty per cent, isn't it?

A. Yes, twenty per cent.

Q. Twenty per cent higher than if you had not considered quadrant by quadrant, that is right, isn't it?

A. That is right.

Q. All right, now, you said we did so and so. Who do you mean by "we"?

A. I mean categorical we, or—

Q. What do you call it—an editorial we? Now, didn't Mr. Hammer work on that, too?

A. Up to the point where the calculation and curves were drawn, several people participated in the collection of data. Beyond that point, outside of casual discussion of the way a curve looked, or something of that sort, why, I completed the work.

Q. Did Mr. Hammer help you on it, then? Is that a correct statement?

A. In the manner described which, beyond this point that I mention, that is, the calculation and assembly and writing of the discussion, after that point it was merely casual as you would look at a curve and dismiss it.

Q. In other words, he helped you up to the point where you drew that straight line which we term a curve, is that right?

A. That is approximately the case. Not only he, but whoever participated in the compilation of the data.

Q. All right, then, you have used the pressure decline method and by taking it quadrant by quadrant you have weighted your pressure decline to a very large degree, is that correct?

A. Well, that composite factor there might be considered a weighting, I think.

Q. A weighting. All right. Now let us go on from that just a step further over to Hutchinson County Quadrant 3. Now, you stated the first thing this morning on the questioning by Mr. March that you deviated from your general plan there and take all of Hutchinson County Quadrant 3 into account, didn't you?

A. Yes.

Q. I understood you to say, Mr. Stevens, that although you didn't take all of Hutchinson County 3 into account, you did take the proportion of Canadian River's; that is, you

arrived at the Canadian River's proportion of the production by taking the production of the whole quadrant into account.

A. No. I might have given that impression and I see how that could happen because right immediately after that I turned the page and saw this compilation of additional wells which has not been in my possession for some time and bringing in those number of wells, perhaps that should be revised more correctly to read this way: That we considered the total production of the new quadrant—call it that if you will—the new designation of area that replaced the designation of area, Quadrant 3 that you see on the map.

A. All right.

A. But that total was considered having in mind the new area adopted.

Q. All right, now, that quadrant isn't outlined anywhere on this map, is it?

A. No, it isn't. It embraces generally that area covered by those wells which were read in the general south and southwest part of the quadrant.

Q. Look at Commission's Exhibit 95; Quadrant 3 of Hutchinson County is outlined there with 3 in it, isn't it?

A. Yes.

Q. All right, now, about what did you take into account in restricting that quadrant as you did for your computation?

A. I will point it out. Perhaps somebody else can point it out better than I can, but—

Q. This colored area is all Canadian River and that is all.

A. Without being exactly definite, I noted on the working papers there that that area was outlined under our '38 map which is not here, of course, but the minute designation of that area, I believe, is relatively unimportant as long as you know the wells that were involved and those were read to you this morning.

Generally speaking, I suppose, it comes down about—

Mr. March: Describe it.

The Witness: It is difficult to describe on this map, but it includes the southwestern part of Quadrant 3 as outlined

on Exhibit 95, embracing those areas shown in color and owned by the Canadian River Gas Company.

Mr. Lange: Quadrant 3 of what county?

The Witness: Hutchinson County.

By Mr. Keffer:

Q. Well, now, you used 35 wells out of Quadrant 3 in Hutchinson County. How many wells are in that quadrant, Mr. Stevens?

A. I did not look that up. I believe you wanted that—

Q. I believe I did. I believe I asked you that this morning.

A. It is a question of counting them.

Q. Sir?

A. It is a question of counting them. I can do it now if you want me to.

Q. Would it take very long? If not, you can do it during recess. Do you have it listed there?

A. By the way, the other reporter has it.

Q. We won't take the time to count them now, but there is a lot more than 35 wells, isn't there?

A. Yes.

Q. All right, now, in restricting, or taking just a limited portion of Quadrant 3, Hutchinson County, you got a lot bigger factor for Canadian River than you would have gotten for Canadian River had you considered it all, as you did on the other quadrants, didn't you?

A. Yes, but you had a lesser total amount of gas to multiply that factor by.

Q. Yes, I know, but as a matter of fact, as you have computed in here, you show Canadian River somewhere around eleven per cent of the gas produced from the quadrant as you limited it or restricted it?

A. Yes, sir.

Q. Whereas, if you had not restricted it, Canadian River would have had something like one per cent or maybe a little better?

A. One per cent of a great deal larger number, yes.

Q. Yes. Do you have any idea which is the greater figure—11 per cent of the smaller number or one per cent of the larger number?

A. No, I don't, and that is unimportant for the reason that the area considered gave a good curve, one that could be logically drawn through points and whatever grouping was determined, whether this identical one is described or some sligtly smaller or larger, if you had obtained a good curve through those points your answer would be equally valid.

Q. All right, now, you stated in answer to Mr. March's question this morning that you cut out the southwestern corner of that for the reason that that is a pretty long quadrant and all of Canadian River's wells were down in the southwestern corner, isn't that the reason you gave?

A. Well, that is probably the principal reason that I would recall at the present time.

Q. Now, didn't you have a much better reason than that, Mr. Stevens, that you didn't give?

A. As I remember, we tried the total quadrant and it didn't result in nearly as good a curve and I believe that that was one of the reasons also suggested for restricting it. It became evident that restricting it to a smaller part of the quadrant might give a better curve for projection and we found that it did as a matter of fact, and used that, which is entirely—

Q. Now, as a matter of fact, isn't the only reason you have for restricting it and not including the whole, is the fact that this method of yours wouldn't work on it at all if you included the whole?

A. You overlooked, I think—

Q. Just answer my question yes or no.

A. Read that.

(The question referred to was read by the reporter, as set forth above.)

The Witness: The fact is that it worked far more satisfactorily with the collection of data on that basis and that in itself is sufficiently good reason.

By Mr. Keffer:

Q. I see; you were looking for an answer, is that your answer?

A. We were looking for a proper lineup of points considering sufficient area and that is justified in any of this

kind of work and there is a further point which should be mentioned in explanation of this, that—to quote your previous illustration, if the Canadian River Gas Company's production represented a very very small percentage of the whole, say one per cent or less, it is obviously an advantage to reduce the area to a size where Canadian River occupied or produced a relatively larger per cent of the whole. That is not necessarily a weakness in method. It is simply a better presentation of facts because, after all, we haven't anything else in here but facts and that rearrangement to a smaller area, as I say, and as I recall from the figures, gave a better curve and hence an equally valid answer.

Q. What kind of a curve did you get when you first plotted it on the whole quadrant, Mr. Stevens?

A. I don't remember that. It could be easily found out. The data is in the working papers there.

Q. Didn't you have a gradually ascending curve instead of a descending curve?

A. It might well have been, I don't recall.

Q. What would give you an ascending curve on that?

A. An ascending curve would be caused by a—well, simply by a lack of decline in pressure against accumulated production.

Q. That's right. What would cause a lack of decline in pressure?

A. A lack of decline in pressure as it would appear on the paper would result from production in a very permeable area, perhaps, which would—and draining a large area through widespread wells, which would serve to give a lower—would serve to give a larger area—a larger production per pound. That would serve to flatten or even incline the production pressure curve.

Q. Well, now, you have given two things; one is a highly permeable area and the other I believe you stated was a small decline per pound production for that reason. Really, after all, it gets back to one reason, doesn't it—a highly permeable area?

A. Possibly that, with the assumption that the wells are fairly widespread or widely spaced.

Q. Oh, yes, I believe you did bring in the wide spacing of wells. Do you know how the wells are spaced in that area?

A. I haven't looked—I haven't considered that. This area was simply for the purpose of getting a better curve and outside of that we did not investigate details of that kind.

Q. Now, as a matter of fact, Mr. Stevens, isn't it true that you have more wells per acre in Quadrant 3, Hutchinson County, than any other single quadrant that you considered?

A. I don't know about that.

Q. Well, don't you care to hazard a guess about it?

A. No.

Q. All right.

A. If it is true, why, that is—

Q. All right. Now, do you have your work sheets there?

A. The reporter has them.

Q. Now look over that quadrant and see what we find there.

Mr. Lange: Here they are.

(The documents referred to were passed to the witness.)

The Trial Examiner: With respect to wells now, Mr. Keffer?

Mr. Keffer: No, with respect to pressures.

Q. I believe your work sheets, you said, didn't show the wells. I believe it does, too.

A. Yes, I show wells.

Q. Well, go on to pressures. That's what I had in mind. He is going to check the wells during recess, Mr. Examiner. That is all right with me.

You have the pressures shown there?

A. Yes.

Q. All right, in 1935 the quadrant pressure was 247 pounds, wasn't it, the total quadrant?

A. I don't think that—what did you say that was?

Q. 247 pounds, the total quadrant.

A. Well, now—

Mr. Lange: Speaking of the—

The Witness: The quadrant as I have it here—

By Mr. Keffer:

Q. I know, but I am talking about the quadrant before you changed it.

Mr. Lange: Referring to well head pressure, Mr. Keffer?

Mr. Keffer: Yes, that is all the well head pressure.

The Witness: 247, yes, is shown here.

By Mr. Keffer:

Q. All right, the pressure in 1936 was 253, wasn't it?
A. 246, I have it here.
Q. 246 in 1936. All right, what was it in 1937?
A. 253.
Q. What was it in 1938?
A. 253.
Q. 253—what was it in 1939?
A. 250.
Q. All right. You had a bigger pressure in 1939 than you had four years earlier in 1935, didn't you, a higher pressure?
A. Yes.

* * * * *

Stevens further testified on redirect examination (Vol. 63, pp. 9041-9063) as follows:

Q. Mr. Stevens, which one of these methods do you prefer for depleting the wells over the life of the wells or the life of the leases?

Mr. Spencer: Mr. Examiner, let us have him qualify the witness first. When I left him he wasn't qualified.

Mr. March: I asked him which one he *prefered* and that is all that is necessary for him to answer, if he has an opinion.

The Trial Examiner: I believe he just stated in response to cross examination, Mr. March, that he had made no study of the property depreciation and depletion other than that this system he proposes would be the logical method to use.

Mr. March: I want to know why he thinks it is the logical method.

The Trial Examiner: Is that what you want to know?

Mr. March: Yes.

The Trial Examiner: All right.

By Mr. March:

Q. Which one of the methods do you prefer and why?

A. Personally, I prefer this one described here as far as preference has any significance. Of course, it seemed that it was the logical one because it was tied in intimately with the life of the well or the use of the well—is tied in logically with the period of use and that is really the fundamental and probably the only basis of preference that the depletion is tied in with, the amount of gas that is going to be depleted. That seemed the very logical thing to me and that is probably the only and main reason for the preference.

Q. Your position is that you are depleting wells and that you should have the depletion period over the life of the wells?

A. Which is the history of the recoverable reserves, which is the period of producing from the recoverable reserves of the period in question. That is stating the same thing I believe.

Q. In other words, the leases aren't going to last longer than the wells?

Mr. Spencer: Mr. March, quit testifying. There is nothing in the record to substantiate that.

The Trial Examiner: Mr. March, I think you can reframe your question. I think that question you asked is wholly improper.

Mr. March: All right, sir.

Q. In your exhibit here, Mr. Stevens, do you state in effect that you can recover all of the gas from present wells under these leases?

A. If I understood your question correctly, the title of the exhibit describes it, it being "The estimate of recoverable gas reserves, present wells," and that reserve not being synonymous with total reserves to be recovered under leases, the difference between the two being recoverable by additional wells.

In short, to recover the reserve under leases, it will be necessary to drill more wells.

Q. Are you through?

A. Yes.

Q. In your opinion can you get all of the gas out from under these leases by the present wells?

A. Not on the basis of the production record to date and not on the basis of this study, which is the production versus pressure records.

Q. Are you attempting here in any way in this exhibit to give an estimate of reserves under leases?

A. No.

Q. Would it be true to state—strike that.

If your were calculating the reserves under the acreage of Canadian River or the reserves in the quadrants in which Canadian River acreage is contained, would you do it by this method?

A. What—

Q. By this method, I mean the method employed to calculate the reserves which these present wells can get out of the ground.

A. You mean if I were calculating the reserves under leases?

Q. That is right.

A. No, I wouldn't use this method.

Q. Why not?

A. Well, for the reason that the effect of weighting pressure against acreage establishes a basis upon which reserves under leases can better be calculated than does this method. While they are in general principle an expression of the utilization of the pressure decline method, yet the method used under that principle differs from that used by Mr. Hammer in the calculation of reserves under leases.

Q. If you wanted to get all of the gas from under these leases, would you have to drill more wells?

A. On the basis of this study, yes. Putting aside the purely theoretical consideration in indefinite time a given well will drain more than in any finite time, naturally, and the conditions of production are different as indicated by the production record constitutng the method here, and it will be necessary to drill some more wells to recover all of the Canadian River gas.

Q. Do you believe—strike that.

Would you be willing to testify for the record here that the Canadian River Gas Company has only two billion, two

hundred fifty-eight million, seven hundred eighty-nine billions—wait a minute. Is that two billion?—it is two trillion, isn't it—pardon me.

A. It depends upon whether you are going to call it Mcf. or not.

Q. 2,258.789 billions.

A. What are you referring to, Mr. March?

Q. I am referring to Page 3 of your Exhibit 182, where you give there the total recoverable reserve, December 31, 1939, including production for August 1, 1939 to December 31, 1939 from the present wells.

A. You are referring to the figure 2,238.849 billions?

Q. That's right.

A. Yes. In fact, I have so testified.

Q. You testified that that is all the reserves Canadian River has?

A. I'm afraid I did, and I'm sorry.

Q. I will ask you the question again. In your opinion, does the Canadian River Gas Company just have reserves under its leases amounting to over two trillion as you have the figure here recorded on Page 3?

A. That is not the reserve under leases. They have more than that under leases. This is the figure on reserves under wells, and the reserves under leases has been given in a previous exhibit.

Q. Is it your intention, either impliedly or otherwise, to give here an estimate of the remaining reserves under Canadian River leases?

A. No, it is not.

Q. And as I understand you, if you were computing the reserves under leases you would have employed a method employed by Mr. Hammer?

A. Yes.

Q. And you would not employ the method employed here?

A. That is right.

Q. As I understand your exhibit here, 182, it is an exhibit which involves the study of the action of wells and wells alone?

A. As expressed in your production and pressures, yes.

Q. It has nothing whatsoever to do with acreage?

A. That is right.

Q. We have had considerable discussion here as to why

you employed quadrants, why you used the same quadrants that Mr. Hammer used in his exhibit. The question was asked you as to what your estimate of reserves which could be recovered by the present wells would be if you had disregarded the quadrants, and I believe there was some statement made here that it was twenty per cent—it would be twenty per cent lower. Now, have you made a calculation to determine exactly what per cent lower it would be?

A. That would be 16.455 per cent below the figures shown for 7-31-39. That was the basis upon which the computation was based, of course.

Q. And why didn't you ignore the quadrants?

A. For the general reason that it was desirable to split up the area in some manner. It could probably have been done in some other form of areal distribution than the quadrants shown. The only reason for taking the quadrants as shown was more one of consistency than anything else, but that they should be broken up into some areas—quadrants in this case is preferable for the reason that analysis of the characteristics of component parts can be more closely studied and the diverse effects in those areas be more accurately charted and weighted into a whole to arrive at, by summation, a result which result is I believe superior to a similar result arrived at by a wholesale consideration of the total area involved.

Q. Is it correct to state that probably the principal reason was that you thought it necessary to have wells in adjacent territory grouped together and studied separately and then relate them to the whole?

A. To relate them to the whole by summation, yes.

Q. Now, I believe it was brought out that you followed exactly the quadrants as contained in Mr. Hammer's exhibit with the exception of Hutchinson 3?

A. Yes.

Q. And I believe it was likewise brought out that the only reason that you did that is because there were no Canadian River wells in the northern part of that quadrant at all?

Mr. Keffer: Now, if the Examiner please, that is not the record, Mr. March. That is not what the record shows. That is what you said.

Mr. March: I will ask him that a different way if Mr. Keffer insists.

Q. Will you explain for the record just exactly why you did not use all of Hutchinson County, Quadrant 3, as Mr. Hammer had delineated it on his map?

A. We started to use it that way consistent with all the others. The nature of the pressures of the wells of other companies in the north—general northern part of the quadrant is such that when projected against accumulated production it gave a very erratic curve, in fact, it was almost an ascending curve if not actually so.

Mr. Keffer: Almost what kind?

The Witness: Ascending. That suggested, looking at the quadrant with respect to distribution of Canadian River acreage and noting that it was entirely in the southwest corner—the suggestion was apparent that perhaps a treatment of that part of the quadrant directly related and adjacent to Canadian River acreage might result in a better alignment of data and constitute a better basis for estimation of Canadian River's recoverable reserves. That proved to be the case and it was simply adopted for those reasons.

By Mr. March:

Q. Mr. Stevens, are there any Canadian River wells at all in the northern part of Hutchinson Quadrant 3?

A. Not that I recall. I am quite sure that is the case. If there had been it would have—well, Exhibit 95 will show that very plainly I think. Here is Canadian River acreage over here (indicating).

Q. Are there any Canadian River wells in the northern part of Hutchinson 3?

A. According to this exhibit there are not, nor do our records indicate any.

Q. According to this exhibit, where do you find the Canadian River acreage?

A. In the southwest part of the quadrant.

Q. Solely in the southwest part of the quadrant?

A. Yes.

Q. Now, Mr. Stevens, if there had been Canadian River wells up here in the northern part of the quadrant, you could not have disregarded the northern part of the quadrant, could you?

A. No, you could not have.

Q. Oh, yes, there was some further discussion about

that, so therefore the principal reason was you did not use the northern part and did not deem it necessary because no Canadian River wells were up there, is that not correct?

Mr. Spencer: Now, there he goes again—"the principal reason." Let the witness state what the principal reason was.

The Witness: Those are the principal reasons and those are valid reasons I think.

By Mr. March:

Q. Oh, yes, there was some discussion—I believe you admitted that had you used all of Hutchinson 3 in spite of the fact that there were no Canadian River wells in the northern part of it that you would have got a gradually ascending curve?

A. As I recall it was of that nature almost. It certainly wasn't a definitely descending curve in the sense that these others are.

Q. Mr. Stevens, in any of these other quadrants using the data for 1937, 1938 and 1939, do you have a similar situation?

A. Not with respect to the values for those three years, no.

Q. You don't have any quadrant—do you have any quadrant at all which was comparable to Hutchinson Quadrant 3?

A. No, there were none.

Q. Now, Mr. Stevens, there has been a great deal of discussion about these curves that you have drawn here as reflected in Exhibit 182. Now, I want to direct your attention to the individual quadrant curves which you have constructed. There was some implication that in these individual curves that you arrived at your answer first and then drew your line. Is that correct?

A. There might have been. I believe there was, partially, at least.

Q. Now, I direct your attention to Quadrant 4, Carson County, which is the first quadrant curve. Now, I will ask you, did you determine mathematically the points there before you drew your curve?

A. In the sense of arithmetic, yes, and that the pressures were averaged and the production was accumulated.

Q. You plotted to arrive at those individual points there your production against your pressures?

A. That is right.

Q. And it was after that that you drew your line?

A. That is right.

Q. Your curve?

A. Yes.

Q. Now, I direct your attention to that curve and ask you whether or not it would be possible for you to draw that curve any other way without increasing your estimate, giving consideration to '37, '38 and '39.

A. It would not have been possible to draw it any other way without increasing the estimate of reserves, for the reason that had we drawn it any other way to more completely employ '37 than we have, the result would have been a curve at a gentler slope which would have the effect of increasing the reserves.

Q. Then it would have been impossible for you to draw this line any other way, giving proper consideration to '38, '37 and '39 without increasing your estimate?

A. That is true.

Q. Now, Mr. Stevens, I want you to go through—glance through every single one of these quadrants here—Quadrant curves, and tell me which, if any, you could have drawn differently, giving consideration to '37, '38 and '39, without increasing your estimate of reserves.

A. The next one is Hartley County Quadrant 1. If any more consideration had been given to 1938, it would of course have increased the estimate of reserves for that quadrant. However, if we accept the premise that '38 is obviously low for some reason, then '37 should be given more weight and '38 ignored. The result in this case would have been a very slight decrease of the estimate of reserves.

However, that lineup of points there is probably, and in general, considering average opinion, I believe the only one where any logical change would decrease rather than increase the estimate of reserves.

Q. You just check the others to play safe.

A. And the next one, Hutchinson 3, described as being in the southwest part of the area, Hutchinson 3 marked on Exhibit 95, we have a lineup of points there in which 1936 does not appear to be had. However, it wasn't given major weight, but if 1938 were given any more weight than is

given there the result would have been an elevation in the reserves and an increase in the estimate of reserves.

Mr. Keffer: How about 1939, if you had drawn it right through the center of it?

Mr. March: I am asking the question, Mr. Keffer.

The Witness: That would ignore 1938, Mr. Keffer.

Mr. Keffer: How's that?

The Witness: That would ignore 1938. We are considering all three points.

Mr. March: I am asking the questions, Mr. Keffer.

Mr. Keffer: Take 1938 like it is, drawing the line through 1939.

By Mr. March:

Q. Could you have drawn this line giving *consideration* to '37, '38 and '39 any differently from what you have done without increasing your estimate of reserves?

A. No, it couldn't be done without increasing the estimate of reserves unless—

Q. That's all now. Just a moment—

Mr. Spencer: Mr. Examiner, can't the witness finish his answer? Must I protect him?

By Mr. March:

Q. Now, Mr. Stevens, could you have drawn that line any other way, any lower, giving a lower estimate of reserves and still touch '38?

A. No, you could not. That was the point I was about to mention.

Q. Now we'll go to the next one and check that one.

A. Moore County Quadrant 1.

Q. Right.

A. That, as I see it, is the only way that could be drawn without ignoring 1937, and the only way it could be drawn to show a lesser reserve would be to ignore '37.

Q. I will ask you this question: Could that line have been drawn any other way, touching all three of those, touching '37, '38 and '39 without increasing your estimate?

A. No, under those conditions it could not have.

Q. All right. I will ask you the same question with regard to Quadrant 2, Moore County.

A. That is right, also with respect to Moore County, Quadrant 2.

Q. In that case, Mr. Stevens, if you had gotten closer to the point of '37 than you did, would that have increased your estimate of reserves?

A. That is right, it would have.

Q. The next one, Moore County, Quadrant 3. Now, Mr. Stevens, in that case you split 1938 and 1939 points right down the middle. Now, if you had gotten any closer to the 1937 point, would that have increased your estimate of reserves?

A. It would have.

Q. Potter County, Quadrant 1, could you have drawn that line, touching each of the three points 1937, '38 and '39 without increasing your estimate of reserves?

Mr. Keffer: Now, just there, Mr. Examiner. Mr. March made that statement many times and made it again here. I have let it go, but it is so erroneous it distorts the record and I feel that some observation and objection should be made at this time.

He talks about "touching the point '38," which the line does not do at all, which he can tell by looking at it.

Mr. March: If you would like my language a little better and a little more concise and complete, I will state it this way:

Q. Mr. Stevens, could you have drawn this line any closer to the 1938 point without increasing your estimate of reserves?

A. Well, you could draw it through the center of '38 and '39 and it would decrease the amount of reserves.

Q. I am talking about the three years.

A. But giving equal weight in the situation to '37, you could not do that.

Q. But now since you brought that up, Mr. Stevens, I want to ask you this question: Would you have attempted anything like this if you just had the data for the two-year period, '38 and '39, and had no other data?

A. In general one would not draw a curve on two yearly

points unless he had to. In a couple cases here we have split '38 and '39 points, but even so, '37 has played some reasonable relation, but in the event of having all of these nine quadrants based on only two points, it is quite unlikely that the reserves would have been drawn in this manner and using this same group of data.

Q. Your statement is, as I understand it, that if you had just had the data for a two-year period, '38 and '39, you probably would have never made this study in the first place because it would be inadequate for such a study like this.

A. That is true, yes.

Q. And in every case you drew a line here, you did give some consideration at least to the three-year period?

A. Yes, even though, as stated, the curve was drawn through '38 and '39, that represents about two cases, I believe.

Q. All right, let's go to the next one, Potter County, Quadrant 2. Now, I will ask you—there is a quadrant in which you split the points of '38 and '39 and you missed 1937. Now, I will ask you this: If you had given any more consideration to 1937 than you did give, what would have been the effect on increasing or decreasing your estimate of reserves?

A. It would have increased the estimate.

Mr. Spencer: There is a place, Mr. March, where you used two points.

Mr. March: The witness has testified he always gave some consideration to the three points, although in this particular case here it pierces right through the center of '38 and '39.

Mr. Spencer: Right.

Mr. March: The witness also testified that he wouldn't even have prepared this exhibit if he just had data for two years.

Q. Now, the next one, Potter County, Quadrant 3. Now, there is a case again where you ply right through the middle of '38 and '39, and you miss your 1937, it is below the line. Now, I will ask you this question: If you had given

any more consideration to 1937, what would have been the effect thereof?

A. It would have increased the estimate for that quadrant.

Q. Now we turn to our composite, Mr. Stevens. On your composite, how did you arrive at your 1935 point?

A. '35?

Q. How did you arrive at your '35 point?

A. The '35 point at zero production is simply the average production for 1935.

Q. Is the 1935 point the composite of all the 1935 points upon your individual quadrants?

A. Yes, in that it is a summation of all the wells in all the quadrants.

Q. Now, how did you arrive at your 1936 point?

A. The summation of all well pressures in 1936 reduced to an average, plotted against the total quadrants—production for 1936.

Q. It is your—is your 1936 the composite of all your points in the preceding quadrants?

A. Yes.

Q. How did you arrive at your 1937 point?

A. In the same manner.

Q. And your 1938 point?

A. The same manner.

Q. And your 1939 point?

A. In the same manner.

Q. Now, Mr. Stevens, I will ask you this question: Would it have been possible to have drawn this line on your composite any differently from the way you did draw it, coming any closer to all three of your points, your '37 point, your '38 point and your '39 point?

A. In general that occurs to me to be a very sensible interpretation of those points. Now, it must be remembered in the case of this total curve or composite curve that the summation of data did give us another point which is the end point at 25 pounds abandonment; so in a sense perhaps this curve should be described as being drawn not only on three points *prinarily*, but on four points since you know in that case the answer that you had to come out to.

It would have been possible to draw it backwards, as a matter of fact.

Q. Let's forget all about the answer which you had now, the answer which you had over here on the right-hand side of your page, the fourth point that you had, and I will ask you this question again: Would it have been—do you understand the question?

A. Yes, I do. As it is the line, as far as I can determine it here by eye, splits '38 and '39 equidistant—split the space equidistant between those—

Mr. Keffer: '38 and '39 equidistant?

The Witness: They are very very close to it.

Mr. March: Get your slide rule on that. Have you got your slide rule on that—I mean your triangle?

Mr. Keffer: He has that to check that distance as between '38 and '39—

Mr. March: You can cross examine the witness when we get through, Mr. Keffer.

Mr. Keffer: Well, that will be some time, and I don't want an obviously false statement to go in the record.

The Witness: Regardless of whether you consider it a serious error in judgment, it represents a very reasonably drawn line and with regard to the statement that four or five engineers would have all drawn a different line, it is, of course, possible for fifty different engineers to draw fifty different lines as may be dictated by considerations which may be from prejudice or diverse judgment, whichever applies, but there is very very few different ways in which this line could be possibly drawn and drawn sensibly.

Mr. March: Yes.

Q. Then is your statement here—is my statement correct, after you observe this, could this line have been drawn any differently, giving more consideration than you have given to the points '37, '38 and '39—giving consideration to all three points?

A. To give more consideration to '38 and '39 would have given a less reserve, but it would have resulted in giving less and less weight than '37 appears to deserve.

Q. Yes, but if you had—

A. So assuming that with respect to '37 which has not

been ignored in previous cases—there is no reason why it should be ignored here, and I simply regard it as a very reasonably drawn line.

Mr. Spencer: Mr. Examiner, perhaps I misinterpreted the witness' testimony. It sounds to me as if he were saying that he had exercised some judgment in drawing the line. As I recall his testimony on cross examination he had a point which he had to reach, the course of the line backwards was determined before he started—

The Witness: It was determined in a sense, yes.

Mr. March: He can explain that.

Mr. Spencer: I just didn't want the impression here—

Mr. March: Go ahead, Mr. Stevens.

Mr. Spencer: If the record is clear, that is fine.

The Trial Examiner: I think he did, Mr. Spencer.

Mr. Spencer: Pardon me for interrupting.

The Trial Examiner: As a matter of fact, I think he reiterated his statement on cross examination.

By Mr. March:

Q. Now, Mr. Stevens, I want to ask you this question: If you had given—what would have been the effect of the situation if you had given any more consideration to 1937 than you did?

A. Well, you would be getting farther away from 1938. You could do that in two ways. You could move the line in a general southward direction parallel to itself perhaps, or you could have swung it about the point it now occupies near 1939.

Q. Well, if you had moved 1937, the line any closer to 1937—do you see what I mean?

A. Yes, it would have gone farther from 1938 and given less weight to 1938.

Q. Well, what would have been the effect of that? would it have increased or decreased the estimate?

A. It would have increased the estimate.

Q. Can you tell me how you could have drawn that line any differently from what you did, giving consideration to

all three points, without increasing your estimate—in fact, all three points?

A. Yes, I understand. I don't see how it could be changed without any justification whatever, having in mind the effect of 1937; that is, assuming that we did not know what the total was and were drawing this entirely with respect to the points. However, this curve is simply a summation of the data. It represents the summation of the data from which the other curves were drawn individually.

Q. As I understand it, before you started drawing this curve you had something that you didn't have when you started drawing these other quadrant curves?

A. That is correct.

Q. You had the answer, is that correct?

A. That is right.

Q. You had the slope of the curve?

A. Yes.

Q. But if you had not had that answer, if you had not had that slope—I mean indicated, and you had just had these points up here; then is there any possible way in which you could have drawn that line, other than what you did, giving consideration to '37, '38 and '39, without increasing your estimate?

A. No reasonable way that it could be done without doing so.

The witness further testified on recross examination (Vol. 64, pp. 9104-9176) as follows:

Q. Now, you have agreed with me, I take it, then, that if the present wells in Quadrant 1, Potter County, will produce all the gas in that quadrant, then the drilling of additional wells certainly would not increase recoverable reserves except to a very very minor extent possibly. That is correct, based upon the assumption.

A. You aren't asking me to affirm the assumption, are you?

Q. No, not the assumption, the result based upon that assumption, that's all.

A. Well, the result based on that assumption is, as you say, but I would like to add that it is an erroneous assumption, that's all.

Q. Well, it may be. I am not admitting that it is er-

roneous, mind you. Now, will you tell me what part of Quadrant 1, Potter County, that the present wells will not drain—will not produce all the gas now underlying that quadrant? That's my next question.

A. That question—

Q. Just answer my question.

A. It will be as stated before, I believe, that the amount of gas it won't drain would be in the area least accessible or available through action of permeability to the wells.

Q. All right, point it out on the map. I want to know where those areas are.

A. It would be in the areas of highest pressure, without even looking at the map, as compared with the lower pressures wherever they are located.

Q. All right, you are going to assume at the end of that period, whenever you are down to 25 pounds, that the southernmost wells of that area which are now in the highest portion of the area, when they are down to 25 pounds, certainly everything north of them is going to be down to 25 pounds.

A. The central point—

Q. Just answer that question. Isn't that a fact?

A. That the area north of it—

Q. Yes, is going to be down to 25 pounds, too, because it is already much lower, or some lower than those southernmost wells.

A. That is a reasonable assumption, but there is still the fact that some other areas will be over 25, and whatever they are—

Q. What other areas?

A. Whatever they are is unimportant. It is the fact that they will be there and their specific location is really extraneous to this except in principle.

Q. You say they will be there. That's the very thing I want to find out. How do you know they will be there? Give me your reasons.

A. You have agreed on many occasions that areas away from the well will be at higher pressure.

Q. That's right, but how much higher?

A. I stated that that is indeterminate.

Q. You know it wouldn't be very much, don't you?

A. You do not even know that, but as to the degree, that has been stated to be indeterminate.

Q Would it be as much as 10 per cent of the total?

A. It is indeterminate.

Q. How's that.

A. You were talking about pressure a minute ago.

Q. That pressure is still what we are talking about. You say the pressures would be higher away from the well, didn't you?

A. Yes.

Q. And I have agreed with you that that is a fact.

A. Yes, and I simply decline to hazard a guess as to how much it would be.

Q. I just asked you if it would be as much as 10 per cent.

A. If you can't say in pounds, you can't say in per cent.

Q. Do you have any idea how much?

A. No, no one does.

Q. Would you say 10 per cent would be too high or too (illegible).

A. I don't say anything about it.

Q. You just don't know?

A. I just don't care to hazard a guess. It is just impossible.

Q. All right, let's get back and we'll leave this for a moment. Now, you follow me here. You said a while ago your gas would remain in areas of higher pressure when you get down to 25 pounds.

A. That is a general statement of fact.

Q. It is a correct statement, isn't it?

A. Yes.

Q. Now, the southernmost wells in that quadrant now are some 2½ miles from the south boundary line of the quadrant, are they not?

A. The wells.

Q. Yes.

A. Yes.

Q. All right, now, those wells are in the highest producing area of the quadrant where wells are located aren't they; that is, those wells have higher pressures than other wells in the quadrant?

A. Well, as a matter of pressure, yes. You are tying in production with—

Q. No, I am talking about pressure.

A. All right.

Q. The pressures of these southernmost wells are the highest pressured wells in the quadrant.

A. Yes, sir.

Q. Now, when those wells are down to 25 pounds, every well north of those is going to be down to 25 pounds, aren't they?

A. Well, the contours run less as we go north.

Q. They do?

A. They do. You say they would be less than 25 pounds?

Q. No, would also be 25 pounds—at least 25 pounds.

A. That is a reasonable assumption.

Q. It is an unavoidable conclusion, isn't it?

A. Assuming the pattern remains the same or approximately the same.

Q. All right, then, we have got it pretty well established that the pattern remains the same; that everything north of the present producing wells which are 2½ miles from the southernmost boundary, would be 25 pounds. All right, and we aren't drilling any more wells either.

Now, we established a while ago that if the pattern remains the same that when those wells are 25 pounds, that down at the edge of the field it would not be any more than —that is, in the area which is now shown as virgin—well, wait a minute. Strike all that.

Those wells are in the 410-pound isobar band, aren't they—that is, from 410 to 420? Those are the ones you said a while ago—the one over here (indicating).

A. Here is the 400, the 410 and 420 and 430.

Q. Then those southernmost wells have a pressure now of about 405 pounds as shown by the map, is that right?

A. I believe that is the case.

Q. "I think"?

A. All right, 405.

Q. 405 pounds, is that what you said?

A. Yes.

Q. All right, now, and you show for a portion of that

area southwest—*southward* at least, a pressure now of 430 pounds, don't you?

A. Yes.

Q. The difference is 25 pounds, isn't it?

A. Yes.

Q. So when that well gets down—the well we are referring to which is the southernmost well in that quadrant—gets down to 400—I mean, gets down to 25 pounds, then the highest pressure on the southern side of your quadrant would be 50 pounds if the pattern remains the same?

A. That is indicated, and it also assumes that that isobar spacing is proportional—is truly proportional in the area immediate to the well.

Q. That's right, and the pattern is going to remain pretty much the same. All right, 50 pounds would be the very highest you would have south of that well, wouldn't it?

A. Disregarding those other factors, yes.

Q. And it would grade down by isobar line, by isobar line, down to 25 pounds; so your average would be a lot less than 50, wouldn't it, south of that line, to the southern extremity of the production; that is right, isn't it?

A. Your average, yes.

Q. All right, now, we have already agreed that everything north of that well will be down to 25 pounds because it is already much lower or gradually lower than that well to the north of it. That is correct, isn't it?

A. Yes, but between successive wells there will also be higher pressure areas than 25 pounds; so the very southernmost area isn't the only one to be considered.

Q. Now, when we have produced those wells that are in that quadrant now down to 25 pounds; then on the admissions you have just made, there is going to be practically no gas or very little gas left in that quadrant above your 25-pound abandonment pressure. Now, doesn't that naturally result?

A. Well, as you say, there is very little more.

Q. That's right.

A. It would be the amount of gas resulting from the increased pressures, whatever that amount of gas was.

Q. All right, we have demonstrated here I think that the highest pressure we would have would be 50 pounds.

A. And whether it is little or large depends upon that

degree of difference, and as indicated by the study, it is the difference between the reserves of the two estimates, one under wells and the other under leases.

Q. Well, now, as a matter of fact, from the very thing that we have just been talking about, Mr. Stevens, your estimate of recoverable reserves under Quadrant 1, Potter County, becomes and is an estimate of reserves under the leases in Quadrant 1, Potter County?

A. No, I have never maintained that or admitted it.

Q. I know you haven't admitted it, but the thing I am talking about, the figure which you got as being the gas recoverable from the wells is also the figure of the gas recoverable from the quadrant, under the leases.

A. Under the present wells as they are distributed only.

Q. Yes, sir, and all this we have been going through, we haven't drilled any more wells at all.

A. Well, you are presuming that all you ever want to recover is recoverable by these present wells and that is merely a matter of definition. Mr. Hammer's definition of leases presumes that you do recover the gas there is in there to recover.

Q. But Mr. Hammer's estimate may be wrong. Now, here is what we are getting to. Now, it is admitted—now, let's don't go back over it again—that whenever the well in that quadrant is down to 25 pounds that the highest pressure you will have in the quadrant down in the extreme southwest corner of it will be 50 pounds if the pattern remains the same.

A. And in other places between wells.

Q. All right, other places between wells it will be what?

A. That covers all the quadrant.

Q. I know, it will be what between wells?

A. That again is indeterminate, but you are going on the premise, Mr. Keffer, if I may say so, that if you had one well there that when you got it down to 25 pounds, that would be the reserve for the leases.

Q. It is the reserve for the leases if it drains the whole quadrant.

A. Well, but it won't.

Q. I know you said that a hundred times, but you have never given very convincing reasons to me why the wells in that quadrant today won't drain that quadrant, Mr. Stevens.

If you could answer me that question, we could cut all these questions that I have asked you this morning, if you would answer that one question.

A. These are tied in with practical things, finite time, the way you do things, hypothetical assumptions of one quadrant to the field. On your assumption you are about to make a conclusion or certainly imply that one well—all the gas that you could get out of that one well down to 25 pounds is the reserve of the field which is an absurdity on the face of it.

Q. I didn't make any assumption, but in fear that you may think I have, let's go back to Quadrant 1 we have been talking about. The wells are pretty well distributed over the quadrant, aren't they, and there is more than one well, isn't there?

A. Yes, and there are spaces between wells.

Q. How many wells in that quadrant? Look and see—39—there may be more now.

A. Well, that is approximately correct. There were 24 wells in the quadrant in which pressures were available.

Q. That's right, 24, and pretty well distributed over the quadrant, isn't that right?

A. Yes—well, I think so.

Q. Well, all right, take a look at it, Quadrant 1, Potter County.

A. The line across the northeast quarter—or the northwest quarter of the quadrant shows three wells and I don't see any northwest of that so that area is relatively—yes, I say the northwest quarter and the line running diagonally—yes, that is one of the three, but nevertheless, from the looks of it there are many locations if you consider the section as a drilling unit.

Q. All right.

A. There are many locations yet to be drilled in Potter 1.

Q. All right, now, answer my question. I don't know—you don't even consider a section a drilling unit, do you?

A. Well, they were on there for the purpose of comparison.

Q. How do you mean they were on there?

A. Wells were located in the center of sections, weren't they?

Q. I know, you've got to put it somewhere. The fact

that a well is located in the center of a section doesn't mean the section is a drilling unit, does it?

A. It doesn't, but the fact remains that there are considerably sized areas in Potter County that could logically drilled.

Q. All right, let's get away from sections as drilling units. The 24 wells in that quadrant are fairly evenly distributed over the quadrant except for the two or three miles on the south side of it.

A. South side and the northwest corner.

Q. Northwest corner, but you have wells in the northwest corner, haven't you?

A. I refer to the northwest corner as being the diagonal west half of the northwest quarter of the quadrant.

Q. Well, that would be about the northwest quarter, wouldn't it—half of a half is a quarter, isn't it?

A. That same area that is on that diagonal.

Q. Well, that might be about a quarter. That's close enough, anyway. All right. Now, I am going to apologize to everybody for staying on this so long.

You have far more wells per acre in Quadrant 1, Potter County, than you have in Quadrant 3, Potter County, haven't you, per acre?

A. I think that is true, there being only nine wells indicated here on Potter 3, that is right.

Q. Now, your nine wells in Quadrant 3, Potter County, by your own admission, is going to produce all the gas there and even a little more. That's right, isn't it?

A. Well, if you assume that you are comparing the reserves under leases and the reserves under wells as stated by the two exhibits.

Q. Now, I am getting away—yes, I am taking the reserves under leases as distinguished from the reserves under wells as you make the distinction.

A. Yes, we show those produce a little less than a fifth.

Q. That's right. You had over there a well that is in Quadrant 3—a well almost every 4,000 acres, didn't you?

A. I believe that was determined the other day.

Q. All right, now, what is your average well spacing in Quadrant 1, Potter County? Let's just compare them. Where are your acres?

A. I don't have the acres on here.

Q. Somebody give me the acres. It's in Mr. Hammer's exhibit. Do you know what it is?

A. No, I don't offhand.

Q. All right, look at Mr. Hammer's exhibit. Mr. Hammer's exhibit shows the acreage in that quadrant to be 57,588 acres, and you show 24 wells. That's right, isn't it?

A. I show 24 wells on which pressures were available to determine the pressures.

Q. There may be a few more wells now. I think there is, but we'll take 24 wells which you show. You have a little better than 2,000 acres to the well, haven't you—less than 2500 or about 2500?

A. 2400.

Q. All right, now, that's a lot closer spacing than you have over in Quadrant 3, Potter County, isn't it?

A. Yes, but two quadrants can't always be compared on spacing alone.

Q. That may be quite true, but the fact, nevertheless, remains you have a closer spacing in Quadrant 1, Potter County, than you do in Quadrant 3, Potter County?

A. That is right.

Q. All right, you say that the present spacing in Quadrant 3, Potter County, will produce all of the gas that Mr. Hammer shows under the leases and some over, don't you?

A. In Potter 3?

Q. That's right.

A. Yes, about a fifth more.

Q. How's that?

A. About one-fifth more.

Q. Yes, all right; then assuming other things are the same, it would be a very reasonable assumption to assume that a closer spacing in Quadrant 1, Potter County, would also produce all of the gas in that quadrant, wouldn't you?

A. If the comparison were based entirely on that criteria, that would be so, but your production doesn't show that.

Q. How do you mean "production doesn't show it"?

A. Production versus pressure, arriving at a recoverable reserve, and that recovery being compared to the reserve under the leases which—

Q. Now, you are going back to your answer for the pur-

pose of the comparison. Now, that's what I am objecting to. Maybe your answer is wrong. That is what I am objecting to. Let's don't go back and assume the answer and then check into it to see if you are right or wrong. We are trying to find the answer in this calculation.

A. The answer is indicated, as the answer shows, on the basis of production history. It is the answer and it isn't getting away from the fact that that is the answer and if the comparison is such as you say, that is just all there is to it.

Q. Now, you say—what is the answer?

A. Pardon me. Let me finish.

Q. Excuse me. Go ahead.

A. And it is all supportable. In fact, we think it has been adequately shown that the reserves under leases of Mr. Hammer's study is a minimum estimate, so the fact that—

The Trial Examiner: Just strike that portion from your answer. You go on and explain, but there is no reason for an answer like that. That isn't any part of the explanation.

The Witness: I'm sorry. I apologize to everybody, but I just did want to finish it. The fact that we show a reserve recoverable under the wells to be a little bit more than reserves under leases is supportable in our opinion as indicating a minimum estimate on the part of Mr. Hammer on another method and perhaps it should be pointed out again also that in making this, quadrant confines were observed, where in the other estimate the quadrant was determined as to reserve with respect to adjacent quadrants.

By Mr. Keffer:

Q. Well, I don't know whether that answers the question or not. Frankly, I've forgotten what I asked, but I believe you did answer. I'll shortcut here, if the Examiner please.

You did answer that if everything was the same that assuming similar conditions in Quadrant 3, Potter County, and Quadrant 1, Potter County, then your wells that are now located in Quadrant 1, Potter County, will produce all the gas that is there. I think you said that.

A. Potter County 1?

Q. Yes.

A. I thought you were talking about Quadrant 3.

Q. I say, if conditions in Quadrant 3, Potter County, and Quadrant 1, Potter County, are the same; then the number of wells now in Potter County 1 will produce all the gas in that quadrant.

A. Well, Potter County 3 was the one in which we had extensive discussion.

Q. Can you answer that question directly? I thought you already answered.

A. It will produce—let's put it this way: It will produce more than indicated by Mr. Hammer's reserve, but it still may produce—but it is entirely possible due to the effect of drainage in Moore County 3, it is entirely possible that more wells will be necessary in Potter County 3, so your conclusion is not fully supportable as to the particular condition there.

Q. Well, let's go back, then, to Potter County 3. Can you say to me that you have more drainage into Potter County 3 than you have out of it, looking at your map?

A. You can't evaluate it.

Q. Then you can't say, can you?

A. I have gone only on the basis of the record, Mr. Keffer, and to do otherwise—

Q. Just answer my question. You can say whether there has been drainage into Potter County, Quadrant 3, any more than there has been out of it, can't you?

A. I have not made a study of it.

Q. You just can't say, then. Just say you can't if you can't.

A. I can't.

Q. All right. That's all I want you to say. Since you can't say that, then you can't evaluate it and you can't give that as a reason logically.

A. I am trying simply to explain something that can't be explained with specific exactness, but only in principle, and it all goes back to previous earlier statements that this study is determined on what the record shows.

Q. Well, that is production record of wells, isn't it?

A. Yes, sir.

Q. All right, now, getting back to the question I asked you a while ago, assuming conditions are the same in the

two quadrants, Potter County 1 and Potter County 3, then you have enough wells already in No. 3, Potter, to produce all the gas that is there under the leases. That is right, isn't it? It would have to be.

A. Under the manner in which those reserves were determined, you might draw that as a conclusion, but it can't be concluded that absolutely no more wells will be necessary for the reason, I believe, that I just explained.

Q. On drainage. Was that your reason?

A. It may be drainage or whatever the reasons are, it is really immaterial. It is a fact that in Quadrant 3, as you say, the well distribution is—

Q. Not as good as it is in 1.

A. The territory—the Potter Quadrant 3 is not covered as completely by wells as is Potter 1.

Q. That's right.

A. And you have stated that it has impermeable areas in it.

Q. I have stated?

A. Yes, I think you claimed that it had impermeable areas in it.

Q. I didn't know I had. I have forgotten that I had.

A. If any rate could be considered comparable, as you are trying to make it, it is a conclusion that more wells could be drilled and probably should be drilled, and in which case the recoverable reserves would still be more than what it is over Mr. Hammer's method on the way he figured it, having in mind there the two methods of figuring, he including adjacent quadrants and I including only the quadrant in question, which makes a comparison of the figures entirely improper except on the broadest considerations, Mr. Keffer, and I think that answers the whole question.

Q. It makes it more difficult. You don't mean improper, exactly?

A. Well, the degree of difficulty almost makes it improper.

Q. All right, let's go a step further and see if I can't help you. You say you have got a good reason, but you don't know what it is. Let's see if I can help you get the reason. You would appreciate that, wouldn't you?

A. If you could evaluate the differences it would be, yes.

Q. All right, let's take Potter 1. See how your isobar lines run there? Can you see from there?—to the northeastward.

A. Yes.

Q. It indicates a rather rapid movement of gas, doesn't it, out of Potter County, Quadrant 1, to the northeastward?

A. I don't think it does.

Q. Well, all right. Now, let me ask you this: Now, on your method—now, I am talking about your method—you always come back to say that the records show this, the records show this, and the records show this. Now, on your method the records which you take are the production records, aren't they?

A. Yes.

Q. Plus the rock pressures, aren't they?

A. Yes.

Q. All right, now, let me ask you this simple direct question: If you have drainage out of a quadrant, then your production records as related to your rock pressure records will show a greater decline in rock pressures than you would have had if you had not had that drainage out, won't it? Just answer that. Anybody can answer that question.

A. That is right.

Q. That is right. All right. Consequently, on the way you have figured it you would show less ultimate production from every well in a quadrant of that character, wouldn't you, necessarily so?

A. If the drainage was occurring in the degree which you assume.

Q. Well, if it was occuring in any degree it is reflected there. You have said many times it is reflected.

A. It is reflected, that is right.

Q. Yes, sir.

A. But I believe you are assuming a marked degree, aren't you?

Q. No, sir, I am assuming the degree, whatever it is, as reflected in your figures. All right, now, the answer of that reflection, or the reflection, rather, that we get is that we get a higher drop in pressure per volume of production, and consequently, the way you have figured it, each well in that quadrant would produce less gas on your figures than if there had been no drainage. Now, that's just fundamental, isn't it?

A. That is correct, in principle, but this is what the record shows.

Q. I know, I am talking about the very record that you are talking about. The record as you have recorded it shows far less production per well than in the way you have figured it over any period in Quadrant 1, Potter County, than it does in Quadrant 3, Potter County, doesn't it?

A. Oh, you are comparing Potter 1. I thought you were talking about Potter 3.

Q. No, I say, the record as you have it shows that the value of a well in Quadrant 3, Potter County, is much more than it is in Quadrant 1, Potter County?

The Trial Examiner: From the standpoint of production?

Mr. Keffer: From the standpoint of production as compared to pressure drop. In other words, your pressures drop faster with the same volume of production in Quadrant 1, Potter County, than they do in Quadrant 3, Potter County.

The Witness: Well, they are down to—yes, there is a difference of about 14 pounds.

By Mr. Keffer:

Q. All right, now, the whole point is, your wells are dropping more rapidly in Quadrant 1, Potter County, than in Quadrant 3, Potter County, when *syncronized* with the production you are getting from the respective quadrants. Now, there isn't any question about that, is there?

A. That's right, but you omit an important consideration and that is the volume of gas that may be there, Mr. Keffer.

Q. Well, now, I don't know how much gas is there. I don't want to assume the answer on these. All right, now, let's go back to another angle on that, then: Your wells, because the pressure drop in Quadrant 3, Potter County, is slight compared to the production, but when you come—and by reason of that fact you come out above Mr. Hammer?

A. You say a slight pressure drop?

Q. As compared to the production, the volume of production.

A. The production is greater—is less in Potter 3 than it is in Potter 1.

Q. I know, but you have got a lot less area to the pound drop, and I haven't checked it. I am getting way out on a limb, but the pound drop in Quadrant 3, Potter County, is less when related to production than it is in Quadrant 1, Potter County, isn't it?

A. Well, let me see.

Q. I am trying to help you solve this thing that you can't understand, and maybe it won't solve it.

A. Potter 1 has a greater area, is that right?

Q. Oh, yes, of course.

A. And you say it has a greater production per pound than does Potter 3?

Q. No, I say Potter 3 has a greater production per pound drop than does—

A. Well, I'll have to investigate that.

Q. How's that?

A. I think we ought to investigate that.

Q. All right, can we do that real quickly? Now, here is the thing I am basing it on. Now, see if I am not right. Now, you get a lot more—as you have figured it here you get a lot more production per well in Quadrant 3, Potter County, than you do in Quadrant 1, Potter, and if that is true, I can't see any other answer to it except the production drop.

A. I think we are confusing—we are talking about two or three different units in diverse areas and now we are getting into production per well, and we are getting to a point where we just can't answer anything. I think we ought to investigate those before we make any more of an answer.

Q. Well, let's see right here, maybe we can get it here.

A. Potter 1, 38 billion.

Q. That's accumulated?

A. Yes, but we can consider it under total pounds produced.

The Trial Examiner: The hearing will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Keffer:

Q. All right, now, Mr. Stevens, you had on your work sheet here the matter that we were discussing a moment ago. Now let's see if we can't hurry through this. I'll read from this sheet and you say if it is correct or not.

In Potter County 1 your total production in 1939—

A. 1939—I just figured these out by total.

Q. I know, but I don't want it that way. Your total production in 1939, 11,214,000,000 feet, wasn't it?

A. Yes.

Q. Your decline in rock pressure for that same period was eight pounds, wasn't it?

A. Yes.

Q. All right, now, we come over to Potter County, Quadrant 3. All right and your production from Potter County, quadrant 3 was 5,225,000,000, wasn't it?

A. Yes.

Q. Your decline in rock pressure was four pounds, wasn't it?

A. 4.3 billions per pound.

Q. All right, now, let's take another view of it. The Canadian River production in Potter County, Quadrant 1, was 6,712,000,000 wasn't it?

A. Yes.

Q. All right, that is slightly more than Canadian River's production in Potter County, Quadrant 3?

A. Yes.

Q. You had a 4-pound drop in Potter County, Quadrant 3, as against an 8-pound drop average in the Potter County, Quadrant 1, with very little more production by Canadian River in Potter County, Quadrant 1, is that correct?

A. That is correct on the basis of total quadrant pressures; however, when you start to compare—make a comparison, a basis of comparison, with Canadian River Gas Company, you should consider the pressures of Canadian River Gas Company.

Q. What are the pressures of Canadian River Gas Company's wells in that area, the drop in pressure in the two years?

A. Between 1938 and 1939?

Q. Yes. It would still be about 8 pounds, wouldn't it?

A. I don't know. They are considerably higher than the quadrant average.

Q. Do you know that to be a fact?

A. Yes.

Q. All right.

A. Mr. Watson, I believe, stated there was 375 pounds in 1939.

Q. In Quadrant 1?

A. Not quadrant 1.

Q. And it was all Canadian River?

A. All Canadian River.

Q. You are bound to have that somewhere there. If you will give it to me I will have it computed and bring it back to you for comparison.

A. Of course, they are all on these work sheets but they are computed to an average.

Q. All right, let us assume, while checking it, that the per pound drop of Canadian River production in Quadrant 1, Potter County, was about 8 pounds from 1938 to 1939.

A. Yes.

Q. All right, in Quadrant 3, Potter County, it was 4 pounds—that was 4 pounds as you show it in there from 1938 to 1939?

A. If you make it clear that this assumption of pressure loss is on the basis of the total quadrants which contain at least three and one-half times more wells than does Canadian River alone, and they are lower pressured wells, and a comparison on the basis of quadrant pressures apply to Canadian River production is not tenable, Mr. Keffer. You have to compare like—

Q. We are going to compare Canadian River's production. That is what we are checking now.

A. You refer to this 4-pound drop. That is the total—

Q. That is all Canadian River. Nobody has anything else in Quadrant 3—

A. I beg your pardon. That is right as to Quadrant 3.

Q. On Quadrant 1 we are going to take it on Canadian River wells alone.

A. Yes.

Q. Let us proceed. Whenever you have that sort of a situation, Mr. Stevens, that is, where the pressure—all right. Here we have it right here. The pressure drop on

Canadian River wells in Potter County, Quadrant 1, 1938 to 1939 was 11 pounds. That is more than your quadrant average, isn't it?

A. Yes, 11 pounds.

Q. 11 pounds. In Potter County, Quadrant 3, it was 4 pounds, wasn't it?

A. All right.

Q. Will you figure out the production per pound pressure drop in the two quadrants and compare them? In fact, you can do that almost in your mind.

A. On Canadian River production and Canadian River pressures?

Q. Yes, that is right. You take Quadrant 3 where you have a production of 5,351,000,000 with 4 pounds drop. Divide 4 in to that and you have about 1 billion 3, don't you?

A. Over here you must consider Canadian River production 6.712 with an 11-pound drop.

Q. How much did you have there per pound drop in pressure?

A. .61 billion per pound.

Q. .61 billion per pound? It is bound to be a lot less than that. It must be 671. This is in billions and you divided by approximately 10, and as the result you got .6.

Q. It wouldn't be 6 billion, it would be 671—I see.

A. That is correct.

Q. You had .672 billion?

A. 6.712 and you divided by 11.

Q. You couldn't still have 6 something, could you?

A. I said .6.

Q. I beg your pardon. I thought you had your 6 and then your point. You are right. Then your production per pound drop on Canadian River's wells in Potter County, Quadrant 1, is .617 billion, is that right?

A. Potter County, Quadrant 1, yes.

Q. And in Quadrant 3, Potter County, it is 1.3?

A. Yes.

Q. So your pressure is dropping twice as rapidly in Quadrant 1, Potter County, compared to your production, than it is in Quadrant 3, Potter County, isn't it?

A. Let's see. We get less production per pound in Potter County, Quadrant 1, than we do in Potter County, Quadrant 3.

Q. That is right.

A. We get less production per pound in Potter County, Quadrant 1, than we do in Potter County, Quadrant 3.

Q. In fact, you get just about half as much in Potter County, Quadrant 1, as in Potter County, Quadrant 3.

A. That is right, and that is exactly as it should be.

Q. Why is that exactly as it should be?

A. For the reason that in Potter County, Quadrant 3 you have both a larger area and a larger number of wells taken from a larger size tank, as it were, and the larger size tank, if it can be referred to as a tank for simplicity, will give you more production per pound than will a smaller sized tank because it is simply—

Q. It will give you more, but you get less in that large tank, don't you, just half as much as you did in the smaller tank?

A. Potter County, Quadrant 3, is a larger tank than Tank 1.

Q. Potter County, Quadrant 3, is larger than Tank 1? I think you are way off on that.

A. I beg your pardon. Well, it gives the difference in that case could only be accounted for by the volume of gas in there.

Q. The volume of gas where?

A. I was assuming for the moment that the areal size might be an indication of the total volume of sand or something.

Q. If it was an indication when you made this assumption, it is still an indication, isn't it?

A. It isn't—

Q. Answer me. Isn't that a fact? If you made a correct assumption a while ago it is still correct right now, isn't it?

A. Well,—

Q. Answer me. Just say yes or no.

A. It is not restricted as you are trying to restrict it.

Q. I am not trying to restrict it. I am making the very simple statement you made—

Mr. March: I object to the witness answering the questions *extemperaneously*. They are unfair to us and unfair to the witness.

Mr. Keffer: There is nothing *extemperaneous* about this.

The Witness: You tell me—

Mr. March: He makes the witness figure out the problems as he goes.

The Trial Examiner: This particular cross examination, Mr. March, is directed to a voluntary statement made by Mr. Stevens. It certainly is permissible. If Mr. Stevens is going to insist upon volunteering these statements, I can't prevent Mr. Keffer from questioning him about them.

Mr. March: The fact is he volunteered to work out the problem here.

The Trial Examiner: No, no.

By Mr. Keffer:

Q. Mr. Stevens, you said there ought to be more production per pound drop in pressure in Quadrant 3, Potter County than in Quadrant 1, Potter County,—

A. That is the thing—

Q. Wait a minute, let me finish my question.

—because Quadrant 3 was so much larger than Quadrant 1, and you had a bigger tank to produce from, therefore, the production should be more per pound drop. Now, if that were true then, it is true right now, isn't it?

A. If it were true then—

Q. You made an untrue statement when you said that, did you not?

A. I assumed, as I started to explain that if the areal distribution is the only criterian involved as indicating the size of the thing, that is the relation indicated to be expected—

Q. When you found it worked just the opposite, you wanted to abandon that one, didn't you?

A. You have to—I did it for this reason: If that isn't apparently the criterian, the surface area as indicated by the map alone, then something else must apply, and I was attempting to state that.

Q. What is the "something else"?

A. Without knowing the exact producing thickness of Potter County, Quadrant 3, the smaller one, as compared with Potter County, Quadrant 1, the larger one, it is impossible, of course, to define whether that particular thickness

may be the accounting difference, the difference accounting for—

Q. What you say, then, is that you have more gas per acre—

The Trial Examiner: Wait a minute.

Mr. Keffer: I beg your pardon.

The Witness: The other thing that accounts in part, without attempting to name the degree for the larger production per pound in Potter County, Quadrant 3, is occasioned certainly in some degree by the drainage from Moore County, Quadrant 3. The combination of those, or whatever else may have occasioned it, is obviously an explanation for the difference, and what those other things are is not contemplated in the study; I don't even care what they are.

By Mr. Keffer:

Q. You just don't know what they are?

A. We don't know what they are in degree, no, sir, as stated before.

Q. All right, suppose the productivity of Quadrant 1, Potter County, per acre was greater than it was in Quadrant 3, Potter County; that is, it is just a richer producing area, would that have anything to do with it?

A. If it were a richer producing area?

Q. Yes, if Potter County, Quadrant 3, were a richer producing area—I mean, Potter County, Quadrant 1, were a richer producing area than Potter County, Quadrant 3, would that have anything to do with it?

A. (Pause.)

Q. Just answer it without looking at your answer there before you first.

A. That is—

Q. All right, look at it.

A. You are dealing with thickness of sand and the early extent of that thickness—in other words, the size of the tank.

Q. That is right.

A. The size of the tank consisting of sand and thickness of sand undoubtedly has some bearing in it, so it wasn't part of this study, Mr. Keffer.

Q. Right there, if the size of the tank, or in other words the richness of the area was greater in Potter County,

Quadrant 1 than it was in Potter County, Quadrant 3, then you would expect a smaller decline per pound with respect to the same production as compared to production than you would in Potter County, Quadrant 3, wouldn't you?

A. A smaller production per pound?

Q. You would expect—no, you would expect a larger production per pound drop from a richer area than you would from an area that was not quite so rich?

A. That is possibly true, but they are indicated not to be that rich.

Q. In fact, they indicate the reverse, don't they?

A. Yes.

Q. All right.

A. You were asking me to evaluate that difference in proportion—

Q. You were just saying you couldn't evaluate it and I am trying to help you. I am trying to do you a favor.

Mr. March: This is a good example of the cross examination. He said that he couldn't do it and he said he would help him—

Mr. Keffer: The point is, he has evaluated it and that is the only thing I am coming up to.

The Trial Examiner: Objection overruled.

By Mr. Keffer:

Q. Mr. Stevens, the map here shows 22,279,000 recoverable reserves per acre in Quadrant 1, Potter County, doesn't it?

A. You are reading from the map?

Q. Yes. Look at it and check it.

A. The remaining reserves on a weighted basis.

Q. What weighted basis?

A. The weighted basis Mr. Hammer used.

Q. Mr. Hammer on the same basis shows 13,426,000 per acre remaining in Quadrant 3, Potter County, doesn't he?

A. Yes, he does.

Q. So everything we have mentioned so far, producing thickness of sands, size of tank, or container, richness of production, all should operate in favor of Potter County, Quadrant 1?

A. Just on the face of it, yes, but—

Q. Just the reverse—

A. I—

Q. Excuse me. Go ahead.

A. It is necessary again to point out the difference in the method used by Mr. Hammer and myself, he incorporating the adjacent quadrants which I did not do.

Q. However, the reverse of those things are true, aren't they?

A. Indicated by these figures—

Q. Indicated by these figures which you yourself prepared?

A. But the effect of the drainage into Potter County, Quadrant 3, from Moore County, Quadrant 3, you haven't given that any consideration.

Q. All right, have you given any consideration to the drainage out of Potter County, Quadrant 1?

A. Except as it is incorporated in the figures.

Q. All right. Precisely so, how is it incorporated in the figures?

A. In whatever degree it affects it.

Q. In pressure loss?

A. In Potter County, Quadrant 1?

Q. Yes. That is right. That is the only way it could be incorporated in your figures for drop in pressure, isn't it?

A. Yes.

Q. That is right. Now, you take that drop in pressure, if you didn't have any migration out your would have had a lesser drop in pressure than you would have had if there was no migration out, wouldn't you?

A. That is—

Q. It is obviously so.

A. It is a statement of principle.

Q. There shouldn't be any argument about that, should there?

A. That's right.

Q. Now, all of the factors you have been naming that should explain this difference, the fact it is working in reverse order, which is somewhat a definite indication you are getting a much less production per pound drop in Quadrant 1, Potter County, than you are in Quadrant 3, Potter County, because of the loss of gas from Quadrant 1 by underground drainage, isn't that a fact?

A. If you divorce the question entirely from thickness, and so on, that would be because—

Q. Including thickness. We have more thickness on your own statement in Potter County, Quadrant 1, than on Potter County, Quadrant 3.

A. As to whether this is occasioned by local drainage, the map would probably serve as the best criterion to answer that, and that is Mr. Hammer's exhibit.

Q. All right, I am going to finish on this.

You show in Potter County, Quadrant 1, present wells are going to produce 340,500,000,000 cubic feet of gas, don't you?

A. Yes.

Q. You show, or Mr. Hammer shows, that the total amount of gas under the leases in that area is 1,078,766,000, doesn't it?

A. Yes.

Q. You show, then, under the present wells we are not going to produce more than a third of the gas that is under that lease, don't you?

A. Under present wells, yes, sir.

Q. Under present wells. You show a greater concentration of wells in that quadrant than you do in Quadrant 3, Potter County, or any other portion of Canadian River's total quadrants, don't you?

A. Yes, but we also pointed out that there was room for more drilling, which indicates room for more wells, and that those wells we added would necessarily add to accessibility of reserves.

Q. All right. You mean that we can step up our production and cut down drainage? Is that what you are trying to say?

A. You could step up your recoverable reserves by drilling more wells. That is all I am attempting to say.

Q. I am trying to go very rapidly, Mr. Stevens, but this is an important point, one of the most important ones in this entire question of reserves.

Your own figures as you have made them show that from the standpoint of the present wells in Quadrant 1, Potter County, that we are only going to produce one-third of the gas in that quadrant, don't they?

A. That is right.

Q. That is absolutely correct. All right, now, if those present wells—and there are 24 of them—are sufficient to drain that quadrant of its gas, then you have calculated not qualitatively but quantitatively by your own figures the amount of gas that is going to be lost from that quadrant by drainage over 600 billion feet or two-thirds of it, haven't you?

A. It is indicated there are not enough wells in there to drain that quadrant. That is the point in the matter.

Q. You say it is indicated because those wells are only going to produce 340 billion while it is shown there is over a trillion there. That is the way you say it is indicated and that is the only proof you have that it is indicated?

A. On the basis of the study, that is right.

Q. You say it is indicated because you take your answer and figure back down, don't you, and that is the only proof you have of it?

A. You draw the conclusion from the answer as you do in any problem.

Q. All right. Now, as a matter of fact, if those wells are only going to produce 340 billion cubic feet and there is more than a trillion cubic feet there then is it not a logical assumption that we are going to lose two-thirds of that as the result of underground drainage from your own calculations?

A. No, the conclusion is that you need to drill more wells and that is the only conclusion.

Q. You are shutting your eyes to drainage, aren't you?

A. Except as they are incorporated in the figures.

Q. I have cited your figures. That abnormal drop in pressure with respect to production as compared to other areas where the reverse ought to be true. What more do you want than that, Mr. Stevens, as an engineer, geologist or as an ordinary layman?

A. Well, to me it simply raises the question that—simply points to the conclusion that more wells are necessary—

Q. You say it simply points to the conclusion that more wells are necessary, because you are assuming there will be no drainage. Let's get on the other side a minute.

A. I haven't assumed drainage in any case. I have admitted local drainage where local drainage is located and I think it is from this point or the point of view of drainage

locally a matter for the company to consider whether they drill wells to reduce that local drainage. The point is that the gas is there and this will be the recoverable gas by these present wells, and if there is drainage you separate your drainage if you claim there is drainage or you know there is drainage—

Q. Maybe so. You say that these wells when they are down to 25 pounds, wells that are pretty well scattered over the quadrant, will have produced only 340 billion feet of gas. Now, you have said that without any quibbling, haven't you?

A. Yes.

Q. That is in your report. You have also said that when those 24 wells are down to about 25 pounds that practically all of the gas in that quadrant is going to be done, haven't you?

A. Except as is retained in higher pressure intermediate areas.

Q. And you said you thought if the same pattern continues, 50 pounds would be the highest pressure anywhere in it, and that in the southwest corner. You said that, didn't you?

A. We have assumed that 50 pounds pressure is an arithmetical subtraction. It may be local; it may not be. There is good reason to believe it will be over 50 pounds, probably a little better reason than to assume it is 50 pounds.

Q. It is not going to be two-thirds of 430 pounds, is it?

A. I don't know what it will be.

Q. That is what you are going to have to make your figures come out, isn't it? You will have to have the average all over it. You would have to have big slices of the virgin pressure to have over 600 billion left in there after you produced 340 billion, wouldn't you? You would have to have two-thirds of your pressure left when every well in the area was down to 25 pounds and you know very well that is an absurdity, don't you?

A. I think we are getting away—

Q. Answer me if that wouldn't be an absurdity.

A. As you stated it it would.

Q. I have stated it precisely as you calculated it, haven't I? I haven't deviated an iota from your calculation, have I?

A. I think it should be pointed out again that this figure

means that on the basis of your present wells you will recover this 340 billion.

Q. That is right; which is a third, approximately, of the remaining reserves, isn't it?

A. About a third of the figure given by Mr. Hammer.

Q. If you wanted to qualify his estimate, I will qualify it—

Mr. March: I object to haranguing with the witness.

Mr. Keffer: It was just a side remark—

The Trial Examiner: We will strike it. Go ahead.

The Witness: When we get right down to it, this estimate means—I think it is true that Mr. Hammer's estimate means that that is the gas that is under there. This is the gas that would be recovered by present wells. The difference between that third figure and that figure given as one-third in relation to Mr. Hammer's; in other words, the two-thirds, is the amount that you could get additional by drilling additional wells.

By Mr. Keffer:

Q. All right. Right there, I have just another question there, and I think we can make that very clear.

You say that the present wells would produce in round figures a third of what Mr. Hammer says is there remaining down to 25 pounds abandonment, don't you? That is what your figures show?

A. Yes.

Q. All right. Now, it would follow that when you have produced that one-third and every one of those 24 wells are down to 25 pounds, then for you to have two-thirds of it left, you would have to have two-thirds of that pressure, wouldn't you?

A. You would have to have two-thirds of the pressure left but you are saying there is no drainage from there—

Q. Wait a minute. You are saying there was not—

A. I didn't say there was not.

Q. All right. Then, you now say there was some drainage from there?

A. I believe on one side there is some local drainage.

Q. All right, but is there any difference between local drainage and any other kind of drainage?

A. Regardless of what happens, drainage or no drainage —you say "drainage." I believe it has in Potter County, Quadrant 1. I believe some local drainage was established for Potter County, Quadrant 1. It doesn't mean in those immediate areas it is going to be two-thirds of the pressure; it means on the basis of this record you are going to get this gas.

Q. That is right. On the basis of your calculation you say if we drill a certain number of additional wells and we have so much reserve for such wells you are finally going to get over a trillion feet in Quadrant 1, Potter County?

A. If you would drill sufficient wells in the quadrant you would get a trillion feet.

Q. You don't know how many wells that would be?

A. I haven't attempted to state.

Q. You also say "when we have produced 340 billion, or a third from our present wells every one of those present wells are going to be down to 25 pounds abandonment pressure," don't you?

A. Their average will be 25. That is the equivalent of stating that.

Q. I will take that qualification.

If the average of every one of those wells, every one averaged in is down to 25 pounds, there couldn't have been but very little—I will say 10 per cent more gas remaining in the higher pressured portion of the quadrants; that is, between 25 pounds and that higher point?

A. I don't know how you figured the 10 per cent. I can't check it.

Q. I picked the figure out of the air. It couldn't be very much, isn't that right?

A. As to "very much," very much is a relative matter.

Q. I know. You can state it in general terms that there isn't going to be much gas. I think anybody could state that.

A. Let me state it this way: If in a given place you had 25 pounds in some illustration and you used 50 pounds, that 50 is 100 per cent more than 25 in that case.

Q. All right.

A. So if you were talking about 10 per cent and I were to check you on 10 per cent, that would be a pound and a half or a pound and a quarter more, which is a little bit peculiar.

Q. When every one of your wells are down to 25 pounds, certainly you are being very generous when you assume that the pressure over the entire area would be more than fifty pounds on an average, wouldn't you?

A. I don't know what it would be.

Q. I know you don't know what it would be, but that would be a most generous estimate, wouldn't it?

A. If—

Q. You can answer that question.

A. You can't without considering one point, that that last 25 pounds differential is going to be a lot harder to get—a reduction in pressure, that is, a flattening to the difference of 25 pounds you have stated, is going to be a lot harder to get than any other set of differentials of 25 pounds.

Q. That is right. Even on any other theory you are not going to get it down to 25 pounds, are you?

A. That is right.

Q. I don't care if you drill a hundred more wells, you are not going to get it down to 25 pounds, are you?

A. Not minutely speaking.

Q. Of course not. Then when you figured there was so much left there at 25 pounds you have to make some adjustment for that that you are not going to get, regardless of how many wells you are going to drill?

A. What adjustments?

Q. There is something more than 25 pounds in there you are never going to get because of these pressure differentials?

A. That brings you to the point of what 25 pounds means.

Q. I assumed 25 pounds meant 25 pounds.

A. We have talked about it in regard to 25 pounds at the well head.

Q. That is true. You said a 25-pound well head all through the examination, so it means just that and not something else?

A. These figures, if you treat them strictly, mean an average of 25 pounds, that is true.

Q. At the well head?

A. At the well head.

Q. That is right. All right, go ahead.

A. The difference between 25 pounds and what the actual pressure would be, if you were able to find that and average

it out, if it were possible to average every square foot of it, that difference in pressure represents an additional amount of gas that isn't contemplated here.

Q. Well, I know. We needn't go into that. When you have 25 pounds well head, if you are going to produce any gas you have to have something more than 25 pounds out away from the well. That is simply stated and is the whole thing, isn't it?

A. That is true.

Q. All right, so when you say "recoverable down to 25 pounds well head," then you have to make some adjustment for that somewhat higher pressure out from your well, which you are not going to recover down to 25 pounds well head, are you?

A. I see your point, but that 25 pounds is—all of these other pressures we have are actually higher than we have stated for the same reason.

Q. What do you mean by higher?

A. They lack a degree of equalization to a stabilized point just as they will at 25 pounds, so they are all off to that extent.

Q. Your 430 pounds had no variation?

A. This 4-year period hasn't anything to do with this 430 pounds.

Q. I know, but in taking pressures today and figuring them back against 430, it has something to do, doesn't it? If they were off in 1935 they would still be off in 1939, and in about the same proportion in all probability, so the result is the same whether they were constant or off, isn't that right?

A. I think so.

Q. I don't think there is any argument about it. I am going to leave that. Just this one question:

You said if you had been estimating reserves you would have followed Mr. Hammer's method, is that right?

A. Reserves under leases, yes.

Q. Reserves under leases?

A. Yes.

Q. Do you know what his method was?

A. In general I have heard him describe it here.

Q. You are not so certain you would follow it if you didn't know precisely what it was?

A. As I understand it—it has been presented here—

Q. I am going to ask you one thing about it, then.

His method averaged or weighted rock pressure averages from an areal standpoint, didn't it, with respect to area?

A. Yes.

Q. Let me ask you this: Where there are volumes, as announced by Boyle's law, that vary with pressures; that is, the pressures vary with volumes or areas? Just state Boyle's law. Maybe I have it backwards, I don't know.

Mr. March: The question is that you want him to state Boyle's law?

Mr. Keffer: The question is that the pressure varies with volumes.

The Witness: I thought you referred to a deviation from Boyle's law.

Mr. Keffer: No.

Q. Boyle's law, from a grammar definition of it, is that pressures vary with volumes, isn't that right?

A. Yes.

Q. And the pressures do not vary with areas, do they?

A. The manner in which you used pressures and areas—

Q. Mr. Boyle didn't say anything about area when talking about the varying of pressures, did he?

A. Pressures can be weighted against any factor pertinent to those pressures.

Q. The point is, volume is the pertinent thing to weight with the pressures and not areas; that is the whole point. You hit it on the nail head—

A. Those volumes occupy areas and in a sense are synonymous with areas.

Q. Volumes are synonymous with areas?

A. Well, when you talk about an acre pound volume, you are talking about a volume in an acre.

Q. All right, I am going to get away from that in just a minute. If we knew the volume under every one of those areas and weighted pressures to that volume, we would get a perfect answer under the application of Boyle's law, wouldn't we?

A. Yes.

Q. All right, now, just one more question further.

When we don't know the volumes and we take the areas and weight it that way, we are necessarily giving every area the same volume, aren't we, in that sort of a weighting?

A. When you consider areas, you are in effect considering the volume under that area.

Q. But you are considering every area has the same volume, aren't you?

A. Within certain limitations.

Q. What do you mean by "within certain limitations"?

A. That is the effect of volume differences in the area in question as weighted into the pressure.

Q. How?

A. In that sense, while you reduce your figure to an area, you are incorporating the *varities* or the divergent characteristics, the differing characteristics of those areas into one quadrant, the area being the acre pound for the quadrant. It is obviously understood that without wells on every square foot you couldn't do it on a square foot basis.

• • • • •

Q. When you are averaging pressures against acreage you are omitting one of the fundamental principles of Boyle's law, aren't you?

A. I don't know what principle you mean.

Q. The principle that pressures vary with volumes and not with areas.

A. I believe I answered that in this manner, that the volumes taken out under those areas, the volumes you omit are of course a part of the expression of Boyle's law.

Q. When you are weighting pressures against acreage, when do you consider the volumes taken out with respect to each particular year? How do you consider it?

A. That—

Q. The fact is, you don't consider it, do you?

A. Don't consider what?

Q. Volume as related to each particular area between isobars on the map.

A. Those are weighted to a single area and in that respect they do.

Q. In that respect they do. You take area 1 which lies between any two isobar lines and you have a pressure of 400 pounds, we will say. You multiply that by the acreage, don't you?

A. Yes.

Q. You come to area 2 that has 390 pounds. You multiply that 390 pounds by the acreage, don't you?

A. Yes.

Q. You come to area 3 which has 380 pounds. You multiply that by acreage, don't you?

A. Yes.

Q. And then you add all of those up, don't you, all the way through the field?

A. Yes.

Q. And you divided by the number of acres to get your weighted pressure?

A. Yes.

Q. And you haven't considered volume in one single instance, have you?

A. What you have done—

Q. Answer my question. You haven't considered volume in a single instance, have you?

Mr. March: Let him answer the question.

Mr. Keffer: He can answer the question yes or no.

Mr. March: He can explain it.

Mr. Keffer: He can answer the question yes or no, and then he can explain it.

The Trial Examiner: Answer the question.

The Witness: No, with this explanation—

By Mr. Keffer:

Q. Go ahead.

A. —that you are right there at the point where you have not considered volume. What you have done to that point is that you have weighted the diverse points of that area under those contour—

Q. Weighted acreage against pressure, haven't you?

A. Yes.

Q. And not volume, have you?

A. But—

Q. Not volume?

A. Not at this point.

Q. All right.

A. And at that point when you do obtain that weighted pressure you have reduced those numerous tanks of 10-pound pressure differences, we will say—that is a good illustration—to what the pressure would be as nearly as can be figured if the entire series of tanks or quadrants were used to full equalization. That is the nearest approximation of it and that is the point that you have arrived at at this point. The next point is to—in other words, you have determined a pressure or the very best possible pressure representing that area having diverse components and with that you treat volumes and that is the way Boyle's law works.

Q. You treat the volume after you get the average? You didn't treat volume before you got the average?

A. It isn't my understanding that volume worked in at that particular point—

Q. Of course not. Now, when you do it that way you are considering that all areas have the same volume, aren't you?

A. I consider all areas have the same volume?

Q. Yes.

A. All areas have the same volume?

Q. That is right.

A. I think Mr. Hammer ought to answer that point.

Q. You can answer it. You are familiar with how you do it.

A. At this point we have weighted average pressures against acreage which is the effect of making one tank out of numerous diverse tanks.

Q. From an areal standpoint?

A. From an areal standpoint.

Q. But not from a volume standpoint?

A. The whole volume—

Q. But not from a volume standpoint?

A. That is right. That has been admitted.

At that point the volume of gas is considered, as I understand it—If I am wrong I don't want to be bound by this, naturally—the volume is considered to have come from that one tank so treated, and if you had 5-pound isobars or

1/10-pound isobars, if it were possible to make those, the degree of refinement would be greatly increased.

If you had lesser distances as employed by many people, your degree of refinement would be a great deal less. As I understand it, that is subject to correction by Mr. Hammer on his own behalf. That is my understanding of the matter.

Q. All right. The whole point is when you weight pressures against acreage you are not following Boyle's law strictly? The obvious answer is yes to that.

Mr. March: You don't have to put the answer in his mouth. Let the witness answer the question.

Mr. Keffer: All right.

The Witness: You are following Boyle's law in that you are merely preparing the data to a convenient form for the application of Boyle's law, and the process isn't through until you use volume. Certainly the use of pressure versus volume is an expression of Boyle's law, so therefore I don't understand why you don't use Boyle's law.

Mr. Keffer: All right.

Mr. March: It is an old trick of Mr. Keffer to jump from the assumption to a practical thing and accuse the witness of having done that himself.

The Trial Examiner: I think we are proceeding under the assumption as originally stated by Mr. Keffer.

Mr. Keffer: That is right.

The Witness: We have an assumption where there is a high pressure area that does have some gas in it, though there is no well drilled on it.

By Mr. Keffer:

Q. Just how much volume would you assign to that area and how would you go about it?

The Trial Examiner: You are still speaking of an area having a 430-pound pressure without any gas in it?

Mr. Keffer: I will say there is a half-million cubic feet of gas per acre—

Mr. March: Wait a minute. Let me see here. First Mr.

Keffer takes this assumption, the assumption that we have an area that doesn't have any gas in it, yet it has 430 pounds pressure. That is Mr. Keffer's own assumption.

The Trial Examiner: That is right.

Mr. Keffer: Mr. March, if you will sit down I will change it.

Q. We have an area with 430 pounds pressure that has a half-million cubic feet per acre in it. How much volume are you going to assign to that under your method of estimating reserves?

A. If you knew that you had a half-million—

Q. We don't know it. We are assigning that.

A. The rest of the components of the problem haven't been stated and as I understand the method. Incidentally, I think I should say that not having made this study under this method, in spite of the fact that I say that I would have used the method, being in a position to use the method at some time, I would certainly go into a study of details which probably at the moment I have not fully considered. Not having gone into a study of it: therefore, I feel that answers I make under this hypothetical situation should be made with the reservation that they are all connected in principle.

Mr. Keffer: I wish the Examiner would please look at Mr. Stevens' exhibit, the first graph in that exhibit, which is the composite graph.

Q. Now, Mr. Stevens stated quite positively to Mr. March yesterday that you couldn't have drawn a line through or near the circles 1937, 1938 and 1939, which are circles around your points, without showing more reserve instead of less reserve. You made that very statement, didn't you?

A. Based upon the judgment of the time I drew the line.

Q. You made the very positive statement that on that curve you had given 1939 as much weight as you gave 1937?

A. As I gave 1937.

Q. You gave 1939 as much pressure as you gave 1937; you made that positive statement, as I recall it.

A. I perhaps did, if you say so.

Q. That is when I interjected yesterday—

Mr. March: Mr. Examiner, I object. If the witness doesn't know, he can say he doesn't know. He doesn't have to assume anything that Mr. Keffer says.

Mr. Keffer: The record speaks for itself.

The Trial Examiner: Go ahead.

The Witness: In an extension of this kind, as in subsequent cases, if I haven't made it definite I want to now, all points were considered in giving weight where at all such weight was justified, the exception being one or two where 1937 was way off.

By Mr. Keffer:

Q. To get back to my question, you want to let your answer stand that you made directly to Mr. March yesterday that you had drawn the most conservative line you could draw taking into account 1937, 1938 and 1939?

A. I think that is right. I think that is an honest statement.

The Trial Examiner: Did you mean, Mr. Stevens, that you didn't want that answer to stand, or you wanted it to stand?

The Witness: I wanted it to stand with reference to these three points, with the very slight qualification—not "qualification," "clarification" that it is an honest statement.

Mr. Keffer: I intended to go over these one by one but time will not permit.

Q. Suppose you leave that line right where it is, just clearing the south side of the circle numbered 38. Do you see that point?

A. Yes.

Q. Then you tilted your line a little to the northward out at 1937 to where it just barely touched the outside of the circle 1937, you could do that, couldn't you?

A. You could.

Q. Then you tilted it down necessarily when you tilted it up with 1938 as the pivot; and when you pivoted it up at 1937 you naturally tilted it down to 1939?

A. Yes.

Q. Do you know where you would barely touch the rim of the circle at 1939?

A. You could do that.

Q. Wouldn't that be a more accurate reflection of the circles 1937, 1938 and 1939, than the line you have drawn?

A. I am not sure. I would have to call your attention to another possibility—

Q. Just answer my question. You can answer it. You don't need a microscope to see it.

A. That, Mr. Keffer, is one possible way to have drawn it.

Q. When you made the positive statement you couldn't have drawn that line any other way, taking the three points into account without showing more reserve, you didn't state the truth, to make it blunt, did you?

A. I stated the truth in this respect—

Q. Part of the truth, then. All right, go ahead.

Mr. March: I object, Mr. Examiner. We don't like these insinuations in the record.

Mr. Keffer: Strike that part of it.

The Witness: The truth to you, rather to me—let me put it that way, as I don't know what the truth is to you—is that at the time of drawing that line it represented a very equitable way to draw that line. It should be also mentioned that each of the following lines with one admitted exception in which it could have been drawn another way, and that variation when we get to it will seem very small in a reduction of reserve. The other quadrants could not have been changed in any reasonable manner, giving due regard to all three points without increasing the reserve, and it is to be noted again that the results for the total quadrants of the Canadian River are the result of a summation, and this summation is shown here now. If this summation of equitably and conservatively drawn components comes to the point of being expressed by a line which falls in close proximity to the point plotted here as this does, it seems to me to be strongly begging for the point of accuracy to criticise a very minute variation when this is a summation of component parts.

Q. Maybe you can just answer one simple question and eliminate all of this. You could have drawn a line which

would have shown lease reserves and would have more nearly given weight to 1937, 1938 and 1939 than the line you drew? That is a fact, isn't it, without any qualification?

A. It would have been possible in the manner that you mentioned, but this is still a summation and I would like to—

Q. The summation is more important than any of its *constituant* parts?

A. A summation is a summation of *constituant* parts.

Q. This tells the whole story?

A. Each part is important.

Q. Of course, but you are not going to let a part of your total be given any more importance, certainly, than your total, are you?

A. Do you consider it no point, Mr. Keffer, that the summation comes to a certain figure and that must be a final point on your curve also?

Q. I don't know that I know what you mean. You were drawing to the answer, is that what you mean?

A. When this curve was drawn an answer was there and we had the answer.

Q. You drew to the answer regardless of where the curve ought to have been?

A. The degree of difference you refer to as the microscopic degree, Mr. Keffer.

Q. I think it would figure out quite a little bit of the time. I see that you ran it across the page twice.

A. This is the way it was drawn. The summation of other equitably drawn curves constitutes a fourth point on this; however, this wasn't drawn entirely with respect to it, yet it was drawn through it and you can—

Q. I don't desire all that explanation. I just desire one thing and that is that it is contrary to the statement you made yesterday that you could take those three points and give each of them greater weight than you are giving them here and draw a line that would show more reserves than you stated yesterday.

A. I don't think there would be any more or a particularly better line than shown here.

Q. I am not talking about the best line or the worst line. I am talking about giving consideration to the point there, which is the whole basis of the question.

A. You haven't given consideration to the fourth known point on the curve at all.

Q. Have you? What is the fourth point—the answer out here (indicating)?

A. That is one of them.

Q. Of course, I am assuming that you are working to the answer rather than assuming you are working from the answer.

A. You already have the answer—you have the answer when this curve was drawn.

Q. You told me that yesterday, that you drew to the answer, so since you had to draw to the answer your points might have been six inches below there and you wouldn't have considered any of them because you had to get your answer?

A. You had to get your answer?

Q. Yes.

A. Your answer is already here.

Q. Let's take these circles here. Suppose 1935 and 1936 and 1937 were lower and 1939 was up about where it was; 1938 was two or three points higher than where it is, you would have drawn your line precisely where it is drawn now?

A. If it had a different set of data, the answer would have been different and the—

Q. But you are drawing your answer out here?

A. The situation isn't comparable, Mr. Keffer.

Mr. Keffer: Mr. Examiner, I have done my very best to finish this long before now. There are a number of things that were opened up again on redirect that I feel should be gone into. It seems a question or two on them, if the witness will answer them, will dispose of that situation in fifteen minutes. I don't know, but I have quite a few of them noted here.

I hesitate when matters are opened up again to let them stand there as the final words or the thing to be considered when maybe they are contrary to practically everything said before that. That is the thing that makes an examination of this kind to me the most difficult thing I can conceive. I have been trying to rush through here and get this examination completed before 12:30 and I haven't done it. I am sorry that is the situation, too. However, I would like

a few more minutes this afternoon to see if I can't finish the examination.

The Trial Examiner: I want to be considerate under the circumstances, Mr. Keffer, but I would like to get through with Mr. Stevens if at all possible before we recess for the lunch hour.

Mr. Keffer: I will try to do it.

Q. We decided yesterday after some rather lengthy cross examination that if the ratio of production as you have found for Canadian River is not changed that your dotted line would not be changed by additional wells, didn't we?

A. That was the case, yes, sir.

Q. How's that?

A. That was the case, yes, sir.

Q. That is a correct statement, isn't it?

A. Yes.

Q. It is obviously so?

A. Yes.

Q. Then we also determined yesterday from your past experience and your past curves that the drilling of additional wells didn't change your top curve on Exhibit 182, your summation?

A. If they had no production record reflecting or requiring a change.

Q. All right. We even decided that for the year 1937, 1938 and 1939, even where they did have production records, that additional wells didn't change your line, didn't we?

A. That is right.

Witness further testified on redirect examination (Vol. 64, pp. 9181-9185) as follows:

Q. Mr. Stevens, on recross examination there were a great any questions asked you in regard to a hypothetical case something like the following, and I will draw this hypothetical picture and will ask you some questions in regard to it.

I have right here—let's assume we have here a gas field—that this piece of white paper is a gas field and we drill right here (indicating), and the pressures in that well are

400 pounds. Now, that is the only well we have at 400 pounds. Extending out from that 400-pound well is an area which has, we'll assume, a pressure of 410 pounds. We'll assume, to make the illustration similar to the one given by Mr. Keffer some time ago, that it extends out five miles from that well, around there, and there are not any other wells around there.

Now, we take all the gas out of there to 25 pounds. Say we do it in a shorter period of time, say we do it in ten years; say we take all of the gas out of this well down to 25 pounds, all of the gas you can get out of this well down to 25 pounds.

Would you or could you in doing that over that short period of time drain all the gas out of this area out here (indicating) in the 410 pound belt, with the exception of 35 pounds?

A. If that represented one well in the field—

Q. I am talking about just in this field, this distance of five miles here, so it would be comparatively—well, we won't limit that. It is similar to the Panhandle field, we'll say.

A. You wouldn't drain the entire area, no. You would drain the area to such a degree as would give a pressure of 25 pounds, however, and there is some higher pressure outside, naturally.

Q. If you pulled this well down to 25 pounds, would it take some time for the pressures to build back up over 25 pounds before you could ever drain this area out here?

A. Oh, yes. That is a foregone conclusion because you would have to establish another new pressure condition conducive to a differential.

Q. In other words, to assume that when you took this well down from 400 pounds to 25 pounds you would have to assume to get all of it out that you had in effect all one container without any obstructions at all and the perssures wouldn't have to build up, is that right?

A. Yes, either that or greatly—and I mean greatly extended time. That is where the time facor comes in.

Q. Is that what you meant when you said back there in your testimony that present wells in the quadrants here could drain the whole territory if it took a thousand years to do it?

A. If you wanted to assume a purely hypothetical case, that is sometimes stated, but never taken very seriously. That would be the case perhaps.

Q. Ordinarily do pressures in wells build back up as fast as the gas is withdrawn if they have a large area to drain from—even if they have a large area to drain from?

A. As compared with something else?

Mr. March: Read the question.

(The question referred to was read by the reporter, as set forth above.)

The Witness: Well, that is a function of permeability that would have to be stated and if it were low permeability it would take a longer time, and if extremely high it would take a shorter time. I think it is a relative question and the only answer that can be given to it is that relative answer.

By Mr. March:

Q. Mr. Stevens, if you had a half-dozen wells in the Panhandle field, in the western part of the Panhandle field and that is all the wells you had there and if you waited an indefinite period of time, say a hundred thousand years, would it be possible for you to drain all the gas from the Panhandle field, in the western part?

Mr. Spencer: Is this based on one hundred thousand years?

Mr. March: This is based on hypothetical hundred thousand years.

Mr. Spencer: You are talking about one hundred thousand years, all right.

The Witness: Well, they say that hypothetical condition is sometimes stated as a means of illustration of principle, but of course in any sense of practicality it would be—

By Mr. March:

Q. Isn't it just as sensible to say that you can drain all of the gas from the Panhandle field—from the Canadian River acreage, in any reasonable length of time—

The Trial Examiner: There is no use opening that point up again, Mr. March. It has been gone into and gone into.

Mr. March: All right, sir. One more question.

Q. Mr. Stevens, you have been asked a great deal of questions about the undergfound geology of the Panhandle field and its functioning. I will ask you this question: Whether or not you have made a study, a careful study of the underground geology of the Panhandle field of Texas.

A. Not that kind of a study, no.

Mr. Keffer: What was your answer?

The Witness: No.

Mr. Keffer: No?

The Witness: No.

By Mr. March:

Q. Then you don't know exactly the full particulars in regard to the functioning of permeability, porosity, drainage, pay thickness, in the Panhandle field, do you?

A. As explained several times, I believe I have not evaluated those in any respect except as they may be themselves evaluated by the figures used which were pressure and volume.

Q. Would you feel qualified to testify in regard to the underground geology of the Panhandle field, since you have not made a study of the same carefully?

A. No, I wouldn't, except on only the most casual considerations.

Q. You have just made a study of the production and pressures as reflected here in your exhibit?

A. As far as this exhibit is concerned, that it all which that subject—that subject has been employed only as explained in connection with the exhibit by the use of pressure volume data and not through any evaluations of its general or specific aspects.

Witness further testified on direct examination (Vol. 65, pp. 9486-9504) as follows:

Q. Mr. Stevens, you are the same Mr. Stevens who has testified heretofore?

A. Yes, sir.

Q. I hand you an exhibit entitled "Canadian River Gas Company Availability Study," and ask you if you prepared that?

A. Yes.

Q. Did you prepare that yourself or was it done under your supervision?

A. I prepared it myself.

Q. Is it true and correct to the best of your knowledge and belief?

A. Yes.

The Trial Examiner: Mr. March, do you wish to have this marked for identification?

Mr. March: Yes, as Commission's Exhibit No. —

The Trial Examiner: It will be marked for identification as Exhibit No. 197.

(Exhibit 197, Witness Stevens, marked for identification.)

By Mr. March:

Q. Mr. Stevens, there is a written statement I believe in this exhibit running through from Pages 1 to 9, is there not.

A. Yes.

Q. Will you please proceed to read that statement?

A.

"Canadian River Gas Company
Availability Study

The availability study of wells of the Canadian River Gas Company has been carried out on a dual basis:

1. For 92 wells producing December 31, 1939;

2. For 97 wells existing, connected, or to be connected in 1940 or shortly thereafter. The additional five wells include two old wells not previously connected (Bivins A-22 and Masterson B-5) and three wells drilled in 1940 (Thompson A-3, B-3, and Masterson A-5).

All volume figures are on a 14.65 pound base.

The availability study was first contemplated for the date of December 31, 1939. More recent data in the form of back

pressure curves and data for 1940 are now available, and the dual basis has been adopted. In that part of the study dealing with (1), the availability is determined with respect to 92 wells; and in that part of the study under (2), is shown the availability of the 97 wells which are connected in 1940, or will be connected in that year or soon enough thereafter as to require consideration as an active source of supply.

On the dual basis stated, the availability study will determine:

(a) The amount of capacity available from wells connected, or to be connected at mid-year and end of years 1939 and 1940;

(b) The amount of capacity available from present wells at future dates, at pressures expected to exist at those future dates;

(c) The approximate dates at which additional wells are indicated to be necessary to supply a maximum 24-hour demand.

These objectives are accomplished by calculation, and illustrated graphically by weighted rate of decline curves, which show capacity at any pressure, and decline of capacity with decline in pressure.

The back pressure curves and data for 1940, for individual wells, used in the calculation of weighted rates of decline, were supplied by a representative of the Canadian River Gas Company. These curves and data are the results of the 1940 mid-year tests carried out by the Texas Railroad Commission and the company. The curves and data were stated to be identical with those in the Railroad Commission files. These curves are accepted, at least tentatively, as representing the individual wells' characteristic rate of decline in capacity with decline in pressure. Their construction follows, and accomplishes, basically, the general procedure and results described in Monograph 7, published by the U. S. Bureau of Mines.

From these curves and test data, was determined a weighted average rate of decline representing what might be considered a typical well; also a weighted rate of decline

for total Canadian River wells, under the two bases stated. The method used is one in which pertinent factors of individual wells were given their proper weight in the calculation of points which were plotted as a straight line on log paper. These curves, whether for the average well or total wells, represent the weighted rate of decline of capacity with decline in pressure. An alternative method of obtaining a curve of this general nature is to arithmetically average intercept values read from individual well curves. The error in principle of this arithmetical method is that each well does not contribute in its proper weight to the determination of a correct, or weighted, average. The method employed in this study was designed to properly weight the characteristics of each well into the rate of decline for an average well. The decline obtained in this method is called the weighted average rate of decline, referring to the decline in capacity with decline in pressure.

The general fact suggesting and validating the weighting method is, clearly, that in any combination of diverse elements, the component parts contributing to the correct average rate of decline must be weighted with respect to characteristics that are pertinent in determining that average rate of decline. An arithmetical average, in contrast, does not weigh diverse factors, and therefore, cannot be properly used to represent a mean when those diverse factors are contributory parts.

The wells are grouped by quadrants consistent with the system used in estimation of reserves. However, this was not necessary to the weighting method under which any grouping of diverse values may be used. The weighted curves for the average well and for total wells are the results of the study which are directly used. For this reason, and for the reason that the company has copies of individual well curves, the accompanying charts show only the weighted average rate of decline by quadrants and for the average of all wells, and the decline for the total groups of 92 and 97 wells.

The summary tabluation of quadrant data (Table I) has its columns numbered, and in parenthesis are noted in the columns and operation by which derivation is accomplished.

For this reason, no further discussion is provided, as it is believed that the method and procedure of determining the weighted average rate of decline will be clearly evident on inspection of the tabulation.

At this point we have established the rate of capacity decline with decline in pressure for all wells of the Canadian River Gas Company. This relation is shown by the curves of Chart I.

The remainder of the study deals with the availability changes anticipated for the future, coincident with pressure changes occasioned by yearly withdrawals. With the decline of pressure the existing wells will approach a point in capacity at which additional wells will be necessary to supply the maximum 24-hour demand.

From consideration of Canadian River Gas Company well pressures, it was determined that from 1939 to 1940 the arithmetical average rock pressure decline was 8.6 pounds, from 378 pounds to 369.4 pounds. The assumption of 378 pounds for 1939 is made on the statement of company representative that the build-up of wells, after taking the 1939 pressures, was such as to convince him that the average of 375 pounds of actual readings should be increased to 378 pounds. Using 375 pounds as indicated by Texas Railroad Commission data, the pressure loss between 1939 and 1940 would be 375 pounds to 369.4 pounds, or 5.6 pounds, for the amount of production involved. The choice of pressure loss, between 5.6 pounds and 8.6 pounds is very important, as it is a measure of pressure loss to be expected for future years for the volume of production involved. If the lower loss is taken, it is clear that the number of years to reach a given pressure, or open flow to supply a given load, will be larger than if the greater loss of 8.6 pounds for the 1939-1940 volume is assumed to be correct on the statement of the company. For the purpose of forecasting the decline of availability (Table II), 378 pounds is tentatively assumed to be the pressure for 1939. In so accepting this pressure, it is strongly emphasized that the results, in terms of open flow for future years and the time at which additional wells are indicated to be necessary, should be considered as a minimum and very conservative. That is $8.6\# \div 5.6\# = 1.54$

represents approximately the ratio of results to be obtained by using 5.6 pounds and 8.6 pounds for the 1939-1940 pressure loss. Using 5.6 pounds, the period before additional wells are necessary would be approximately 1.54 times that shown on the basis of 8.6 pounds loss for 1939-1940. This should be kept in mind when inspecting Table II, the forecast of availability decline.

Considering the production of 48,240,022 MCF for the year ending July 31, 1940, comparable to the times at which pressures are taken, the assumed pressure loss of 8.6 pounds gives a production of 5.61 billion cubic feet per pound. Dividing this production per pound into the annual anticipated load of 49 billion cubic feet, the indicated annual pressure loss is 8.73 pounds per year, 8.8 pounds being taken for the purpose of calculation of Table II. This pressure loss is for that part of the calculation involving 92 wells. The loss per year for 97 wells would obviously be lower as an increase in active size of reservoir would result in more production per pound less, or less pressure loss for a given volume. The ratio of this loss is assumed to be the ratio of the recoverable reserves for the 92 wells as against 97 wells. This is 96.9 per cent, giving a pressure loss per year for 49 billion cubic feet of 8.5 pounds on 97 wells. This loss is conservative the reasons that the 8.8 pounds' loss was explained to be conservative. The current annual production of Canadian River Gas Company is approximately 46 billion cubic feet. For the purpose of this study, it is assumed to be 49 billion cubic feet yearly, to provide for reasonable increase of load allocable to the Denver line requirements.

Due to the fact that pressures are taken by the Railroad Commission at mid-year and company records are kept for calendar years, it is necessary to convert the mid-year data to the end of calendar year. This was done by considering July 31 to be the mid-year point, and the mid-point over which pressures are taken. The five months to December 31 provides the 5/12 by which pressure drop between mid-year points is multiplied. This gives 374 pounds plus as an average for 92 wells, on the basis of using 378 pounds for mid-year 1939, which is very close to the 375-pounds average mid-year pressure if the Railroad Commission figures are strictly taken. Thus, for practical purposes, the mid-year

test data on basis of 375 pounds can be accepted as representing the end of 1939, on the basis of 378 pounds taken for mid-year 1939 as claimed by the company for reason of build-up. Any difference as small as a pound for the end of 1939 is of no consequence when pressure is converted ultimately to form P_t2 or the pressure factor $P_t2 - P_s2$, as the difference in value in this form represents an indistinguishable difference on the scale of Chart I or Chart II.

Refer to Table II, headed "Forecast of Decline of Availability—From Wells Existing and Producing December 31, 1939, and Supplemented by Existing Wells to Be Added in 1940." This tabulation is carried forward on the dual basis, one part for the 92 producing wells of December 31, 1939, and one part involving 97 wells which include two old wells to be connected and three new wells already drilled which are to be connected in 1940 or shortly thereafter.

Columns 1 and 2. These columns require no explanation.

Column 3. This column tabulates the total recoverable reserves at the end of the year, obtained for successive years by subtraction of 49 billion cubic feet per year. That part of the column for 97 wells differs from the figures shown for 92 wells in the amount occasioned by the addition of wells not hitherto considered. Since no production record exists for these wells which could be used as a basis for estimating recoverable reserves or expectancy, they were added on the basis of average of previously existing wells. The reserves figure for end of year 1939 was taken from a previously submitted exhibit entitled "Estimate of Recoverable Gas Reserves, Present Wells."

Column 4. This column tabulates the year and pressures for consecutive years resulting from the yearly pressure losses already described.

Column 5. Anticipated annual production of 49 billion cubic feet, subtractable from the recoverable reserves of 92 wells and 97 wells.

Column 6. Annual pressure loss for 49 billion cubic feet per year, obtained as already described.

The remaining columns tabulate data on a weighted basis derived from the first part of this study.

Columns 7, 8 and 9. The weighted well head pressures for 92 and 97 wells on which availability was calculated correspond to, but are not identical with, the pressures of column 4. Taking the end of year 1939 as an example, which, as explained, is for practical purposes the same as mid-year 1939 using the Railroad Commission data, the weighted formation of pressure P_f is 404.696 pounds. Subtracting the weight of gas, the weighted absolute well head pressure is 380.85 pounds, and the weighted well head gauge is 367.85 pounds. For succeeding years' value, 8.8 pounds yearly loss is consecutively subtracted. From these pressures is then determined the well head gauge, formation pressure, P_f and P_f2, which latter value is found on the weighted curve for 92 wells and the corresponding delivery capacity read on the horizontal scale of Chart I. Similarly, values for 97 wells for columns 8, 9 and 10 are determined.

It will be noted that the weighted well head pressures are about 6 pounds below arithmetical average gauge for 92 wells and about 6 pounds below for 97 wells. This variation in difference for 97 wells results from addition of new wells, which increased the weighted average P_f approximately one pound for the company's wells (Table I).

Column 10. This column is obtained by squaring the P_f values of column 9.

Column 11. This column represents delivery capacity read opposite values of column 10 and from the curves for total wells of Chart I and Chart II.

Column 12. This column is 25 percent of column 11. At this point, another conservative position assumed for this study should be noted. The curves are delivery curves indicating ability to deliver at the surface, and not absolute open flow curves indicating ability to produce a larger amount of gas at the sand face. Capacity in the sense here used refers to capacity to deliver at the surface.

Refer to Chart II on which the group curves of 92 wells and 97 wells of Chart I are repeated, but in a more separated relation for convenience in reading.

These curves, with their notations, are believed to be self-explanatory. On the right is indicated several yearly dates.

Next, reading to left, is indicated corresponding availability at 25 percent of capacity. Next, to left of the curve is the corresponding weighted average well head pressure, and farthest to left is indicated the number of years after 1939. Between the two curves is an auxiliary scale showing, as a matter of convenience, the weighted average well head gauge pressures corresponding to values of the pressure factor scale. To determine further the approximate arithmetical well head gauge pressure from the scale, it is necessary only to add 6 pounds when considering the 92-well curve, and 5 pounds when considering the 97-well curve. Every year was not indicated on the curves to avoid confusion. However, they can be identified on the curves by referring to Table II. The purpose of these curves is to indicate when 25 percent of capacity is incapable of supplying a maximum 24-hour delivery rate of 190 MMCF. This volume was adopted after finding that the maximum to 1940 was approximately 180 MMCF.

From inspection of Chart II and Table II, it will be noted that:

(a) For the 92 wells of December 31, 1939, 25 percent of delivery capacity does not decline to 190 MMCF or lower until after the close of 1957, or 18 years after 1939.

(b) For the 97 wells of December 31, 1940, 25 percent of delivery capacity does not decline to 190 MMCF or lower until after the close of 1959, or 20 years after 1939.

At this point it is again emphasized that assumption of pressure data as recommended by a company representative, as against pressures published by the Texas Railroad Commission, results in a more rapid pressure loss, open flow loss, and availability loss for a given volume of gas removed, and that acceptance of the 378-pound average for 1939 claimed by the company is an extremely conservative position to adopt in this study. Adoption of the 375-pound average for mid-year 1939 would give results which would be 1.54 times those under (a) and (b), that is 27 years for 92-well basis and 30 years for the 97-well basis, before additional wells would be necessary to supply a maximum 24-hour demand of 190 MMCF for the total Canadian River system.

The analysis of back pressure data for the dual basis of 92 and 97 wells of Canadian River Gas Company, as described, summarizes to the following conclusions:

For Weighted Average Rate of Decline of Weighted Average Well

	Basis	
	92 Wells	97 Wells
1. Weighted Average Capacity, 1939, MMCF	17.837	—
Weighted Average Capacity, 1940, MMCF	17.394	17.888
2. Weighted Average Closed-in Formation Pressure P_t, 1939 (Abs.)	404.696#	—
Weighted Average Closed-in Formation Pressure P_t, 1940 (Abs.)	399.040	400.265#
3. Weighted Average Closed-in Pressure at Well head, 1939, Gauge	367.85	—
Weighted Average Closed-in Pressure at Well Head, 1940, Gauge	362.53	363.68
4. Arithmetical Average Closed-in Pressure at Well Head, 1939	375.05	—
Arithmetical Average Closed-in Pressure at Well Head, 1940	368.3	369.4
5. Q value at 10 M Pressure Factor, 1939 and 1940, MMCF	2.339	2.375
Q value at 100 M Pressure Factor, 1939 and 1940, MMCF	12.440	12.693
6. "N" value or slope, 1939	.7256583	—
"N" value, or slope, 1940	.7256583	.7278999
7. Pressure Factor, 1939	163.779	—
Pressure Factor, 1940	159.233	160.210

	Basis	
	92 Wells	97 Wells
For Weighted Rate of Decline—Total Well Curves		
8. Total Open Flow, 1939, MMCF	1,671.90	—
Total Open Flow, 1940, MMCF	1,625.36	1,672.48
9. "Q" Value at 10 M Pressure Factor, MMCF, 1939 and 1940	218.93	234.00
10. "Q" Value at 100 M Pressure Factor, MMCF, 1939 and 1940	1,164.25	1,250.65

The weighted average and total group curves can be plotted from the above data, which can be identified on table and chart Nos. I and II made part of this exhibit. The curves are calculated from mid-year back pressure data for 1940. The 1939 pressures as reported by the Texas Railroad Commission were used to determine capacity on the 1940 curves. The pressures noted in these conclusions and on Table II should not be confused with the adjusted pressures used for end of 1939 and 1940 as explained in the section dealing with decline of availability.

11. At various future dates the wells will be capable of supplying maximum 24-hour demands as follows: (From Table II)

End Year	Years After 1939	Availability @ 25% Capacity 1 MMCF 92 Wells	97 Wells
1942	3	375.0	405.0
1947	8	307.5	337.5
1950	11	270.0	295.0
1955	15	213.75	237.5
1957	18	191.25	218.75
1959	20	168.75	192.5

12. For the 92 wells of December 31, 1939, 25 percent of delivery capacity does not reach a required maximum 24-hour delivery rate of 190 MMCF until after the close of 1957, or 18 years from 1939. From the standpoint of capacity, no additional wells are necessary until that time.

13. For the 97 wells to be connected in 1940 or shortly thereafter, 25 per cent of their delivery capacity does not

reach a maximum 24-hour delivery rate of 190 MMCF until after the close of 1959, or 20 years from 1939. From the standpoint of capacity of wells active in 1940 or shortly thereafter, no additional wells will be necessary for 20 years.

Attention is again called to the fact that this study is conservative by reason of pressure considerations previously explained, and that the interval before wells are necessary from the standpoint of capacity may be greater than stated by approximately one-half.

In working out this availability study to the point where it could be determined when additional wells were necessary, the calculations necessarily arrive at a definite year. The conclusion as to definite years is, in degree of importance considered secondary to the fact that that year is beyond what might be considered as a reasonable period of time. That is to say, the results of this study would still be entirely valid had the availability been so reduced as to indicate wells to be necessary at some earlier date but still beyond a reasonable period of time.

The tabulations and charts constituting part of this exhibit are listed below.

Table I. Summary—Analysis of Back Pressure Data—Construction of Weighted Average Rate of Decline.

Chart I. Weighted Average Rate of Decline Curves, by quadrants and for average of 92 wells, weighted decline of capacity with decline in pressure for total of 92 wells and 97 wells. This chart is illustrative of the data and calculations of Table I.

Table II. Forecast of Decline of Availability.

Chart II. Weighted Decline of capacity with decline in pressure, for total of 92 wells and 97 wells involved in the dual basis of the study. On these curves are indicated various periods of time, to the point where the wells concerned will reduce in capacity so that 25 percent of that capacity will not supply a maximum 24-hour rate of 190 MMCF. The curves of this chart are illustrative of the data of Table II.

The Trial Examiner: Do you have another question of Mr. Stevens, Mr. March?

Mr. March: Yes.

Q. Mr. Stevens, you stated I believe here that the back pressure curves and data for 1940 for individual wells used in the calculation of weighted rates of decline, were supplied by a representative of the Canadian River Gas Company?

A. Yes.

Q. What do you mean by that?

A. As to the representative, Mr. Watson supplied those curves and they constitute Exhibit 97, I believe, and by the curves themselves, I mean that those were stated by Mr. Watson to be identical with similar curves in the office of the Texas Railroad Commission and were curves built up from data taken in company—or under supervision—in company with or under supervision of both the Canadian River Gas Company and the Texas Railroad Commission.

In short they are the 1940 back pressure tests and curves taken by the Railroad Commission and the Canadian River Gas Company.

Q. And in so far as individual wells are concerned you just adopted those curves of the company?

A. I have, yes.

Q. All of which are found in Exhibit 97?

A. Yes.

Mr. March: That's all.

Cross Examination

By Mr. Spencer:

Q. Mr. Stevens, what do your working papers consist of in connection with this exhibit?

A. They consist of rather extensive calculations, Mr. Spencer, which are summarized there.

Q. And I assume your working papers will be available to our representatives for checking?

A. As far as I am concerned, with the concurrence of counsel.

Mr. Spencer: Does counsel have any objection to that?

The Trial Examiner: Mr. Stevens' working papers I presume will be made available?

Mr. March: They will. They will be made available. When do you want them?

Mr. Spencer: Not right at this moment. That is all for the present. I wish to reserve cross examination on this exhibit.

The witness further testified with respect to pressure drop on Canadian River wells as related to production, which is tabulated as follows: (Vol. 86, pp. 12953-12954:)

Year	Production for Each Pound Lost in Pressure
1937-1940	11.13 billion cubic feet
1938-1940	8.156 " " "
1939-1940	6.619 " " "

The witness further testified on redirect examination (Vol. 86, pp. 12953-12963) as follows:

By Mr. March:

Q. You have stated several times here in answer to questions, Mr. Stevens, that you were conservative here. Now, I will ask you why a pressure drop of 8.8 pounds a year is conservative. Can you illustrate just how it is conservative?

A. Yes. Considering the Canadian River production on three different bases; first, the last four years including 1937, 1938, 1939, 1940, the pressure decline, 16.4 pounds, in those four years from 385.8, to 369.4, an average decline per year of 4.1 pounds for a volume of 37,383,940,000 cubic feet—strike out that relating to 37 billion—the accumulative production comparable to this pressure drop for this period was 182.508 billion. Dividing by the 16.4 pounds pressure drop, we get a figure of 11.13 billion per pound. Reducing all this and following examples to a common basis of 49 billion so that the pressure drop is comparable in all those cases, we divide in this first instance 49 billion by 11.13 billion which gives a pressure drop per year for that period of 4.4 pounds decline.

Speaking of 49 billion, that is comparable with the 8.8 that was used.

Taking the last three years, using 1938, 1939 and 1940—do you want me to read all these figures, or, rather, give the answer? If you want to shorten the record— .

Q. Answer the question the way you see fit. In other words, you better give the figures so that opposing counsel will have an opportunity to see what you have done.

A. The pressure decline in those three years from 386.065 to 369.4, a pressure decline of 16.65, or an average decline per year of 5.555. The volume produced during that time was 135,912,842,000 cubic feet which divided by the pressure drop for the period of 16.665 gives 8.156 billions per pound which in turn divided into 49 billion is 6.008 pounds per year on the 49 billion basis as against the 8.8 pounds used.

Through 1939 and '40, the last example, comprising two years, the pressure drop from 383.37 to 369.40, a difference of 13.97 pounds, corresponding to that was the production of 92,464,196,000 feet, which divided by 13.97 gives a production per pound of 6.619 billion, which in turn divided into 49 billion to obtain the yearly pressure loss on the basis of 49 billion, gives 7.4 pounds per year as compared with the 8.8 used, and that I think illustrates what I meant by conservative, in so far as any other logical grouping undertaken in this kind of study shows a lesser pressure drop than I do assign to Canadian River acreage.

Q. Now, Mr. Stevens, there has been a great deal of discussion here as to what would be the effect upon your study if the production had increased, if your production requirements and the company's requirements were increased considerably in the years to come. Have you made a study of what would be the effect on your study if certain contemplated increases were made or certain increases in production requirements were necessary?

A. Yes.

Q. Now, will you tell me there how long it would be before Canadian River would have to drill any wells? Have you got that figured out? How would the production have to go into that drilling of wells?

A. Basing on 1939 and 1940, the yearly loss in pounds would change if increased rates per year were withdrawn—increased volumes per year, and figuring down to 197 pounds, the point at which the system will fail to supply 190 million cubic feet, I realize that there is a combination both of increase in takes and increase in peak load, predicated for the company, but referring to the most recently stated peak of

190 million—well, I see we are getting into difficulties, because that was claimed to be on a 16.4 pounds base, but at any rate, to illustrate this, if we take 50 million a year it will be 18.78 years before the present wells would not be able to supply the peak loads.

Q. You mean would be unable to supply it?

A. The time at which it will be unable to supply it, and taking the 52 billion which was outlined, I believe, in Mr. Beardsley's exhibit—59 million exclusive of demands of the line as yet unbuilt to Milwaukee, 52 billion per year, it would be 18.06 years before it will be unable to supply 190 million cubic feet per day.

Q. From what day is that?

A. From the end of 1940.

And going up, with a considerable jump, to 60 billion a year, it will take 15.65 years before 190 million per day cannot be produced by the present wells.

Going up to 70 billion it will be 13.41 years, and going up as an extreme to 80 billion, it will be 11.74 years after 1940, which is in this latter instance certainly more than the seven years of the period from 1940 to 1947.

I realize that this 190 million peak load, if it is 16.4 base, these yearly figures which I have read, to convert that 190 million to 14.65, the periods stated would need to be divided by 1.119, to obtain the answers on the basis of approximately 203 million cubic feet. I don't check that 208, Mr. Keffer. If you are really talking about 190—

Mr. Keffer: I was not talking about 190, Mr. Stevens. It was 186, I believe—yes, 186, on 16.4 base, as your 1940 peak.

The Witness: I beg your pardon. 208 million, that should be revised to, and the previous references to 190 million should be changed to 186 million.

Mr. Keffer: The 190 million was with your 14.65 figure.

The Witness: Yes.

Mr. Keffer: You probably became confused or probably I did.

The Witness: At any rate, that corrects it to the proper basis in terms of your stating 186 million was a 16.4 figure.

Mr. Keffer: That's right.

By Mr. March:

Q. Does that complete your answer, Mr. Stevens?
A. Yes.

Mr. Keffer: May I interject just one question there?

Mr. March: Certainly.

Mr. Keffer: In increasing your volumes which you spoke of, you failed to increase your peaks also, didn't you, Mr. Stevens, in the answer you just gave?

The Witness: As a matter of fact, I think I stated practically an absurdity when I stated 80 billion per year. I have not increased the peaks accordingly. To increase those peaks beyond a certain point of the capacity of the line obviously requires extensions of the pipe line system and they will not, if I understand the situation correctly, increase greatly beyond—or if at all—beyond the present 186 million on the 16.4 base without extensions to the system.

Mr. Keffer: You are talking about the Denver line?

The Witness: No, I am talking about the entire system, including the—that was the peak of the entire system.

Mr. Keffer: That's all.

By Mr. March:

Q. Now, Mr. Stevens, there has been some questions raised here by Mr. Keffer as to whether or not you did not know that the pressure decline per production was accelerating from year to year—Canadian River Gas Company wells. In other words, that the production was going down per pound loss.

Now, I want to know if you had plotted on your Exhibit 182 the 1940 figure, whether that would have shown that the pressure had declined more in 1940 than they did in 1939.

Mr. Spencer: Before you answer, we object to that, Mr. Examiner. If it is going to be evidence, let's have it plotted. Let's see what it is so we can cross examine on it.

Mr. March: You can see what it is, but Mr. Keffer asked the question as to whether or not—time and time again—

whether he didn't know that the pressure declines were accelerating over the years, and I want to find out whether or not in 1940 the pressure decline was greater than in 1939.

Mr. Spencer: Well, I don't object to your doing any of that except this: I don't want you to speculate on what would happen if he had done so. Let's see what it is and get it in the proper form so that we will be able to cross examine on it.

The Trial Examiner: Has he done that, Mr. March?

Mr. March: Yes.

The Trial Examiner: Ask the witness the question.

By Mr. March:

Q. Have you plotted your 1940 figure on your Exhibit 182 curve there?

A. A bit of explanation I think is necessary there in that it must be remembered that in Exhibit 182 the calculated curve on the basis of a ratio was the Canadian River curve. This differs in this respect, that the Canadian River data was used, and the data then so plotted was investigated with respect to the last several years to see what the incline or decline or decrease or increase in the—it was checked with regard to the last few years to determine the changes indicated in the pressure volume or the pressure production trend and that is about the simplest way to describe it.

Q. Does that differ from the factors you used in calculating your curve in Exhibit 182?

A. It varies in this respect, that it is plotted on the Canadian River data alone without any reference to contiguous areas of production.

Mr. March: In view of that fact, Mr. Spencer, I will not ask the question. If I do I will prepare an exhibit on it.

Q. But you can answer this question: Do you know whether or not in 1940 the pressure declines on the Canadian River wells was in excess of 1939?

A. I will answer your question in this way: The 1938, 1939, taken by itself—

Mr. Spencer: Now, just a minute, Mr. Stevens. Let's be careful, Mr. March, because if you get started here you

are going to require a lot more cross examination. You haven't laid any foundation for that particular question.

Mr. March: Oh, yes. The question was asked my witness whether or not he did not know that the decline was accelerating on Canadian River wells. I have a right to ask him a question now as to whether or not he has gotten evidence to show that it was not.

Mr. Keffer: Mr. March, I predicated that on Mr. Watson's figures which was the basis of his exhibit here, and he said on the basis of those figures "yes." In fact, the question has already been answered, favorably, to my mind.

Mr. Spencer: Why don't you save that question?

Mr. March: The question was asked my witness and it is a redirect question. My witness was interrogated on this matter on cross examination.

The Trial Examiner: Read Mr. March's question, will you please, Mr. Reporter?

(The question referred to was read by the reporter as set forth above.)

The Witness: There was not in excess—

Mr. Spencer: Wait a minute. We have made an objection to the question.

The Trial Examiner: Did you make an objection?

Mr. Spencer: Yes. I thought we did. I beg your pardon.

The Trial Examiner: The objection will be overruled.

By Mr. March:

Q. Answer the question, Mr. Stevens. They weren't in excess, you say?

A. They weren't in excess of the production established by 1938 and 1939.

Q. Were they as much?

A. No. I was going to answer that in a graphic sense; that is to say, if you consider the trend established by 1938 and 1939 the curve will have a steeper incline than the curve similarly drawn with respect to 1939 and 1940 and is one of those cases typical of what you might expect over a period of years, where one year may be a little low and

another year a little bit high, and making it necessary to consider them all as a group rather than with respect to consecutive years when you are calculating an amount of gas out per pound or vice versa.

That is due simply to inaccuracies or lack of buildup, any one of which reasons are impossible to determine quantitatively.

Q. So instead of an accelerated decline in 1940 you have a less decline in 1940 than you did in previous years?

Mr. Keffer: He didn't say that.

The Trial Examiner: Just a minute, Mr. March. He didn't say that.

Mr. March: Do you object to me asking that question? You say he didn't say that?

Mr. Keffer: You asked a leading question.

Mr. March: You object to the leading question?

Mr. Keffer: Yes.

Mr. March: Is the objection sustained?

The Trial Examiner: Now, read this question back again, please, Mr. Reporter.

(The question referred to was read by the reporter as set forth above.)

The Trial Examiner: He hasn't said anything like that, Mr. March.

Mr. March: Well, he can state whether he did or not, Mr. Examiner. I understood that he did. I understood that that was the point.

The Trial Examiner: If you understood that, then why ask that question? Do you just want to rehash it?

Mr. March: I want to clinch it.

The Trial Examiner: Well, let the record speak for itself on that.

WATSON, witness for Canadian, testified with respect to the arithmetical average pressure of Canadian River wells

and the 1939 and 1940 buildup prior to the taking of the pressures (Vol. 30, pp. 4205-4208) as follows:

Q. You were asked to get the average rock pressure decline for all wells for the past three years. Do you have that information now?

A. Yes, sir.

Q. That is for the years 1938, 1939 and 1940?

A. Yes, sir.

Q. Will you give that, please?

A. Those are numerical rock pressure averages.

Q. You took the number of wells and averaged them?

A. In 1938 the arithmetical average rock pressure was 383.5 pound gauge; 1939, as I have previously testified, the average rock pressure was 375 pounds. That was a test made in mid-year 1939 as recorded and reported on that day. When I made my 1940 rock pressure report I found additional pressures taken after the date of the 1939 report reflected that the 375-pound rock pressure was lower than it should have been since all of the wells had not been shut off for any sufficient length of time. I, therefore, revised the 1939 rock pressure, arithmetical rock pressure, to 378 pounds as observed after the mid-year 1939 report.

Then in 1940 the rock pressures officially observed by the Railroad Commission were 370 pounds.

Q. What was that figure?

A. 370 pounds.

Q. Do you consider that that figure of 378 pounds for 1939 is a more accurate reflection of the pressures obtaining in mid-year 1939 than the one you had previously given?

A. Yes, that is as I have previously explained: If you get the increased pressures after you have made certain observations you have to consider the whole report, and obviously, 375 pounds was too low or I could have never gotten 378 pounds two or three months later.

Q. You attribute it to the fact there had not been sufficient shut-in on some of your wells on the pressures that gave the 375-pound average?

A. That is correct. Several of the wells were not shut in at all and we had no rock pressure on them at the time of the mid-year 1939 report.

Mr. Lange: I wonder if that same thing is true with reference to the 1940 test?

The Witness: No. In the 1940 test the Railroad Commission gave us advance notice that they were going to run the tests. The back pressures must have good rock pressure or they wouldn't work at all, so we had two or three months notice and we worked out a schedule with them as to which well we would test on certain days. By having that schedule we shut off wells in a sufficient length of time ahead of the test to get what we were satisfied was good rock pressure.

Mr. Lange: How long were they shut in for the test?

The Witness: Not less than a week and longer if we could spare the wells. I think it was approximately a week.

By Mr. Keffer:

Q. Right in that connection, Mr. Watson, it may not be clear to someone reading the record who doesn't know the practical operating angle of a gas well: When you produce a gas well at the end of the line, your working pressure on that well is lower than what you refer to generally as the rock pressure, is it not?

A. Certainly. It couldn't deliver gas if it didn't.

Q. If you have a 400-pound rock pressure well after it had been closed in long enough to build up and you started operating that well, its working pressure might be fifty pounds or less than its normal rock pressure, might it not?

A. It must be less than its rock pressure.

Q. Then if you operate that well for a period of time and we go out to that well today while it is in operating condition and close off the line and gauge its rock pressure, you wouldn't get a normal rock pressure?

A. Certainly not.

Q. What would you get? Would it be sub-normal?

A. Most certainly.

Q. Then the practice in taking rock pressures is to shut the wells in for a sufficient length of time that the wells will build up to what might be determined their normal rock pressure, is that correct?

A. Our practice has always been to shut a well in and observe the pressures at intervals of a day or two days or whatever we think is necessary until two consecutive observations have shown no material increase, and when I say "material increase," I mean a tenth of a pound or so, which we are now able to gauge.

STEVENS, Commission Witness, further testified (Vol. 90, pp. 13652-13656) as follows:

Q. Mr. Stevens, I hand you a diagram entitled "Pressure Versus Cumulative Production, Exaggerated Scale, Canadian River Gas Company Wells, Panhandle Gas Field, Texas," and I will ask you to state what that purports to be.

A. That is what it is.

Mr. March: I will ask that it be marked for identification.

The Trial Examiner: It will be marked for identification as Exhibit No. 263.

Mr. Spencer: Exhibit 263, Mr. Examiner?

The Trial Examiner: Yes, Exhibit 263.

By Mr. March:

Q. Mr. Stevens, I notice you have Charts A and B, indicating the same title on each one, is that correct?

A. Yes.

Mr. March: Mr. Examiner, may we have Chart A marked as Exhibit 263-A and Chart B marked as 263-B?

The Trial Examiner: Very well.

(Exhibits 263-A and 263-B, Witness Stevens, marked for identification.)

By Mr. March:

Q. Will you state briefly what these two charts show?

A. The purpose of this exhibit is to show the effect of addition of 1940 data when applied to the pressure-cumulative production data of immediately preceding years of Canadian River Gas Company wells.

Chart A: Chart A is drawn on an exaggerated scale so that the relation of yearly points may be exaggerated and clearly seen.

Curve A, referring to Chart A, of course, is drawn with respect to 1938 and 1939 to show the trend established by those years alone.

Curve B is drawn with respect to 1939 and 1940 to show the trend established by those years alone, and to illustrate

the fact that 1940 data tends to establish the trend of Canadian River wells at a higher level. Curve B also establishes the fact that by reason of its higher position on the chart that the company's wells are not suffering an accelerated rate of decline. Curve B is drawn as indicated with consideration to the average pressure of 97 wells.

The average pressure for these wells is slightly higher than that for 92 wells, this number excluding three new wells drilled in 1940 and 2 old wells which were to be connected in 1940 or soon thereafter.

Curve C is drawn with respect to 1939 and 1940, as was Curve B, but giving consideration to the average pressure of 92 wells. What has been stated in comparing Curve B with Curve A can be said in comparing Curve C with Curve A. The difference in the two comparisons is, one of degree by reason of the lower average pressure of 92 wells already mentioned, and apparent from inspection of Curves B and C relative to Curve A.

Curve D: This curve drawn solid is an average curve drawn with respect to 1938, 1939, and 1940. It does not actually touch the three yearly points. It passes 1938 and 1939 at equal distances and between the two 1940 points; that is, for points represented by the average on 92 wells and on 97 wells, it approximately equals distances from them.

To have drawn the curve near the 92 well point for 1940 would have changed the medial relation with respect to 1938 and 1939. In short, the curve is believed to be properly drawn with respect to all three years. It could with substantial logic be drawn in a closer relation to the 1940 point for 97 wells as that is the number of wells for 1940.

Going to Chart B, the curve on this chart is Curve B of Chart A, using a less exaggerated scale so that the curve may be extended to intersect with an assumed abandonment pressure of 25 pounds, that intersection being at 2895 billions of cubic feet. Subtracting the production to 8-1-40 of 220.5 billions of cubic feet, the reserve recoverable for the 97 wells is 2,374.5 billions of cubic feet.

Further subtracting production of 48.07 billion for the year ending 8-1-40, we arrived at 2326.43 billion as the re-

serves which can be recovered from the present wells as of 8-1-39, using Canadian River wells alone. The figure on the basis of projection of Canadian River data alone is comparable with the recoverable reserve of 2,186.7 billion in Exhibit 182 determined by another method.

It is not the purpose to displace the figure for the reserves to be recovered as shown in Exhibit 182; however, the opportunity is taken to observe that the reserve figure for that exhibit is conservative on the basis of Curve B which was drawn with the effect of 1940 production contained therein.

The essential purpose of this exhibit is to show the effect of 1940 data for company wells. Its effect as indicated by Charts A or B is to influence the pressure-cumulative trend to a higher level. In doing this it is indicated that the company's wells do not have an accelerated decline in pressure.

Stevens also sponsored Exhibits Nos. 263-A and 263-B, which are as follows:

Exhibit No. 263A

CHART A

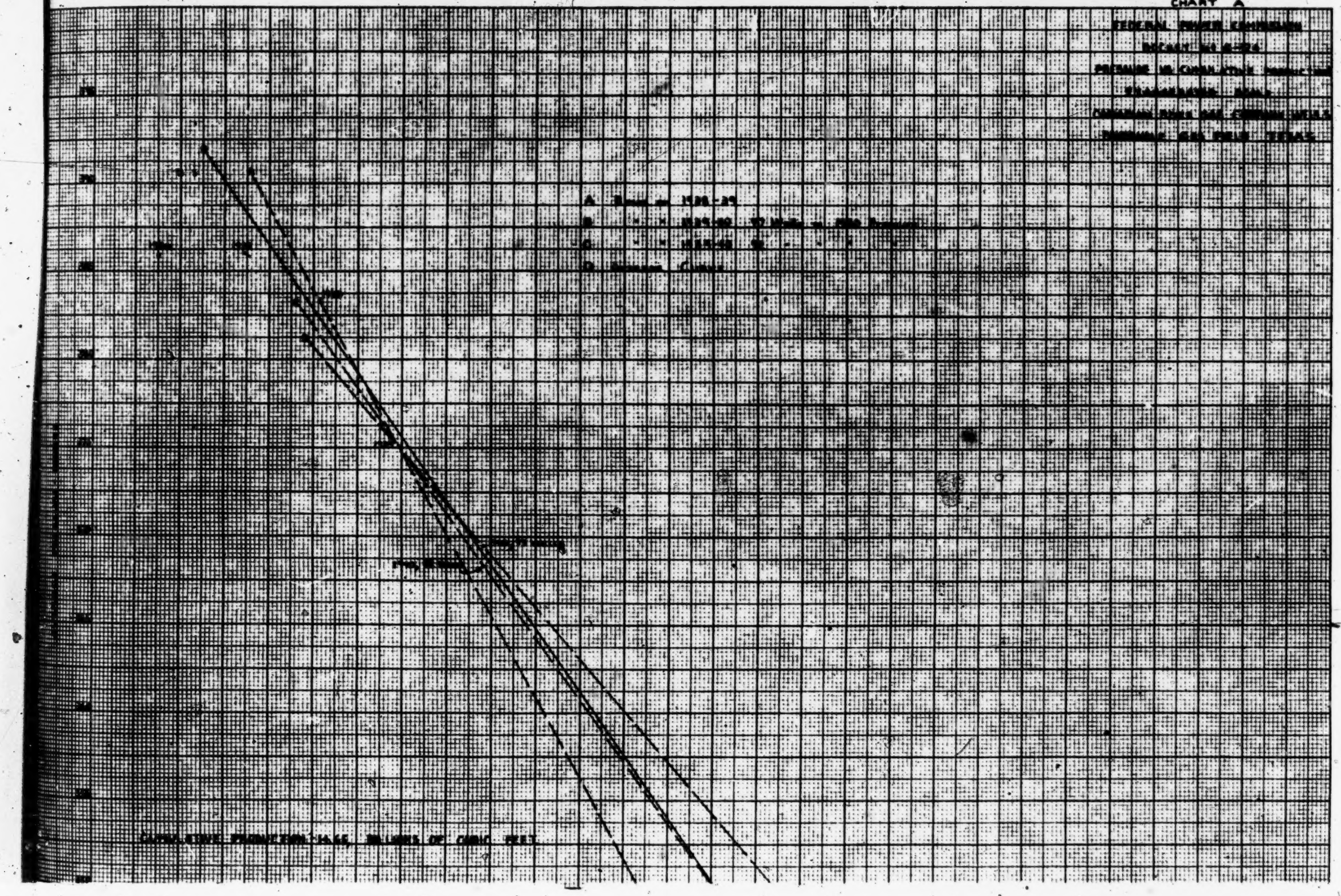
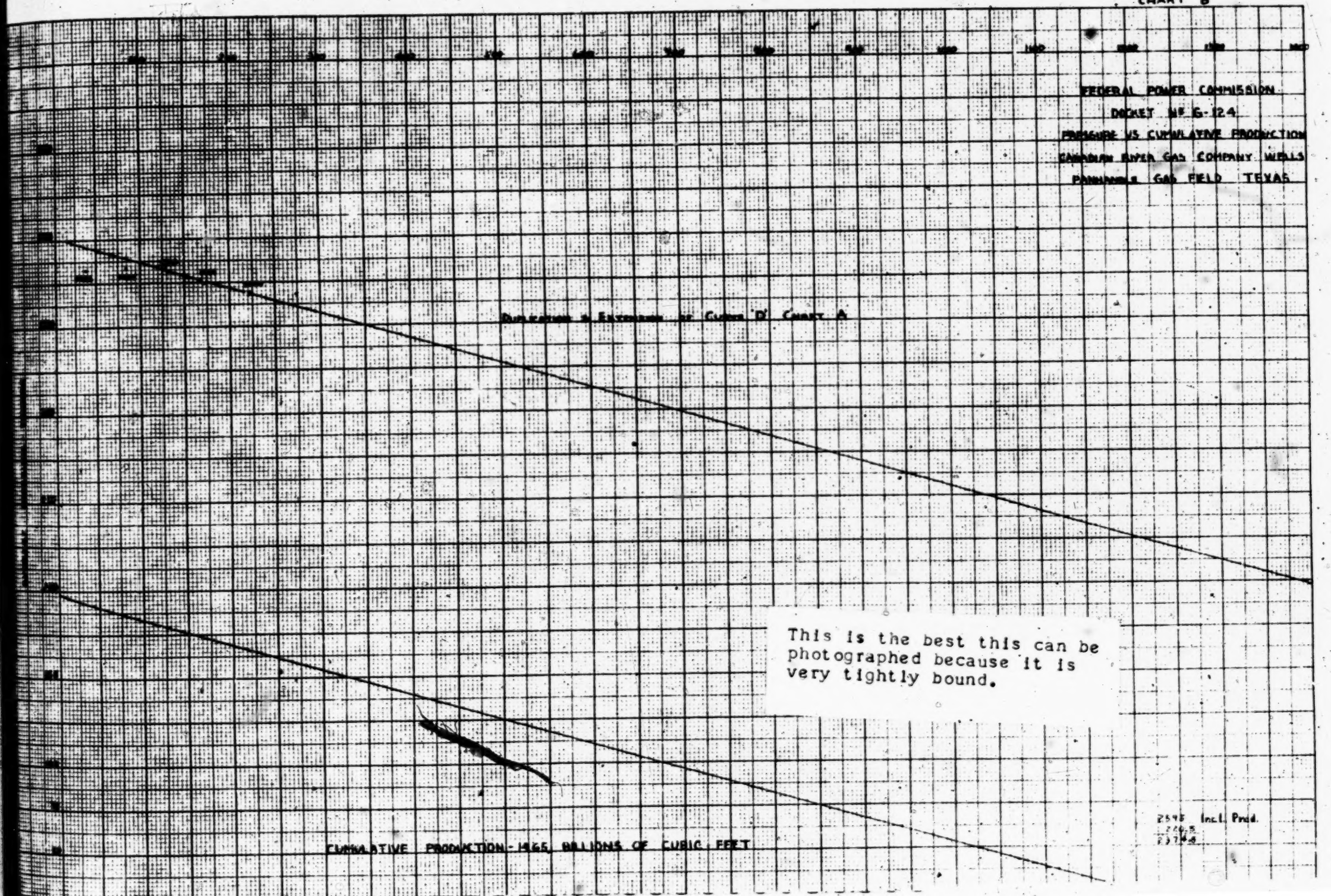


CHART B



This is the best this can be photographed because it is very tightly bound.

Stevens further testified on cross examination (Vol. 95, pp. 14649-14678) as follows:

He stated that he had sponsored Exhibit 182 in which he had used the arithmetical average of certain wells in order to get the estimated producing ability of those wells, and in arriving at that arithmetical pressure average for that exhibit he took into account the wells owned by companies other than Canadian River Gas Company, but all of which were located within the quadrants outlined by Mr. Hammer in which Canadian River had gas acreage, with the exception of Quadrant 3 in Hutchinson County. He took into account only the southwest corner of that quadrant. He took into account many other wells other than the Canadian River wells in arriving at the arithmetical average of pressures for the purpose of determining the volume of gas Canadian River wells would produce.

Stevens also sponsored Exhibit 197, which was an availability study in which he predicted the decline in rock pressure from year to year as to Canadian River Gas Company wells which was also based upon an arithmetical average of the rock pressures of such wells, but in that exhibit he didn't follow the same course he had followed in Exhibit 182, but with respect to Exhibit 197 he took into account only the wells that were actually owned by Canadian River Gas Company.

Witness also sponsored Exhibit 252 which was an availability study but limited to some 55 wells which are furnishing gas to the Denver pipe line, and in that study he considered the arithmetical average rock pressure of those wells only.

Stevens also sponsored Exhibits 263-A and B, which consist of some curves which purport to show the arithmetical average pressure of various Canadian River wells from 1938 to 1940, inclusive. Exhibit 263-B merely projects such curves into the future.

The witness does not recall the type of wells that he included in his arithmetical average in Exhibit 182, but which were not included in Exhibit 263-A and B, 252 or 197. He stated there was no point in knowing that as it wouldn't have made any difference what kind of wells they were.

In constructing arithmetical averages shown on Exhibit 263 the witness indicated the 1939 arithmetical average of Canadian River wells as being 375.05. This was not the same pressure that was used for the year 1939 in the construction of his Exhibit 197.

Watson had previously testified that the arithmetical average pressures of Canadian wells for 1939 was 378 pounds and this was the figure used in Exhibit 197, and when constructing Exhibit 197 he recognized Watson's testimony to this effect. He stated this gave him a more conservative answer with respect to Exhibit 197. He stated, however, that when he came to prepare Exhibit 263-A he felt perfectly justified in using a different figure, 375.05, because this was the Railroad Commission pressure figure. He stated also that Mr. Watson had furnished no proof that the accurate arithmetical average pressure was 378 in 1939. He stated also that he could not raise the 1939 pressure as utilized in Exhibit 263-A and B without also increasing the 1938 and 1940 pressures by 3 pounds, and if he had done so the result would have been just the same in so far as his curves are concerned.

The witness was then asked if it was not obvious that there was no reason why 1940 should be changed. His answer to that was that there was no obvious reason, either, from the Railroad Commission as to why 1939 should be changed.

The witness further testified (Vol. 95, pp. 14660-14667) as follows:

Q. Let's take them one at a time. I have started with 1940. Now, so far as you know, there is no reason on earth to change 1940 up or down, is there?

A. The same is true of 1939.

Q. Can you answer yes to that question? There is no reason?

A. I see no reason at the present time other than indicated. I see no reason at the present time not to take the 1940 pressures as shown by the Railroad Commission for the wells involved in the 1940 point, and I also see no reason why the 1939 should not be considered in the same way.

Q. All right. Now, Mr. Watson—or, the Canadian River

Gas Company does have a different figure for 1939 than the reported Railroad Commission figures?

A. I don't know what they have. I know what they reported to the Commission but other than that I have seen no Canadian River reports.

Q. You have heard Mr. Watson's testimony?

A. He is confident that the buildup should be three pounds higher than recorded by the Railroad Commission.

Q. Didn't he go a little further into that?

A. I don't recall.

Q. Didn't he say a test was made a month later where the well was permitted to build up and showed actually three pounds more?

Mr. March: I object: The record will speak for itself.

Mr. Keffer: He is quoting Mr. Watson here and has predicated his exhibit upon it.

The Witness: I don't remember his testimony as to the month showing three pounds. As I recall his testimony, he was convinced that the 3-pound buildup was necessary but I don't believe he stated any figure other than three pounds.

By Mr. Keffer:

Q. As a matter of fact, Mr. Watson—if he testified there was actually a 3-pound buildup following the time that the Railroad Commission took their pressures, isn't that some proof that the pressures for 1939 were three pounds higher than what the Railroad Commission records showed?

A. To do that, all of the wells would have to be out of service.

Q. Do what?

A. All of the Canadian River wells would have to be out of service.

Q. To do what?

A. To continue the buildup you referred to.

Q. What kind of a buildup did I refer to?

A. What kind did you refer to?

Q. You're telling me. Go ahead.

A. If you have this buildup I referred to, the three pounds, it would be necessary to have the wells out of service in whole or in part.

Q. Is that such an impossible thing in the summertime?

A. Well, it is not an impossible thing, of course.

Q. Do you know how to take rock pressures, Mr. Stevens?

A. Certainly.

Q. How?

A. Is it necessary to explain that?

Q. It ought not to be but isn't it a common practice where they can do so to permit the wells to build up? Isn't that the desired thing?

A. Yes.

Q. Is there any reason on earth why wells can't be shut in ahead of the person gauging the wells so they can build up? In fact, isn't that the ordinary normal and customary way to do it?

A. Yes, a certain number at a time.

Q. Then those wells could have built up three pounds just as Mr. Watson said they did?

A. After the date of the tests, you mean?

Q. Yes.

A. It is possible. There has been no evidence submitted to that effect or any claims made that—

Q. Do you consider Mr. Watson's sworn testimony as evidence in this case?

A. He did not specify individual wells which had built up.

Q. Is it necessary to specify as to individual wells to make the statement that he got a three pound higher average pressure?

A. No.

Q. It is still a fact, isn't it?

A. That probably isn't necessary to be specified. I will take his word for it if he made a dependable statement.

Q. You make the statement here that in 1939 the pressure was 375 pounds. I don't see where you have listed any wells.

A. I can show them to you.

Q. How's that?

A. I have them listed here and I can show them to you.

Q. I am sure you can. I am also sure Mr. Watson could do the same thing, yet you wouldn't want me to disregard your testimony here because you haven't enumerated the wells, would you? Would you?

A. It would be a rather difficult thing—

Q. What's that?

A. It would be a rather impossible to enumerate the wells, Mr. Keffer.

Q. I know it is. The only point is, when you have testified that it was 375 pounds on that particular date that is sufficient to prove that it was 375 pounds, even though you haven't referred to a single well.

Mr. March: I object to the line of questioning. He is arguing a legal point.

The Trial Examiner: I think that is true, Mr. Keffer.

Mr. Keffer: That is perfectly all right. I will withdraw the question; however, Mr. Stevens started the argument.

The Trial Examiner: Perhaps we can go along better if—

Mr. Keffer: I think we can.

Q. As a matter of fact, Mr. Stevens, if the pressures actually were 378 pounds in 1939 instead of 375 pounds, then in the interest of preciseness which you mentioned a while ago, that is the figure you ought to have used?

A. With this provision, that 1938 be also increased and 1940 be also increased in the same amount. As a matter of fact, it isn't definite in a case of the two other years as to how much they should be increased.

Q. All right, let's see. We are increasing 1939 from 375 to 378 because there was an error. There was no error in 1940. Why change 1940 simply because you have corrected 1939?

A. Well, this sureness of error as to 1940 probably isn't described as an error but an inaccuracy. In the case of 1939, if you had a buildup as your sworn testimony indicates, of three pounds—you state that in 1940 there was no discrepancy due to any degree of shut-in. I don't believe that lack of discrepancy of three pounds or any other pounds in the case of 19[illegible] has been established.

Q. As I understand you, then, there would be no reason to change 1940 simply because you corrected 1939, is that correct?

A. I tried to say in so many words that there is no reason that I know of why you should not change 1940 if you changed 1939.

Q. Let's go back all over the thing again. Why are we changing 1939, Mr. Stevens?

A. Under the assumption that this statement of 3 pounds later buildup is an entirely valid one.

Q. All right, there has been no such contention made on the 1940 rock pressures, has there?

A. There hasn't been any that I recall.

Q. Then if we correct 1939 for the reasons you have just stated, there would be no occasion to make any change in 1940, would there, because the same reason doesn't apply?

A. If the reason does not apply in 1940, that would be true, but I haven't seen any substantiation of that point of view.

Q. What point of view?

A. That 1940 was perfect.

Q. You haven't heard anybody question it, have you?

A. Well, the 1939 pressure, as quoted by the Railroad Commission, wasn't questioned and all of the people that have read the pressures in the country and used them, if they have used them, haven't questioned them, either. It is a question of specific disagreement which one of your representatives has claimed to be the case.

Q. Naturally it would be assumed to be correct until it is shown to be to the contrary. I would do that and you would do that.

Mr. March: I object to that. That is a legal conclusion.

Mr. Keffer: There is no such a conclusion to that question, Mr. March.

Mr. March: As a matter of fact, that is merely a legal question. As a matter of fact, Mr. Stevens has already said that—

Mr. Keffer: All right, all right. Mr. March, I'm trying to save time but I might get to a point where I don't care to save time. Let's go on.

Q. What we always want is a correct figure, isn't that true?

A. I believe so, yes.

* * * * *

Stevens further testified (Vol. 95, pp. 14667-14693) with respect to the pressures of certain wells for various years. His testimony, in part, is tabulated as follows:

	1938	1939	1940
Bivins A-21	391	356	386
Killgore A-1	485	384	
Masterson J-1	409	367	396.2
Bivins A-4	385	356	398.6
Bivins A-23	415	343	365
Masterson D-4	388	365	377.5
Masterson F-1	415	413	404.5

The witness stated that he had made some corrections with respect to Killgore A-1 and Masterson F-1 wells due to the fact that a representative of the Railroad Commission had told him that a correction should be made.

The witness then stated that the drop in pressure on Bivins A-21 well from 1938 to 1939 was 35 pounds, and from 1939 to 1940, there was an increase of 30 pounds, and that this indicated quite clearly to him as a gas engineer that there was something wrong with the 1939 pressure, and indicated that the 1939 pressure, in all probability, was taken without an adequate buildup, and that the 1940 pressure was taken with an adequate buildup.

He also referred to the pressure of the Masterson J-1 well and stated that the decline from 1938 to 1939 was 42 pounds and that there was an increase from 1939 to 1940 of 29 pounds, which indicated that there was an improper buildup in 1939 on that well. He referred also to the Bivins A-4 well, and stated that this well had lost 29 pounds in pressure from 1938 to 1939, but had a buildup from 1939 to 1940 of 42 pounds, and that this indicated that something was radically wrong with the 1939 test on that well.

Witness referred also to the Bivins A-23 well, and stated it had a drop in pressure from 1938 to 1939 of 72 pounds but had increased from 1939 to 1940 22 pounds; that the Masterson D-4 well had decreased 23 pounds from 1938 to 1939, but increased 12 pounds from 1939 to 1940.

The witness was then asked whether, if Mr. Watson had told him there had been an improper buildup for the 1939 pressure survey and had cited as examples some of the wells above-referred to, that would have been sufficient to incline the witness to accept the sworn testimony of Mr. Watson that there had been an improper buildup. The witness an-

swered that he didn't see any particular reason why he should doubt Mr. Watson's veracity or question it."

The witness also stated that the taking of arithmetical averages of wells is not a perfect process, and that where the pressures are averaged arithmetically they may throw you off either up or down depending upon whether the additional wells that are drilled from time to time are drilled in high or low pressure areas, and that as a matter of fact, Exhibit 263-A illustrates this very point. The plat shows the 1940 pressure for 92 wells as being approximately 369 pounds, but when he added the 5 additional wells drilled in 1940 and included these with the others, his average for 1940 was about 370 pounds. He stated that if 5 additional wells were drilled in an area in which the pressures were 400 pounds or above, that this would increase his average pressures for 1940 about 1½ pounds, even though there had not been any production from or drainage into or away from the area.

Stevens further testified (Vol. 95, pp. 14680-14681) as follows:

Q. So you could expect in taking arithmetic averages of wells where you are drilling them from year to year a fluctuation?

A. That is one thing that would cause a fluctuation of point from a straight line, yes.

Q. As a matter of fact, most of the Canadian River's undrilled acreage is in higher than average pressure bands, isn't it?

A. Well, you made quite an example once of this Thompson well, I believe that was.

Q. As Canadian River drills wells from time to time, the drilling of those wells will have a tendency to hold that arithmetical average up to a greater extent than it would have been if they hadn't drilled wells?

A. That is true. You also drilled three new wells in 1939 that would have that effect.

Q. All right.

A. You have three new wells in 1940 which had a parallel effect.

Q. So you can't rely too strongly on arithmetic averages, can you?

A. For what purpose?

Q. For any purpose.
A. Not for meticulous accuracy you cannot.
Q. How's that?
A. Not for meticulous accuracy.

The witness further testified that he did not take the average of all of the wells in the entire quadrant as Mr. Hammer did and as Stevens did in his Exhibit 182 because he wanted to show the conditions on Canadian River's acreage with respect to production versus pressure and exclusive of the contiguous areas.

He stated that in his Exhibit 182 where he considered the additional wells in the various quadrants, the problem was to determine the gas that was going to be produced from Canadian wells alone, and that it was necessary to include contiguous areas because this method involved a ratio and he got this ratio by taking into account all of the other wells. He stated that the same general objective in Exhibit 263-A and B were the same as in Exhibit 182, but that he had simply used a different method. He was then asked that if he was right in Exhibit 182, whether he was wrong in Exhibit 263-A and B, or vice versa, and he answered,

"No, just a simple degree of conservatism."

He stated that if he had taken into account all of the other wells which he did consider in Exhibit 182, he did not know whether the rock pressure would have been less or not because he hadn't made that comparison, but he did say that the rock pressure should be less in that case because, as he recalled it, the wells not considered were in generally lower pressure areas, but he did not know definitely whether all of them without exception were in lower pressure areas than the Canadian wells which he counted or not. He did say, however, that in any event the other wells had no bearing on this Exhibit, and he did not have any concern as to whether they were higher or lower. He said that the wells he did consider were affected by whatever occurred adjacent to them, and in that sense the adjacent areas were to some indeterminate degree incorporated in the study, but that he would make no attempt to evaluate them.

He stated that the effect of the other wells were taken

into account in a different way, but that it was an ultimate conclusion they can never be determined or evaluated.

Witness Stevens further testified (Vol. 96, pp. 14785-14799) as follows:

Q. In Exhibit 182 you have assumed that every time Canadian River drilled a well it increased its available supply of gas by 23 or 24 billion feet?

A. Not specifying the exact area.

Q. I know, but in order to reach that conclusion you had to assume that each well had its own drainage area, didn't you?

A. It is inconceivable to think a well doesn't have some drainage area.

Q. Can you answer my question as to whether or not it had its own drainage area?

A. It had a drainage area unspecified.

Q. Mr. Stevens, on your theory a well that has no production should have no pressure drop, is that right?

A. If it isn't depleted.

Q. If it isn't producing it hasn't started to drain, has it?

A. If it isn't interfered with locally by contiguous areas, that would be the case.

Q. What would you say would be a contiguous area? How far away would a well have to be?

A. That is an indeterminable thing, depending upon physical factors of the formation.

Q. Would you say four or five miles?

A. I wouldn't say any miles.

Q. Do you know where the Masterson B-5 well is?

A. Yes, I do.

Q. The closest well to it is about 2½ miles, is it not?

A. Yes.

Q. And the wells in the other direction will range from four to five miles away, isn't that right?

A. That looks about right.

Q. Would you expect that well to suffer any drop in pressure in the absence of production?

A. It might. As a matter of fact, I believe it did.

Q. Yes, as a matter of fact, it suffered eight pounds drop from 1939 to 1940, didn't it?

A. That is right.

Q. That had to be from a complete buildup in both years, didn't it?

A. Yes, that is right.

Q. There couldn't be any mistake on that pressure in buildup or lack of buildup, could there?

A. I don't think so.

Q. That is because it hadn't produced any gas in that year's buildup. In fact, it hasn't drained any. That is rather conclusive—you do know there was no production from it, don't you?

A. I believe that is the case.

Q. Will you check and see if that is the case?

A. Yes. That is Bivins B-5?

Q. No, Masterson B-5, Quadrant 1, Potter County.

A. I am fairly certain from my recollection, that well isn't connected—it is to be connected and hasn't been.

Q. You don't show any production for it, do you?

A. No.

Q. It is pretty good proof it didn't have any, isn't it?

A. I think so.

Q. That well dropped eight pounds, and eight pounds, strange as it is, is the very average you used on these computations, isn't it?

A. On the average?

Q. On the average.

A. That is right.

Q. So that well is an average well in pressure drop without a cubic foot of production, isn't it?

A. Well, that may be coincidental.

Q. May be what?

A. It may be coincidental. Go ahead.

Q. Will you answer my question?

Mr. March: What is the question?

Mr. Keffer: Read it.

(The question referred to was read by the reporter as set forth above.)

Mr. March: It is obvious the average is the average of the drop.

The Trial Examiner: He hasn't answered it yet. If he would say "yes, that is merely a coincidence," that would have answered the question.

The Witness: That is a coincidental check with the average of 8 pounds.

By Mr. Keffer:

Q. Now, Mr. Stevens, if you would take that well certainly as a test, you could have the 8 pounds pressure drop on Canadian River acreage without a foot of gas, couldn't you?

A. Repeat that question, please.

(The question referred to was read by the reporter as set forth above.)

The Witness: As a test? What kind of a test?. What do you mean by test?

By Mr. Keffer:

Q. As the basis for the comparison.

A. And consequently from that specific well you say that production has no relation to pressure drop, is that what you mean?

Q. You just answer my question. It doesn't matter what I mean. The question is very simple and it is susceptible to a simple answer.

A. It has declined eight pounds without—that is in how many years?

Q. One year.

A. One year?

Q. Yes, that is what you said, wasn't it? If it isn't, check and see if it isn't one year.

A. I don't recall—regardless of what number of years it is, I do not have the pressure for 1939 on this sheet here.

Q. It is 408-400 pounds.

A. All right, I believe I recall that.

Q. How's that?

A. It declined eight pounds in one year without any production.

Q. All right. It is evident Canadian River acreage might suffer an 8-pound drop without any production at all, isn't it?

A. That criterion you apply is unreasonable. It is unreasonable for the reason that while this well has drained eight pounds in one year without production, as you say.

the rest of the wells had some production from them, didn't they?

Q. Yes, surely.

A. Well,—

Q. Let's get a little more specific here. The drainage area of that well is determined by drawing a concentric line around it and splitting the difference between it and opposing wells and would be something like 30 or 40 square miles, wouldn't it?

A. Whatever it is makes no difference as the fact is no two wells have to have the same drainage area. The fact that Canadian River took gas out of the surrounding wells, nearby wells, regardless of whatever the distance was—if it went four miles in their case, all right; if it went a mile and a half or two miles to the nearest wells, okay—doesn't mean every well is going to do that.

The reduction of pressure by movement of gas is still a relationship that can't be denied. That gas that went from under the Masterson B-5—we will assume it came out of Canadian River wells—served to increase the amount of production. If you had taken it out of the Masterson B-5 the wells that had gotten it would have shown a lesser amount of gas per pounds, so you end up in this average at the same point. That is the difference?

Q. All right, let's rush along here. It does show unquestionably that the drainage distance of a well in that area is several miles, doesn't it?

A. It indicates that it is at least 2½ miles in that case to the nearest well but that doesn't say anything about the rest of the wells in the field.

Q. You wouldn't assume it would run down one little groove to that one particular well, would you?

A. I am making no assumption as to the character of flow.

Q. And it is especially true when that well 2½ miles away had a pressure that was very little lower than your Masterson B-5 well and the wells to the north and northeast created a differential, you would assume it went to the north and northeast?

A. It doesn't make any difference where it went.

Q. That well does indicate most clearly that all of these

wells owned by other companies within the Canadian River block and those others we named offsetting it have a very distinct bearing and relationship upon the producing life of the Canadian River property?

A. If you base it upon the performance of the B-5 well, that is true, but whatever the effect is—I have repeated it so many times—in the pressure volume record of Canadian River Gas Company it is indicated on Exhibits 263-A and 263-B.

Q. The pressure records for other wells are not in there, are they?

A. No, but the effect is upon the Canadian River.

Q. How do you know?

A. You were claiming they reduced the pressure of the Canadian River.

Q. That is right. Do you agree to that?

A. That is what you are claiming.

Q. Do you agree to that?

Mr. March: In regard to what well?

Mr. Keffer: I am not talking about any particular well.

Mr. March: In regard to what area?

The Trial Examiner: We will stand in recess until 2:00 o'clock.

(Whereupon, at 12:35 o'clock, p. m., a recess was taken until 2:00 o'clock, p. m., of the same day.)

Afternoon Session, 2:00 P. M.

The Trial Examiner: The hearing will be in order.

Whereupon, HARRY F. STEVENS, the witness on the stand at the time of recess, having been previously duly sworn, resumed the stand and testified further as follows:

Mr. Keffer: Mr. Reporter, will you read back the last few questions and answers before we recessed?

(The record referred to was read by the reporter, as set forth above.)

Cross Examination (Continued)

By Mr. Keffer:

Q. Do you agree to that?

A. I think I'd better have the question restated more definitely, if I may.

Q. You had made the statement that I was assuming or evidently assumed or took the position that the other wells we were discussing would affect the Canadian River wells as a result of drainage and I asked you if you agreed to that.

A. Oh, you were referring to contiguous acreage, I believe.

Q. And blocks within our acreage as well, which is not owned by us.

Mr. March: You are asking him now whether or not he thinks those wells are draining your acreage?

Mr. Keffer: Whether those other wells are draining our acreage.

Mr. March: I object to that. This is not a drainage exhibit and has nothing whatsoever to do with it. It is a study of individual wells of the Canadian River Gas Company and the peak performance of those individual wells.

The Trial Examiner: The particular question, though, I believe, Mr. March, is relevant to the exhibits. The objection will be overruled.

The Witness: I don't say that those wells are draining Canadian River acreage or that they do not. I have not made a study of drainage with respect to that. If they are, as stated before, their effect is in the production data of the Canadian River.

Mr. Keffer: I'm sorry, Mr. Stevens, I thought I was listening but I didn't get your answer.

(The answer referred to was read by the reporter, as set forth above.)

By Mr. Keffer:

Q. How is it in the production data?

A. If it is in there it is reflected in the decline of pressure, if that is the case. If they drain to Canadian River, they are reflected in the maintenance of pressure.

Q. Well, then, you would have been on the safe side if you had counted them in in arriving at your arithmetical averages, wouldn't you?

Mr. March: Which exhibit are you talking about?

Mr. Keffer: Where he shows his arithmetical averages, Exhibit 263-A and B, as well as 252. It would apply to both of them as they weren't considered in either one.

The Witness: I don't see as it is necessary. They are already in there.

By Mr. Keffer:

Q. Well, you haven't taken down their pressures and averaged them in with the pressures of Canadian River wells, have you?

A. No, but it is certainly clear that whatever effects that they had affected the Canadian River pressure.

Q. And you assume that whatever that effect is that it is right now fixed and is not going to change?

The Trial Examiner: I think he has answered that, Mr. Keffer.

Mr. Keffer: Yes, I think he has.

Q. All right, now, Mr. Stevens, you stated some time back; that is, this morning, that although your calculations are based upon the assumption that each well on the average would decline the same as every other wells in pressures, yet you knew as a matter of fact that that would not be the case actually. Is that the case?

A. Yes, that the average is the thing that applies. You are assuming in this case here that where we went through wells and showed on the basis of an 8.3, or approximately 8 pounds per year, the working pressure required would be—

Q. As you have stated in your exhibit, Table 3?

A. The gauge working pressure would be more than the rock pressure. You are assuming that they would have to decline that 18.26 pounds in those two years. The meaning of the average year is not that at all. Some of these wells which on your basis you say will decline 18.26 per year, it may well be that that well will decline six pounds or ten pounds or five.

Q. Yes, and it might decline 40 or 50, might it not?

A. Well, that is rather an extreme.

Q. Well, it might decline more than the 18.26, isn't that correct?

A. It isn't very likely.

Q. Well, you have your average at 18.26, you're bound to have some that are more than that, aren't you?

A. That's just the point. Some are more and some less.

Q. And your answer is that they might decline more than 18.6?

A. That's right, and the overall average gives you this margin we referred to.

Q. You do say that is going to vary from year to year according to the actual decline?

A. Depending on how much you take from it.

Q. And then if they are going to vary from year to year, then your average will vary from year to year, necessarily, won't it?

A. No. You are talking about individual wells.

Q. I know, if individual wells aren't going to decline on the average basis, then you have got a different factor each year to figure a different average each year.

A. The average will decline approximately eight pounds on the basis of the record.

Q. I say, I know that is what you say. Now, my point is, if the individual wells will vary from 18.26, then you would have to strike a new average each year to get your correct average, wouldn't you?

A. You still overlook the fact that this 8.8 pounds is that average.

Q. I understand that. That was the average—

A. That doesn't change.

Q. That was the average based upon your pressure figures of 1939 to 1940, wasn't it?

A. 1938, 1939 and 1940.

Q. All right, 1938, 1939 and 1940. All right now, if those individual well performances are going to vary, then as a matter of fact, your average is likely to vary.

A. Not materially, no, if any, on the basis of this record.

Q. How do you know it won't?

A. On the basis—

Q. How do you know it won't? How on earth are you going to tell that your average is going to be the same?

A. On the basis of three years history.

Q. Well, I don't think that answers the question. You say that on the basis of the record of your history it is not going to obtain in the future except on an average?

A. That's the story. That's all there is to it.

Q. Yet you say the decline is not going to be uniform, don't you?

A. It probably won't. It hasn't been, with respect to a given well.

Q. That's right. Well, your average is composed of all of your wells, isn't it?

A. That's right, and it, taking in to consideration those variations, has done so.

Q. Now, if your individual wells will differ, why wouldn't you have to strike a new answer each time?

A. My answer is the same as before.

Q. All right, if you think you have answered it.

On your exhibit 252 you have a type of weighting on that, haven't you?

A. Yes, sir.

Q. You weight your rock pressures with your open flows, don't you?

A. Yes.

Q. All right, then, it all depends on where that variance is going to come, doesn't it?

A. That is taken care of in the method.

Q. Let's see if it is. Now, you have got a weighted average, as you term it, as set out in Exhibit 252 where you have weighted your rock pressure declines or your rock pressures with your open flows. Now, to maintain that average you have got to have the same proportionate decline in the big wells as you have in the little wells, haven't you?

A. The effects of those open flows in terms of their respective curves from which they are read, one from each well, is weighted into that average. That, of course, is one reason why the weighted average isn't the same as the arithmetical average.

Witness Stevens further testified (Vol. 96, pp. 14870-14833) as follows:

Mr. Stevens was referred to his redirect examination with respect to Masterson B-5 well and stated that since that well had been shut in he would think it had a perfect build-up, but he didn't know whether the pressure readings were accurate or not.

Mr. Stevens further testified that the Allison Canadian

River well had a pressure drop of 9 pounds from 1939 to 1940, with a production of 73 million cubic feet, or a pressure drop of 1 pound for each 8 million cubic feet of production, and that the Bivins B-3 well in the same area had a 4 pound pressure drop, with 452 million cubic feet of production, or a production of approximately 113 million cubic feet for each pound lost in pressure.

Thompson A-2 well of Canadian had a production of 269 million cubic feet from 1939 to 1940, with a drop of 11 pounds in pressure, which resulted in about 24 million cubic feet of production for each pound lost in pressure, while the Thompson P-2 well, in the same area, and for the same period, had a pressure drop of 3 pounds, with production in excess of one billion cubic feet, or a production of approximately 360 million cubic feet for each pound lost in pressure.

The Masterson A-1 well for the same period produced 813 million cubic feet of gas, with a pressure drop of 6 pounds, which resulted in a production of 125 million cubic feet for 1 pound lost in pressure, and the Read A-1 well of Canadian in the same area had a production of 125 million cubic feet of gas, with a pressure drop of 12 pounds, or about 10 million cubic feet of production for each pound lost in pressure.

The Bivins A-5 well of Canadian had a production during the same period of 697 million cubic feet of gas, and lost only 1.4 pounds in pressure, while the Seay A-1 well nearby had a production of 104 million cubic feet during the same period with a drop in pressure of 7 pounds, or approximately 15 million cubic feet for each pound lost in pressure, and the ratio in favor of the Bivins well over the Seay well was in excess of 40 to 1.

The witness Stevens further testified (Vol. 96, pp. 14882-14883) as follows:

When you have a pressure decline in a well from one year to another of some 50 or 60 pounds with a certain production, we'll assume for the sake of the question 2 million feet, and the next year that well has a production of one million feet, on the theory that you have been expounding here for the several times that you have been on the witness stand, you would expect a decline in that subsequent

year of half of the decline you got in the preceding year, wouldn't you?

A. We are getting into this average again.

Q. No, I'm not talking about average at all. I'm talking about those wells Mr. March asked you about on redirect when you said or intimated pretty strongly, if you didn't say it, that it was a decline in production that caused those wells to build up.

A. To allow them to build up from their immediately surrounding areas to an indefinite extent. That certainly was a factor in allowing the pressure to build up.

Q. When they were on production with substantial volumes of gas?

A. Certainly. While there may have been substantial volumes of gas, there were greatly reduced volumes of gas.

Q. Are you changing your theory on the relationship between production and drop in pressure?

A. Not on the average.

Q. Just on some wells? Where you want to get a different answer you change?

A. It is simply an explanation of why those wells increased in pressure. It was due to a decelerating rate of production.

Q. Isn't the logical answer that a decelerating rate of production instead of increasing the pressure would simply decelerate the loss of pressure on your theory?

A. Well, it would depend on how bad the heavy production of the previous year pulled it down.

Q. All right, let's drive a peg there and stay right there until I ask you this question: Then in those previous years those wells didn't have a proper buildup, did they, before the pressures were taken?

A. That is illustrated by 1938 and year 1937 points on these curves.

Q. Will you answer my question, please? Those very wells didn't have that proper buildup for taking the 1939 pressures, did they?

A. That would seem to be the case.

Mr. Keffer: All right. That's all. You said that the first time and then you changed it. That's the only reason I went back into it. That's all.

The witness further testified that the pressures shown

on his graph in Exhibit 263-A and B were not weighted pressures. He further stated that if a field is fully developed you can take arithmetical averages and determine production with reference to pressure drops without using a weight medium which brings all of the acreage into account, and in such case an arithmetical average of the pressures of wells will enable one to make an estimate of reserves without any sort of weighting. He stated, however, that the Panhandle field was not fully developed and that the Canadian River acreage was not fully developed. He did state, however, that he could take arithmetical averages as to Canadian River wells and determine the recoverable gas from existing wells, which is all that Exhibit 263-A and B pretends to be.

Referring to the excess of available working pressure over line requirement, the average excess for 1942 and 1947, respectively, is approximately 86 pounds and 44 pounds, and represents the margin of well head working pressure over what is necessary at that point for the conditions of flow of wells totaling 130 MMCF into the lines and with 250 pounds at Bivins station. Having in mind the basic assumption of 250 pounds suction at Bivins, it is indicated that in 1942 and 1947 each well has a margin of both capacity and working pressure. It is also indicated by reason of this excess that 250 pounds suction can be maintained at Bivins station through 1947, that it will not fall to 150 pounds or any point between 150 and 250 pounds before that time. It then follows that no additional compression units are needed before 1947 except as may be dictated by the requirements of 250 pounds suction and the pumping of 130 MMCF.

In 1942 the available suction pressure at Bivins, of 250 pounds, will be 68.55% of the average rock pressure of 364.69 pounds to be expected at that time. In 1947 it represents 77.02% of the average rock pressure of 324.6 pounds expected to exist at that time.

It is my opinion that the foregoing investigation, on the basis of factual data more accurately forecasts the operating conditions than Mr. Rhodes' 'judgment figure' of 150 pounds suction pressure for 1943 and his conclusion as to

the necessity of additonal compressor capacity which is incidental to that judgment figure.

Also Mr. Rhodes' claim that suction pressures of one third or one half or one quarter of average closed in well pressures, said to exist in his experience in other fields, is not applicable to the Panhandle field when investigated with respect to Panhandle wells and company facilities which determine operating pressures.

The witness Stevens further testified (Vol. 96, pp. 14855-14861) as follows:

By Mr. March:

Q. Mr. Stevens, turn to your Exhibit 263-A and B.
A. Yes.
Q. I refer you to your 1940 point there.
A. Yes.
Q. Do you recall yesterday there was some effort to cite you several wells in which pressures had been increased in an effort to cast some doubt upon the accuracy of the 1940 point?
A. Yes.
Q. There were several of those wells mentioned and I believe you stated at the time that those pressures possibly increased because there might have been something wrong with the measurements. Did you during last evening examine the production of those wells in an effort to arrive at some answer as to why the pressure increased?
A. Yes, I have.
Q. I refer you first to the Bivins A-21 which was mentioned. Will you give me the 1939 pressure?
A. 356.
Q. Will you give me the 1939 production?
A. 385.7.

Mr. Keffer: Over what period?

Mr. March: I asked him to give me the 1939 production.

Mr. Keffer: I know that but we have calendar years and mid-years. I want to know which one it is.

The Witness: These are mid-year endings.

By Mr. March:

Q. I will ask you to give me the production of that well in 1939.

A. It was 2,326,909,000.

Q. That much what?

A. Cubic feet.

Q. Now give me the 1940 pressure.

A. That was 385.7, as stated.

Q. Which was an increase over 1939?

A. Yes.

Q. Give me the 1940 production from that well.

A. It was a production which was approximately half of the previous year, 1,361,611,000 cubic feet.

Q. Now let's take the next well. The next well was the Bivins A-14, was it not?

A. Yes.

Q. The 1939 pressure on that well was what?

A. 405.

Q. The production on the well in 1939?

A. 2,658,205,000.

Q. The pressure on the well in 1940?

A. That was 100.5 pounds.

Q. And the production in 1940?

A. That was 1,618,706,000 cubic feet.

Q. The next well is the Killgore A-1. Give me the 1939 pressure on that well.

A. 384.

Q. The production?

A. 1,024,778,000.

Q. The pressure?

A. 372.7 for 1940.

Q. And the production in 1940?

A. 1,024,326,000 which is almost exactly the same as the previous year.

Q. During that period the pressures did decline for that well?

A. They did decline. That was the one about which the area was discussed.

Q. Let's take the Masterson F-1. Will you give me the 1939 rock pressure on that well?

A. 413.

Q. And the production in 1939?

A. 128,772,000.

Q. The pressure in 1940?

A. 445 pounds.

Q. And the production in 1940?

A. 94,504,000.

Q. The next one was the Bivins A-23. Will you give me the pressure for it in 1939?

A. 343.

Q. And the production?

A. 324,170,000.

Q. And the pressure in 1940?

A. 365.2.

Q. The production in 1940?

A. 202,226,000.

Q. In other words, the production in that year was less than half of what it was in the previous year 1939?

A. That is right.

Q. Let's take the Masterson D-4 which was mentioned by Mr. Keffer. What was the pressure in 1939?

A. 365 pounds.

Q. The production in 1939 was what?

A. 3,094,794,000.

Q. The pressure in 1940?

A. 377.5.

Q. And the production in 1940?

A. 1,700,736,000.

Q. Roughly in percentage what was the decline in production in 1940 over 1939?

A. Not quite half.

Q. Now let's take the Bivins F-1.

A. 350 pounds in 1939; as for the production, 66,845,000.

Q. And in 1940?

A. 346.

Q. Pressure?

A. Yes.

Q. The production in 1940?

A. 532,615,000.

Q. I see. Now, Mr. Stevens, do you know of any other wells whose pressures increased in 1940 in the Canadian River Gas acreage?

A. Aside from those listed yesterday by Mr. Keffer, I did find one here, Bivins A-10, which in 1939 had a pressure of 382 pounds; production, 5,022,000. In 1940 it had a pressure of 390.8 with a production of 6,599,000.

Q. Are there any others that you ran across?

A. There is the Thompson B-1, which in 1939 had a pressure of 362 and a production of 16,887,000; for the following year 1940 it had 364.5 pounds for the production and 32,813,000.

Q. There may be others for all you know?

A. Well, I checked them quite carefully but I might have missed some.

Q. You might have missed some?

A. I doubt it.

Q. After looking at the production from these wells, is it not quite possible that the decrease in withdrawals from those wells might have had something to do with the increase in pressures in those wells in 1940?

A. That seems the case. I believe in every case that we have noted—it may not have been in every case, but at least in a majority of the cases the increase in pressure was accompanied by a rather strong reduced proportion of production. The amount of volume isn't the final criterion involved because one well might be able to produce larger amounts than another, whether or not the same pressure drop, but in general those lists represent cases where build-up was observed with greatly reduced rates of production.

Q. Now, Mr. Stevens, if it should be the case that all of those wells Mr. Keffer read off where the pressures are increased, the reason they showed an increase was because of erroneous gauging of the well or taking of the pressure, and is it not equally likely that the Masterson B-5 well where the pressure decreases and there wasn't any production, that might have been an error? In other words, one is—

A. Where there is an error—of course, it would be hard to determine that.

Q. You haven't made a study to find out whether it is an error or not, have you?

A. No, naturally, I don't see how I could check whether the Railroad Commission made an error in their figures or not.

Q. However, you have checked here in two years where there were errors in the mimeographed copy?

A. In one year, 1939.

Q. And two wells.

A. Those were called to my attention. In a sense, I didn't—they were checked after being brought to my atten-

tion. I don't know whether you would call it my checking it as the Railroad Commission checked it.

Q. And the officials of the Railroad Commission told you those two figures for those two wells you discussed this morning were wrong?

A. Yes, and Mr. Peterson adopted the same corrections.

Testimony of C. J. PETERSON

Witness for Canadian.

C. J. PETERSON, witness for Canadian, testified to various matters relating to gas reserves. His testimony in this connection (Vol. 68, pp. 9924-9944) is as follows:

A. "My name is C. J. Peterson. I was born in 1885 in the Hawaiian Islands and am a resident of Amarillo, Texas.

"I received my high school education in the Hawaiian Islands. I received the degree of A. B. in the Department of Geology and Mining at Leland Stanford University in 1910. My studies at Stanford University were entirely geological and engineering as related to mining and were specalized in economic applications of geology. Geological courses embraced both mining geology and petroleum geology.

"Since leaving Stanford University my entire career has been devoted to economic work in the application of geology.

"In 1910 I took a position with Tonopah Mining Company of Nevada as assistant mining engineer. My work with this company was underground surveying, sampling of ore bodies, drafting, estimations of reserves of ore bodies and reports of examinations on mining properties.

"In 1912 I went down to Venezuela as geologist for the New York and Bermudez Company, which was a subsidiary of the Barber Asphalt Company.

"At that time the Barber Asphalt Company and its subsidiaries had concessions of approximately five-sevenths of the whole Venezuela for oil exploration purposes. However they had to make a choice of the best part of that territory within a certain time limit, and my duties in Venezuela consisted, with a number of other geologists, in making surface

geological surveys, which would determine the segregation from the concessions held by the company, of the properties which were of greatest value for oil and gas exploration.

"I stayed in Venezeula about one year and then went back to work again for the Tonopah Mining Company of Nevada. This time the Tonopah Mining Company employed me as an examining mining engineer in exploration work for the company. This mine examination work embraced examinations of mining properties in practically all of the mining states of the Unted States and also in Nicaragua. After my work in Nicaragua I returned to Tonopah and performed the duties of acting chief engineer for the company for a year at Tonopah.

"In 1917 I took a position with the Empire Gas and Fuel Company as petroleum geologist. In this position my work was confined to detailed structural surface geology in the Osage field, Oklahoma. I left this position in 1917 to do geological exploration with a company which eventually was known as the Hamilton Oil Corporation. This company did geological exploration work in several states, and while in its employ I had to make examinations of properties for them in the states of Oklahoma, Texas, Kansas and Kentucky. My work then embraced surface and sub-surface geology, estimates of oil and gas reserves and detailed surface geological structural surveys of properties.

"In 1921 the Hamilton Oil Corporation sold out their properties to what is now the Continental Oil Company and for a year I worked as a consulting geologist in association with Mr. C. L. Severy, in Tulsa, Oklahoma.

"In 1923 I again went to work for the Empire Gas and Fuel Company, this time as a petroleum geologist in the Rocky Mountain Division, with offices at Denver, Colorado. During my work for the Rocky Mountain Division of the Empire Gas and Fuel Company, I had to make surface geological examinations and determinations of the value of properties in the states of Colorado, Utah, New Mexico, Wyoming and California.

"At the end of 1926 I left the Rocky Mountain Division of the Empire and took a position at the offices of the Em-

pire Gas and Fuel Company, Bartlesville, Oklahoma, as geologist in charge of exploration work for the Cities Service Gas Company. My work with this company embraced subsurface geological work, geological work involved in estimating gas reserves, and was largely connected with the analysis and recommendation to the company of gas pipe line projects.

"In other words, when gas was developed in various localities, it was part of my work to report to the company whether or not it would be profitable to build gas pipe lines to those places. This of course involved estimates, estimating what reserves might be available and whether or not these pipe line projects would be economical.

"In the course of my work in this connection, the Cities Service Gas Company built its gas pipe line from the Panhandle field to Wichita, Kansas, and from there to Kansas City, Missouri. This pipe line now furnishes Kansas City with some of its gas. This pipe line was constructed in 1928 and extends from the Cities Service Gas Company compressor station in the outskirts of Pampa in the northwest quarter of Gray County in a northeasterly direction through Roberts and Hemphill Counties, Texas, to Wichita, Kansas. From Wichita, Kansas it goes to Kansas City, Missouri. After a study of conditions in the Panhandle field, I made the geological recommendations for the construction of this pipe line.

"Also in my work for the Cities Service Gas Company, through a study of the geological conditions in certain abandoned gas fields owned by the Cities Service Gas Company, I recommended the storage of gas in these abandoned gas fields. These gas storage projects are now working on a commercial basis. During the summer when the main trunk gas pipe line does not have a peak load, gas is now stored in these abandoned gas fields, near cities being furnished with gas. During the winter when the pipe line has a peak load, this stored gas is available for any emergency.

"In 1930 I left the employ of the Cities Service Gas Company and took a position as Chief Geologist for the Continental Construction Corporation. The Continental Construction Corporation was the predecessor of the Texoma

Natural Gas Company and the Natural Gas Pipeline Company of America. My duties as Chief Geologist for the Continental Construction Corporation were confined to the study of geological and gas production conditions in the Texas Panhandle gas field.

"In July 1931, the Texoma Natural Gas Company opened offices in Amarillo, Texas. I was then and have been since then Chief Geologist for the Texoma Natural Gas Company and in that capacity have been studying geological and production conditions in the Texas Panhandle field continuously up to the present time.

"As Chief Geologist for the Texoma Natural Gas Company I have an organization under my direction which is known as the geological department. In this department is my assistant, Mr. W. F. Brainerd, a graduate geologist. He is a graduate of the Department of Geology of Syracuse University and took his Master of Science degree at that university in 1922. He has been employed in economic geological work for over seventeen years. We work together a great deal of the time on details of the geologic work, the geologic work involved in drilling wells and the gathering of production statistics. He is very experienced in microscopic work in the examination of samples and cuttings of the formations encountered during the drilling of wells, and he has done a great deal of that microscopic work under my direction.

"For this microscopic work we have some of the best microscopic equipment obtainable. This consists of a Spencer microscope with special lenses and special lighting equipment to light the stage. This microscope was made especially for the examination of well cuttings from sedimentary formations. Sedimentary formations are those formations which in the majority of cases contain oil and gas accumulations.

"Also in my department is a draftsman, who keeps our lease, production, rock pressure and geological maps up to date and keeps the map files and does miscellaneous drafting work.

"My stenographer and secretary handles correspondence

and keeps files on geologic data, statistics of production, scouting data and logs of wells.

"In addition we have a man who does some of the work of plotting up graphic well logs and collects, washes, dries and files samples of well cuttings from the wells drilled in the field.

"The cuttings of each well are filed separately so that at the different depths in each well sampled, we can examine the cuttings of the formations encountered and know what they are.

"We examine not only samples of cuttings from the wells drilled by our company but also samples from wells scattered over the field. In this way we determine the places where the formations occur, the structural conditions in the field and the position in the formations where the gas and oil occur.

"We have examined with the microscope well cuttings from over 600 wells in the Panhandle field. In the course of doing this we have examined over 12,830 samples and have on file in our office for reference over 60,000 samples of well cutting from the Panhandle field.

"In the preliminary work in the field we used to take well cuttings from the surface all the way down to the total depths of the wells, because it was necessary to find out exactly what the conditions were in all formations, and we did not wish to overlook any possibilities in the upper formations.

"As a result of our experience in examining the wells located in different portions of the field, we are now able to narrow our examinations to certain portions of the formations in certain parts of the field.

"My duties for Texoma involve choosing the best locations for the drilling of wells; the determination of the points at which casing must be set in wells; the determination of what depth wells shall be drilled; the determination of the relative value, geologically, of acreage owned by Texoma; the determination of what leases shall be drilled or acquired; and the keeping of permanent records of wells

drilled. These are called well logs. A well log is a record kept by the driller of a well. This record shows the formations encountered in the well, the depths at which they are found, the occurrences of oil, gas, or water which are encountered in drilling the well and the depths at which they occur.

"I have personally spent a great deal of time in studying conditions during the drilling of Texoma's wells, especially in getting the thickness of the gas producing formations, and also in getting information of this nature regarding wells all over the field.

"It is a very important matter to Texoma Natural Gas Company to know what amount of gas is being and has been produced from the Texas Panhandle field. For this reason it has been one of my duties to keep abreast of the production of gas in that field and I have done so throughout the period that I have been serving in the Panhandle field as Chief Geologist for Texoma Natural Gas Company.

"Determination of Thickness of Gas Pays in the Texas Panhandle Field

"1. General Discussion.

"By the thickness of pay is meant the total thickness of gas producing portions of the formations which produce gas. Gas in the Panhandle field occures in intermittent porous streaks, with barren rock between them, in the Dolomite, Dolomitic Limestone, and Limestone zones of the Big Lime, and in the Granite Wash when it is productive. These porous pay streaks vary in thickness and the thickness of pays is determined by totaling the thickness of the pay streaks.

"For anybody to correctly interpret and determine the thickness of pays as shown in the records of logs, it is necessary to have had experience in watching the drilling of gas pay section in the field. It is also necessary to know from experience what the procedure of the drillers is when they record the occurrence of the gas in making up their records of the wells. For instance, in the drilling of some of the earliest wells drilled in the field, gauges of the wells

would be taken at certain intervals during the drilling of a well and these gauges would show increases of gas for those intervals; however, the intervals for which the increases of gas were shown did not consist entirely of gas pays. The gauges were not taken at sufficiently frequent intervals to delineate the gas pay streaks or the barren streaks of formation lying between the gas pay streaks.

"Often matters like this can be cleared up by consultation with the drillers of the wells, by reference to the record of the well showing the formations encountered and, especially by reference to the drilling tickets of a well which show the amount of time involved in the drilling of formations.

"For instance, when a well is being drilled through gas pay formations, the formations are drilled at a much faster rate than when the formations do not have gas pay in them. All these matters have been considered by the writer in determining the thickness of gas pays in the Panhandle field.

"Many of the records used are far from being perfect and have been difficult to interpret. To aid in interpreting these records, I have carefully watched the actual drilling of the gas pays in a great many wells and have talked with a great many drillers in the field to find out their method of recording the occurrence of gas on the wells they drilled.

"To obtain information on this matter, I have personally spent a great deal of time studying conditions during the drilling of Texoma's wells. Many times I have gone out to a well and stayed on the derrick floor for periods ranging from 18 hours to 36 hours. In some cases I have been on a derrick floor 72 hours without any sleep so as to get actual information regarding the formations encountered, the way they were encountered in the well, the way that gas was encountered in the well, the actual thickness of the formation containing the gas and how it acted when it was encountered. I have personally, during the drilling of wells, gauged them during their drilling at five-foot intervals to find out just where the gas was and have had assistants of mine working on shifts gauge wells at five-foot intervals during the entire process of drilling in the gas pays.

"In determining the thickness of gas pay during the drilling in at five-foot intervals, the method is to take a gauge of the well when gas is encountered and determine the open flow at that point. Then, after the well has been drilled five feet, it is again gauged to determine the open flow and then, after another five feet has been drilled another gauge is taken and the open flow determined.

"This process is carried on until all the gas producing formations have been drilled. This shows whether or not there is an increase of gas at five-foot intervals during the drilling of the pay. If the open flow taken at the beginning of a five-foot interval is less than the open flow obtained at the end of a five-foot interval, the record shows an increase of gas during the drilling of that five-foot interval and it is considered that that five-foot interval is in gas producing formation. If the open flow taken at the end of a five-foot interval is less than the open flow taken at the beginning of a five-foot interval, then the record shows that there was a decrease of open flow during the drilling of that five-foot interval and it is considered that that five-foot interval did not contain gas producing formation.

"After these records have been compiled, the intervals which show an increase of gas and are considered to contain gas producing formation are added together, giving the total pay thickness of the gas producing formations encountered in the well. Wherever records in this detail were available, this method was used in obtaining the thickness of the gas pays encountered in wells. I have in my office the well records of over 6,000 wells. In determining the gas pay thicknesses in the field, these well records were combed and as many as possible used in different areas of the field to obtain the average thickness of pay in the field. A great many records were so indefinite as regards records of pay thickness that they could not be used. A great many of the records used were far from perfect, but from knowledge of the method used by the drillers in logging well pays and from records which showed the amount of time involved when drilling the formations these records could be interpreted.

"II. Details of Determination of Thickness

"1. Acreage Classification.

"For convenience in estimating the thickness of pay, the writer has divided the acreage of the field into two classifications; viz:

"a. Best Commercial Gas Acreage

"b. Marginal Gas Acreage

"Following this page is a map of the Panhandle field showing the boundaries of the field and sweet and sour gas areas used in the determinations of thickness."

Mr. Keffer: Mr. Peterson, if I may suggest to the Examiner and to the others, it might be well to glance at the map which is on the following page while Mr. Peterson reads the explanation of the map. I think it will mean more if that is done.

The Witness: "The sulphur gas line is slightly different from the present line, but is merely used as being convenient for the segregation of areas. On this map, the best commercial gas area is colored yellow and the marginal gas area is colored gray. The uncolored areas in central Gray County is designated as unproductive acreage by the Railroad Commission of Texas. The uncolored area in southwestern Moore County is believed by the writer to be unproductive on account of a dry hole drilled there.

"The best commercial gas acreage is that in which the average initial virgin open flow is above 5,000 Mcf. per well and comprises the areas which have received the most intensive development and about which the most data can be obtained. In drawing the boundary line of the yellow area, I picked out the best commercial part of the field as closely as possible, but there are some places in this area where there are wells with an initial open flow below 5,000 Mcf. per well. These areas, however, were comparatively small and the small wells were surrounded with wells of larger open flow so that the area as a whole had to be considered as the best commercial gas acreage.

"The marginal gas acreage is on the marginal edges of

the field except in central Gray County, where it comprises a large part of the field. The average initial open flow of this area is less than 5,000 Mcf per well, but the data obtainable about the area is limited on account of the small amount of development done to date in a large part of it. This area contains some wells with an open flow above 5,000 Mcf. per well, but there are very few of these wells and, for this reason, the acreage as a whole cannot be considered in a class with the best commercial gas acreage. This area seems to be an area with small average open flow. The area includes a number of dry holes and uncommercial gas wells.

"2. Determination of Thickness of Pay in Best Commercial Gas Acreage.

"In the case of the best commercial gas acreage, enough data was available so that averages of pay thickness could be determined satisfactorily.

"On the map showing the best commercial gas acreage and the marginal gas acreage will be noted a north-south line extending through the central portion of Gray County which divides the Panhandle field in what is known as the 'West Field' and what is known as the 'East Field.' This is a line which was adopted by the Railroad Commission of Texas for proration purposes. In determining the thickness of pay for the best commercial gas acreage (colored yellow on the map) this area was divided up into 13 smaller areas, the acreage in each of which was carefully determined. These areas were the sweet and sour gas areas of each county in the West Field and in the East Field. The designation of these areas with their corresponding acre content are shown on Table 1 which follows this page.

"For each of the areas mentioned above, the thickness of pay in wells scattered over these areas so that they would be representative were determined and then the average thickness of pay per well in each area was determined. The results of this work are shown in Table 2 which follows Table 1.

"It will be noted that in obtaining these averages, the records of 627 wells were used. The average thickness for each of the designated areas shown in Table 2 having been

determined, this average thickness was multiplied by the number of acres in each respective area, the result being the number of acre feet in each respective area. Then the number of acre feet of the areas involved in the best commercial area were added, the result being the total acre feet in the best commercial gas area. Then the total acre feet in the best commercial gas area was divided by the amount of the total acres in that area, the result being the weighted average thickness per acre in that area. The details of this computation are shown on Table 3 and it will be noted that the weighted average thickness per acre obtained by this method was 70.01 feet. It is considered, then, that 70 feet is a representative figure for the thickness of gas pays in the best commercial gas area of the Panhandle field. This area contains 1,033,970 acres."

Mr. Keffer: Mr. Peterson, as to Table No. 1 and Table No. 2 and Table No. 3, I suggest that you not read those but that the reporter be instructed to copy them in as a part of the testimony.

The Trial Examiner: Very well, Mr. Keffer, the Examiner will instruct the reporter to follow that suggestion.

(At the direction of the Trial Examiner, the following Tables were copied into the record.)

"Table 1

Best Commercial Gas Acreage in Texas Panhandle Oil and Gas Field

County	Sweet Gas	Sour Gas	Total
	West Field Gas Acres		
Carson	195,300	13,560	208,860
West Gray	65,445	2,970	68,415
Hartley	800	13,677	14,477
Hutchinson	40,002	99,834	139,836
Moore	260,377	122,538	382,915
Oldham	—	—	—
Potter	107,347	—	107,347
Total West Field	669,271	252,579	921,850
	East Field Gas Acres		
East Gray	17,620		17,620
Wheeler	94,500		94,500
Total East Field	112,120		112,120

Best Commercial Gas Acreage—Summary

Total Gas Acres—West Field	921,850
Total Gas Acres—East Field	112,120
Total Gas Acres—Entire Field	1,033,970
Total Sweet Gas Acres	781,391
Total Sour Gas Acres	252,579
Total Field Gas Acres	1,033,970

Table 2

Calculation of Average Thickness of Gas Producing Formation Per Well in Designated Areas of Best Commercial Gas Acreage

County	No. Wells Used*	Total Thickness Producing Formation (Feet)	Average Thickness Producing Formation Per Well
West Field			
Sweet Gas Area:			
Carson	103	8839	85.82
West Gray	77	3800	49.35
Hartley	0		33.50**
Hutchinson	24	1481	61.67
Moore (Except SW Corner)	87	6804	78.21
Moore (SW Corner)	0		33.50**
Potter	16	1475	92.19
Sour Gas Area:			
Carson	36	2037	56.58
West Gray	18	934	51.89
Hartley	2	67	33.50
Hutchinson	87	5481	63.00
Moore (Except SW Corner)	51	3110	60.98
Moore (SW Corner)	0		33.50**
East Field			
East Gray	31	1616	52.13
Wheeler	95	4208	44.29

*Well records were combed for thickness of producing formations. All records with this information were used that would give a representative average. Many records gave no information as to thickness of producing formation and could not, therefore, be used. 627 wells were used in this calculation.

**For the southwest corner of Moore County in the sweet and sour gas areas and the sweet gas area of Hartley County, the same thickness is used as that obtained for the sour gas area of Hartley County, which is contiguous to the southwest corner of Moore County.

Table 3.

Calculation of Weighted Average Thickness of Gas Producing Formation in Best Commercial Gas Area.

County	No. Wells Used	Average Thickness Producing Formation Per Well (Feet)	Gas Acres	Acres x Feet (Acre-Feet)
West Field.				
Sweet Gas Area:				
Carson	103	85.82	195,300	16,760,646.00
West Gray	77	49.35	65,445	3,229,710.75
Hartley	0	33.50	800	26,800.00
Hutchinson	24	61.67	40,002	2,466,923.34
Moore (Except SW Corner)	87	78.21	247,862	19,385,287.02
Moore (SW Corner)	0	33.50	12,515	419,252.50
Potter	16	92.19	107,347	9,896,319.93
Sour Gas Area:				
Carson	36	56.58	13,560	767,224.80
West Gray	18	51.89	2,970	154,113.30
Hartley	2	33.50	13,677	458,179.50
Hutchinson	87	63.00	99,834	6,289,542.00
Moore (Except SW Corner)	51	60.98	121,038	7,380,897.24
Moore (SW Corner)	0	33.50	1,500	50,250.00
East Field.				
Sweet Gas Area:				
East Gray	31	52.13	17,620	918,530.60
Wheeler	95	44.29	94,500	4,185,405.00
Total West and East Fields:			1,033,970	72,389,081.98

Total Field—Weighted Average Thickness Per Acre — $\frac{72,389,081.98}{1,033,970} = 70.01$ Feet

70 Feet Used

Peterson further testified as follows:

On cross-examination the witness testified that he used the driller's logs to a certain extent in determining pay thickness. Some of them were sufficiently detailed that he could get all of the information he needed about pay thickness from them, but others were in such condition that he found it advisable to investigate also the drill tickets turned in by the drillers from which the logs were made. (Vol. LXIX, p. 10090.) During the last 10 years the logs have been better than in prior years. (Vol. LXIX, p. 10092.) Some logs are better today than others but all give valuable information. (Vol. LXIX, p. 10093.) Some logs were discarded because of inadequate information. (Vol. LXIX, p. 10094.) Not all of the discarded logs, however, were inaccurate. Some were discarded because the witness tried to get a representative picture of the condition in an area and for that reason he selected wells that would be fairly and evenly spaced over an area. (Vol. LXIX, p. 10095.)

The purpose of dividing the field into areas was in order to get a more of less uniform spacing of the wells in each area to get a truer average. (Vol. LXXII, p. 10449.) He could use closer spacing in one area than in another but by weighting out the thickness as shown in Exhibit 206, a more accurate average was obtained. (LXXII, p. 10450.) He utilized the most reliable data obtainable. (Vol. LXXII, p. 10459.) In selecting the wells used he spaced them in the different areas in order to get a representative picture regardless of productivity. The wells were spaced so as to give a good average. (Vol. LXXII, p. 10469.) It was necessary to divide the fields into sectors so a better average could be obtained—one that was more representative. If he had taken 16 wells in Potter County for example, and then 16 wells in Moore County, it would have been necessary to take the same number of wells in each county over the field regardless of his information and it wouldn't have given an accurate picture. A determination was made for each area. He utilized more wells in one area than in

another if he could get the proper spacing that would justify him in doing so. (Vol. LXXII, p. 10472.)

He does not recall the exact date on which all of the data was assembled, but he has been assembling it over a period of some 10 years and spent a great deal of time assembling data and information in computing the real thickness, all of which is recorded in Exhibit 206. (Vol. LXXII, pp. 10482, 10483.)

The determinations of pay thickness were made some years ago and were not made for the purpose of utilizing them in any litigation. They were made in order to get definite information that was reliable for operating purposes. (Vol. LXXIII, p. 10554.)

Mistakes or differences in the determination of pay thicknesses tend to compensate each other in the final analysis when the averages are assembled. 627 wells were used in all in the determination of the average pay thickness. If there was a total error of as much as 627 feet in all the wells used this would make a difference of only one foot in each well on the average. The thicknesses are also weighted by areas. The average thickness in each area is multiplied by the acreage in each section or area and the product is divided by the total acreage in the entire yellow area, Exhibit 206 (which is over one million acres). This has the effect again of dividing any error that there may be, so that the whole process develops into one which consists of dividing the error if there is an error. Vol. LXXXII, pp. 12240 and 12241.)

The witness also was cross-examined with respect to the determination of his best commercial area (yellow) and marginal area (gray) as shown on the map contained in Exhibit 206, and on redirect examination figures were quoted as to the natural average open flow at 430 pounds virgin pressure for the entire marginal (gray) area as follows:

Carson County, sweet gas area, the average was 2,900,000 cubic feet per well.

Gray County, West Field, sweet gas area, the average was 3,018,000 cubic feet per well, eleven of which wells were dry holes.

Moore County, sweet gas area, had no wells but the nearest well to it was a dry hole.

Potter County, sweet gas area, the average was 4,100,000 cubic feet per well.

Carson County, sour gas area, the average was 4,720,000 cubic feet per well, which included one dry hole.

Gray County, sour gas area, the average was 1,615,000 cubic feet per well.

Hartley County, sour gas area, the average was 3,500,000 cubic feet per well, but there was one well with an open flow of 10,600,000 cubic feet, which in the opinion of the witness, represented a small part of the area.

Hutchinson County, sour gas area, the average was 3,373,000 cubic feet per well, but if three additional dry holes were considered the average would be 2,650,000 cubic feet per well.

Moore County, sour gas area, the average was 3,583,000 cubic feet per well.

Collingsworth County, sweet gas area, the average was 2,038,000 cubic feet per well.

Gray County, east field, sweet gas area, the average was 3,500,000 cubic feet per well.

Wheeler County, sweet gas area, the average was 3,993,000 cubic feet per well. (Vol. LXXXII, pp. 12235-12239.)

Peterson further testified (Vol. 68, pp. 9945-9948) as follows:

The Witness: "Determination of Average Effective Porosity of Gas Producing Formation in Best Commercial Gas Acreage of Panhandle Gas Field, Texas.

"As geologist in charge of exploration work for the Cities Service Gas Company, part of my work consisted of estimating recoverable gas reserves for scattered producing properties in the Midcontinent fields in Oklahoma and Kansas. These estimates were made in order to determine whether or not it would be advisable to purchase properties, or to build gas pipe lines and purchase gas from specific

properties. Many estimates had to be made where there was no production data available for use of the pressure decline method.

"The whole object in estimating recoverable reserves, is to determine what gas can be recovered. The gas that can be recovered depends upon the action of the wells through which the gas is recovered. By this I mean the producing characteristics of the wells. Of course these producing characteristics depend upon the formations producing the gas. Where there is large permeability in formations without large decrease in rock pressure when heavy quantities of gas are withdrawn from the formations, it follows that there is a corresponding porosity in the formations to accomodate the gas. Thus in many fields there is a relationship between open flow and the gas content of the formations. Like conditions of porosity and permeability in the formations are reflected in the behavior of gas in wells, under the same physical conditions.

"When I was making the recoverable gas estimates referred to above, the back pressure method of testing wells for open flow was in the course of being developed and no information of this character regarding wells was available to me. It was always a help to me in making decisions about my recommendations and estimates, to observe in the field, tests made of wells for rock pressure and particularly for open flow and the operation of blowing a well until its open flow was stabilized. I could tell more about the dependence to be placed on recovering gas from those wells by watching them tested, than I could from reading records. For this reason I used to accompany the men who tested wells for the Cities Service Company to the field and observe the test of the wells. In this way I began to correlate my estimates with field conditions and with thickness of pay and open flows, and by figuring back from my results and production records, formed conclusions about the effective porosity of the producing formations.

"As a result, this experience has established a criteria for judgment so that after working in a field, studying the producing formations, determining their thickness, watching well behavior and ability to deliver gas under varying conditions of rock pressure and open flow, I can weight

the different field conditions and arrive at conclusions regarding average effective porosity and gas acre content, which are practical for reliable estimates of gas reserves.

"Since July 1931, I have been working in the Texas Panhandle field, watching the testing and drilling in of gas wells. I have studied the behavior of the gas wells under varied conditions of delivery of gas, at different open flows and rock pressures and have examined thousands of samples of well cuttings. I have studied porous pay cuttings from gas wells as well as from oil wells. I have had access to records of determination of porosity made from cores of the oil producing formations, which are the same formations which produce gas. I have studied the plotted back pressure curves of wells, which curves show the producing characteristics of wells.

"Correlating all this information together with my experience in other gas fields, I have reached the conclusion that the average effective porosity in the best commercial gas acreage of the Texas Panhandle field is 20 per cent. (This is the area colored yellow on the map attached to the exhibit.)

"It is significant that this same porosity of 20 per cent is noted as applicable to this area of the Texas Panhandle field in the following publications in the bulletins of the American Association of Petroleum Geologists:

"'Gas a Big Factor in the Texas Panhandle' by C. Max Bauer.

"Vol. XII, No. 2, pp. 165-176 and 'Geology and Occurrence of Natural Gas in Amarillo District, Texas' by Victor Cotner and H. E. Crum, Vol. XVII, No. 8, pp. 877-906.

The witness stated on cross-examination that porosity and pay thickness determines the volume of gas in place (Vol. LXXIII, p. 10561) and if the porosity is equal in any two cases the more pay thickness you have the more volume you have. (Vol. LXXIII, pp. 10561, 10562.) Open flow is an indication of relative porosity. (Vol. LXXIII, p. 10565.) However, permeability is a factor that determines open flow but you generally have porosity to accommodate the permeability and you can't have permeability without por-

osity. (Vol. LXXIII, p. 10562.) There is a relationship between open flow and porosity although open flow depends partly on permeability and partly on porosity, but it does not depend entirely upon permeability in any manner. (Vol. LXXIII, p. 10564.)

Commission counsel had marked as Exhibit 216 the working paper of the witness which showed certain porosity tests on cores in the Dolomite Zone of the Texas Panhandle Field made by the Phillips Petroleum Company in March, 1940. The cores were from 19 oil wells and cover 1,015 tests and gave an average porosity of 13.08%. (Vol. LXXII, p. 10370.) The range was from zero to 30%. (Vol. LXXII, p. 10372.)

Commission counsel then had marked as Exhibit 217 a working paper of witness which showed certain porosity tests by Stanolind Oil and Gas Company. The average porosity shown on these tests was 13.21%. (Vol. LXXII, p. 10379.) The Stanolind was unwilling to give the witness the details of its tests but did permit him to make an examination of the details and authorized him to utilize the average porosity as shown by such tests. (Vol. LXXII, p. 10380.)

Commission counsel then had marked for identification as Exhibit 218, core analysis tests furnished witness by Shell Petroleum Corporation, covering the Buff Dolomite in the Texas Panhandle Field. The determinations were made on samples taken at one-half foot intervals. (Vol. LXXII, pp. 10431, 10432.) These cores were taken all the way through the pay formation. (Vol. LXXII, p. 10423.) Witness has examined many more porosity determinations which he could not offer in evidence because they were confidential, but they always came out with about the same average porosity in old producing formations. (Vol. LXXII, p. 10425.)

There is a big correspondence between permeability and porosity in the Texas Panhandle Field—with a large permeability you generally have a large porosity. (Vol. LXXII, p. 10434.) It is improper in the determination of this matter to pick out a few samples only. The proper manner in which to determine the question is to take the averages of all of the samples with respect to porosity and permeability determinations (Vol. LXXII, p. 10440.)

Drill cuttings are known all through the oil and gas profession—they are used by hundreds of companies for examination purposes and many people all through the profession examine them for porosity. (Vol. LXXII, pp. 10414, 10415.) A cutting is just a piece of the formation that has been cut by the bit whether it is a rotary cutting or a cable tool cutting (Vol. LXXII, p. 10388), but a cable tool cutting or sample is better and purer than the rotary sample. (Vol. LXXII, p. 10390.) Samples of cuttings are gathered while the well is being drilled. Cuttings are frequently blown out of the well where gas has been encountered and witness follows the practice of putting in a vent line which leads out from the top of the wellhead 100 feet or more from the rig and samples are sometimes collected in this vent line as the well is drilled. Some of the samples are as much as a quarter of an inch in size. (Vol. LXXII, pp. 10410, 11.) He has picked some samples off the derrick floor that were as much as half an inch in diameter and has made a very careful examination of them. (Vol. LXXII, p. 10412.) He can tell by the appearance of the samples and by an examination of them whether they come from pay formation or not and such samples show the porosity of the formation. Witness has examined thousands of samples and bases his opinion upon such examination. (Vol. LXXII, p. 10418.) Samples of well cuttings are examined to show porosity, that is, to determine the relative porosities occurring by comparison with known porosity obtained from oil wells where porosity tests have been made. In this manner witness has been able to determine average porosities. (Vol. LXXII, p. 10420.)

Witness has obtained all of the porosity core determinations that he could and such determinations tended to absolutely corroborate his idea of the average porosity in the Texas Panhandle Field. (Vol. LXXII, pp. 10422, 10423.) He has seen samples of cuttings which have been determined to have a certain porosity and knows how those samples look under a microscope. He can then take other samples and determine whether or not they are more or less porous than the ones in which the porosity has been determined. (Vol. LXXII, p. 10424.)

Permeability as Related to Porosity

The witness testified on cross-examination that wells having a small open flow generally have low permeability and wells having high open flow generally have high permeability. Gas moves rather slowly through an area of low permeability, permeability being the ability of a formation to allow fluids to flow through it or to permeate it. (Vol. LXX, pp. 10243-10245.) Porosity and pay thickness determine the volume of gas in place. (Vol. LXXIII, p. 10561.) High open flows or large wells are an indication of high reserves. Therefore, when you have large permeability and you produce large volumes of gas out of the well, you must have large volumes in the formation in order to produce it. Consequently, you have also a high porosity. There is not a great deal of porosity in the small wells. The open flow of such wells goes down easily and it takes a long time for them to build up, which indicates a tight formation and a small reserve. You can always tell from the open flow of a well whether it is supported by a large reserve or a small one. The witness would certainly consider that a lease which has a 50,000,000 cubic foot well on it is a great deal more promising, and one that has a higher reserve, than a lease with only a 5,000,000 cubic foot open flow well. It is possible in some fields to have a high porosity and a low permeability but experience shows that this is not true in Texas Panhandle Field. Experience in the Texas Panhandle Field shows small open flow wells consistently produce less than large open flow wells. (Vol. LXXI, pp. 10312-10317.)

Porosity and permeability in the Texas Panhandle Field are very closely related. (Vol. LXXII, p. 10434, Vol. LXXIII, p. 10563.)

Dry Holes and Abandoned Wells

Exhibit 210 was prepared by the witness for the purpose of showing the dry holes and abandoned gas wells in the Texas Panhandle Field. Exhibit 210-A contains a list of the dry holes in the Texas Panhandle Field as shown on the map, Exhibit 210. Exhibit 210-A shows the name of the company drilling the well; the well number; the landowner upon whose land the well is drilled; the location of the well; the total depth of the well, and the date the well was com-

pleted, and the quadrant in which each well was located, as shown upon Commission Exhibit 179 by Hammer.

The abandoned wells on Exhibit 210 are marked in a deep red while the dry holes are marked with a black and red circle with the center colored yellow. The outlines of the field as shown on Exhibit 210 are the same as shown on Commission Exhibit 179 by Hammer. The quadrants as outlined on Exhibit 210, were copied from Hammer's Exhibit 179. (Vol. LXIX, pp. 10339, 10340.)

Witness testified on cross-examination that the map, Exhibit 210, shows approximately 104 dry holes, which is a small number for the size of the Texas Panhandle Field, but which are very significant. The purpose of the map is to show that certain areas of the field are absolutely unpredictable from any information obtainable and that those areas are certainly undesirable for drilling purposes or for development. (Vol. LXIX, pp. 10102, 10103.) Dry holes are sometimes drilled right in the middle of what was thought to be a good producing part of the field. This is significant. Texoma drilled a dry hole right in the middle of a highly productive area and you might go in the middle of the Canadian acreage and do the same thing. In the southwest corner of Moore County there is shown on Exhibit 206 a barren spot or dry island colored in white, which indicates that that area is very doubtful territory, but before a dry hole was drilled it looked very good. You can get dry holes in the most productive areas. (Vol. LXIX, pp. 10108, 10109.)

Texoma drilled a dry hole in Section 18, Block 26, E. L. & R. R. Railroad Company survey, Moore County. This dry hole is surrounded by gas wells within a mile and a half of it in most directions. This well was drilled in the center of a number of productive wells. (Vol. LXIX, p. 10110.) The two dry holes above referred to were drilled in an area that would have been considered as structurally high in the midst of productive gas wells. (Vol. LXIX, p. 10118.) It is possible that other dry holes will be drilled under similar circumstances. (Vol. LXIX, p. 10117.)

The abandoned wells shown on Exhibit 210 were taken from the books of the Railroad Commission. Their records

showed these wells formerly produced gas and were then abandoned. (Vol. LXIX, p. 10083.)

Peterson testified on cross-examination that most of the abandoned wells were in low pressure areas and this fact had a lot to do with their abandonment. Most of them were in areas where the pressures had declined to around 200 pounds, or slightly below 200 pounds, rock pressure. A lot of the trouble in those wells was due to water conditions, which in some cases corroded the casing and probably allowed water to enter the gas producing formation. This water condition has caused the salting up of numerous wells and has made it necessary to abandon them. These wells are listed in Exhibit 214. This same situation prevents the pressure from building up. (Vol. LXX, pp. 10188-10193.)

The abandoned wells owned by Texoma Natural Gas Company are shown in Vol. LXX, p. 10207. The pressures at the time of abandonment ranged from 100 pounds to 145 pounds.

At the time the Texoma acquired the wells above referred to, careful tests were made to determine the condition of the well and the condition of the hole. They were all in good operating condition, which means there was no water in the wells, there was no casing trouble, and they were producing dry gas. They were not producing any oil and were not producing any water. The wells were in good dry condition and there wasn't any water coming into the hole from the bottom. (Vol. LXX, pp. 10211, 10212.)

Peterson further testified (Vol. 68, pp. 9948-9959) as follows:

"Gas Produced From Texas Panhandle Field During Its Life From the Beginning to January 1, 1940.

"It is a very important matter for the Texoma Natural Gas Company to know what gas has been and is being produced from the Texas Panhandle Field. For that reason, as Chief Geologist for the company, it has been one of my duties to keep abreast of the production of gas in that field and to ascertain from reliable sources what production has occurred prior to inauguration of activities of the Texoma

Natural Gas Company in the field, in addition to ascertaining the amount of gas currently produced each year.

"In Table 1, shown on the next page, is an estimate of total gas produced from the Texas Panhandle field on a 16.4 pound base for the life of the field to January 1, 1940. Following Table 1, is a graphic representation of the total gas produced for the period mentioned above, showing the production by daily averages for each of the years from the beginning of the field through the year 1939. This graph shows by scale the daily averages by years in millions of cubic feet and the different classifications of the usage of gas are shown by different colors. The following is an account of the method used in obtaining the figures:

A. Basis of Figures

"1. Gas produced prior to 1932

"In Table 1, the gas produced prior to 1932 is the estimate of Victor Cotner, given in the publication 'Geology and Occurrence of Natural Gas in Amarillo District, Texas' by Victor Cotner and H. E. Crum, bulletin of the American Association of Petroleum Geologists, Volume 17, Number 8, August, 1933, Pages 877-906.

"This estimate is believed to be the most reliable obtainable for this period. Mr. Cotner and Mr. Crum had conducted extensive research into the production of gas in the field in its early years. At the time prior to 1932 when they were present in the field, the Railroad Commission did not issue reports on the usage of gas by the gasoline plants. They did issue some reports on the usage of gas by the pipe line companies.

"Mr. Cotner was with the Columbian Carbon Company which company was interested in gasoline production from gasoline plants and through this connection he was in a position to obtain information on the gas which was being used by these plants.

"Mr. Cotner and Mr. Crum in making up their reports on production from the field worked in collaboration with other geologists in the field. This paper, written by Mr. Cotner and Mr. Crum, is accepted by the fraternity of geologists and members of the American Association of Petroleum Geologists as an authoritative document. I

have used the estimates of gas in that paper in testimony before the Federal courts in legal contentions between the Texoma Natural Gas Company and the Railroad Commission of Texas, and the Railroad Commission of Texas has never questioned in any way that record.

"2. Gas Produced Since 1931—Data From Railroad Commission Reports

"The estimates of gas produced since 1931 were made by the writer. The data on gas used by gas pipe lines and on gas used by gasoline plants was obtained from monthly records and reports obtainable at the office of the Railroad Commission of Texas. To prevent duplication and to give a true picture of gas used by gas pipe lines and gasoline plants, these figures have been adjusted by * * *

Mr. Keffer: You can leave out Table No. 1, Mr. Peterson. You need not read that group of figures but I take it the reporter will, nevertheless, copy that into the record as a part of your testimony.

The Trial Examiner: We will have the reporter do that.

(At the direction of the Trial Examiner, the following Table 1 was copied into the record.)

Table I.

Gas Produced From Texas Panhandle Field.
All Figures on 16.4 Lb. Base.

Revised April, 1940.

	Gas Used By-Gas Pipe Lines		Gas Used By Gasoline Plants	
	Total M. C. F	Daily Avg. M. C. F.	Total M. C. F.	Daily Avg. M. C. F.
1926 and Earlier	15,725,533	—	34,300,000	—
1927	8,825,598	24,179	263,800,000	722,740
1928	39,978,176	109,230	330,500,000	903,005
1929	84,767,509	232,240	395,110,000	1,082,493
1930	81,175,878	222,400	412,796,000	1,130,948
1931	86,538,708	237,092	346,255,000	948,644
1932	97,087,294	265,266	283,708,708	775,160
1933	109,179,977	299,123	333,838,516	914,626
1934	147,363,215	403,735	564,804,621	1,547,410
1935	156,695,751	429,303	563,734,998	1,544,479
1936	183,804,643	502,198	330,269,607	902,376
1937	210,333,095	576,255	345,298,466	946,023
1938	207,553,695	568,640	318,498,051	872,597
Total	1,429,029,072		4,522,913,967	
1939	222,299,905	609,041	329,653,273	903,160
Total	1,651,328,977		4,852,567,240	

Table I (Continued).

Gas Produced From Texas Panhandle Fields.
All Figures on 16.4 Lb. Base.

Revised April, 1940.

	Casinghead Gas Not Treated (Blown in Air)		Gas Blown in Air & Used Drlg. Wells	Total Gas Produced	
	Total M. C. F.	Daily Avg M. C. F.	M. C. F.	Total M. C. F.	Avg. Per Day—M. C. F.
1926 and earlier	92,000,000	—	105,400,000	247,425,533	—
1927	144,000,000	394,521	88,600,000	505,225,598	1,384,180
1928	114,000,000	311,475	49,500,000	533,978,176	1,458,957
1929	90,000,000	246,575	55,800,000	625,677,509	1,714,185
1930	70,000,000	191,781	52,600,000	616,571,878	1,689,238
1931	50,000,000	136,986	16,300,000	499,093,708	1,367,380
1932	32,940,000	90,000	4,026,000	417,762,002	1,141,426
1933	25,550,000	70,000	4,380,000	472,948,493	1,295,749
1934	33,800,000	92,603	21,665,125	767,632,961	2,103,104
1935	28,850,000	79,041	26,037,265	775,318,014	2,124,159
1936	15,540,000	42,459	30,066,628	559,680,878	1,529,183
1937	6,205,000	17,000	29,692,496	591,529,057	1,620,628
1938	5,075,000	13,904	12,268,267	543,395,013	1,488,753
Total	707,960,000		496,335,781	7,156,238,820	
1939	7,300,000	20,000	13,026,239	572,279,417	1,567,889
Total	715,260,000		509,362,020	7,728,518,237	

(Note on bottom of Table I.)

Carbon black is made by burning residue gas from gasoline plants. Thus gas used for carbon black is included in the column showing gas used by gasoline plants.

Gas produced 1926-1931 estimated by Victor Cotner—Geology and Occurrence of Natural Gas in Amarillo District, Texas. Bulletin A.A.P.G. Vol. 17, No. 8, August, 1933. P.P. 877-906.

Gas produced 1932-1939—Gas used by pipelines and gasoline plants from records of Railroad Commission of Texas. Balance of data estimated from weekly oil field scout reports, and Railroad Commission Records.

The Witness: I will just repeat the last sentence.

"To prevent duplication and to give a true picture of gas used by gas pipe lines and gasoline plants, these figures have been adjusted by the writer so that they differ a little from the Railroad Commission figures. For instance, in the Railroad Commission reports on gas used by gasoline plants, some residue gas is noted as being used for repressuring. This gas which is considered to go back into the gas field reservoir is subtracted out by the writer from the total gas used. Also, the gasoline plant reports include residue gas used by the Northern Natural Gas Company for gas pipe line consumption. This gas is subtracted by the writer from the totals of gas used by gasoline plants and added to the totals of gas used by gas pipe lines. Carbon black is made by burning residue gas from gasoline plants. Since the residue gas is a part of the gas consumed by gasoline plants, gas used for carbon black is included in the total of gas consumed by gasoline plants. The figures given in this estimate are on a 16.4 pound base. In comparing them with the sources from which they came, it must be remembered that the Railroad Commission figures issued from the beginning of the field through July 1935 were on a 16.4 pound base. Since July 1935, the figures issued by the Railroad Commission are on a 14.65 pound base.

"3. Gas Produced Since 1931—Estimates Not Given In Railroad Commission Reports

"The Texas Railroad Commission keeps no records on casinghead gas not treated (blown in air from oil wells). None of this gas is metered. This item represents gas blown to air from oil wells not connected to gasoline plants. The writer's estimates of this gas are based upon information from scouts in the field, the number of wells unconnected to gasoline plants and information of local conditions.

"Gas blown in air and used drilling wells is not shown in reports of the Railroad Commission. This includes gas used for fuel by oil companies. Some of this gas is metered and so far as records of this metered gas are obtainable they have been used. This fuel does not include gas used for fuel by gas pipe lines which is included under gas used by gas pipe lines. Fuel has been estimated by figuring up the wells completed each year and the well days and fuel

involved for the wells whose fuel has not been included under gas pipe line consumption. Gas blown in air is the gas blown to air during the drilling and testing of gas and oil wells completed each year. This is estimated from the gas encountered in the wells completed each year, taking into consideration the time of drilling through the gas pays and the method of completion.

"4. Gas Withdrawals From the Field During 1939

"In estimating the total gas withdrawals for 1939, the methods just described were employed, except that more metered gas records were available from the Railroad Commission; also, a few more items of gas blown to air had to be taken into account. In 1939, the Texas Railroad Commission for the first time took back pressure tests on all the gas wells in the sour gas area; operators took more back pressure tests; considerable acidization of wells occurred; and it became necessary to do more blowing of wells during operations in order to keep wells in condition for efficient production of gas. These factors were all considered. The total gas produced from the Texas Panhandle gas field during 1939 was estimated as follows on a 16.4 pound pressure base:"

Mr. Keffer: You may admit the table on Page 10, Mr. Peterson, and the reporter will copy it into the record.

The Trial Examiner: We will have the reporter copy in the table entitled "Gas Produced During 1939," on Page 10.

(At the direction of the Trial Examiner, the following table was copied into the record:)

Gas Produced During 1939.

	Total M. C. F.	Daily Avg. M. C. F.
Gas used by gas pipelines	222,299,905	609,041
Gas used by gasoline plants	329,653,273	903,160
Casinghead gas not treated, blown in air	7,300,000	20,000
Gas blown in air and used drilling wells	13,026,239	35,688
Total gas produced	572,279,417	1,567,889

The Witness: "B. Residue Gas Used for Carbon Black

"Carbon black is made by burning residue gas from gasoline plants. Thus, gas used for carbon black is included in the column showing gas used by gasoline plants (see Table 1). On the graph showing total gas produced from the Texas Panhandle oil and gas field by daily averages, the gas used by gasoline plants is colored brown and in this brown colored area the residue gas used for carbon black is hatched in squares. Following is a record by years of the residue gas used for carbon black during the life of the Panhandle field through 1939."

Mr. Keffer: We will have the reporter copy that table entitled "Residue Gas Used for Carbon Black—All Figures on 16.4 Pound Base," into the record.

(At the direction of the Trial Examiner, the following table was copied into the record:)

Residue Gas Used for Carbon Black—All Figures On 16.4 Pound Base.

Year	Total Gas Used M. C. F.	Average Per Day M. C. F.
1926	1,890,000	5,178
1927	11,280,000	30,904
1928	43,020,000	117,541
1929	136,374,000	373,627
1930	168,104,000	460,559
1931	120,387,000	329,827
1932	117,013,546	319,709
1933	140,866,141	385,935
1934	165,627,522	453,774
1935	175,788,287	481,612
1936	199,590,334	545,329
1937	257,633,750	705,846
1938	239,829,793	657,068
1939	260,257,224	713,033
Total Gas Used	2,037,661,597	

The Witness: "Considering the above tabulation of gas used for carbon black, it is noteworthy that the use of gas for this purpose has gradually increased each year during the life of the field except during the years 1931, 1932 and

1938. The usage of gas for carbon black fell off slightly in 1938 when a total amount of 239,829,793 Mcf. was used. However, the usage again increased in 1939 when 260,257,224 Mcf. was used. This is the largest usage of gas for that purpose for any one year during the life of the field. It is probable that this usage will continue to increase in the future.

"C. Total Withdrawals to January 1, 1939 and January 1, 1940.

"Referring to Table I, the total gas produced from the Texas Panhandle field on a 16.4 pound pressure base to January 1, 1939 was 7,156,238,820 Mcf. and the total gas produced to January 1, 1940 was 7,728,518,237 Mcf.

"D. Progress of Gas Consumption in the Texas Panhandle Field

"Referring to Table I and the colored graph illustrating it, it will be noted that except for the years 1930 and 1938 there has been a gradual increase each year in the usage of gas by gas pipe lines. In 1939, they used more gas than in any previous year, viz: 222,299,905 Mcf., which was at a rate of 609,041 Mcf. per day. Since all the gas pipe lines are not yet operating at their full capacity, it is believed that this usage will continue to increase for some time, year by year.

"The amount of gas used by gasoline plants each year has fluctuated considerably. The amount used by these plants increased steadily each year from 1926 through 1930. In 1931 and 1932 this usage of gas fell off somewhat, partly due to enforced regulations against wastage of gas by the Railroad Commission and partly on account of a business depression in the nation. Gas used for this purpose increased considerably above former usage in 1934 and 1935. This was due to the fact that the State of Texas loosened up in their regulation on the usage of gas for gasoline plant consumption during 1933 and 1934 and 1935 gasoline plants were allowed to use dry gas for gasoline and pop residue gas to the air without restriction. In 1936 the State of Texas tightened up its regulations again on the use of residue gas and would not allow the use of dry gas for the production of gasoline where the residue was allowed

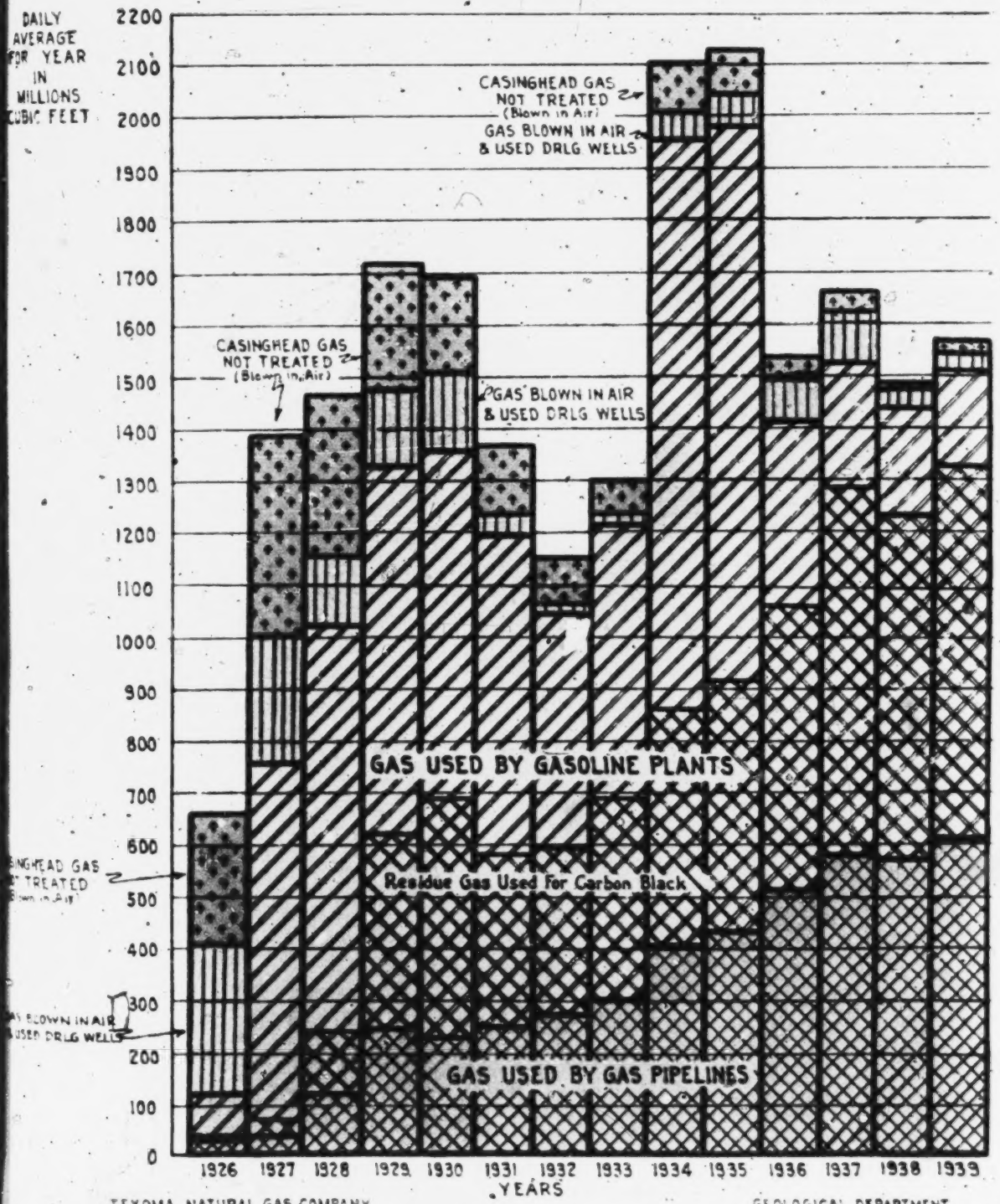
to be popped into the air. Gas used for gasoline plants increased from 1936 to 1937 and a decrease occurred in 1938, but again in 1939 there was an increase of this usage of gas over the usage in 1938.

"It seems reasonable to expect that usage of gas in the Panhandle field as a whole will continue to increase each year for some years to come."

Mr. Keffer: If I might just for one moment, I would like to have Mr. Peterson turn back to the graph between Pages 8 and 9, giving us a brief explanation of it.

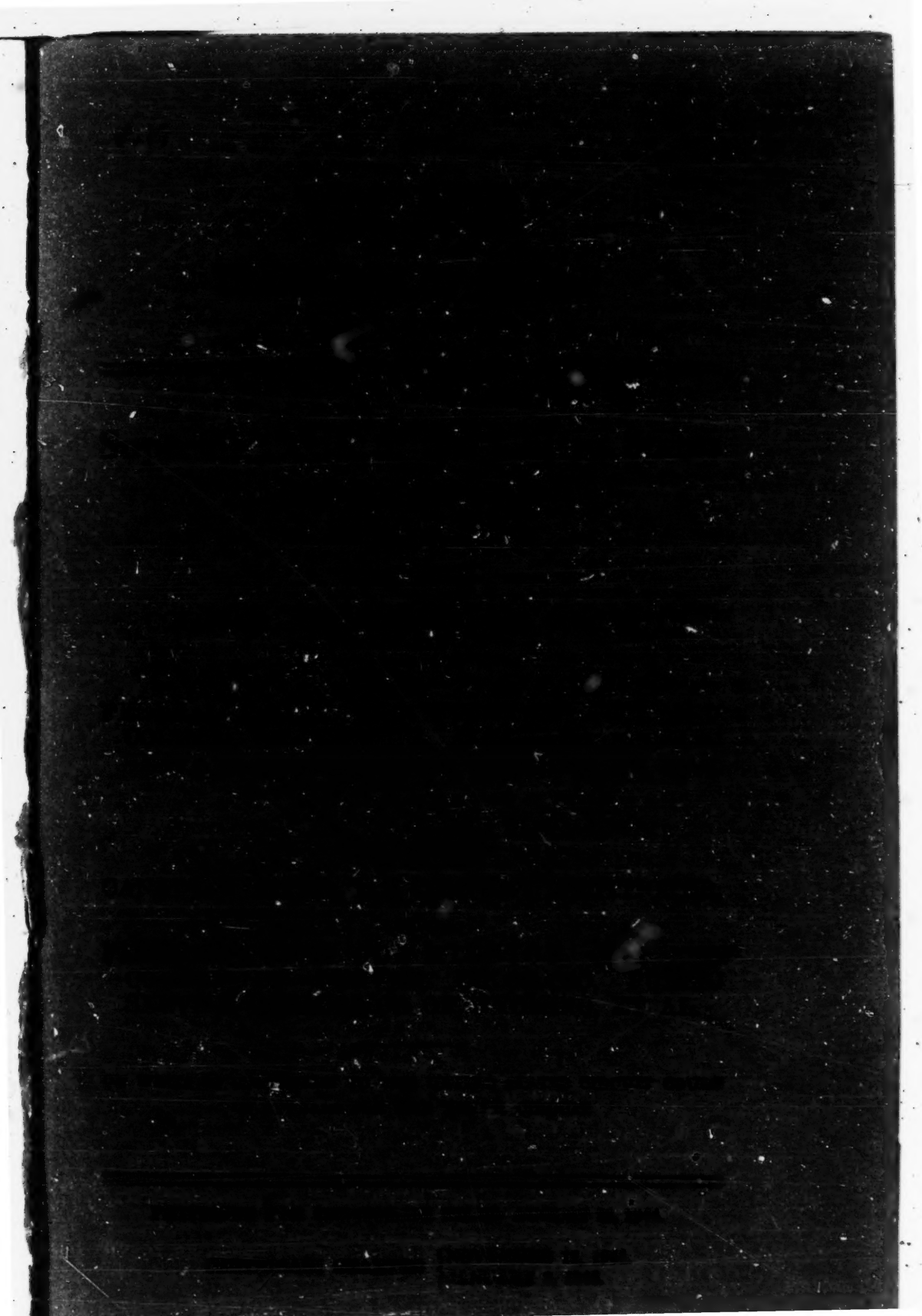
TOTAL GAS PRODUCED
FROM
TEXAS PANHANDLE OIL AND GAS FIELD
SHOWN BY DAILY AVERAGES
16.4 Lb. Base

Exhibit No. 206



TEXOMA NATURAL GAS COMPANY
Statistics by C. J. Peterson

GEOLOGICAL DEPARTMENT



United States Circuit Court of Appeals

TENTH CIRCUIT.

No. 2550.

COLORADO INTERSTATE GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

No. 2551.

CANADIAN RIVER GAS COMPANY, a corporation, PETITIONER,

vs.

FEDERAL POWER COMMISSION; CITY AND COUNTY OF DENVER, COLORADO; PUBLIC SERVICE COMMISSION OF WYOMING; COLORADO-WYOMING GAS COMPANY; PUBLIC SERVICE COMPANY OF COLORADO; and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

ON PETITION TO REVIEW AND SET ASIDE ORDERS OF THE FEDERAL POWER COMMISSION.

FILED SEPTEMBER 9, 1942.

VOLUME 8—Pages 4351-5063

Peterson then explained the graph (Vol. 68, pp. 9960-9963) as follows:

Peterson referred to the column which represents the year 1939, which column does not quite reach the 1600 line shown on the left of the graph. He stated that this column represented 1,600,000,000 cubic feet per day. The column representing the year 1926 shows a total production of something less than 700 million cubic feet per day.

The blue cross-hatched columns at the bottom of the graph represent the gas that goes into the gas pipe lines and during the year 1926 there was probably not more than 25 million cubic feet per day that was marketed through gas pipe lines out of a total of production of 700 million cubic feet per day produced that year.

As you go through the graph, reading to the right, it becomes more or less self-explanatory. The blue at the bottom of the graph represents the daily average of gas used by pipe lines. The next section going upwards represents gas used in carbon black plants, said columns being cross-hatched. The next section going upwards, which is represented by diagonal parallel lines, represents gas that was processed by gasoline plants, the residue of which was not used in carbon black plants. The remaining portions of the graph represent casinghead gas that was not treated in gasoline plants but was blown into the air, and also represents gas that was blown into the air and/or used during the drilling of wells.

Peterson's withdrawal figures check with the Railroad Commission's estimate. The Railroad Commission has estimated that in excess of 6 trillion cubic feet of gas have been produced in the field up to July 1936. This figure when converted from a 14.65 pound to a 16.4 pound pressure base checks with Peterson's withdrawal figures for the same period. (Vol. XC, pp. 13834-13837.)

Note: It will be observed that these volumes are all given on a 16.4 pound pressure base. The Commission representatives in quoting various figures on gas volumes have uniformly used a pressure base of 14.65 pounds. If desired the 16.4 pound pressure base may be converted to a 14.65 pound pressure base by multiplying the 16.4 pound volumes by 1.11945. (Vol. LXIX, p. 10062.)

Peterson testified on cross examination that the figures used by him in showing gas withdrawals have been checked from every possible angle and confirmed by interviewing operators in the field. (Vol. LXXIII, p. 10634.) He also checked his estimates, where reports of metered gas were not available, with various employees of the Railroad Commission from time to time, which persons are familiar with the field through daily contact with it and have confirmed the reasonableness of his estimates (Vol. LXXIII, pp. 10632, 10625, 10627); that such figures have been used in litigation with the Railroad Commission and never questioned by it. (Vol. LXXIII, p. 10597.)

The witness also checked Cotner's figures for withdrawals prior to 1932 and found them to be approximately correct. (Vol. LXXI, pp. 10335, 10336.) Cotner's estimate of withdrawals are regarded by everyone in Texas Panhandle Field to be as good as can be made. (Vol. LXXI, pp. 10340-10345.)

Cotner had access to the records of gasoline plants which were not available to the public, which plants at that time were highly competitive and kept abreast of not only what they produced themselves, but what their competitors were utilizing. Cotner also collaborated with practically all of the geologists that were then working in the Texas Panhandle Field. (Vol. LXXI, pp. 10341, 10342, 10346, 10347.)

In estimating gas blown into the air during the drilling of wells, the witness stated that he had reports on the wells drilled, both gas wells and oil wells, and the open flows of gas wells, and with this information and with information as to the total hours utilized in drilling through pay formations he made estimates as to the amount of gas that was blown into the air and used while the wells were being drilled through the gas producing formations. He has kept a very careful record of this on wells drilled by Texoma Natural Gas Company, this being a part of his duties as Chief Geologist of that company. He kept a chronological record showing the gauges of the volumes of gas encountered at fifteen-foot intervals and the number of hours engaged in drilling and by adding up these amounts after a well was completed he could determine the total volume of

gas that was wasted into the air, as compared to the open flow volume of the various wells drilled and by this means he worked out a factor based upon the open flow volumes encountered. The methods of drilling utilized by Texoma are the same methods utilized by other operators in the field and it takes about the same time to complete a well through the producing formations. His factor is somewhat different for each county in the field, based upon the time required to drill through producing formations in various portions of the field. The average volume of gas lost for each well drilled during each year has remained about the same for each year. Pay formations can be drilled in a shorter length of time in some counties than in others and this accounts for his different factor for each county. (Vol. LXXIII, pp. 10636, 10641-10646. Vol. LXXIV, pp. 10753, 10754.)

The witness has also worked out a formula for estimating gas lost in drilling oil wells. This was determined by studying the drilling records of a great many oil wells and the volumes of gas ordinarily encountered in oil wells at different depths and by determining the number of days the gas encountered would blow into the air before an oil well was finally completed, and this averaged about 5,000,000 cubic feet for each oil well drilled as the volume that would be wasted into the air during the drilling of each well. (Vol. LXXIV, pp. 10957-10059.)

Peterson also prepared and introduced Exhibit 206-A, which Exhibit was admitted in evidence, and which is supplemental to Exhibit 206. Exhibit 206-A merely shows the gas withdrawal figures in the Texas Panhandle Field for the year 1940, and the cumulative withdrawal figures to January 1, 1941, which Exhibit is shown in Vol. 69, pp. 10037-10039, inclusive, and which is as follows:

EXHIBIT NO. 206-A.

Gas Withdrawals From Texas Panhandle Field.
During 1940.

In estimating the total gas withdrawals for 1940 the methods described as used in estimating total gas withdrawals for the year 1939 were employed. The total gas pro-

duced from the Texas Panhandle Gas Field during 1940 was estimated as follows, on a 16.4 pound pressure base:

	Total MCF	Daily Average MCF
Gas used by gas pipe lines	235,860,805	644,428
Gas used by gasoline plants	337,256,848	921,467
Casinghead gas not treated blown in air	7,320,000	20,000
Gas blown in air and used drilling wells, etc.	17,029,476	46,529
Total gas produced	597,467,129	1,632,424

Residue Gas Used For Carbon Black.

Carbon black is made by burning residue gas from gasoline plants. Thus, gas used for carbon black is included in the above totals showing gas used by gasoline plants. Following is the amount of gas used for carbon black during 1940, on a 16.4 pound pressure base:

Total gas used MCF	Daily Average MCF
262,487,147	717,178

It will be noted that during 1940, as compared to 1939, there was an increase in the total gas produced of 25,187,712 MCF. Increases were as follows:

	MCF
Gas used by gas pipe lines	13,560,900
Gas used by gasoline plants	7,603,575
Casinghead gas not treated	20,000
Gas blown in air and used drilling wells, etc.	4,003,237
	25,187,712

Total Withdrawals to January 1, 1941—16.4 pounds pressure base

Referring to Table I, the total withdrawals to January 1, 1940, were 7,728,518,237 MCF
Adding withdrawals during 1940 597,467,129 "
Total withdrawals to January 1, 1941, are 8,325,985,366 "

Peterson further testified on cross examination (Vols. 72 and 73, pp. 10422-10570) as follows:

Q. Why didn't you look at a core from an oil well if you wanted to get the relative condition?

A. I have obtained all of the porosity core determinations that I could obtain of different wells—different oil wells, and I didn't have any correspondence to look at, to tell the truth. I have seen a number of cores of oil wells.

Q. These reports on cores that you got from other companies, they weren't of any particular use to you, were they?

A. They were of great use to me.

Q. In what respect?

A. Well, they tend to absolutely corroborate my idea of what the average porosity is in the Panhandle field.

Q. You don't even know what formation those cores were taken from.

Mr. Spencer: He has testified as to the formation.

Mr. March: As to whether it is the best pay or the poorest pay of the oil well, or what-not.

The Witness: Are you making a statement?

Mr. March: I am asking you if that isn't correct.

The Witness: Can you read that statement he made? I wasn't paying much attention to his statement and I don't remember it.

(The question referred to was read by the reporter as set forth above.)

The Witness: I don't think the companies were lying when they gave me the description of those cores and they stated in each case that those cores were taken from the dolomite formation, and as I said, we don't dispute the fact that you may not be able to obtain a core in the richest part of the formation, although I have gotten some cores here from the Shell Petroleum Corporation which were taken all the way through the pay.

By Mr. March:

Q. Let's look at this Phillips matter marked for iden-

tification and see whether it was taken from the best wells where you could compare a record of porosity determined from samples of cuttings, do you?

A. Well, I know it is kind of a strange thing, but I have—although I am submitting certain exhibits showing porosities obtained in the dolomite oil area, there are many more determinations that I have seen that I cannot offer in evidence because they are confidential and the peculiar thing about it is that you always come out at about the same average on these core determinations that you find. That is the reason I was trying to bring out regarding these papers which I have identified as exhibits the average porosity shown.

Q. But those porosities were determined from cores. I asked if you had any porosities of oil wells which were determined from cuttings.

A. I haven't claimed that any determinations have been made from cuttings.

Q. You don't know of anyone that has made any oil porosity tests in the Panhandle field from cuttings, do you?

A. As a matter of fact, I do, but I haven't had access to them.

Q. You haven't had access to them?

A. No, sir.

Q. You don't know what they are?

A. No, sir.

Q. I want to go to the top of this well where you are getting out these cuttings from the pay formation and where the particles are blowing out. You said you put some sort of an instrument or pipe on there where you could separate the gas from the particles so the man could get in there and catch those particles?

A. No. We put in a vent line. This vent line extends for about 150 feet from the derrick floor. It runs out horizontally and then has an elbow, you call it an "L", and a riser is put in. A lot of times we have put on a connection and extension out from the point where the riser goes up into the air. This riser is vertical, that is, as with respect to this horizontal vent line.

As the gas blows the cuttings out of the hole the cuttings come through this vent line at a very fast rate and will

go into this section of pipe. It just blows them horizontally into it before the gas goes out through the vertical riser and in that way you can get cuttings.

Q. About like the diagram here?

A. Yes, sir. That would give you a good idea.

Q. The pipe goes into crooks and then goes into dead end and the residue blows into the air?

A. Yes, and the gas will hit this—

Q. It will hit the first turn in the pipe?

A. This end here (indicating).

Q. It will hit the dead end?

A. Yes, sir, it goes out there.

Q. The larger cuttings will do that but the smaller cuttings from the best pay formation will blow into the air?

A. I haven't claimed I could get the cuttings from the best pay formation.

* * * * *

Q. Mr. Peterson, have you used your cuttings in any manner in arriving at your permeability?

A. No, sir.

Q. Nor as to open flows?

A. Not the cuttings, no, sir.

Q. Nor as to gas in place?

A. I have formed a judgment on a study of the cuttings which helps me to determine what the gas in place might be; which helps me.

Q. From your cuttings?

A. Yes, sir.

Q. If you can determine permeability from your cuttings, how can you do that when you can't rely upon the accuracy of those permeabilities from cores?

A. I haven't said that and I don't claim that I have ever determined the permeability of my cuttings.

Q. Have you determined the permeability of any wells?

A. I don't know. I wouldn't know what the permeability of a well was. Of course, it would depend upon the size of the casing and how much the diameter was. A casing with a large diameter would have a very great permeability.

Q. You have never determined the permeability of any gas wells in the Panhandle field?

A. No, sir.

* * * * *

By Mr. March:

Q. Is this all of your working papers on pay thickness?

A. This gives the result of all of my working papers on pay thickness. I would have to use the logs of the well and a lot of information that I gathered at different times and these pay thicknesses have been determined by work that was started way back in 1931. They were determined not for any hearing but for the purposes of getting information for the company. I had to use different logs, of course, in the preparation of this exhibit. The names of the wells are given there. I want to say the wells listed there are from logs in my collection at Amarillo and they have all been copied by members of the staff of the Federal Power Commission. Undoubtedly they are in their possession.

Q. I haven't asked you for those logs as yet, but the logs and this constitute the only working papers on pay thickness?

A. Yes, sir, that together with having working papers, because I have had to find out about lots of these well pay thicknesses by consulting with drillers, tool pushers—

Q. Tool dressers?

A. No, I don't think I have consulted any tool dressers, but tool pushers are quite different from the tool dressers. A tool pusher is a person who has charge of drillers ordinarily for a contractor and sees that the work is done and keeps the men supplied with the material necessary, and generally is pretty well informed on what is going on at a well, and watches things and sees that they are done in an efficient manner.

Q. I notice you have 627 wells here. Are those the 627 wells you used to get your 70 per cent pay thickness?

Mr. Keffer: Seventy what?

Mr. March: 70-foot pay thickness.

The Witness: Yes, sir.

By Mr. March:

Q. You didn't use any but these 627 wells?

A. No, sir.

Q. Will you just describe for the record the contents, how you got this data set up by wells?

A. This is a list of wells showing—wells that were used in determining my pay thickness. The sheet as set up shows the well description—for instance, the name of the company is given and then the farm name and number of the well; then the location of the well, that is, the portion of the section that it is in, and then the section number; the block number and the survey number, which identifies the well on the map. Then the pay thickness is given, which was determined for the well.

Q. How did you determine the 627 wells you used? Do you think that is covered in your written statement sufficiently?

A. Well, this is a pretty good description given here.

Q. If you are satisfied, I will withdraw the question.

The Trial Examiner: Are you withdrawing the question?

Mr. March: That is right.

Q. I believe you stated you divided the wells into sections?

A. Into sectors.

Q. You divided the sour gas from the sweet gas?

A. Yes, sir.

Q. You mostly followed county lines, did you not?

A. Yes, sir. The divisions have been made simply to give a convenient area to use.

Q. That is the only purpose of the divisions, is that right?

A. Well, to try to get a representative area so that each well—in each case the spacing of most of these sectors is practically the same in each sector. I would say that the spacing of the wells is more or less uniform in each of the sectors, taken separately, but if the sectors were grouped, you wouldn't get a true average. I have tried to get the best average—

Q. You wouldn't get a true average?

A. I have tried to get the best average I could in each sector.

Q. What if you took the whole field and ignored sectors, would you get a representative average?

A. It would be hard to get the spacing of wells available to give an even spacing of the whole field. I have tried to space these wells evenly so the average of any sector would be representative.

Q. What would be the difference if you didn't take the sectors individually in your figures as to pay thickness?

A. It would be hard to get a good average. That is all. That is because it would be hard to get your—in some of those divisions I think I used more wells than in others and that is the reason they are divided into sectors. I could use closer spacing in one sector and set it out—if another sector had a wider spacing I would use that sector and divide it up that way. That was the reason, just to try to get a more accurate average of the areas represented.

Q. You made a calculation to ascertain what sort of an average you would get if you hadn't had the sectors?

A. There wasn't—the sectors were made—if we would have had to take an average of the field, that is, if I hadn't divided it into sectors—well, let's take up the Potter County area. There your wells are very widely spread. If you had taken an average of the field and included Potter County wells with an area like Wheeler County, where you have wells on every 160-acre tract, or wells in Moore County where you have maybe a well in every section, the average wouldn't be near as true as the one you have gotten here.

Q. In other words, you divided the field up into quadrants and you are getting at your average for each quadrant?

A. I didn't intend—

Q. What would be the difference in calling these areas quadrants and sectors?

A. A quadrant is one-fourth of something.

Q. Do you recall Mr. Hammer's exhibit where we designated the sectors as quadrants?

A. I don't know how he did it. He had sixteen quarter parts in the Panhandle field.

Q. That is the only reason you wouldn't want to call them quadrants? If I referred to them as quadrants you wouldn't like that, would you?

A. No, sir. A quadrant means a quarter part of something.

Q. Do you know the United States Geological Survey has quadrants designated as they are not quarter parts?

A. No, sir. As I remember it, the U. S. G. S. publication divided it into quadrangles.

Q. Quadrangles?

A. Yes, sir.

Q. Is that right?

A. Yes.

Mr. March: It is about noon, Mr. Examiner. I can continue on but we might recess now.

The Trial Examiner: We will recess until 2:00 o'clock this afternoon.

(Whereupon, at 12:30 o'clock p. m., a recess was taken until 2:00 o'clock, p. m., of the same day.)

Afternoon Session, 2:00 P. M.

The Trial Examiner: The hearing will be in order. Whereupon—

C. J. PETERSON the witness on the stand at the time of recess, having been previously duly sworn, resumed the stand and testified further as follows:

Cross Examination (Continued).

By Mr. March:

Q. These 627 wells, they are just how extensively scattered over the field?

A. Just about what?

Q. How extensively scattered over the field?

A. Well, let's take a look at that.

Q. Do you need your working papers on that?

Mr. Spencer: No, it is in his written statement.

The Witness: Exhibit 206.

By Mr. March:

Q. While we are looking at this thing, I want to tie in this 627 wells to this Table 2 on Page 9 of your Exhibit 206. That is the 627 wells referred to there, is it not?

A. Yes, sir.

Q. Which are contained in this working paper?

A. You asked how they are distributed over the field?

Q. Yes.

A. Well, in the Carson County sweet gas area, 103 wells.

Q. You don't need to read all of that. I notice here that you indicate the numbers of wells which are found in various counties and sections, but I wondered how they are distributed over the various counties.

A. Well, the location is given in that working paper.

Q. By looking at this working paper I can determine the location of these various wells?

A. Yes, sir. That was an exhibit made up so that those wells could be located on a map.

Q. I notice here you only have 16 wells in Potter County.

A. Yes, sir.

Q. 16 wells in Potter County.

A. Yes, sir.

Q. Is it not true that most of Canadian River's acreage is in Potter County?

A. Well, I wouldn't say most of it is. I have never analyzed it. I believe most of it is, though.

Q. How many Canadian River wells do you have here?

A. Well, I would have to look at the list there to tell.

Q. Just an approximate figure is all I am interested in.

A. Canadian River and the Amarillo Oil Company which—and the Red River Oil Company which are—

Mr. Spencer: Owned by the same parent company.

The Witness: Have the same parent company—there are 16 wells. That would be the total of Canadian River wells.

By Mr. March:

Q. You don't have anything but Canadian River wells in Potter County, do you?

A. No, sir.

Q. What is the average thickness of Canadian River acreage in Potter County of those wells, approximately?

A. The average thickness is at 92.19 feet.

Q. How many for—the only other Canadian River wells I believe are in Moore County, are they not?—and Hutchinson County, or do you have any in those two counties?

A. Hutchinson and Moore—you mean in Hutchinson

County—at least four Canadian River wells in Hutchinson County.

Q. At what average pay thickness?

Mr. Spencer: Do you mean for the county or for the four Canadian River wells?

Mr. March: For the four Canadian River wells.

Q. You might read off which four they are there.

A. The four wells that I have used in Hutchinson County, sweet gas area, are the Amarillo-Bivins No. B2, 1320 feet from the east line, 820 feet from the south line, Section 90, Block 46, H & T C, 65 feet.

The Canadian River Dunaway, B1, 362 feet from the north, 1645 feet from the east, Section 5, *Blocy* Y-2, 100 feet.

The Canadian River Dunaway 2A, 2300 feet from the east line, 2310 feet from the south line, Section 5, Block Y-2, 58 feet.

The Canadian River Bivins B1, Section 11, southwest corner of the northeast quarter of Section 11, Block Y-2, 138 feet.

This makes a total thickness in all of 361 feet and an average thickness of 90 feet.

Q. Now, that is only a small area there. Let's see which wells you have left out of there. There are four wells in there which Canadian River has, aren't there? Which Canadian River wells did you leave out from your pay thickness calculations?

A. Well,—

Q. You can look right here on this map, Exhibit 95, and tell.

A. Yes. There are four wells there.

Q. Yes.

A. I will try to locate these wells.

Mr. Spencer: Won't the map itself, Mr. March, show sufficiently what wells he did not use?

Mr March: Well, if I get this working paper in evidence I think it will.

Mr. Keffer: He has already put the wells in evidence.

Mr. March: The wells aren't in evidence.

Mr. Keffer: Well, the map is in and the list is on the map.

Mr. March: The working paper is not in evidence yet. I want to check on this little corner. I want to know what wells he left out.

Mr. Keffer: And the map shows it. That's what I am stating.

Mr. Spencer: We are willing to stipulate that he did not use them all.

Mr. March: Oh, I know that. I know he didn't use them all. That is a very small corner there and I am just going to ask him about that.

Q. Can you read the open flow of those wells?

A. Here is a well in Section 11, Block Y-2, shown here, 76 million cubic feet, I believe—76 million cubic feet.

The next one is in Section 90, Block 46, 40 million cubic feet.

The next two are in Section 5, Block Y-2; one of them has 34.8 million cubic feet and the other one has 30.8 million cubic feet.

Q. Now, will you take those wells that you did not use and read off the open flow of those wells—Canadian River acreage?

A. Canadian River acreage?

Q. Yes.

A. Those aren't made up with reference to Canadian River acreage.

Q. I understand that, but it is included.

A. There is a well here in Section 4, Block Y-2, that has 8 million cubic feet.

There is a well in Section 88, Block Y-2,—Block 46, rather—that has 70 million cubic feet, and a well in Section 13, Block Y-2, that has 58 million cubic feet, just north of the one that we used that had 76 million cubic feet.

There is a well in Section 9, Block Y-2, that has 45 million cubic feet.

Mr. Spencer: Are those initial volumes you are reading, Mr. Peterson?

The Witness: These are initial open flows, yes, sir.

There is a well in Section 13, Block Y-2, that had 75 million cubic feet.

There is a well in Section 10, Block Y-2, that has 7 million cubic feet.

By Mr March:

Q. Is that all that you did not use that are in the Canadian River acreage in Hutchinson County?

A. I believe so.

Q. Do you know what the pay thickness of those wells is that you didn't use?

A. No, sir, I couldn't determine it.

Q. You could not determine it?

A. No, sir.

Q. You didn't have records you could determine it from?

A. Those wells were drilled a long while ago and it was very hard to determine the exact pay in them.

Q. Were all those you did use drilled subsequent to the wells you did not use—these you read off last?

A. I wouldn't swear on that, but it must be understood in trying to make an estimate of this kind one has to use the most reliable data he can get hold of. Otherwise, the work wouldn't be very reliable.

Q. Have you got logs on those wells you didn't use in Canadian River acreage in Hutchinson County?

A. Yes, sir.

Q. Could you have taken those logs and determined it on the wells that you did not use?

A. I believe you would find out that they are pretty hard to use, if you tried to compare them.

Q. Well, the only reason you didn't use these other wells is because you didn't have accurate data in regard to them?

Mr. Spencer: He hasn't said that was the only reason.

By Mr. March:

Q. Is that the only reason?

A. That is one of the reasons. It is not the only reason.

Q. You wouldn't want to state for the record here that

you didn't have as good data on them as you had on the others?

Mr. Spencer: He has already stated that.

The Witness: I have already stated that. That is one of the reasons. There are two reasons why I picked my wells. One is to get accurate data and the other one is to try to get more or less even spacing in the wells that I can get hold of.

By Mr. March:

Q. You find out for me which of those wells you used were drilled subsequent to those you did not use.

Mr. Spencer: Now, Mr. Examiner, unless the Examiner thinks that is important, we are not going to encumber Mr. Peterson with a lot of miscellaneous, various and sundry requests by Mr. March to furnish information on things which we think are not material.

Mr. March: If you don't want to give us those, I can get those from Mr. Thompson's working papers, I think.

Mr. Spencer: You can get it from your own working papers.

Mr. March: I don't think so.

The Witness: Don't you have the wells?

Mr. March: We may have in Washington. I have wired for 627 logs and I expect to look at every one of them.

Q. Now, let's move along over here to Moore County. How many Canadian River wells do you have in Moore County, approximately?

The Trial Examiner: Mr. March, do you mean how many wells did he use in Moore County?

Mr. March: Yes, how many wells did he use in Moore County?

Mr. Lange: In this Table No. 2.

Mr. March: Yes.

The Witness: Do you want to include the Red River?

Mr. March: Is the Red River a subsidiary of the Canadian River or wholly-owned—that's right, it is an affiliate—

Mr. Spencer: He understands—

Mr. March: He just asked me the question.

Mr. Spencer, I would like to ask you for the record: Those Red River wells, are they tied into local Texas service and not into the Denver service?

Mr. Spencer: That's right, using the term "local" relatively. They aren't tied into the Canadian River system.

The Witness: 16 wells altogether.

The Trial Examiner: Are those the Canadian River wells?

By Mr. March:

Q. Are they Canadian River wells?

The Trial Examiner: That was the question.

By Mr. March:

Q. In Moore County.

A. They are all Canadian River except one or two Red River wells.

Q. Let me see one or two of those Red River wells there. Let's see what the thickness is.

A. Red River, Shelton 1-A—is that supposed to be Red River?

Mr. Spencer: That's right.

The Witness: That's one Red River well. Canadian River Thompson well—Canadian River Reed 2-A.

The Trial Examiner: Did you get that, Mr. Reporter?

By Mr. March:

Q. Now, do you know how many Canadian River has up there in Moore County altogether—what percentage of the wells in Moore County that Canadian River has that you took?

A. No, sir, I don't.

Q. Do you know whether or not those wells that you

took have the highest pay thickness according to your own calculation?

A. The ones I took are the only ones that I have been able to determine the pay thickness on, so I couldn't very well answer the question.

Q. How many wells has Canadian River got altogether and Red River combined, since you have got both of them combined here in this discussion?

A. I don't know.

Q. You don't have any idea?

A. I have never counted them.

Mr. Spencer: Well, why mix Red River into it?

Mr. March: Well, we have got—

Mr. Spencer: There is just one in there.

Mr. March: Well, there are several more over in Potter County. Leave Red River in there. I will ask you this question:

Q. How many producing wells does Canadian River have?

A. I don't know.

Q. You never made an examination of those wells to ascertain how many they have got?

A. I never counted them, no.

Q. You didn't look over every well Canadian River has in order to arrive at which ones you would use?

A. Oh, yes, but I didn't count them at the time.

Q. As I say, you have only got 32 Canadian River wells and Red River wells in there in Potter and Hutchinson County—36—16 in Potter County, 4 in Hutchinson, and 16 in Moore?

Mr. Spencer: If you are going to make anything out of it, let's let the witness go back and count and see what he has got.

The Witness: I tried to pick out the wells that I could use and I didn't pay any attention to what company they belonged to.

The Trial Examiner: I believe that is his testimony, Mr. Spencer.

Mr. Spencer: In one instance, Mr. Examiner, he combined Red River with Canadian River wells. They weren't separated.

The Trial Examiner: That's right, in Moore County.

Mr. Spencer: I am willing to stipulate any figures you want.

Mr. March: Does 92 wells sound right for Canadian River?

Mr. Spencer: More than that.

Mr. March: About how many?

Mr. Keffer: I think today it is a hundred, isn't it—98—it's a hundred wells for Canadian River and I think now there are just—wait just a second. I can tell you how many Red River has. (Examining Exhibit 95). I think there are 13 wells of Red River and 1 now drilling that started since we came up here, since the first of the year, and I don't know whether it has been completed yet or not. It might be 14.

Mr. March: That would make 112 altogether?

Mr. Spencer: That would be a close approximation, yes.

By Mr. March:

Q. With 112 wells you could only get 36 wells on which you could make any determinations at all as to pay thickness, is that right?

A. No, I wouldn't say that.

Q. What would you say?

A. Well, when I made up this exhibit I took what was available that I could determine the pay thickness on. I think they have drilled several since I worked on this exhibit that I could obtain the thickness of, but in this area, Moore County, except the southwest corner. I have used 87 wells in all which are pretty well scattered over that whole area—pretty well spaced, and in Potter County I used all of the Canadian River wells there, which are pretty well spaced, too, for that part of the field, and in Hutchinson County itself, in the sweet field—the west sweet field, which is in that corner, I used 24 wells altogether. Of those

wells, 4 of Canadian River wells. That is a pretty good representation when you consider the acreage. It makes a pretty good spacing.

* * * * *

Q. Thickness is a pure laboratory calculation, is that right?

A. I wouldn't say so.

Q. It is more of a judgment figure?

A. No, it takes in a lot of careful work to get your thickness figured up—investigations.

Q. How would that have affected your estimate of pay thickness if you just used 16 wells in West Gray County? Do you think that would have raised your figures any as to pay thickness?

A. The reason that I have divided these sectors up is that in that way you can get a better average of each area that will be representative than if you took, say, Potter County 16 wells and then went up to Moore County and took 16 wells, or 32 wells. You would have to do that all over the field if you tried to take the field as a whole. You would have to take just about the same number of wells all over the field regardless of your information and it wouldn't give you as good a picture as I have gotten. The whole object—if you will notice, each of these sectors is a separate sector, and the sectors are not balanced with each other. They aren't related to each other at all for getting your results. No sector has been added in with another or balanced with it, or whatever you want to call it. I just made the best determination I could in each area. The reason I got more wells in one area than in another, if I could get the spacing that would justify taking that number of wells, why, I took them.

Q. I note here, and it is very interesting to me, that there are 65,445 acres in the west Gray County wet—sweet gas area, and in Potter County there is 107,347 acres.

A. Yes, sir.

Q. In the sweet gas area—and in Potter County you take 16 wells in spite of the greatly exceeding acreage, and in west Gray you take 77 wells. How do you account for any such action as that?

Mr. Spencer: Mr. March, if you had been listening instead of being so interested, he just explained it was a matter of spacing. He took the greatest number of wells

he could find where he could get them properly spaced. He has just gone through it right ahead of your question.

By Mr. March:

Q. Is that your answer?

A. Why, certainly. That is the reason I made these different sectors because I couldn't get—I'd like to have gotten a hundred wells in every one of those places if I could, because it was an important—there were only 16 wells in Potter County. I couldn't build a lot more wells.

Q. Did you say there were only 16 wells in Potter County?

A. Only 16 that I have been able to use.

Q. There are considerably more than that in Potter County, though, aren't there?

A. Yes, there are more than that.

* * * * *

By Mr. March:

Q. Now we come to the actual determination of pay thickness or the actual procedure by which that pay thickness is determined. As I read your statement and as I have listened to your testimony here, although you have logs on these 627 wells, that you do not rely upon those logs solely for your determination of pay thickness.

A. No, sir.

Q. Why don't you rely on those logs for the determination of pay thickness?

A. Because some of them were rather inadequate and I was able to check, though, and get some information at different times that gave me a clue to use them.

Q. Where are the notes and the data which supplement those logs?

A. I haven't any data to supplement them because I made—as I say, if I had been preparing this for an exhibit, I would have a lot of data, but I wasn't preparing it for an exhibit. At least I didn't have any idea of ever offering it as an exhibit when I worked it up.

* * * * *

Q. Has your estimate of reserves over the years changed much?

A. No, sir. As I got more information, I have tried to improve it. I want to draw the—I would like to draw your

attention, Mr. Examiner, to something about this estimate—just an explanation.

The Trial Examiner: Well, it is a matter of explanation of an answer to a question that Mr. March has asked—

Mr. March: I have no objection, Mr. Examiner.

Mr. Spencer: Is what you are going to say in explanation of some answer you have made to a question propounded by Mr. March?

The Witness: I wanted to draw attention to the method used in obtaining the thicknesses—that is, the method by which the area is divided all the way through—this whole area.

Now, for instance, referring to the Table 2 in Exhibit 206, you will note I summed up the total thickness, for instance, in Carson County—103 wells—summed up the total thickness and then divided by the number of wells used and that gave me an average per well of 85.82. Now, since I used 103 wells there, in order for there to be a difference, we'll say, of one foot in my average, I would—that would accommodate an error of 103 feet—if I had a total error of 103 feet, why, that would only make a difference of one foot in my average, and if you consider the whole 627 wells that have been used, to accommodate an error of one foot in my average, would necessitate an error in the whole computation of only—of over 627 feet so that if I did make errors, why, the whole process lends itself to dividing the area. This is further carried on when the averages—when it is averaged—the average obtained and weighted per acre.

In Table 3, the average obtained for each area is multiplied by the acreage obtained in the acre feet, and then the whole is divided by the total number of acres in the error which is 1,339,700, which serves further to serve as the method—it lends itself to dividing the area, whatever it might be in greater thickness or less thickness. You would have to have an awful big error there to shorten the average in the end.

* * * * *

By Mr. March:

Q. Who were some of those drillers you were talking to?

A. I am not going to attempt to tell you because it is impossible for a man to remember people ten years back.

Q. Can you tell us one driller you have talked to who has agreed to tell you about the pay thickness?

A. I am not going to tell you about any of it.

Q. You wouldn't tell me any of their names?

A. I have consulted some of them but I'm not going to try to get into that.

Q. I will ask you to cite a single driller who will agree with you as to pay thickness.

The Trial Examiner: What's that?

By Mr. March:

Q. I will ask you to cite a single driller who will agree with you as to pay thickness of a given well.

A. I didn't say that they agreed with me as to pay thickness. I said by investigating and talking to them I determined what the pay thickness was.

Q. If they didn't agree with you, how could you determine it?

A. I could find out what they were drilling through—when they were drilling through the pay thickness and what the pay thickness was. They didn't try to determine pay thickness. They would tell me how they were drilling at different places and where they got the pay, but they didn't add it up or try to determine it.

Q. These logs don't even show pay thickness, do they?

A. A lot of them do. I just said that I used a lot of logs just as they were. I already have made that statement.

Q. If you don't want to tell me the name of a single driller, that is all right. We will now go to this 12½ per cent of the drillers you talked to. I want to know the 12½ per cent of the other type of men you talked to. They were the pushers, you say, and the people keeping records on the well?

A. Yes, sir. I am not going to attempt to estimate any percentages because it is impossible for a man to do it.

Q. I don't want you to. I have all the percentages I need. Now I need a little fill-in here. Can you name a single pusher that agreed with you on pay thickness?

Mr. Spencer: Has he testified the pushers determined sand thickness yet?

The Witness: No, sir. As I say, I have obtained different information from these people that enabled me to determine pay thickness. They never determined pay thickness for me.

By Mr. March:

Q. Who are some of the individuals?

A. I am not going to try to name them. I have seen so many of them, I do not want to try to name them.

Q. Who is one of the pushers?

A. I don't think I am going into that.

Q. That is all right with me. So we get to the 25 per cent now. Did you talk to somebody who had connections with the drilling of the well? Now we come to the other 25 per cent which had no connection with the drilling of the well, but which were officials of the company—

A. They were company representatives—

Q. What were they—geologists and the like?

A. Yes, sir, company geologists and company scouts.

Q. You talked to the Phillips Petroleum Company's geologists on some of their wells as to what pay thickness they had?

A. Yes, I have talked to a number of them at different times.

Q. Did they agree that you could determine pay thickness of any of their wells?

Mr. Spencer: He hasn't testified they determined any sand thickness.

The Witness: I got information from them which I could use.

By Mr. March:

Q. None of the Phillips representatives told you that you contacted in the field, this 25 per cent of the representatives of the companies you contacted in the field, told you and agreed with you as to the pay thickness?

A. Yes, I have asked them at different times as to what the pay thickness would be—what they thought the pay thickness would be, and they told me what I said.

Q. Phillips?

A. Yes.

Q. Did they say they could determine pay thickness accurately?

A. They told me what they considered the pay was.

Q. Who was that?

A. Different ones there—

Q. Who, for example?

A. That is kind of hard to go into, trying to tie a Phillips man down to something.

Q. You are relying upon it, aren't you?

A. Certainly, at the time I relied upon it.

Q. Well, the Examiner has to rely on this and we want to have it backed up, if possible, or not backed up—I doubt whether it can be backed up or not. Whom did you talk to?

A. Well, I talked to Tom Craig of the Phillips Petroleum Company about different wells.

Q. Tom Craig gave you the pay thickness?

A. Yes, sir, he told me what he thought was the pay thickness and where he thought the record was inadequate, and other things. You see, we bought quite a number of wells from the Phillips Petroleum Company.

Q. What is Tom Craig?

A. Tom Craig is a geologist for the Phillips Petroleum Company in Amarillo.

Q. Is he in charge of the Amarillo office? Mr. Knight is district geologist, isn't he?

Mr. Spencer: Just a minute. Let the witness answer the other question.

The Witness: Tom Craig was district geologist ahead of Mr. Knight. Now Mr. Knight is district geologist and I don't know Tom Craig's official capacity. It was when he was district geologist I used to consult with him about these wells.

By Mr. March:

Q. About when was that?

A. Back in 1931 and 1932.

Q. You haven't consulted with anybody from the Phillips Petroleum Company since then?

A. Yes, at different periods.

Q. And with Mr. Knight, present district geologist?

A. Yes, sir.

Q. Did he give you the pay thicknesses?

A. No, sir.

Q. Why wouldn't he give you the pay thicknesses?

A. I don't think I consulted him about pay thicknesses.

Q. Who else did you consult?

A. Those are the only two geologists that I have known with Phillips in the field.

Q. You say Tom Craig showed you where the pay thicknesses were inadequate.

A. He didn't think that the record was good.

Q. You never asked Mr. Knight what he considered to be the pay thickness of the Phillips wells, have you?

A. Well, I have had so many conversations with these gentlemen that it is hard to remember just what definite information they gave me at different times. We are all very well acquainted with each other.

Q. So, therefore, none of the 25 per cent here were taken from the Phillips? They were not consulted as to the effective pay thickness subsequent to 1932?

A. No, sir.

Q. You just said Mr. Knight didn't give you any opinion as to pay thickness?

A. I said I couldn't remember what I talked with him about at different times, but he has helped me on pay thickness; that is, he has given me information.

Q. Are you familiar with his testimony that you can't use pay thickness in the Panhandle field of Texas to determine it?

A. I am not familiar with any of his testimony anywhere. I haven't read any of his testimony and don't know what you mean.

Q. Did he orally inform you that you could not determine the pay thickness of the Panhandle field of Texas?

A. Who?

Q. Mr. Knight.

A. No, sir.

Q. Did he say you could?

A. I have never heard him express an opinion on the subject.

Q. You have never heard him express an opinion on pay thicknesses at all, have you?

A. I have asked him about pay thickness in certain of the Phillips wells—

Q. Which wells?

A. I can't remember now, Mr. March.

Q. What did he say when you asked him about the pay thicknesses of certain Phillips wells?

A. He told me what he thought the pay thickness was in those wells.

Q. I see. I want those wells designated so I can check on that.

Mr. Spencer: He said that he can't remember.

The Witness: I can't possibly remember.

By Mr. March:

Q. Did you use a great many Phillips wells in this estimate here?

A. I used a few of them, quite a number of them, but I have never counted them to see what they were.

Q. Were they some that you used here that you talked to him about?

A. I couldn't remember concerning that, Mr. March. This work has gone on over a period of ten years and a man can't remember all of those details.

Q. Did Mr. Knight tell you the pay thickness of the oil wells, or were they gas wells?

A. I have inquired of him about pay thickness in oil wells and gas wells both.

Q. But you can't say whether or not there are any of those used here in your 627 wells that you asked him about?

A. As I say, I can't remember.

Q. I see. All right, we will move along.

What other geologists did you consult, company representatives, did you consult, relative to these pay thicknesses in the 627 wells?

A. Oh, I consulted the geologists of the Texas Company and the geologists—

Q. Just a minute. Whom did you consult with The Texas Company?

A. Mr. Schwartz, District Geologist, at Pampa.

Q. Did they have many gas wells?

A. The Texas Company?

Q. That's right.

A. I think they have quite a number of them.

Q. Were they included in the 627 wells you consulted Mr. Schwartz in regard to?

A. Yes, sir.

Q. Did Mr. Schwartz tell you the way it was done?

A. He gave me no information that helped me to determine it.

Q. Which wells were they? Were they all of The Texas wells here? Can you check through without going through the exhibit here?

A. I can't remember which one I consulted him about. I consulted him with the one idea—

Q. Which one did you consult him about?

A. I can't tell.

Q. No one else can tell by examining those logs of yours?

Mr. Spencer: What someone else can tell, you hardly and I can hardly tell until it is looked at.

Mr. March: I doubt whether you and I could even tell.

Mr. Spencer: You and I are pretty smart. We might be able to take it out of there.

The Witness: Do you expect me to answer a question about what somebody else can or cannot do?

By Mr. March:

Q. You can't tell me, then, the wells you consulted—the wells that you were having trouble with and consulted The Texas Company about?

A. No, sir.

Q. And Mr. Schwartz gave you some information about some wells that you were having difficulty with and he helped you to determine the pay thickness?

A. Yes, sir.

Q. He didn't say what the pay thickness was, did he?

A. I can't remember.

Q. All right, who else did you consult? What other geologists? What other company representatives did you consult?

A. Well, I consulted geologists with Gulf Producing Corporation.

Q. Whom did you consult there?

A. Mr. Terrell.

Q. When did you consult him?
A. At different times during the past ten years.
Q. Is he still district geologist?
A. No, sir, he isn't there at the present time.
Q. How long has he been gone?
A. I don't remember exactly.
Q. Approximately?
A. Less than a year.
Q. Less than a year?
A. Yes.
Q. Mr. Schwartz is still with The Texas Company as a geologist?
A. No, he is not with The Texas Company.
Q. How long has he been gone from there?
A. I can't remember that either.
Q. You don't even remember the last time you consulted him?
A. No, sir.
Q. You haven't consulted him in recent years?
A. No, sir.
Q. You haven't consulted him since 1932?
A. I doubt if I have consulted him since 1932.
Q. When was the last time you consulted Mr. — this Gulf man?
A. I can't remember.
Q. You can't tell.
A. I don't think anybody could remember things like that.
Q. Even approximately?
A. No, sir, not even approximately.
Q. Did you take notes when you consulted people as to the pay thickness, as to the 25 per cent of these walls, these geologists?
A. I took notes when I tried to determine the pay thickness.
Q. Where are the notes?
A. I haven't any of them.
Q. How many did you consult down there?
A. I have consulted the geologists of the Empire, now known as the Cities Service Oil Company.
Q. The Cities Service Oil Company?
A. Yes, sir.

Q. Whom did you consult there?

A. Archie Kantz.

Q. What is he?

A. The District Geologist for the Empire, now known as the Cities Service Company.

Q. Is he still the district geologist?

A. Yes, sir.

Q. About how many of these wells did you consult him about?

A. I can't remember.

Q. You can't remember any particular well you consulted him about?

A. No, sir.

Q. Did you consult him very much?

A. I don't know what you mean by very much.

Q. Did you consult him about a great number of wells or with the few wells you were having trouble?

A. A few wells at various times I wanted information on—I consulted him about those.

Q. Does he have a tabulation of pay thickness of these wells?

A. No, sir.

Q. Do you know of anybody that does have that information but you?

A. I have no way of telling what these men possess.

Q. I thought you went in and talked to them and asked them what the pay thickness was.

A. I asked them for information to enable me to determine it. I am not claiming these men determined my pay thickness.

Q. Did they in any case tell you what the pay thickness was in a number of cases?

A. Yes, sir, in a number of cases.

Q. Did the Cities Service man tell you?

A. Yes, sir.

Q. Which wells?

A. I can't remember now.

Q. If you can't remember which wells, how can you remember whether or not he told you what the pay thickness was?

A. Because I can remember that I had to check some wells up with him and to make my determination.

Q. About when was that?

A. I can't remember which wells there were.

Q. About when was it?

A. I can't remember when it was, except that it was during the past ten years.

Q. It is all very hazy?

A. No. I have never kept a diary on these things.

Q. It is more than I can see how you can keep all of these things in your head to say that a 75-foot pay thickness—

A. At the time I worked this up I took a record of the total pay thickness at the time I determined it. It was on a list and this exhibit—

Mr. Spencer: This working paper?

The Witness: This working paper—

By Mr. March:

Q. Which list was destroyed?

A. No,—

Q. The original list you took it from—

A. I threw it away after I got it typed up.

Q. You didn't throw it away until the Federal Power Commission requested you make up a list like that?

A. I was trying to remember whether I ever had it typed up before—I think I had—after I had it typed up in good form I threw away the old list. What good was it?

Q. My question was, did you have it typed up before the Federal Power Commission made the request for you to produce those pay thicknesses on those 627 wells?

A. Yes, I had it typed up at different times.

Q. Do you have those 627 wells on the list and no more?

A. Yes, that is all I have ever been able to use.

Q. All you have ever been able to use? How many wells are there in the Panhandle field of Texas?

Mr. Spencer: Gas wells?

Mr. March: Yes.

The Witness: Just a minute. I want to qualify that answer I gave. I will say it is all I have been able to use to try to get a representative spacing of the wells.

By Mr. March.

Q. How many more have you been able to use to determine pay thickness?

A. I don't know, Mr. March.

Q. Approximately how many?

A. As a matter of fact, I haven't worked up any more than I have in that list there because that was all I needed for the purpose I was using it.

Q. You picked out those wells and determined the pay thickness on those particular wells?

A. Yes, sir.

Q. In other words, those other wells which you from time to time talked about and maybe made notes in regard to pay thickness on, you don't have any data on those wells at all?

A. The only wells I ever had any notes on are the ones in this working paper.

Q. How many gas wells are there, approximately, in the Texas Panhandle?

A. Approximately 1600.

Q. 1600?

A. Yes.

* * * * *

A. About two and a half miles from the edge of the field.

Q. You said it was how far from the D-4 well?

A. It is about 1⅝ miles.

Q. All right, did you use that well—Masterson M-1 as I read it here—H-1—it could be N-1?

A. It is the well in that Section 3, Block B-11.

Q. You know which well it is.

A. Yes. I didn't use it, no.

Q. Now, Mr. Peterson, we have made a complete circle around this largest well of the Canadian River Gas Company and we found that you only used one of those wells, the one with 18 million open flow. Now, you can look there. Do you see any wells any closer than the ones I have indicated that we have discussed?

A. The one I used is the one north of the Masterson.

Q. The 18 million open flow well?

A. The 18 million open flow, yes, sir.

Q. Now, Mr. Peterson, why didn't you use any of those

other wells? For example, why didn't you use the Masterson D-4?

A. Well, it probably was on account of the fact that I couldn't interpret the record or get enough information on it. As I say, these thicknesses were determined by using the best information I could get. If I had wells with information that I couldn't use and couldn't satisfy myself that I had a satisfactory determination, I didn't use them.

Q. Is that the reason you didn't use those other wells that I read off?

A. I believe that is the case. These determinations were made up a long while ago and not for any litigation or anything. They were made up in trying to get definite information that I thought was reliable.

Q. In your opinion, did that one pay thickness on that one well, assuming it is correct, does it indicate the pay thickness of that region?

A. Well, averaged with other wells in the big area involved in Potter County there, in wide spacing, why, it gives a pretty good average of that area.

Q. How do you know? You don't know what the pay thicknesses of those wells are.

A. No, sir.

Q. Does the pay thickness vary with your open flow?

A. Not necessarily.

Q. Well, you just don't know what the pay thicknesses of the wells are in that entire region, then, do you? It's bound to be variable, isn't it?

A. Sometimes you can't always get all the information you want in a region, but I am trying to get an average of the area as a whole.

* * * * * *

By Mr. March:

Q. You haven't made an estimate of reserves of the whole field on the open flow method of estimating reserves, have you?

A. I have never said that I had used an open flow method of estimating reserves.

Q. All right. Do you agree with this statement—reading from Page 895 of the Cotner and Crum report.

"The great variations of open flow of wells in the Texas Panhandle field indicates considerable differences both in porosity and thickness of pay strata."

The Trial Examiner: That is from Exhibit 215?

Mr. March: Yes.

The Witness: What page is that on?

Mr. March: I am reading from Page 895.

Mr. Spencer: How does that quotation begin?

By Mr. March:

Q. "The great variations of open flow of wells in the Texas Panhandle field indicates considerable differences both in porosity and thickness of pay strata."

The question I am asking you is, do you agree with that sentence here?

A. Well, if you put in the next sentence with it.

Q. I am asking you about that sentence, then I'll ask you about the next one.

Mr. Spencer: That is a complete answer. He says yes with the explanation.

Mr. March: Let him put in the explanation. I don't care.

Mr. Spencer: That's all we are talking about.

The Witness: The next sentence says, "porosity is the main factor."

By Mr. March:

Q. Then you do agree and you do contend that open flow has a direct relationship to pay thickness, is that right—contrary to your previous contention?

A. No, sir, that is not what it says here.

Q. Then you don't agree with it—I mean you don't agree with the statement I just made?

A. Let's hear the statement.

Mr. Spencer: I have difficulty whether you want him to agree with you or Crum and Cotner.

The Witness: I thought you were talking about Crum and Cotner.

Mr. Spencer: Wasn't that answered?

Mr. March: No, there wasn't, and I don't want to be deferred. I want it answered.

(The record referred to was read by the reporter as set forth above.)

The Witness: I think I answered that. I stated it two or three times that you can't determine pay thickness by open flow.

Mr. March: All right, that's all there is to it.

Now, do you know for certain where those small particles are coming from when they are blown out of the well, whether they are coming from the pay or what-not?

A. Well, the particles themselves generally speak for themselves.

Q. Do you know?

A. You can tell by an examination of the particles whether it comes from the pay or not.

Q. How can you tell that?

A. You can tell by the appearance of it and by examining it. Is shows the porosity.

Q. It shows the porosity?

A. Yes, sir.

Q. Can you determine the porosity mathematically from the samples?

A. You can get an idea from looking at them.

Q. Can you give me the porosity determination you made on any well?

A. No, sir. I was just trying to get ideas of the situation down there as a whole. I have examined hundreds of thousands—thousands of samples to base my opinion upon that.

Q. Have you a single record down there that shows the result of an examination of any well for porosity, what the porosity of that well was?

A. No, sir.

The Trial Examiner: We will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

Mr. Spencer: May I ask the witness one or two questions, Mr. March?

Mr. March: Yes, sir.

Mr. Spencer: Will you explain to the Examiner the different uses that are made by your department of the well cutting samples which you take?

The Witness: The well cutting samples that we collect are used for a number of purposes. Before we reach the gas pay the samples are used to determine exactly what formation we are drilling in so that we can set our casing in a well at a point as close to the pay formation as possible. After we have set our casing the samples that are used mainly to determine the formations in which we are drilling so that we can determine what formation we are in; so that we can determine when we go from one producing pay formation to another; so that we will know at what depth it is advisable to stop drilling a well; so that we can determine what formations we end the well in. Those are the main uses we make of our sample cuttings.

Mr. Spencer: Just one more question.

To what extent generally have you used well cuttings in making your determinations as to porosity of the formations encountered?

The Witness: I have used all well cuttings that I could obtain that showed porosity to get an idea of the relative porosities occurring in the well and to compare these cuttings and the occurrences of the bores with the cuttings obtained from oil wells where tests had been made which gave a general idea of what the average porosity might be.

By continually watching these samples I obtained a judgment of what the variability was and from the relative values reached an idea of what the average might be. It is mainly a relative form of getting a relative idea of porosities in the formations. It also gives an idea of how porous the rock looks in some of the big wells and things like that.

When we were drilling through some of the big gas pays at times I have been chased off the derrick merely by the shower of particles falling on the floor.

By Mr. March:

Q. You mean the flowing out of the gas? You mean the particles were blown out by the gas?

A. Yes, and we picked them up.

Peterson further testified (Vol. 69, pp. 10104-10120) as follows:

Mr. March: I'll repeat it.

Q. Do you know of any other gas field to your knowledge that has as good a record as this field in regard to dry holes—gas field, I am speaking of now?

A. Well, let's see, that's 104 dry holes out of approximately 1600 gas wells. That would be about 1/16th. I am not certain, but I think the Homer field has a better record than that.

Q. Where is that?

A. Down in Louisiana.

Q. You don't know about that, though, do you?

A. That's the trouble with the question. You would have to make a study of all these fields to know exactly what the percentage of the dry holes was.

Q. About what is the percentage, do you know, down there?

The Trial Examiner: You mean this field in Louisiana that he mentions?

Mr. March: That's right.

The Witness: That's the trouble, I'm not certain. He is asking me to try to compare this field with all the fields in the United States and I will have to admit I don't know how to do it without doing a lot of reference work.

Mr. March: All right.

Q. Now, let's see, I notice a rather unusual thing about these dry holes, that there are very few of them in Canadian River acreage, is that correct? Do you understand the question, Mr. Peterson?

A. Yes, sir, that is correct.

Q. By the way, before we go any further, my question as to dry holes—did you include in your figure the abandoned gas wells, too, your 140 figure?

A. 104 was the figure I stated.

Q. Does that include—I was just asking you about your dry holes. I haven't got to abandon gas wells yet. I want to be sure I got that figure.

A. From what I can make out, there are 103 dry holes. It might be 104, though.

Q. 103 as distinguished from your abandoned wells?

A. Yes, sir.

Q. I just wanted to get that clear. As I see here you only have two dry holes in the Canadian River acreage, is that right?

A. I don't show any dry holes here on Canadian River acreage.

Q. You don't?

A. No.

Q. Are there any?

A. Well, I think that they have some outside the boundaries of the field.

Q. We are talking about the field now—Canadian River has not drilled a single dry hole in the field, is that right?

A. I believe that is right.

Q. In other words, every time they put a well down they have got gas, is that correct?

A. Yes, sir.

Mr. Keffer: May I ask a question there, Mr. March?

Mr. March: Sure.

Mr. Keffer: I'll tell you what it is in advance—

Mr. March: Go right ahead, Mr. Keffer.

Mr. Keffer: Have there been any dry holes drilled, Mr. Peterson, on lands adjacent to Canadian River lands?

The Witness: Yes, sir. There have been two dry holes right adjacent to those.

By Mr. March:

Q. Who drilled those?

A. Texoma Natural Gas Company.

• • • • •

Q. How many wells has Texoma Natural Gas Company, approximately?

A. About 165 wells.

Q. Only two dry holes. Do you know of any company

in the Panhandle field with the exception of the Canadian River Gas Company that has a better record as far as dry holes is concerned, than the Texoma Natural Gas Company, taking into consideration the number of wells drilled?

A. Well, I hate to say that. I really don't know.

Q. You don't know of any, do you?

A. No, sir.

Q. How many dry holes—strike that.

As I counted there are only 10 dry holes east of the County line of Hutchinson County and Carson County here—pardon me, west of the County line of Hutchinson and Carson counties, in the gas producing formation. I mean by that, as I count the dry holes here in the entire eastern portion of the field—the western portion of the field, the portion west of the east line of Hutchinson and Carson Counties in the gas producing portions of the field, I don't believe there are but 10 dry holes there, is that correct?

A. West of the east line of Carson County in the west gas field?

Q. That's right.

A. I haven't tried to pick the dry holes in the oil area.

Q. I am talking about commercial gas acreage.

A. I think that is correct.

Q. I notice you counted one up here in the oil acreage. Is that oil acreage that dotted line coming up in—

A. It is close to the line there. I thought it was right on the line there.

Mr. Lange: In Hutchinson County?

The Witness: In Hutchinson County.

By Mr. March:

Q. That is approximately correct, isn't it?

A. I think that is correct.

Q. You wouldn't have any difficulty in saying that you didn't know of a field in the history of this country that had a better history as far as dry holes, just taking the dry holes? Could you make a statement like that without any fear that you were making an incorrect statement, to your knowledge?

A. No, I don't believe I do.

Peterson further testified (Vol. 82, pp. 12214-122[illegible]) as follows:

Did you know there are some 80 wells located in the Borger-Lefors area in which pressures have been increasing—have increased since 1935?

A. I have an impression that there are some wells in that area in which the pressure is increasing but I haven't made a study of the exact number.

Q. Do you know?

A. But I haven't made a study of the exact number.

Q. Do you have any idea as to what percentage of those wells you used in calculating your pay thickness?

A. Not having made a study and not knowing what wells the pressure is being increased in, I have no way of telling how many of those I used in my pay thickness.

* * * * *

Q. And you stated in your cross examination this morning, except for very isolated instances your marginal area was controlled to a great extent by the open flows that you found in that area, did you not?

A. Yes, sir.

Q. Did you take into account structural conditions where your wells—where not many wells had been drilled?

A. Yes, sir.

Q. All right, will you state the average open flow which you found in the gray area?

A. I have this worked out for the different divisions of the gray area. For Carson County west field, sweet gas area, the average 430-pound natural open flow was 2,900,000 cubic feet. This was from seven wells which had a total 430-pound open flow of 20,300,000 cubic feet.

In the Gray County west field, the sweet gas area, the average 430-pound open flow was 3,018,000 cubic feet. This took into consideration 28 wells, 11 of which were dry holes.

The Trial Examiner: You mean by that, Mr. Peterson, you included 11 dry holes in your average?

The Witness: Yes, sir, to give an idea of what the area might have.

The Trial Examiner: As I take it now you are arriving at the average open flow of the wells in that area?

The Witness: I have to count the dry holes in as an open flow of zero, because they show a bad condition.

The Trial Examiner: I see. Very well.

The Witness: Now, in Moore County west field, sweet gas area, there was a very small area, and the only thing near this area was a dry hole.

In Potter County west field, the sweet gas area, it had one well with 430-pound open flow of 4,100,000 cubic feet.

In Carson County, west field, sour gas area, the average 430-pound flow was 4,720,000 cubic feet. This was obtained from five wells, including one dry hole.

In the Gray County west field, sour gas area, the average 430-pound open flow was 1,615,000 cubic feet.

In Hartley County, west field, sour gas area, the average open flow from two wells was 3,500,000 cubic feet, while the open flow from another well was 10,600,000 cubic feet, which is in my opinion representative of a small part of the area.

In Hutchinson County west field, sour gas area, the average 430-pound open flow was 3,373,000 cubic feet. This was taken from a total of 11 wells and included no dry holes.

Considering three additional dry holes, the average 430-pounds open flow in this area would be 2,650,000 cubic feet.

The Moore County west field sour gas area had an average 430-pound open flow of 3,583,000 cubic feet. This included 10 wells and included no dry holes.

The Collingsworth county east field, sweet gas area, had an average 430-pound open flow of 2,038,000 cubic feet. This was from two wells.

Testimony of J. D. THOMPSON, JR.
Witness for Canadian.

J. D. THOMPSON, JR., witness for Canadian, testified with respect to gas reserves in the Texas Panhandle Field (Vol. 65, pp. 9965-9973) as follows:

A. "My name is J. D. Thompson, Jr. I was born in

Johnstown, Ohio, January 31, 1891. I now live in Amarillo, Texas.

"I graduated from Denison University, Granville, Ohio in June, 1914, receiving the degree of Bachelor of Science, my major subject being geology. After receiving my degree I spent approximately two years doing graduate work at Cornell University in Ithaca, New York. My work there was largely confined to advanced courses in Geology but also included duties as instructor in laboratory work offered to the under-graduate students by the department of Geology. My work at Cornell University extended over the period from September 1914 until April 1916, at which time I took a position as field geologist for the Empire Gas and Fuel Company at Bartlesville, Oklahoma. I have practiced my professior as oil and gas geologist continuously since April 1916 to the present time.

"I was employed by the Empire Gas and Fuel Company for a period of three years during which I did field work in Ontario, Canada, New York State, Pennsylvania, Ohio, Indiana, Missouri, Illinois, Kansas, Colorado, Oklahoma, Louisiana and Texas. My work for the Empire Gas and Fuel Company was varied and may be best described under three headings.

"1. Plane-table surveys in which I did detailed mapping of structural geology as shown by rock beds outcropping on the surface of the earth.

"2. Reconnaissance work in which I scouted ahead of the plane-table crews searching for areas in which favorable conditions of structural geology were present. Upon my recommendation such areas would later be mapped in detail by the plane-table crews.

"3. Subsurface structural geology work in the oil and gas fields of Northern Louisiana. In areas such as this last one mentioned, where surface outcroppings of the rock beds offer only meager information as to the structural condition existing below the surface of the earth, the structural geology of the area is worked out by a study of the logs and sample of the drill cuttings of the wells drilled in the area. This is known as subsurface work.

"In the spring or summer of 1919, I resigned from my position with the Empire Gas and Fuel Company and took up work for Mr. Leroy Adams, an independent oil operator with headquarters at Wichita, Kansas. My work for him included both detailed surveys and reconnaissance work in Kansas, Oklahoma, Wyoming, Montana, Ohio, Kentucky, Mississippi, Alabama, Tennessee, Georgia and Florida.

"In April 1922, I moved to Amarillo, Texas, where I took a position as district geologist in the Texas Panhandle area for the Gulf Oil Corporation, which was then known as the Gulf Production Company. I was employed by them continuously for seven years until the summer of 1929. My work for this company may be divided into three phases.

"The first phase may be called exploratory work which covered a period from the year 1922 until the year 1926. At the time I took up my work in this area, only two oil wells located in northern Carson County and some 20 to 25 scattered gas wells had been completed there The production from the two oil wells was being pumped into steel storage tanks since there was no oil pipe line leading from the field at that time.

"Of the gas wells a group of perhaps ten or fifteen in Potter and Moore Counties were being operated by the Amarillo Oil Company which had built a pipe line to the city of Amarillo where it furnished gas for commercial and domestic use. The remaining gas wells were connected only for use as field fuel for the exploratory operations going on at that time.

"During the four years 1922 to 1926, my work included a study of the subsurface geology of the Texas Panhandle area. In this period many exploratory test wells were being drilled in widely scattered locations throughout the Texas Panhandle area. The results of these tests and a study of the well records and samples of the drill cuttings obtained from them revealed the fact that the Texas Panhandle oil and gas field was confined to and controlled by a very large anticlinal structure or upward fold in the rock beds having an axis extending from southeast to northwest through Wheeler, Gray, Carson, Hutchinson, Potter, and Moore Counties, Texas, for a distance of more than 100 miles

"This anticlinal structure was found to be underlain by an irregular range of mountains composed of igneous rock upon which had been laid down sedimentary rock beds of Pennsylvanian and Permian age. These sedimentary beds included several irregularly distributed pay formations containing oil and gas and salt water. Along the apex of this fold, gas has accumulated in tremendous quantities; while along its northeast flank and in local low areas near its apex and on its southwest flank large concentrations of oil are found in the several pay formations which produce gas higher on the structure. Lower on the anticlinal structure, down dip from the oil producing area, salt water was encountered in the pay formations.

"Wells encountering salt water instead of oil and gas are called dry holes by oil and gas men. The extent of the field was defined by the salt water wells occupying a low structural position around the margins of the field. During this exploratory period, the Gulf Oil Corporation extended their lease holdings in this area on my recommendations until they included approximately 200,000 acres. Also upon my recommendations they drilled several exploratory test wells and contributed money or material to the drilling of many more scattered throughout the field.

"The second phase of my work in the Texas Panhandle oil and gas field may be called development work. It followed immediately after the exploration phase already discussed and covered the years 1926 to 1927. At this time oil pipe lines were built to the Texas Panhandle field connecting it to the trunk pipe line systems of the larger oil companies and hundreds of oil and gas wells were drilled in this field.

"During this period, the Gulf Oil Corporation completed between 150 and 200 oil and gas wells there and it became my duty to furnish geological information to guide the drilling and production department in the completion of these wells. This work included recommendations as to the proper points at which to set casing in the wells and the furnishing of information as to the probable depths at which gas, oil and salt water might be expected in order that the completion of the wells should be as efficient as possible. My work also included the making of recommenda-

tions as to the locations of wells drilled in semi-proven areas within the field. This work was undertaken to avoid as much as possible the drilling of dry holes and also gas wells which could find no market connections at that time.

"My work during both the exploratory phase and the development phase necessitated that I keep constantly in touch with the drilling activities of all operators in the field, in order that I might keep abreast of current additions to geological information that would be of practical value in guiding the program of the Gulf Oil Corporation.

"The third phase of my work for the Gulf Oil Corporation may be referred to as the geophysical phase. During the years 1928 and 1929 I was given the assignment of correlating the subsurface geology of the Texas Panhandle and of West Texas with geophysical exploration work which was being carried on by them at that time. This included a magnetometer survey which covered almost the entire area from the north line of the Texas Panhandle region southward into southwest Texas. In doing this work, it was again necessary for me to study the logs and samples of the drill cuttings secured from the many test wells scattered throughout this large area.

"In August 1929 I resigned my position with the Gulf Oil Corporation and opened an office as independent consulting geologist. Since that time I have been engaged continuously in doing consulting work on geological problems in connection with oil and gas. I estimate that approximately 95 per cent of this work has been confined to the Texas Panhandle area.

"My work as a consulting geologist in this area covers various activities.

"I am called upon to make locations for oil and gas wells and for recommendations as to casing points and drilling depths of these wells.

"I frequently prepare valuation reports on oil and gas properties. Such reports are used by prospective buyers of such properties or owners who wish to make sales of such properties or banks who make loans on them. My valuation reports are also required by individuals or estates owning

oil and gas properties in connection with their income taxes or estate taxes.

"I also prepare appraisals for the use of corporations in their reports and applications to the Securities and Exchange Commission in connection with matters of financing stock or bond issues.

"My work also includes the preparation and presentation of technical evidence before various commissions and courts of law as to conditions existing in the Texas Panhandle oil and gas field.

"In order that I may carry on this varied work and be of service to my clients I must of necessity keep an up-to-date file on the development activities of the field. At the time I left the Gulf Oil Corporation in the year 1929, they were kind enough to give me a complete file of information on all the wells drilled in the Texas Panhandle field up to that time. I subscribe for the services of the Dwight Well Log Service of Amarillo, Texas, from whom I obtain copies of logs of all the wells drilled in the field. This I supplement with information obtained from many of the operators in the field, including both independent operators and major oil and gas companies. This includes information on oil and gas production and the geology of the field. Some of the geological departments of the major oil companies maintain collections of samples of the drill cuttings from most of the wells in the field. I have access to these collections and have examined thousands of well cuttings from wells in all portions of the Texas Panhandle field in connection with my study of the geology of the area.

"I might explain that these samples of well cuttings are taken from the wells at regular depth intervals, usually every five or ten feet, and put in little cloth bags which are labeled with the name of the well and the depth from which the samples came. These bags of samples are brought to the geological department of the oil or gas companies, where they are washed, dried and put into one-ounce bottles. These bottles are labeled as to the name of the well and the depth of the samples, and aranged in boxes in proper sequence from the top to the bottom of the well. Examining these, one can get at a glance a quick picture of the formations

which any particular well penetrated, or one can make a detailed microscopic study of the whole geologic section as revealed by these samples of the drill cuttings.

"These samples are accessible to me partially by virtue of my personal friendship with the geologists of the major oil and gas companies. However, I am able to cooperate and contribute to them information and samples from the wells drilled in the field by numbers of my clients. In many cases small independent operators do not keep collections of drill cutting samples, but are willing to instruct their drillers to take the samples as the wells are being drilled, sack them and mark them properly and turn them over to me or the scouts or geologists of the major companies who maintain a sample exchange so that all of the companies cooperating may obtain samples not only from their own wells but from any other wells in the field which are of particular interest to them. The sample exchange bureau referred to is managed by E. V. Dwight, who has headquarters in the Herring Hotel, Amarillo, Texas."

The witness then identified Exhibit 187 which was received in evidence, and which is a pressure contour (isobar) map of the Texas Panhandle Field, the various pressure bands of which are set out in different colors.

The witness explained that the heavy line around the outside of the map represents the outline of the Texas Panhandle Gas Field as determined by the Railroad Commission of Texas. There are some additional areas included along the northeastern flank of the colored portion of the map which produce oil, but which are not considered as part of the gas field. The colored pressure bands represent 20 pound differentials in pressure.

The witness further explained the map, Exhibit 187 (Vol. 68, pp. 9976-9987), as follows:

"Introducing Exhibit No. 187, entitled 'Texas Panhandle Gas Field Rock Pressure Map, May 1939.'

"This exhibit portrays the extent of the Texas Panhandle gas field. Its border is outlined by heavy black lines as drawn by employes of the Railroad Commission of Texas on a map issued by them in the summer of 1937. Nothing has occurred in the development of the field since that time which materially changes this outline and it will serve our present purposes in defining the extent of the field.

"This exhibit further portrays by 20-pound interval contours and colored bands the rock pressure conditions existing in the Texas Panhandle field as of July 31, 1939. I drew these contour lines and colored bands, using the official well-head gauge pressures recorded by the Railroad Commission of Texas during the summer of 1939, purporting to show the rock pressure conditions existing in the field as of July 31, 1939.

"The following legend is used, as indicated on the exhibit, each color representing well-head gas pressure conditions as follows:

	Pounds
Gray	0-200
Orange	200-220
Dark Blue	220-240
Pink	240-260
Red	280-300
Purple	300-320
Yellow-Green	320-340
Light Blue	340-360
Brown	360-380
Salmon Pink	380-400
Yellow	Above 400

"It will be noted that the area colored gray, where well-head gauge pressures are 200 pounds or less, are confined to or are adjacent to those portions of the field which produce oil; while the areas colored yellow, where well-head gauge pressures are 400 pounds or above, are situated in localities remote from the oil producing portion of the field."

Q. Right there, Mr. Thompson, you might explain by reference to the map where the oil producing formations in the field are.

A. Most of the oil producing portions of the field lie on the northeast side of the field with unimportant exceptions, such as east central Carson County where there are two oil wells and a few down in south central Gray County.

Q. You have a number of little dots on the map, Exhibit 187, both within the gas field area and without the gas field area. What do those dots represent?—all up and down the northeast flank of the structure there.

A. Those dots represent oil wells. Also I call your attention to the fact that there is an area in northern Moore County which produces some oil.

Q. You say those dots represent oil wells. Do those dots within the confines of the gas field also produce gas as well as oil?

A. Yes.

Q. All right.

A. "Originally, the entire area of this field had a pressure of 430 pounds and would, therefore, have been colored solid yellow, using the above color scheme. The pressure differential in the field, as indicated on this exhibit, is the result of progressive depletion of the gas reserves of the field due to gas withdrawals coincident with the production of oil and gas withdrawals for gas pipe line use.

"In the early life of the field, gas was largely regarded as a nuisance, handicapping the development of oil production. Since there was no market outlet for the gas itself, the result was that it was wasted in tremendous quantities during the early production history of the field. The earliest major oil producing areas to be developed in the field were the Borger area in south-central Hutchinson County and the Lefors area in central Gray County.

"In these two areas, gas was encountered in pay formations above the oil bearing formations. Little interest was taken in conserving this gas. It was frequently allowed to flow from the hole along with the oil and was, thus, entirely wasted to the air. This gas produced with oil was known as casinghead gas.

"This situation gave rise to what is now known as our casinghead gasoline industry in this field. The otherwise wasted gas could be utilized by casinghead plants which removed its gasoline content and popped the residue gas

into the air. Since enormous amounts of gas were thus being wasted, the carbon black industry then moved into the field to utilize the otherwise wasted casinghead gasoline plant residues for the manufacture of carbon black.

"These two industries were, therefore, firmly established and used tremendous quantities of gas from the oil producing areas of the Texas Panhandle field before the major gas pipe lines were ever built to convey gas to distant cities for industrial and domestic use. The result of these early withdrawals from the oil field areas was the establishment of the pressure differential picture set forth in this exhibit. Without question, there has been a tremendous drainage of dry gas from that portion of the field which produces dry gas only to the low pressure oil producing areas due to this long-established differential in pressure. That drainage has continued progressively from year to year and is effective today.

"Estimate of Reserves.

"Introducing Table A of this exhibit entitled:

> "Estimated Original Recoverable Reserve of the Panhandle Field at a Pressure Base of 16.4# per square inch at Assumed Wellhead Abandonment Pressures of 0, 25, 50, 75, 100 and 125 Pounds.

"In arriving at my estimate of the original gas reserves of the Texas Panhandle gas field, I have assumed that the estimate of the Railroad Commission of Texas of 1,461,936 acres for the total proven gas acreage in the field is substantially correct. I have divided this gas acreage into two classes:

"Commercial	1,035,146 acres
"Marginal	426,790 acres
"Total	1,461,936 acres

"Mr. C. J. Peterson's Exhibit No. 206, shows substantially my ideas as to the location and extent of these two

classes of gas acreage in this field. This exhibit expresses so nearly my own ideas in this matter that if I prepared a map myself setting forth my ideas on the subject, it would be so nearly a duplication of Mr. Peterson's map that I do not consider it worthwhile to do so.

"Estimate of Gas Reserves:

"Following is my estimate of the original gas reserves of the Texas Panhandle gas field at zero pounds absolute:

Commercial—1,035,146 acres at 17,514 Mcf. equals 18,129,547,044 Mcf. at 0# Abs.

Marginal—426,790 acres at 5,000 Mcf. equals 2,133,950,000 Mcf. at 0# abs.

Total—1,461,936 acres 20,263,497,044 Mcf. at 0# Abs.

"In estimating the gas reserves of any field, one of two methods is generally employed by geologists and engineers.

"One, usually referred to as the 'pressure decline' method, makes use of data setting forth rock pressure declines as compared to total withdrawals. This method is very satisfactory for use in estimating the reserves of small fields in which the thickness and porosity of the pay formation is comparatively uniform. However, it cannot, in the writer's opinion, be used with any degree of satisfaction in the Texas Panhandle gas field which involves an area of nearly 1,500,000 acres under which the porosity and thickness of the pay formation are exceedingly variable.

"Another method, therefore, has been applied by the writer in determining reserves of gas in this field. This method, known as the 'pressure porosity' method, takes into account the volume of effective pore space in the reservoir rock, as indicated by estimated pay thickness and porosity conditions.

"Commercial Gas Acreage

"In arriving at the estimated gas reserves under the class of acreage referred to as 'commercial acreage,' the following formula has been used:

$$\frac{43560 \times 471 \times 70 \times 20 \text{ per cent}}{16.4} = 17{,}514 \text{ Mcf. gas per acre.}$$

"In the above formula.

43560 equals Number of square feet in one acre.

471 " Average original bottom hole pressure expressed in pounds per square inch.

(430 plus 13 plus 28 equals 471)

430 equals Original well head gauge pressure.

13 equals One atmosphere at barometric reading of average atmospheric pressure of field in pounds per square inch.

28 equals Weight of column of gas in pounds per square inch. (Bureau of Mines Formula).

70 equals Average feet thickness of pay formation in field.

20 per cent equals Average porosity of pay formation in field.

16.4 equals The pressure base expressed in pounds per square inch at which the gas is measured.

"To arrive at the average pay thickness of 70 feet, indicated above, a study has been made of hundreds of well records from gas wells in the field.

"The average porosity of 20 per cent is the result of studies made by myself and other geologists in this and other gas fields.

"Marginal Gas Acreage

"Experience to date forces me to conclude that as a whole the marginal area of the Texas Panhandle gas field is underlain by comparatively thin gas pay formations of low permeability and I seriously question the economic expediency of attempting any wide-spread drilling campaign there.

"This marginal gas area includes that portion of the field where I anticipate that wells of less than 5,000 Mcf. natural open flow volume capacity would be completed if drilled. A study of the completion data obtained from the records of the wells drilled in the marginal area to date reveals that

they were either very small gas wells or dry holes, with the exception of a few instances where small oil wells were completed. Considering the information obtained from the records of these wells, I am forced to conclude that the marginal area is one of very low potential gas productivity where perhaps only two or three million cubic feet of gas per acre will be found. However, since information is rather incomplete in certain portions of this area due to lack of drilling, I have assigned a judgment figure of an average of 5,000 Mcf. of gas per acre to the reserve of the marginal area. This, I am confident, makes due allowance for instances where possible future exploratory drilling may result in encountering larger open flow volumes than I anticipate at the present time.

"The pressure factors shown in Column 3 on Table A of this exhibit are arrived at by the application of a formula worked out by the United States Bureau of Mines and published on Page 167 in 'Bureau of Mines—Monograph 7,' together with Table 37, Page 156 of the same publication. By this formula, the following ratios between gas at zero pounds absolute and the various assumed well-head gauge abandonment pressure in this field are shown as follows:

Pressure factor for 0= well-head gauge $=1-\frac{14}{471}=.97028$

(14 = bottom hole pressure when well-head pressure = 0)

Pressure factor for 25= well-head gauge $=1-\frac{40}{471}=.91507$

(40 = bottom hole pressure when well-head pressure = 25)

Pressure factor for 50= well-head gauge $=1-\frac{67}{471}=.85775$

(67 = bottom hole pressure when well-head pressure = 50)

Pressure factor for 75= well-head gauge $=1-\frac{94}{471}=.80042$

(94 = bottom hole pressure when well-head pressure = 75)

Pressure factor for 100= well-head gauge $=1-\frac{120}{471}=.74522$

(120 = bottom hole pressure when well-head pressure = 100)

Pressure factor for 125= well-head gauge $=1-\frac{147}{471}=.68790$

(147 = bottom hole pressure when well-head pressure = 125)

(When well-head gauge pressure = 430 pounds, the bottom hole pressure = 471 pounds)

"It will be noted that Column 5 on Table A of this exhibit indicates that I have used a recovery factor of 90 per cent. It is generally recognized by geologists and engineers that a 100 per cent recovery of the gas from any given field is impossible. I believe that the use of a recovery factor of 90 per cent in estimating the recoverable reserves of the Texas Panhandle gas field is entirely justified.

"The tremendous area of the field and the extreme variation of conditions in the pay formations must be taken into consideration.

"Incomplete recoveries of gas from the field may be anticipated for various reasons which include the trapping of gas in pay lenses, water pollution from both bottom hole water and upper water improperly shut off due to imperfect casing.

"The plugging of wells by salt precipitation, the rusting through of casing or any other occurrences leading to insurmountable mechanical difficulties, will also contribute to incomplete recovery of gas from the field.

"Contributing to incomplete recovery of gas from the field is the fact that at any given well-head abandonment pressure of the wells in the field a higher pressure will exist at points between the wells. This being the case, the gas creating this higher pressure between the wells will not be recovered at any assumed well-head abandonment pressure. For example, when the wells in the field have reached a pressure of 125 pounds, it is reasonable to assume that some areas in the field between the wells might have a pressure of 150 pounds or 175 pounds or higher, representing a substantial volume of unrecoverable gas should the field be abandoned at 125 pounds well-head pressure. A like condition would exist, relatively speaking, at any other assumed abandonment pressure.

"It is reasonable to assume that large portions of the marginal area will never be drilled due to the fact that such development would be economically inexpedient because of the small open flow volume capacities to be anticipated in the drilling of wells in this area. The result will be a very much wider well spacing in the marginal area than in the com-

mercial portion of the field, resulting, obviously, in incomplete recovery of the gas reserves of the marginal area. This effect will be increased by the low permeability which our experience indicates to be existent in the marginal area.

"It will be noted that Column 7 on the exhibit sets forth total production from the Texas Panhandle field to the date January 1, 1939. Mr. Peterson's Exhibit No. 206 explains the method of arriving at this figure."

The witness further testified (Vol. 69, pp. 9990-9991) as follows:

A. Presenting Table "A" in exhibit 207. "Estimated Original Recoverable Reserves of the Panhandle Field at a Pressure Base of 16.4# per square inch at assumed wellhead abandonment Pressures of 0.25, 50, 75, 100 and 125 Pounds.

Assumed Abandonment Pressures	At 0 Lbs. Abs.	Pressure Factor	Product	Recovery Factor		Original Recoverable	Production to 1-1-39	Recoverable 1-1-39
0# Gauge	20,263,497,044 Mcf.	x .97028	19,661,265,912	M x .90	equals	17,695,139,321	7,156,238,820	10,538,900,501
25# Gauge	20,263,497,044	x .91507	18,542,518,240	M x .90	"	16,688,266,416	7,156,238,820	9,532,027,596
50# Gauge	20,263,497,044	x .85775	17,381,014,589	M x .90	"	15,642,913,130	7,156,238,820	8,486,674,310
75# Gauge	20,263,497,044	x .80042	16,219,308,304	M x .90	"	14,597,377,474	7,156,238,820	7,441,138,654
100# Gauge	20,263,497,044	x .74522	15,100,763,267	M x .90	"	13,590,686,940	7,156,238,820	6,434,448,120
125# Gauge	20,263,497,044	x .68790	13,939,259,617	M x .90	"	12,545,333,655	7,156,238,820	5,389,094,835

On cross examination the witness (Thompson) testified that the reserve estimate which he had given could not be called either a maximum or a minimum estimate but that he did think it was a fair estimate and one that he thought was right; that he could have done several things that would have made a smaller estimate, for example, he could have used a higher recovery factor but he did not do so because he did not think it was justified and neither did he think a lower recovery factor would be justified, and that if he had thought so he would have used a lower recovery factor. He used the recovery factor that he thought was right. The witness does not think that, rationally, he could have made the estimate either higher or lower. (Vol. LXXV, p. 10972, 10973.)

The witness further testified that open flow of the wells was a good criterion of the relative amounts of gas in place and that although he did not do so, it was not unreasonable to estimate reserves on the basis of open flow of the wells because sustained high open flows indicated a high porosity. (Vol. LXXVI, p. 11153, 11154.)

The witness testified on cross examination that he was likely too generous in his estimate as to the gas in place in the marginal area and that the structural situation in such area was such that to him it was unthinkable that that area contained much gas. (Vol. LXXVI, p. 11140.)

The witness was then referred to the marginal area (colored gray) on Peterson's map contained in Exhibit 206, in Moore County, where only a few wells had been drilled, and was asked if that area would probably not prove to be highly productive. The witness answered that he had rather definite information about the structural situation in the particular area referred to and that it was going to be too low to be highly productive, but on the other hand that he had assigned a higher acre content to the marginal area to take care of a situation where larger wells might be discovered. That some wells near the edge of the field are highly productive because they are far enough up on the struc-

ture to make them so, but there is a sudden rapid dip in the producing formations at the edge of the field. Experience through the history of the field has indicated that you will run out of high productivity almost immediately. (Vol. LXXVI, pp. 11141-11143.)

Witness further testified that the marginal or gray area, as shown in Exhibit 206, in Moore County, was generally low structurally and that this had been determined from geological information from small wells drilled within the area as well as dry holes drilled outside of the area and that although large wells are sometimes found near the edge of the field and near the edge of the gray area, because they are located rather high structurally, still these wells do not indicate that the marginal area generally has large gas reserves because its structural position is too low for this to be true.

(Vol. LXXVI, pp. 11142-11148.)

On cross-examination the witness testified that it was still necessary to apply a recovery factor, even though the field was not producing down to zero pounds wellhead. In other words, wherever you stopped producing, whether at 25 pounds wellhead or any other figure, there would always be areas in the formation between the wells higher in pressure than the abandonment pressure at the wellhead. (Vol. LXXV, pp. 11096-11098.)

The witness also reiterated the statements contained in his direct testimony with respect to loss of gas through mechanical troubles, such as caving or salting up of the formations and many other things that can happen to gas wells, which would dry up the outlets and result in the non-recovery of gas which would otherwise be recovered by the well, all of which would make it impossible to obtain a 100 per cent recovery. (Vol. LXXV, p. 11108.)

The witness, upon being cross-examined on an assumed 25 pounds abandonment pressure, testified that at this abandonment pressure you would have approximately 6 per cent of the original gas left in the reservoir but that this assumes that you had an equal pressure of 25 pounds all over the

field, not only at the wellhead but back away from the wellhead where it is known there would be substantially higher pressures and that the gas represented by those substantially higher pressures would not be recovered if the wells in the field were abandoned at 25 pounds. There must be something deducted from the total reserve in order to get the recoverable figure which calls for the application of a recovery factor at any assumed wellhead abandonment pressure. The witness then referred to an estimate of reserves as shown in Schedule A, Exhibit 207, wherein he arrived at a figure of 18,542,000,000,000 cubic feet plus, which is absolutely all the gas there is in the field above an assumed 25 pounds abandonment pressure. He then stated that you would not get every foot of that gas because there will be pressures in the field that will be substantially higher than the 25 pounds at the well, and therefore this calls for the application of a recovery factor. (Vol. LXXV, pp. 11101-11104.)

The witness also testified that in some fields which were influenced by water drives and where the encroachment of water causes the blocking off of large amounts of gas, recovery factors as high as 40 or 50 per cent are sometimes used and that although he did not anticipate any great loss of recovery on account of water in this field (Texas Panhandle Field), still there would be local losses due to water pollution from wells but not nearly as great as is encountered in the water-drive field, and also that although there were many reasons why all of the gas would not be recovered at any given abandonment pressure that one of the most important reasons is the fact that the gas pressure will always be higher out in the formation between the wells than it is at the well. (Vol. LXXV, pp. 11107, 11108.)

The witness discussed also the matter of bottom hole water and that as pressures go down water encroachment will become a great deal more important and also as the equipment in the wells gets older water troubles will develop to a more serious proportion. All wells reaching low pressures will not eventually develop water troubles but the water that is included in the field will probably be more operative in low pressures than in high pressures and water encroachment probably more effective as pressures get lower. (Vol. LXXV, pp. 11111-11113.)

Determination of Thickness of Gas Pays

The average pay thickness of 70 feet in the best commercial area of the field was utilized by witness in making his computations as to reserves and was based upon a study made by him of hundreds of gas wells in the field. (Exhibit 207, p. 8, Vol. LXVIII, p. 9983.)

The witness on cross-examination stated that he had used nearly 600 wells in determining his average pay thickness. (Vol. LXXV, p. 11034.) The determination was made in the early part of 1938. The figure arrived at for the average of all wells utilized was 69.86 feet but for convenience in computing his reserves he considered the pay thickness to be 70 feet. Pay thicknesses cannot be determined exclusively from well logs. The card index file kept by witness and which was utilized by him contains more information frequently than do the wells logs. (Vol. LXXV, pp. 11035-11036.) Witness explained how a determination of pay thickness was made from a study of well logs and from information he had gathered from time to time and shown on his card index system, and where these two sources of information were not clear, by discussing the matter with drilling superintendents, drillers on the rig and others who might have definite information about a particular well. With all of this information assembled it is then a matter of taking the pay formations in which gas was encountered and the distance of each formation in which gas was encountered, and totaling them up in order to get the total pay thickness for any given well. (Vol. LXXV, pp. 11041-11050.)

The witness was cross-examined at length regarding numerous wells with respect to the data contained on the cards taken from his card index file, and from the information shown on these cards the witness computed the pay thickness in a number of wells. He then stated on redirect examination that he could not hope to, and did not attempt to, keep all of the relative information with regard to pay thickness or other matters readily accessible in his cards, but that he did try to keep a card on every well drilled in the field, although there were some wells upon which he did not have cards, but these cards merely represented the beginning point of his investigation of any particular well, whether for pay thickness or any other matters; that he did not rely

entirely upon his card index file, nor upon wells logs for determining pay thicknesses or other matters, but gathered all information he possibly could from reliable sources available to him. (Vol. 94, pp. 14357-14362.)

The witness did not consult with Peterson with respect to his pay thickness determination except as to some wells of Texoma Natural Gas Company, the drilling of which had been supervised by Peterson. (Vol. LXXV, p. 10964.)

Thompson stated on direct examination that in the Texas Panhandle Field natural gas occurs in four separate geological formations, as follows:

1. Red Bed, which is of negligible importance.
2. Brown Dolomite, which is by far the most consistent and important gas pay in the field.
3. White Lime, which is of relatively small importance.
4. Granite Wash, which is locally quite important, but is not consistent in its occurrence in productivity and does not cover nearly as large an area as does the Brown Dolomite gas pay.

In order to portray the great variability of conditions under which oil, gas and water are found in the Texas Panhandle area, the witness prepared two graphic cross sections showing conditions found in the various wells included in said cross sections. These cross sections are marked Exhibits 208 and 209, respectively.

Exhibit 208 extends approximately from south to north through the lease holdings of Canadian, and Exhibit 209 extends from a point near the western end of the gas field through the lease holdings of Canadian. Their exact positions in the Texas Panhandle Field are shown on Exhibit 187 by green lines connecting the various wells shown in the cross sections.

These two exhibits are described in detail at pages 11 to 22 inclusive on Exhibit 207 and also in Volume LXIX, pages 9993-10019.

Briefly, these exhibits show the producing formations in the wells designated in each of the exhibits, and show the

respective formations in which gas, oil or water was encountered in those wells. They also show the type of gas pay formation in which oil, gas or water was encountered; that is, whether in Brown Dolomite, White Lime, Granite Wash or Red Bed. They also show the thickness of the gas pays encountered as determined from well logs and the card index file of witness Thompson, but do not necessarily show all of the information possessed by Thompson and utilized by him in the determination of sand thicknesses.

Thompson stated that there is extreme variability in the thickness and productivity of the various pay formations encountered and that one or more of these pay formations are absent in all of the wells shown. The cross-sections show that the Brown Dolomite gas pay formation is by far the most consistent and productive of any of the gas pays encountered.

Determination of Effective Porosity

On cross-examination witness reiterated that he had arrived at an average porosity of 20 per cent and that this figure was used in his reserve estimate. (Vol. LXXV, p. 11012.) It was his opinion that a 20 per cent porosity figure was the most accurate figure that could be reached. (Vol. LXXV, pp. 11053, 11054.)

Witness arrived at a determination of the average porosity through the examination of well cuttings, well logs, well cores, information that he could get from producers, etc. (Vol. LXXV, pp. 11001, 11002.)

Well cuttings are fragments of rock bailed out of the drilling wells—the samples of the cuttings can be bailed out when going through the gas pay if the open flow volume is not too great and cuttings are blown out of the hole from the gas pay in large wells. Sometimes big pieces of rock are blown out with good porosity in them. (Vol. LXXV, pp. 11002-11004.) Witness has examined a great many of the well cuttings under microscope (Vol. LXXV, p. 11010) and has examined many oil well cores under microscope covering a period of years. (Vol. LXXV, pp. 10995-10996.) The information obtained from the examination of oil well cores and the porosity determinations therefrom (Exhibits 216, 217; 218) has corroborated witness' previous ideas as to

porosity. Witness is permitted by the major oil companies to consult their collections of cuttings very freely at any time he desires. (Vol. LXXV, p. 11005.) The Gulf Oil Corporation, for example, had samples of well cuttings aggregating more than 250,000. (Vol. LXXV, p. 11009.) It can be determined where the cuttings are coming from that are blown out of the hole during drilling operations. (Vol. LXXV, p. 11006.)

Volume of Gas Produced from the Texas Panhandle Field from Beginning of Production to December 31, 1940.

Thompson did not utilize the gas withdrawal figures in his estimate of gas reserves. However, Schedule A of Exhibit 207 does show the production of gas up to January 1, 1939, which aggregates 7,156,238,820 Mcf. The witness deducted this figure from his original recoverable reserves at various assumed abandonment pressures in order to show the remaining reserves recoverable as of January 1, 1939.

Witness stated on cross-examination that he had accepted the Cotner and Crum figures of withdrawals (Exhibit 215) up to 1932, and as to subsequent withdrawals, had accepted Peterson's figures. (Exhibit 206, Vol. LXXV, p. 10975.) He accepted Cotner's figures because he had helped Cotner in the compilation of the figures and consulted with him very freely in the preparation of the Cotner paper, and he also knew the very great detail that Cotner went into in assembling his data and he was confident that his figures were approximately correct; and that such figures were accepted by the witness as the best available figures obtainable. In his opinion they could not be inaccurate enough to make any very great difference in the present remaining reserve estimate of the field. (Vol. LXXV, pp. 10977-10978.) The witness also testified that he had assisted Peterson in compiling his figures of withdrawals; that he knew that Peterson had spent a lot of time and very great care in the compilation of the figures and he was willing to accept them as being accurate. (Vol. LXXV, p. 10980.) He knew that it was necessary and that Peterson did convert some of the withdrawal figures from different pressure bases to a 16.4

pounds base, which is the base upon which the figures are given. (Vol. LXXV, p. 10987.)

The witness believes that you can estimate gas blown into the air with a fair degree of accuracy and he thinks Cotner did so. He was thoroughly familiar with the field and the witness has confidence that his work was sufficiently accurate that he does not hesitate to use it. (Vol. LXXV, p. 11094.)

J. D. THOMPSON, JR., also testified (Vol. 75, pp. 10994-10998; 11013-11015; 11033-11037; 11085-11086; 11099-11105) as follows:

By Mr. March:

Q. Did you examine any such cores of the company?
A. No, sir.
Q. Is that a pretty expensive process, taking those kind of cores?
A. I presume it would be. I don't know much about it.
Q. Did you ever see one taken?
A. No.
Q. Did you ever see any kind of a core taken?
A. I think I have seen cores taken.
Q. Where was that?
A. In the Panhandle field.
Q. Oil well cores?
A. Yes.
Q. Did you ever see any gas well cores?
A. I don't believe I ever have.
Q. Do you know of anybody that ever has?
A. I don't recall having anybody tell me that they had.
Q. Where were these oil well cores from?
A. From various wells in the Texas Panhandle field. I can't specify any particular one.
Q. Could you specify a particular one if I gave you time to check up on it?
A. No.
Q. Did you examine those cores under a microscope?
A. Yes.
Q. Do you have a record of it?
A. No.

Q. About how many have you seen?

A. Oh, I wouldn't know. Over a period of years I have seen a great many but I couldn't say how many?

Q. About how many have you examined?

A. That is what I say, that I can't remember.

Q. You have no record of any examination of an oil core?

A. That is correct.

Q. Do you know the process by which the cores are taken, the different processes?

A. They use core barrels.

Q. That is not the most effective process, is it?

A. I am not an expert on the technique of taking cores.

Q. Do you know how to direct somebody to take a core?

Mr. Spencer: If he isn't an expert, I don't see how he could direct anybody.

Mr. March: He can say so.

Mr. Spencer: Why repeat the same question?

Mr. March: I want to be sure. I want to have it in the record just exactly how it is.

The Witness: No, I wouldn't attempt to direct anybody in doing that.

By Mr. March:

Q. Have you in your office a core of any well from anywhere?

A. I used to have two or three pieces of core. I don't remember whether I still have them or not.

Q. Were they of oil wells?

A. I don't even remember what wells they came from. I picked them up as showing certain conditions which were interesting to me. I presume they were from oil wells, however, they were not from the pay formation.

Q. They were not from the pay formation?

A. No.

Q. Did you look at them under a microscope?

A. I looked at them under a hand lens.

Q. Did you make any notes on your observations?

A. No.

* * * * *

Q. Can you take any given gas well and tell me what the porosity is in that gas well specifically?

A. That would be rather hard to do.

Q. How's that?

A. I don't believe I can.

Q. Have you any working papers where you have computed the porosity upon individual gas wells in the Texas Panhandle field?

A. No.

Q. Have you ever seen any such calculations?

Mr. Keffer: If the Examiner please, just on that—I don't know that it makes a whole lot of difference. Mr. Thompson explains in his exhibit very clearly and rather carefully the basis of reserves estimated in the field by him in which he takes as one of his factors a 20 per cent porosity throughout the commercial area in the field. There may be wells that have a greater porosity and there may be some others that have less. That is almost certain to be true. I think he has already stated that he made no calculations on individual wells in order to get that average, but that is determined by an examination of cuttings and all other information that he could get.

For that reason I feel as though the question has really been answered in his written statement so far as that is concerned.

Mr. March: I will proceed on—

Mr. Keffer: How's that?

Mr. March: I won't stay on that point any longer; however, I do want to explore it enough to know what it is.

Q. Now, Mr. Thompson, I note that you—you might answer my question. You might answer the question pending here. Have you ever seen any porosity determinations on individual wells in the Texas Panhandle gas field?

A. Yes.

Q. Whereabouts?

A. I have arrived at what might be called porosity myself by calculation.

Q. All right, can you tell me the porosity on any given well in the Texas Panhandle field?

A. No.

Mr. Spencer: Are you talking about gas wells?

Mr. March: He said no, that's all I want. Gas wells is what I'm talking about, yes.

Q. Now, let's see, now, have you ever seen anyone else arrive at the porosity of individual gas wells in the Panhandle field of Texas?

A. Yes.

Q. Who?

A. Peterson.

Q. Peterson?

A. Yes.

Q. Have you ever seen his tabulation as to porosity of individual wells?

A. Yes.

Q. Well, where is it?

A. I don't know. It isn't here, I am sure.

Q. That's the only one you have ever seen?

A. It is all that I recall at the moment.

Q. Sir?

That's all that I recall.

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Q. I hand you a copy of Mr. Peterson's working paper and refer you to Page 10 and ask you if that is the well, Canadian River Gas Company Seay 1?

A. Yes.

Q. Will you give his thickness?

A. He gives a thickness of 52 feet.

Q. Now, Mr. Thompson, did you use this well in arriving at your pay thickness calculation?

A. I don't remember.

Q. Can you tell me any particular well that you used in arriving at the 70 per cent pay thickness?

Mr. Spencer: 70 what?

Mr. March: 70 feet pay thickness.

The Witness: I can't be absolutely certain.

By Mr. March:

Q. Well, have you a list of the wells that you used in determining your pay thickness?

A. No.

Q. There isn't such a list in existence?

A. No.

Q. How many wells did you use?

A. Nearly six hundred.

Q. There isn't any possible way for me to check upon the wells that you used?

A. No.

Mr. Spencer: How long ago did you do that work, Mr. Thompson?

The Witness: In 1938. In the early part of 1938.

By Mr. March:

Q. Did you then have notes on all these wells individually?

A. At the time I prepared the estimate I had a list of the wells which I assembled from my card file. I don't know that I had any further notes than that.

Q. Would you say that your 70.1 pay thickness that you arrived at was a pure judgment figure?

A. No. I didn't arrive at 70.1.

Q. What did you arrive at?

A. I arrived at 69.86, but I used 70 just for convenience. I think one must use his judgment in interpreting the pay thickness of the individual wells; so there is a judgment factor to that extent.

Q. You couldn't take the logs, then, of Canadian River and—driller's logs—another geologist couldn't go through them and get the same answer that you got just by looking at the logs?

A. I have explained to you that my card file on Canadian River carries a good deal more information than is contained on the logs. I found that the information on them was inadequate in a number of cases.

Q. So it wouldn't be safe to rely just on those logs and tabulate them as to pay thickness?

A. No, sir.

Q. Could you rely upon them in any case?

A. Now, just what case, for instance?

Q. I mean any particular case, any case. Just take those logs—suppose you take Canadian River's logs—could you rely upon them for any check?

Mr. Spencer: Any case or any purpose?

Mr. March: I mean in the case of any particular well or wells or logs.

Mr. Spencer: Rely upon them for what purpose?

Mr. March: I mean rely upon any of the well logs to determine pay thickness exclusively.

The Witness: No.

By Mr. March:

Q. So there is no way, then, that I can check your wells, your pay thickness calculations, is there?

A. No.

Q. Did you use the same wells that Mr. Peterson used?

A. No, I am quite sure I didn't.

Q. Well, do you have any idea of how may wells you used in common with him?

A. No.

Q. Would you say less than half or a third? Do you have any idea?

A. I have no idea. I never compared my list with his.

Q. Then you couldn't say whether you used any in common with him, could you?

A. I presume we must have. I know that I used a good many of the Texoma logs or pay thicknesses in Texoma wells, because I considered my information upon them was more accurate than on some of the other wells.

The Trial Examiner: Mr. Thompson, did you say that you have never compared your list with Mr. Peterson's? I thought you testified you had no list.

The Witness: I don't have at this time.

The Trial Examiner: I see.

The Witness: I made a list but I never compared my list with his.

By Mr. March:

Q. The list is non-existent today?
A. That is right.

• • • • • •

By Mr. March:

Q. Isn't one of the most productive areas of the Canadian River Gas Company near the Fritch compressing station?
A. There are some very good wells in that area.
Q. I note that around that area we have pressures of 346, 345, and 342.
A. That appears to be about right.
Q. Now, that being true, the pressures being down considerably there, what makes you conclude that just because the pressures are down in these wells, these oil wells which have penetrated the gas pay in which wells the gas is cased off, that the production is depleted—I mean, the gas is depleted?
A. The original reserve existing in that area has been depleted by the loss of pressure in direct proportion to the loss in pressure.
Q. Then we have here a direct relationship between pressure decline and loss of gas in place, don't we?
A. Yes.

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By Mr. March:

Q. Well, take his original recoverable reserves. What is your figure there at 25 pounds before you apply your recovery factor?
A. Well, they aren't recoverable reserves.
Q. Well, original recoverable, it says.
A. Well, that column you are refering to I believe says "Product," doesn't it?
Q. Well, I was referring to—yes. We'll say "Product" there. I was referring to the other column but I see I should have been referring to this one. What does "Product" mean?
A. I first found the amount of gas in place at zero pounds absolute.
Q. Originally?
A. Yes. Then in order to reduce that to wellhead gauge

pressures it is necessary to apply a Bureau of Mines' formula reducing it from zero absolute pressure in the field to the zero gauge pressure or 25 pounds gauge pressure or any other desired gauge pressure and so I multiplied the original reserve in place at zero absolute by this Bureau of Mines factor, getting a product which shows in Column 4 on Table A.

Q. Yes. It's 18,542,518,240,000.

A. At 25 pounds.

Q. Yes.

A. 18,542,518,240,000 cubic feet.

Q. Now, just above there is another figure which represents, as I see it, the product at zero gauge.

A. At zero gauge, that's right.

Q. What is that?

A. 19,661,265,912,000 cubic feet.

Q. All right, assuming that you would abandon at 25 pounds, you wouldn't produce any more gas, then between 25 pounds and zero is over a trillion cubic feet of gas, isn't there?

A. Yes.

Q. Now, does that amount to 10 per cent of the gas—does that amount to 10 per cent of the product at 25 pounds abandonment pressure?

A. No, it would amount to approximately six per cent, I believe.

Q. Six per cent?

A. Approximately that.

Q. Well, have you computed it?

A. No, I haven't, but 1 trillion is one-eighteenth of 18 trillion and I just made a rough guess. If it were 20 trillion it would be 5 per cent.

Q. Yes. In other words, the amount of gas which would be between zero pounds and 25 pounds at 25 pounds gauge would be approximately 6 per cent of your 18 trillion, which is the figure you have at 25 pounds, is that correct?

A. Yes.

Q. All right, now, there you have 6 per cent that you are going to assume that is in the formations, that you are not going to get out, that you are not going to want to get out.

Now, I ask you, when you pulled down to 25 pounds and still have 6 per cent of your total reserve—that's correct, isn't it—total original reserves?

A. Yes.

Q. —still in place, doesn't that make due allowance for any gas that would be impossible to recover?

A. No, I think you are confused, Mr. March. Now, that figure there we have been discussing—18 trillions plus represents just a mathematical calculation of the total gas existing in the field. I mean the total gas which could be withdrawn from the field, assuming that the field has an equal pressure of 25 pounds all over the field, not only at the wellhead but back away from the wellhead where we know there would be substantially higher pressures. Now, the gas represented by those substantially higher pressures would not be recovered, so it must be deducted from this total to get a recoverable figure.

Q. Yes, but you have 6 per cent there that you are saying that you will never recover, assuming every well goes down to 25 pounds before it is abandoned.

A. Well, that abandonment pressure may be arbitrarily selected at any point.

Q. Well, if we went up higher you would have a larger percentage in place between your zero and 25 pounds.

A. Sure.

The Trial Examiner: Mr. March, aren't you talking about the pressure for the entire field being down to 25 pounds rather than a 25-pound wellhead abandonment pressure?

Mr. March: I am talking about the wellhead abandonment pressure here at 25 pounds. I am saying this, Mr. Examiner: Assuming that every well did go down to 25-pound abandonment pressure, admitting that there would be pressures higher than that out in the formations and still gas left in the formations, that when you have a difference—by abandoning at 25 pounds you leave in the field at least 6 per cent of your reserves and that takes care of the situation instead of having to go ahead and apply another factor to the thing.

Mr. Spencer: Mr. Examiner, I think he has answered himself. Whenever he reduces his reserves to 6 per cent then he must have less than 25 pounds at the wellhead.

Mr. March: I am not going to reduce them. That's just the point. I am glad you brought that up. I am not going to reduce them to zero. I am going to leave them at 25 pounds and abandon them there, and that leaves 6 per cent of my reserves in the field. Now, I want to know why it is necessary to go ahead and apply another 10 per cent there and leave 16 per cent of the reserves in the field.

The Witness: Well, this basic calculation—I'll read the figures: The original reserve in place at zero absolute is indicated as being slightly over 20 trillion; then we make a basic calculation which assumes that you are going to get every foot of gas in the Panhandle field down to 25 pounds abandonment pressure. You multiply that 20 trillion plus by .91507 and arrive at 18,542,000,000,000, and so forth, which is absolutely all the gas there is in the field above 25-pounds abandonment pressure. You are assuming that you are going to get every foot of it.

Now, you won't get every foot of it because we know that there will be pressures in the field that will be substantially higher. Therefore, I feel that it is necessary to add a recovery factor.

By Mr. March:

Q. Yes, but if we abandon down to 25 pounds, leaving 6 per cent of the gas in the field, doesn't that take care of the gas which you couldn't get out if you went down to zero? In other words, here the situation is, Mr. Thompson, as I see it, if you abandon at 25 pounds instead of going back to zero, why, that leaves 6 per cent of the gas in place in the field.

Mr. Spencer: It leaves more than that. That's what he has been testifying.

The Witness: 6 per cent plus.

By Mr. March:

Q. 6 per cent in place in the field?

A. 6 per cent plus—

Q. Just a moment. But if you went down to zero, then you wouldn't have 6 per cent. You could then apply a recovery factor of 10 per cent because you wouldn't have

abandoned above zero, therefore, you couldn't have taken care of any of your gas which you could not recover which was out in the formations.

A. I think I have made my position just as clear as I can make it, Mr. March, on that.

Q. All right, sir. Now, I note with a great deal of interest the statement that Cotner and Crum made. I want to read it to you and see what you think about it.

Mr. Lange: What's the page number?

Mr. March: Page 895, the last paragraph on Page 895.

"As no water is present on structure in the gas pays or directly under them, the Panhandle field will no doubt have an ultimate recovery of all gas in the reservoir with the exception of a very small percentage." Do you agree with that statement?

A. Yes.

Q. All right, sir, that's all I wanted to know.

A. 10 per cent is a very small percentage.

Q. How's that?

A. 10 per cent is a very small percentage.

Q. Yes, but at 25 pounds you wouldn't have 10 per cent in the formations, you would have 16 per cent in the formations, is that correct?

A. Approximately.

Q. Yes, so, therefore, although 10 per cent is a very small amount, when you get up to 16 per cent, that's going up the line, isn't it?

Mr. Spencer: It is more.

The Witness: Yes, but I can tell you just exactly what Cotner meant by that.

Mr. March: I don't want you to tell me what he meant, because I don't think that anybody can tell what any other man means and give an intelligent construction of it.

The Witness: I would like to do that if I may.

Mr. March: I want to subpoena Mr. Cotner in here if there is going to be that kind of testimony permitted.

Witness Thompson also testified (Vol. 76, pp. 11134-11139; 11171-11173; 11242-11245) as follows:

Q. Now, I note that on Mr. Peterson's map he has a heavy line separating the two parts of the field, the east field from the west field. Is there drainage today—movement of gas between the east field and the west field, in your opinion?

A. I would say that there is no effective drainage—no pronounced drainage at this time in either direction.

Q. Would you say that there was slight?

A. Oh, there might be a slight drainage.

Q. Which way is the slight drainage?

A. Both ways—from the area shown colored yellow immediately south of the block fault area indicated in central Gray County. You will note that the contour of the isobars would indicate a drainage from that yellow area northeastward towards Wheeler County and also northwestward toward northwest Gray County.

Q. Do you know what extent that yellow area has changed during the last five years—the pressures there—looking at Exhibit 187?

A. Well, it couldn't have changed much. It is still about 400 pounds.

Q. If there is still about 400 pounds, then there could be little or no drainage, could there?

A. I said it was slight drainage.

Mr. Keffer: May I ask a question there?

Mr. March: Yes.

Mr. Keffer: Did you say, Mr. Thompson—or, would you say, Mr. Thompson, that five years ago that the whole area south of the barren spot in Gray County might not have been 400 pounds? In other words, your yellow area now above 400 pounds may be smaller today than it was five years ago, for example?

The Witness: Well, I am sure that it is smaller than it was five years ago.

By Mr. March:

Q. Now, Mr. Thompson, since there is no effective movement of gas from the east field to the west field and from the west field to the east field, just why in the world do you include the whole field in your estimate of reserves?

A. Well—

Mr. Keffer: I might make just one correction on the question you asked. You said "effective drainage" and I think Mr. Thompson said "pronounced drainage." That may be a distinction without much difference, but there is that difference.

By Mr. March:

Q. Well, is there any effective drainage between those two fields, the east field and the west field?

A. I don't consider that there is at this time. A situation might develop, however, that would make such drainage possible, and since the east field is losing its pressures rather rapidly, I can see the time coming when the pipe lines that are getting their gas from Wheeler County might build an extension over into the west field.

Q. If it moved over to the west field it would kind of equalize the situation, wouldn't it, and prevent any drainage to the east field?

A. Well, it would just add to the gas withdrawals from the west field. Naturally, it would tend to equalize them, having exhausted the gas in the east field, and they moved over to the west, why, that would just tend to exhaust the west field.

Q. Wouldn't gas move very very slowly through this low permeable formation south of the block?

A. Not in my opinion. I think you are right as can be on that.

Q. As I see, to the north here you have, for example, around the Lefors area, you have a very low pressure area which remains low in spite of the fact that there is large pressures around there. Now, if that hasn't built up, why, it is not likely that there will be any drainage from the east field to the west field or vice versa until those pressures build back up, is there?

A. No. Both the west field and the east field are now contributing to the repressuring of this oil producing area shown colored gray in the area immediately north of the block fault in Gray County.

Q. Well, this low area around Lefors here?

A. Yes.

Q. Are the pressures increasing?

A. I haven't made a study of that and I don't know, Mr. March.

Q. I see your isobar map indicates, I believe, here from 200 pounds in that area, about the lowest pressure in the field.

A. Yes, and that area in Wheeler County and in the Borger Sanford area in Hutchinson County are the largest low pressure areas in the field.

Q. If there wasn't any gas wells in the western part of the field, how long do you think it would take the gas wells in the eastern part of the field to drain the gas in the western part of the field, assuming you had the same formations you have got there now—the same structures, the same drilling program in this intervening area— the central area?

A. You mean if there were no oil and gas wells?

Q. No oil and gas wells, we'll say, west of the Roberts and Gray County lines.

A. West of the west lines of Roberts and Gray County?

Q. Yes, and you had the same structure which separates the two fields and you have the same productivity over on the eastern part of the field.

A. The same development conditions as now exists?

Q. Yes.

A. Oh, it would take a long time for the east field to have much effect on the west gas field.

Q. Two or three hundred years?

A. Oh, I don't know. I wouldn't even attempt to measure it in terms of years.

Q. It would be a very long time?

A. Yes, it would be a long time.

* * * * *

Does virgin pressures still exist in the Panhandle field of Texas?

A. I am not sure whether there is any place in the field where you have got absolutely virgin pressure, but there are areas where it is almost virgin pressure.

Q. All right. Now, as I see here, this helium dome is just about a little less than the difference between the nearest well in the Hugoton field and the nearest well in the Panhandle field on the north, is that correct?

A. The Hugoton field is up in Kansas.

Q. Yes.

A. That would be 50 or 60 miles away.

Q. The nearest well between the Hugoton field and the

Panhandle field, the nearest two wells aren't that far away, are they?

A. You didn't ask me that. You said the helium field.

Q. Well, I'll ask you that now.

A. There are wells in the Oklahoma Panhandle that are closer to the Amarillo field—I mean to the Panhandle field.

Q. About what is the distance between the nearest wells between the two fields, approximately?

A. Well, those wells in the Oklahoma Panhandle would be approximately—possibly 30 miles.

Q. The nearest one is 30 miles?

A. Yes.

Q. How do you know this is not all one great field, the Hugoton field and the Panhandle field of Texas?

A. I think they are separated by a syncline in northern Moore County. There may be a very small neck in northeastern Moore County which wouldn't be over three or four miles wide, where there may be a connection.

Now, that has not been proven and I wouldn't be willing to say that that connection exists, but I think there is a possibility that it may exist.

Q. The producing formations in the Hugoton field are just about the same as the Panhandle field.

A. That is my interpretation of it.

Q. There is an enormous amount of gas in the Hugoton field, isn't there?

A. I think there is. I am not in a position to discuss the Hugoton field as an expert because I have never made a close study of it.

Q. Has there been very much drilling between the two fields?

A. There have been several test wells drilled.

Q. There has been very little drilling, then, between the two fields?

A. That is right.

Q. It is largely unexplored in that area?

A. I think that is correct.

* * * * *

Q. Now, if there is a drainage indicated by your map—if there is drainage indicated by your map—I'm not saying that there is—isn't the principal cause of that drainage those Canadian River wells which are highly productive in the

southwestern part of Hutchinson County and the southeastern part of Moore County—northwestern part of Potter County—northeastern part of Potter County?

A. That appears to be true to me.

Q. Don't you think Canadian River is getting its share of the gas in there with all of those highly productive wells?

A. They are getting some of it as it goes by.

Q. As it goes by? How fast does it go by?

A. Well, I have seen those pressure contours change from year to year as we have drawn up the pressure contour maps of the field. There is always a very noticeable change with encroachment of the low pressure areas southwestward into Moore and Potter Counties.

Q. Do you know what the production of the Canadian River wells has been in the southwestern portion of Hutchinson County?

Mr. Spencer: Total or current?

Mr. March: Total from the beginning.

The Witness: I don't have that figure.

By Mr. March:

Q. Do you know what the total production of gas in the entire Hutchinson County area has been?

A. I don't have that figure.

Q. How do you know any gas is getting by?

A. By changes from year to year in pressure contour maps.

Q. Well, with all the enormous production which the Canadian River takes out of that area, aren't they largely responsible for bringing those pressures down there themselves?

A. They contribute to the falling pressure, but I don't think they are solely responsible.

Q. If they were producing their 25 per cent there they would certainly be contributing considerably to the decrease in pressures, would they not?

Mr. Spencer: That is a hypothetical question.

Mr. March: I am asking it that way.

The Witness: If they are producing 25 per cent of their capacity?

By Mr. March:

Q. That is right.

A. They would be contributing very substantially to the fall in rock pressure.

Q. Have you made any study to ascertain just what percentage of the total decline in rock pressure they are responsible for in that area?

A. I have made such a study but I am unable to give what the results were now. I don't remember.

Q. You really can't say, can you, for certain, if any gas is going to the lower pressure areas in the northeast?

A. I think that is unquestionable.

Q. Have you any figure to sustain that?

A. No. I can give you one illustration that I think might be valuable. In the Sanford-Borger area in spite of the fact that substantial production of gas is being taken, the rock pressures of the wells that are actually producing are rising from year to year.

Q. How much are they rising?

A. It varies quite a lot.

Q. What are the pressures in there now? It seems to me they are pretty low.

A. This booklet I have here in my hand is a booklet put out by the Dwight Well Log Service showing the determinations from tests completed by the Railroad Commission of the State of Texas for the summer of 1940. I have gone through reports of previous years and marked down the lowest rock pressures of any given well in that area and the date when that lowest rock pressure occurred, and if you compare that lowest rock pressure with the present rock pressure, it is quite apparent that these wells are building up rather substantially.

J. D. Thompson, Jr., also testified with respect to testimony given some years ago in the United States District Court for the Northern District of Illinois, in the Chicago District Pipe Line Company case. Commission Counsel quoted from his testimony (Vol. 94, p. 14350) as follows:

"Q. In the figures that you have used with respect to the amount of gas originally in the field, did that or did it not refer to recoverable gas?

"A. It does cover recoverable gas.

"Q. Does it exclude gas which you do not consider re-

coverable which may be in the field? Perhaps I ought to ask you, will you explain what you mean by recoverable gas?

"The Master: Yes, I think that is proper.

"The Witness: Well, I have assumed practically 100 per cent recovery. That has been accomplished in other fields. As the gas becomes more valuable it is sometimes desirable to put gas wells on a suction or vacuum to get it all out finally.

J. D. Thompson, Jr., further testified with respect to the testimony given in the Chicago case, and above quoted (Vol. 94, pp. 14377-14380) as follows:

Q. Mr. Thompson, I almost overlooked the matter in which Mr. March interrogated you about with respect to your testimony in the Chicago District Pipe Line Company case which was held before a Master, I believe, in the Federal District Court in Chicago.

Mr. March: That's right.

By Mr. Keffer:

Q. You gave an estimate of the gas in the field as you stated this morning and also an estimate as to the life of the field and I believe that the portion you read, Mr. March, he also gave an estimate of withdrawals for 1935, 1936 and 1934, is that correct?

Mr. March: I think he has read that part.

Mr. Keffer: It is in the transcript. I just didn't want to go over that.

Mr. March: That was in there.

By Mr. Keffer:

Q. Now, that case was held—that hearing was held, as shown by this transcript, in the summer of 1934, was it not?

A. Yes.

Q. Will you state, Mr. Thompson, whether there were any unusual conditions or at least any conditions occurring in the field or present in the field at that time which are not present in the field today?

A. Yes, there were. They were stripping and blowing to air huge quantities of gas.

Q. I will ask you whether you recall that an increase of stripping operations and popping gas into the air—whether it was on the increase or decrease at that time.

A. At that time it was on the increase.

Q. Was there any indication that you know of at that time that that practice would be stopped?

A. No, I anticipated that it would continue.

Q. If that practice had continued on through the years, certainly there would have been a much larger production of gas from the Panhandle up to this time than has been the case, is that not true?

A. Yes, that's true.

Q. Now, you also stated at that hearing, as disclosed by the reading of the transcript this morning which covered a portion of your testimony, that all of the gas in the Panhandle down to zero pounds pressure would be recovered, is that correct?

A. Yes, I did.

Q. I will ask you if there were any circumstances or conditions existing in the field at that time which do not exist today that caused you to believe that gas would be produced down to zero pounds in the Panhandle gas field?

A. Yes, the stripping plants had no transportation problem at all. They merely took the gas from the well, stripped the gasoline out of it, and popped the residue into the air. They could withdraw gas down to zero pounds in my opinion.

Q. The gas which was supplied in a given stripping plant was generally collected right around close to the plant, was it not?

A. Yes, I believe that is true.

Q. Not only did they have no pressure problems as far as popping the gas into the air, but they had a very insignificant pressure problem with respect to gathering the gas, did they not?

A. That is right.

Q. Do you believe that pipe lines in the Panhandle gas field will withdraw gas down to zero pounds pressure?

A. No, I think that they will do.

* * * * *

J. D. Thompson, Jr., further testified (Vol. 94, pp. 14388-14391; 14405-14407) as follows:

Recross Examination.

By Mr. March:

Q. Now, Mr. Thompson, do you know those wells that you just recited off here in the center of Potter County in the yellow area, have declines in pressures from 1939 to 1940?

A. Yes.

Q. Have you made a study of production from those wells during that period?

A. Oh, to a certain extent I probably have but not for the purposes of submitting any testimony here.

Q. Well, now, Mr. Thompson, then you don't know whether or not they produced enough gas, then, to drain that area themselves, do you? Strike that.

Do you know whether or not the wells that you just recited here as losing pressure during that period, that this one well up here in Section 31 was losing pressure without any production—eight pounds in pressure—do you know whether or not those other wells were producing large quantities of gas?

A. I presume they were producing rather substantial amounts of gas.

Q. Have you got the production there?

A. No, I don't have the production here.

Q. You testified I believe previously that you had made no study of the production from these various pressure zones which you have here. Well, now, have you since my last examination of you made any examination of the production of those wells?

A. You are referring now to the wells in Potter County?

Q. That's right.

A. No, I haven't.

Q. Well, now, Mr. Thompson, if you have not, how can you state that the reason—or imply the reason that this one well lost pressure of eight pounds without any production was because of long distance drainage over towards the Sanford-Borger area?

A. I think you are misstating what I said a little bit.

Q. You don't mean to leave that impression?

A. I meant to say that it has lost in pressure, which was due to drainage mostly to the north and northwest. I think that is the most reasonable interpretation that you can make on it.

Q. And have you studied the production of the field during that same period immediately to the north and to the northeast?

Mr. Spencer: He says he has not, Mr. March.

The Witness: No, I haven't.

By Mr. March:

Q. All right, then, how do you know, Mr. Thompson, that that gas which moves away from this one well here in Section 37 was not because of local drainage to other Canadian River wells right in the area?

A. You say in Section 37?

Q. Section 31.

A. 31, yes. I don't know exactly to which well such drainage might have gone.

Q. As a matter of fact, Mr. Thompson, if you haven't made a detailed study of the production of the wells and the Canadian River wells surrounding this one well and the wells which you recited a few moments ago, you can't tell whether or not it was local drainage because of the movement of about eight pounds away from that well or not or whether or not it was long distance drainage, can you?

A. I don't believe I claimed that that eight pounds moved a long distance. I am sure I didn't.

Q. Well, now, if these other wells that you recited here did have very substantial production during 1939 to 1940, it is very likely that they could themselves have been responsible for pulling that eight pounds down—the pressure down eight pounds.

A. Partially responsible but not competely responsible.

Q. What makes you think it is not completely responsible?

A. Because I think you have got a general migration of gas to the north and northeast all through that country.

Q. To the north is a chain of Canadian River wells, isn't there?

A. Yes.

Q. Then you haven't made a study of the production of those Canadian River wells to find out whether they could not have taken that gas, have you?

A. No. I have answered that question about ten times that I haven't.

* * * * *

Q. You were going to find out for me, Mr. Thompson, how many wells were producing gas in Hutchinson county. Did you obtain that information?

A. I believe so. The Railroad Commission listed in 1940 a total of 303 gas wells in Hutchinson County and also 14 oil wells which were producing some gas.

Q. How many wells—strike that. How many wells in the Borger-Sanford area have been sour gas wells that have blown sweet gas, do you know?

A. What do you mean? What do you mean "have blown sweet"?

Q. That is right. How many of the sour gas wells have turned sweet?

A. I have no data on that with me here at all.

Q. Did you ever make a study of it?

A. I have made observations concerning it on several occasions.

Q. If there has been vast amounts of gas removed from Moore County and Potter County and Carson County, sweet gas areas over into the Borger-Sanford area, why isn't all of that area sweet gas now?

A. Because there hasn't been enough gas to go over there yet to change it from sour gas to sweet gas.

Mr. March: That is all.

Redirect Examination.

By Mr. Keffer:

Q. Mr. Thompson, in respect to the last question that was just asked you—I am stating the law in this respect—it takes very little hydrogen sulphide to make gas sour, does it not?

Mr. Lange: Of course the law provides for the content.

Mr. Keffer: That is right. Mr. Thompson may not know the exact content but he knows it takes very little hydrogen sulphide to classify the gas as sour.

Q. Is that right, Mr. Thompson?

A. Yes, I do know that.

Q. And the wells in the Borger-Sanford area originally had a very high content of hydrogen sulphide, didn't they?

A. That is my information.

Q. Take an area in which the pressures have gone down to 200 pounds. There would still be a lot of gas left, wouldn't there?

A. Yes.

Q. Then as sweet gas migrated into the area where there was gas of hydrogen sulphide content to mix with it, it would take a tremendous volume of sweet gas to bring the hydrogen sulphide content down to the point where it would be classified as sweet gas, wouldn't it?

A. Yes.

Testimony of C. Dox Hughes
Witness for Canadian.

Canadian offered C. Dox Hughes as a witness, who submitted a reserve estimate for the Texas Panhandle Gas Field. Mr. Hughes' testimony, with respect to his estimate, is as follows:

Qualifications

Witness was born in 1896 and is now a resident of Amarillo, Texas, having lived there since February, 1926.

His technical education was received at the University of Kansas where he completed his course in geology in June, 1920.

He accepted a position with Empire Gas and Fuel Company in the summer of 1920 at El Dorado, Kansas, where he was in charge of the Empire geological work in the Greenwood County area. This work included supervision of the drilling of wells and recommendations concerning acquisition or surrender of leases.

In 1922 he was transferred to Duncan, Oklahoma, and was made District Geologist for Southwest Oklahoma. His duties consisted of the supervision of the drilling of wells, recommendations as to lease purchases or surrender, and reconnaissance field work, and in this connection he studied the entire Permian and associated formations of western, south-

western and southern Oklahoma. Much of this reconnaissance work was done in connection with Dr. Chas. N. Gould. The witness subdivided and mapped a large area between the Wichita and Arbuckle mountains and interpreted the regional structural geology of that area. He directed considerable core drilling along the north side of the Wichita mountains and made discoveries which necessitated a complete reclassification of the Permian beds in southwestern Oklahoma. This work was of particular value with respect to the Texas Panhandle Field because of the similarity of the Wichita mountains to the sub surface conditions in the Texas Panhandle Field.

In December, 1925, he was given an assignment at Cisco, Texas, in charge of geological work for the Empire Gas and Fuel Company in that area.

In February, 1926, he was transferred to Amarillo, Texas, as District Geologist for the Empire in charge of the Texas Panhandle Field. Development in the Texas Panhandle Field was just getting under way at that time and the Empire was active in drilling wells in that area.

He resigned his position with the Empire in March, 1929, and has been an independent consulting geologist since that date with continuous residence in Amarillo, Texas. The bulk of his time has been spent on work in the Texas Panhandle Field but has also included studies of parts of New Mexico, Colorado, Kansas, Oklahoma, Louisiana, Arkansas, Missouri, Mississippi and Tennessee.

During the past several years the major portion of his work has been confined to the Texas Panhandle Field. His clients have included many of the large companies and individuals, land owners and royalty owners, gas companies, carbon black companies, gasoline plant operators and the Attorney General's office of Texas.

He has directed the purchase of considerable gas acreage based on his geological interpretations, which includes most of the acreage purchases by the Panhandle Eastern Pipe Line Company in the Texas Panhandle Field. He also supervised the drilling of most of the early wells for this company. He has purchased leases for Consolidated Gas

Utilities Corporation in Wheeler County. He has done consulting work on oil problems in this area, which included recommendations as to buying and selling of leases, royalties and wells, and also included appraisals for inheritance and income tax purposes.

During his services with the Empire Gas and Fuel Company he supervised the drilling of many oil and gas wells and observed the completion of many wells belonging to other companies and individuals. He did much work of this character also for the Panhandle Eastern and in addition to the wells with which he has had personal contact, he has kept abreast of the completions of wells since that time by means of logs, samples of formations and other records.

He recommended the purchase of a gas lease on some 60,000 acres of the Burnett ranch in Carson County, Texas, utilized by the Cities Service for a gas reserve for its Kansas City line, which was one of the first major trunk pipe lines out of the Texas Panhandle Field.

(Exhibit 211, pp. 1-7, Vol. LXIX, pp. 10043-49.)

Estimate of Gas Reserves

The methods employed by Hughes in estimating gas reserves in Texas Panhandle Field are generally described in Volume LXIX, pp. 10050-10064, and Exhibit 211, pp. 1-16.

Practically all gas wells in the Texas Panhandle Field are drilled (completed) with cabled tools. When gas is encountered it can be detected at the mouth of the well and as the drilling continues and the flow increases this can also be detected. If the producing formations were thick and soft and porous large volumes of gas would be blowing into the air, but on the other hand if the producing formations were thin and hard and tight the increase as drilling continued would be slight and upon the completion of the well a small amount of gas would be evident. After watching the completion of many of these wells the witness concluded that large wells were encountered where the combined effective producing formations were thick and soft and porous, or where there was some combination of this arrangement, and ordinarily small wells were encountered where the combined effective producing formations were thin and hard and tight, or where there was some combination of this arrangement.

There are some exceptions to this rule. A few gas wells in the field have encountered crevices or cavernous conditions where large volumes of gas were found upon merely reaching the pay formations. This is also true in some of the Granite Wash wells where the vertical permeability is extremely well developed and where large volumes of gas are obtained immediately upon encountering the pay formations. These wells are in the minority. Based upon his own observations affecting several hundred wells, the witness has concluded that large gas wells occur where the pay is thick and soft and porous and that small wells occur where the pay is thin and hard and tight. The witness stated that this was also the unanimous opinion of others who are familiar with the Texas Panhandle Field.

The original virgin reservoir pressure was the same over the entire field. Reserves of gas in place is dependent upon pressure and upon the effective pay thickness and its porosity. Although there are slight variations it can be stated that the open flow volume of a well is dependent upon thickness of pay and permeability of the pay. Vertical permeability in this field is usually low which makes it necessary, generally speaking, to penetrate the entire producing formation. Since the large open flow wells are found where the producing formations are soft and porous it follows that in the Texas Panhandle field permeability is best where the porosity is best and permeability is least where the porosity is the least. It is the witness' opinion, therefore, that for practical purposes permeability varies with porosity.

Virgin Natural Open Flow is an important index to Original Gas Content because:

Reserves are governed by

Pressure (this is the same factor affecting both Reserve and Open Flows).

Thickness (this is the same factor affecting both Reserve and Open Flows).

Porosity (for practical purposes, in the Texas Panhandle this varies with Permeability).

Open Flows are governed by

Pressure (this is the same factor affecting both Open Flows and Reserve).

Thickness (this is the same factor affecting both Open Flows and Reserve).

Permeability (for practical purposes, in the Texas Panhandle this varies with Porosity).

The witness stated that if small gas wells were discovered in the Texas Panhandle Field where the pay was soft and porous, but low in permeability, then his conclusions would not be true. He stated, however, that the small wells did not occur under these conditions but on the contrary they do occur where the pay (producing formation) is hard and tight. There are exceptions to this general rule which consists of the freak wells which encounter their entire open flow volume upon reaching the pay. These wells are usually within areas of more normal conditions as indicated by normal wells around them and can thus be appraised as freaks (exceptions), but even if treated at full value in accordance with the open flows they would not affect the answer on the whole to any very great extent since the areas they affect are small.

There is a direct relation in the Texas Panhandle Field between virgin natural open flow and original gas reserves in place. The witness made some computations in 1930 based upon the porosity-thickness method and which computations included a number of gas wells upon which he had the most reliable information. These calculations indicated that where his thickness and porosity computations indicated a reserve of 10,000,000 cubic feet per acre that the well itself had about 10,000,000 cubic feet open flow and where the thickness and porosity calculation indicated 5,000,000 cubic feet per acre the well itself had about 5,000,000 cubic feet open flow. He then concluded that it was practical to go from the known areas into the unknown by means of the open flow comparisons without making thickness and porosity determinations. The virgin natural open flow in the unknown areas served as indicators of reserve, or original gas content in place. It then became his practice to arrive at estimates of

the gas content of leases by comparing the open flows of the wells in the areas in question with those areas concerning which he had complete data.

He has used this method for the past 10 years in his consulting work for various companies, large and small, independent operators, lease buyers and sellers, royalty buyers and sellers, individual land owners and royalty owners. This method has been used in making appraisals for concerns proposing to drill wells and build pipe lines and proposing the purchase of leases and wells and royalties as well as for the selling of leases and wells and royalties, and in connection with carbon black plant operations and proposed pipe line expansions and for inheritance and income tax settlements.

In the early stages of the development of this method his studies were on portions of the field only and involved separate leases and tracts and did not involve the entire field. When he later made estimates of the reserves for the entire field the method was then applied to the field as a whole. The application was made to the field as a whole by means of a map of the field which showed the natural open flow or potential of each well under virgin or approximately virgin rock pressure conditions. The field was divided into classifications based on open flows, but in determining his classifications he used in addition to the open flows his knowledge of structural and stratigraphic geology at the well and in the various areas of the field. In some cases the boundary lines between zones or classifications of acreage took into account corrections for wells that had been drilled in at slightly reduced pressures which meant that the well would have been larger had it come in at virgin pressure. The witness has later taken this into account by actually correcting the open flows of the wells to virgin pressure conditions before placing the open flow on the map. Such corrections have been made in accordance with the United States Bureau of Mines back-pressure curves. The witness then determined the average potential or open flow for each zone shown on his map. This was done by averaging the open flows of all of the wells in each zone after having studied the distribution of the wells and after having concluded that the average was representative. The witness

stated that there would be minor variations with respect to the exact limits of each zone but that this was taken into account in arriving at his average figure as representing the open flow of each of his zones.

These zones are shown in the colors on the zone map or productivity map prepared by Hughes, Exhibit 212.

The method has been refined from time to time, the greatest refinement having come with the completion of new wells giving more complete information on the exact zoning of the field by potentials or open flows. The field has been enlarged somewhat by the acceptance of the Railroad Commission's outline of the field. This has resulted in the inclusion of some 200,000 acres which the witness considered practically worthless for gas production. This also resulted in the addition of an additional zone to the potential or productivity map (Exhibit 212) so that now the witness uses five zones, the lowest zone being from zero to 500,000 cubic feet potential.

Additional refinements have come through the application of Boyle's Law (pressure decline) at various times and in various ways. This was accomplished by applying Boyle's Law at different times to areas within the field where it was considered that the effect of drainage could be evaluated and by weighting the pressures with acreage times potential instead of weighting pressures with acreage only. This gave a better weighted pressure because potential along with acreage constituted a better index to the varying volumes of gas contained in the formations. The application of Boyle's Law (pressure decline) to various parts of the field constituted a check or test on the witness' original observations but did not result in a revision of the factor of .919211, which is the factor he is now using and has used for a number of years. The areas utilized in testing the method are located in the eastern part of the field, the central portion of the field and the western portion of the field are representative of the field as a whole.

The estimate of original gas reserves of the field by the utilization of this method and by the application of the .919211 factor to the average potentials or open flows is described briefly as follows:

The average in each zone shown on the productivity map (Exhibit 212) is determined by actual measurement from the map.

The average open flow for the wells in each zone is also determined, corrections being made as hereinafter shown where such corrections are necessary. Consideration is also given to structural conditions and other data in order to arrive at a true virgin open flow condition or relationship.

The average potential or open flow for each zone, determined as hereinabove outlined, is then multiplied by the acreage in each zone. There is then applied to this product the factor of .919211. In other words the witness takes approximately 92 per cent of the product of acreage times average potential or open flow, which results in the volume of gas at zero pounds bottom hole or absolute pressure on a 16.4 pound pressure base. The sum of these products is then added, which gives the volume of gas in place for the entire field.

The addition of these sums for each zone results in a grand total of 19,822,646,947 Mcf. as the original reserve or gas content at zero pounds bottom hole on a 16.4 pound pressure base and this figure converted to a zero pounds wellhead pressure gives 19,233,517,929 Mcf. as the original volume of gas in place at zero pounds wellhead pressure.

The witness has then applied to this figure a recovery factor of 90 per cent. (The reasons for applying a 90 per cent recovery factor are hereinafter set out.) The result of the above computations gives an estimate of recoverable gas originally in place in the formation at zero pounds wellhead of 17,310,166,137 Mcf.

The witness has tabulated his estimate on page 15, Exhibit 211, giving his estimate of original recoverable gas in place at various assumed abandonment pressures from zero pounds wellhead to 100 pounds wellhead and also shows the present recoverable reserves as of August 1, 1939.

The estimates are as follows:

"Original Recoverable Gas Reserves of the Texas Panhandle Field on 16.4 Pounds Base, and 90% Recovery Factor.

0 lbs.	17,310,166,137 Mcf.
25 lbs.	16,325,198,631 Mcf.
50 lbs.	15,302,587,914 Mcf.
75 lbs.	14,279,798,799 Mcf.
100 lbs.	13,295,009,700 Mcf.

Total production from the field was 7,485,066,520 Mcf. at 8-1-39, and subtracting this from each of the above figures the

Present Recoverable Reserves (at 8-1-39) follows:

0 lbs.	9,825,099,617 Mcf.
25 lbs.	8,840,132,111 Mcf.
50 lbs.	7,817,521,394 Mcf.
75 lbs.	6,794,732,279 Mcf.
100 lbs.	5,809,943,180 Mcf.

The above figures may be converted to a 14.65 pound base by multiplying by 1.11945."

The above estimates are based primarily upon computations made from data shown on the productivity map prepared by Hughes (Exhibit 212). The outline of the open flow zones as shown on this map have been revised from time to time where the drilling of additional wells made it necessary. Revisions have not always been made, however, where the open flow of a well drilled in a particular zone did not correspond with the classification theretofore made. This is true particularly where the deviations from the zone map tended to compensate, and made no difference therefor, in the final result of the computations.

The witness in 1939 (Vol. LXXIX, pp. 11621-11624) again tested the zone classification (productivity classification) as shown on Exhibit 212, by studying the entire field in the light of all wells drilled in the field. He did this by classifying the entire field as to virgin natural open flow on a section by section basis (640 acres being a section) rather than by zones of similar open flow as shown on the map. Sections where no wells had been drilled were classified ac-

cording to the nearest development and according to geology as far as possible. The geology took into account structural position, type of pay (formation) to be expected, whether the tract was located in an area where the pay (formation) was well developed or not, and trends in those areas where evidence of porosity conditions existed. This proved to be a satisfactory confirmation of the zone or productivity map, Exhibt 212, although the computation based on the map gave a somewhat higher reserve estimate.

Hughes further testified on cross-examination that his method of estimating reserves, based upon potentials or open flow of wells, as corrected, is not a new method, but is one that has been in use in the oil business for a long time, and although the witness does not know of anyone that has used the method directly as he has used it, he has been convinced of its soundness for several years. (Vol. LXXVIII, pp. 11496, 11497.) That the only thing he had done in this case was to apply a well-known relationship between potentials of oil wells and reserves of oil. He has applied the same basic method to the gas field apd in his opinion it should work better in a gas field than it does in an oil field. (Vol. LXXVIII, p. 11525.) The method follows the fundamentals of physics. The pressure in the formation is one of the factors which you must know in order to estimate gas reserves. Thickness of the producing formations is another thing you must know. You must also know the porosity, and by that the witness made it clear that he meant *effective* porosity, that is, inter-connected porosity in the formation. Pressure influences open flows. Permeability, of course, governs open flows and this is related to porosity because you can't have permeabilty unless you have some effective porosity. The two start from a common point. If there were no porosity there would be no permeability, and thus they end with a common point. Permeability generally increases with porosity. All of these things follow the fundamental laws of physics and they are also correlated with the witness' practical experience in the Texas Panhandle Field. (Vol. LXXVIII, pp. 11499-11501.)

In the early stages of the development of his method, as applied to the Texas Panhandle Field, the witness had determined the porosity and thickness of the producing for-

nations in different areas of the field. His determinations as to porosity were not based upon cores but were made from porous pay formations that had blown out when the wells were being drilled, which portions the witness knew were coming from the pay formations because they contained gas. (Vol. LXXVIII, pp. 11465, 11466, 11468.) Pay thicknesses were determined from wells concerning which the witness had observed the actual drilling operations. (Vol. LXXVIII, p. 11471.) These observations in connection with the actual porosity and pay thickness determinations in these areas caused the witness to conclude that there was a relationship between potentials and reserves. (Vol. LXXVIII, pp. 11476, 11477, 11478.) The witness first determined the actual gas in place and relating this to the open flow volumes of the wells, arrived at a relationship. (Vol. LXXIX, p. 11610.) The initial tests were made prior to 1930 on a group of wells on the Burnett ranch in Carson County, Texas (Vol. LXXVIII, p. 11479); also tests in Wheeler County (Vol. LXXIX, p. 11679); also other studies and observations more recently in the western portion of the field (Vol. LXXIX, p. 11680), and his most recent study shows that his conversion factor should be lower than the one he has used in his Exhibit 211 (Vol. LXXIX, p. 11680).

The reasonableness of the factor has been further checked by taking each 640-acre tract in the field and making estimates as to each such tract which gave a figure a little less than his over-all estimate in this case. (Vol. LXXVIII, pp. 11548-11550, Vol. LXXIX, pp. 11623, 11624.)

On cross-examination Hughes was challenged by Commission counsel to cite any specific proof from published scientific journals to the effect that open flow indicated gas in place. The witness then referred to investigation 3313 of the United States Bureau of Mines, being a bulletin titled "Extent and Availabilty of Natural Gas Reserves in Michigan 'Stray' Sandstone, Horizon of Central Michigan." The report was prepared by E. L. Rawlins and M. A. Schellhardt. The report reflects that they made an estimate of gas reserves in Michigan on the porosity thickness method. To do this you must have porosity and you must also have thickness. The witness then quoted from the bulletin as follows:

"Two principal methods of analysis have been used in this report to determine the average productive thickness through a field. The first method is based on an average of the interpreted productive thickness of the individual wells in the field being studied."

"The second method is based upon an interpretation of average open flow volume per foot of productive thickness * * *."

The witness stated that it is quote obvious that Rawlins and Schellhardt arrived at thicknesses in individual wells that were studied, and in some wells where the thicknesses were unknown they used the open flow as an indicator of the thickness.

The witness stated that the persons making the estimate had to have an estimate of porosity and in order to relate this to an estimate of thickness of the sand, the open flow was taken as a guide. The witness doesn't assume an average porosity to relate to his open flow, and he stated that if he desired to follow specifically what was done in Central Michigan that he could assume a porosity of 20 per cent, say, and by means of the open flow estimate pay thickness. He could then use the porosity and thickness as the basis for a computation of reserves.

The only difference between what the witness does and what Rawlins and Schellhardt did was that the witness considered open flow as a guide to both porosity and thickness, while the others had an assumed porosity and with that assumed porosity considered the open flow as a definite guide to thickness. (Vol. LXXXV, pp. 12691-12694.)

The witness then stated that he had discussed with Rawlins just what he was doing in the Texas Panhandle Field, and how he had arrived at a relationship between open flows and reserves in place. He attempted to relate the conversation he had had with Rawlins on this subject. This was objected to by counsel for the Commission and the soundness of the objection was granted by counsel for Canadian and the conversation was not related. (Vol. LXXXV, pp. 12695, 12696.)

The witness stated that Rawlins and Schellhardt recog-

nized the direct relationship between open flow and reserves in place and merely went through the mathematics of showing the pay thickness that was necessary to accommodate that given relationship. It was an assumed proposition all the way through based upon the definite recognition of the relationship between open flow and the reserves in place. Vol. LXXXV, p. 12697.)

The witness again reiterated that what he did was to arrive at thicknesses and porosities in a group of wells, from which point with an observed relationship between open flow and reserves he went directly from that to the field as a whole and applied the relationship to the field as a whole. (Vol. LXXXV, p. 12698.)

The witness observed the thickness and porosity on a group of wells that established the relationship between open flows of those wells and the reserves, and Rawlins did the same thing in Michigan. (Vol. LXXXV, p. 12700.)

Productivity Map, Exhibit 212

Exhibit 212 shows a picture of the entire Texas Panhandle Field with respect to the various zones of productivity.

The legend on the map, Exhibit 212, indicates the zone of productivity evidenced by each color. The yellow color represents those portions of the field where the open flows of the wells are above 40,000,000 cubic feet per day. The area colored green represents the areas in which the open flows of the wells range from 25,000,000 to 40,000,000 cubic feet per day. The red color represents areas where the open flows of the wells range from 10,000,000 to 20,000,000 cubic feet per day. The blue color represents areas where the open flows of the wells range from 5,000,000 to 10,000,000 cubic feet per day. The gray color represents areas where the open flows range from zero to 5,000,000 cubic feet per day. (Vol. LXIX, pp. 10067-10071.)

Hughes stated on cross-examination that the zones of productivity shown on Exhibit 212 represent the appraisal of the witness with respect to the productivity of each zone (Vol. LXXVIII, p. 11527) and in the witness' opinion the zone map is sufficiently accurate to enable him to make his computations. (Vol. LXXVIII, p. 11528.)

The map classifies the entire field approximately in accordance with the open flows that would be expected to be found by wells drilled in the different zones had they been drilled at the time the field was all virgin pressure. The initial potentials utilized in constructing the map were gathered from various sources, including all of the logs the witness has accumulated over a period of years, investigations that he has made, and reports on various wells where he has had occasion to make a more detailed check, as well as a study of scout reports and tickets and many other types of information." (Vol. LXXIX, pp. 11618-11620.)

The drilling of subsequent wells, the open flows of which do not correspond precisely with the classifications on the map, does not destroy the value of the map for the reason that those deviations have actually averaged out—for example, the zone map that was made a year ahead of the present map and which was based upon the information that the witness had collected at that time, gave a total product of acres times potential approximately the same as the present map made a year later, after approximately 100 new wells had been drilled and spotted on the map. (LXXIX, pp. 11621-11624.)

Still a year later another survey of the field was made after an additional 100 wells, approximately, had been drilled and this study was based upon a section by section appraisal (640 acres to a section) of the potentials, and resulted in approximately the same figure. The drilling of new wells changed the picture so little that the witness did not change his estimate of reserves. (LXXIX, pp. 11621-11624.)

Some of the wells came in with a lower potential than the zone map would have indicated and others came in with a higher potential but the net result was that these deviations compensated each other. (Vol. LXXIX, pp. 11621-11624.) As a matter of fact the map is subject to being revised every time a new well comes in, but on the other hand, past experience has shown that these revisions when made have been so slight that the difference in the zones as figured over the entire field, is negligible. (Vol. LXXIX, p. 11669.)

The witness' attention was called to a number of possible

discrepancies, that is, concerning wells that were not shown in the proper productivity zones. The witness answered that such small discrepancies did not result in an erroneous zoning of the field; that in many instances he could have zoned certain areas or portions of areas lower than he did zone them, so that the errors, if they might be called such, are compensating ones (Vol. LXXIX, p. 11691), and that these small differences do not change the over-all picture. (Vol. LXXIX, p. 11677.) These possible discrepancies referred to are found generally in Vol. LXXIX at pages 11635 to 11731. The witness explained that the so-called discrepancies did not as a matter of fact exist but that the zoning of his map in the particulars referred to, was based upon his judgment of structural and geological conditions and his interpretation of the size and performance of other wells in the immediate area.

This was all checked very thoroughly by a section by section appraisal of the field, which check gave a somewhat lower figure than indicated by the map, Exhibit 212 (Vol. LXXIX, pp. 11694; 11695). Many of the wells shown on the map, Exhibit 212, were not converted back to virgin open flows, since this was done only as to wells completed in the past three years, but the great majority of wells, as shown on the map, were completed at dates when the pressures were still high and therefore represented approximate virgin conditions. There were also some wells drilled at lower pressures, as witness explained in his direct testimony, for which he made due allowances in the construction of his zone map. (Vol. LXXIX, pp. 11589, 11590, 11612-11614.)

The witness also stated that he had discounted to a certain extent the alleged well potentials in a portion of the sour gas area in north Moore County (Vol. LXXIX, p. 1185) and that this was necessary because sour gas is on a proration basis and that the potential of the well was a factor in determining its allowable production. That is, an operator could produce more gas legally from a high potential (open flow) well than from a well of lower potential and that he had discounted those wells for the reason that his investigation had convinced him that it was the sensible thing to do; that the high potentials in that area developed very largely after proration became effective and not before. (Vol. LXXIX, pp. 11859; 11860.)

A casual examination of the initial completions of wells in the Texas Panhandle Field shows that the exceptionally large wells were developed after operators of gasoline plants in that area became desirous of having as high a potential figure as they could get and by any means that they could get it. Some of the potential figures are taken with everything in perfect condition, every mechanical arrangement in perfect order. That has been the history of fields under proration. It is then that the demands arrive for high potentials in order to have a larger volume of production allocated to them. This is definitely the thing that has happened in the sour gas area of the Texas Panhandle Field. (Vol. LXXX, pp. 11836, 11837.) The extremely large wells generally are reported only in that part of the field where the operators need high potentials. They acidize them and shoot them and do everything else (to increase the potentials). (Vol. LXXX, p. 11838.)

The witness on redirect examination in support of the fact that he discounted to some degree the apparent open flows of the gas area of north Moore County, particularly, submitted a list of forty wells from that area. These forty wells were listed on the zone map, Exhibit 212, as having an average open flow of 50.7 million cubic feet per day. The witness then took the potentials of those same wells, as shown on the 1939 report of the Railroad Commission, and converted each one of them back to a 430-pound virgin open flow or potential. This calculation showed that the accurate original potential of those forty wells on the average, based upon their present performance, was only 31.64 million per day. In other words, the performance of those wells was only 60 per cent of what might have been expected from the open flows as originally reported and as shown on Hughes' zone map, Exhibit 212. (Vol. LXXXV, pp. 12723-12725.)

These wells are listed in Exhibit 212-A, which exhibit was marked for identification and introduced by Commission counsel. This exhibit shows the name and location of the wells, the original potential, as reported and as shown on Hughes' map, Exhibit 212, and the potentials as reported on the 1939 Railroad Commission report, but after the same had been converted back to the original potential at 430

pounds virgin rock pressure. The color band in which these wells were spotted on Hughes' zone or productivity map, Exhibit 212, and the color band on which these wells should have been spotted in view of the later performance of the same, is shown on the exhibit.

The witness again stated on redirect examination that although attorneys for the Commission had pointed out several cases where wells were placed in a lower zone of productivity than they should have been if potentials alone had been considered, that there were also many other instances where small wells, and even dry holes, had been placed in higher zone classifications than they should have been had potentials alone been considered, and that he had not seen fit to change his classifications simply because dry holes or small wells had been drilled in areas where large wells would have been expected; that although there are variations here and there from the zone or productivity map, Exhibit 212, it does nevertheless reflect rather accurately the productivity of the various areas in the field on an average. (Vol. LXXXV, pp. 12721, 12722, 12723.)

Later gauges by the Railroad Commission are very significant on wells of this type. Frequently the original reports did not represent gauges at all. This was all taken into account. (Vol. LXXIX, p. 11832.)

The witness further stated on cross-examination that he had not changed from his 1938 zone map as compared to his 1939 zone map, which is Exhibit 212. He had found from examination that he had enough wells in the different colored zones to show the proper average. This is especially true in the sour gas portion of the field because there the average figure was reached prior to the inauguration of proration in that area. Proration has caused a great demand for potential in that area and resulted in many cases in a definitely inflated figure. (Vol. LXXX, pp. 11835, 11836.)

Determination of Recovery Factor

Hughes' testimony with respect to the use of a recovery factor is set out in Volume LXIX, pages 10063 to 10066, Exhibit 211, pages 17 to 19.

It will be noted that on each computation of original gas in place at each assumed abandonment pressure that the

witness has determined the recoverable gas by taking 90 per cent of the estimated original reserves in place in each case. This has been done because the witness is of the opinion that the total original reserves of gas computed to any given abandonment pressure will not actually be produced.

When the average wellhead pressures in the field reach any particular abandonment pressure there will still exist pressure differentials out in the formation away from the well bore. The differentials must exist if the wells are to be produced down to the abandonment pressure. The differential consists of higher pressures, in the formation away from the well bore, than the pressures at the well. It necessarily results, therefore, that when the abandonment pressure is reached at the well that the average reservoir or formation pressure is some figure higher than that.

It is not possible to determine the exact volume of gas involved but it is definite that not as much gas will be produced down to an average well abandonment pressure as the computations to that point would indicate. It is apparent, therefore, that some percentage figure less than 100 indicates the recoverable gas.

Still another reason for using a recovery factor results from the effect of water that gets into the pay formation. Experience shows that water is actually getting into the reservoir from wells that have been drilled into bottom water and although these wells were plugged back they were not always successful in shutting off the water. It is known also that upper water is getting into the reservoir in some cases where casing has failed to completely shut off the water above the gas formations. This water from whatever source contaminates areas by horizontal migration after it gets into the formation. This results in the trapping off of gas in the formations thereby rendering it unrecoverable. This also results in the salting of the formations at the well which renders a well incapable of production. Some wells have been abandoned due to this occurrence. Many wells have been abandoned due to the fact that water has flooded out the gas.

Several wells have been abandoned due to caving shales, collapsed casing, or low potentials. Most of these wells were

abandoned while general pressures in the areas in which they were located were around 100 pounds or more. Each abandonment of this type, besides leaving the area involved with a possible water contamination, actually increases the areas between the remaining wells in which pressure differentials will exist.

Still another reason for applying a recovery factor is the fact that many portions of the field contain hard, tight, lean areas which may never be drilled, and therefore, their gas content, even though small, will not be recovered completely.

Considering the effects of all of the foregoing reasons the witness has concluded that a 90% recovery factor would be a fair and reasonable figure to use.

Permeability as Related to Porosity

Witness further testified on cross-examination that the application of his method of the estimation of reserves in Texas Panhandle Field did not depend upon an absolute and direct relationship between porosity and permeability. Relationship between open flow and reserves exists whether there is a direct relationship between permeability and porosity or not, but that for practical purposes in the Texas Panhandle Field porosity varies with permeability. (Vol. LXXVIII, pp. 11517, 11518.) The relationship between porosity and permeability is only one of the factors that is involved in the relationship between open flow and reserves. (Vol. LXXVIII, p. 11516.)

Porosity and permeability determinations made by Shell Petroleum Corporation, Exhibit 218, indicate quite a definite relationship between permeability and porosity. The witness stated that these tests reflected that where the porosity was zero to 5% with an average porosity of 3.2%, the average permeability was .14, but where the porosities ranged from 5% to 10%, with an average of 7.7%, that the average permeability was 4.4. Where the porosities ranged between 10% to 15%, with an average of 12.4% the permeability was 21.7. Where the porosities ranged between 15% to 20%, with an average of 16.6%, the permeability was 55.2. Where the porosities were above 20% with an average of 23.1%, the permeability was 468.2. These tests all showed a definite

increase in permeability with the increase in porosity. (Vol. LXXVIII, pp. 11509-11511.) Witness stated that there will be a whole range of porosities and permeabilities in each individual well. A large well must have a large porosity in connection with a large permeability, otherwise the large open flow would not be a sustained open flow. The sustained large open flow must have large volumes of gas in the formation to sustain it and those large volumes of gas must have large porosity in order to accommodate it. (Vol. LXXVIII, pp. 11513, 11514.)

Conclusions as to relationship between porosity and permeability should not be based on just a few comparisons or determinations but you must study enough of them to be able to get average results and see what the average relationship is. However, a study of the Shell tests shows a surprising degree of relationship. (Vol. LXXVIII, p. 11519.) Another reason why isolated examples cannot be taken is the fact that the permeability determinations as well as the porosity determinations are made from small portions of the actual core. In some cases the exact sample taken is no larger than a man's little finger and then again the permeability tests are made from one portion and the porosity tests from another. (Vol. LXXVIII, pp. 11519, 11520.)

Open flow is dependent upon sand thickness and permeability which is tied-in definitely with porosity (Vol. LXXIX, p. 11650), but the fact remains in the Texas Panhandle Field that where wells are drilled into thick porous pays that you do not have low permeability. Small wells are found where the pays are hard and thin and tight. (Vol. LXXIX, p. 11655.)

Witness was further cross-examined with respect to authorities and tests as to the relationship between permeability and porosity. This examination referred particularly to the statements made by Muskat in his work on "Flow of Homogeneous Fluids" and certain data contained in tests made by Pennsylvania State College.

Hughes stated that he agreed with the conclusions reached by both Muskat and the engineers who collected the data contained in the Pennsylvania State College Bulletin, which conclusions were that porosity and permeability did not

necessarily vary directly. He stated that he had always been of the opinion that the relationship between the two was not a direct one but that he recognized, as do the authorities above referred to, that there is a relationship and that in some cases permeability and porosity did vary in the same manner. The witness stated that in his estimate of reserves in the Texas Panhandle Field he had made no claim that porosity and permeability varied directly, but his experience in the Texas Panhandle Field had convinced him that the relationship there between porosity and permeability was a close one and that, therefore, there was a direct relationship between open flow and reserves. The witness also called attention to the fact that the authorities above referred to, were dealing with *absolute* porosity, but that permeability is dependent upon *effective* porosity and not absolute porosity. The porous spaces must be connected in order to permit the flow of fluids through a solid. The witness also stated that the relationship between permeability and porosity would be much closer in a gas field than in an oil field because gas would flow more readily through porous spaces than a viscous fluid like oil. (Vol. LXXV, pp. 12680-12691.)

Testimony of STANLEY GILL, Witness for Canadian.

Qualifications

Witness was born in 1899 and resides in Houston, Texas, where he conducts a consulting engineering practice. He was educated as a mechanical engineer, graduating from the University of Washington in 1920 with the degree of B.S. in Chemical Engineering. After the completion of his undergraduate work he attended Columbia University for three years, completing the graduate course in engineering with the professional degree of Ch.E. early in 1923.

Following a year as Assistant in the Physics and Engineering Departments at Columbia University he was employed in February, 1924, as Industrial Fellow of the Mellon Institute of Industrial Research at Pittsburgh, Pennsylvania, and was assigned to the investigation of oil field and pipe line corrosion problems for the Gulf Production Company and the Gulf Pipe Line Company. He moved to Houston in February, 1924, and has remained there since that time.

From 1924 until the end of 1931, he was continuously engaged in engineering work for the Gulf Production Company. During this eight-year period his duties expanded from those of his original employment and during the latter part of such employment he had charge of a group of engineers engaged in research in all phases of production and pipe line operations.

In January, 1932, he opened a consulting engineering office in Houston and has carried on a consulting practice continuously since that time. His consulting work has been concerned with engineering applications in all branches of oil and gas production and transportation. Among the lines of work which have constituted the greater part of his engineering practice during recent years the following are cited:

(a) The design, construction, development and operation of instruments for geophysical exploration;

(b) Study and analysis of geological and geophysical data and recommendation as to drilling wells on the basis of such data;

(c) Assistance in and supervision of drilling operations, particularly as relating to high pressure technique and the control of mud-laden fluids;

(d) Design and testing of drilling and production equipment;

(e) Valuation of oil and gas properties, including estimation of reserves and of future earnings;

(f) Valuation of physical properties; and

(g) Design and operation of high pressure gasoline and condensate recovery and gas recycling plants.

Most of his clients are large independent oil producers, although he has done some work for major oil companies and for associated groups of royalty owners and small independent producers.

He has been familiar with the Texas Panhandle Field since 1926 or 1927. At that time his work in the field was in connection with special problems relating to oil production and transportation and particularly to corrosion of equipment.

His first detailed work in connection with gas production in the Texas Panhandle Field was in 1935, at which time he was employed as an expert witness in a case against the Railroad Commission. Since that time he has maintained close contact with developments in the Texas Panhandle Field. On a number of occasions he has been employed on matters relating to the field and he has also carried on independent studies of pressure and producing conditions in that area.

In addition to the experience which he has had in what might be considered the routine problems in the development and operation of oil and gas properties, it has been necessary in his consulting practice to devote a large portion of his time to the extraordinary problems which grow out of those operations on particular properties. This has necessitated extensive analytical studies with the aid of men of wide experience in, and practical knowledge of, the industry and the particular problem presented. An intelligent understanding of the various estimates of the gas reserves of the Texas Panhandle Field requires an analytical study of this character. (Vol. XCI, pp. 13973-13978, Exhibit 265, pp. 1-3.)

Witness further testified on cross-examination with respect to his qualifications that he was not a geologist although he had taken courses in geology in both the University of Washington and Columbia. (Vol. XCII, pp. 14062-14065.) The witness majored in chemical engineering at Columbia, which had little to do with petroleum. The witness explained, however, that he was one of the generation of chemical engineers who preceded formal education in petroleum engineering. Most of his generation of petroleum engineers were educated as chemical engineers, mining engineers, mechanical engineers, or something of that sort. Formal education in petroleum engineering emerged the latter part of the 1920's and is not yet standardized. (Vol. XCII, p. 14066.) The witness during his last year at Columbia had charge of four laboratories and quiz periods in the physics department. He handled the laboratories, conducted the regular quizzes and graded papers and later had charge of two of the large chemical engineering laboratories. He, in collaboration with an instructor, wrote a laboratory manual for the

course in advanced electro-chemistry. These were advanced courses. (Vol. XCII, p. 14068.)

Witness further stated that from the very beginning his problems were concerned with corrosion of oil well equipment and particularly with corrosion of oil well screens and wells in the Texas Gulf Coast. The solution of this problem is purely an economic one and relates to costs of recovery of oil. This being true, it became necessary in connection with the problem to make estimates of recoveries of oil, and therefore from the very start of his employment with Mellon Institute a very considerable part of his work would be classified as petroleum engineering, since it was concerned with questions of recovery. (Vol. XCII, pp. 14070, 14071.)

Counsel for the Commission then cross-examined the witness at length on his qualifications with respect to the estimation of oil and gas reserves. This cross-examination is found in Vol. XCII, on pages 14072 to 14129.) During the course of the examination the witness testified that he had made estimates of oil reserves in some 100 different fields and was cross-examined on some fifteen of them. He also stated that he had estimated gas reserves in some fifteen or twenty gas fields. He named fourteen of them and was cross-examined to some degree upon those named.

Determination of Effective Porosity, Texas Panhandle Field

Gill stated that the average porosity of 20%, assigned to the commercial acreage by Thompson, was the result of his many years experience in the Texas Panhandle Field and other gas fields. Peterson on the basis of a similar background of experience has arrived at the same conclusion as to average porosity. Thompson based his use of the 20 per cent porosity figure upon close observation of Texas Panhandle Field wells and upon correlation of the results of these observations with recoveries that had actually been had from other comparable areas.

Gill stated that the very few records of actual porosity determinations which have been made on cores of oil wells in the field indicate a considerably lower average porosity. This is usual in the case of limestone or dolomite pays from which it is seldom possible to obtain cores of the most

porous parts of the reservoir formation. In general, opinion as to over-all recovery anticipation affords a more reliable guide for reserve estimates than do the results of actual tests on cores. Even in sand reservoirs where good cores can be obtained, the core samples represent at best a microscopic sampling of the formation and are of value principally as a guide for judgment as to its character. In the most elaborate applications of core analyses for the estimation of oil reserves they apply judgment in the form of a recovery factor to arrive at final estimates that seem correct in the light of experience. In the case of limestone or dolomite reservoirs, judgment is of even greater importance.

The witness does not believe that he would himself apply an average porosity as high as 20 per cent to the limestone and dolomite pays of the Texas Panhandle Field. He has never made a careful study of the field from this point of view, but he has devoted a great deal of study to recoveries of oil out of the limestone reservoirs. Data on a group of such reservoirs are contained in Table I attached to Exhibit 265.

Table I contains a list of sixteen limestone producing fields in Texas and New Mexico showing the county in which such fields are located, the name of the field, the producing formation and the anticipated ultimate recovery of oil in barrels per acre foot.

Gill stated that anticipated recoveries out of all but two of these fields are very much less than would be expected out of formations of 20% average effective porosity. The two exceptions draw their production from highly fissured and cavernous cretaceous limestone, recovery from which is greatly facilitated by the presence of a very active water drive. With these exceptions, the oil reservoirs listed in Table I, Exhibit 265, will not yield ultimate recoveries corresponding to average effective porosities of more than 10% or 15%. It therefore appears to the witness that the 20% average effective porosity figure used by Thompson and Peterson may be too high. (Vol. XCI, pp. 14011-14013; Exhibit 265, pp. 29-30.)

The witness further testified on cross-examination that porosity determination could be made from well cuttings

and that this was done in the Turner Valley Field, for example, in Alberta Province, Canada, in which field witness had done considerable work and had estimated the gas reserves. The porosity determinations in that field were made from the well cuttings by the Canadian Government and Province of Alberta, and were utilized by witness in making an estimate of gas reserves in that field. It is impossible to make a good determination of effective porosity from such cuttings but you can make a good determination of total porosity which is higher than effective porosity. The cuttings which formed the basis for the total porosity determinations were made here from a limestone formation. The cuttings averaged a little over one quarter of an inch in length and possibly a little over an eighth of an inch in width, and possibly a twentieth of an inch in thickness, and were rotary cuttings. There were only two wells in the field in which the well formation had been totally cored and from which cores porosity determinations have been made as to effective porosity. There had also been fair-sized pieces of porous formation that had been blown out of gas wells and porosity measurements had been made on these as to the effective porosity. These pieces of formation were blown out of the holes after the completion of the well. (Vol. XCII, pp. 14108-14110.) The producing formations in the Turner Valley field are found in the Permian limestone which is similar in geological age to the limestone in the Texas Panhandle Field and is similar to such limestone in all respects. The average effective porosity of the field is about 15%. (Vol. XCII, p. 14106.)

Determination of Thickness of Gas Pays

Gill stated that the average pay thickness of 70 feet applied by Thompson to the commercial gas acreage is in his opinion a close approximation of the actual average pay thickness. This figure was reached after a careful study of records of some 500 or 600 gas wells in the field. The witness states it is rather significant and highly important in confirming the accuracy of this figure that Peterson arrived at an almost identical conclusion as to the thickness of pay, as a result of his own independent studies of about the same number of wells. Thompson's and Peterson's estimates of pay thickness differ in detail. The list of wells employed by them were far from identical. Each used wells on which

he, individually, was able to secure what he considered reliable information. On the wells which were used by both there are, in some instances, differences in interpretation. Decision as to the actual thickness of pay is in many cases largely a matter of judgment, and Thompson's and Peterson's opinions as to a considerable number of particular wells have been somewhat different. Each arrived, however, at almost identical figures for the average thickness of pay over the entire million-acre commercial area, and this fact very strongly supports the opinion of the witness that this figure closely represents the actual average pay thickness. (Vol. XCI, pp. 14013, 14014; Exhibit 265, pp. 31, 32.)

The witness testified on cross-examination that he had studied the porosity and pay thickness in the Texas Panhandle Field over a period of years—about five and a half years; that he had probably not spent more than fifteen days actually in the field, but he had spent a great deal more time than this with records and calculations in the field. He never made an actual determination of pay thickness in the Texas Panhandle Field but he has studied the method utilized in determining pay thicknesses and has done enough spot checking and examination of records and logs on his own account to satisfy himself. He has checked a considerable number of wells used by Thompson in the determination of his pay thickness, particularly the wells of Texoma, and calculated the pay thickness of a good many of them independent of Peterson, and the spot checking which he had done was sufficient to satisfy him that both Peterson and Thompson had made good estimates of pay thickness. In spot checking pay thicknesses he utilizes logs principally. He also had drilling tickets in some cases. (Vol. XCII, pp. 14140-14146.) He has spent an aggregate of five or six days in checking the thickness determinations of Peterson and has checked a number of wells he had used, being enough to see how he arrived at his figures in order that the witness might determine whether the estimates were good. (Vol. XCII, pp. 14148, 14149.) The witness also spot checked quite a few of Thompson's pay thickness determinations from Thompson's cards; which were wells that Thompson believed he had used in his determination of pay thickness. He discussed the determinations of pay thickness with both Peterson and Thompson and discussed particular wells with them. (Vol.

XCII, pp. 14174, 14175.) The witness did not take Thompson's cards and attempt to compare the pay thicknesses shown thereon against Peterson's pay thicknesses for the reason that there was no point in doing so. This would merely constitute "piddling around with picayunish detail that doesn't help in arriving at a conclusion." The fact that Thompson and Peterson differ on a particular well isn't important when their final averages come out almost identical. That shows that errors have compensated and balanced. One of the two is in error where one has more pay thickness than the other on a particular well. Maybe both are in error but the fact that the averages are substantially identical shows that those errors have compensated and it seems to the witness that this would show an open-minded man that the two of them were certainly not working together. The determination is not the pay-thickness of a particular well but their estimate of pay thickness for the entire producing area. Peterson and Thompson independently arrived at what witness considers to be a very, very sound and reasonable estimate of the average pay thickness for the Texas Panhandle Field. (Vol. XCII, pp. 14198, 14199.) The witness accepts the pay thickness, as determined by Thompson and Peterson, but stated very positively that he did not adopt either Thompson's or Peterson's thicknesses as to each individual well in specific detail, but does accept their averages as being very reasonable averages. (Vol. XCIII, pp. 14275, 14276.)

Determination of Recovery Factor

Thompson used a 90 per cent recovery factor based upon his opinion as to recoverable gas reserves. As to this factor Gill testified that there may be considerable difference of judgment. 90 per cent is a very high recovery factor for a gas reservoir, but may be justified for the Texas Panhandle Field as a whole, since trapping by water, which is a common cause of loss of recovery in many of the gas fields, will have less effect on recoveries out of the Panhandle reservoir. It is his opinion that the use of a somewhat lower recovery factor might be proper in a volumetric estimate of this type and that the use of any higher recovery factor would be entirely out of line and improper. (Vol. XCI, p. 14015; Exhibit 265, p. 32.)

Relationship of the Open Flow of Wells to Reserves in Place

Hughes employed a method in estimating reserves that is based upon an empirically established relationship between initial natural open flow, corrected to virgin pressure conditions, and per acre reserve of recoverable gas. The method and factors employed by Hughes have been devised and determined by him during some fifteen years of constant observation and study of the Texas Panhandle Field.

Gill had been familiar with Hughes' procedure for something over five years and had spent a great deal of time discussing it with him. The witness stated very positively that Hughes had developed his method by very careful and conscientious study and that he had availed himself of every possible opportunity to subject his procedure to careful and unbiased, critical, scientific scrutiny. Although Hughes' procedure originated in the Texas Panhandle Field, through his comparisons between open flows and estimates of reserves arrived at on a volumetric basis, a principle is incorporated which has long been recognized in the oil and gas industries. Experience over a long period of years and through the production of billions of barrels of oil and trillions of cubic feet of gas has shown that there is a close relationship between initial unrestricted productivity and ultimate production recoverable from a field or area. The principle is recognized in the proration orders of state regulatory bodies, which include in most of their allocation formulae a factor of potential production. It is also common practice in many areas to base valuation of oil producing properties for purposes of ad valorem taxation upon the rate of production. Prior to the application of extreme production curtailment under proration, purchase and sale of producing properties was commonly based upon rates of daily production. In all of these cases there is recognition of the general belief that a large producing well must be backed up by substantial underground reserves, and that a small well of inferior producing ability definitely indicates an area in which the underground reserves are small. (Vol. XCI, pp. 14016, 14018; Exhibit 265, pp. 34 and 35.)

The witness has on several occasions made rather detailed studies of the actual relationship between initial production and ultimate recovery in the case of oil fields. Although com-

parisons cannot be made between different fields on this basis, he has found in a number of cases that within a particular oil field the quantities of oil actually recovered from different leases and from different parts of the field was on the average quite strongly related to the initial unrestricted potentials of the wells. The witness would expect the relationship to apply more closely to gas properties than to oil properties, since the performance of a gas well reflects conditions over a considerably wider area than does the performance of an oil well. Hughes has established the fact that in the Texas Panhandle Field there is a definite, and on the average, a remarkably consistent relationship between initial open flow of wells and the per acre reserves of gas estimated by the application of volumetric methods and pressure-decline methods. Although individual wells and properties may diverge from the average, these departures are the exception rather than the rule and the agreement between Hughes' procedure and other methods of estimation is close. Hughes is currently using a multiplier of .919211 to convert from open flow to per acre reserve. This multiplier expresses the slope of a straight line curve of the average relationship between open flow and underground reserves. The application of this factor to a map zoned largely on corrected initial open flows results in Hughes' estimate of field total reserves. (Vol. XCI, pp. 14018, 14019; Exhibit 265, pp. 35, 36.)

There are two theoretical factors concerned with well performance, which may well be considered in connection with Hughes' procedure of estimation. The first of these is Hughes' use of natural open flows, corrected substantially to virgin reservoir pressure conditions. The witness feels that Hughes is entirely correct in applying these open flows rather than open flows at completion pressures or open flows after shooting or acidization. Hughes corrects completion open flows to virgin reservoir pressures by the application of back pressure curves of average slope. On the average this procedure will lead to a reasonably accurate estimate of what would have been the natural open flow of a well drilled at the particular point before pressures had been reduced by withdrawals of gas through other wells. This so-called virgin natural open flow will bear a closer relationship to reservoir conditions than will the open flow

at a partially depleted pressure or the open flow after acidizing or other treatment, which increase open flows by their effect upon permeability of formations closed to the well bore. Such increases do not truly reflect conditions in the area tributary to the well. (Vol. XCI, pp. 14019, 14020, Exhibit 265, pp. 36, 37.)

The witness further testified concerning this subject on cross-examination and stated that he had discussed with Hughes many of his calculations and the data upon which they are based and that although he is not at all certain that Hughes is absolutely correct in everything that he has done, he has arrived at a reasonably consistent method which is pretty well sustained. He has checked it by applying pressure-decline to limited areas that are in his opinion relatively free from influence of drainage and in some cases to subdivisions of areas, and in applying the pressure-decline test he weighted area and per acre content. This does not mean that he had his answer before he started. It is merely a method of checking the procedure and it is a very simple engineering procedure to check the validity of an answer of that kind. It is simply that you work the same thing two ways and come out with about the same answer. It serves as a double check on the procedure; for example, you can take the pressure-decline and figure back to a per-acre content.

You can also take the factor which Hughes used and calculate over from his zoning and the open flows of the wells in the zone to an acre content. If the two came out just about the same it would mean that the two were giving results that were in reasonable conformity. If one method consistently gave results that were higher than the other that would lead to a revision of the constant or multiplier (factor). Hughes arrived at the per acre content by the application of his factor against his open flow zone. He could then have applied, and in some cases did apply, the pressure-decline method in the limited area with which he was dealing, and weighted out the pressure-decline on that area and the per acre content and arrived at such weighted pressure-decline for the area. He started with a per acre content and he weighted the pressure-decline per acre to arrive at a weighted pressure-decline. Then in many cases he took the per acre content which he calculated by the

application of a factor, and combined these two and reached a figure for the total reserve of the area with which he was dealing. He could then apply against that estimated reserve at the beginning of his period the amount of production that had come out of the area during the period for which the pressure-decline was determined, and from that could have calculated from the production and the original reserve what the pressure-decline should have been. He would then have arrived at two independent figures for the same pressure-decline. One of them resulted from taking the surface pressures and weighting by area and per acre content, and the second, by relating his estimated original reserve to the withdrawals to reach a pressure-decline. If his estimate of per acre content was correct those two methods would give exactly the same figure for pressure-decline. If they wound up with different answers that would mean that his factor was probably wrong. If, over a series of such checks, there was a consistent trend shown, that is, if it showed that his estimates of per acre reserves were consistently high—consistently too high—to make those calculations come out even, then it would be time to revise the factor. The witness has seen his calculations on these various areas and has gone over a considerable part of the data. The witness believes that an independent application could be made of the pressure-decline method and, if made on the same area from the same data, and made honestly and competently, it would check with Hughes' estimate of reserves. The true weighted average pressure could be determined approximately by weighting pressures on surface area alone where applied to a zone, as Hughes did, where the per acre content was substantially equal throughout the zone. There are only two sets of conditions under which a pressure average on surface acreage alone can truly represent actual average pressures, that being when the pressure is equal in all parts of the reservoir or when each and every acre in the reservoir is underlaid by exactly the same volume of gas bearing voids. Mr. Hughes approached that second condition when he limited his calculation to an area in which, in his opinion, the reserve under one acre was about the same as the reserve under every other acre. Therefore, he weighted the pressures within that particular zone on surface acreage alone and got approximately an average weighted pressure on volume for that zone. He then took the next zone and

treated that separately. He didn't try to combine the two. This will serve as a sufficient check upon the field as a whole if applied to enough areas. Hughes extended that check pretty well over the whole field. The witness has gone over Hughes' work and believes that his zoning of the field is within reasonable limits of accuracy. (Vol. XCII, pp. 14183-14187, 14189-14191, 14193-14196.)

Witness explained that when he said that Hughes' zoning of the field was within reasonable limits of accuracy he had in mind that there was some error inherent in such studies. The more thorough the studies and the more thorough the data, the less the error becomes, and as time goes on the estimates get better and better and more accurate. Hughes' estimates of reserves of the Texas Panhandle Field have varied perhaps ten per cent as his data and checking and weighting of the thing lead his opinion to be improved upon and to be grounded upon sounder and sounder results. That is a common engineering practice where the accuracy of results is limited by the extent of the data available. Hughes' estimates have been developed over a period of years by continuous study testing and weighing and improvement to arrive at his best opinion as to the reserves. It is the witness' opinion that his estimate of reserves is pretty close to the actual facts. (Vol. XCII, p. 14196.)

The witness further testified on cross-examination that all of the wells shown on Exhibit 212 were not corrected back to virgin open flow conditions but the ones where the corrections amount to a substantial amount have been corrected back. Many of the wells were completed close to virgin pressure and the correction was so small in those wells that it wasn't necessary to make the correction. The witness knows this to be a fact because he contoured a couple of maps of the Texas Panhandle Field based upon corrected virgin open flows and is familiar with those figures. The witness checked Hughes' zoning of the field as detailed on map sent him in 1938 or 1939. The map he checked was not colored but it did have potentials noted on it. He checked those potentials against the Railroad Commission's open flow potentials as of that date, which he corrected back to virgin open flow in order to determine if they were in reasonable correspondence. No corrections were made in the high pressure areas because the figures used by Hughes

were close to the open flow figures of the Railroad Commission's report and therefore they were considered to be about right. The witness stated that he knew all the open flows recorded on the map, Exhibit 212, were not initial open flows at virgin pressure but that there are a sufficient number of them to support an estimate of reserves. Some of the open flows on the map don't mean anything, particularly because many of them are incorrect open flows that have been reported on the initial completion of wells and where the initial reports were erroneous these wells were not used in determining the averages. (Vol. XCII, pp. 14200-14204.)

Hughes' method will work whether he has the initial virgin open flow of every well or not. It would work just as well on most any type of uniform correction of open flows in order to make the open flow figures which he used for different parts of the field comparable with each other. The principle would apply just the same. His factor is based upon the study of factual relationships upon the field and is determined by that. (Vol. XCII, pp. 14205, 14206.)

It is the opinion of witness that it does not necessarily follow that a 10 million foot open flow represents approximately 10 million cubic feet of gas per day in place, but that he does think that this ratio is approximately correct in the Texas Panhandle Field. The witness bases this conclusion upon studies he has made which have led him to believe that the relationship stated by Hughes is approximately correct. The witness has made a good many studies of this in the Texas Panhandle Field and has made a good many studies of the work that Hughes has done and he has studied the work of other people. This conclusion is not based solely upon what Hughes did but, as stated, the witness has made a number of studies and has made independent personal estimates of the total reserves of the Texas Panhandle Field from which he learned a great deal. He has examined specific data on a large number of wells in the field. He is familiar with the performance of gas reservoirs in general, including the Texas Panhandle Field, and he bases his opinion not on any one part of his various studies, but on the whole. (Vol. XCII, pp. 14206-14208.)

The witness and those working under him spent at least a thousand man-hours of work on checking Hughes' zone

map in early 1939 (the predecessor of the present map). They calculated back and checked every one of the open flows shown on the map. That is, corrections were made in open flows where the well was brought in at a pressure so low that the correction was of importance. The witness and the men working under him took one of the maps and checked the potentials all the way through and contoured the map on virgin open flow potentials and made many calculations from them. They found the potentials on the map to be quite reasonably accurate when compared against the Railroad Commission's records. The map was checked against the latest report of open flows from the Railroad Commission, well by well. (Vol. XCII, pp. 14220-14223.)

The map that the witness checked was the one submitted by Hughes in the Texoma case and every well on the map was checked and the data were found to be reasonably accurate. (Vol. XCII, p. 14224.) (Hughes has heretofore testified that the map, Exhibit 212, is the same map that was submitted in the Texoma case, Vol. LXXVIII, page 11491).

Permeability as Related to Porosity

Gill testified on direct examination that the theoretical considerations bearing on the propriety of using open flow as a measure of reserves in place are rather complicated. In the simplest sense they are compared with relationships between permeability and porosity. Technically porosity and permeability are more or less inter-related but are not mathematically determined as to value by this relationship. The theoretical relationship between porosity and permeability is rather qualitative in nature, and may be expressed by the statement that permeability cannot exist at all in the absence of porosity, and that effective porosity, which may be loosely defined as that porosity from which fluids can be withdrawn into wells, cannot exist at all in the absence of permeability, since permeable interconnection is necessary in order to make the porosity effective. As a practical fact the relationship between porosity and permeability is much closer than this generalized statement might indicate. Within a particular pay formation it has been found, in many cases, that there is a rather direct relationship between permeability and porosity. This statement applies to aver-

ages, and many individual specimens will show relationships that vary either way from the average. In general, however, it is true that within a particular field a definite relationship between permeability and porosity frequently exists. (Vol. XCI, pp. 14020, 14021; Exhibit 265, pp. 37, 38.)

Permeability is not by any means the only factor which determines the open flow of a gas well. Although high permeability in the part of the formations immediately surrounding a well bore is necessary for a well of large open flow, there are conditions under which such high local permeability may not result in a large well. For example, the well bore might encounter a small local area in which the reservoir rock was extensively fissured or contained very large, continuous pores. If this were only a local condition, and if the large fissures or pores were fed by a formation of extremely low porosity, the well would not be able to sustain a high rate of open flow, since gas could not be fed rapidly enough to the local spot of high permeability. A high, sustained rate of flow for a gas well is possible only when the formation tributary to the well contains a large volume of gas. The volumetric content of the reservoir formation, which is one of the controlling factors in open flow, is dependent upon the thickness and porosity of the porous formation. (Vol. XCI, pp. 14021, 14022; Exhibit 265, pp. 38, 39.)

. . . . . .

STANLEY GILL also testified on cross examination (Vol. 92, pp. 14140-14146; 14179-14181) as follows:

Q. Have you ever made an estimate of reserves of the Texas Panhandle field?

A. I have made a good many of them.

Q. Where are some of them? Have you ever put them in evidence in a case?

A. No, sir.

Q. Have you ever made them for a company and furnished the company with a copy of it?

A. I have furnished Texoma with the results of a good many of them. What I have attempted to do is to make a proper application of pressure decline methods for the Texas Panhandle field by various methods of weighting and by various methods of calculation, and each time I have made such an estimate I have weighed that estimate as impartially as I have tried to weigh the estimates that have

come into this case and have decided that they were not good.

Those estimates have ranged from 22 trillion to 34 trillion, depending upon the methods that were used. None of them have stood up under my own analysis where I would be willing to accept them as correct estimates.

You understand, Mr. March, the treatment and analysis of these declines that I have applied to the estimates of Mr. Hammer and Mr. Stevens aren't something that I have invented for this case. I have been using it against my own estimates for many years.

Q. Well, you can't—you never had—

A. They are my own estimates and if my own estimates fail to stand those tests I discard them.

Q. You have never testified in a case in which you have made an estimate of the reserves of the Panhandle field of Texas?

A. Of course not, because I have never made an estimation that stood up, when I tested it impartially, and I have never made an estimate that I considered myself was a truly correct estimate.

Q. Why didn't you try the porosity thickness method?

A. I considered that the use of the porosity thickness method which had been made by Mr. Thompson and Mr. Peterson was far better than any application I could have made of it because of their far greater experience and knowledge of the field. I, therefore, did not waste time on trying to make a porosity thickness estimate which would have been in my opinion inferior in quality to the ones that they had made.

Q. Well, if you have never made a study of the application of the porosity thickness method in the Panhandle field of Texas of your own, how do you know that theirs is right?

A. I didn't say I had never made a study of that method in the Texas Panhandle field, Mr. March. I have, and I have over a period of years.

Q. How many years?

A. Well, it's a little arithmetic—about five and a half years.

Q. How much time have you spent in the Texas Panhandle field during the last five and a half years?

A. I don't suppose during the last five and a half years, I don't suppose actually, physically, I have spent over fifteen days in the Texas Panhandle field. I have spent a darn-sight more time than that with records and calculations on the field.

Q. Furnished to you by Mr. Thompson and Mr. Peterson and Mr. Hughes?

A. Some of the information.

Q. Did you have it furnished by anyone else?

A. Yes.

Q. Who?

A. Well, I had a considerable amount of data from Phillips Petroleum Company.

Q. What sort of data?

A. Well logs, principally.

Q. Have you got those?

A. I had pressure tests; I had a mass of information from the Railroad Commission of Texas.

Q. Did you ever make an examination of the pay thickness and the porosity of the Texas Panhandle field?

A. As I told you, I have studied that method and I have done enough spot checking and examination of records which —both on my own hook—of logs and more particularly with Mr. Peterson and Mr. Thompson so that I am personally satisfied to accept their estimate of thickness.

Well, that's what I have done from my own studies of this method.

Q. Did you ever try to make an estimate of thickness of the Panhandle field of Texas yourself?

A. Mr. March, I don't like to have to tell you the same things over and over. I have spot checked their methods but I have never myself made an estimate of average pay thickness over the entire Texas Panhandle field.

Q. Have you ever spotted the wells that Mr. Peterson uses on a map of the Panhandle field of Texas?

A. No, I never have.

Q. Do you know how many wells Mr. Peterson uses?

A. Something over 600.

Q. Have you ever made an examination of any of those wells to check them?

A. Of a considerable number, as I said.

Q. Which ones have you checked?

A. I don't remember, Mr. March.

Q. Can you name one that you have checked?

A. Well, I have checked with Mr. Peterson practically every one of the Texoma wells. I would say every one of the Texoma wells that were drilled prior to 1936 and most of them that were drilled from 1936 to 1939.

Q. Did you check the pay thickness calculations?

A. Now, if you want me to, I'll read the names of those wells.

Q. That is a list of all the Texoma wells?

A. That's right.

Q. Well, there is no need to read the list. You have designated them sufficiently clear, but I will ask you this:

Did you, independent of Mr. Peterson, calculate the pay thickness for those wells of Texoma?

A. A good many of them.

Q. Well, how many of them?

A. I don't know.

Q. Which wells did you calculate the pay thickness for that Mr. Peterson used?

A. I told you, Mr. March. I thought I made it clear that I had done enough spot checking to satisfy myself that both Mr. Peterson and Mr. Thompson, independently, had made what I considered good estimates of pay thickness. Now, I have used that pay thickness only a very general way. I think the pressure decline method is a much better method of estimating reserves than pay thickness when it is properly done.

Q. Of the Texas Panhandle field?

A. Any field, and of course it is terribly bad when it is improperly done.

* * * * *

Q. You testified in the Texoma case in your examination, I believe, by Examiner Simpson, on Page 1512 and 1513:

"By Mr. Morgan:

"Q. Can that method of computing reserves be applied to the Texas Panhandle field, Mr. Gill?

"A. I think it is possible to apply it by weighting to a per acre content of the field, which is essentially what Mr. Hughes did in arriving at his constant. That is, he weighted his pressures both to area and to per acre content in order

to arrive at an average pressure. I think you get a fair approximation that way."

You were speaking there of the pressure decline method as applied by Mr. Hughes. There your testimony is. Is that correct?

A. I presume so.

Q. Well, now, what pressure decline method of Mr. Hughes were you talking about?

A. It is stated exactly there.

Q. I see. Well, how did he apply it there?

A. It is just stated in what you just read, Mr. March. This is from Page 1513 where you were reading:

"That is, he weighted his pressures both to area and to per acre content in order to arrive at an average pressure. I think you get a fair approximation that way."

Now, that explains just exactly; that is, by combining both as to area and as to per acre content he did get a weighting on volume, a sort of weighting on volume, a fair approximation, as I have called it there. He did get a fair approximation of a weighting to volume of gas.

Mr. Gill further testified (Vol. 93, pp. 14254-14257; 14259-14263; 14267-14268; 14270-14272) as follows:

By Mr. March:

Q. I will refer you to Page 42 of your written statement, Exhibit No. 256—265, where you state:

"Not only do such withdrawals bring about extensive drainage, but they are of importance in controlling future trends of withdrawals. For example, heavy withdrawals of gas from Wheeler County may be expected to lead to premature reduction of pressure, and to a shift of withdrawals into the sweet gas area of Moore County."

Now, I want to know what study you have made to ascertain whether or not there will be a shift of the operations of the companies producing in the east field to the west field.

A. Oh, that isn't based on a detailed study. It is just a matter of common sense and common knowledge. It is an inevitable thing.

Q. How do you know they won't go to some other field?

A. Well, it's just that that is the most reasonable expectation. There is no—there will be a rather strong incentive to stay in the Panhandle because of the fact that to a considerable extent the trunk line and gathering line investments have already been made and as long as there is gas in the Panhandle it will to a considerable extent be more economical for those people who are now getting their supplies out of the east field to remain in the Panhandle than it would be for them to jump off into some other field which might require considerable additional trunk line investment.

Q. Isn't it quite probable that some of them will go out to the Hugoton field?

A. I don't know about the Hugoton field specifically but I think it is quite probable that some of them will get some of their supply from other fields when the east field won't supply them any further, but on the other hand I think it is absolutely certain that part of the demand now satisfied out of the east field will be taken up out of the west field when the east field production peters out.

Q. Don't you know that some of these companies producing gas out of the east field at the present time have large holding in the Hugoton field immediately north of the Panhandle field?

A. I understand that they do, and it is also true that some of the companies in the east field could reach up into the west field far less expensively than going to Hugoton.

Q. Well, isn't the acreage pretty well taken up already in the west field?

A. Generally speaking, yes, sir, but there is acreage which is not now connected.

Q. I thought it was your general opinion the whole field would be pretty well depleted at the same time.

A. Did you?

Q. Yes. Is it?

A. I wouldn't know—I wouldn't say that that question expresses my opinion at all. I wouldn't say so, no sir.

Q. You think that there will be certain parts of the field depleted before other parts of the field are?

A. Certain parts will be depleted for particular purposes long before other parts are; that is, I believe, for example, that the east field will be depleted as far as it being a source

of supply for trunk pipe line purposes considerably before the extreme high pressure area of the west field there.

Q. If there is a free movement of gas and drainage into the Panhandle field, why wouldn't the gas drain from the west field into the east field and maintain the pressure in the east field?

A. Mr. March, you asked me about that yesterday and I told you there was no effective sub-surface drainage between the east field and the west field.

Q. Do you think as a practical matter there will be?

A. As a practical matter, I don't think there will be a drainage between the east field and the west field.

Q. What is the estimate of reserves as a whole?

A. For the reasons stated on Page 42 and the excerpt you read from Page 65, that is, that depletion of the east field will result in a shift of withdrawals into the west field, and that, therefore, the reserves in the east field will have a bearing upon the eventual depletion of the entire Texas Panhandle field.

Q. When do you think this shift will take place?

A. I don't know. I haven't figured it out. It won't be so long until there will be some shift.

Q. Do you know how near the east field is to the depletion?

A. No, sir, I haven't made a reserve estimate of it. The pressures are coming down over the entire east field.

Q. Do you know in the east field there are pressures still over 400 pounds?

A. Yes, in two places in very lowly productive areas, areas of low productivity of no commercial importance as far as I know.

• • • • •

Q. Now, beginning on Page 7 and extending through Page 40 of your exhibit, as I understand that is where you start your criticism of Mr. Hammer and Mr. Stevens.

A. My discussion of their estimates, yes, sir.

Q. Now, let's first hurriedly run through here beginning on Page 7. When you weight the surface don't you have to take volume into consideration automatically?

A. No, sir.

Q. Isn't there a relation between surface and volume?

A. As I told you yesterday, surface is one of the factors

in determining volume. It is exactly the proposition if you would say that the volume of a carpet covering the floor of this room was the same as the entire volume of the room. Obviously, it isn't anything of the sort, but that is what you do in weighting pressures in a reservoir when you weight it on surface acreage alone. You say that the volume of the carpet covering the entire floor of this room is exactly the same as the volume of the entire room. That is why it is wrong.

Q. You say here: "Mr. Hammer's pressure decline method in which withdrawals of gas are compared to declines of pressure, the latter being weighted only on surface acreage, is entirely incorrect for estimation of reserves of gas in the Texas Panhandle field."

All right, now, Mr. Gill, how much incorrect is Mr. Hammer?

A. Well, it is my opinion that his estimate of total original reserves is something over 50 per cent high.

Q. How much?

A. Something over 50 per cent high.

Q. How do you know? You haven't made an estimate.

A. I have made many estimates of reserves of the Texas Panhandle field,

Q. You stated they were all wrong?

A. Yes, sir

Q. All right, then—

A. I made estimates as wrong as Mr. Hammer's.

Q. Have you ever made an estimate you thought was right?

A. No, sir.

Q. How can you measure anyone else's estimates? What do you have to go by? What standard do you have to go by?

A. I testified yesterday, Mr. Mareh, at rather exhaustive length that I have made many estimates of the Texas Panhandle field; that I had weighted them generally as correctly as I had weighted the estimate of reserves discussed in Exhibit 265, and that in every case where I had made an estimate of reserves by any one of the various applications of pressure decline procedures they had failed in the light of analysis on the basis of what is happening in the field to prove up to be correct. In other words, they failed under

analysis just as Mr. Hammer's estimate failed under analysis and for similar reasons.

Now, in the case of some of those estimates they didn't miss the material as badly as Mr. Hammer's estimate does, and—

Q. How do you know he missed it at all?

Mr. Keffer: Let the witness finish.

Mr. March: I beg your pardon.

The Witness: And in others cases they missed it as badly as Mr. Hammer did. As I told you yesterday, the estimates I have made have resulted in estimates of original reserves from 22 trillion up to 34 trillion, I believe, and in general the lowest estimate, say from 22 trillion to 25 or 26 trillion, comes closer to checking out than the higher estimates.

I have explained it at a great deal of length in this discussion, which is incorporated in Exhibit 265, that in view of the fact I have not yet been able to work out the proper application of pressure decline to the field, I am of the opinion now that the best estimate of reserves that are available on the Texas Panhandle field are estimates Mr. Hughes and Mr. Thompson have introduced here. I don't accept their estimates as absolutely correct, but I think they are the best estimates there are. My own work leads me to the opinion that the lowest estimates I arrived at which were on the order of 22 trillion for original reserves, were too high, and, therefore, I believe in my own work that the true figure is below 22 trillion; and as I say, I now am of the opinion at the present time that the figures which have been presented by Mr. Thompson and Mr. Hughes and which lead to figures less than 20 trillion, are of the best available

Q. Are they within 20 per cent of correctness?
A. Oh, yes, they are probably closer than that.
Q. How much closer than that?
A. I don't know.
Q. You don't know?
A. No, sir.

* * * * *

Q. It is your position that Mr. Hammer has not con-

tended that it would be possible for the Canadian River to recover these reserves?

A. I have made no such statement, Mr. March.

Q. You don't purport to make any such statement?

A. I haven't said that Mr. Hammer doesn't have the idea it wouldn't be physically possible for Canadian River to recover the quantity of gas under their properties. I think it could be said that it would be physically possible for them to do it but to attempt to apply that to a practical situation is sophistry of the wildest sort.

Q. Have you made a study to ascertain how much they couldn't recover?

A. I have made a rather thorough study of the probable drainage. I have not attempted to express it in quantitative terms—

Q. Can you at the present time in—

A. Let me complete my answer. I was going to state on the end of that answer that it was because I can't estimate it quantitatively.

Q. It is impossible for you to say just exactly how much of the remaining reserves under Canadian River's acreage that Canadian River will recover or not recover?

A. I think that is a correct statement.

Q. It is impossible for anybody else to say that?

A. Yes, sir, I believe so.

Q. Then you don't know if you can't measure quantitatively or cannot give any approximation of it quantitatively whether or not they could recover all of the remaining reserves under this acreage?

A. If we wished to indulge in pure sophistry I would say that Canadian River Gas Company could recover all of its recoverable gas now under its property. I don't know what in the world they would do with it, though. It would be necessary for them to move in and drill a lot of wells and blow a tremendous quantity of gas to the air or else put it up in cans and save it for future use.

As a practical matter, Canadian River will not recover anywhere near all of the quantity of gas that is now existing under that property. I know that, Mr. March, in exactly the same way that I know a louse is smaller than an elephant. However, I have never measured either one of them.

Q. It would do you good to measure them, wouldn't it?
A. No.
Q. You can measure the difference between a louse and an elephant, can't you.
A. I know a louse is smaller than an elephant.
Q. Can't you measure the difference?
A. Yes.

• • • • •

Q. Do you think when Mr. Hammer takes his quadrants and weighs in the surrounding quadrants and considers the *surrounging* quadrants in figuring each one of the quadrants he takes in to any effect his drainage which might take place in regard thereto?

A. Not to any practical extent. Now, that procedure which is a very poor and indefensible procedure, does have a tendency to take a quadrant from which gas has been drained and to indicate that the present reserve of that quadrant is greater than it actually is. To that extent it tends to erase, disguise and conceal the fact that drainage is taking place.

Q. I believe you admit here it is proper to divide the field up into quadrants in making estimates of reserves?
A. As a matter of convenience, yes, sir.
Q. It is a matter of convenience to divide the area up that way? You say, as I understand, those quadrants should follow zones of equal productivity?
A. I didn't say that.
Q. What did you say in regard to that?
A. I said they didn't follow zones of equal productivity or zones of anything else.
Q. You said they should if they were to be used at all, didn't you?
A. I don't believe so. He could have gained some information by having them do that, but I didn't say they should have.
Q. You said that Mr. Hammer's quadrants are not laid out in relation to pressure patterns, relative reserves or areal distribution of withdrawals.
A. What page is that on?
Q. That's on Page— and then you say—

Mr. Spencer: What page, please?

Mr. March: That's on Page 16.

Q. You say: "Up to the point of his determination of withdrawals and weighted pressures by 'quadrants,' Mr. Hammer has made legitimate use of his subdivision of the field area."

Now, did you imply there that when you do divide the field up into quadrants in estimating reserves that you should follow the pressure band—I mean the productivity bands?

A. No, sir, I didn't say that they should. That's what that statement means. He could have gained some information out of his subdivision by some such method of dividing, but he did not do it. I didn't state that he should have done it, Mr. March.

Q. Do you know what would have been the difference in Mr. Hammer's results if he hadn't weighed the surrounding quadrants in determining a given quadrant?

A. As to which one of the results?

Q. Any of his results—his results on the field as a whole.

A. I haven't calculated through, Mr. March, but I rather expect that his results for the field as a whole would have come out pretty close to what he got. That's just due to the accident of distribution as between his quadrants. It would be my idea that he would come out somewhere reasonably close to the same answer for the field as a whole.

Q. Why are you criticising his using the surrounding quadrants?

A. Because it is an entirely incorrect method.

Q. If he comes out with almost the same answer, why do you say the answer—why do you say it is an incorrect method?

A. As I said, I haven't figured it out—figured it through, but due to the accident of distribution it would probably come out to about the same answer but you see in arriving at the same incorrect result by two methods doesn't make it right.

* * * * *

Stanley Gill further testified (Vol. 99, pp. 15298-15300; 15347-15351) as follows:

Q. Now, Mr. Gill, if that area was formerly below 400

pounds and suddenly it became 400 pounds and over, what would you say was the cause of that?

A. I would say that if it did take place there would be some replenishment by drainage.

Q. Don't you think, Mr. Gill, there was drainage into the Canadian River acreage and repressuring here which caused the low pressure area to be wiped out of the middle of Potter County in 1937 and the 400-pound band even extended over into Moore County?

A. I really don't know, Mr. March. It is entirely possible that that particular part of Canadian River's acreage did pick up some gas out of other parts of Canadian River acreage. You see, geographically, that big high pressure area in Potter County from which much drainage would come in there is Canadian River acreage.

Q. Well, obviously, if any great movement of gas came about that way, there would be some low pressure created in a corresponding period of time in Canadian River acreage, wouldn't there?

A. I expect the pressure out in the yellow area was reduced somewhat.

Q. You notice here in 1937 there wasn't any low pressure areas created to the southwest of the repressuring area.

A. There isn't any pressure below 400 pounds shown on the 1937 map, no, sir.

Q. Now, Mr. Gill, have you made a study of that area in there to ascertain specifically the cause of that?

A. The study I have made, Mr. March, is to determine physically the cause of the overall sequence of development of low pressure back into that Moore and Potter County area. Very definitely that general overall development, although it is masked in spots by such local effects as you mentioned, is occasioned by the large regional drainage of gas out of that area into the area of very heavy withdrawals which lie in general in southwestern Hutchinson County.

Q. My question to you is specifically this: Have you made a study specifically of the production by wells to ascertain the cause of that repressuring in Potter County in 1937 and in a part of Moore County?

A. I have answered that question several times, Mr. March.

Q. What is your answer?

A. The only specific study by wells in relation to drainage trends that I have made is one, the results of which are tabulated on Page 10, Exhibit 266. That shows very positively that area to which you are referring has suffered rather extensive drainage.

I have also included in Exhibit No. 266 some calculations that I have made from Mr. Hammer's data as to his quadrants which show the same thing, and—

Q. I know. That is in the record. There wouldn't be any drainage indicated from this area in 1937 when the area was repressuring, would there?

A. There is extensive drainage out of Potter County and southern Moore County indicated by the sequence of development of low pressures in that area which is shown by this series of maps, Exhibit 239, from year to year. It is a progressive thing and—

• • • • •

By Mr. Gibson:

Q. Mr. Gill, have you by your Exhibit 265 made or attempted to make an estimate of recoverable reserves of the Texas Panhandle field?

A. That particular exhibit does not include an estimate of reserves made by me; no, sir.

Q. The same is true with respect to the Canadian River Gas Company's properties in that field?

A. That is right, yes, sir.

Q. In preparing this exhibit I notice under the heading "Scope of Study," you have stated: "I have been requested to prepare and to submit a report covering my opinions and conclusions as to the several estimates of gas reserves in the Texas Panhandle field, which have been presented in this proceeding. In compliance with this request I have studied the exhibits and testimony relating to the estimates of reserves listed below:"

Then you list the estimates, some ten of them.

A. There are four estimates of reserves.

Q. Four estimates of reserves?

A. Yes.

Q. On Page 5 under the heading "Introduction," you

make the statement: "Attention has been given to the correctness of methods employed, to the manner in which they have been applied and to the applicability of the results in determining the future producing life of gas reserves in the Texas Panhandle field."

On the same page you state: "While it must be understood that estimation of reserves of gas or oil is far from being an exact science, it must also be emphasized that reasonably accurate estimates can be arrived at by the application of proper methods."

On Page 6, in speaking of the estimation of reserves you state: "The results are 'estimates' rather than 'determinations' of the reserves of oil or gas."

On Page 7, in dicussing the estimate of Mr. Hammer, you make the statement: "Mr. Hammer has made his estimate of reserves of gas in the Texas Panhandle field by a pressure decline method which involves several unique features. I feel that Mr. Hammer's estimates are neither correct nor applicable for evaluating the probable future life of the Canadian River or field reserves. This opinion is based upon three lines of reasoning:"

I desire to ask you in this connection if it is not a fact that by this exhibit, that the only thing you have done or attempted to do is this: Instead of taking the data shown in the exhibit of Mr. Hammer and using it for the purpose of making an independent estimate of recoverable gas reserves of the Canadian River's properties, you have taken that exhibit and given it a critical study for the sole and only purpose of arriving at your conclusions and stating your opinion with respect to the correctness or incorrectness of the inference made, the conclusions deduced, and the opinions stated by Mr. Hammer in the making of his estimate?

A. That question is involved, Mr. Gibson, but I will refer you back to the quotation which you read from Page 4 as to the scope of the study. I have done exactly what I stated there; that is, I have prepared and submitted a report covering my opinion of conclusions as to the overall estimates of gas reserves in the Texas Panhandle field

which have been presented in this proceeding. That is what I have done.

Q. An estimate constitutes nothing more or less than a formulation of opinion based upon data, opinions, theories, and judgments; isn't that a fact?

A. Yes, sir, I would say that is correct.

Q. Then it is true that the only thing you have done is to take the data, the observations, the theories, the judgments, the inferences, conclusions, and opinions stated by Mr. Hammer and the others in these exhibits and after having made a study of the same you have arrived at your conclusions and formulated and stated your opinion respecting the correctness or incorrectness of the inferences, conclusions, or opinions stated by them?

A. I have expressed my opinion as to the correctness of their results and have detailed my reasons for arriving at those opinions. That is what I have done.

Q. That is all you have done or pretended to do, is it not?

A. I have done what I stated here in this report that I intended to do, yes, sir.

Q. What is said with respect to Mr. Hammer applies likewise to all you have mentioned in your exhibit?

A. I have studied the estimates and arrived at the conclusions stated in my Exhibit 265.

Mr. March: Is that all, Mr. Gibson?

Mr. Gibson: No.

Mr. Spencer: Are you through with your cross examination of this witness?

Mr. Gibson: Yes.

Mr. March: I have one other question I would like to ask the witness and Mr. Keffer has a few on redirect.

Mr. Gibson: At this point I want to make a motion to strike this exhibit and everything that is said with respect to it.

Analysis of Pressure Decline Method of Estimating Natural Gas Reserves in Texas Panhandle Field.

A. Basic Principles:

"Boyle's Law expresses a simple relationship. It states the fact that the quantity of gas contained within a rigid container varies directly with the absolute pressure. Doubling the pressure doubles the quantity of gas. By increasing the pressure ten times, ten times the quantity of gas can be stored within the container • • •. This law applies strictly to the perfect gas, regardless of the size or shape of the rigid container in which it is confined. Correct calculations can be made from it, however, only when the actual pressure average throughout the entire volume of the container is accurately known." (Gill—Exhibit 265, page 9.)

"A pressure-decline method in which withdrawals of gas are compared to declines of pressure, the latter being weighted only on surface acreages, is entirely incorrect for estimation of reserves of gas in the Texas Panhandle Field." (Gill—Exhibit 265, page 7.)

"According to Boyle's Law pressure varies with volume and not with area unless each area happens to contain the same volume." (Hughes—Exhibit 258, page 6.)

"Volumes (of gas) are not equal in the various areas of the (Texas Panhandle) Field." (Hughes—Exhibit 258, page 11.)

"Hammer • • • has weighted his pressure against areas and not against volumes. • • • he does not have uniform volumes per acre for each quadrant and neither does he have uniform pressures for each quadrant." (Hughes—Exhibit 258, page 11.)

B. Illustrations of Use of Pressure Decline Method in Estimating Natural Gas Reserves:

Testimony of C. Don Hughes
Witness for Canadian.

C. Don Hughes, Witness for Canadian, testified on this subject (Vol. 86, pp. 13086-13121), as follows:

Q. Your name is C. Don Hughes?

A. Yes, sir.

Q. You are the same C. Don Hughes who has testified before in this case?

A. Yes, sir.

Q. Mr. Hughes, I hand you a document and I will ask you if you prepared that instrument in Statement form as an exhibit to be utilized in this case?

A. Yes, sir, I did.

Mr. Keffer: I will ask, Mr. Examiner, that the instrument be marked for identification.

The Trial Examiner: It will be marked for identification as Exhibit No. 258.

(Exhibit 258, Witness Hughes, marked for identification.)

By Mr. Keffer:

Q. Will you proceed and read that statement Demonstration the Pressure decline method.

A. "In order to show how this method is based upon Boyle's Law we refer to Chart 1 where we have three containers of equal size, each containing 20,000 CF of gas, at a pressure of 400#, making a total of 60,000 CF of gas. All of the valves are closed.

Example #1. Suppose we open valves A, B, and C, and then we open valve D and allow 15,000 CF of gas to go out through meter X, in doing this 5,000 CF of gas is removed from each of the containers and, since 5,000 is exactly 1/4th of the 20,000 content then the pressure drops 1/4th or 100# in each container and the remaining pressure is 300# in each container, and the weighted average pressure is the same in all three.

Since the same pressure drop has occurred in each then that is the weighted average pressure drop, or 100#, and with a withdrawal of 15,000 the production per pound drop is 150 CF. Since our original pressure was 400#, then by

multiplying 150 CF per pound by 400# we get 60,000 CF as our computed original amount, which is correct. The correct result is reached because we had an equal volume in each container, and we are in effect weighting pressures against volume.

Example #2. Now, suppose we start out again with the full amount and with all valves closed, and we open valve A, then we open valve D and allow 15,000 CF of gas to flow out through the meter X, all of it comes from A. Since this 3/4ths of the total amount originally in A then its pressure drop will be 3/4th of 400#, or 300#, leaving a pressure of 100# in A.

Now, in order to compute the weighted average pressure remaining in the three we add their pressures, 100# in A, 400# in B, and 400# in C, and find the total of 900# and dividing by 3 find 300# as the weighted average pressure. Thus we see that the weighted average pressure loss is 100# and since 15,000 CF was produced it was at the rate of 150 CF per pound drop and multiplying by 400 gives an original content of 60,000 CF which again is correct. This is true because all of the containers have an equal volume and we are in fact weighting the pressure against volume.

Example #3. Now, instead of going back to the beginning, we start where Example #2 left off, we close valve A, open valve B, leaving valve C closed, then open valve D long enough to let 15,000 CF of gas be produced through meter X; this of course will all be coming from container B.

Since this is 3/4ths of the total originally in B, then the pressure drop would be 3/4ths of 400#, or 300#, leaving 100# pressure in B.

Now, to compute the weighted average pressure of the three containers by adding 100# in A, 100# in B, and 400# in C, we have 600# and dividing by 3 we find 200#. The weighted average pressure has dropped from 300# to 200#, or a loss of 100# with 15,000 CF produced, or 150 CF per pound drop, the same as before.

Multiplying by 400# we get 60,000 CF as original content, which is correct. By this time the grand total production from beginning however is 30,000 CF and with an

overall pressure drop of 200# making 150 CF per pound drop, we again multiply by 400# and get 60,000 CF as the original content, and again, this correct for the simple reason that we have weighted pressures against volume.

Example #4. Now we will carry on from where Example #3 left off. We close valves A, and B, leave C open and then open D long enough to produce 15,000 CF through meter X. Obviously all of this comes from container C and is ¾ths the original content of C hence C has lost ¾ths of its pressure or 300# leaving 100#. We now add 100# in A, 100# in B, and 100# in C, getting 300# and divide by 3 to find the weighted average pressure of the three to be 100#. The weighted average at the end of Example 3 was 200# so we see a drop of 100# during Example 4 with 15,000 CF produced, or 150 CF per pound drop, the same as in the other previous examples. Multiplying by 400# we find 60,000 CF as the original content, again it is correct for the reasons hereinabove stated.

Thus we see that in this setup where the containers are all of equal size we can apply Boyle's Law and get a consistent and correct amount of gas produced per pound drop whether the gas pressure in all containers is going down uniformly or whether it is going down differently in the different containers. Since the examples give the same amount of production per pound drop, then by multiplying by the same original pressure in pounds the computed original content always figures the same and under this arrangement it is correct and is a case where the Pressure-Decline Method works perfectly.

Chart 2. Now we refer to Chart 2 in which we have different sized containers A with 30,000 CF, B with 20,000 CF, and C with 10,000 CF, making a total of 60,000 CF the same as we had on Chart 1. We have the same original pressure of 400# and all valves are closed.

Example #5. Suppose we open valves A, B, and C, then open valve D long enough to produce 15,000 CF of gas through the meter so that 7,500 CF goes out of A, 5,000 CF goes out of B, and 2,500 CF goes out of C. Since 7,500 CF is ¼th of the 30,000 CF content of A then its pressure loss is ¼th of 400#, or 100# leaving 300# pressure in A. Since

5,000 is ¼th of the 20,000 originally in B likewise it loses 100# leaving 300#.

Also since 2,500 is ¼th of the 10,000 originally in C then its loss is 100# leaving 300#. Averaging, we find, A with 300#, B with 300# and C with 300# making a total of 900# and dividing by 3 shows 300# weighted average pressure, or a loss of 100#. With a production of 15,000 CF we find the rate of 150 CF per pound drop and multiplying by 400# shows original content to be 60,000 CF which is correct. The reason it is correct is that the pressures in all three varying sized containers have gone down uniformly. In other words, the pressure was the same in each container.

Example #6. Now to show how with Boyle's Law still acting as it should the Pressure-Decline Method can become inaccurate. Suppose we start in all over with the containers filled and 400# and all valves shut We now open valve A and then open valve D long enough to allow 15,000 CF to be produced through meter X, obviously it all comes from container A, leaving just half of its original content and of course half its original pressure, or 200#.

Now let us add to see what the weighted average pressure is, A with 200#, B with 400#, and C with 400# totaling 1,000# divided by 3 gives 333-1/3# weighted average pressure. Subtracting from 400# shows a weighted average pressure drop of 66-2/3# while 15,000 CF were being produced at a rate of 225 CF per pound drop, and multiplying by 400# gives 90,000 CF as original content which we know to be wrong since we started out with the set amount of 60,000 CF.

The thing which got us into trouble here is that we weighted each container in order to get a weighted average pressure without taking into account that the containers are different in size. What we really need to know is the equilibrium pressure which would result if all the containers were allowed to equalize, that is, if we insist on using some weighted average pressure knowing that the containers differ in size and if we do not know how they differ. In other words, we arrived at an average weighted pressure by considering area rather than volume. Accord-

ing to Boyle's Law pressure varies with volume and not with area unless each area happens to contain the same volume."

Q. Right in that connection, Mr. Hughes, in averaging pressures in the field such as Mr. Hammer averaged them and such as the Railroad Commission of Texas averaged them, you are as a matter of fact weighting your pressures against areas, are you not?

A. Yes, that is right.

Q. And is it true or not that different areas in the Panhandle field vary widely with respect to gas content?

A. Yes, it is true that the content does vary widely.

Q. You may proceed.

A. "Example #7. But coming back to show why 333-1/3# although it is a weighted average pressure based merely on numbers of containers (each containing the same surface area) is not the same as the equilibrium pressure which we want, suppose at the end of Example #6 we let valve A open (D of course still remains closed) then we open valves B and C. Gas will move from containers B and C into container A. However, now gas will be produced into meter X since valve D remains closed. Container B will furnish 5,000 CF and container C will furnish 2,500 CF making a total of 7,500 which will migrate into A. After B has furnished 5,000 it will have 300# pressure instead of 400#. After C has furnished 2,500 it will have 300# pressure instead of 400# and then when A has received the combined amount of 7,500 it will have 300# instead of 200#. In other words the whole system will have become equalized at 300# which is also the arithmetic weighted average pressure after equalization. We have seen that the system has not been allowed to produce any gas yet its new weighted average pressure is 300# instead of the 333-1/3# weighted averaged at the beginning of the period of equalization. Thus without any production the weighted average pressure has declined 33-1/3#. This decline leads to an absurdity, where with no production the pressure loss is 33-1/3#, the rate becomes zero per pound drop and multiplying by 400# we find zero as the original content.

Example #8. Suppose we start again where Example 6 ended, with a total production of 15,000 having been taken

out of A, with B and C still untouched, we found that gave 66-2/3# drop or 225 CF per pound drop, and indicated an original content of 90,000.

From that given situation let us produce enough from each container to result in a 100# drop in each, from where they were at the end of Example 6.

In order to do this A would be permitted to produce 7,500 out through the meter and in doing this its pressure would drop 200# to 100#. B would be permitted to produce 5,000 out through the meter and in doing this its pressure would drop from 400# to 300#. C would be permitted to produce 2,500 through the meter and while doing it its pressure would drop from 400# to 300#. The total amount produced from the entire system during this procedure would be 15,000 CF. The remaining weighted average pressure would be found by adding A with 100#, B with 300#, and C with 300#, totaling 700# and dividing by 3 gives 233-1/3#.

Subtracting this from 333-1/3# leaves 100# as the weighted average pressure loss. With 15,000 CF produced during this loss the rate is 150 CF per pound drop instead of 225 CF per pound drop in Example 6. Since each container lost the same number of pounds during example 8 the result of that calculation came out correct, namely 150 CF per pound drop, and multiplying by 400# indicates 60,000 CF original content, which we know to be correct, instead of the wrong figure of 90,000 found in Example 6. In other words the pressure drop in each container was identical

Example #9. At this point it is important to show that, while we obtained the correct figure from a study of the interval in Example 8, we would still have an erroneous result if, instead of using that interval alone, we would have gone back and computed by the overall method from the beginning.

The overall method would combine the results of Examples 6 and 8, namely, container A had produced 22,500 CF with a remaining pressure of 100#; B had produced 5,000 CF with a remaining pressure of 300# and C had produced 2,500 CF with a remaining pressure of 300#. Thus we had a grand total production of 30,000. We now add the pres-

sures, A with 100#, B with 300#, and C with 300#, totaling 700# and dividing by 3 find the weighted average pressure to be 233-1/3# (identical with that found previously as at the end of Example 8).

The total loss in pounds from 400# is 166-3/3# and with a production of 30,000 we find we had produced 180 CF per pound loss. We observed in Example 8 that the correct production should be 150 CF per pound drop and that it was indicated by using merely one interval during which each container lost the same number of pounds pressure. Therefore, to go back and average in everything from the beginning does not increase the probability of accuracy, in fact this proves definitely that it has lead away from a correct figure to an erroneous one. But referring to the 180 CF indicated production per pound drop and multiplying by 400# we find at the end of Example 9 the indicated original content of 72,000 CF.

Here we see the effect of early production coming from the richest container leading to an erroneously high figure of original content being 90,000 instead of the known correct figure of 60,000. During the next stage of production some was taken from leaner containers and by the overall method the computed original content has dropped from 90,000 to 72,000 but still not know the correct figure of 60,000.

Conclusions From the 'Text Book' Examples.

1. If the pressure-decline method is working correctly it shows a constant amount of gas produced per pound pressure drop, whether computed on any one of several intervals or by going back to the beginning each time.

This is accomplished when each container is equal in size (Chart 1) whether the pressures in each are going down *iniformly* (Example 1), or going down in varying amounts (Example 2).

It is accomplished with containers of unequal size (Chart 2) only when the pressures in each are going down uniformly (Example 5) or when for a given interval the pressure loss in each container is the same (Example 8).

2. If the pressure-decline method is not showing a con-

stant rate of production per pound drop in pressure then it is due to the fact that we are having unequal pressure drops in containers having unequal content (Chart 2). This is shown by Examples 6, 7 and 9.

3. It further shows that, if that rate of production per pound pressure loss is declining with successive periods, then the early production was coming from larger containers than those furnishing the later production, or at least it shows that some production was beginning to come from smaller containers. This is shown by Examples 6 and 9.

Chart 1 has heretofore been marked as Exhibit 188 and Chart 2 as Exhibit 189 and referred to as such during the cross examination of Federal Power Commission witness Hammer.

The pressure decline method as applied by Mr. Hammer cannot give the correct answer because pressures are not equal in the Panhandle of Texas gas fields and for the further reason that the volumes are not equal in the various areas of the field. Mr. Hammer has attempted to secure a weighted pressure in the field by taking the area of each segment between isobar lines and multiplying this by the pressure obtaining in each segment as to each quadrant and then dividing each quadrant total by the number of acres in the quadrant.

This method necessarily assumes that each segment as outlined by the isobar lines in any given quadrant contains the same volume of gas per acre as every other segment in the quadrant. This obviously is a false assumption. Mr. Hammer therefore has weighted his pressures against areas and not against volumes.

The grouping of quadrants as illustrated by Federal Power Commission Exhibit No. 180 could not possibly correct this error for the reason that in each of the quadrants the volume varies over the areal extent of the quadrant. In other words, he does not have uniform volumes per acre for each quadrant and neither does he have uniform pressures for each quadrant. This being true he could not possibly

arrive at the correct estimate of reserves of gas in place by the application of the pressure decline method as he applied it.

[Exhibit 188, Chart, appears at page 3883.]

[Exhibit 189, Chart appears at page 3887.]

The Pressure-Decline Method
in the
Texas Panhandle Gas Field.

Based upon a strict assumption that the Panhandle Reservoir is 100 per cent volumetric control, a critical examination has been made of the Pressure-Decline Method.

The pressure figures used in the computations are the weighted averages found by the Texas Railroad Commission. The first field-wide survey was conducted by the Commission in the summer of 1935. A second one was made in January 1936 and due to winter operating conditions it was considered less accurate and involved unnecessary inconveniences and therefore the winter survey was discontinued in favor of an annual one in the summer.

During the contouring of the 1940 pressure map this fall by the Railroad Commission, an error was discovered in the 1939 map. The error affected some 30 sections of land in southeast Gray County where the pressures on the 1940 map are necessarily raised over what they were on the 1939 map. It is due to new control shown by the Lone Star Fowler wells in Section 118 Block H&GN. The wells which gave the new control for the 1940 map had a drop in pressures during the years as follows:

Lone Star Fowler #1 8-1-39 pressure 323#, 8-1-40 pressure 304#:

Lone Star Fowler #2 8-1-39 pressure 322#, 8-1-40 pressure 303#.

The pressure drop in each was 19 pounds.

I presume it was an oversight that those pressures were not used on the 1939 map. At any rate this shows that the weighted average pressure for 1939 was wrong. Had the

pressures in these wells being used the weighted average would have been some higher than was found and reported by the Commission. This would have caused a smaller drop in the weighted average pressure from 8-1-38 to 8-1-39 and consequently a larger drop between 8-1-39 and 8-1-40 than exists in the published figures.

Therefore for lack of a correct figure for 1939; or rather due to the known fact that the 1939 figure is in error, I am ignoring it and in the following study am treating the two-year period 8-1-38 to 8-1-40 as a unit whose production resulted in the pressures accepted as being correct at the date 8-1-40.

Chart "A".

If the Pressure-Decline method were working correctly, the production per pound drop in pressure would be constant, that is, at any given pressure survey date the cumulative production divided by the overall pressure loss would give a constant figure.

Date	Cumulative Production Mcf.	Pressure Loss From 430#	Production Mcf. per Pound Drop
8-1-35	5,197,693,413	67.49=	77,014,270
7-1-36	5,754,179,067	75.00	76,722,387
7-1-37	6,307,060,469	82.95	76,034,484
8-1-38	6,929,985,630	92.34	75,048,577
8-1-40	8,082,404,377	111.69	72,364,620

The fact that the production per pound drop is not constant proves conclusively that the pressure-decline method is not working correctly in the Texas Panhandle.

The downward trend in the rate of production per pound drop is shown graphically on the accompanying Chart "A". If the pressure-decline method were working correctly that downward trending curve would be a horizontal straight line.

Chart "B".

If the pressure-decline method were working correctly, the rate of production per pound drop computed by the overall method at any given pressure survey date could be multiplied by the total number of pounds original pressure

and obtain a constant figure indicating the total original Reserve.

Date	Rate of Production in MCF per Pound Drop Overall Method	Orignal Reserve MCF Obtained by Multiplying Rate per pound by 430#
8-1-35	77,014,270	33,116,136,100
7-1-36	76,722,387	32,990,626,410
7-1-37	76,034,484	32,694,828,120
8-1-38	75,048,577	32,270,888,110
8-1-40	72,364,620	31,116,786,600

The figures indicating original reserve are not constant and this fact proves conclusively that the pressure-decline method is not working correctly in the Texas Panhandle; the importance and significance of the downward trend in the computed original reserve is shown on Chart "B".

If the method were working correctly that downward trending curve would be a horizontal straight line until it finally intersected an extension of the 45 degree sloping line.

Chart "C".

If the pressure-decline method were working correctly, the rate of gas produced per pound pressure drop would be the same for any or all intervals or periods between pressure surveys, that is, the rate "currently" would be constant.

Period	Production During Period MCF	Pressure Loss During Period	Production Mcf. per pound loss during period or "currently"
Beginning to 8-1-35	5,197,693,413	67.49	77,014,270
8-1-35 to 7-1-36	556,485,654	7.51	74,099,288
7-1-36 to 7-1-37	552,881,402	7.95	69,544,830
7-1-37 to 8-1-38	622,925,161	9.39	66,339,208
8-1-38 to 8-1-40	1,152,418,747	19.35	59,556,524

The current production per pound drop is not constant and this shows conclusively that the pressure-decline method is not working correctly in the Texas Panhandle. This rapidly declining rate of production per pound loss is shown plotted against accumulated production on Chart "C".

If the pressure-decline method were working correctly this would be a horizontal straight line.

The importance of this curve is discussed at length toward the end of this report.

My observation for several years has been that the production in the early life of the field came from richer than average areas and the pressure loss at that time was in those areas and hence an application of the pressure-decline method would give an estimate of original reserve that is too high.

I have maintained that the remaining high pressure areas were lean and when they finally came into depletion their pressures would drop faster with a continually lowering of the estimate of original reserve by the pressure-decline method.

There are still large areas of high pressure lean acreage which can cause this decline in rate of production per pound drop to continue into the future.

Our reservoir is not a perfect container and migration is restricted in some areas. Unequal withdrawals have caused unequal pressure declines in various parts of the field. I believe the declines as a whole have been in richer than average areas and if the entire field were shut in today until the pressures became equalized, the final pressure would be less in pounds than our present so-called weighted average pressure. Theoretically it is this equilibrium pressure that is needed (and which we do not have) in order to apply Boyle's Law correctly to the container.

In opposition to this, it has been pointed out by some who are trying to use the pressure-decline method in the Panhandle that even though the original content of gas did vary in the field, still the variation would average out in all pressure bands. That is, within each pressure band at any date they are so widespread and include all kinds of acreage good bad and average, that any given band is typical of the field.

Now, if by chance this does happen to be true, then the situation is more serious than I have suspected.

For if this be true, then the pressure-decline method should be working perfectly, giving constant results.

Obviously it is not working out that way and in order to explain why it isn't we must admit some situation to exist in the reservoir which is causing an ever lessening amount of production per pound drop.

This decline in the amount of production per pound drop has been going on throughout the entire period in which we have the official pressure surveys, from August 1935 to the present, August 1940. This is the period in the history of the field in which we have the best information, both as to pressures and production.

It appears logical to project into the future this changing rate of production per pound drop.

This would be done by extending the five year control curve on Chart "C" as a downward trending straight line.

The extension would intersect the base line at about 18 trillion cumulative production which at first thought might be interpreted as the indicated original reserve.

However, if these declining rates of production per pound drop be actually set up in table form and the necessary drop in pressure required during a given amount of production is computed it will be found that the field is at zero pressure when the cumulative production is about 16.3 trillion.

Summary:

1. It is apparent that the pressure-decline method is not working correctly in the Texas Panhandle. This is not subject to argument. I recognize Boyle's Law and I have not upset any law in physics in proving that the method is not working correctly, in fact I have used Boyle's Law to prove my conclusions.

2. I have shown a valid reason why the pressure-decline method is not working correctly, and if my reason is sound, conditions still exist which will cause the downward trend in production per pound drop to continue into the future.

Such a continuation points to an estimate of original reserve of 16.3 trillion cubic feet of gas.

This critical study of the pressure-decline method re-

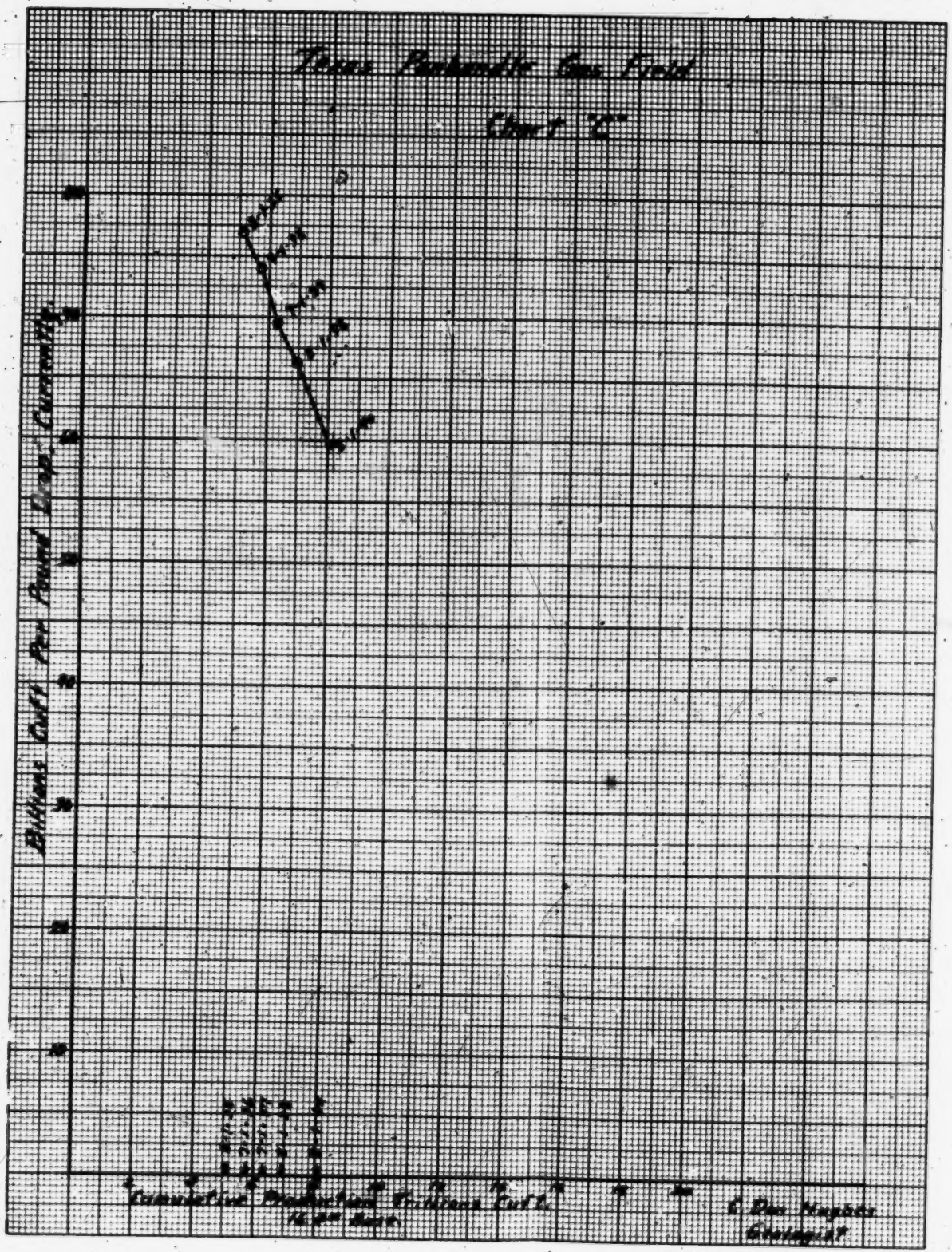
veals a steady decline in the rate of production per pound drop.

While it shows positively that the orthodox manner of using the method cannot be relied upon, since it gives a different answer each time, still it is believed that the definite rate of change in the production per pound drop is significant.

Therefore, this study shows that the method does not give a reliable answer at any one date, but that it becomes a guide for the future by extending the changing rate of production in accordance with actual performance during the past five years.

An extension of this trend points to an original reserve of 16.3 trillion for the field. If this is correct, then my estimate of approximately 19¼ trillion is too high. Even though this is the indication, I am inclined to stand on the evidence that 19¼ is a reasonable figure and that the manner in which I arrived at it is reasonable. However, in the light of contemporary trends in the downward rate of production per pound drop in the reservoir it may be that a new angle has developed, the effect of which should be incorporated in a revision downward of my 90 per cent recovery factor.

Exhibit No. 258



Pressure Decline Method.

Using Mr. Hammer's Quoted Production Prior to 8-1-35, his production figures from 8-1-35 to 8-1-39 and weighted average pressures for the field at the two dates computed from Mr. Hammer's working papers.

By using data in Mr. Hammer's working papers I have computed the weighted average pressures for the Panhandle field, including Wheeler County Quadrant I, at 8-1-35 and found it to be 369.10 pounds, or a drop of 60.90 pounds from original 430 pound pressure.

Using this data, I also computed it for 8-1-39 as 331.73#, including Wheeler County Quadrant I, or a drop of 98.27 pounds from original pressure of 430 pounds.

Mr. Hammer has entered a figure of 4,833,608,743 Mcf. quoted by him as being the cumulative production for the field prior to 8-1-35 arrived at by the Phillips Petroleum Company.

He showed as his own metered production for the period 8-1-35 to 8-1-39 from records of the Texas Railroad Commission 2,430,370,036 Mcf.

I have made a study of this basic data in order to see what he would have arrived at, in comparison with my results, had he applied the pressure decline method in the orthodox manner, that is, treating the field as a whole and computing the production per pound drop in pressure.

In order that these results could be compared with my results I have converted his 14.65 pound pressure figures to 16.4 pound base.

Multiplying 4,833,608,743 Mcf. by .892329 gives 4,317,814,354 Mcf. 16.4# base.

Multiplying 2,430,370,036 Mcf. by .89329 gives 2,171,025,249 Mcf. 16.4# base.

Using the pressure-decline method, the production at 8-1-35 of 4,317,814,354 Mcf. was divided by the pressure loss at 8-1-35 or 60.90 pounds, indicating a production per pound drop of 70,900,071 Mcf. This rate of production per

pound loss was multiplied by 430 pound original pressure resulting in 30,487,030,530 Mcf. as an estimate of original reserves down to zero wellhead.

Now to test the reliability of the method we add the production for the 4-year period (8-1-35 to 8-1-39) to the production prior to 8-1-35, or 2,171,025,249 Mcf. plus 4,317,814,354 Mcf. and get a cumulative production of 6,488,839,603 Mcf. for the entire period prior to 8-1-39. Dividing that by the total pressure loss of 98.27 pounds at 8-1-39 we find a production of 66,030,728 Mcf. per pound loss which is much less than we found before and which shows that the pressure-decline method is not working correctly. We should have obtained a figure approximately the same as we had for the first period. Multiplying this lesser amount of production per pound loss by 430 pounds we get an estimate of original reserves of 28,393,213,040 Mcf., further showing that the method is not giving a consistent estimate.

In order to visualize this changed estimate the information has been plotted on charts which also show the answers I arrived at when I used our production data and the weighted average pressures for the field as found by the Texas Railroad Commission.

On Chart "A"1 I have plotted with small triangles, as the indicated control points, the results obtained using Mr. Hammer's data showing definitely the lessened rate of production per pound loss along with his cumulative production for the field. It can be readily seen that his own production and pressure figures show a faster changing rate than the one we have with our figures.

On Chart "B"1 I have, with similar symbols, plotted the resulting estimates of original reserves arrived at with his figures as compared with those arrived at with ours. Again it is noticeable that as plotted against cumulative production on the horizontal scale the indicated original reserve figure had dropped more rapidly than our figures had.

It is quite evident on Chart "B"1 that if the rate of change based on his data continues, then I have overestimated the reserves when I show 19¼ trillion.

Now we will test the performance of the field on what Mr. Hammer states is the only accurate history we have, that is, his 4-year period, 8-1-35 to 8-1-39.

His production of 2,171,025,249 Mcf. is divided by his pressure loss for the period (369.10# — 331.73# = 37.37#) of 37.37 pounds showing a production per pound loss of 58,095,404 Mcf., which is surprisingly low compared with the 70,900,071 Mcf. per pound loss shown by his data for the period prior to 8-1-35.

Multiplying the production per pound loss for the 4-year period by 430 pounds, we find an estimated original reserve of 24,981,023,720 Mcf., which again is quite in contrast with the 30,487,030,530 Mcf. arrived at, using the period prior to 8-1-35.

In order to visualize these data I have plotted the changed rate of "contemporary" or "current" production on Chart "C" 1 where it can be seen not only in its own light but in comparison with a similar downward trending rate shown by our figures.

This evidence on Chart "C" 1 is very significant. It shows both with his data and our data that the production per pound pressure loss is declining very rapidly.

If this rate exhibited by Mr. Hammer's data is extended as a straight line and if increments of production identical with this 4-year period are added to the cumulative production then it is possible to read from the extended line the rate of production per pound drop which might be expected. By dividing this rate into the increment of production, the number of pounds pressure loss can be computed for each increment. By subtracting this pressure drop from the pressure at the beginning of the increment then the remaining pressure can be computed.

This has actually been done and it shows that the pressure of the field is exhausted when the cumulative production is approximately 14.3 trillion cubic feet. The number of increments necessary to bring that about is approximately $3\frac{1}{2}$ and if those increments of production are assumed to take place during four years each, as his actually did, then the computed years involved would be approximately 14 years after 8-1-39.

Another phase of the study consists of using annual production for the field totaled from Mr. Hammer's working

papers and annual weighted average pressure drops computed from his working papers. The production was converted from 14.65# base to 16.4# base using the factor .89329.

Period	Production Mcf. 14.65# base	Production Mcf. 16.4# base
8-1-35 to 8-1-36	620,404,940	554,201,528
8-1-36 to 8-1-37	595,387,041	531,853,290
8-1-37 to 8-1-38	616,439,219	550,658,990
7-1-38 to 8-1-39	598,138,836	534,311,441
	2,430,370,036	2,171,025,249

The pressure drop for each period was found by subtracting the weighted average pressures at the end of each from that at the beginning of each period.

Period	Weighted Average Pressure	Pressure Drop
8-1-35	369.10#	
8-1-35 to 8-1 36	359.86	9.24#
8-1-36 to 8-1 37	350.95	8.91
8-1-37 to 8-1:38	341.87	9.08
8-1-38 to 8-1-39	331.73	10.14

The production for each period was divided by the pressure drop to determine the rate of production per pound drop.

Period	Production MCF 16.4# Base	Pressure Drop	Production Per Pound Drop MCF 16.4#. Base
8-1-35 to 8-1-36	554,201,528	9.24	59,978,520
8-1-36 to 8-1-37	531,853,290	8.91	59,691,727
8-1-37 to 8-1-38	550,658,990	9.08	60,645,263
8-1-38 to 8-1-39	534,311,441	10.14	52,693,436

The rate of production per pound drop was steady during the first three periods but dropped sharply during the last period, this may be visualized on Chart "C" 1 where it has been plotted as a curve controlled by small squares at each point.

This information was plotted against cumulative production from 8-1-35 on the horizontal scale.

It is readily seen that the net effect of these annual rates of production per pound drop shows a decided decline at the end of the priod, an average curve through these four points would slope downward nearly parallel with the other two curves on Chart "C" 1. This confirms the slopes of the other two.

The cumulative figures from 8-1-35 for use on the horizontal scale follow:

Period	Production for Period MCF 16.4# Base	Cumulative from 8-1-35, MCF 16.4# Base
8-1-35 to 8-1-36	554,201,528	554,201,528
8-1-36 to 8-1-37	531,853,290	1,086,054,818
8-1-37 to 8-1-38	550,658,990	1,636,713,808
8-1-38 to 8-1-39	534,311,441	2,171,025,249

The rate of production per pound drop annually may be multiplied by 430 pounds giving an estimate of original reserves for the field:

Period	Production Per Pound Drop MCF 16.4# Base	Original Reserves To 0# Gauge MCF 16.4# Gauge
8-1-35 to 8-1-36	59,978,520	25,790,763,600
8-1-36 to 8-1-37	59,691,727	25,667,442,610
8-1-37 to 8-1-38	60,645,263	26,077,463,090
8-1-38 to 8-1-39	52,693,436	22,658,177,480

Referring again to the declining rate of production per pound pressure loss as plotted on Chart "C" 1 with the small squares as the control points the trend has been extended into a sloping straight line.

If this declining rate of production continues in accord with the extended curve then the following will be the result.

When the cumulative production on the horizontal line has reached 3 trillion the rate of production for the increment of production of 828,974,751 Mcf. which brings the cumulative total to 3 trillion will be about 47.5 billion per pound. Dividing this into the production increment shows that a 17.45± drop will be necessary. If we subtract this

from the existing pressure at 8-1-39 it leaves 314.28 as the remaining pressure.

By continuing this procedure in increments of 1 trillion each it is found that the pressure will be exhausted when the cumulative production is slightly over 9 trillion. If we subtract the approximately 2 trillion, cumulative production at 8-1-39 it leaves 7 trillion.

Mr. Hammer shows the total production for the 4-year period as 2,171,025,249 (16.4# base) or an average of approximately 543 billion per year.

Dividing the remaining 7 trillion at 8-1-39 by 543 billion shows approximately 13 years indicated to take the field down to zero pressure wellhead."

Q. I have just a few questions. Mr. Hughes, if you wil refer to your Chart "C" 1 that follows Page 24 of your Exhibit 258. You have shown three curves there. The furthest curve to the right is based upon the Railroad Commission's figures, is it not, for those respective years as indicated upon the curve?

A. Yes, that is right.

Q. The middle curve is based upon Mr. Hammer's figures for the period August 1, 1935 to August 1, 1939, but is not broken down into years?

A. That and the period prior to 1935. That curve is based upon—

Q. That curve to the left shows Mr. Hammer's figures year by year, doesn't it?

A. That is right.

Q. If you extend that curve as you have stated through the year 1939, we will say, and through the circle representing 1937 and approximately half-way—we should say between the circles representing 1938 and the circle representing 1936—you get the curve that is projected as you have shown it?

A. That is right.

Q. Now, Mr. Hammer's curve on his figures show a slight increase in production per pound drop for the period from August 1, 1937 to August 1, 1938?

A. That is right.

Q. Could that be accounted for by Mr. Hammer's failure

to take into account quantities of gas that have been produced and not metered?

A. Yes, assuming that his contouring of the maps of those different dates and planimetering and all might not account for some of that variation.

Q. Could—there could very easily be mistakes made in matters of that kind no matter how careful you were?

A. That is right.

Q. That slight increase is not shown on the Railroad Commission's figures on the curve to the right?

A. No.

Q. The curve farther to the right on that chart?

A. No.

Q. Now, just one or two more questions.

Will you go back to Chart A on Page 14. Now you show production in Mcf. per pound drop in pressure covering the entire field in the table on Page 14, do you not?

A. That's right.

Q. That's right. It starts out at 8-1-35, .77 billion per pound drop in pressure—77 billion cubic feet—that's right—and taking 1-19-40, it has dropped to a little more than .72 billion per pound drop in pressure.

A. That is right.

Q. But now those are cumulative figures, are they not?

A. Yes.

Q. That's right. When you get your 77 billion at 8-1-35 you have taken all production from the beginning of the field up to that time, is that correct?

A. Yes.

Q. And when you get your 76 plus billion per pound production in 1936 you have taken the entire history of the field up to that time?

A. Yes.

Q. And likewise you have taken everything back of each year and brought it up to the year which you have shown here, is that correct?

A. Yes, that is right.

Q. Now, if you had broken that down into years you would have gotten a much greater decline in your rate of production per pound drop, wouldn't you?

A. Yes.

Q. Now, that is shown on Chart "C", that is, I mean on Page 16, your table set out on Page 16, which discusses Chart "C".

A. That's right.

Q. Now, you will notice there at 8-1-35 you have 77 billion plus cubic feet per pound drop which is the same figure which you had on the chart on Page 14, isn't it?

A. That's right.

Q. When you divide that up into years, get the per-pound drop for each year for the period of 8-1-38 to 8-1-40, instead of the 72 billion plus, which you show on Page 14 and which is cumulative for those two years, you get 59 billion plus, is that not correct?

A. That is right.

Q. Showing that each year as you go forward, no matter where you start, you get less production the following year than you did the preceding year per pound drop in pressure, is that correct?

A. That is correct.

Mr. Keffer: I merely wanted to explain, Mr. Examiner, the difference between the cumulative figures and the figures from year to year. I wasn't sure that it was as clear as it might be.

Q. Now, on that same basis, referring to Page 15, you show there, using the pressure decline method, the different answers that you would get if you would make reserve estimates at different periods, do you not?

A. That's right.

Q. And it goes from 33 trillion plus to 31 trillion plus?

A. Yes.

Q. But those are again cumulative, aren't they?

A. That's right.

Q. That's right, when you make the estimate on this basis at 8-1-40, you have taken everything back of 8-1-40 to the beginning, is that correct?

A. That's right.

Q. Now, when that is broken down again into years—well, I don't see where you have made an estimate on that, but go back to Page 16. If you were to make an estimate for the 2-year period, 8-1-38 to 8-1-40, in which you have a little less than 60 billion production per pound drop in

pressure, your estimate, instead of being 31 trillion, plus, as shown on 15, would be something in excess of 25 trillion, wouldn't it?

A. Yes, it would be.

Q. Just roughly?

A. It would be 430 pounds times this.

Q. 59 plus?

Mr. March: 59 plus, billion?

Mr. Keffer: That's right.

The Witness: That's right.

By Mr. Keffer:

Q. Now, those same general observations I think would apply to Mr. Hammer's figures which you also show on your subsequent charts, in your exhibit, but I want to call attention to just one thing.

If Mr. Hammer had made his estimate based upon production and decline in pressure for the period 8-1-38 to 8-1-39, he would have had; as shown by Page 26, a pressure drop of 10.14 pounds, wouldn't he?

A. Yes.

Q. On Page 27 he shows production of 534 billion plus, or a production of 52 billion plus per pound drop in pressure.

A. That is right.

Q. That is on 16.4 base?

A. Yes.

Q. Now, if he had made his estimate for that period, you would have the figure as shown on the second table on Page 28 which is 22 billion—I mean 22 trillion—658 billion original reserve on a 16.4 base?

A. That is right.

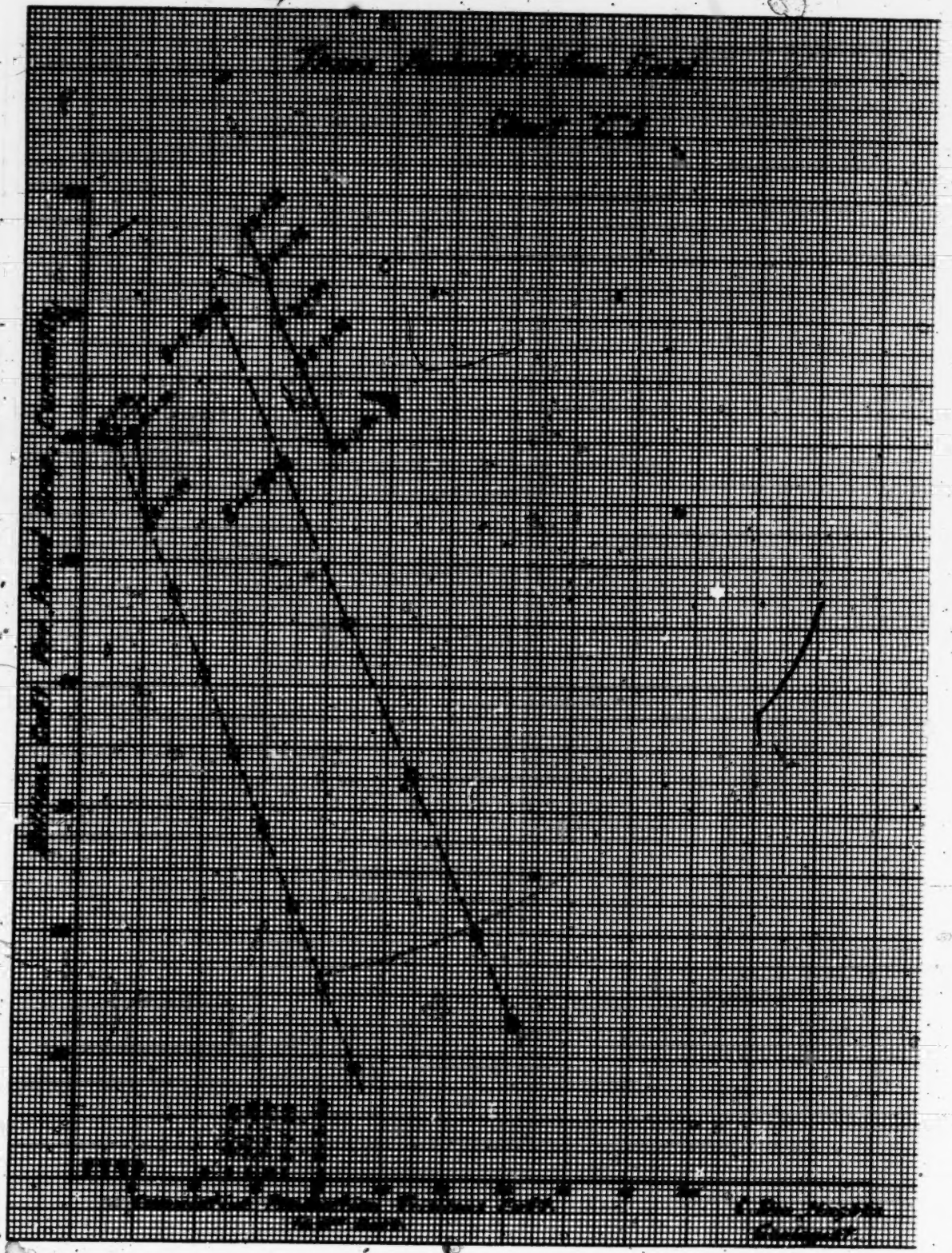
Q. That is the figure that he would get if he had used the last available data for a complete year?

A. That is right.

• • • • •

Exhibit 258.

4515
Exhibit No. 258



Hughes made a further study of Hammer's estimate of reserves with particular reference to the utilization of quadrants by Hammer. This study is contained in Exhibit 264 and the testimony in connection therewith in Volume XCIV, pages 14462 to 14476.

Exhibit 264 contains tables A and B which are based upon the working papers of Hammer.

There is also attached to the Exhibit two maps which are exact duplicates of Hammer's isobar map, Exhibit 179. The first of these maps shows the various counties of the field colored in red and in green. The counties colored green are the counties which have gained gas by migration as reflected by Hammer's data. The counties colored in red indicate the counties that have lost gas by migration, as indicated by Hammer's data. The second map follows the same color scheme as to quadrants and shows the quadrants as outlined on Hammer's isobar map, Exhibit 179, which have gained gas by migration, colored green, and those which have lost gas by migration, colored red, all as disclosed by Hammer's data.

The Exhibit itself contains a detailed explanation of the various figures set out in Tables A and B.

The calculations made by Hughes show, according to Hammer's data, that Wheeler County has lost in excess of 48 billion cubic feet of gas by underground migration during the four-year period covered by Hammer's data. The only place that this gas could have drained to would be Gray County since there are no other counties in the field adjoining Wheeler County. The gas, therefore, would have migrated from a lower pressure area to a higher pressure area as shown by the isobar configurations on Hammer's Exhibit 179. (Vol. XCIV, pp. 14464-14465.)

Gray County lost almost 14 billion cubic feet of gas by migration, and this, plus the 48 billion which it gained from Wheeler County, makes a total of 62 billion cubic feet that migrated out of Gray County. The only possible place for this gas to go would be Carson County to the west. Hammer's map, Exhibit 179, shows the pressures to be higher in Carson County than in Gray County. There

fore, this volume of gas necessarily migrated from a low pressure area to a higher pressure area. (Vol. XCIV, p. 14465, 14466.)

Carson County lost almost 163 billion cubic feet of gas during the four-year period. It had gained 62 billion cubic feet from Gray County which made a total of approximately 225 billion cubic feet that migrated out of Carson County. Some of this gas could very logically have gone into Hutchinson County, but not all of it, since Hutchinson County gained approximately 134 billion cubic feet. This left approximately 91 billion cubic feet that Hutchinson County might have received from Carson County, which necessarily migrated to some other county. (Vol. XCIV, pp. 14467-14468.) This gas could not go to Potter County since Potter County also lost 27 billion cubic feet approximately. The only place it could go would be Moore County. There migrated into Moore County, therefore, the approximate 91 billion cubic feet left out of the gas Hutchinson County received from Carson County, plus the 27 billion cubic feet that migrated out of Potter County into Moore County. It is evident, therefore, that Moore County received approximately 118 billion cubic feet of gas by migration from Hutchinson and Potter counties. Moore County, as shown by Hammer's map, Exhibit 179, has a higher pressure than Hutchinson County. (Vol. XCIV, pp. 14467, 14468.)

All of the above calculations are shown in tabulated form on page 5 of Exhibit 264. Hughes stated that, assuming Hammer's data were correct, it actually showed that substantial volumes of gas had migrated from Wheeler County to Moore County. (Vol. XCIV, pp. 14468, 14469.) Hughes stated, however, that he did not mean to imply that gas had actually migrated from Wheeler County to Moore County, or that gas migrated from low pressure areas to high pressure areas, which is indicated by a study of Hammer's data. He explained the absurd situation which results from a consideration of Hammer's data by the fact that Hammer's estimates of gas in the various quadrants of the field are erroneous. It is Hughes' opinion that the weighting and averaging process used by Hammer had the effect to aggravate or overestimate the gas actually

in place in many of the quadrants of the field. It is the witnesses' opinion, however, that the study does show that Hammer's estimate of reserves for the various quadrants and for the field as a whole based upon this method, is entirely erroneous (Exhibit 264, page 5 to 8.)

Hughes testified that there is no drainage in or out of the Texas Panhandle Field as a whole and that Hammer could have applied his data to the field as a whole without dividing the field into quadrants. If he had treated the field as a whole and disregarded quadrants then Hammer's data would have resulted in an estimate of approximately 28 trillion cubic feet to zero pounds wellhead on a 14.65 pound pressure base, but that the method of estimating reserves for each quadrant, and then adding these various estimates to determine the estimate for the field resulted, on Hammer's data, in an estimate of approximately 31 trillion cubic feet. Hughes does not agree that the 28 trillion cubic feet is the correct estimate, but merely states that by using the same data Hammer increased his estimate by approximately 3 trillion cubic feet by the division of the field into quadrants. (Vol. XCIV, pp. 14474-14475.)

Cross Examination on Exhibit 258.

On cross examination Hughes again reiterated that the pressure-decline method as applied to the Texas Panhandle Field would give approximately the correct result if there were any method whereby the correct weighted average pressures could be obtained. The correct weighted average pressures cannot be obtained by weighting on acreage alone; in order to get the correct weighted average pressure it should be weighted on volume, not on acreage. (Vol. XCIV, p. 14503.)

Hughes again explained the error that was made by the Railroad Commission in contouring its 1939 pressure map and stated that this error was called to his attention by the Railroad Commission staff. He stated further that if he had used the 1939 pressure figure that the curve which is shown on Chart C, Exhibit 258, would have declined much more from 1938 to 1939 than it did for the period from 1938 to 1940. (Vol. XC., pp. 13810-13822.) Hughes did not attempt to correct the error because this

could only have been done by recontouring the entire field which he did not do. (Vol. XC, p. 13823.) Although the wells upon which the error was made were located on the east field, it affected the weighted average pressure on the entire field. (Vol. XC, p. 13826.)

The witness stated that he had been applying the pressure-decline method to the Texas Panhandle Field since the Railroad Commission had been putting out weighted average pressures, but it did not give consistent results; that he would not shut his eyes to the definite trend which the pressure-decline method showed and that if this trend continued in the future as it had in the past five years that this method would point to an original reserve in place of 16.3 trillion cubic feet. (Vol. XC, pp. 13842-13844.)

It is the witness' opinion that if the field were shut in and pressures were permitted to equalize that the equalized pressure would be less than the Railroad Commission's weighted average pressure and less than Hammer's weighted average pressure, and that one reason that this would be true is the fact that the high pressures now obtaining in the field are located for the most part in the lean areas; that is, areas that have less than the average volume of gas in place; (Vol. XCI, pp. 13881-13883) and that the difference in the so-called weighted average pressure and the equilibrium pressure would probably be quite a sizable difference. (Vol. XCI, p. 13884.)

The witness was referred to Chart C-1, which contained a graph based upon Hammer's pressure and production figures. He stated that the decline from 1938 to 1939 was not unusual because it corresponds with other data with which he has compared it. He thinks it is more likely that the pressure declines with respect to production in some of the earlier years covered by Hammer's study are more likely to be unusual. (Vol. XCI, pp. 13901-13904.) He made a reasonable interpretation of the data shown on Chart C-1 in drawing his curve based upon such data. Upon being accused of ignoring both the 1936 and the 1938 points he replied that he had not ignored either but that he gave due weight to both his line as drawn inter-

sects both the 1939 and 1937 points, and just about splits the difference between the 1936 and 1938 points, and that however interpreted, the data as taken from Hammer's calculations show a decided downward trend, whereas, if the pressure-decline method were giving the correct results the data would show a straight horizontal line instead of the sharply downward trending line. (Vol. XCI, pp. 13905-13907.)

The witness also reiterated that if the application of the pressure-decline method, as it has been applied in the Texas Panhandle Field, does not give consistent results (and it does not) that it should either be discarded entirely or interpreted in the light of the definite trends which the application of the method discloses. (Vol. XCI, p. 13912.)

Hughes further testified on cross examination (Vol. 78, pp. 11471; 11499-11508) as follows:

Q. Then you can't recall exactly what percent porosity—have you ever tried to compute the per cent porosity for individual wells of the Texas Panhandle field?

A. I must have done it at that time on those I was working on. It was necessary if I used a porosity on those wells that I was studying at that time.

Q. I thought you just told me someone else did that

A. Do you mean, did I attempt to make the laboratory determination?

Q. That is right.

A. No, I have never done that. I didn't mean to give you that impression.

* * * * *

Q. Doesn't this estimate of reserves involve the fundamentals of physics as you have applied the method here?

A. Yes, I think so.

Q. Have you any authority, any publication, any scientific journals, any text books, which would sustain you here?

A. It might be well to read what I said in my written statement.

Q. Well, I have read the written statement several times and I don't find—there is no authority cited there.

A. I have tried to describe here what I did.

Q. Of course, I am not interested in what you did right now—I know what you did, but I am interested in what authority you had for doing what you did in the field of physics.

Mr. Spencer: He is giving you his authority in his statement.

By Mr. March:

Q. What page are you referring to?

A. At the bottom of Page 5, after I described my observations I go into a little sort of a summary in which I state: "Thus I believe that for practical purposes in the Texas Panhandle permeability varies with porosity."

In the next explanation is stated: "Virgin natural open flow is an important index to original gas content because reserves are governed by pressure."

The pressure in the formation is one of the factors which you must know in order to estimate reserves and they are governed by thickness. Thickness is one of the things you must know. Porosity is another thing you must know, and when we talk about porosity in the oil and gas business we are talking about effective porosity, that is, the interconnected porosity in the formation.

Now, that statement ties in definitely to the use of physics in estimating reserves. Then the next statement is "Open flows are governed by pressure." Pressure is one of the things that influences open flow.

Referring back to the first observation on reserves, that pressure is the same in both cases.

"Open flows are governed by thickness." That ties in to direct observation in the field and it has its reasons in physics why that is true.

"Open flows are governed by permeability." Of course, back in that permeability relationship comes porosity, because you can't have permeability unless you have some effective porosity, so that the two start out from a common point. No porosity would have no permeability and then end up with a common point where under given sizes your permeability would be greater if your porosity was greater.

I think all of those statements are tied in to physics and the way I apply that to the Texas Panhandle field is then tied into my practical experience in the Panhandle which I have explained in this report.

Q. That was very interesting; however, I want to get to the point of my question. I notice here on Page 6 you say: "Permeability (for practical purposes, in the Texas Panhandle field this varies with porosity)."

Then you have at the top part of the page: "Porosity (for practical purposes, in the Texas Panhandle varies with permeability)."

Can you show me any scientific books, any scientific text books on physics which sustains any such direct relationship?

A. Well, I don't think I can show you any that states that there is a direct relationship in all cases. I don't know that I could show you a quotation that would necessarily state that there is a direct relationship in some cases. I know I could show you cases where it shows there wouldn't have to be a relationship. I have—

Q. Well, I have done a little—

Mr Spencer: Well, let him finish his answer, Mr. March.

Mr March: All right, proceed with the answer.

The Witness: I think that I have tried to explain that my practical observations in the Panhandle field allow me to conclude that there is a relationship.

By Mr. March:

Q. Is that your complete answer?

A. Well, up to this point.

Q. All right, sir. Now, I have done a little studying myself here on this subject—

Mr. Spencer: Are you testifying now?

By Mr. March:

Q. Who would you say had written the outstanding work on this subject of permeability and porosity?

A. Well, I wouldn't want to say right offhand.

Q. Do you know anybody that has written any books on it?

A. Yes, I know several. I don't know them, no.

Q. I mean, do you know who they are?

A. I know some of the names, yes.

Q. Name one.

A. This isn't a guessing contest.

Q. No, it isn't, but it seems to me, as you state, that the thing is based on some very fundamental laws of physics—the whole theory.

A. The theory is but the practical application isn't.

Q. I have in my hand here "Flow of Homogeneous Fluids" by Muskat, published in 1937—M. Muskat. Have you read that book?

A. No, I haven't.

Q. You mean you have made a careful study of this question of permeability and porosity without reading one of the leading authorities upon the subject?

A. I have made a study of it in its application to the Texas Panhandle field.

Q. Do you agree with this statement of his?

Mr. Spencer: Now, just before we do that, Mr. Examiner, there is no testimony in the record that this is a leading authority on the subject.

Mr. March: It doesn't have to be the leading authority.

Mr. Spencer: You said it was.

Mr. March: He said he didn't know whether it was a leading authority or not.

The Trial Examiner: No, you didn't ask that.

By Mr. March:

Q. Well, is he one of the leading authorities on it?

A. To be perfectly frank, I don't know.

Q. Would you agree with this statement of his on Page 12?

The Trial Examiner: Do you know the author?

The Witness: Yes, I have seen the name and I know who it is he is talking about, but I have never read the book.

By Mr. March:

Q. You know he is an outstanding authority in the field of physics, don't you—Morris Muskat?

A. I don't know for sure. I assume that he is.

Q. I see. I will ask you if you agree with this statement on Page 12. If you do you can say so. If you don't agree with it you can say so. After some discussion, it states this:

"It will be noted that since the porosity is the ratio of the volume of the unit pore to that of the unit cell (Table I), it will be independent of the radius R of the uniform spheres comprising the assemblage. However, the permeability of the array is dependent upon the actual dimensions of the pore openings and is proportional to R. Thus the porosity of an assemblage cannot alone provide an accurrate indication of its permeability. This lack of proportionality between porosity and permeability even in the ideal case is in itself sufficient to eliminate any possibility of deriving significant permeability estimates from porosity measurements."

Do you agree with that statement?

A. Well, I would have to study that.

Mr. Keffer: May I suggest, Mr. Examiner, that Mr. Hughes be given an opportunity to study this text. He is picking out a statement there and I don't know, there may be many things in there that will conflict.

Mr. March: He may have that opportunity.

Mr. Keffer: I would like to have him do that.

Mr. March: I will not ask any more questions until he has done that, but I would like to have him consider this footnote:

"Yet strangely enough, until recent years, the terms themselves were even used synonymously by some engineers, probably because the porous media with which they dealt showed in general that permeability and porosity varied in some manner."

Now, here the book is.

The Trial Examiner: Mr. Hughes, have you ever read any text books on the methods that you employed in this field?

The Witness: I don't believe that the method that I use has been described specifically as such in a text book. No, I don't think—

The Trial Examiner: It is your own method that you have worked out the mechanics of as I understand it.

The Witness: Yes, the straightforward direct application that I use here, yes.

Mr. March: There is only one other matter I want to mention along this line.

Q. I haven't been able to find, and I will be frank to admit, any scientific backup for your exhibit. There may be some and I am coming to the details of the application of the exhibit in just a minute on its merits.

I have studied and I have here the "Pennsylvania State College Mineral Industries Experiment Station, Folder No. 12," proceedings of the Third Pennsylvania Mineral Industries Conference, Petroleum and Natural Gas Section held at the Pennsylvania State College May 5th and 6th 1933 and I will let you take this and study it, too. I want to ask you if you agree with a statement in here regarding the subject.

First I want to know if you agree with the definitions and see if we have a common understanding of the definitions:

"Permeability is that property of a solid which makes possible the transport or conveyance of fluids by and through it; in other words, it is a measure of the fluid conductivity of a solid."

Mr. Spencer: Now, Mr. Examiner—

By Mr. March:

Q. Do you agree with that definition of permeability?

Mr. Spencer: Before you answer if he wants him to express his opinion on a lot of random reading from text

books here, I suggest that he designate what he wants an opinion on and give the witness a chance to look at the text book.

Mr. March: I will give him a chance.

Q. Then I want to know if you agree with this definition of porosity:

"Porosity is that property of a solid which makes possible the storage of fluids within itself; in other words, it is a measure of the fluid capacity of a solid."

Now, that is found on Page 66.

Now, near the end of this scientific publication, Page 140, we find the following statement, and I will ask you if you agree with it and you can take your time about answering it:

"The data emphasizes the fact that there is no direct and simple relation between porosity and permeability. This fact cannot be emphasized too strongly in view of the prevalent impression even among technical men and engineers that there is a relation or worse yet, that the two are equivalent. The sample of maximum porosity did not possess maximum permeability, although it can be expected that a relatively large increase in effective porosity in many cases is accompanied by an increase in permeability of considerable magnitude. However, the reverse is frequently true, also."

That is on Page 140.

Mr. Spencer: I wonder if we have a note of those.

Mr. March: That's all there is. That's all I could find.

Mr. Spencer: I am glad of that. I wouldn't want to get down to a battle of text books here.

By Mr. March:

Q. And I will still give you an opportunity if you see fit on my cross examination to cite me any authority in any text book or publication on the field of physics for your theory.

A. That is on the strict relationship between permeability and porosity.

Mr. Hughes further testified on cross examination (Vol. 85, pp. 12676-12703) with respect to the relationship of porosity to permeability, as follows:

Cross Examination (Continued).

By Mr. March:

Q. Mr. Hughes, you have had an opportunity to study those two books I gave you. One was Muskat's Flow of Homogeneous Fluids and I asked you if you agreed with the statement I read into the record from Page 12 of that book. I will again ask you that question.

Mr. Spencer: Mr. March, do you think we should have the statement read into the record again at this point?

Mr. March: The statement was read into the record on Page 11504 and 11505 of the transcript. I think that will suffice, but he can read it into the record again if he so desires.

Mr. Spencer: I am not insisting upon it if it is sufficiently identified.

Mr. March: I have the part that was read into the record right here.

The Witness: I don't remember exactly the portion that was read into the record.

By Mr. March:

Q. Do you have Page 12 there?

A. Yes.

Q. You might read here, starting with "It will be noted • • •" the top paragraph on Page 12, and the footnate 2 on page 12.

A. "It will be noted that since the porosity is the ratio of the volume of the unit pore to that of the unit cell • • • it will be independent of the radius R of the uniform spheres comprising the assemblage. However, the permeability of the array is dependent upon the actual dimensions of the pore openings and is proportional to R^2."

Wait a minute. That has a 2. It looks like R^2. The 2 refers to the footnote. That should be "proportional to R."

"Thus the porosity of an assemblage cannot alone provide an accurate indication of its permeability. This lack of proportionality between porosity and permeability, even in the ideal case, is in itself sufficient to eliminate any possibility of deriving significant permeability estimates from porosity measurements."

I want to correct myself again. There is another "2" after that, so I am quite sure back up there the "R" should have read "R^2."

Q. You forgot to read footnote 2.

A. Yes. The footnote says: "Yet strangely enough until recent years the terms themselves were even used synonymously by some engineers, probably because the porous media with which they dealt showed in general that permeability and porosity varied in the same manner."

May I make some comment here?

Q. First I want to know if you agree with that statement?

A. Yes, I agree quite definitely with this statement and I always have recognized that porosity and permeability did not need to vary together and this book is a lengthy treatise that shows the mathematics of why they do not need to, although all through the book he recognizes the relationship—a relationship. That relationship starts from the very fact that in order to have permeability you must have some porosity and coming back to this sentence in the first paragraph I just read where he says: "Thus the porosity of an assemblage cannot alone provide an accurate indication of its permeability" shows what I mean. These authorities definitely recognize the relationship but approve very distinctly and to great extent with very advance mathematics why that is not true, but the significance of what these theoretical treatises have to do with the actual field experience and field practice is brought out, I think, in this footnote where he says: "Yet strangely enough, until recent years, the terms themselves were even used synonymously by some engineers." At that point we have a highly theoretical—the author of a very highly theoretical treatise on the subject, you might say, is not condemning them for using the term "synonymously," but pointed out they

did use the term "synonymously;" that is, the terms "porosity" and "permeability," and I want to point out we have not done that. We have not used the term "synonymously."

He also points out why they were doing that, because in the very same sentence he says: " * * * probably because the porous media with which they dealt showed in general that permeability and porosity varied in the same manner."

My interpretation of that statement is that he definitely recognizes that these engineers out on the job and dealing with actual practical examples had found that the "porous media"—I am using his very words—"with which they dealt, showed in general that permeability and porosity varied in the same manner."

At that point my experience in the Panhandle field fits in with his statement; however, I want to make it very definite here again that this has to do with the very strictest interpretation of how porosity and permeability go along together.

Now, I haven't made any claim that in my treatment of reserves in the Panhandle field that porosity and permeability do have to go along on a very hair-splitting straight line relationship. In fact, my zone map is not a map of permeability. My zone map is a map of open flow. A relationship is constantly between open flow and reserves and not between permeability and porosity. The relationship between permeability and porosity is only one of the factors that enters into what open flow really is.

My relationship, and it is shown on my zone map, is the relationship between open flow and reserves in place.

Q. Now, I asked you in regard to the other book you have there, the publication, referring to Page 6—

A. May I point out one more thing?

Q. Surely. Go right ahead.

A. I have one more citation—

Q. Wait just a moment. Is that citation from Muskat's book on "Flow of Homogeneous Fluids"?

A. Yes, sir.

Q. It is from this book you have here?

A. Yes. By the way, I didn't make these marks on this book. I notice there is a warning in the front of this book. It says: "Whoever writes in, tears or injures in any way a book belonging to the Denver Public Library may be punished by fine from $2 to $25," and I definitely didn't make the marks on this book.

Q. Confidentially, I didn't either.

The Trial Examiner: Will you serve a copy of this page to the library when it is returned?

The Witness: On Page 80 of Muskat's book in the middle of the paragrapl. there in the middle of the page he says: "While it appears probable that the porosity of a given heterogeneous sand will be the primary property determining the final value of the permeability of the given assembly of sand grains, it is nevertheless not unlikely that the porosity will still not give a completely sufficient specification * * *" my interpretation is that he definitely recognizes a relationship by that "* * *the porosity will still not give a completely sufficient specification * * *" emphasis on the "completely."

That ties in with the bottom of Page 12, with the note on the bottom of Page 12.

By Mr. March:

Q. I will ask you to see anywhere it shows the direct relationship between permeability and porosity.

A. I don't say that it does. I don't demand an absolutely direct one. As I explained before, on reserves in the Texas Panhandle field, it has to do with the relationship between open flows and reserves in place, and the relation between porosity and permeability is only one of the factors that governs open flow. Thickness is another factor. I think I have tried to explain in our experience in the Panhandle, that whatever the permeability might be, if you have a big well, of course, you have a thick pay or a good permeable porous zone.

Now, if you had a well that had high permeability locally but did not have a great amount of void spaces which would be definitely related to thickness and porosity, then

that open flow would not be sustained. The fact is that these large wells, the average large wells in the Panhandle field, do have enough porosity and thickness back of them in order to sustain, and if you had the reverse in that case you would have a freak well that would either be discounted in its apparent open flow or would be discounted in the size of the area that is involved, so again I want to make it very clear that my relationship is on open flow and reserves.

Q. All right, let's come to the next book there, your "Pennsylvania State College, Mineral Industries Experiment Station, Folder No. 12." First I will ask you in regard to the definition of permeability and porosity. I think it is on Page 66 there.

A. There is a definition, yes, on Page 66 of each term.

Q. It is referred to here in the record on Page 11507.

A. Do I agree to those definitions?

Q. Yes. There is also reference to it in the transcript on Page 11506. Do you agree with those definitions of permeability and porosity?

A. I might read those definitions here again:

"Permeability is that property of a solid which makes possible the transport or conveyance of fluids by and through it; in other words, it is a measure of the fluid conductivity of a solid."

"Porosity is that property of a solid which makes possible the storage of fluids within itself; in other words, it is a measure of the fluid capacity of a solid."

Of course, I agree with those definitions in a general way; however, the permeability is dependent upon the effective porosity rather than on the absolute porosity, because in order to have any permeability at all we must have an inter-connection of porosity; that is, the porous spaces must be connected in order to allow the flow through the solid, again showing quite definitely that it is related.

Q. The next one I believe is on Page 140.

A. The next sentence right after the paragraph on porosity states: "The only simple relation between the two is a qualitative one, namely, a solid is permeable by virtue of its porosity."

That is just what I stated in my own words.

Q. Turn to Page 140 and read that paragraph I asked you if you agreed with, beginning with "The data emphasizes the fact * * *".

A. Page 140?

Q. That's right.

A. Is that another one you read into the record?

Q. That is right. That is the main one. It starts with "The data emphasizes the fact * * *" beginning there on Page 140.

A. Well, that very first sentence says: "The data emphasizes the fact that there is no direct and simple relation between porosity and permeability."

I would like to indicate the emphasis on direct and simple relationship. Again that indicates that there is a relation. Now, quoting from that point, do you want me to read the rest of the quotation?

Q. Go ahead.

A. "This fact cannot be emphasized too strongly in view of the prevalent impression even among technical men and engineers that there is a relation, or worse yet, that the two are equivalent."

Of course, I haven't made any contention that the two are equivalent. It states further: "The sample of maximum porosity did not possess maximum permeability, although it can be expected that a relatively large increase in effective porosity in many cases is accompanied by an increase in permeability of considerable magnitude. However, the reverse is frequently true, also."

Again that shows quite definitely the thing that I have observed in the Panhandle field that can quite definitely exist even though their mathematics shows it does not need to exist. I agree right along it does not need to exist and there would be many places where it wouldn't.

Q. I believe that is all of the quotations isn't it?

A. Is that all you wanted me to read?

Q. Yes. Just a minute. You can read any other portions you see fit.

A. I would like to mention one or two more from this

bulletin. I would like to mention, too, that this bulletin from the Pennsylvania State College and a great deal of the other work that has been done in recent years on permeability and porosity has to do with the problem of secondary recovery of oil from old abandoned oil fields where the permeability relationship is much more amplified with respect to a viscous fluid like oil than it is in a gas field. It is just obvious that the permeability has more to do with a viscous substance like oil, a liquid, than it would on gas. This bulletin from the Pensylvania State College was dated May 1939.

On Page 93 of the Pennsylvania State College bulletin—just a moment. Is that the same article?

A. Yes, it is the same treatise, Bulletin 12.

Q. All right, go ahead.

A. Near the bottom of the page it says: "The results seemed to indicate that permeability was related to porosity in grain size, and a plot of the permeability versus porosity defined a curve. From a knowledge of results in the field the conclusion was drawn that in the Bradford and Richburg areas porosity is a criterion of permeability."

These conclusions—you want to see if I am reading this word-for-word, do you?

Q. I just want to see what page you were reading from.

A. "These conclusions are concurred in by Barb * * * and Barb and Branson * * * in presenting an equation defining the relation between these factors for the Bradford sand of average grain size as a result of many tests."

I think it is evident that they recognized a relationship.

In the middle of Page 94 they state: "There seemed to be a parobolic relation between permeability and porosity."

In that case the word "parobolic" refers only to the shape of the curve which is a curve relationship as stated in the citation that I just read to you previously.

On Page 170 of the same bulletin under "Discussion," Mr. Pierce—

Q. Is that a part of the transcript you are reading?

A. It is under "Discussion."

Q. This isn't a part of the article of the scientific studies I quoted from, is it?

A. It is a part of the bulletin quite definitely. It is a discussion by the various members in session.

Q. Go right ahead.

A. It is published here as part of this bulletin we are talking about. Mr. Pierce says: "I have long been a radical on condemning engineers who relate porosity to permeability only. Now I am in the position of coming back to their aid. I feel that Messrs. Fancher and Lewis go too far." They were the authors of this treatise preceding these pages.

It states further: "It is not true that there is no relationship with a definite substance there is a relationship."

Now, again I want to point out the fact that those men in dealing with the highly mathematical reasons why there would not need to always be a relationship have found in their contact with practical engineers and geologists with conditions out in the field that those engineers have been realizing a definite relationship for a long time. It is quite evident that what he says is significant in what I have done.

He says: "With a definite substance there is a definite relationship." Just a minute. I want to correct that It says: "With a definite substance there is a relationship." That is exactly what I have found in the Panhandle, but again I want to point out that relationship is not the sole governing factor that entered into my observation of a definite relationship between open flow and reserves. This thing we are talking about in these bulletins is the very very strict relationship between porosity and permeability.

Now, there is another citation—

Mr. Keffer: May I ask a question here, Mr. March?

Mr. March: Yes.

Mr. Keffer: Do you know that the Mr. Pierce you quoted from there is Homer Pierce or H. R. Pierce from the Bureau of Mines? If you don't know, that is all right.

The Witness: I couldn't tell you definitely.

Mr. Keffer: All right.

The Witness: I am trying to see if these men who took part in this discussion have their relationship set forth, but I don't see it here.

Another citation is on Page 171 in this "Discussion." It is by Mr. Hogg.

By Mr. March:

Q. Is that a part of the transcript?

A. Yes.

Q. What page is it on?

A. Page 171. It states: "With reference to Mr. Pierce's remarks, it is possible that there is more of a relationship between permeability and effective porosity than between permeability and absolute porosity."

Of course, my explanation a moment ago would definitely indicate that I agree with that, that the relationship of the—at all times when we are talking about the porosity of a reservoir, we must talk about the effective porosity, because if there is a part of the porosity that is not effectively interconnected with the reservoir or whatever might be in it would never be an effective part of the reserves that we would be talking about; that is, if it were sealed off it wouldn't be a part of the reserve that we would want to be discussing.

On the same page, Doctor Fancher in this same discussion and one of the authors of the paper, says: "Permeability is some function of porosity providing we consider other factors. High porosity does not always mean high permeability. There is in general an increase of permeability with increase in porosity but the relationship is perhaps an exponential and complex function of other variables as well as porosity."

There again he recognizes relationship between permeability and porosity and again I want to point out that this relationship has been recognized by engineers who are out on the job in the field and his technical discussion recognized that fact, that engineers have noted the relationship; and as I pointed out, Muskat, you might say, took the engineers to task for observing the relationship in the media they were dealing with but for using the term "synonymously."

Q. Nobody is going to deny there is a relationship but I challenge you to show *me* anywhere in this book where there is a direct relationship.

A. I told you a while ago I didn't say that there was and I do not demand from my treatment of what I am doing with open flow as related to reserves of gas in the Panhandle field that the relationship there is dependent upon porosity and permeability only in part. Therefore, that relationship would not have to be a straight line, definite hair-splitting relationship. I am dealing with wells in the field, with averages of wells of the same size and type where the thicknesses and these permeability relationships tend to average out.

We even noticed the samples that were employed in detail from the one well, the Shell No. 3 Haggard, showed that even within that one hole that the permeabilities varied so that we are dealing with the open flows of wells and back down in the formations from which those open flows are controlled we have averages and we have the ranges from low to high both in porosity and permeability.

Mr. Keffer: From the same well?

The Witness: From the same well.

By Mr. March:

Q. I will challenge you to present any scientific proof from published scientific journals where the open flow indicates gas in place.

A. I will be glad to do that. I want to refer you right at that point to the report of investigation 3313 of the United States Bureau of Mines. The title of that bulletin is "Extent and Availability of Natural Gas Reserves in Michigan 'Stray' Sandstone, Horizon of Central Michigan."

This report is by E. L. Rawlins and M. A. Schellhardt. Now, you challenge me to show you where in the text there is a relationship between open flow—

Q. Direct relationship between open flow and gas in place.

A. We have left the porosity and permeability relationship and have gone to the very thing I am talking about in the Panhandle field of Texas.

Q. That is right. Proceed.

A. In this report they make an estimate of gas reserves in the Michigan stray sandstone zone horizons of Central Michigan. They make these estimates on the porosity thickness method. Now, in order to make such estimates you must arrive at your porosity. I will come to that in a little bit here. You must also have thickness.

On Page 11, the third paragraph—I am reading from this report—it states: "Two principal methods of analysis have been used in this report to determine the average productive thickness throughout a field. The first method is based upon an average of the interpreted productive thicknesses of the individual wells in the field being studied.

"The second method is based upon an interpretation of average open flow volume per foot of productive thickness. Ordinarily, for thicker productive lenses than occur in Central Michigan a study would be made of the open flow volume per square foot of productive formation exposed in the drill hole, but for the comparatively thin productive sandstone lenses in Central Michigan fields it is believed that an interpretation based on the open flow volume per foot of productive thickness is satisfactory."

I want to explain in detail just what that means. It means quite definitely that in order to estimate reserves in the manner in which he did, using the porosity thickness method, in order to arrive at the reserves he must have a porosity figure and he must also have a thickness figure.

Now, in this explanation it shows quite obviously that he arrived at thicknesses in individual wells that were studied and in some wells where the thicknesses were unknown to him he used the open flow as an indicator of the thickness.

Now, in order to have a porosity to go along with that open flow or with that thickness, I want to quote how he found the porosity. I am reading now the paragraph under "Porosity" near the top of Page 8 in this report:

"Cores have not been obtained from any wells in the Clare, Hinton-Millbrook-Belvidere, Home-Richland-Day or Ferris-Crystal areas, and consequently porosity tests applicable to these fields have not been made. A porosity test on a sample from one well in the Vernon field indicated a porosity of approximately 19.5 per cent. Samples of

the productive formations from several wells in the Austin field were tested for porosity in a Chicago laboratory and results averaged about 17 per cent. A sample obtained from what seemed to be a very porous streak in one of the wells in the Austin field and tested at the Petroleum Experiment Station, Bureau of Mines, Bartlesville, Oklahoma, had a porosity of approximately 24 per cent. Reports on samples obtained in the Broomfield field indicated a porosity ranging from 18 to 20 per cent. A consideration of these data indicates that it is reasonable to assume a porosity of 20 per cent in estimating gas resources in the higher parts of the structures and 18 per cent in computing probable reserves farther down the structure."

At that point I want to point out that he has an estimate of porosity. In order to go along with an estimate of porosity in an area where he did not know the thickness of the sand he let the open flow be his guide to what that thickness was and it is explained quite definitely in the first quotation that I read.

Now, the only difference between what he did and what I do is that I don't set up an average porosity to go along with my open flow. If I wanted to follow specifically what he has done, I could go along with each well with an assumed porosity of 20 per cent, say, and by means of the open flow let the open flow give me an estimated thickness and at that point I could use porosity and thickness and it would show the mathematics of the computation arriving at the reserve.

The only difference between what he says and what I do is that I let my open flow be a guide to both porosity and thickness. I want to point out again what he did was, he had an assumed porosity and with that assumed porosity he let his open flow be a definite guide as to thickness.

Right in connection with that, several years ago while Mr. Rawlins was still with the Bureau of Mines and before this report was published—the date of this report is July 1936—at the time I was working for the Cities Service in connection with the Topeka case—as I remember it was in the spring of 1935. I remember I told you the other day the case was in 1935—I had a long conference with Mr. Rawlins who was still then with the Bureau of Mines and located at Bartlesville, Oklahoma.

I explained in detail just what I was doing in the Panhandle field, how I had arrived at the fact there was a relationship between open flow and reserves in place. As I discussed what I was doing in the Panhandle, he very—

Mr. March: Just a minute. I object to that statement for this reason, because my witness wasn't permitted to say what the Phillips Petroleum Company had discovered about the known relation between porosity and permeability. Mr. Hammer was on the stand and I asked him as to the Phillips Petroleum Company showing there was no relationship between permeability and porosity—

Mr. Keffer: Just a moment, Mr. March. We will grant the soundness of the objection, Mr. Examiner.

The Trial Examiner: Very well.

Mr. Keffer: You need not say any more, Mr. March. We have granted it.

Mr. March: I would rather let my man go on.

Q. Is that all of the statement you have about that report?

Mr. Spencer: You interrupted the train of thought of the witness.

Mr. March: Just skip the Rawlins conversation.

Q. Is there any other statement you wish to make? If there is, we will be glad to have it.

A. Skipping the discussion, I can go along and quite definitely state what I have done in the Texas Panhandle field is definitely what he did in the areas of the Michigan field where he had no thicknesses and where he hadn't an assumed porosity, but he let his open flow be the definite index as to the amount of gas in place.

The only difference was, he came around and carried through the mathematics after letting the open flow give him an estimate of thickness, but the result is the same. Had he set up his relationship he could have gone directly by means of a factor from open flow to reserves in place Just what that factor could have been, I do not know. It most certainly would not have been the same factor that I used in the Texas Panhandle field. I wouldn't expect the

factor I used in the Panhandle field to be the same in another field. That factor would have to be determined; however, I want to point out that he could have definitely gone from open flow by means of the factor to reserve content per acre in place.

Q. But he didn't?

A. I say that the only difference—the result is that relationship—

Q. But he didn't, I said.

A. I could answer that better if I could refer to my conversation with him.

Q. I see.

A. The result is, he did do it. For instance, I could point it out very distinctly that the way I applied a direct relationship between open flow and reserves in place in the Panhandle field at a given well with this relationship between open flow, I could assume porosity and I could calculate by means of that porosity what the necessary thickness would have been, and my answer would be the same as the answer that I do get without calculating it. That is what I am trying to show you, that the only difference between what I did and what he did is, he has recognized this direct relationship between open flow and reserves in place, but he merely went through the mathematics of showing what thickness was necessary in order to accommodate that given relationship. It was an assumed proposition all the way through, based upon the definite recognition of the relationship between open flow and reserves in place.

Q. The field you referred to is located in Michigan?

A. I stated the title of the bulletin.

Q. Those sands are pretty well uniform, aren't they, as to content?

A. No, they are not. I think you could gather from the paragraph that I read that they were not.

Q. You made some very interesting statements here, Mr. Hughes. I believe you stated here that you arrived at the porosity and pay thickness of the Texas Panhandle field by the open flow method of estimating reserves.

A. Would you have that read for me?

Q. I understand the effect of it was—

A. I would like to have it read.

Q. I will ask you the question directly. Did you determine the pay thickness of the Texas Panhandle field?

Mr. Spencer: In connection with the preparation of this exhibit?

Mr. March: In connection with the preparation of this exhibit.

The Witness: I have explained at length what I did, that I arrived at thicknesses and porosities in a group of wells from which point with an observed relationship between open flow and reserves I went immediately from that to the field as a whole with that relationship of open flow to reserves.

By Mr. March:

Q. I want to ask you if you did arrive at the pay thickness for the entire field?

A. No, definitely not. I think that has been clear in the record.

Q. And in arriving at the pay thicknesses in those few wells which you didn't have the names of, I believe you used the same method that Mr. Rawlins uses here in the Michigan field, or did you?

A. May I have that bulletin again?

Q. Certainly.

A. I told you what he does—

The Trial Examiner: We have spent considerable time on that, Mr. March, explaining the difference between what he did and what Mr. Rawlins did.

Mr. March: I just want to ask a few questions in regard to that, Mr. Examiner. If in those early wells he did arrive at the pay thicknesses in the manner Mr. Rawlins did, that is something different than what he did at the beginning, because from what I understand, he had samples to ascertain the pay thicknesses of those early wells he examined. It makes a big difference. I want to just clear that point up.

Mr. Keffer: Of course he said quite definitely, Mr. March, as I understood him, at least, that he didn't apply open flows for the determination of sand thicknesses.

Mr. March: If he will make that statement in regard to the early wells, that is all right.

The Witness: Let me make a statement—

By Mr. March:

Q. Did you use the method Mr. Rawlins has outlined here in arriving at the pay thicknesses of the few early wells?

A. You mean by that method in which he

Q. Open flow.

A. Quite definitely, no.

I want to point out what I did as compared with what he did. I observed the thickness and porosity on a group of wells that started me out on my relationship between the open flows of those wells and the reserves.

Now, I want to point out that that is also what Mr. Rawlins did in Michigan. I have read that quite distinctly in the first quotation from Mr. Rawlins where he says

Mr. Spencer: I don't think there is any necessity of repeating it, Mr. Hughes.

The Witness: All right.

By Mr. March:

Q. Did you know that in the Texas Panhandle field that 5 million cubic feet—strike that.

Did you know that in the Texas Panhandle field five feet of pay may have 10 million cubic feet of gas and 10 feet of pay may have 3 million feet of gas?

A. I haven't in mind at the moment a specific case proving that point, but I wouldn't be surprised at all. I wouldn't be surprised if the contrary were true.

Q. Then your open flow doesn't indicate pay thickness, does it?

A. The pay thickness is one of the things that governs open flow. The other is the porosity.

Q. Yes.

A. And permeability. If you have greater volume from the lesser thickness, naturally you have greater porosity and permeability with that lesser thickness. That is just obvious. It works out that way quite definitely in the Texas Panhandle field.

Q. If your pay thickness had different content, how in the world can you gather anything about reserves in the Texas Panhandle field?

A. Well, I have explained how I arrive at it. Now, at that point it is obvious that pay thickness is not the sole governing factor of reserves and it is not the sole governing factor on open flow. It is only one of the factors.

Q. Oh, yes, there is one other question I want to ask you in regard to this Pennsylvania bulletin. You are aware of the fact that in this Pennsylvania State bulletin these two individuals who wrote this article examined some three or four hundred cores to come to their conclusions?

A. They have quite a list of determinations in the bulletin. Whether they actually did the work or not, I am not in a position to say. There is a list of quite a few determinations of core samples. Of course those core samples are very small and they represent only a few inches of the formation and the core which is used—the actual piece of the formation which is about as big as your thumb or a little larger, that actually goes into the determination of permeability, is not the identical piece of the formation from which the porosity is tested.

Undoubtedly it is from the same general portion of the core. That, of course, is as near the same as they could get it, I presume.

Q. These analyses of cores, three hundred and some odd here, of the authors of the Pennsylvania State bulletin, are similar to that of the Shell Petroleum Company that we discussed, aren't they?

A. Well, they are similar in that they are determinations of porosity and permeability. I have made no attempt to plot those curves or those relationships into a curve.

Q. You are aware, though, are you not, that the conclusions on Page 140 are based upon that comprehensive study on those cores?

A. Let me see the conclusions on Page 140.

Q. You just read them.

A. I don't think those conclusions refer to all of the determinations. They might. I wouldn't want to make a point of that but I want to refer you to the situation that I quoted in which the results of those permeability-porosity *testes* showed that there was a curve relationship. I think I read the citation in which that was stated.

Q. Yes. Now, do you have any other authority, do you think, to support that open flow indicates gas in place?

A. Well, I wanted to clear up one thing just a moment there. You said that I have read those bulletins. I did not read either one of those books completely word for word: I have not read those.

Q. Did you read the Pennsylvania State bulletin?

A. I skimmed through it but I don't want it left in the record that I read and made a complete study of that bulletin, word for word.

Mr. Hughes further testified on cross examination (Vol. 79, pp. 11650-11653) as follows:

Q. The permeability has a lot to do with the reservoir condition, doesn't it?

A. The reservoir—the porosity is one of the definite factors that determines permeability. The porosity and thickness governs the reserves.

Q. Have you ever made a study to ascertain what the thickness is in those two wells?

A. No, I haven't.

Q. How do you know one has a higher thickness than the other?

A. I think I explained in the beginning that my observation was that open flow was dependent upon thickness, and permeability, which was tied in definitely with porosity.

Now, from that statement I have explained—if I haven't explained it clearly I want to make it clear now, that the reason I went from that observation to the rest of the field from the area where I knew that relation was—I went to the rest of the field on a direct relationship by means of open flow—that it was largely because I didn't have these other figures on those other areas of the field.

"These other figures," by that I refer to the thicknesses. As I went from my known areas to the unknown areas I let my open flow be my measure, my index, which covers both thickness and porosity, that is exactly what I did, so except just for curiosity I would have no reason to examine those particular wells as to what thickness the log might have shown or whether it showed any thickness or whether it was a reliable record or what.

Q. So you used this method of estimating reserves be-

cause you didn't have reliable data to estimate the reserves on the pay thickness and the porosity method?

A. If I knew specifically what the thickness was in every tract in that field and knew what the porosity was on every tract in that field, I wouldn't need to use any other method.

Q. Isn't it true the reason you can't apply the porosity thickness method is because you can't secure accurate thickness and accurate porosity for the entire field?

A. I won't make that broad a statement. I will tell you what I did—

Q. Yes.

A. I realized that I had some test areas in which I felt that I knew what the thicknesses and the porosities were, and after finding that they were related to open flows, then whether I made a detailed search to prove that the thicknesses were available or not, I went on to the unknown areas by means of open flows.

The fact that I have done that doesn't necessarily prove that what you said a moment ago was true, that is, that you don't have enough thicknesses. I found at that time that it was very difficult to know in many of the other instances what the thicknesses were and what the porosities were, and it was a matter of convenience and necessity that allowed me to conclude that my relationship was true and to go ahead from that, from the known into the unknown by means of open flow.

Q. Of course, you can't name me a single well which you conducted those experiments on?

A. I told you yesterday that I did not have a list of those wells, but the observations were definitely made. They were made by me a number of years ago.

Q. I have made some sort of a study of some pay thicknesses which have been prepared by some geologists. Have you examined those pay thicknesses made by those geologists?

A. I have discussed them at length.

Q. Have you examined the pay thicknesses?

A. I heard you read a lot of them. I have seen a list of them but I haven't made an attempt to check them, if that is what you mean.

Q. Have you—if you checked one of those and found you had a 50 million open flow well with a lower pay thickness than a 25 million open flow well, that would indicate to you in the case of the two particular wells there was no direct relation between the pay thickness and the open flow?

A. It would indicate to me the well that had the same pay thickness with a little larger open flow would have more porosity.

Q. That is the only conclusion you would want to draw?

A. That is the pertinent conclusion.

Q. If the well had more than a 20 per cent porosity, an open flow well, what would you say?

A. I would say it had more than a 20 per cent porosity.

Q. Do you know of any laboratory test by which you can determine the porosities of gas wells in the Texas Panhandle field?

A. I think we discussed that at length yesterday.

Q. You don't know of any?

A. Yes, I described some. You can read in the record what I said about that yesterday.

Q. I asked you to give me a single well in the Texas Panhandle field where there were laboratory tests on the samples taken from that well where the porosities had been determined by anybody.

A. You mean the complete porosities?

Q. I mean the porosities of the pay formations.

A. No; I agreed with you I didn't know of any cases of that sort.

* * * * *

Mr. Hughes further testified on cross examination (Vol. 80, pp. 11849-11850) as follows:

Q. I come next to the next Shamrock well, it is the Garland-McKee well, located in Section 399, Block 44—the same block as the other—and H & T C Survey, with an open flow of—my record shows 160 million but I don't have those records here, and your record shows as I see it, 155 million.

A. There is a well. I have a well in that section.

Q. 155 million?

A. 155 million, yes, sir.

Q. Now, Mr. Hughes, I want to know if in making up your averages for these zones you included that Shamrock well in the average.

A. Well, what is the date of the completion?

Q. The date of completion of that well is 5-13-38.

A. 5-13-38?

Q. Yes, sir.

A. I wouldn't definitely know without the—the same applies to that that I made on the wells just before. I am inclined now as I look back and reconstruct what went into the picture that I have painted on those zones—I doubt very much if I would have used it according to what I know about those wells today, I know that I wouldn't have used them if I had known about them then what I know about them today.

Q. What in the world did you put that open flow up there on your map as being your open flow for, then?

A. I explained that, too.

Q. Did you correct that back to virgin open flow conditions?

A. I doubt it.

And again, (pp. 11869-11870, Vol. 80),

Q. I notice here in these two examples which you have set forth you have used in both cases a 20 per cent porosity.

A. Yes, sir, in the example.

Q. I notice that in one case you use a 40 foot pay thickness and in the other case a 20 foot pay thickness, is that correct? For the large well of 10 million open flow you used a 40 foot pay thickness and for the small well of 10 million open flow you used a 20 foot pay thickness, is that correct?

A. Yes. You mentioned the small wells. The smallest well is 5 million, isn't it?

Q. Yes. Mr. Hughes, I thought you told me when we approached this the other day you couldn't recall what pay thickness you used in your original calculations.

A. I don't. That is an example. Those are examples of what I was talking about.

Q. This is not any particular well?

A. Absolutely not.

Q. You still don't know whether you used a 20 per cent porosity and a 70 foot pay thickness?

A. It shows there I didn't use a 70 foot pay thickness.

Q. Against what size well would you have used it?

A. It depends. I used what I observed at the time.

Q. Do you mean to say that these examples are actual wells?

A. No. I thought I made that plain. In case they are, I didn't intend to show that they were. They were given as examples to show how the formula—it is shown in Example 1 and it is shown in Example 2.

Q. Now, then, you cannot tell me the pay thickness which you used?

A. No, and I told you that the other day many times on the individual wells, but I did it and I did it on a number of wells and I convinced myself I was doing a right and reasonable thing.

Q. Can you show me any place in the Panhandle field where you have two wells right close together where the smaller well has half the pay thickness of the larger well?

A. I think I could but right offhand I don't know. It might work out that way. It wouldn't have to.

And again, (pp. 11878-11879, Vol. 80),

Q. Yes, but I want to know the answer to a very simple question. I want to know why you haven't tried to apply the porosity thickness method to the entire field in arriving at your factor.

A. You know that as well as I do and it has been stated there are many many wells in the field that you can't find out what the thicknesses were. The records were poor and they were not carefully watched, and a lot of wells were drilled by operators that weren't particularly interested in trying to get details of that nature. There are many many wells in the field that I wouldn't attempt to tell what the thickness was, however, I do know what their volume open flow was and I have explained how I have interpreted those open flows and I show what interpretation caused me to arrive at that.

Q. We are at the first step now we take in getting your 1-1 factor.

A. Yes.

Q. You arrive at the 1-1 factor by using the porosity thickness method on some wells on some parts of the field which wells you cannot tell me specifically?

A. That is right.

Q. Or the pay thickness or porosity? You cannot tell me specifically?

A. That is right.

And again, (pp. 11895-11905, Vol. 80.),

Q. Here is my question: It is very simple. Did you at any time in the preparation of these two exhibits here apply the pressure decline method to the whole field in trying to arrive at your factor? You can answer that question very simply.

A. I have told you that I have been applying the pressure decline method to the entire field for a number of years.

Q. In the preparation of this exhibit?

A. Well, naturally it was prior to the exhibit, because I have been doing it for a number of years.

Q. Well, what was the pressure that you used—the average pressure that you used?

A. Do you want to know from me if I have gone through the arithmetic of taking the production from the Panhandle field at a given date and taken the weighted average pressure of the Panhandle field at that same date and make the bald application of the pressure decline method? Is that your question?

Q. Yes, without inserting a per acre content before you start.

A. Yes, I have done that on a number of occasions.

Q. Let's do that right now, using your own production figures, assuming that they are right. All right, in Exhibit 212 you have a production figure as of August 1939, the total withdrawals as I see it, of 7,485,066,520 Mcf.

The Trial Examiner: You are talking about Exhibit 211?

Mr. March: Exhibit 211.

You have that as your withdrawal figure, do you not, at 16.4 pounds?

The Witness: That's right.

Call it 7½ trillion in round numbers.

Mr. Lange: Page 15, Mr. Examiner.

The Witness: Call it 7½ trillion approximately. If I am going to identify it—do anything with a slide rule, that's about as close as it would be on the slide rule.

By Mr. March:

Q. All right, sir. Then, next, I believe the virgin pressure is 430 pounds. We can assume that, can't we?

A. Yes.

Q. All right, sir. Now, the Texas Railroad Commission weighted areal pressure for the entire field for the summer of 1939 is, according to my figure taken from the Railroad Commission, 323.7 pounds.

A. That sounds about right. I have it here. I think that is it—323.72, July, 1939.

Q. All right, we'll take that as our average weighted areal pressure. All right, you subtract, do you not to get your pounds lost—430 minus 323.7?

A. Yes, that's right.

Q. All right, and what do you get?

A. 106.28 pounds.

Q. 106.3 pounds?

A. That's close enough.

Q. You divide, do you not, your 7½ trillion by this 106.3 pounds to get your per pound drop?

A. You can, yes.

Q. Well, do that, will you?

Mr. Keffer: May I have an understanding at this time with Mr. March that when he goes through this complicated computation that you will give the witness an opportunity to explain in connection with it why this sort of computation cannot give the right answer, otherwise, I am going to object.

Mr. March: I will give him an opportunity to make a lecture on it.

Q. What answer do you get?

A. How's that?

Q. What answer do you get?

A. You are trying to get the production per pound drop?

Q. Yes.

A. That is 7½ divided by 106.3. That gives you about 70½ billion per pound drop.

Q. Yes.

A. Yes—70.5 billion in round numbers. I am reading from this.

Q. Now, right there, where is your similar figure that you calculated out here by your method of open flow, indicating gas in place?

A. My figure doesn't indicate gas in place. My figure indicates original reserve.

Q. All right, you don't have a per pound drop figure and you don't have those figures in existence, is that right?

A. My estimate of gas in place would be the difference between that original at this stage—

Q. All right, now, the production per pound drop—now, we'll calculate the remaining reserves to zero pounds wellhead and is it not correct that you multiply your 323.7 to your average pressure.

A. It just so happens in the Panhandle it is not correct to do what you are doing, but we will do it for arithmetic.

Q. You said you checked your method against the pressure decline method. I am not saying this is not an application of the pressure decline method in the Panhandle field.

A. That will be covered in my speech.

Q. All right, I want to give you the opportunity to make that speech.

All right, you multiply your weighted average pressures by your per pound drop to get your remaining reserves, do you not?

A. I am following your instructions.

Q. Well, don't you do that?

A. Well, we are doing it in this arithmetic, this arithmetic we are doing now.

Q. Isn't this the application of the pressure decline method to the Panhandle field of Texas?

A. It might be your application, but it certainly is not mine and I can give you many reasons why after a while, and I know what the answers are going to be.

Q. What's it going to be—about 30 trillion?

A. I have done it many times. I have been doing it for years.

Q. All right, now tell me this: Just wherein did the way that you apply the pressure decline method in checking your factor differ from the way that we are applying it?

A. Apparently I didn't make it clear in my explanation but the explanation did make it clear. I made it as clear as I could.

Q. The only difference is you started out with your per acre content.

A. Pardon me.

Q. The only difference being that you started out with your per acre content?

A. Yes, I started out with what I thought to be the per acre content and it turned out that in applying it in that method the application of the pressure decline method showed that it was a reasonably correct figure, too, but this is not going to do it.

Q. All right, then I will let you tell me when we get through here just how you did it, just how it is different from this and just why the difference.

Next you multiply your weighted average pressure by your per pound—

A. You want me to multiply 70.5 billion by 324 pounds?

Q. Yes—323.7 pounds.

A. That gives you a product of 22.8.

Q. 22.8. All right, sir, now that is on a 16.4 pounds per square inch basis, isn't it?

A. How's that?

Q. That is on a 16.4 pounds pressure base, isn't it? That answer is on a 16.4 pound pressure base?

A. Yes, it is, because the pressure base of the figures that we started out—

Q. All right, now, you convert that over to a 14.65 pound pressure base.

A. You want me to multiply 22.8 by 1.11 and—call it 1.12—that is the conversion factor to change gas on the basis of 16.4 to 14.65 base. 22.8 times 1.12 becomes approximately 24.15.

Q. I get 25½.

A. Wait a minute.

Q. I didn't get it, I'll confess that.

A. I am used to using my little slide rule that has half the number of divisions on it.

Q. I get 25½ trillion.

A. No, it wouldn't be quite 25½—22.8 times 1.12 gives you 25.3, approximately.

Q. All right, sir, now we have lost this 7½ trillion by withdrawals according to your estimate of withdrawals. I want you now to convert that 7 trillion from your 16.4 pounds pressure base to your 14.65 pounds pressure base.

A. Yes, that would be 7½ multiplied by 1.12. That gives about 8.34.

Q. Now, add up your 25½ trillion and your 8.4 8.34 trillion, and what does that give you?

A. 25½—I didn't quite get 25½.

Q. 25.3.

A. 25.3, I believe, and 8.34.

Q. Yes.

A. 8.34. We'll call it 8.3. You get about 33.6.

Q. 33.6 trillion?

A. Yes, that would be trillion.

Q. That would be the original reserve of the Panhandle field of Texas computed by that application of the pressure decline method, wouldn't it?

A. Well, that is your interpretation of it. It is not mine. That is the arithmetic. I am not trying to dodge the arithmetic at all. That is the arithmetic of your procedure that you have led me through.

Q. I used your withdrawal figure, you will admit, though, in doing it.

A. Yes, you used the withdrawal figures that I am using, converted over to 14.65.

Q. All right, I want you to do this for me: I want you to divide there and get the per acre content.

Mr. Keffer: Now, just a minute, Mr. Hughes. Did you understand that question?

The Witness: If he is trying to tack that per acre content onto me—I am going through again the arithmetic.

Mr. Keffer: All right, I want it clear that that is Mr. March's figure.

The Witness: Yes. I am going to divide 33.6 by the acreage of the field as I have used it on this zone map—1,468,329.

By Mr. March:

Q. Is that for the whole field?

A. Yes. So I will divide 33.6 by 1468, and the answer obtained by making that division is 22.9 million.

Q. 22.9 million Mcf.?

A. Yes. We were dealing with Mcf.—no, not Mcf.

Q. I mean cubic feet.

A. We are referring to 22.9 million cubic feet.

Q. All right.

A. This arithmetic that we are going through.

Q. All right, now, do you know any other way of applying the pressure decline method to the Panhandle field of Texas?

A. Yes, I know a number of ways.

Q. I'll let you go into those in a minute, but here you employ this same method and start out with your per acre content of 22.9 million and see what you would come out with.

A. I don't understand your question—your instruction. That was an instruction but I don't understand the instruction.

Q. All right, here is what you say you did:

"From this average *existant* pressure in each of the four zones and having my previously determined original gas content of each of the four zones I applied the pressure decline method to each zone and obtained an estimate of the amount of gas each zone had lost."

I want you to start out here and go through the same calculation except that you start off with the per acre content. What answer did you get?

A. You will have to show me how to do that. I don't know how you want me to do it.

Q. Could you work the pressure decline method when you had the per acre content to start with?

A. I have described what I did and I did it, but I don't understand what you mean for me to do with that 22.9.

And again, (pp. 11907-11921, Vol. 80),

Q. Mr. Hughes, you did not intend to state here that you had your per acre content before you start?

Mr. Keffer: I didn't say that.

By Mr. March:

Q. I mean in your formula. You didn't put the per acre content which you had arrived at by your 1. formula in your pressure decline formula when you started to work the pressure decline formula?

The Trial Examiner: Read that question, will you please, Mr. Reporter?

(The question referred to was read by the reporter as set forth above.)

By Mr. March:

Q. Did you utilize your per acre content that you had arrived at by your 1. formula in your pressure decline formula which you refer to here?

A. No, I don't know in what way it would enter into the formula.

Q. All right, now, I want you to tell me here for the record here—this is the best explanation you can make of the way you used the pressure decline method, is it, that you have here?

A. In testing I used it in the method that I have described.

Mr. Keffer: By the way, right there, Mr. March, as you have read a while ago—and I have never read this thing here—as you read, he didn't attempt to say how he applied the pressure decline formula.

Mr. March: If he didn't, I want to know how he did.

The Witness: This part here where you said you hadn't read before, you have to start in with the fact that I had the field divided into zones and I applied the pressure decline in each zone and I left the potential of each zone as an index or a ratio, if you would rather call it that, than to say that I had my previously determined content.

We can forget all about that being a previously determined content if you want to. We can just look at it as though it were a ratio of some content, whatever the content was.

Now, then, when I applied the pressure decline method to that I ended up with a figure that was so near the figure that I had previously estimated was the content of those zones that I split the difference. Now, the splitting of the difference left 1.075, and I had a 1 to start with. We can see what the pressure decline factor would have been.

Now, let's see what that would have been. The difference—I have 1.075 which is the split difference between 1 and something else. I must have had 1.150. Is that the arithmetic on that—1.150 plus 1 becomes 2.150 and divided by 2 is 1.075. Now, that is the degree of difference in the pressure decline method.

Now, at that point if I had not assumed a correct ratio—if you want to call it that for those zones—which I choose to call a previously determined content in this explanation, then that difference would have been much greater than that, and by spreading the difference they wouldn't have come out nearly as close as they did. That is the point I was trying to make that I considered it a reasonable check and the two methods I split the difference so that as I describe in this report that at that stage of my method it was tied in really to both the porosity thickness method and the pressure decline method.

Q. Is there any way it is humanly possible to check those calculations you made on the pressure thickness in arriving at that factor?

A. Well, I don't know that I have constantly been checking them lately.

Q. I mean to arrive at the factor today in this exhibit.

A. I don't have all of the intermediary steps between that point and the .92 but I have tried to tell you that later studies as time goes on—as time goes on those studies keep showing that the factor was a little too high. At present, as I have explained before, my opinion of the factor .92 that I am using is that it is a fair and reasonable one but that the information that I have as to the way the field is performing since I last made the study which re-

sulted in the .92, it indicates that that factor could be revised somewhat downward.

Q. I don't want to bear on this much longer. I would like to have you come over to this map and show me very briefly how you utilized the perssure decline method in estimating the reserves of the Texoma Natural Gas Company.

A. I have explained that in detail.

Q. Take it up zone by zone. You take your red zone and do what? Take it zone by zone. Take one zone and that is the way you do all of the zones—

Mr. Keffer: Mr. Examiner, the witness has described how he checked his factor against the pressure decline method. I don't know that he can say any more about that.

I will state this to the Examiner and to Mr. March, that Mr. Hughes *as* now in the course of preparation—it is not ready to be submitted and I am quite certain he is not ready yet to testify concerning it—a rather elaborate set of figures and computations upon the pressure decline method which will answer every question.

Mr. March: In that case there is no need to go any further with that line of inquiry.

Q. We are now to your .075 factor. You state here that in getting your .9 factor you have mentioned here 200,000 worthless acres of land. In what respect do you mention that 200,000 worthless acres of land?

A. After I explained how I tested my porosity thickness open flow method by means of the pressure decline method, then I changed the subject entirely as indicated by the fact that I have given the following paragraph a new number. It shows that I am starting now to explain some other things in connection with the history of the development of my estimate of reserves.

We left completely the discussion of the relation of how I tested the idea and the method with the pressure decline and we have gone now to an entirely different subject. That subject is shown in Paragraph No. 12 and there are several paragraphs following it on Page 5 of Exhibit No. 238.

Q. You just tell me in what respect you utilized the 200,000 acres.

A. I will explain it. This tells it in words I thought over during my leisure time.

Q. If that describes it, you need not read it.

A. "This method has been refined from time to time. The greatest refinement comes with the completions of new wells giving more complete information on the exact zoning of the field by potentials and by increasing the number of places in the field that known pressures may be obtained dufing each field-wide survey for pressures.

"Prior to 1937 I used my own idea as to the outline of the gas field but in 1937 I decided to accept the Texas Railroad Commission's outline of the field as exhibited on their pressure map."

You asked me that date the other day and I didn't remember it for sure but I have just read it.

"In doing this I had to include more than 200,000 acres of land which I had considered worthless for gas, and which I still consider worthless."

That goes on and has nothing to do with the testing of the pressure decline method against the porosity—

Q. What did it have to do with getting the .9 factor?

A. It didn't have a thing to do with the .9 factor.

Q. Let us see what you say in regard to the .9 factor. You state: "Additional refinements have come with subsequent balancing of estimated amounts of gas having gone out of the five zones, zone by zone, and totaled for the whole field, against the production figures from the whole field at a given date. This subsequent testing of the method has resulted in changes of the factor to the present one which is .919211."

I want to know where that data is where you balanced the production from these various zones and arrived at the .9 factor. I haven't seen it.

A. No, I don't have that, and as I have stated, that was the date in which these number of different tests had arrived at the time I used the .92.

Q. It is not in existence?

A. I don't know that it is in existence. I don't have it

here. I have several others that I have made since and I don't have them here.

Q. I want to see the ones you utilized in getting at this .9 factor because I can't test the .9 factor unless I have it here.

A. I told you I haven't it here and I have a number of tests of that factor.

Mr. March: I want the one you utilized in arriving at this factor and I will request counsel to make that available for me to examine.

Mr. Keffer: I do not know how we are going to get something that is not in existence. I will do my best but you won't want me to manufacture one for your special purposes, will you? You don't mean to imply that, do you, Mr. March.

Mr. March: You haven't manufactured one, have you?

Mr. Keffer: No, I haven't, but you are very insistent that one be furnished after the witness says that it isn't in existence. I don't know how I am going to do that unless I make one. You wouldn't want me to do that, would you, Mr. March?

Mr. March: If it is not in existence, I can't get it and I cannot test the factor.

The Witness: May I explain, a moment ago in reply to your remark that I could make a speech?

Mr. March: Wait until I get through questioning you—

The Witness: The explanation that Mr. Keffer gave to the Examiner a moment ago will take care of that speech business.

Mr. March: That is fine, very fine.

Q. In this Topeka case we referred to the other day, I requested you to find out for me what the estimate of reserves was that you had given for the field in that case. Did you find that out?

A. No, I didn't. I had no way of finding that out. I don't have a transcript of that. I can give you the date of the hearing and if you can locate a transcript of it I would be glad to have you read it.

Q. Give me the date of it.

A. I might as well give you all of these while I am on this subject.

Q. We will mark them—

A. They are not in presentable shape.

The Chicago case was in equity 13454, Federal Court, Chicago, Illinois, July 1934;

The Cities Service case was before the Kansas Corporation Commission in Topeka, Kansas at two different dates, January 1935 and April 1935;

The Chicago case before the Federal Power Commission was in May 1939—that is the one you are familiar with—and there are some other cases. These are cases in Texas. One was called the Shut Down case, Texoma Natural Gas Company versus Terrell, 59 Federal (2) 750, case heard 11-4-32. I furnished some affidavits in that case.

The next case—

Q. Just a minute. What was your estimate of reserves in that case?

A. I don't believe that an estimate of reserves was one of the items under consideration.

Q. What did you testify to in that case about?

A. The Shut Down case—it seems to me that it was largely matters of drainage and effective drainage.

Q. Was there a transcript taken—of course there was if it was in Federal Court. Was this in Federal Court?

A. Yes.

Q. Then a transcript was made.

A. The next one was a Market Demand case, Texoma Natural Gas Company versus Terrell, 2 Fed. Supp. 168, Feb. 3, 1933—hearing on interlocutory injunction. I furnished an affidavit in that case.

Q. For whom?

A. For the Texoma Natural Gas Company.

Q. What was the affidavit?

A. I don't know. These had to do with—

Q. You mean you furnished an affidavit and you don't know what was in that affidavit?

Mr. Keffer: He hasn't said that.

By Mr. March:

Q. What was in the affidavit?
A. I don't remember.

Mr. Keffer: I suggest that the affidavit is th best evidence of what was in it.

By Mr. March:

Q. Was it an estimate of reserves?

Mr. Keffer: Mr. March probably doesn't know, but the Examiner will appreciate that certain of these cases in Federal Court in application of temporary injunction or interlocutory injunction are submitted on affidavit form, not on question and answer form as given here. These affidavits are frequently lengthy and give many details. Certainly I wouldn't want this witness to testify as to what he gave in an affidavit nine years ago.

Mr. Lange: Did that interlocutory proceeding finally result in a hearing on the matter?

Mr. Keffer: I don't think any of those cases ever went beyond the stage of an application for a temporary injunction—wait just a minute. There was first the application for a temporary restraining order in each one of them. I expect that was granted upon the verified bill that was filed. I am supplying some things that I don't remember precisely but I am sure that was the normal case that was taken and these affidavits were submitted on the application for temporary injunction.

Sometimes applications for temporary injunctions and applications for permanent injunctions which could have been two separate transactions, were consolidated in one hearing and I am inclined now to believe they were in those cases, but there was never an appeal from the three judge trial in Federal Court to an appellate court.

Mr. Lange: What I was getting at was where they finally did hear any of the proceedings on the merits they did take the testimony.

Mr. Keffer: I did know that they did in some instances but I am not sure they did in all of the instances. I am

not quite certain. I think one went to the Supreme Court in the Consolidated case where there was testimony taken.

Mr. March: My question is whether or not there was an estimate of reserves given there. I will ask the witness.

Q. Was there an estimate of reserves given there, Mr. Hughes?

The Trial Examiner: If he remembers. Do you remember?

The Witness: I remember this, that if there was an estimate of reserves it wasn't contested in any way. I remember that definitely. In fact, I think in the next one I am coming to there was an estimate of reserves, although the case was against the Railroad Commission. As I remember it they didn't question our estimate of reserves in any way, shape or form. I could be wrong about that.

By Mr. March:

Q. The Railroad Commission didn't question your estimate of reserves?

A. As I remember it.

Q. Did they approve it?

A. I don't know—

Q. You mean you aren't sure?

A. I don't know that they put a stamp of approval on something. I am trying to tell you what happened in this case.

Q. Before we leave the other case, you don't remember whether you had an estimate of reserves in Federal Court?

A. I don't think there was an estimate of reserves of the entire field entered into it in these two last mentioned cases, the cases in Texas, the Shut Down case and the Market Demand case. I don't think that an estimate of reserves of the Texas Railroad Commission entered into those cases. I could be wrong but I am trying my best to remember whether an estimate of reserves came into those cases.

The next case was the Ratable Production case, House Bill No. 266. That was the Texoma Natural Gas Company versus Thompson. Thompson is one of the Railroad Commission's commissioners of Texas. It is in 14 Fed. Supp.

318, 300 U. S. 55, 81 L. E. 510. It says here, "Interlocutory injunction heard 9-19-35; tried 3-31-36."

Mr. Keffer: That was the one I was talking about.

Mr. Lange: And that is the one that preceded your hearing on the merits.

Mr. Keffer: Mr. Hughes has given there the correct style, however, that case was consolidated with a Consolidated Gas Utilities case and went up to the Supreme Court in the Consolidated Gas Utilities versus Thompson. There might be some confusion in the names but the citations will be correct.

By Mr. March:

Q. For whom did you testify in that case?.

A. The Texoma and the Consolidated.

Q. Did you have an estimate of reserves in that case?

A. I feel pretty sure that I had an estimate of reserves but I would have to check on that to be positive.

Q. Check that, will you please?

A. I don't know where I can check it until I get home and have a transcript of that made available.

Q. You mean, Mr. Hughes, you don't have a file on your estimate of reserves in the past?

A. I didn't say that I didn't have a file on my estimates of reserves. I can tell you this, that the estimate of reserves I have been using over the past several years back to and including the Cities Service case, couldn't be very far from around 18 or 18½ trillion, which is close to my present 19½ trillion. I can tell you that definitely so if you want to split hairs and know exactly the amount in each one of those cases it can be determined and if I am wrong the record will show it. I am not trying to misrepresent a thing in that statement.

Q. I am not saying that you are. You may proceed.

A. Those are the only ones I have.

Q. I do want to know if you can possibly get from your records what the percentage of drainage was for the Cities Service Company in the Topeka case.

A. I don't remember that I made a study of that. The only way I would know—I remember I made a study of the

reserves, but whether I made a study of the drainage at that time, the only way I could check that would be to obtain a copy of the transcript of that case. At the present time I don't know where I could get it and undoubtedly the Cities Service has it but I don't have it.

Mr. Hughes further testified (Vol. 85, pp. 12699-12721) as follows:

By Mr. March:

Q. I want to ask you if you did arrive at the pay thickness for the entire field?

A. No, definitely not. I think that has been clear in the record.

* * * * *

Q. Now, Mr. Hughes, your recollection was very very vague about the Chicago District pipe line case and I have gone to a lot of trouble to get the transcript of your testimony about it, and I want to ask you a couple of questions about it, and refresh your memory.

A. Which case is that, you say?

Q. That is this case: Chicago District Pipe Line, a corporation, plaintiff, versus Benjamin F. Lienheimer, Andrew Olsen, Charles E. Byer, J. D. Marnane, the persons constituting the Illinois Commerce Commission, and Otto Kerner, Attorney General of the State of Illinois, defendants; U. S. District Court, Northern District of Illinois, Eastern Division, No. 13,454 in equity, Chicago, Illinois, Tuesday, July 17, 1934, 2:30 p. m.—I beg your pardon. Your testimony begins on Wednesday, July 18, 1934, at 10:00 o'clock, a. m.

Now, you were asked this question:

"Q. Have you made a calculation, Mr. Hughes, for the purpose of determining the total amount of natural gas which was in the Texas Panhandle field prior to the beginning of withdrawals from that field?

"A. Yes, I have.

"Q. And what is your judgment in that regard based upon? Is it based upon the total area of the field as we know it?

"A. The information that has been obtained by drilling the various wells in the field.

"Q. What is your estimate?

"A. About 16¾ trillion cubic feet of gas.

"Q. Is that all the gas or the recoverable gas?
"A. That is what I consider recoverable gas."

That is found on Page 1090—Page 1092, rather. Then you state:

"Q. And the recoverable gas which you have given us a figure on is the gas that lies between two rock pressures of 25 and 430 pounds?"

Mr. Keffer: Now, just a moment. Mr. Hughes has never given any testimony in this case as to abandonment pressure. The matters which Mr. March is leading up to are quite definitely that.

Mr. March: No, I am not leading up to that.

Mr. Keffer: Yes, you are.

Mr. March: No, I'm not.

Mr. Keffer: Now, just a moment. Mr. March if he desires, may, of course, give the estimate made by Mr. Hughes as to recoverable gas, but I don't think he has the right on cross examination, at least, to prove by Mr. Hughes what Mr. Hughes might consider to be a proper abandonment pressure.

Mr. March: Mr. Hughes doesn't say anything about abandonment pressure, not a word, and I am not going to say a word about it.

Mr. Keffer: I think it does. I think what you just read could at least be interpreted as that. May it be understood, then, that the data you are reading shall not be considered in connection with any abandonment pressure?

Mr. March: If he doesn't say it. I don't want it to say it. I have no intention of bringing out abandonment pressure.

Mr. Keffer: It is your understanding that what you are reading has nothing to do with abandonment pressure and may not be so considered.

Mr. March: That's satisfactory with me, sure.

Mr. Keffer: All right.

Mr. March: I can't limit what the Examiner will do.

Mr. Keffer: You can make agreements here which are binding upon the Examiner. That's the only thing I want, and if you and I make a stipulation it is binding upon the Examiner, the Power Commission and the courts.

Mr. March: He doesn't mention abandonment pressure here and I am not going to, and as far as I am concerned, it has nothing to do with abandonment pressure.

Mr. Keffer: If it has nothing to do with it, then certainly you can make the stipulation, can't you?

Mr. March: The stipulation is it will not be considered in abandonment pressures?

Mr. Keffer: That's right.

Mr. March: I won't make any kind of stipulation in the record. The testimony will speak for itself. I am not bringing it out in regard to abandonment pressure.

Mr. Keffer: The only point is this, Mr. Examiner, if it is offered from the standpoint of abandonment pressures, an objection to it is good. If it is not offered for that purpose, perhaps the objection is not good.

Now, counsel can clear that up readily. Then if they refuse to do it, then I am going to object to the testimony on the basis that it does have some relevancy to abandonment pressure.

The Trial Examiner: The point is this, I think, that the matter you are referring to there has to do with Mr. Hughes' recovery factor.

Mr. March: It does. That's the point. It has to do with this recovery factor but not abandonment pressure.

Mr. Keffer: And it is limited to that.

Mr. March: That's right. I am not limiting a thing. It doesn't have anything to do with abandonment pressure but it does have to do with the recovery factor.

Mr. Keffer: You said that long ago.

Mr. March: But I am not stipulating with you on anything in the record.

Mr. Keffer: What do you mean? Then you mean you aren't limiting your offer to the recovery factor?

Mr. March: That's all I am bringing out here is in regard to the recovery factor.

Mr. Keffer: And it is offered for that limited purpose?

Mr. March: As far as I am concerned, it is not offered for any other purpose.

Mr. Keffer: As far as you are concerned, you are the only person concerned, because you are offering it.

The Trial Examiner: I think to be proper, Mr. Keffer, I think it is perfectly proper for Mr. March to read there from Mr. Hughes' former testimony if it pertains to Mr. Hughes' recovery factor.

Mr. Keffer: That's right, and it is limited to that.

The Trial Examiner: I don't think it would be proper to go so far as abandonment pressures. Mr. Hughes has not testified in a proceeding which has to do with abandonment pressures.

Mr. March: He doesn't say which one is right on these pressures. He has 100, pounds, 50 pounds, and 25 pounds in a series and I am not trying to confine him down to any abandonment pressures at all.

The Trial Examiner: Well, let's go ahead in the interest of saving time.

Mr. March: Well, then, I will read here to make it complete on Page 1094.

Mr. Keffer: You don't mind me looking here, do you? I have got to see what's coming. I haven't seen this.

Mr. March: No.

Q. You state on Page 1094:

"Q. Will you state how much gas has been withdrawn from the Texas Panhandle field for all purposes from the time of its discovery up to June 1st of this year, 1934?

"A. In round numbers that figure is 4.2 trillion cubic feet.

"The Master: Just about a quarter.

"A. Just about, yes, sir.

"By Mr. Davis:

"Q. That would leave—
"A. That would leave—
"Q. What recoverable gas reserve?
"A. About 12,550,000,000,000 cubic feet in the reservoir."

Q. Now, I ask you if that refreshes your memory in regard to your testimony as to your estimate of reserves in that case.

A. Well, I am assuming that all those figures that you have read were correctly transcribed and you mention there, I believe, 16 and what was that, three-quarters trillion?

Q. Your estimate of reserves that you have here on Page 1090, you state is about 16¾ trillion cubic feet of gas.

A. 16¾ trillion at 25 pounds?

Q. I will read what you stated over here:

"Q. At what rock pressure is it considered that gas is no longer commercially recoverable?

"A. In my figures I use 25 pounds as a point at which it would become uneconomical.

"Q. The recoverable gas which you have given us a figure on is the gas that lies between the two rock pressures of 25 and 430 pounds?

"A. Yes."

A. Yes, that's the point. I wanted to bring it down to the complete basis of the figures that I was mentioning from memory the other day which would be around 18 trillion. I was trying to refresh my memory as to about what that 16¾ trillion at 25 pounds abandonment pressure was on the comparable basis that I generally talk of and the total original reserves in place down to zero bottom hole, and that figure, as nearly as I can compute it rapidly here with the slide rule, would be slightly over 18 trillion.

Q. At zero pounds?

A. Yes, at zero pounds bottom hole. Now, what else was it you wanted to know about that?

Q. I want to know now why you considered that you had taken care of the recovery factor when you went down to 25 pounds and did not apply a 90 per cent recovery factor.

A. Well, of course, 25 pounds abandonment pressure has nothing to do with our consideration of the recovery factor. That is quite definite in the first place, and in the second place, as I remember it, that was the first, or very nearly the first time in which I had attempted to make an estimate

of reserves of the entire field in the Panhandle, and I have certainly learned a lot since then.

At that time I didn't know that a lot of these wells were going to go dead from water conditions and be abandoned, many of them at above 100 pounds and some of them as high as 200 pounds. There are many many things that I did not know about the field at that time that I do know about the field at this itme. In fact, I hadn't even noticed the fact that in computing down to 25 pounds abandonment the very arithmetic of that computation in the light of what I know now was incorrect, and that has been brought out in this record. It was an obvious error at that time and I admit it.

Q. Now, you use the words "recoverable gas reserves" as 12,550,000,000,000, so you apparently assume that all the gas could be recovered?

A. The explanation I just made was on that very question that you have just now asked.

Q. All right, sir. Then you state on Page 1148—no, on Page 1147:

"Q. Have you an opinion, Mr. Hughes, on the basis of the facts which are now known to you on the Texas Panhandle field as to the probable remaining life of that field as a natural gas field at this time?

"A. Based on the estimates I mentioned previously and in particular the more conservative estimate on 1936 withdrawals, it points to a life of about 11½ years from the present time."

Do you recall that statement?

A. I recall something of that, and I remember as I recall it, at that time the production from the field for stripping purposes was increasing by leaps and bounds.

Now, you read a statement that refers to the more conservative estimate for 1936. Without going back I would want to check that, but I think that at that time I projected the trend in the rate of increase in production from the field that was taking place at that moment and it continued to take place for quite a while after that hearing that you are reading from, so that quite definitely that statement was made in view of the existing conditions at that time and I am making that statement from memory and I am quite confident that that can be confirmed.

Q. Do you think the gas will be exhausted in eleven and a half years from 1934?

A. Well, all I need to do in connection with that is that at the time we were considering this very very great increase in the rate of production from that field, as I said before, that increase did continue for quite a few months, but then the law was passed in which this stripping of the sweet gas was made, was stopped, and the trend of production changed quite abruptly as is shown and definitely shown in the graph of annual production in Mr. Peterson's exhibit, so that graph explains exactly what my explanation is as to that. Of course the arithmetic at that date on given reserves and with an increased rate of production that was taking place at that time applied to the reserve, the arithmetic ended up with so many years. When that rate changed quite abruptly the arithmetic would be something else.

Q. Well, now, Mr. Hughes, I will refresh your memory on what you said would be the withdrawals for 1935. On Page 1134 of the transcript:

"Q. Have you made an estimate of the probable withdrawals of gas from the field for all purposes in 1935?

"A. I have.

"Q. What is your judgment?

"A. I have made two estimates on that. One is based year's activities which leads me to a figure which I do not think is out of line which would be an average daily withdrawal of 3,400,000,000, but the figure which I think is more conservative, although it is not necessarily more accurate, would be to take what happened during the past two years and let that be the guide, and that arrives at a figure of 3,060,000,000 cubic feet daily which would be a yearly withdrawal of 1,120,000,000,000."

Now, what were the withdrawals in 1935?

A. I don't know, but they are in evidence here and I think what you have just read explains what I had tried to recall from memory as to what that arithmetic involved. I am assuming that you are reading it, and I am assuming it was transcribed correctly.

Q. Now, I find here that—and which has been of great interest to me—that you gave an estimate of reserves according to your own statement here and I will read it to you, in 1932. On direct examination on Page 1087 you say this:

"Q. Are you the same Mr. C. Don Hughes who testified in 1932 before the Illinois Commission in a case involving the Peoples Gas, Light and Coke Company?

"A. I am."

And on over further here there is a statement that you didn't make an estimate of reserves. Is that correct?

A. A statement that I did or did not?

Q. That you did.

A. If it is in there it must be correct.

Q. Did you make an estimate of reserves in 1932?

A. I don't know. That could be determined. From my memory I didn't remember that I did. I may have. If I did, I did. I haven't tried to miscolor whether I did or not.

Q. All right, now, I have gone through this testimony and I have tried to find out what method you employed, and I can't do it, and I want you to see if you can throw any light upon it.

On Page—that is, in 1934—on Page 1176:

"Q. How did you determine what was originally in the field?

"A. Well, it is a long process. The rock pressures and thickness and pay saturations and porosity figures—I don't have any details of that with me. It varies from one part of the field to another and I try to go into the details of that sort of thing, and to try to go into the details of that sort of a thing, we would have to treat practically every area in the field separately."

Now, what method does that say? What is that method?

A. I think it says—I am not going to try to answer questions on that early stuff. I would have to refer to any reports that I may have had at that time. I have tried to give you a sort of a chronological picture of how my method was arrived at in the first place and how I have gone along from year to year, and some of those details at the different stages in which I was working, I don't know that I could even tell very specifically what they were at (illegible) different stages. I think that pretty well explains what was done. To go back of that to try to find the details, I wouldn't attempt to do here. I don't think it means anything, anyway.

Q. All right, sir. This is the only transcript I have been able to get ahold of. Now, of course, a trillion or so doesn't make much difference when you are estimating reserves, does it—a mistake of a trillion or so?

A. A mistake?

Q. Yes, a trillion or so when you are estimating reserves. Like you have an edition of your estimate coming out in 1932 and 1934 and 1939 and 1941 and 1945 and they are all different.

A. Assuming they would be different in 1941 and 1945.

Q. Well, in view of the fact they have been different in the past, I assume you will continue that in estimating reserves.

A. I told you when the conditions in the field at the date of the estimate shows that it is reasonable and practical to do so, I am constantly differing. I have made no attempt to show that the contrary was true.

Q. Now, this is one time I want to get in and—right now—and I don't think it advisable to wait until this other exhibit comes up.

Don't go into detail, but state just how you applied the pressure decline method to get that .9 factor. Now, there was something said about another exhibit which you had which brought that out very clearly. I want you to state in regard to this exhibit briefly how that was arrived at.

Mr. Spencer: Mr. Examiner, unless I am badly mistaken, I think Mr. Hughes had explained that at least a dozen times how he arrived at his factor.

Mr. March: No, he didn't explain how he arrived at—the last time, in how he arrived at it and how he checked against his pressure decline method. I started to have him do it and Mr. Keffer said he had another exhibit on that and he would wait to have him do it. I want him to do it right now. I don't want to take any chances on that other exhibit.

The Trial Examiner: Let us do this, Mr. March: As I recall it, that particular matter came up and you made a reservation at that time and it seems to me if an exhibit—future exhibit, is to come in that deals with that particular matter, it would be repetitious to go into it here now and then again on the other exhibit.

Q. Is there another exhibit, Mr. Hughes?

Mr. Spencer: Let me answer that, Mr. March.

Mr. March: All right.

Mr. Spencer: I will make this stipulation with you, Mr. March: Mr. Hughes will have an exhibit of that character which we will submit here, or he will be permitted to be cross examined on the subject.

Mr. March: All right. I just didn't want to let that slip away.

Now, I want to ask you just a couple more questions.

Q. As I understand, you used Mr. Peterson's estimate of withdrawals?

A. Yes, that's right. I used his table of withdrawals.

Q. All right, sir. Now, in averaging your pressures for various zones, did you average in the dry holes?

A. How's that?

Q. I said, in averaging your average pressures for each of your pressure bands, did you average in dry holes? In other words, when you got to a dry hole in a pressure band, did you say "Zero"?

A. You mean my zone map? My potentials?

Q. Yes, did you average in your dry holes, the open flow at the dry holes in getting your average open flows?

A. Well, I'll tell you, I took into account the dry holes. Those dry holes are what caused me to originally not include as much of an area in my outline of the field as the Railroad Commission includes.

Q. I understand.

A. So they were automatically in that in my idea of what those marginal areas would do. Now, any dry holes that have been drilled within the different zones since the time that I concluded that I had a reasonable figure representing the average of those zones has not gone into it for the same reason that I explained the other day why some of those inflated potentials in the other direction did not go into my average for a given zone.

Q. So in averaging your pressures in the—

A. Potentials, are you talking about?

Q. Potentials, yes—open flows.

In averaging your open flows in your various zones you did not average in your dry holes?

A. I have explained that.

Q. Did you? I'll make this very simple. You see up here on this map Moore County?

A. Yes.

Q. You see that red band there?

A. Yes.

Q. That red pressure band?

A. Yes.

Q. I want to know in getting your average open flows for the red band whether or not you averaged in all of the dry holes as zero?

A. Well, if those dry holes existed and were in that band at the time I was arriving at my average, very likely they were in. However, dry holes that have come in since I decided that I had a good average to use, wouldn't go into them.

Q. I see. So in every one of these bands—

A. Of course, in a red area there aren't very many dry holes. Dry holes in the red area are very very much the exception. Of course there are some. I see here some dry holes in that area in the red up there that you were asking me about right near those Ingerton wells here we were talking about the other day. I don't think I pointed them out at that time but this map shows that in what I called the red area within a mile and a half of that Ingerton well, there are about four dry holes.

Q. You averaged all of those in?

A. That would show that my treatment of that area and the color that I show is certainly very very reasonable, even though the one well might be pointed out as being a little higher than the average color band indicates.

Q. Now, if you average in the dry holes in the red area, did you average them in in all of the open flow bands as you came to them?

A. Well, I have tried to explain to you what I must have done. If those dry holes had existed, that is, had been drilled at the time that I was getting the information on my averages I would probably have used them. However, I want to show further that within any of the zones, getting up into the high value acreage, there are not very many dry holes.

Theoretically there shouldn't be any, but in actual practice they do drill them once in a while.

Mr. Hughes further testified on cross examination (Vol. 90, pp. 13842-13846) as follows:

Q. Did you prepare this exhibit since you have been in Denver, Colorado?

A. The part that has to do with Mr. Hammer obviously was because I never heard of his information until I came up here. The other part, as I said, has been growing for a number of years. The first year that the Railroad Commission of Texas gave us a weighted average pressure I tried the pressure decline method. It gave me a figure that was obviously too high and ever since then—every time they bring a figure out I again apply it and I find that the things are changing and you can't get consistent results and the first part of my exhibit is a definite explanation of what that study results in.

Q. You make one of the strangest statements I ever heard of over here on the first page of your statement—on page 20. You make this statement:

"An extension of this trend points to an Original Reserve of 16.3 trillion for the field. If this is correct, then my estimate of approximately 19¼ trillion is too high. Even though this is the indication, I am inclined to stand on the evidence that 19¼ is a reasonable figure and that the manner in which I arrived at it is reasonable."

Now I want to ask you this question: How could a figure of 19¼ trillion be reasonable when you say that everything points to a reserve of four trillion less than that?

A. Well, I didn't say that everything points to it. I am at that point discussing the extension of a trend which has been going on for five years, very consistently in the Texas Panhandle and that has a bearing on what I was talking about a moment ago. I am definitely interested in knowing what is going on in that reservoir. I want to know how it is performing from year to year and in order to do that I construct these curves which are critical as to the method of showing what is going on, and I have found that from year to year at each new period that we have a survey that we are finding that the field is actually performing by producing less amount per pound drop than it had been before.

Now, I can't shut my eyes to that trend. Now, I don't know that it is going to continue, but I am saying in this

statement that if that trend continues in a straight line, and you will see by referring to Chart C that it is a fairly straight line—now if that trend continues down to the end of the life of the field, it means that the field has 16.3 trillion in it.

Now, I am not convinced that that trend is going to continue. I have already arrived in other manners at an estimate of 19¼ trillion which is a figure that is higher than the one I have just quoted.

Q. 16.3 trillion—if it could—16.3 trillion and 19¼ trillion couldn't be right at the same time. One of them has got to be wrong. Now which horse are you going to ride?

A. I am watching the trend of events. The longer this situation continues to exist that has been existing for the past five years, the more convinced and the more confidence I have in the trend as shown on Chart C.

Q. Are you trying to say that the reserves are somewhere between 16.3 trillion and 19¼ trillion?

A. No, not at this point, but if that trend continues that is apt to be my conclusion a little later on down the line. For the present I am willing to stand on the 19¼.

Q. You may change your estimate at any time within four trillion?

A. When the information that is the most pertinent in the field shows that I need to revise my figure I will revise it.

Q. Just as you have done in the past.

A. Yes, sir.

Q. You have revised it upwards from 16.3 trillion since 1934.

A. 16.3—I believe you will recall that that was on a 25 pound abandonment and I converted it the day you brought that figure in, and that figure is about 18 trillion; so let's forget that 16.3. I have revised it from 18 trillion to 19¼ trillion.

Q. You did testify that the reserves will only last eleven years from 1934.

A. I think that was very definitely explained in the light of what was going on at a certain time. The arithmetic showed a certain figure.

Q. Every time you make your calculations the arithmetic shows a different figure, doesn't it?

A. As to what?

Q. You had a calculation last year where your arithmetic shows one figure for reserves and you make one this year that shows another figure for the reserves.

A. We were talking about the arithmetic on the life of the field. Now what kind of arithmetic are you talking about?

Q. Every time you have made an estimate of the life of the reserves of the Texas Panhandle Field it has been different, hasn't it?

A. Not every time. I have just about decided that in the light of some of these things that are taking place in the reservoir that have to do with these decline studies that there is not much use to keep changing these figures just a small amount until enough evidence piles up that it should be changed materially, and I have brought out—I have stated quite carefully in this particular case that the figure that I am using today is the same figure I used in Chicago in 1939 but that the tendency of the performance—the conditions that prevail in the field today would allow me to revise that slightly downward, but again I am waiting for more evidence to build up showing that an appreciable change should be made. It might tend to conform to the one I am using.

Q. How long do you think it will be before anybody can tell what the reserves of the Panhandle Field are, approximately?

A. Well, nobody will ever know what the reserves were until the last cubic foot, or approximately, has been produced.

Mr. Hughes further testified on cross examination (Vol. 91, pp. 13880-13885) as follows:

Q. Now, you made a great many statements here about the equalized pressure or the equilibrium pressure, which I believe is what you called it. You stated here on Page 17: "I believe the declines as a whole have been in richer than average areas and if the entire field were shut in today until the pressures became equalized, the final pressure would be less in pounds than our present so-called weighted average pressure."

Were you referring there to the weighted average pressure of the Railroad Commission of Texas?

A. Yes.

Q. You were not referring to Mr. Hammer's weighted average pressure?

A. It wouldn't make any difference. I don't see much difference between his and theirs as to the different dates. One date in particular is a little different. The weighted average pressure arrived at by weighting is the weighted average I am talking about, and at the time this was written I hadn't seen his figures so I was obviously referring to the Railroad Commission's pressure.

Q. This exhibit was prepared in rebuttal to Mr. Hammer's exhibit, wasn't it?

A. I told you yesterday the last part of the exhibit was; the first part was a study I made long before I heard of Mr. Hammer's exhibit.

Q. When was the first part prepared?

A. Well, I don't even know for sure.

Q. When did you have the first part typed up?

A. When was it typed up?

Q. Yes.

A. I don't know. I might be able to check back and give you the exact date.

Q. Has it been since you have been here in Denver?

A. This particular typing of it, yes.

Q. Here is what disturbs me: "The final pressure would be less in pounds than our present so-called weighted average pressure." Now, do you know what the equilibrium pressure would be if the field were shut in and allowed to equalize?

A. No, I don't, I'm sorry to state, and I don't think anybody knows for sure what it would be, but I am quite positive it would be something less than the figure that we arrived at by weighting the field by acreage only.

What page are you reading from?

Q. Page 17. If you don't know what the equilibrium pressure will be, how can you come up here and say it will be less than the weighted average pressure?

A. I am not quite sure it will be less.

Q. How do you know?

A. In my opinion I don't think there is any doubt but what this is true that the great bulk of the withdrawals and the pressure losses throughout the field have taken place in richer than average areas. The greatest portion of the

field today that remains at high pressures is very lean, so if you would shut the field in today, shut all of the wells in today and allow equilibrium to take place, those high pressure and lean areas would attempt by migration to build that pressure up. As that lean amount of gas migrated over into the low pressure areas which have larger content, they wouldn't fill it up quite as much in proportion as to what they are losing; so you finally would arrive at an equilibrium pressure that wouldn't be as great as this weighted average pressure we arrive at when we weight it on the acreage alone.

Q. How much less would it be?

A. I don't know.

Q. You don't have any idea?

A. I don't know how much less it would be.

Q. You haven't given it any consideration as to whether it would be a hundred pounds less or ten pounds less?

A. I haven't made any estimate of what it might be for the reasons that I have explained which are good sound geological reasons. I am quite sure it would be less than the weighted average pressure arrived at today on acreage.

Q. Why haven't you made some effort to ascertain how much less it would be?

A. I don't think—

Q. It couldn't be too much less, could it?

A. What do you mean, too much less?

Q. I mean by that, it couldn't be very many pounds less of the weighted average pressure of the field.

A. That wouldn't have anything to do with it. The facts that I have explained could allow quite a great variation between the finally arrived at equilibrium pressure and today's weighted average pressure. It could be quite a sizeable amount, in my opinion.

Q. It is one of the relevant things of yours that can't be measured or appraised?

A. I haven't attempted to measure it. The conditions I have described are present in the field and the decisions following the observations of those conditions would lead quite definitely to the conclusion that that equilibrium pressure would be less than the weighted average pressure.

Q. Now, Mr. Hughes, since you have such a thorough knowledge of everything that has happened in the field, will you tell us this: How long would it take us, approximately,

if the field were shut in tomorrow when the equilibrium pressure would be reached?

A. I haven't any idea.

Q. I thought you studied the movement of gas and the obstacles of the movement of gas together. Do you have any idea as to how long it would take to reach 100 per cent equilibrium?

A. It would take a long time.

Q. A hundred years?

A. It would take a very long time.

Q. A very long time?

A. Yes.

Q. What does a long time mean to you?

A. We would be dead and gone before it reached that equilibrium pressure.

* * * * *

And again (pp. 13911-13915, Vol. 91.)

Q. Do you know of any field as large as the Panhandle field of Texas where the pressure decline method has been applied where the pressure pound and production didn't vary from year to year but didn't average out on a straight line?

A. Well, the first thought on that question is that I don't know of any other field in the world that is as large as the Panhandle field with respect to its reserves. I do know of a field that has more acres in it, but now to come to the second part of your question—

Q. What field has more acres?

A. The Hugoton field.

Q. Right north of this Panhandle field?

A. Yes, that is north.

Now, with respect to the second part of your question, the only way you can answer that is by making studies of the fields. Whether they do or not can only be determined by studying the field and when you study the field if they do give consistent results you conclude that you can apply Boyle's Law—I mean the pressure decline method—and in studying the field if you find that it does not give consistent results from time to time you either conclude that the whole thing is worthless and throw it out the window, or if it goes along consistently and shows from one period to the next

over a consistent number of periods that there is a trend being established, then I think you are at liberty to take into account the trend that is being exhibited and interpret your answers in the light of the trend.

Q. I notice in this rebuttal exhibit that you stay away from the part of Mr. Hammer's exhibit where he makes his estimate of the recoverable reserves of the Canadian River Gas Company. In other words, you don't have any rebuttal to that. You just take his figures on the whole field.

Now, I will ask you this question: I will ask you the question as to whether or not you have plotted production against pressure decline utilizing his figures just on the Canadian River part of his estimate.

A. Let me see. Will you restate that?

Q. I want to know whether or not you have utilized his figures and have plotted the production versus the pressure decline on the Canadian River part of his estimate.

A. You mean by that on the Canadian River acreage or on the quadrants in the Canadian River—

Q. First on the Canadian River acreage.

A. Well, I couldn't find in his working sheets the figures that would have permitted me to do that, so the answer to that portion of it is no.

Now whether I have plotted the comparable study on his quadrants which contain some Canadian River acreage, I don't know. I would have to refer to my work sheets on what I have done with his figures before I could answer that question.

Q. Have you ever plotted the production of the Canadian River wells against the pressure drops of the Canadian River wells through the year 1940 to ascertain whether or not they do not approach a straight line?

A. Well, I am quite sure that I haven't done that.

Q. You haven't done it, so you wouldn't—

A. Through 1940.

Q. Yes. You wouldn't know whether or not that reveals a straight line or not. You wouldn't know whether it would approach a straight line?

A. A straight line with respect to what?

Q. Similar to this Chart C-1. In other words, taking the

example to the left there and plotting your production against your pressure decline through 1940 on Canadian River wells.

A. Oh, you mean just on the wells alone?

Q. Yes, production from the wells and pressure decline from Canadian River's own wells.

A. And on each well, just production on each well?

Q. Total production decline versus pressure decline.

A. Well, how would you arrive at the pressure decline? I want to know for sure what it is you are asking me.

Q. I am asking you if you ever plotted the Canadian River well production against the Canadian River pressure decline similar to the way that you have plotted the production and pressure declines for the whole field on this Chart C-1 in the left-hand diagram.

A. Well, if you mean plotting the grand total of Canadian River production against the arithmetical average pressures of the wells, that is of a given date and new wells that come in and just bring them into the picture and all that, you mean?

Q. I mean this: You know how you did this in Column No. 1 there?

A. Yes.

Q. I mean doing it just like you did that.

A. No, I haven't.

Hughes further testified on cross examination (Vol. 94, pp. 14490-14499) as follows:

Q. Now, Mr. Hughes, your next move here, as you say, is to assign an open flow to each one of your sections. That's right, isn't it?

A. That's right.

Q. By an open flow do you mean what the open flow would be at virgin pressure conditions?

A. That's my interpretation and in fact my intention, and since these open flows that went into the study that I have made on Canadian River Gas Company were most carefully carried back by them to virgin pressure conditions, they are more nearly actual virgin pressure conditions than I have heretofore used and as I have explained before—

Q. All right, in assigning the open flow to each section, did you, where there were wells in the section, take the

arithmetical average of the various open flows of the various wells in the section?

A. I don't think I did. In fact, I can't think of very many sections that actually have more than one well in them. There are a few cases in some of those sections I believe that the tracts were treated separately so that it would not necessarily be an arithmetical average. Whether or not I did that would have depended upon the location of those wells in the section, the geological conditions in the area. There are a number of things that went into my consideration of a given tract before the actual open flow figure was determined.

Q. Now, so there we likewise differ from the way you worked your field as a whole. You didn't take the field as a whole, you took the average open flows within your various pressure bands, pretty well, didn't you?

A. From the pressure bands. I averaged the open flow for the zone.

Q. Zone, that's what I mean.

A. Yes.

Q. Now, in the case of the section, though, you don't do that. You approximate what the open flow should be based upon these various wells, where there are wells in the section.

A. Well, I said that I don't remember taking the arithmetical average. Now, in the first place let's come back and see about how many cases there would be. I don't suppose there would be over—oh, a dozen sections in the whole area that have more than one well in the given section. I am just looking very roughly and hurriedly. I don't want to be pinned down to that dozen, either, but in so far as to the acreage that I am dealing with—this what I am talking about is incidental and if there were more than one well in a given section, the information on both wells we would use.

Now, if you want to get specific on some section, why, I might be able to tell you whether it is an arithmetical average of the potentials. I don't remember. I can't remember whether it was of not. I could tell you this: It wouldn't need to be—for instance, if you have a section of land with two wells down on one side of it that were pretty good sized wells and immediately on the north line in the next section was a

very very small well, naturally I wouldn't appraise that section that had those two good wells down along the south line according to the potential arithmetical potential of those two wells. I would let the small well along the north line have a bearing on the classification that I would assign to that section.

Q. Without going into the thing in detail, you know quite well, do you not, you didn't take the arithmetical averages?

A. I don't believe that it would work out that I did, but I am telling you what was involved in whatever I took.

Q. Don't you know what you did in this case? We have to surmise what you did?

A. I think I have described the procedure that I would go through in appraising a section.

Q. When did you go through all this procedure in estimating the Canadian River acreage?

A. I don't remember exactly.

Q. It has been since you came to Denver, hasn't it?

A. No, my goodness!

Q. When?

A. I don't remember.

Q. Don't you know whether it was in 1940 or in 1939?

A. Well, I told you the date of the map. The exhibit, Exhibit No. 212, is dated the first of 1939; I told you a field-wide section by section survey would be a year later. That would be the first of 1940, wouldn't it?

Q. Yes.

A. I would assume the details on this Canadian River were probably worked out about a year ago on that basis. In trying to reconstruct here what took place, I am trying to give you just what did take place.

Q. In some cases you are not quite sure yourself just what did take place?

A. Well, I have described the procedure.

Mr. Spencer: He is not able to tell you the results section by section, Mr. March.

By Mr. March:

Q. Now, Mr. Hughes, when you came to a section where there was a well right in the middle of it, did you assign the open flow of that well to the section?

A. Again I cannot remember, but let me tell you the line of reasoning I would have used in a case like that. Had that well that was in the middle of a section been greatly different from the sizes of wells immediately around that section, if that were true I certainly would not have assigned the value of that one well. If I had it would have been due to conditions that I considered making it representative.

Under the set of conditions I have described, I have tried to picture a situation that would fit a case where according to my procedure I would not have given it a figure. Again I don't remember all of the different ones. You have 13 pages in my working sheets, as I remember it, and each one of those pages have about 40 entries on each page, so there must be approximately 400 entries.

Q. In other words, you have 400 individual estimates of reserves on your working papers, haven't you?

A. They are estimates on reserves based upon the figure which I have just given you on approximately 400 tracts of land.

Q. In other words, what you are doing is taking one little old tract of land, an arbitrary section, and estimating the reserves for it and then adding them all up to get the total?

A. Taking it arbitrarily?

Q. Well, naturally you didn't have anything to do—

The Trial Examiner: He told you, Mr. March, that he has taken them section by section. It is quite clear in the record.

Mr. March: Yes, I think it is quite clear, too, that he has made 400 individual estimates of reserves.

Q. You have estimated the reserves on each of the tracts, haven't you?

A. There is an estimate of reserves on each tract.

Q. That is right. Mr. Hughes, do you think you could tell anything about the reserves of a given tract of land by taking that one tract and making an estimate of reserves for it? Do you think you could get a correct reserve on the one tract of land?

A. If I didn't think I was getting a correct picture, I

certainly wouldn't have been spending these years doing that in the Panhandle field. My clients must have been thinking I have been doing it or they wouldn't have been paying me all these years to keep doing it.

Q. Then you wouldn't criticise Mr. Hammer in so far as attempting to estimate Canadian River reserves by just taking the quadrants the Canadian River reserves are in? In case you did disagree with his method of averaging in so far as attempting to estimate reserves for the Canadian River acreage alone, you wouldn't criticise him for attempting to do that, would you?

A. Apparently I have criticised him indirectly in that I didn't do it. I wanted to get down to smaller tracts in treating the Canadian River leases.

Mr. Spencer: I think you misunderstood his question, Mr. Hughes.

By Mr. March:

Q. The point I am stating here is, Mr. Hammer took in estimating the reserves the quadrant in which the Canadian River had acreage as some of the acreage owned there was owned by other companies. You would not criticise him for limiting his estimate of Canadian River reserves to that area in view of the fact you have taken smaller areas and estimated Canadian River reserves, would you?

Mr. Spencer: Mr. March, I don't want to interrupt your cross examination—I want to help you—but as I understand your question, it is "you wouldn't criticise Mr. Hammer for estimating reserves based upon his quadrants, when you have gone much further in using a much smaller unit in which to estimate it." Is that the point you have in mind?

Mr. March: In view of the fact he estimates reserves for smaller units or whether he would criticise Mr. Hammer for using the Canadian River quadrants for the Canadian River Gas Company and not take the whole field into consideration. That is what I have in mind.

Mr. Spencer: You are talking about gas in place?

Mr. March: No, I am not talking about gas in place but I am talking about recoverable gas. I want to have it understood that I am talking about recoverable gas.

Mr. Spencer: I would like to have it understood that I want the question to be clear as to what he is answering.

By Mr. March:

Q. Do you understand my question?

A. I think it is a pretty difficult question to answer.

Q. It is obviously in the record that you have taken smaller units than Mr. Hammer thought of. So much for that step.

Then you multiply your acreage in each section by the potential which you have allocated, do you not?

A. That is right.

Q. In that respect you do just as you did before in your other estimate in so far as that particular step is concerned?

A. Yes, that step is the same.

Q. Then you do the same. So much for that step.

Then you would go a step further. You then do what?

A. Well, for convenience, on the working papers that I have set out there are the additional steps that carry this on through, making an estimate of remaining reserves at different dates that are involved. At that point that step we have just finished where we have multiplied acres by potential, at that point we can multiply that product acre by potential by my factor .92 and that gives me the estimated original reserves of gas.

Q. Yes, but you don't do that as you have pressure which comes in there.

A. No. I want to point out to you that I do that. If you go down to the bottom; that is, the sum of all of those acres times potential products on the last page, you will see a grand total figure which is referred to in my written statement. That grand total figure is multiplied by my factor .92 which gives me directly my estimate of original reserves in the Canadian River acreage.

Q. Why do you have pressure involved over here after you multiply your acres by potential? You say that the pressure factor in the left-hand column on the first well is indicated as 425 pounds at .9873.

A. I just explained to you—apparently you weren't

listening—that these next steps you are going to point to have to do with estimation of reserves at later dates. I also want to point out that at the end of this step just made in taking these grand totals here on the last page times the potential you will find a figure which I have referred to in my written statement to which I applied my .919211 factor which gives me without going into pressures or anything, and without referring to these columns on these working sheets, I have a figure that gives me my estimate of original reserves of the Canadian River Gas Company leases.

Mr. Spencer: At zero wellhead.

The Witness: At zero wellhead—at zero bottom hole. At that stage I have my estimate of original reserves. What you are stating has to do with something else and—

Hughes also testified on cross examination (Vol. 94, pp. 14502-14508) as follows:

Q. When you brought pressures to bear here in the Canadian River estimates of the remaining reserves as of 1932, you brought into play the pressure decline method which you condemn, don't you?

A. I brought it into play in a manner which I thought and which I consider that some of it, not working in the field as a whole, had been ironed out in that I have attempted to classify acreage according to volume. That was the reason I classified my acreage in accordance with potentials.

Q. You are now saying that the pressure decline method will work in estimating the remaining reserves of the Canadian River acreage?

A. Well, that's the way I have applied it, yes.

Q. And that is your position?

A. It has been my position all along that the pressure decline method should work if we weight the field, and if we know the correct manner of applying it in accordance with volume. My open flow classification of the tract by tract study of Canadian River acreage is my opinion as to the closest approximation on a volume basis. Now, there are some things, however, going on in the Texas Panhandle field that as time goes on and as we study them, and if it continues, why, they may be well recognized that the pressure

decline method is not even working, assuming we did have that weighted volume.

Q. You mean it is—

A. So that that is getting into something else that—

Q. It may be that it will not even be working in the Canadian River acreage as you apply the method to the Canadian River acreage?

A. Well, if it isn't working in the manner that I have applied it, the other method that would be working if these studies lead to the fact that there is another situation that is causing it to work otherwise, it will certainly show that Canadian River has been suffering a whole lot more drainage than this study shows, quite definitely.

Q. How could the pressure decline method show anything if it wasn't working?

A. Well, I have explained I am assuming that it is working in this particular study.

Q. In this particular study?

A. But I am telling you what would be the result if it is not working in the manner that I am assuming it, but if it is working in the manner that fits in with this study that I am making currently, it is a method that I am not ready to sponsor. It is a well-known and well-recognized relationship but I am not willing to sponsor that application to the Panhandle field, but if it is working, if it turns out a few years from now that it has been working in that manner all along, I have terribly underestimated the amount of loss by drainage from Canadian River acreage and I know that very definitely.

Q. You say you are experimenting on that method now?

A. I am not experimenting on it. I am merely watching it. I am watching the performance of the field. At the present date it indicates that the field is working under that method but I am not willing to agree as yet that it is because I want a little more history to prove it, but the history for the past five years has definitely indicated that there is something going on down there that would fit in with this other method and it is the method that Mr. Gill referred to the other day and as I said before—

Q. By the way, you might just tell us how that method differs from all three of these other methods—of these other two methods.

A. Well, it is very simple in that we have been assuming all along that the Texas Panhandle reservoir was under 100 per cent volumetric control, and in a reservoir which is under volumetric control, Boyle's Law works in such a manner that the remaining reserves in the field are always directly proportional to the remaining pressures in the field.

Now, the thing that I am talking about is a reservoir that is under capillary control and a reservoir under capillary control as it so works out, the remaining reserve in the field varies directly as the squares of the remaining pressure at the time, and it is quite a different arrangement. It would involve an entirely different manner of computing this drainage in this study I have made. It is a well-recognized method. There is no question about that, but I can tell you very definitely that if that method which applies to reservoirs under capillary control is working in the Texas Panhandle field, I can repeat again I have very grossly underestimated the amount of drainage that the Canadian River acreage has been suffering.

Q. I notice here in working your pressure decline method the new thing here strikes me is that instead of using pressure and production, you have left production clear out of it and use your—what, in place of production?

A. Well, here is the only thing: You are trying to tie this in with production. Most of those leases have never had any well on them and there is no production that you can put up, alongside of the pressure drop in each one of those tracts. What I have done, I have estimated the content of each one of those tracts and at the various dates depending upon the pressures existing on those tracts, I have applied Boyle's Law to arrive at the remaining estimated reserves of those tracts. It is very simple what I have done. It is a simple application of Boyle's law, tract by tract.

Q. Nominally, application of Boyle's law would bring your production to bear, wouldn't it?

A. You are talking about the pressure decline method and I am talking about an application of Boyle's law based upon the estimate of reserves that I estimated was originally in each tract.

Q. How does Boyle's law differ from the pressure decline method?

A. Well, that was explained at length the other day.

Q. By Mr. Gill, but I want you to explain it.

A. I explained it.

Q. You did?

A. I did, at length.

Q. All right. Now, you get a product which is considerably lower, which is some lower than the product—your original reserve figure. For example, in this first one here I see you get a product—just a moment here—the first product I see is 632 there as of 1932. What is your original reserve there in that first illustration?

A. Well, these figures haven't been as to each tract by tract—have not been converted to reserves. The product that you are pointing to as the product of acres times MMcF. under the 1932 period is 632 compared with an original acre times MMcF. product under virgin pressure conditions of 640.

Q. Using in the latter case, of course, your pressures?

A. That's right. The pressure in that particular tract had gone down from 430 to 425 and that difference between 640 and 632 is an expression of the difference between 430 pounds virgin wellhead pressure corrected down to reservoir pressure, and 425 pounds remaining pressure at 1932 corrected down to reservoir pressure.

Q. Now, Mr. Hughes, is there any way that I could compare your original reserve for each section to your remaining reserves as of 1932, 1938 and 1939, for each section? Have you got a calculation showing that?

A. These are the basic figures that we are pointing to. All you would need to do with each one of these figures under the tract would be to take that product which is acre times MMcF. and multiply it by my conversion factor of .919211. That would convert each one of those acres times MMcF. products into my estimate of gas in place at zero bottom hole.

The additional method of estimating reserves which Hughes referred to in his cross examination, supra (pp. 14504-14505) was incorporated in Exhibit 315. This exhibit was offered in evidence, which offer was rejected by the Examiner and exception taken, as shown by the following pages of the Record, Vol. 102, pp. 15871-15876:

By Mr. Keffer:

Q. You are the same C. Don Hughes who has testified before in this case, are you not?

A. Yes, I am.

Q. And you have been sworn?

A. Yes.

Q. Mr. Hughes, you have prepared a written statement with respect to some further testimony on reserves in the field, have you not?

A. Yes.

Mr. March: Now, Mr. Examiner—

Trial Examiner: (interposing) Just a moment.

By Mr. Keffer:

Q. Is this the instrument?

A. Yes, it is.

Mr. Keffer: May this instrument be marked?

Trial Examiner: Mark the document referred to by the Witness Hughes for identification as Exhibit 315.

(Exhibit 315, Witness Hughes, marked for identification.)

Mr. March: Mr. Examiner, we strenuously object to any further testimony at this late date in regard to gas reserves. Obviously, this will reopen the whole question of gas reserves. I would like to direct the Examiner's attention to this, that during the last five months, Respondents had every opportunity to come in here and bring on geologists and present estimates of reserves and give other reserve testimony. Not only that, but they were given adequate opportunity before we recessed in Denver to do that and this hearing was convened for the specific purpose of taking the testimony of Christy Payne and Mr. Lerch.

As a matter of fact, the whole thing that prompted this additional hearing in Washington was the application to take the depositions of Christy Payne and F. H. Lerch, Jr. Now, I want to refer the Examiner to that application and it states very specifically there that matters would be limited to that testimony of F. H. Lerch and Christy Payne.

To bring this testimony in here will reopen the hearing

on reserves. It will bring into play new issues. It will otherwise continue this hearing indefinitely and I think any court of law in this country would rule that the respondents have certainly had, in five months, adequate opportunity to put on estimates of reserves. As a matter of fact, this witness alone was in Denver for almost two months.

Trial Examiner: Mr. March, let's make this as short as we possibly can. I don't need any extended argument, I don't believe.

Mr. March: Very well, I have all the argument I care to make.

Trial Examiner: Have you anything to say, Mr. Keffer?

Mr. Keffer: Mr. Examiner, very briefly this Exhibit 315 merely presents an issue which was raised in the hearing at Denver. The Examiner will recall that Mr. Hughes, while on the witness stand on cross examination, testified as to a method or an estimate based upon pressures squared which matter had been brought out by Mr. March in his cross examination.

This is simply gathering up the loose ends on that. As it stands in the record now, it perhaps is due us or, at least, possibly the burden is upon us to make an explanation of just what he meant on that and that is all this purports to do. It is merely redirect of a matter that was brought out on cross examination.

Trial Examiner: I might say, Mr. Keffer, that the Examiner at this stage of the proceeding is very hesitant to take further testimony with respect to reserves of the Panhandle field.

I feel that every opportunity was afforded both the Respondent and the Commission's counsel to present evidence pertaining to reserves in the field at the time we were in Denver and the purpose of this hearing today was, of course, directed to taking of the testimony of Mr. Payne and Mr. Lerch.

Now, I don't intend to foreclose consideration of any other matter at this time but I do feel that we have adequate testimony in the record pertaining to the reserves or, at

least, that ample opportunity has been afforded to submit that testimony in the proceeding we had at Denver.

Therefore, the Examiner is inclined to sustain Commission's counsel's objection to the introduction of any further testimony on reserves at this time.

Mr. Keffer: I take it, Mr. Examiner, in order that we might complete our record in this respect, and to save time and eliminate the reading of what the testimony would be, let the reporter copy it in.

Mr. March: We object to this going in the record. Mr. Examiner, that is just putting it in the backdoor, copying it into the record. This is a new estimate of reserves. I have just glanced through it, but we don't object to having the thing marked for identification so you will have a record shown but that is just a way of putting the thing into the record, having it copied into the record.

Mr. Keffer: Mr. Examiner, I don't know any way of making a record, in fact, there isn't any way except to state what the testimony will be and I cannot do it except to read it. I thought we might save the time of the Examiner and counsel by putting it in this way.

Trial Examiner: Why not do this, Mr. Keffer. It is your desire to make an offer of proof, I take it?

Mr. Keffer: That is it exactly but I must show what the offer will be.

Trial Examiner: I was going to suggest that inasmuch as this is part of a document which has been marked for identification as Exhibit 315, perhaps it would be expedient to make an offer of the exhibit itself and the Examiner, in conformity with the statement he has made, will reject the offer and then the exhibit is a part of the record.

Mr. Spencer: If it may be understood, Mr. Examiner, that in making such an offer, the written statement will be considered, for the purpose of the offer, as being a part of the record.

Trial Examiner: I think it will be so understood.

Mr. March: That is satisfactory but did I understand the

Examiner to say it will be a part of the record, even though it is rejected?

Trial Examiner: If I said that, that is an erroneous statement. I meant even though this exhibit were rejected, it still went to the Commission as a part of the proceedings. That is what I intended to say.

Mr. March: It is a rejected part of the proceedings.

Trial Examiner: It is a rejected exhibit but it is transmitted to the Secretary as a part of the proceeding.

Mr. Keffer: All right. The Examiner will give us an exception, of course.

Trial Examiner: Surely.

Exhibit 315 is as follows:

Exhibit No. 315

Written Statement of

C. Don Hughes

During my cross-examination in these proceedings in connection with my testimony presented on pages 14455 to 14461, inclusive, of the record, I stated that I was watching the performance of the Texas Panhandle Field and studying the matter to see if another method (referred to as a pressure squared method) which I described in my testimony was actually working in the field and would solve the difficulties arising in the attempts to apply the so-called pressure decline method to the problem of estimating reserves of the field. I stated further that my observations indicated that the field was working as this pressure squared method indicated it should be and that therefore the remaining reserves in the field might vary directly as the square of the remaining pressure at the time rather than according to the commonly accepted method involving variation directly proportional to the pressure. I have been requested by counsel for Canadian River Gas Company to prepare this statement in further explanation of the study mentioned above and the conclusions reached therefrom.

Additional study and investigation since the date of my cross-examination has revealed to me that the method of

estimating gas reserves in the Panhandle Field, based on the squared pressure relationship, produces more consistent results than any other known method. The truth of this statement is strikingly demonstrated when pressure squares at different periods are plotted against cumulative production for such periods, and the straight line is drawn which most closely represents the observed data.

There is attached hereto Chart I on which the squares of the weighted average pressures of the field for the mid-year tests of 1935, 1936, 1937, 1938 and 1940 are plotted against the cumulative production of the field for each period from August 1, 1935. This is the period in the history of the field in which the most reliable data for both pressures and production figures have been obtainable. A straight line which most nearly fits the plotted points has been drawn upon the chart, and it may be noted by inspection of the chart that the distances by which the individual points differ from the line are so slight as to be negligible. The fact that a straight line so closely represents the points plotted in this manner indicates that there no doubt is some physical condition existing in the reservoir which is measured by the method of squaring pressures. Because such a straight line is not obtainable by any other method, that physical condition must be distorting the results obtained by applying the usual volumetric method, and results obtained from the latter method must be inaccurate and unuseable.

One explanation of the existing physical condition, which would indicate that the pressure squared method is properly measuring its effect in this case, has been advanced by Dr. Stanley C. Herold, a petroleum geologist and production engineer formerly associated with Stanford University, in his book entitled "Analytical Principles of the Production of Oil, Gas and Water from Wells" (Stanford University Press, 1928). Dr. Herold's publication relates that he had observed this same difficulty in using data available to measure reserves a number of years ago, and discovered that Jamin had done considerable research in France about 1860 on the flow of gas through capillary tubes which contained small globules of water; that Jamin had set out certain laws concerning the behavior of gas flow under these conditions. Dr. Herold applied these laws by mathematical analysis

to the problem of gas reservoirs, and his study indicates that if a reservoir fulfills the necessary qualifications for capillarity to affect the flow of gas from the reservoir, the relation between gas withdrawals and squared pressures must be a straight line. In our case we secure the straight line from plotting the results of withdrawals in the field and it is not unreasonable to assume that physical conditions in the Panhandle Field do fall within the classification which Dr. Herold defines.

The projection of the straight line on Chart I to the production axis indicates that there was a remaining reserve of approximately 12.6 trillion cubic feet at 16.4# pressure base down to 0# well-head gauge pressure as of August 1, 1935.

The question as to what production prior to August 1, 1935, would have caused a reduction from virgin pressure of 430# to the pressure in 1935 is answered by the straight line, extended backward and up to the ordinate value of 184,900 (the square of 430) where it indicates prior withdrawals of approximately 5.1 trillion cubic feet. This amount differs by only 2% from the 5.2 trillion shown by Mr. C. J. Peterson's production tables, which were obtained by accumulating all available production data and estimating gas withdrawals where they were known to exist but for which no measurement data were obtainable. This would indicate that the withdrawal figures commonly accepted by the industry and the Railroad Commission of Texas for production of gas prior to standardization of measurement basis in 1935 are reasonably correct.

Chart I shows that the total original reserves in the Texas Panhandle Field were approximately 17.7 trillion cubic feet, which is the sum of production prior to August 1, 1935 (5.1 trillion) and the indicated reserves remaining at August 1, 1935 (12.6 trillion).

Table I below is a tabulation of the data from which Chart I was plotted.

Table I

Basic Data

Date	Weighted Average Well-Head Pressure R.R.C.*	Weighted Average Well-Head Pressure Squared	Cumulative Production from 8-1-35 MCF at 16.4 # Base
8-1-35	362.51	131,414	0
7-1-36	355.00	126,025	556,485,654
7-1-37	347.05	120,444	1,109,367,056
8-1-38	337.66	114,014	1,732,292,217
8-1-40	318.31	101,321	2,884,710,964

*The weighted average pressures are the computations of the Railroad Commission of Texas.

The record reflects the following with respect to additional testimony at Washington:

Mr. Lange: Mr. Examiner, there has heretofore been filed in this proceeding by the Colorado Interstate Gas Company an application for the taking of some depositions in this proceedings. Commission's counsel has been advised by general counsel that it is the Commission's desire that instead of having a deposition taken or depositions taken in the proceedings that it be suggested to the Examiner that at the time the proceedings here are concluded the Examiner will recess the proceeding to be resumed in Washington, D. C. for the purpose of taking those depositions or taking the testimony of those witnesses in Washington, D. C., rather than having to take the depositions. Commission's counsel, therefore, at this time would suggest to the Examiner that instead of taking depositions in the proceedings at Washington, D. C., that this proceedings be recessed to be subsequently resumed in Washington, D. C., for the purpose of taking the testimony of the witnesses named in the application.

In that respect, in order to expedite the final conclusion of this proceedings, we would suggest that the resumption of the hearing be had in Washington, D. C. at the earliest possible date and also that the proceedings there be confined to the taking of the testimony as applied for by the company.

The Trial Examiner: I think with respect to the practicalness of adjourning this hearing to Washington in order to take the testimony of Mr. Lerch and Mr. Payne it is much more practical to do that than to attempt to take their depositions. The Examiner will be inclined to follow that request of Commission's counsel; however, I am wondering, Mr. Brock, what the thoughts of respondents are with regard to the time that will be necessary to get ready to take this further testimony.

Mr. Brock: Mr. Examiner, of course we are breaking up here after five months—after a five-months' session—and apparently everybody will need a little time to get home and look around and perhaps take care of a few personal matters. Mr. Spencer and Mr. Dougherty and some of the rest of us have talked about it before and it was their suggestion that we reconvene April 28th. It was thought there would be no serious delay if that much time were taken.

There is one other thing I want to say, too, Mr. Examiner, in connection with Mr. Lange's last remark. I haven't understood in connection with this future hearing in Washington the thing was to be strictly limited to the testimony of the witnesses whose depositions we had applied to take. I haven't discussed that as fully with Mr. Dougherty and Mr. Spencer as I might have done, but my understanding was—I know Mr. Lusk has referred several times to some allocations or separations of an exhibit which he was interested in, and Mr. Rhodes has given attention to that particular study but didn't get it completed when he left here on account of illness and went to Florida. After coming back from Florida, my advice is that he has been very much engaged in some more natural gas cases before the Federal Power Commission, I believe, and the result is that I have had in mind all the time that would be possible; that it would be possible to introduce such an exhibit back there at the Washington hearing and possibly anything else anybody might have overlooked in this long five-months' hearing here in Denver.

I don't mean by that that either side should reopen this case and start trying it all over again, but there is a possibility of a mishap on either side on some particular item

Mr. March: If the Examiner please, the Commission's counsel's position is that we shouldn't wait until April 28th to reconvene in Washington. That would be four weeks' time and we should reconvene in two weeks, or a shorter length of time. If we wait to reconvene at Washington until that late date, this hearing will be going on June 1st and it seems we should not do that.

In the second place, we object to any testimony in Washington other than the testimony specified in the application of the parties which counsel signed. Our purpose has been to finish this hearing. If we go to Washington and leave this exhibit and that exhibit and this witness and that witness coming up, we will be trying this case all summer, and we most strenuously object. We object to any such a construction or arrangement to be made. There have been certain specific reservations made here.

Mr. Brock: I would like to make a reservation—

Mr. March: We object to that most strenuously. It is a thing we have been fighting to do, to get through with this hearing. This thing can run on and on and on and on as so many hearings have done with appreciable results.

Mr. Brock: I submit, Mr. Examiner, on each side here after this long drawn-out hearing, not having had an opportunity to review what evidence has gone in in detail, that it would be beneficial to keep the case open should either side discover something which ought to really go in. It wouldn't be surprising if something has been overlooked on either side and I don't think there is any such grand rush as Mr. March has been talking about.

The Trial Examiner: Let me say this: First of all, as to the date we might reconvene this hearing, the Examiner is going to be tied up in another hearing commencing in Washington on April 2nd. I have no thought at present as to how long that hearing might last, so I am reluctant to trim this time too closely.

In addition to that, the Examiner must insist that the record in this proceeding be corrected up to date and the stipulations submitted to the Examiner with regard to corrections of the record the day we reconvene in Washington.

Counsel are considerably behind in making corections of the record and that may require some time.

I had in mind, frankly, Mr. Brock, meeting somewhere around the middle of April.

Mr. Brock: We might consider the 21st which is the Monday preceding the date I suggested as the earliest date.

The Trial Examiner: Let me do this: I will set the time as April 21st, 1941, and then in the event the Examiner should not be free at that time or some other emergency arises, then we can make different arrangements at that time.

Mr. Brock: It is satisfactory to try it that way.

The Trial Examiner: The Examiner will set April 21st, 1941 as the date.

Now, with respect to the purpose of proceeding back there, the Examiner feels that the proceeding should be directed to the purpose of taking the testimony of Mr. Lerch and Mr. Payne; however, the Examiner is fully cognizant of things that are sometimes overlooked in continuing a hearing as many days as we have in this case.

While at this time the Examiner feels that proceeding back there should be for the specific purpose of taking the testimony of Mr. Lerch and Mr. Payne, nevertheless, the Examiner is perfectly willing to consider at that time the merits of additional testimony of either counsel for the respondents or Commission's counsel might have and to consider the offering of that testimony at that time rather than to attempt to leave the hearing wide open, so to speak, without some definite purpose on the adjournment to Washington.

Hughes also testified (Vol. 95, pp. 14528; 14569-14570; 14582-14594; 14623-14626) as follows:

Q. Is this the first time you have ever made any study of the Canadian River wells?

A. Of the Canadian River wells?

Q. That's right.

A. Well, I think that the information that I have shown

you shows, even if I had only read this information, it would show that I have made a study of the Canadian River wells.

* * * * *

Q. Did you ever think about checking your alleged drainage by the actual conditions that existed in Canadian River acreage prior to 1932 and in the west part of the field prior to 1932?

A. No, I made no study prior to 1932 of the type that I have shown here.

Q. Then how do you know that gas was not draining to the Canadian River acreage at that time in 1932?

A. It might have been. My interpretation is that it has not, due to the values that I have assigned. Now, if at 1932 some of this total production that the Canadian River had produced at that date of 94.4 billion, if none of that—I mean if they had lost no gas in addition to that by drainage, then my study would become a definite indication that my factor .919 is too large.

Q. Too large?

A. And then I would apply a lower factor to all those Canadian River leases and it would end up with a less estimate of reserves on the basis that they had obtained from their own leases, every foot of gas at that date, and if you assume that they had obtained more than some of their own gas, it would still further reduce this factor basis, which then in the end would wind up that I would come out with an estimate of reserves that is smaller than the one that I do come out with in this study. That is the only conclusion that could follow. Now, whether that is actually the case or not, I don't know for sure, but it is my interpretation that the conditions as I have shown in this statement on Canadian River reserves is the basis—is the best possible conclusion that I arrive at.

* * * * *

Q. Mr. Hughes, have you made a study by years of the pressure declines of Canadian River's acreage and the production of Canadian River's production as a whole by years all the way through to ascertain as to whether there has been any drainage from the area?

A. No, not the way you have described it. I have made a study, that is, I made a study in the middle of 1932, the

middle of 1938 and the middle of 1939, and the results are shown here.

Q. Mr. Hughes, you have here a figure for August 1, 1938 as of that date—it is a drainage figure, which you say has been drained away from Canadian River acreage, it being the difference between your production and depletion figure. Why did you skip those intervening years?

A. I don't know. It was really of no importance. One reason I went back to 1932 is that it was my opinion, generally speaking, the production from Canadian River acreage at that date accounted for the pressure loss, so the study for that date was for the purpose of trying to test the reasonableness of my factor.

If I had come out with a much greater apparent loss by drainage, I would have been inclined to think my factor was wrong. If I had come out with an apparent drainage into the Canadian River acreage at that date, I would have again concluded my factor was wrong. But since it came out so close, I considered it a good check on my factor. The reason I used 1938 and 1939 was that I wanted to make a test of what was going on currently. Those were the last two years I had at my disposal, and knowing that the production was shifting over into that general area from other parts of the field, I wanted to test the current performance. A year was a handy period to *chose* because the tests were made from one year to the next.

From 1938 to 1939 was the most recent year and naturally I wanted to make the test in the light and effect of the shifting of production into that area. That is the reason.

Q. I see here in 1938 and 1939 you tried to measure in percentage the drainage which has taken place from Canadian River's acreage.

A. I tried to measure—I obtained a percentage figure which represents the difference between depletion; that is, the amount of depletion which Canadian River produced.

Q. I gather you disagree wth Mr. Gill in that you think you can measure drainage quantitatively from the Canadian River?

A. That is what I attempted to do.

Q. Did you hear Mr. Gill's testimony that he couldn't do it quantitatively?

A. I don't know that he said that. I heard his testimony.

Q. On Page 11 of his written statement—

Mr. Spencer: Which exhibit is it, Mr. March?

Mr. March: Exhibit No. 266.

He states: 'Since the original per acre reserves varied widely as between different parts of the area, such a quantative calculation cannot be made from the figures given on the table."

The Witness: What table is he talking about?

By Mr. March:

Q. The previous paragraph: "The figures arrived at in both of the above studies reflect the effects both of drainage and of original difference in reservoir content. If it could be assumed that the original reservoir content expressed in terms of total gas per acre was the same in all parts of the field, these figures could be used to obtain a quantitative expression of the drainage that had occurred into and out of the zones of pressure loss up to the time when the study was made."

A. Is he talking about Canadian River acreage?

Q. Yes. Didn't you hear his testimony?

A. Yes. He is apparently talking about Mr. Hammer's quadrants. I don't think what you were reading had anything to do with the question you asked me.

Q. Is that so. So you don't think Mr. Gill stated that he couldn't measure drainage quantitatively? Is that your position?

A. With respect to Canadian River acreage?

Q. That is right.

A. You haven't shown me where he did.

Q. All right, sir. I just wanted to get your position.

You state here that approximately 27 per cent was drained away between 1932 and 1938, is that correct?

A. No, that—

Q. That is the last year.

A. The percentage figure you are reading there—I think you will find that refers to the percentage of the depletion of Canadian River leases from the beginning of the field to the date 1938.

Q. How much gas has been drained away from Canadian River acreage between 1932 and 1938 according to your contention?

A. I don't know. I don't know that it is figured here.

Q. Have you made such a calculation?

A. No, but we can do it. It would be the difference between—from these figures on Page 3 you could determine that.

Q. What is the amount of difference between the depletion and production? What would be the amount drained away from 1932 to 1938?

A. Now, what was it you wanted—the percentage?

Q. I want to know the amount of gas in Mcf. which has been drained away according to your figures from Canadian River acreage from 1932 to 1938.

A. I have gone through the arithmetic and unless I have made a mistake, it is 29,821,939 cubic feet.

Q. Which has been draining away?

A. Between July 1, 1932 and August 1, 1938.

Q. And as we found out a few minutes ago, your figures showed that approximately 21 million Mcf. had been drained away prior to 1932?

A. Yes, that's right.

Q. All right, Mr. Hughes, how do you account for the fact that if 21 million had been drained away prior to 1932 that only 29 million according to your figures were drained away from 1932 to 1938, during the most prolific production of the field?

Mr. Spencer: Are you saying millions or billions, Mr. March? I believe you said millions.

Mr. March: Yes?

Q. Is this 29 figure in millions of Mcf.?

A. It is in millions of Mcf. It is billions of cubic feet —29.8 billions of cubic feet.

Q. Is that the same unit we used when we measured the 21 million prior to 1935?

A. Of Mcf., that's right.

Q. How do you account for the fact that whereas with very few wells adjoining Canadian River, if any, prior to 1932, 21 million was drained away and with a great deal of production around Canadian River acreage since 1932 only

29 million according to your figure has been drained away?

A. I don't know how to account for it. That's just the situation. That's just the way it works out.

Q. Now, Mr. Hughes, you come here to the map and show me where that 29 million went to that drained away from 1932 to 1938.

Mr. Spencer: He doesn't have to come to the map to show you that.

Mr. March: Well, anywhere. I don't care.

The Witness: Well, it will be going to areas of lower pressure than the pressures from which it was drained, wherever those lower pressures exist, that's where it would be going.

By Mr. March:

Q. All right, now, what part of the Canadian River acreage was drained during that period? It couldn't have been drained, could it?

A. All of the Canadian River acreage being drained?

Q. Could all of the acreage have been drained during that period?

A. Do you mean that that drainage was uniform from acreage scattered over the—

Q. No, I mean, could all of the acreage have been drained during that period—some gas out of it?

A. Well, it would depend upon the pressure pattern in the acreage. This is an overall figure. This is the net result of their drainage. Now, the drainage had to be going in that direction of lower pressured areas than the pressures in the Canadian River acreage. I think that is obvious. Now, just where those particular areas were generally speaking, they are in a northeast direction from the Canadian River group.

Q. Now, come up here on the map and show me approximately where that Canadian River gas was going specifically.

Mr. Spencer: Do you want to refer to Mr. Dunlap's map?

The Witness: Well, those I think would be sufficiently—they are sufficient to indicate where the low pressure areas are. Due to the fact that the yellow is the highest pressure

color on this set of maps, Exhibit No. 239, then the orange is the next lowest group and the next lowest group is the blue and the green—by the time you get out the green you are getting out pretty close to the edge of the Canadian River area as a group of leases that I am talking about. What I am talking about Canadian River group of leases, I am referring to this group of colored leases here on Exhibit 95.

Now, by 1938 the green area is the area that is approximately less in pressure than all of the rest of the Canadian River area. Therefore, the Canadian River group of leases as a group, the drainage would be from then out in that direction. It would be in the direction from the Canadian River group of leases of southwest Hutchinson County.

Q. Drainage through southwestern Hutchinson County?

A. No, it would be draining into the area of southwest Hutchinson County.

Q. The green area?

A. Shown in that green color, the travel of gas being from the blue area into the green area and from that orange-colored area into the blue and from the yellow area into the orange. Now, that is the general—the only conclusion that you can make from the pressure setup.

Q. Now, Mr. Hughes, I have already asked you about 1933, about whether or not you could tell me whether or not those pressures were caused—the declines were caused by drainage there in the southwestern part of Hutchinson County or by production. I will now refer you to the 1934 map.

Mr. Hughes, you see that portion where it shows 400 to 350 pound pressures there extends over for the first time over into the corner of Potter County from Hutchinson and over into some of the Canadian River acreage in Moore County.

Now, I will ask you this question; whether or not the declines in pressure there during that year period was caused by production from Canadian River wells within the area or whether or not that was caused by drainage.

A. In my opinion it was caused by both.

Q. Have you made a study of the production of the individual wells in that zone?

A. No, not of the individual wells.

Q. Have you made a study of the production from the Canadian River wells as a whole in that zone during that period?

A. No, I hayen't, and I don't think it would be possible to arrive at a conclusion—a conclusive opinion from such a study, since the pressure contours indicate that drainage is going on. Then, the production from wells in that area of course influence the reduction in pressure but the actual total reduction in pressure in the area is a result of both the production from wells in the area and the drainage from the area.

Q. How can you state that it is when you haven't made a study of the production decline in the entire year period of time?

A. Well, I thought I made it clear.

Mr. Spencer: He has answered that question, Mr. March.

Mr. March: You mean by stating that his exhibit shows it?

Mr. Spencer: He said such a study wouldn't show you anything.

Mr. March: Well, he never made a study. He doesn't know whether it would show anything or not.

Q. Now Mr. Hughes, you see the 1935 map. You see there is, in Mr. Dunlap's map there, there is a slight intrusion—a little further intrusion of the brown 400 to 350 pound zone over to Potter county?

A. Yes.

Q. And there is a still further movement of the zone over into Moore County, Canadian River acreage?

A. Yes.

Q. Now I will ask you the same question—if I would ask you the same questions relative to the movement of those presures back as I did to the previous 1934 map, would your answers be the same?

A. Yes, that that pressure condition is due to both production from wells in the area and drainage of gas from the area, yes that's right.

Q. And that you have not made any study relative to the

production of the individual wells in the area during the period of the pressure decline of that period, or the total production from those wells?

A. For that period?

Q. That's right.

A. No.

Q. Now, next we come to 1936 and we find that the brown area which is 400 pounds, has intruded a little farther into Potter County, down into Potter County.

A. Yes.

Q. Now, if I should ask you the same questions in regard to that that I asked you in regard to the previous ones, would your answers be the same?

A. To the area as a whole?

Q. Yes, sir.

A. That the effect of those pressures is due to both production from wells in the area and drainage from the area?

Q. Yes.

A. Underground drainage from the area?

Q. Yes.

A. Yes.

Q. And have you made a study of the individual wells in that area during the periods of pressure declines by years, or the production from the wells as a whole in that area during that period?

A. No, I haven't made that study.

Q. Now, Mr. Hughes, we come to 1937 and I note here that there is some change in the configuration of the 400-pound pressure in Potter County and that there is a further intrusion into Moore County of the lower pressure area, but I note with a great deal of interest here that in the western part of Potter County that the pressures have increased back clear over the Potter County line into Moore County and that low pressure area has been wiped out in Potter County.

Now, that indicates that during that period, doesn't it, that the pressure has increased in Potter County in that area?

A. That is my interpretation, and that is why I mentioned a while ago in connection with the 1936 map that if you meant from the area as a whole. I recognized that

little extension that is sticking back in there into north Potter County on the 1936 map. It is obvious from the 1937 map that that little area that stuck back into there was repressured. At least it is so indicated by the contouring on the 1937 map.

Q. Now, do you think that is a correct delineation of what has happened from your studies?

A. Yes, definitely. Again, the effect of that pressure is due to the combination of production and drainage. In that particular case it would be my conclusion that the production during that particular time wasn't quite as great as the drainage was into the area, and, therefore, the pressures built up, assuming those are correct pressures. We are assuming that those were the correct pressures and the maps were made correctly, and I have no reason to doubt either one. I am just telling you what was involved.

Q. Have you made a study of the production in that area by years in 1937 of the pressure increases of the individual wells or decreases?

A. No, I have not.

Q. Now, Mr. Hughes, you would have to show a gain in pressure and reserves of Canadian River Gas Company in 1937, wouldn't you, if you had it done on a yearly basis?

A. Yes.

Q. You would?

A. Yes, the pressures came up. I think you will find there are some examples of that in the study that you have marked Exhibit 280. If the pressures have come up, naturally, over the previous period, when you treat that particular tract, that very treatment of it shows that that tract had gained a little.

Mr. Spencer: You are talking about tracts or the whole Canadian River area?

The Witness: Tracts, I was thinking of there.

* * * * *

Q. Oh, yes, I challenge you to show me one well up here to which gas has moved away from the Canadian River Gas Company in 1939.

Mr. Spencer: Now, Mr. Examiner,—

Mr. March: As distinguished from this—these other years.

Mr. Spencer: Here I am on my feet again. I don't see why it is necessary for counsel to challenge anybody here. If he wants him to point out a well, if he knows, then that's all right.

Mr. March: I'm sorry I said "challenge."

The Trial Examiner: This is up to 1939?

Mr. March: That's right.

The Witness: The year ending 1939?

By Mr. March:

Q. Ending July 1, 1939.

A. Mr. March, in order to pick out a particular well that could have obtained, and in my opinion would have obtained some of the gas that was lost by leases owned by the Canadian River acreage during the year ending 1939, I could construct for you on Mr. Thompson's contour map a little geometric pattern going down his pressure contours at right angles to those contours in such a way that the arrangement of the area between one limit of this area and the other limit would be the expanse of the Canadian River acreage and I would merely follow on down his map by going at right angles to his contours to where that method going from one contour to the next would finally bring me in to the lowest pressure in the pattern.

Now, then, to be specific, I would go to the Railroad Commission and get a list of each well in that area whose pressures were lower than the Canadian River leases and each well in that area that had produced a cubic foot of gas in that year ending in 1939. I would list in that list not only one well for you but I would give you the whole list that in my opinion would include the wells that in my opinion were getting some of the gas that started from the Canadian River leases during that year.

Now, just how far out, as you go down-dip in a pressure manner, the particular gas that left Canadian River leases during that period had extended by the end of the year, I wouldn't attempt to say, but sooner or later those would be the wells that would eventually get some of the gas, or at least some of the gas that was being replaced by gas that had started from back up there in the Canadian River leases.

Q. Mr. Hughes, you have never made such a study, have you?

A. I never have made such a study?

Q. Yes.

A. No, I haven't.

Q. Now, Mr. Hughes, you criticised Mr. Hammer because his production declines—I mean, his production pressure figures you said would not approach a straight line, but have a downward trend. Now, would your figures approach a straight line for the pressure decline method that you have utilized?

A. How do you mean that I have utilized—on the tract-by-tract—

Q. No—yes—in other words, you have an estimate in which you use a pressure decline method at 7-1-32, 8-1-38, and 8-1-39,

A. Well, the way I have applied Boyle's Law in each tract, I am assuming that it is a straight line. Now, you were confusing—I have not applied the pressure decline method in this study. I started out with my estimate of original content in each tract and I applied Boyle's Law and found the computed amount of gas that was lost by all the tracts and made a comparison to that figure of production that had been taken from those tracts. The thing that you have tried to ask me to compare, I don't think is comparable. I haven't said that Boyle's Law wasn't working in the field. I said the pressure decline method applied to the field is not working. I have assumed that Boyle's Law is working, but as I have explained before, I am not so sure now that we know correctly just which manner we should apply Boyle's law.

Testimony of STANLEY GILL, Witness for Canadian

Necessity for a Correct Equilibrium Pressure

Stanley Gill, whose qualifications have heretofore been given, testified with respect to the several estimates of reserves introduced in this case and particularly with reference to the pressure-decline method as applied to the Texas Panhandle Field and the absolute necessity of having a correct equilibrium pressure before this method can be ap-

plied. His testimony on direct examination is contained in his written statement in Volume XCI, pp. 13981-13998, and in Exhibit 265, pages 5 to 18. The following is a statement of Gill's testimony.

"The several estimates of reserves made in this case were subjected to careful scrutiny and study. Attention has been given to the correctness of methods employed, to the manner in which they have been applied and to the applicability of the results in determining the future producing life of gas reserves in the Texas Panhandle Field. Witness analyzed these methods from the point of view of engineering fundamentals and also on the basis of his own knowledge of the Texas Panhandle Field.

While it must be understood that estimation of reserves of gas or oil is far from being an exact science, it must also be emphasized that reasonably accurate estimates can be arrived at by the application of proper methods. Such estimates are frequently used as the basis for very large transactions and expenditures. In such cases large sums of money may depend upon the validity of these estimates and accuracy is of the utmost importance.

The accuracy of an estimate of reserves of oil or gas depends upon the completeness and dependability of the basic data, upon the correctness of the methods of estimation and their application and upon the reliability and experience of the geologist or engineer by whom the estimate is made. Probably the most important of these is the experience of the individual who makes the estimates. Purely mechanical application of a procedure of estimation may be made by a raw and inexperienced graduate of a good technical school. Such an estimate, even though it be couched in highly technical terms and accompanied by maps and mathematical formulae, is usually quite valueless and would never be acceptable as a basis for purchase or sale of properties, for valuation as collateral for a loan or for determination of the advisability of large expenditures in operating facilities. Proper estimation of reserves requires not merely a knowledge of the mechanics of an estimating procedure, but also a critical faculty that can be gained only through many years of detailed experience. While witness is not prepared to go as far as a certain eminent geologist who once stated

that "geological instinct" was the only reliable guide to estimation of reserves, he is very definitely convinced that detailed familiarity with a producing area and a thorough background of experience in estimation of reserves are of vital importance if dependable results are to be obtained. The results are "estimates" rather than "determinations" of the reserves of oil or gas. The results arrived at cannot be exact, but they are dependable and can be weighed and compared by careful and critical scrutiny of the procedures by which the results were obtained.

Hammer, Commission witness, has made his estimate of reserves of gas in the Texas Panhandle Field by a pressure-decline method which involves several unique features. Witness is of the opinion that Hammer's estimates are neither correct nor applicable for evaluating the probable future life of the Canadian or field reserves. This opinion is based upon three lines of reasoning:

(a) A pressure-decline method in which withdrawals of gas are compared to declines of pressure, the latter being weighted only on surface acreages, is entirely incorrect for estimation of reserves of gas in the Texas Panhandle Field;

(b) Even if a method of this type could be correctly applied in the Texas Panhandle Field, Hammer's procedure would lead to entirely incorrect results. The weighted procedure used by him results in incorrect conclusions as to pressure-decline relationships for the field as a whole and is erroneous in its application to Canadian's acreage; and

(c) Hammer's estimate of remaining gas reserves under Canadian's acreage would be without value in the prediction of future producing life of this acreage, even if it were correct, since it fails completely to take into account the effects of future drainage.

There can be no doubt of the fact that pressure-decline methods, where they are properly applicable, afford an accurate means of evaluating reserves of natural gas. Where the data on a field are adequate for such an estimate, and where these data show that the pressure-decline method can be properly applied, the estimates of reserves and ultimate

recoveries are more accurate than can be attained by other procedures of estimation. For this reason, pressure-decline methods should be preferred to others for estimation of gas reserves in those fields to which such methods can be properly applied. In many fields, however, physical conditions are such that pressure-decline estimates may lead to widely erroneous conclusions. Indiscriminate and unreasoning application of pressure-decline methods, without careful study of their adaptability for the estimate being made, may lead to false results and conclusions.

Figure 1, attached to Exhibit 265, shows typical relationships between pressure-decline and accumulated total production and production per acre-pound in various types of gas reservoirs. Obviously, reserves can be calculated from pressure-decline only in those cases where pressure declines directly with production, or where the departure from direct variation is accounted for by deviation from Boyle's Law.

Gill further testified on direct examination that a straight line relationship cannot be applied for proper and correct estimation of reserves where the facts on a field, when plotted in curves such as those of Figure 1, Exhibit 265, do not conform to Boyle's Law.

The Texas Panhandle Field is definitely a field to which simple pressure-decline methods, invoiving weightings on surface acreage alone, cannot be properly applied. The theoretical reasons for this are elementary. Fundamentally, application of the gas laws and particularly of Boyle's Law, which expresses the relationship of gas volumes to pressures, are related entirely to volumes and not at all to areas alone.

Boyle's Law expresses a simple relationship. It states the fact that the quantity of gas contained within a rigid container varies directly with the absolute pressure. Doubling the pressure doubles the quantity of gas. By increasing the pressure ten times, ten times the quantity of gas can be stored within the container. Quantity, as thus applied, of course, means the actual weight of gas or the equivalent volume of gas at some definite base temperature and pressure. This law applies strictly to any perfect gas, regardless of the size or shape of the rigid container in which it is confined. Correct calculations can be made from it, however,

only when the actual pressure averaged throughout the entire volume of the container is accurately known.

The true weighted average pressure of gas in the Texas Panhandle Reservoir cannot possibly be determined, however, by weighting pressures against surface acreage alone. The reason for this is shown by Figure 2 attached to Exhibit 265, which is a reproduction of a drawing witness prepared in 1935. The top sketch on this page is a cross-section of the gas producing formation across the Texas Panhandle Field. The basic cross-section was prepared by C. J. Peterson from logs of actual wells. In the second drawing the distribution of original gas reserve across this cross-section is shown. The very great variation of gas content for equal surface acreages is apparent. In the third sketch an equivalent distribution of this gas in containers is shown. Each of these containers represents, in size, the volume of gas which originally underlaid an exactly equal surface area.

The true average pressure throughout the entire volume of gas in any gas reservoir can be correctly determined by weighting on surface acreage alone only under either of two sets of physical conditions. These are:

(a) When the pressure is equal in all parts of the reservoir; or

(b) When each and every acre in the reservoir is underlaid by exactly the same volume of gas-bearing voids.

When one of these two conditions exists the actual pressure existing through the volume of gas within the reservoir can be determined from a consideration of surface pressures and surface acreages, but this cannot be done under any other conceivable set of physical conditions. Since neither of these conditions exists, nor is even barely approached, in the Texas Panhandle Field, determination of average pressures by weighting on surface acreage alone cannot possibly lead to an evaluation of the actual average pressure existing through the volume of remaining gas, and therefore cannot possibly lead to a correct estimation of the gas reserves of the reservoir or any part of the reservoir.

The fact that the pressure-decline method, using pressures weighted on surface acreage alone, cannot be applied to the

Texas Panhandle Field, is conclusively demonstrated not only by unquestionable theoretical considerations, but also by all of the available factual data on relationships between pressure-decline and production of gas in the field. If surface pressure weighted on acreage alone could be correctly applied to estimation of reserves of gas in the Texas Panhandle Field, the yield of gas for any given increment of average pressure would always be equal. This is absolutely fundamental. Neglecting corrections for deviation from the gas laws (which are well known and which can be applied to any given case) the amount of gas remaining in any gas reservoir of constant volume, will be strictly and exactly proportional to the average absolute pressure existing through the volume of gas in the reservoir. If the volume of the gas-filled space changes, as for example in a field in which there is rapid water encroachment, this proportionality will not exist and pressure-decline estimates can be applied only by correcting for the changes in reservoir volume. This is not necessary in the case of the Texas Panhandle Field, where water encroachment is of such a minor character that its effect on reservoir volume can be entirely ignored. For such a reservoir the remaining quantity of gas, expressed in weight or in volume at a given base pressure, will necessarily and inevitably be exactly proportional to the actual average absolute reservoir pressure.

In the Texas Panhandle Field the original reservoir pressure was approximately 471 pounds absolute. When the actual average pressure throughout the volume of gas in the reservoir has declined by 25% to 353.3 pounds absolute, exactly one-fourth of the volume of gas which originally existed within the reservoir will have been removed. When it has declined 50%, to 235.5 pounds absolute, exactly one-half of the original gas will have been withdrawn from the reservoir. In other words, each decline of one pound per square inch in the actual average absolute reservoir pressure will be brought about by withdrawal of exactly 1/471st of the quantity of gas that originally occupied the reservoir voids. If this strict and exact equality of pressure-decline for equal volumes of gas withdrawal does not exist, it means either that the volume of the reservoir does not remain constant or that an attempt is being made to apply improper

gas withdrawal figures or incorrectly calculated average pressures.

(Note: Both Hughes and Hammer have used wellhead pressures which are 430 pounds.)

The lack of proportionality between gas withdrawals and pressure declines results almost entirely from incorrect pressure-decline figures. Massa and Hughes have submitted calculations based on Hammer's pressure and production figures. Their calculations show that the yield of gas per acre-pound or per pound decline in pressure has decreased progressively from year to year during the period covered by Hammer's estimates. The results arrived at by Massa and Hughes are shown in Exhibit No. 257 and Exhibit No. 258, respectively. This progressive decrease from year to year shows conclusively that Hammer's application of a pressure-decline method is totally incorrect and leads to an entirely false estimate of gas reserves. Hammer is not alone in this error. The same fallacy exists and can be conclusively shown to exist in any other estimate of gas reserves of the Texas Panhandle Field, based on declines of average pressures arrived at by weighting on surface acreage alone.

Hammer has overriden and ignored the lack of uniform relationship between pressure-decline and gas withdrawals by adopting as his fundamental premise the assumption that the curve expressing relationship between average pressures and accumulated total gas withdrawal is a straight line. He has, therefore, by application of an averaging procedure based on the method of least squares, drawn his curves as straight lines, or has applied an average yield per acre-pound per square inch derived from such calculations. His error is in incorrectly assuming a straight line relationship between pressure and accumulated total production. This relationship does not in fact exist between pressures, averaged by weighting on acreage alone, and accumulated total withdrawals in the Panhandle Reservoir. An actual plotting of Hammer's own figures connecting the points as he has determined them, demonstrates the fact that yield of gas for equal increments of pressure-decline are progressively less from year to year on the basis of average pressures calculated as he has calculated them.

The fact that the pressure-production relationships employed by Hammer in making his estimates do not come close to conforming to Boyle's Law, is proven by a consideration of the data contained in Table III of his Exhibit No. 180. In Figure 3, attached to Exhibit 265, curves of pressure against production, accumulated from August 1, 1935, are plotted from Hammer's results by "quadrants," as given in Exhibit No. 180. It is obvious that none of these is a straight line relationship, and that the application of Boyle's Law is improper. The great error resulting from Hammer's application of Boyle's Law is even more apparent from Figure 4 attached to Exhibit 265. In this figure, the variation in rates of recovery, per acre-pound, are plotted by "quadrants." If Boyle's Law applied, these would be horizontal straight lines. The actual uniform tendency, as shown in Figure 4, is such that application of Boyle's Law results in a gross over-estimation of reserves.

Hammer assumed that his pressure averages correctly expressed performance in accordance with the gas laws, when compared to gas withdrawals. On the basis of this premise he assumed that the relationship between these two factors should be a straight line. He therefore constructed straight lines by the application of a mathematical method which could, in fact, lead to the construction of a straight line to represent the distribution of bird shot in a shot gun pattern, but which leads in the application which he has made of it, to a conclusion which does not bear any reasonable relationship to the actual facts as they exist in the Texas Panhandle Field.

An additional major fallacy is found in Hammer's weighting of his "quadrants." The division of the field into such areas is a legitimate and proper procedure for convenience in measurement and computation. The division could also be used to study the drainage and pressure performance if the subdivisions had been laid out for this purpose. Hammer's "quadrants" are not, however, laid out in relation to pressure patterns, relative reserves or areal distribution of withdrawals. Up to the point of his determination of withdrawals and weighted pressures by "quadrants," Hammer has made legitimate use of his subdivision of the field area. From this point on his calculations based on his

"quadrants" are entirely incorrect. Under the procedure which he has employed, and in which he has combined with each "quadrant" all of the surrounding "quadrants," his results are entirely incorrect as applied either to any particular individual "quadrant" or to any combination of "quadrants," up to and including the complete combination used in arriving at estimates for reserves of the field as a whole. The reasons for these inaccuracies may be simply stated as follows:

(a) The values arrived at for any particular "quadrant" do not and cannot properly express conditions which exist within that particular "quadrant" at the time of the estimates. This statement is obviously true, since the values arrived at are not values for the particular "quadrant" under consideration, but are values for a group of "quadrants," including not only the particular "quadrant" under consideration but also all of the surrounding "quadrants."

(b) For the field as a whole the averages arrived at do not and cannot represent true average values, because unequal weights are given to different parts of the field area. In arriving at the overall averages, Hammer has used some of the centrally located "quadrants" eight or nine times, while some of the edge "quadrants" have been used only four or five times. By his procedure a given area in one of his central "quadrants" may have as much as two times as much weight in the final averages as does an equal area in one of the edge "quadrants."

The unequal weighting would lead to incorrect results, even if all the acreage had been equal in original reserve value, but is even more incorrect for the Texas Panhandle Field because it multiplies the weight given to rich "quadrants" in the center of the structure. This is readily apparent from the cross-section which was shown in Figure 2, Exhibit 265. Averages arrived at by any such procedure as Hammer's are incorrect and give an incorrect and distorted picture when applied to Canadian's acreage. Much of the Canadian acreage is located in "quadrants," the performance of which is inferior to that of adjoining "quadrants" within which Canadian does not hold acreage. By the method of

averaging employed by Hammer, the apparent value of these inferior edge "quadrants" is inflated by the inclusion of performance figures on other areas.

Finally, it may be very definitely stated that an estimate of remaining reserves in place under Canadian acreage as of any date, even though such an estimate were correctly made, would be entirely without value as an indication of the future producing life of such reserves. Such an estimate, expressing only a total quantity of gas in place, fails entirely to consider the effects of drainage, which will actually be of controlling importance in determining the future economic life of these reserves as a source of supply of gas for a trunk pipe line system.

Gill testified on cross examination as follows:

That from the very beginning of his experience in the oil business he was concerned with the problem of estimating reserves. (Vol. XCII, pp. 14070-14072.) That in estimating gas reserves he ordinarily used the pressure-decline and volumetric methods and as to oil, he used the production-decline method. (Vol. XCII, pp. 14081, 14082.) That he had made a number of estimates of reserves on gas fields (Vol. XCII, p. 14100), being fifteen or twenty gas fields in all. (Vol. XCII, p. 14128.) The gas fields concerning which estimates were made were covered in the cross-examination from pages 14085 to 14129.

The witness stated that the use of the term "volumetric" as applied to gas estimates was the method which considered sand thickness and porosity. (Vol. XCII, p. 14101.)

The witness was asked to define "equilibrium pressure." He stated that this was the true weighted average pressure within the formation; that any gas container—gas reservoir—which is inter-connected permeably, would reach an equilibrium pressure if all withdrawals were stopped and if sufficient time were allowed, assuming that there is no water drive and if there were no change in the gas bearing volume. In other words if such a field were shut in long enough it would eventually equalize at a pressure which would be equally the same as the true weighted average pressure.

"Now, that true weighted average pressure which is

identical with what you call the equilibrium pressure, is the only pressure that could be used in a proper application of the pressure-decline method. (Vol. XCII, p. 14113.)

It is the true weighted average pressure (equilibrium pressure) that must be obtained before the pressure-decline method can be accurately applied. (Vol. XCII, pp. 14117, 14118.)

The witness was then asked if volume was not considered when pressures were weighted on surface area. The witness replied that this was not true, although surface is one of the factors in determining volume. He illustrated this by saying that the volume of a carpet covering the floor of a room is not the same as the entire volume of a room, but that is the assumption that is made when pressures in a reservoir are weighted on surface acreage alone.

The witness stated that he had endeavored to make many estimates of gas reserves in the Texas Panhandle Field based upon a proper application of pressure-decline methods and by the utilization of various methods of weighting and various methods of calculation. Each time that he has made such an estimate he weighed that estimate as impartially as he could and has decided in each instance that the estimates were not correct. None of the estimate stood up under his own analysis where he would be willing to accept them. (Vol. XCII, pp. 14140, 14141.) In making such estimates he was not looking for an answer but was looking for a sound method based upon pressure-declines in the Texas Panhandle Field and such estimates as he has made would not stand the test of unbiased engineering criticism; that he had tried hard to make an estimate that he thought was correct because he believes that there is some way of applying correctly the pressure-decline method of estimating gas reserves in the Texas Panhandle Field, but he is certain that it is not an elementary approach. Every elementary approach gives an incorrect result. (Vol. XCII, pp. 14178, 14179.)

He then again referred to Figure 2 attached to Exhibit 265 which is a typical cross-section of the Texas Panhandle Reservoir and which shows the correct deviation in pay

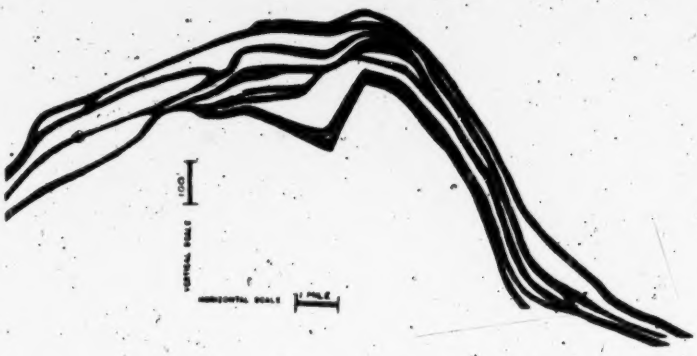
thickness from one side of the field to the other, and explained that this figure showed graphically why it was impossible to secure a true weighted average pressure (equilibrium pressure) by weighting pressures on surface acreage alone. (Vol. XCII, pp. 14156, 14160-14162, 14167.)

Hammer has not arrived at the correct weighted average pressure which most nearly approaches equilibrium pressure because he determines the average pressures weighted on surface acreage alone and the result does not closely approach equilibrium pressure. The witness then reiterated that the curves shown in Figure 4 attached to Exhibit 265 prove absolutely and without any doubt that the pressures utilized by Hammer are not the true weighted average pressures in the Texas Panhandle Reservoir. There is no question in the witness' mind about this. (Vol. XCIII, pp. 14270, 14271, 14273-14275.)

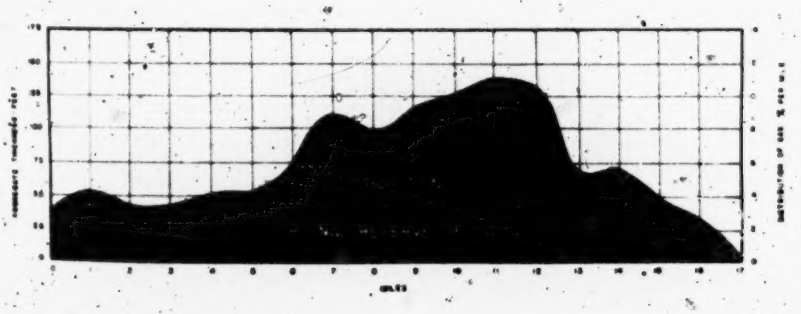
Exhibit No. 265

FIG. 2.
ILLUSTRATIVE CROSS-SECTIONS OF THE TEXAS PANHANDLE FIELD

CROSS-SECTION OF GAS-PRODUCING FORMATION.



TOTAL THICKNESS OF GAS-BEARING FORMATION.



EQUIVALENT DISTRIBUTION OF GAS IN CONTAINERS.

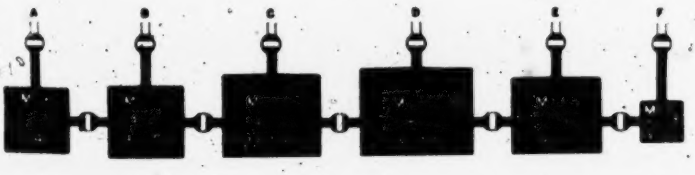
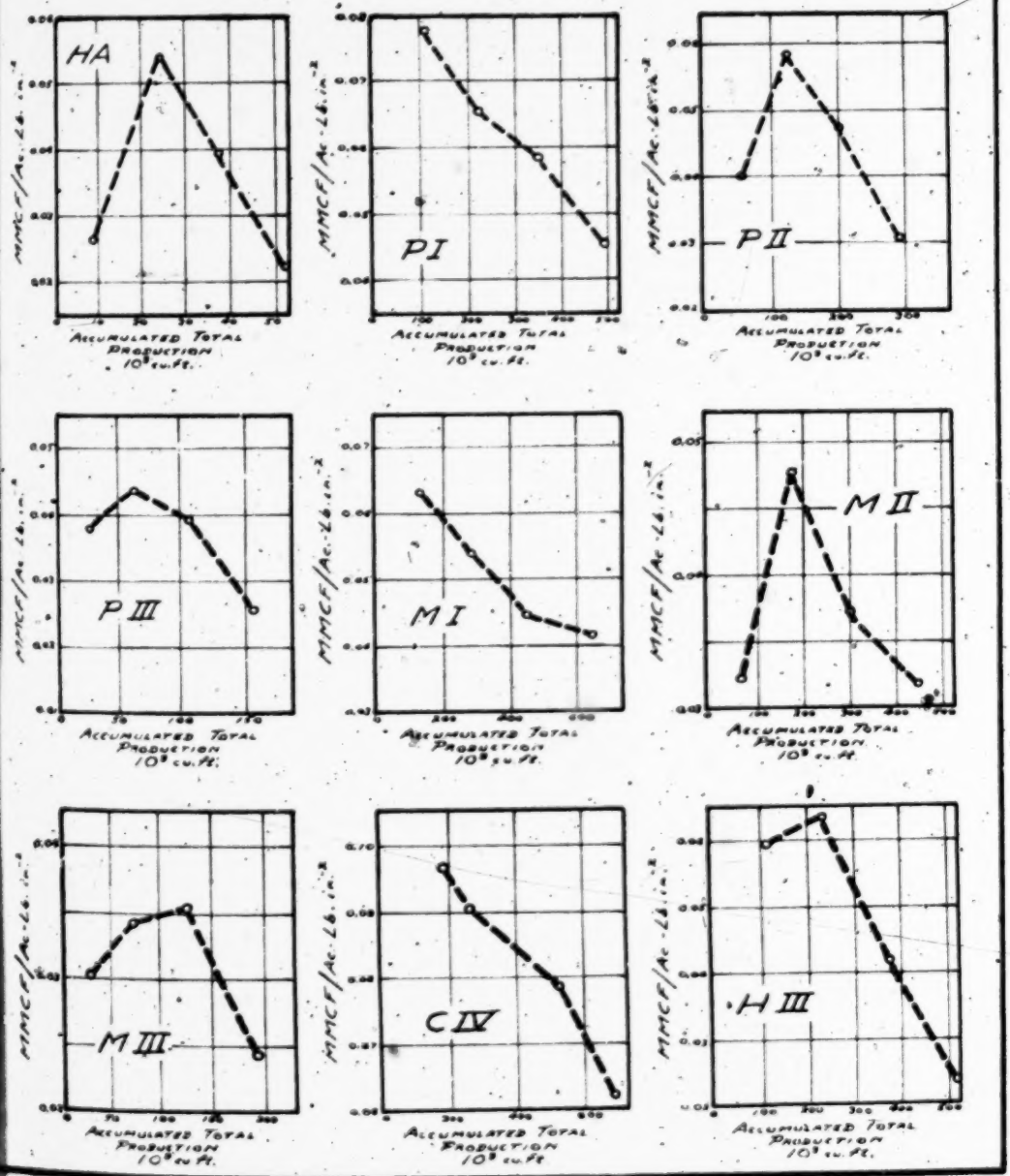


FIG. 4.

VARIATION IN RATES OF RECOVERY PER ACRE.-LB./SQ.IN. FROM HAMMER'S "QUADRANTS"

——— COMPUTED FROM TABLE III, EXHIBIT "180



Analysis of Stevens' Method

Testimony of STANLEY GILL, Witness for Canadian

Stanley Gill, witness for Canadian, analyzed the methods and procedure utilized by Stevens, Commission witness. in estimating the recoverable reserves from Canadian's present wells. Stevens' estimate is contained in Commission Exhibit 182. Gill's testimony is contained in Exhibit 265, pp. 18-24, and in Volume XCI, pp. 13999-14006, and is summarized as follows:

The witness stated that Stevens' methods and procedure were entirely fallacious, because:

(a) Stevens estimated reserves by a decline method, by averaging the pressure performance of wells, and this did not truly represent actual average pressures within the reservoir.

(b) Stevens' curves for his individual quadrants were arbitrarily drawn. He did not follow a uniform procedure in averaging out the various points, and did not give the same relative consideration to the points for particular years.

(c) Stevens neglected or ignored his pressure points for 1935 and 1936 in the plotting of his curves, while such pressure points were utilized by Hammer in his estimate. The reasons advanced by Stevens for ignoring the 1935 and 1936 pressure points fall into the category of expediency, rather than sound engineering practice.

(d) Stevens did not construct his curves on the basis of the various pressure points but constructed a straight line that most appealed to his fancy in each particular case.

(e) Stevens arbitrarily assumed that Canadian would continue to produce the same proportion of gas out of each quadrant in the future that it produced in the past. (Exhibits 255, by Hendee, and 256, by Massa, show conclusively that Stevens' assumption is totally unjustified and incorrect.)

(f) Stevens assumed additions to reserves for each additional well completed, and, in doing so, ignored interference between wells and overlapping of drainage areas. This is fundamentally erroneous.

Gill stated further that Stevens' procedure in some cases led to ridiculous results, which is illustrated by his treatment of Potter Quadrant 3 and Potter Quadrant 1. Hammer's estimate of reserves in place in Potter Quadrant 3 was 448,272,000 Mcf. as of August 1, 1939. Stevens estimated that the nine wells in this quadrant, drilled on a spacing of about 3700 acres per well, would recover approximately 525,300,000 Mcf. from the same date, or about 117% more than Hammer's estimate. In contrast to this estimate, Stevens estimated that the twenty-four wells in Potter 1, which are spaced to an average density of about 2400 acres per well, would recover less than 45% of the volume of gas estimated by Hammer as remaining beneath this quadrant on August 1, 1939. Hammer's estimated reserve under this quadrant was 1,282,995,000 Mcf., while Stevens estimated that the existing wells of Canadian and others would recover only 568,800,000 Mcf. Stevens concluded that approximately fifty-two wells, on an average spacing of about 1100 acres per well, would be required to recover the estimated reserves from this quadrant. This would be more than three times the drilled density that Stevens estimated would be required to recover all of the gas, and more, underlying Potter 3.

Gill further stated that another basic error inherent in Stevens' calculations was the assumption that each well produces its gas from a separate and independent drainage area, which Stevens assumed bore a constant and unvarying relationship to withdrawals out of the well. Stevens then assumed that such additional wells will actually increase the ultimate total recovery, unless they are so closely spaced that interference will occur. The witness further stated that interference would actually take place between any two gas wells withdrawing gas from the same permeably inter-connected porous reservoir system. Gill stated that the assumption of Stevens might be correct as applied to oil but was wholly erroneous as applicable to gas.

Gill further stated that given a sufficiently long period of

time, a single well could drain all of the recoverable gas out of any permeably inter-connected porous system, even though the size of the system was as great as that of the Texas Panhandle Field. Additional wells after the first well would not add a cubic foot to the total quantity of gas that could theoretically be recovered out of such completely inter-connected system. Additional wells are drilled, not to add to the reserves, but to make possible recovery of the gas within a shorter period of time.

The drilling program of a gas well is determined by two factors:

(a) The necessity for a sufficient number of wells of sufficient producing ability to supply gas at a daily rate sufficiently high to satisfy the maximum requirements of the available market (peak-load demands). In Texas a well cannot produce more than 25% of its open flow potential, and actually a considerably greater open flow capacity should be developed. Operations to a full 25% of open flow are usually improper and will result in serious operating difficulties. The number of wells should be sufficient to supply the peak-market demands at some considerably lower percentage of total open flow capacity, and there should be additional wells drilled to provide an adequate supply when some wells go off production, which is a normal operating occurrence as wells become older.

(b) In many cases lease obligations, rather than the demands of the gas market, control drilling operations.

Abandonment Pressure in the Texas Panhandle Field

Testimony of MAX K. WATSON, Witness for Canadian

Max K. Watson, gas engineer and assistant general superintendent of Canadian, whose qualifications have heretofore been given, testified as to the rock pressure at which it will become unprofitable for Canadian to continue operating and maintaining its gas wells in the Texas Panhandle Field. His testimony on direct examination is shown in

Volume LXXXVI, pages 13037 to 13045 and Exhibit 254, pages 1 to 7.

(1) The rock pressure at which it will become unprofitable for Canadian to continue operating and maintaining its gas wells in the Texas Panhandle Field.

At 50 pounds rock pressure the back pressure method developed by the United States Bureau of Mines indicates that the average well of the Canadian will have an open flow capacity of approximately 1,000 Mcf. per day as shown by the curve attached to Exhibit 254. By applying the 25% of open flow capacity permitted by the Railroad Commission, the maximum allowable of such well will be 250 Mcf. per day.

A 65% load factor (approximate production load factor for 1940) applied to the maximum allowable will give an average well an average productive expectancy of 160 Mcf. per day, which when valued at 4c per Mcf. at the well amounts to approximately $6.50 per day, or approximately $2,375.00 per year before deductions for royalties and severance taxes amounting to approximately $595.00 per year at present average rates. Therefore, the net amount available for operating and maintaining an average gas well at 50 pounds rock pressure will be $1,780.00. Canadian's cost of operating and maintaining its gas wells in the past without including royalties, severance taxes or amortization charges has been in excess of this amount.

Past and present costs of Canadian for operating and maintaining its producing gas wells do not provide a dependable index for the purpose of measuring the cost of operating and maintaining such wells when they reach rock pressures as low as 50 pounds. Present wells of Canadian have been operating at comparatively high pressures and therefore have been free from many operating difficulties which will develop at lower pressures. As the rock pressure of a well decreases, its open flow decreases at a proportionately higher rate. As the open flow decreases, the well is less capable of keeping itself clean of cavings and free from water, which has a tendency to increase bridging in the hole, flooding and salting in the formation. Moreover, as the wells approach a 50-pound rock pressure, they will be older and the corrosion of casing by water at the forma-

tions in which the well is not producing will become a greater problem. Since a well of low open flow capacity is unable to free itself of its accumulated water, it may be necessary in many instances to pump or syphon off such water which will add substantially to the cost of operating and maintaining the wells.

It should be remembered that when a well reaches a rock pressure of 50 pounds the actual working pressure of such well is only about 40 pounds. It also should be remembered that past tests of the future capacity of a gas well to produce in the Texas Panhandle Field shows that such capacity is declining at a greater rate than is indicated on any specific date by use of the back pressure method referred to above. The fact is that all producing problems have the effect of decreasing a well's ability to deliver gas and causing a corresponding reduction in its producing characteristics as represented by the back pressure curve at any date. Therefore, the estimate given above of the open flow capacity of a well at 50 pounds pressure in the Texas Panhandle Field is a maximum estimate based on present data.

For the reasons above stated, it is his opinion that it will become unprofitable for Canadian to continue operating and maintaining its gas wells in the Texas Panhandle Field when the rock pressures of such wells have declined to 50 pounds.

(2) The rock pressure at which it will become unprofitable for Canadian to drill additional wells in the Texas Panhandle Field.

A study of the producing ability of an average gas well indicates that a total of less than 1,000,000 Mcf. will be produced from an average well between 125 pounds and 50 pounds rock pressure. Assuming a value of 4c per Mcf. at the well for such gas, the total value of gas to be produced between the rock pressures above mentioned will be less than $40,000.00. Deducting the current rate of royalty and severance taxes applicable to such gas would reduce the total amount above to approximately $30,000.00 which would be available for the payment of operating charges and amortizing the cost of the well with its fittings, meter and gathering line. He has heretofore testified that based upon present conditions, the cost of drilling and completing future gas wells with meter, meter house and gathering line, will

be $30,000.00 each. Obviously, the revenue to be anticipated from a well between a rock pressure of 125 pounds and abandonment pressure of 50 pounds is insufficient to pay the cost of operating, maintaining and amortizing the same, without taking into consideration any return on the investment.

Therefore, for the reasons above stated, it is his opinion that 125 pounds rock pressure represents the lowest pressure at which Canadian will be able profitably and economically to drill additional wells in the Texas Panhandle Field, and it may well develop that it will be economical and good business practice to discontinue drilling at a higher pressure.

(3) The number of wells which will be required by Canadian at certain pressures to furnish its estimated markets.

By the use of the back pressure curves referred to above it is estimated that Canadian will require a total of 212 producing gas wells at 125 pounds rock pressure in order to supply the peak obligations reached in the year 1940 of 186,000 Mcf. per day. Hendee's estimates for future years in his Exhibit No. 80 indicate an increasing average day in the peak month up to 216,000 Mcf. per day in 1946. This estimate of required wells is a minimum because of the decreasing ability of wells to produce gas as indicated by the change in back pressure tests heretofore taken on the same wells at different dates. Also, it has been assumed that each new well drilled in the future will be an average well, which may not be realized since a substantial portion of the undrilled acreage of Canadian is indicated by its geologists to be in so-called areas of less than average or low potential.

By the same method of calculation it is estimated that Canadian would be required to drill 78 additional wells in order to meet the same market requirements of 186 million per day betwen a rock pressure of 125 pounds and 100 pounds; likewise, a total of 725 wells would be required to furnish such markets down to a 50-pound rock pressure, and a total of 1,675 wells down to a 25-pound rock pressure.

A total of 212 producing gas wells will permit an ultimate spacing of wells by Canadian of approximately 1,200 acres per well. Generally, such a spacing should so distribute the

Company's wells among its various leases as to automatically provide for proper internal proration. In some instances, however, internal proration as between leases will not permit certain wells to produce at full capacity as allowed by the Railroad Commission, which again serves to make the above estimates of total wells required a minimum rather than a maximum estimate.

It should be emphasized that the 212 wells estimated above will only be able to supply the market requirements referred to so long as the rock pressure of such wells remains at 125 pounds. As the rock pressure declines with subsequent withdrawals, the producing capacity of the 212 wells will decrease in a greater proportion than the rock pressure until the abandonment pressure of 50 pounds rock pressure is reached.

There is attached to Exhibit 254 a back pressure curve which represents the average well of Canadian. It will be noted that there is indicated upon the curve the expected open flow of the average well at 125 pounds pressure, 100 pounds pressure, 50 pounds pressure and 25 pounds pressure. The open flow as indicated represents the maximum producing ability of the wells at the various pressures indicated. The wells, of course, can produce legally only 25% of this amount due to statutory restrictions.

The witness testified on cross-examination that although he had not prepared a formal study with respect to abandonment pressures similar to the study contained in Exhibit 254, that he has at all times kept the matter in mind and is continuously studying the general question of abandonment pressures. (Vol. LXXXVIII, pp. 13214, 13216.) He stated that it was physically possible to produce a well below 50 pounds, and physically they might be produced to zero pounds but that such operations would not be justified economically. (Vol. LXXXVIII, p. 13217.)

The witness' calculations are made upon a value of gas at the well of 4c per Mcf. on a 16.4 pound pressure base. This is the prevailing price in the field and is based upon the amount that is paid generally by producing companies to their royalty owners for the royalty gas. It hasn't fluctuated particularly during the past few years. (Vol. LXXX-

VIII, pp. 13218-13220.) He has assumed that the present value will remain the same until the abandonment pressure of 50 pounds has been reached. He sees no reason for the value of gas to increase particularly in the future. (Vol. LXXXVIII, pp. 13230, 13231.)

His computation is also based upon the fact that wells in the state of Texas are not permitted to produce in excess of 25% of their open flow. He has assumed that this limitation will also continue throughout the period covered by this study. There is no provision in the law for increasing the proportion of the open flow that a well might produce when pressures become low. It is the witness' opinion in any event that no operator should produce a well in excess of 25% of its open flow volume and that this is particularly true when low pressures have been reached for the reason that there is a great deal of difficulty producing wells at low pressures without overproducing them. (Vol. LXXXVIII, pp. 13234-13236.)

The witness further testified that it would be natural to conclude that if regulations permitted the production of a well up to 50% of its open flow, it would be possible to produce under those circumstances twice as much gas as would be produced if the restriction was 25% of its open flow as it is today, but that this would be an absurd assumption for the reason that no well should be produced at the rate of 50% of its open flow, regardless of regulation. (Vol. LXXXVIII, pp. 13237, 13238.)

The witness also reiterated that open flows will decline at a faster rate than that indicated by the back pressure curve. This is true by reason of mechanical failures of the well. That is, the salting of the formation or caving, or mudding off of the formation. This does not discredit the back pressure curve. The curve will apply if there is no change in the well bore, but if something happens to the well which will decrease its producing characteristic the curve will not apply. Canadian has already had several mechanical difficulties and in some instances has been unsuccessful in restoring a well to its original open flow. (Vol. LXXXVIII, pp. 13244-13250.)

The witness testified that even if the value of gas at the

mouth of the well became higher than 4c per Mcf. during the period covered by the study, that still he did not believe that wells would be produced below a 50-pound pressure. If gas advanced to 8c at the well this would not mean that the wells would be produced down to 25 pounds. The computations, although based upon 4c per Mcf. for the gas at the well would not provide enough money to pay the cost of operations. The witness had not considered anything at all for return on the investment at the 4c per Mcf. wellhead price. (Vol. LXXXVIII, pp. 13252-13255.)

The witness reiterated that at a 50-pound pressure and a 65 per cent load factor, an average well could be expected to produce 160 Mcf. per day, which volume valued at 4c per Mcf. at the well amounts to approximately $6.50 per day, or approximately $2,375 per year before deductions for royalties and severance taxes. Royalties and severance taxes at the present time and at the average rates, amount to approximately $595 per year. This leaves, therefor, the net sum of $1780 available for operating and maintaining an average well at 50 pounds rock pressure. The operating costs alone, without providing for anything else, have been in excess of $1780 per year; for example in 1933 the operating cost of an average well was $2,661.35; in 1934 it was $2741.58; in 1935 it was $2,477.53; in 1936 it was $2,146.14; in 1937 it was $2,287.84; in 1938 it was $2,173.65; in 1939 it was $2,291.50, and in 1940 it was $2,072.56. (Vol. LXXXVIII, pp. 13265-13267.)

The witness stated in his direct examination:

> "The past and present costs of Canadian River Gas Company for operating and maintaining its producing gas wells do not provide a dependable index for the purpose of measuring the cost of operating and maintaining such wells when they reach rock pressures as low as 50 pounds. Present wells of Canadian River Gas Company have been operating at comparatively high pressures, and therefore, have been free from many operating difficulties which will develop at lower pressures. As the rock pressure of a well decreases, its open flow decreases at a proportionately higher rate. As the open flow decreases, the well is less capable of keeping

itself clean of cavings and free from water, which has a tendency to increase bridging in the hole, flooding and salting in the formation. Moreover, as the wells approach a 50-pound rock pressure, they will be older and the corrosion of casing by water at the formations in which the well is not producing will became a greater problem. Since a well of low open flow capacity is unable to free itself of its accumulated water, it may be necessary in many instances to pump or syphon off such water which will add substantially to the cost of operating and maintaining the wells." (Vol. LXXXVI, pp. 13039, 13040.)

Remaining Life of Texas Panhandle Field as a Source of Supply for Long Distance Pipe Lines

Testimony of R. W. Hendee, Witness for Canadian

R. W. Hendee, who is an engineer and also General Manager of Canadian and whose qualifications have been given heretofore, computed the remaining life of the Texas Panhandle Field.

Hendee's testimony on direct examination is shown in Volume LXXXVI, pp. 13045 to 13049, and in Exhibit 255 at pages 1 to 4 inclusive.

He stated that the probable life of the Texas Panhandle Field as a source of supply for major long distance pipe lines now taking gas from that field depends upon (a) the total recoverable gas reserves, (b) the rate of withdrawal, (c) the rock pressure at which it will become unprofitable to drill additional gas wells in the Texas Panhandle Field in the future, and (d) the abandonment pressure below which it will be unprofitable to operate and maintain the then existing gas wells.

For the purposes of his study, he adopted:

(a) J. D. Thompson Jr.'s estimate of original gas reserves in the field as shown in his Exhibit No. 207;

(b) C. J. Peterson's cumulative past withdrawal figures from the field as shown in his Exhibits Nos. 206 and 206-A for the full period ended December 31, 1940;

(c) Max K. Watson's study of rock pressure at which it will become unprofitable to drill additional gas wells in the Texas Panhandle Field in the future, and

(d) Max K. Watson's abandonment rock pressure of 50 pounds as shown in his Exhibit No. 254.

Estimates of future withdrawals beyond 1940 have been made by the witness, using the same classifications as followed by Peterson, i. e., "Gas Used by Gas Pipe Lines," "Gas Used by Gasoline Plant," "Casinghead Gas Not Treated (Blown in Air)" and "Gas Blown in Air and Used in Drilling Wells," a schedule of the estimated future withdrawals by years together with Peterson's withdrawals being attached to Exhibit 255 as Table I.

With respect to "Gas Used by Gas Pipe Lines," figures were obtained by witness directly from each major pipe line company withdrawing gas from the field.

With respect to "Gas Used by Gasoline Plants" (which includes gas used for the manufacture of carbon black), a study has been made by the witness of the probable trend of operations in the Texas Panhandle Field of the natural gasoline industry and the carbon black industry, and from the information and data gathered in such study the withdrawals of gas for such purposes have been estimated by him for the future.

Studies and estimates have been made by him with respect to "Casinghead Gas Not Treated (Blown in Air)" and "Gas Blown in Air and Used in Drilling Wells."

There is attached to Hendee's Exhibit 255 a production table which is set out in full as follows:

Year	Gas Used By Pipe Lines M.C.F. (1)	Gas Used By Gasoline Plants M.C.F. (2)	Casinghead Gas Not Treated (Blown in Air) M.C.F. (3)	Gas Blown in Air and Used in Drilling Wells M.C.F. (4)	Total Gas Produced M.C.F. (5)	Total Cumulative Gas Produced M.C.F. (6)
1926 and earlier	15,725,533	34,300,000	92,000,000	105,400,000	247,425,533	247,425,533
1927	8,825,598	263,800,000	144,000,000	88,600,000	505,225,598	752,651,131
1928	39,978,176	330,500,000	114,000,000	49,500,000	533,978,176	1,286,629,307
1929	84,767,509	395,110,000	90,000,000	55,800,000	625,677,509	1,912,306,816
1930	81,175,878	412,796,000	70,000,000	52,600,000	616,571,878	2,528,878,694
1931	86,538,708	346,255,000	50,000,000	16,300,000	499,093,708	3,027,972,402
1932	97,087,294	283,708,708	32,940,000	4,026,000	417,762,002	3,445,734,404
1933	109,179,977	333,838,516	25,550,000	4,380,000	472,948,493	3,918,682,897
1934	147,363,215	564,804,621	33,800,000	21,665,125	767,632,961	4,686,315,858
1935	156,695,751	563,734,998	28,850,000	26,037,265	775,318,014	5,461,633,872
1936	183,804,643	330,269,607	15,540,000	30,066,628	559,680,878	6,021,314,750
1937	210,333,095	345,298,466	6,205,000	29,692,496	591,529,057	6,612,843,807
1938	207,553,695	318,498,051	5,075,000	12,268,267	543,395,013	7,156,238,820
1939	222,299,905	329,653,273	7,300,000	13,026,239	572,279,417	7,728,518,237
1940	235,860,805	337,256,848	7,320,000	17,029,475	597,467,129	8,325,985,366
1941	239,538,447	340,000,000	7,300,000	15,000,000	601,838,447	8,927,823,813
1942	257,242,137	345,000,000	7,300,000	15,000,000	624,542,137	9,552,365,950
1943	269,210,846	345,000,000	7,300,000	15,000,000	636,510,846	10,188,876,796
1944	282,697,341	345,000,000	7,300,000	15,000,000	649,997,341	10,838,874,137
1945	291,972,410	345,000,000	7,300,000	15,000,000	659,272,410	11,498,346,547

(The volumes shown above are computed on a pressure base of 16.4 pounds per square inch.)

The above table shows the actual withdrawals from the field as compiled and estimated by Peterson and shown in his Exhibits 206 and 206-A through the year 1940. This table also shows the estimates of future production by Hendee for the years 1941 to 1945 inclusive. Hendee assumes that the production from 1945 to 1956 will be the same on the average as the production in the year 1945, as estimated by him. It will be noted that Hendee estimates that the total production from the field in 1945 will be about 62 billion greater than the total production from the field in 1940, an increase of slightly over 10%. Most of this increase results from the increase in withdrawals by pipe lines which accounts for approximately 56 billion from 1940 to 1945 out of a total overall increase of 62 billion for the same period. In other words, Hendee's estimates anticipates practically no increase in the withdrawals from the Panhandle Field except the increase in withdrawals by the pipe line companies.

Hendee stated that the annual actual and estimated withdrawals had been combined in cumulative totals and then plotted against Thompson's estimated total recoverable gas reserves on a curve entitled "Total Cumulative Past and Estimated Future Withdrawals from Texas Panhandle Field," which is attached to Exhibit 255 as Chart "A." Since no estimates covering future withdrawals beyond the year 1945 were made, the plotted curve was extended beyond 1945 at approximately the 1945 withdrawal rate until the curve intercepted Thompson's estimated recoverable gas reserves at a rock pressure of 100 pounds.

Watson has shown in his Exhibit No. 254 that it will be unprofitable to drill gas wells in the Texas Panhandle Field with rock pressures of 125 pounds or less. Therefore, it is reasonable to expect that drilling of new wells in the field will have ceased when the average field pressure has declined to 100 pounds. Watson has also shown in his Exhibit No. 254 that commercial production of gas by the major pipe line companies will cease when the average field pressure has declined to 50 pounds. Since it is assumed that drilling will cease at an average field pressure of 100 pounds, it follows that the productive capacity of existing wells will decline progressively down to the assumed abandonment pressure which results in declining annual withdrawals for this period as indicated on the plotted curve.

By applying in this manner the past and estimated future gas withdrawals against Thompson's recoverable gas reserves in the field, the curve which witness had plotted indicated that average field pressures will have reached Watson's abandonment pressure of 50 pounds and the economic life of the field as a source of supply for major long distance gas pipe lines will terminate by the end of the year 1956.

There is attached to Exhibit 255 a curve showing the total cumulated past and estimated future withdrawals from Texas Panhandle Field. This curve shows that when an average pressure of 100 pounds has been reached in the field that there will have been produced a total in excess of 15 trillion cubic feet of gas based upon Thompson's estimate as contained in Exhibit 207, and that when an average pressure of 50 pounds has been reached the total production from the field will be 17,381,014,589 Mcf. on a 16.4 pounds pressure base. This corresponds to Thompson's estimate of original gas in place at an assumed abandonment pressure of 50 pounds per square inch gauge but before the application of Thompson's recovery factor of 90 per cent.

Hendee testified on cross examination that he began collecting information for his Exhibit 255 in January, 1940, although he had been generally familiar with production in the Texas Panhandle Field for the past twenty years and particularly familiar with the question since assuming his present position about five years ago. (Vol. LXXXVIII, p. 13287.) He estimated the production from 1940 to 1945 and used the 1945 estimated production figure for the remainder of the period covered by his study, that is, up to 1956, at which time the average field pressures will have reached an abandonment pressure of 50 pounds and the economic life of the field as a source of supply for major long distance gas pipe lines will expire at that time. The witness has estimated that the withdrawals will continue at the same rate as the 1945 estimated withdrawals until the curve shown in Exhibit 255 intersects the 100-pound reserve estimate of Thompson and that the withdrawals will be tapered off somewhat until the 50-pound abandonment pressure has been reached. (Vol. LXXXVIII, pp. 13288, 13289.)

The witness was accused of having testified on a previous

occasion in this case that the life of the Canadian River-Colorado Interstate project would terminate in 1947, which is the date that most of the contracts expire. He stated positively that he didn't testify to that effect but merely testified that he didn't know what would happen after the contracts expired in 1947. (Vol. LXXXVIII, pp. 13289, 13290.)

In this Exhibit 255 the witness considered the withdrawals from the entire field and didn't consider the withdrawals of Canadian alone for the reason that the life of Canadian as a gas producer is dependent generally on the life of the field, and that his study had to do primarily with the life of major long distance gas pipe lines. (Vol. LXXXVIII, pp. 13291, 13292, 13294.) There will be some gas produced after the long distance pipe lines are no longer operating in the field. This gas will be utilized locally. (Vol. LXXXVIII, p. 13295.)

The witness has assumed that gas withdrawals will remain about the same from 1945 to 1956. However, the general trend of withdrawals has been upward, but he has given no consideration to this in determining the future life of the field. (Vol. LXXXVIII, pp. 13300, 13301.) The witness has had some experience in estimating future withdrawals and in fact had estimated the 1940 production and had missed it only one-tenth of 1 per cent. (Vol. LXXXVIII, pp. 13301, 13302.)

In estimating the future withdrawals of the pipe line companies operating in the field he simply took the estimates of the executives of the various companies. In other words, he utilized the estimates of the respective companies as to their future withdrawals for 1940 to 1945. (Vol. LXXXVIII, pp. 13303, 13304, 13305, 13331.)

In estimating the withdrawals by gasoline plants the witness made a particular study of the gasoline industry, the carbon black industry and related industries. This study was based primarily upon the Minerals Year-Book issued by the Bureau of Mines and he also studied the past production or withdrawals of the gasoline plants and carbon black plants in the field. The withdrawals for these purposes have been fairly constant for the past few years except for the years 1934 and 1935 when the Stripping Law

was in effect. After that, and beginning in 1936, the withdrawal figures have been fairly constant. No two years have been actually the same but he would not expect them to be. The witness also discussed the matter generally with a great many people and read numerous articles dealing with gasoline plants, carbon black plants and pipe lines. He didn't write to the executives of companies owning gasoline plants as he did to the companies owning gas pipe lines for the reason that the gasoline plants were running at about their capacity and it would follow that their production for the future would not vary a great deal from the production at present although the general condition in the industry indicates that the production of both carbon black and gasoline will continue to increase. (Vol. LXXXVIII, pp. 13334-13343.) Reference to the table of gas withdrawals incorporated in Exhibit 255 will show that after 1941 the witness makes no change whatever in the estimated use of gas by gasoline plants and upon being questioned concerning this he stated that this represented a very fair average figure for the future and that he didn't think it would be much more or less than that. (Vol. LXXXVIII, p. 13345.)

His estimates for casinghead gas not treated and blown in the air are virtually the same from 1938 for the reason that the witness feels that the wastage of gas of this character is about as low as it can possibly get. There was a great decrease in gas of this character blown into the air from 1934 to 1937 due to more careful operations on the part of the operators in the field but he doesn't think it is possible for it to get any lower than it is now. (Vol. LXXXVIII, pp. 13345-13346.)

The witness is also of the opinion that gas lost in the drilling of wells and gas blown into the air is about as low as it can get. The figures in 1932 and 1933 are very low because there wasn't much drilling during that period and from 1933 to 1937 there was an intensive development which caused the curve to go up. There has been quite a little drilling from 1938 to 1940 but the loss of gas has been better controlled through the utilization of better methods. (Vol. LXXXVIII, p. 13348.)

The curve, as shown in Exhibit 255, tapers off somewhat from the 100 pounds average pressure point to 50 pounds average pressure. That is true because the production will

be a little less during that period, and if he had not tapered off the production during that period, his calculations would have resulted in reaching an abandonment pressure at 50 pounds about two years sooner than his curve indicates. The witness explained that it was perfectly obvious where drilling is discontinued at a pressure of around 100 pounds you will get less and less production from the same wells as the pressure declines. (Vol. LXXXVIII, pp. 13349, 13350.)

The witness testified on redirect examination that he did not estimate the future withdrawals by the gas pipe line companies by extending a curve based upon past performance, but merely took the estimated future withdrawals as given to him by the various companies. If he had made the estimate independent of the figures given to him by such companies it would have been necessary for him to study the markets of the companies, the market outlets and matters of that kind. It would have been necessary for him to have had a great deal more information than is reflected by past sales. (Vol. LXXXVIII, pp. 13352, 13353.)

The principal outlet of gas consumed by gasoline plants is the outlet afforded by carbon black plants. There is nothing at this time that indicates any decrease in the manufacture of carbon black. About 85% of carbon black production is utilized in the rubber industry and this production of rubber in the United States is increasing and will probably continue to increase by reason of the demands brought about by the fact that army units are being mechanized. Carbon black is also used in synthetic rubber to the same degree as it is in natural rubber and the manufacture of synthetic rubber is likely to increase in the immediate future. The demand for motor fuel also affects to some degree the operation of gasoline plants and the present indications are that there will be a tremendous demand for gasoline. The witness, however, in estimating the demands of gasoline plants has not taken this increased demand into account but has assumed that the gasoline plants and carbon black plants will consume the same volume of gas in the future that they have in the past. (Vol. LXXXVIII, pp. 13353, 13355.)

The witness further testified on recross examination that the utilization of sour gas for the manufacture of carbon

black is not necessarily wasteful. Carbon black is a very useful product and is the very best substance *than* can be used in automobile tires in order to increase longevity of the tire and its grip on the road. It is not wasteful to take the gasoline out of the gas since but a very, very small percentage of the gas is lost and it is really an improvement upon the gas that goes in the pipe lines. It really doesn't hurt the gas enough to be of any particular importance. The witness does not know whether the pipe line companies will in the future take sour gas or not but if they do he does not believe that this will materially affect the life of the field since the use of the sour gas for this purpose would merely replace the gas that is now being used for other purposes and the total withdrawals would be about the same. (Vol. LXXXVIII, pp. 13357, 13362, 13364, 13365.)

R. W. HENDEE further testified on cross examination (Vol. 88, pp. 13286-13298; 13309; 13332-13333, and in Vol. 101, pp. 15635-15637) as follows:

Q. Mr. Hendee, your study is predicated upon the soundness of the testimony of three witnesses?

A. Three.

Q. Mr. J. D. Thompson, Jr's. estimate of reserves; C. J. Peterson's cumulative withdrawals and Max K. Watson's study of rock pressure; if you are wrong, they are wrong?

A. That would be correct.

Q. You made a careful study of their exhibits?

A. Yes, I have.

Q. Do you feel competent to pass upon the soundness of their exhibits?

A. No, I don't as I am not a geologist. I have used the exhibits as the best information that I had.

Q. Why didn't you take Mr. Hammer's exhibit, his estimate of reserves, and use it here?

A. Because I prepared this before Mr. Hammer's exhibit was put in in the first place.

Q. You mean if you had been working for the Federal Power Commission you might have done that?

A. I might have.

Q. Now, this study of yours as to future withdrawals in the Texas Panhandle field, how long did it take you to get this information together?

A. I started in January 1940, I believe, collecting the information.

Q. January 1940?

A. That is right.

Q. This is the first sort of study like this you have ever made?

A. Exactly like this, yes.

Q. Have you spent many years studying the withdrawals from the Panhandle Field of Texas?

A. I didn't get your question.

Q. Have you spent many years studying the rates of withdrawals from the Texas Panhandle field?

A. No.

Q. You just cumulated a lot of data and put it together and here it is?

A. No, I wouldn't say that. I have had general experience in the gas business for twenty years and that has naturally been a subject of my interest for a good many years. I have been interested in the Panhandle field, although I have only been in my present position about five years.

Q. During that five-year period, however, you have made no study as to the withdrawals from the field?

A. No, I don't think I have.

Q. And is this study made specifically for this case or not?

A. It was made specifically for this case.

Q. Is your company relying upon this exhibit to govern its future conduct in the operations of your company?

A. I think so, yes, sir.

Q. You think they are?

A. Yes.

Q. What makes you believe that?

A. Well, I think that is the best information we have at the present.

Q. At the present?

A. Yes, sir.

Q. Do you think it is a good indication of what will be the situation in 1956?

A. I think this is an estimate and I think it is the best estimate we can make and the best one available at the time.

Q. As I understand, you don't make an estimate all the way to 1956 but just to 1945?

A. That is correct.

Q. What happens with your 1956 proposition here? You state here at the end of your exhibit: "The curve which I have plotted indicates that average field pressures will have reached Mr. Watson's abandonment pressure of 50 pounds and the economic life of the field as a source of supply for major long distance gas pipe lines will terminate by the end of the year 1956."

A. Where are you reading?

Q. On the last page of your written statement.

The Trial Examiner: It is Page 4, Mr. Hendee.

The Witness: What was the question?

By Mr. March:

Q. My question is, if you have just made your estimate to 1945, how can you make this statement about 1956?

A. I have assumed for the purpose of this exhibit that the withdrawals will continue at the same rate until the curve intersects Mr. Thompson's 100-pound reserve and it has been tapered off to the 50-pound line. That is all there has been done.

Q. So your real estimate is 1945 and you have just extended your curve to 1956 just to see what it would look like?

A. That is correct.

Q. Now, I thought that you had already testified here that this whole project is going to blow up like a balloon in 1947 when this contract expires with the Colorado Interstate Gas Company:

A. I didn't testify that way. I said that I didn't know about it beyond that time.

Q. Since you have had time to think it over, what position are you taking now relative to the—what will happen at the time the contract with the Colorado Interstate Gas Company and Canadian River Gas Company expires in 1947?

Mr. Keffer: If the Examiner please, the exhibit of Mr. Hendee's is a field-wide study. It isn't a study limited to Colorado Interstate Gas Company and Canadian River Gas Company particularly, as it is an estimate of the withdrawals from the field as a whole and not withdrawals by Canadian River Gas Company.

When I say "withdrawals from the field," I mean by all of the operators in the field over this period; applying that, then, to Mr. Thompson's estimate of reserves, it is a very simple calculation to ascertain how long that field will last at that withdrawal. Except to the extent it includes Canadian River's withdrawals—I will state it that way—it has nothing to do specifically with the particular volume of Canadian River wells withdrawals but the aggregate of all of the company's wells in the field.

Mr. Keffer: I think your question there, Mr. March, goes somewhat beyond the exhibit in that respect.

Mr. March: He comes up with one exhibit in which he ends everything in 1947 and now he has an exhibit in which he takes it on up beyond that period. I wanted to know—

Mr. Keffer: I understand what you mean.

Mr. March: —what he considers to be the life of the property; whether it considers the property to be the life of the contract or the life of the field.

Mr. Keffer: I don't see how the life of the contract would have anything to do with the life of the property as such. He may be out of business but still have some gas left.

Mr. Spencer: Mr. Examiner, the point is this: Mr. Hendee is not purporting to show nor is he submitting any estimate of the life of the Canadian River Gas Company's reserves in relation to its market in this exhibit.

Mr. March: I don't think Mr. Hendee will make that statement, Mr. Spencer. I will ask him.

Q. Mr. Hendee, has this anything to do with the life of the Canadian River Gas Company's reserves you have available?

A. This particular exhibit?

Q. Yes.

A. No.

Q. I thought you stated in this exhibit that the Canadian River Gas Company's life as a gas producer and a seller of gas was dependent upon the life of the field.

A. That is true generally, yes.

Q. That is the point and that is why you had to consider the withdrawals from the entire field?

A. Yes.

Q. That instead of considering the Canadian River's withdrawals?

A. Yes.

Mr. Spencer: I guess I didn't go far enough with what I meant. What I meant to say is, it is quite possible Canadian River Gas Company would be out of business in 1947; that the properties would be sold to somebody else and operated by somebody else, but as a project he has not attempted to fix the life of that project in this particular exhibit. It is based entirely on the field, and total withdrawals on that field.

Mr. March: Is there an objection pending?

The Trial Examiner: I don't believe so.

Mr. Spencer: I don't believe there is an objection.

By Mr. March:

Q. You used the words "economic life" here of the field. What do you mean by the word "economic"?

A. Well, that, as Mr. Watson described it, is a point below which it wouldn't be economical to produce or to continue the drilling of wells, and 50 pounds is the point at which it would not be economical for long distance pipe lines to continue taking gas from the field.

Q. I see, Mr. Hendee, that you have been more conservative in this statement than Mr. Watson was in his statement. He stated, as I understand, in his exhibit: "Fifty pounds is the rock pressure at which it will become unprofitable for Canadian River to continue operating and maintaining its gas well from the Texas Panhandle field," and you state in effect it will be unprofitable for it to continue in the use of long distance gas pipe lines.

A. That is correct; that is what I said.

Mr. Spencer: He hasn't said that. Let's read exactly what he said. There is a difference in there.

Mr. March: Let's do that. He states: "The curve which I have plotted indicates that average field pressures

will have reached Mr. Watson's abandonment pressure of 50 pounds and the economic life of the field as a source of supply for major long distance gas pipe lines will terminate by the end of 1956," and Mr. Watson has indicated that when the pressures of 50 pounds are reached by the Canadian River Gas Company that it will be no longer profitable for them to continue operating and maintaining its gas wells in the Texas Panhandle field.

Mr. Spencer: The question that you asked him had particular relation to his statement on Page 3, the first two sentences, in the paragraph commencing on that page.

Mr. March: Page 3 of Mr. Watson exhibit?

Mr. Spencer: No.

Mr. March: I was reading from the last page of the written statement of Mr. Hendee.

Mr. Spencer: I don't want to mix up your cross examination, Mr. March.

Mr. March: He has already answered my questions.

Q. Well, Mr. Hendee, since you have been more conservative than Mr. Watson, what basis have you to make your assertion in effect that the wells will be only available for gas pipe lines?

A. Did you have the word "Canadian" in there?

Q. No.

A. The only thing I studied was the field as a whole and I feel that is true. I am considering major long distance gas pipe lines. There will be production from the field, as Mr. Watson says, after that.

Q. You haven't made any study of the economic abandonment pressure study of the field?

A. No, sir.

Q. You have had to take Mr. Watson's data on that?

A. That is right.

Q. And Mr. Watson says when the Canadian River wells reach 50 pounds it will be no longer profitable to operate at all. What I want to know is why you didn't follow his conclusions there.

A. I consider the Canadian River a major long distance pipe line.

Q. You imply on Page 4 of the statement that the Canadian River Gas Company will be able to utilize the gas locally from these wells?

A. That may be so.

Q. That is very likely, isn't it?

A. Very likely. There will be lots of gas produced after that.

Q. That is very likely.

A. Yes.

Q. There will be lots of gas produced after you get 50 pounds abandonment pressure?

A. Yes.

Q. Do you know of any fields from which that statement can be supported?

A. You mean lots of gas produced below fifty pounds?

Q. Yes.

A. Yes, sir.

Q. Where, for example?

A. Fields in Oklahoma that have gone down to zero pounds but—

Q. Zero pounds?

A. But at considerable expense and trouble.

Q. How did they pull them down to zero pounds?

A. Pardon me?

Q. How did they pull them down to zero pounds?

A. With compressors on a suction.

Q. The company you were formerly with, did it have any such wells?

A. Yes.

Q. Where did they distribute their gas?

A. That was for very very local distribution.

Q. Where does that company have its major outlets?

A. Tulsa and Oklahoma City.

Q. That is as far as they transport the gas?

A. Yes, sir, that is the greatest distance.

Q. How far is the gas from Tulsa?

A. This gas wasn't going into Tulsa.

Q. How far is the field from Tulsa from which you were withdrawing your gas?

Mr. Spencer: You mean by suction?

The Witness: This gas I was talking about didn't go

to Tulsa, Tulsa was drawing its gas—the gas was being drawn 150 to 200 miles from Tulsa.

By Mr. March:

Q. Well, was it all in that same field?

A. No, the Oklahoma Natural Gas Company had about 30 or 35 fields it was drawing gas from.

Q. How far was this field from which the gas was being drawn to zero from Tulsa?

A. The field was about 35 miles from Tulsa.

Q. Where were they delivering their gas?

A. The gas was going right around the town of Claremore. The wells were around the town of Claremore.

Q. And this field from which Tulsa secures its gas is 150 or 200 miles away? What are the pressures in the field?

A. What is that?

Q. What are the pressures in the field from which Tulsa is securing its gas?

A. It was five or six hundred pounds when I left there.

Q. Have you any other citations you can support gas being produced down to zero?

A. No, not directly.

Q. It usually goes below zero?

A. No, a gas field as such doesn't generally go below zero.

Q. Have you ever heard of them going below zero?

A. Pardon me?

Q. Have you ever heard of any gas field having wells pulled down below zero?

A. Dry gas wells—no, I don't think so.

Q. How about sour gas wells?

A. Casinghead gas is drawn below zero. That is for gasoline plants.

The Trial Examiner: Mr. Hendee, did the Oklahoma Natural Gas Company own the distribution system at the town of Claremore?

The Witness: Yes.

The Trial Examiner: And this gas went directly into this distribution system?

The Witness: Yes.

The Trial Examiner: It is still going, in so far as you know?

The Witness: I don't think it is as most of the wells have been pulled down and abandoned.

By Mr. March:

Q. At what pressure were they when they were abandoned?

A. Down to 25 or 30 pounds and various pressures.

Q. You said some of the wells were down to zero?

A. No, they were pulled down to zero by the suction.

Q. Pulled down to zero and they were forced to let the pressures build back up?

A. Yes.

Q. You could still pull them down to zero?

A. Little wells you could.

Q. It is sort of like milking a cow.

A. That is right, the same principle.

* * * * *

Q. Mr. Hendee, when you made inquiries of these natural gas pipe line companies, did you tell them you wanted the information for rate case purposes?

A. I think I did.

Q. First you sent a letter around to them and next you wired them?

A. Yes.

Q. Then did you get some of them on the telephone?

A. No, I don't think I did, except Mr. Dickinson.

Q. Did you call Mr. Dickinson on the telephone for Texoma Natural Gas Company?

A. Yes.

Q. What about the Phillips Petroleum Company? Don't they produce a little gas?

A. They don't have a pipe line out of the field.

Q. They produce some gas, don't they?

A. Yes.

Q. How does its gas production compare with the rest of the gas production in the field?

A. I really don't know because it goes into various outlets.

Q. You really haven't given that any consideration in this study?

A. It is in here, this cumulative curve.

Q. How did you get it in there when you didn't know about it?

A. I know it is in there because all of the figures are in there.

Q. How do you know the future figures are in the curve when you say you didn't get the future figures from the Phillips Petroleum Company?

A. They are in here in one of the companies' takes or the gasoline figures, so they are continued into the future the same way.

Q. Did you send a letter of solicitation to the Phillips Petroleum Company?

A. No, I didn't.

Q. Why didn't you?

A. I wasn't interested in them particularly as I was interested in the actual take from that field.

Q. You were equally interested in withdrawals from the field?

A. That is true.

Q. Don't you know these other companies take more gas from the field than the pipe line companies?

A. Yes, and they are in here.

Q. You didn't attempt to get any information at all from the Phillips Petroleum Company?

A. No, sir.

* * * * *

Q. Did you ever see that proration schedule of the Canadian River Gas Company before, Exhibit No. 32?

A. I can't identify this exhibit as the exact one.

Q. Do you know this man W. C. Doughty?

A. Yes, sir.

Q. Is he one of your employes?

A. Yes, sir.

Q. Now, are you familiar with the proration schedule of the Canadian River Gas Company?

A. Yes.

Q. Was that a schedule which was just made up by the company itself voluntarily?

A. Yes, that's right.

Q. Was there any written contracts between the lessors and the company approving the proration schedules?

A. No, not that I know of.

Q. Is the schedule subject to change at any time without any notice to the lessors?

A. Yes.

The Trial Examiner: Hasn't Mr. Watson testified as to all of that, Mr. March?

Mr. March: Not clearly. It's not clear. I want to be sure about it. It's not clear. It is now, though.

Now, just one other question:

Q. Is this the first proration schedule the company has ever invoked?

A. This particular one?

Q. Yes.

A. Oh, no. That schedule is changed from time to time.

Q. When was the last time you changed it?

A. It might change from month to month.

Q. It might change from day to day?

A. Yes.

Redirect Examination.

By Mr. Keffer:

Q. You say it is changing from time to time. You are speaking of wells drilled, for example, on acreage that had not therefore been under production?

A. That's right. When a new well is drilled it increases the proven operated acreage under that particular lease and that changes the schedule.

Q. You stated also, Mr. Hendee, that there was no contracts of land owners approving that schedule. You do have certain contracts, such as the Bivins A Consolidated lease, which provides for methods of allocating production to that land?

A. That's true.

Q. And some others in your consolidation lease forms?

A. That's true.

Testimony of J. G. Dickinson, Witness for Commission.

J. G. Dickinson, witness for the Commission, stated that he was General Superintendent of Production for Tex-

oma Natural Gas Company; that he had no connection in any way with Canadian. (Vol. LXIV, pp. 9197-9198.) That all of the gas for the Natural Gas Pipe Line Company of America is furnished from the acreage of Canadian and Texoma Natural Gas Company. (Vol. LXIV, pp. 9202-9203.)

Dickinson testified on cross-examination that his duties as General Superintendent of Texoma Natural Gas Company consisted of supervision of the activities of the geologist, land, lease and production departments, which covers practically all of the field operations of the company and that he had held this position since 1930. (Vol. LXIV, p. 9228.)

The witness testified on redirect examination that it was his opinion that the entire life of the reserves of both Canadian and Texoma Natural Gas Company was approximately twelve years from January 1, 1940, and that his company relied upon this estimate as to the life of the reserves and that this assumed that there would be no pipe line property in service by the end of 1952. (Vol. LXIV, p. 9232.)

J. G. DICKINSON further testified on cross examination (Vol. 64, pp. 9197-9208; 9213-9216; 9218-9226) as follows:

J. G. DICKINSON called as a witness by and on behalf of the Federal Power Commission, being first duly sworn, was examined and testified as follows:

Direct Examination.

By Mr. March:

Q. Please state your name.

A. J. G. Dickinson.

Q. What business are you engaged in?

A. I am General Superintendent of production for Texoma Natural Gas Company.

Q. Are you the same Mr. Dickinson that has been sitting in the court room here the last three or four days?

A. I believe so.

Q. Are you in any way connected with Canadian River Gas Company?

A. No, sir.

Q. Your business here is solely that of an observer?
A. That is right.
Q. Mr. Dickinson, I hand you a copy of a letter here signed by you, addressed to Mr. Robert W. Hendee, dated November 18, 1940, which purports to give the requirements of the Texoma Natural Gas Company on the Canadian River Gas Company for the future. Does that look like the letter you wrote?
A. Yes, I think so.
Q. Are the figures—is that the way you had them?
A. I don't recall the figures but—
Q. Will you state briefly what that shows?
A. This is a designation of quantities of gas which Natural Gas Pipeline Company would require from Canadian River Gas Company to supply markets which would be served by certain extensions which were contemplated.
Q. You say that certain extensions of the Natural Gas Pipeline facilities were contemplated?
A. Yes.
Q. With what certainty do you know that you will require this gas in the future as you have indicated here in this letter from the Canadian River Gas Company?
A. I don't believe I am in a position to testify as to that. Maybe I could best explain this letter by saying that I was advised by Mr. Floyd C. Brown who is vice president and general manger of our company—
Q. Which company is that?
A. The Texoma Natural Gas Company and Natural Gas Pipeline Company.

—that Texoma would be required to furnish certain quantities of gas for additional markets and at the same time he requested that I advise Mr. Hendee that additional quanities would be required from the Canadian River Gas Company—from the Colorado Interstate Gas Company instead of Canadian River Gas Company.

Q. What is Mr. Brown's position? Is he your superior?
A. Yes.
Q. You work under his immediate supervision?
A. No, I work under Mr. Kesinger's immediate supervision.
Q. Who is he?
A. He is general superintendent.

Q. Kesinger works under Mr. Brown's supervision?

A. Yes.

Q. Let's see. You say that you furnished this estimate of future requirements because Mr. Brown told you to?

A. No, I believe it would be more accurate to say that Mr. Hendee asked me to furnish him with the requirements from Colorado Interstate as far as Natural Gas Pipeline Company was concerned, and I requested the information of Mr. Brown.

Q. Well, you asked Mr. Brown to tell you just exactly what the requirements of Texoma Natural Gas Company and Natural Gas Pipeline Company of America would be upon Canadian River Gas Company, is that right?

A. Yes.

Q. So he furnished you with this information in this letter?

A. That's right.

Q. Well, how do you know that these will be the requirements?

A. Well, I am depending upon Mr. Brown's judgment in that matter.

Q. You state here in this letter:

"Confirming my telephonic conversation with you yesterday the following tabulation represents the increased quantities of gas to be furnished pipe line to Chicago and Milwaukee by Canadian River Gas Company."

Now, Mr. Dickinson, do you know whether or not Canadian River Gas Company will be required to furnish the amounts of gas indicated here in this estimate?

A. It is my judgment that they will be, based on the acquirement of knowledge as I outlined just previously.

Q. Then it is not solely the information which you got from Mr. Brown?

A. Not entirely.

Q. If you wrote this letter and state that that is how much gas you are going to require, you merely are relying upon what Mr. Brown said, or did you have some knowledge as to the correctness of these figures yourself?

A. Oh, no, I have no knowledge of the figures outside of the information I got from Mr. Brown.

Q. Did you get all of this information from Mr. Brown, every bit of it?

A. Yes.

Q. So, therefore, you don't know whether or not they are going to need these increased quantities of gas indicated in this letter or not, of your own knowledge—the Texoma Natural Gas Company and the Natural Gas Pipeline Company of America?

A. No, I haven't made a study of market requirements.

Q. As far as you know, they may not need any of it?

A. Oh, I wouldn't say that. I have confidence in Mr. Brown's judgment. I would believe they would probably need all of it.

Q. Let's see how Mr. Brown formulates this judgment. You are the superintendent in charge of production of Texoma Natural Gas Company, is that correct?

A. That's right.

Q. And Texoma Natural Gas Company—what is the relation between Texoma Natural Gas Company and Natural Gas Pipeline Company of America?

A. They are affiliated companies.

Q. They are controlled by identical interests, aren't they?

A. Not exactly.

Q. What is the difference? Wherein are they not controlled by identical interests?

A. Well, I believe that Standard of New Jersey, which does have an interest in Natural Gas Pipeline Company, does not have an interest in Texoma.

Q. That is the only difference in the relationships?

A. I think so.

Q. Are they operated as substantially a single business enterprise?

A. Yes.

Q. Now, when Mr. Brown wants to know whether or not he is going to have to go to some source—strike that, will you?

All of the gas of Natural Gas Pipeline Company of America is furnished by the Texoma Natural Gas Company and the Canadian River Gas Company, is it not?

A. Yes. That is, it is furnished through Colorado Interstate from Canadian River acreage.

Q. Yes.

A. And Texoma acreage.

Q. Those are the only two sources of supply for the Chicago line?

A. Yes.

Q. Well, now, when Mr. Brown wants to know as to whether or not all of that gas could be supplied by you or not, he would have to ask you as production superintendent, would he not?

A. Yes, I think he would ask me.

Q. Well, did he?

A. Yes, I had a conference with Mr. Brown in Chicago in which we discussed the future requirements from Texoma acreage.

Q. What sort of a report did you make to him?

A. I told him that we had ample reserves in the Panhandle field to supply the additional requirements from Texoma over a considerable number of years.

Q. How many years?

A. I don't recall.

Q. Approximately, how many years?

A. I don't remember that, Mr. March.

Q. Would it be fifty years or twenty years?

A. No.

Q. Would it be twenty years?

A. I don't remember.

Q. Would it be five years? You have some idea, now, don't you, Mr. Dickinson? What did you mean by a large number of years? What did you have in mind when you said "large number of years"?

A. I think it would be best to express it this way, that on account of the drainage condition in the Panhandle field the life of Texoma leases is limited by the life of the field and Texoma has more reserves than is required for its load and that we could furnish additional gas for the extra markets in addition to our present setup, present requirements.

Q. For a good many years?

A. Yes.

Q. About how many years?

A. Well, I told you I didn't remember.

Q. Well, you have some idea, now Mr. Dickinson, now, don't you? Just give us approximately.

A. Well, as I remember it was in the neighborhood of ten years, more or less. I don't remember exactly.

Q. Approximately ten years, you thought, that the Texoma Natural Gas Company had sufficient reserves to fur-

nish their present requirements for approximately ten years, is that right?

A. I think so, more or less. I don't remember exactly there.

Q. This drainage thing, I didn't ask anything about drainage—

Mr. Spencer: He's your witness.

By Mr. March:

Q. What do you know about drainage? Are you a geologist?

A. No.

Q. You don't know anything about drainage, then, do you?

A. I made quite a study of the conditions in the Panhandle field.

Q. Are you responsible for the testimony in the Texoma case that the Texoma Natural Gas Company was losing sixty per cent of their gas by means of drainage?

A. I believe Mr. Peterson testified to that.

Q. Do you think they are losing that much?

A. Yes.

Q. All right, you told Mr.— you wouldn't know the per cent of drainage since you aren't a geologist, would you?

A. No, I have no knowledge as to the percentage I didn't make that study.

Q. So you had this conference with Mr. Brown and you told Mr. Brown that you had reserves to take care of the present requirements, you thought, for a period of ten years, and what else did you tell him? That doesn't get down to these figures yet.

A. I think that is all. I told him I thought we had sufficient reserves to supply those requirements for ten years, more or less. I don't remember the exact period.

Q. All right, then, did he ask you—

A. That is, for our 75 per cent of the pipe line requirements. The other 25 per cent is furnished by Canadian River.

Q. You in effect told him that if they wanted to take care of the Milwaukee market or these extensions, whatever they were, they would have to go some place else to get the gas, is that right, in effect?

A. No, I didn't tell him that. He didn't ask me about that.

Q. Did you indicate to him as to how much you would have to get from Canadian River?

A. No, I assumed that the quantities required through Canadian River would automatically be supplied under the contract.

Q. So you didn't give him any figures at all as to just exactly the requirements that would have to come from Canadian River?

A. No, he gave them to me.

Q. Of course, he had this conference with you first and then he turns around and gives the figures to you?

A. No, I think you misunderstood. This conference took place some time before he gave me these figures here. We had some discussion of approximate quantities, but these definite estimates of quantities were not arrived at until some time later.

Q. Oh, you say you did have some discussion, then, on quantities, that Canadian River would have to supply?

A. No, our discussion of quantities dealt with Texoma to start with.

Q. Yes.

A. And then later I made a request for quantities which both Texoma and Canadian River should furnish and then supplied those to Mr. Hendee.

Q. Yes, you were getting those figures, of course, from Mr. Brown?

A. That's right.

Q. Mr. Dickinson, when you speak of the additional requirements to be caused by circumstances beyond the present markets of Natural Gas Pipeline Company, what do you mean by that?

A. Why, principally a proposed extension into Wisconsin and Milwaukee area.

Q. The Milwaukee area?

A. Yes.

Q. Is there a pipe line running from—I believe you stated that it is just a proposed extension to the Milwaukee area, is that correct?

A. That is right. A pipe line has been built to the Wis-

consin line and right of ways have been bought on into the Milwaukee area.

* * * * *

Q. Well, your knowledge of Natural Gas Pipeline's line to Chicago is not superficial, is it?

A. I have general knowledge of that situation.

Q. Do you know whether or not you could deliver the gas in any additional requirements over that line without building a new line?

A. Yes, I am sure we could not deliver any substantial additional quantities.

Q. Without building a new line paralleling the line?

A. Without making some extensions of our pipe line system, yes.

Q. Well, by extension of the pipe line system, of course—

A. Either building a parallel line or looping the present line to some extent.

Q. Well, if your estimates are correct here you couldn't deliver all the gas that you have ultimately to deliver here without paralleling the line, could you?

A. That is true, and we have already bought rights of way to loop this line and have taken option on the station site for a new compressing station in Moore County and bought a right of way from Moore County up to the Gray County station in Oklahoma.

Q. The Gray County station is your principal compressor station?

A. No, it is the second compressor station after you leave the Panhandle field.

Q. Now, you say that your company has two sources of supply, the Canadian River Gas Company and the Texoma Natural Gas Company, both of which are located in the Panhandle field of Texas?

A. Yes.

Q. How much of the requirements do you expect to get from the Hugoton field?

Mr. Spencer: Excuse me. By "these requirements," do you mean during the period named on that letter?

Mr. March: Yes. I want to know what requirements he is going to get from the Hugoton field.

Q. I am interested to know whether or not it might be

possible to get all the gas they want to get from Canadian River from the Hugoton field. What arrangements have been made to get gas from the Hugoton field, Mr. Dickinson?

A. Well, during the period covered by this letter there have not been any arrangements made.

Q. What period is covered by this letter—to 1946?.

A. Yes.

Q. Mr. Dickinson, do you know whether or not your company has made any arrangements to get any gas from the Hugoton field to take care of its requirements to Milwaukee, or other requirements?

A. No definite arrangements, yet.

Q. There is negotiations being carried on, though?

A. No, it has not reached that stage yet, I don't think.

Q. You know very positively that no negotiations are being carried on or arrangements made with regard to getting gas from the Hugoton field?

A. Oh, I think there has been a lot of conversation, but I don't know whether you would characterize them as negotiations or not.

Q. Have you been making those preliminary conversations and have you been in charge of them?

A. Oh, I have been making some of them.

Q. Where is the Hugoton field in relation to the Texas Panhandle field? How many miles north?

A. I don't remember. Those fields are quite large.

Q. How far is the nearest producing well in the Hugoton field from the nearest producing well in the Panhandle field?

* * * * *

Q. Do you know the answer to my question as to the distance?

A. No, I can't tell you without referring to a map. I don't remember that.

Q. Would you say it was fifty miles—less than fifty miles?

A. I think that from the edge of one field to the edge of another that fifty miles might be all right.

Q. It would be less than that, wouldn't it?

A. I don't remember.

Q. Where is the Hugoton field in relation to your pipe line?

A. It is west of it.

Q. Approximately how far?

A. Oh, forty or fifty miles. I don't remember that distance very well either. That's kind of a hard question to answer, too, because these eastern limits of the field aren't definitely delimited and it is rather irregular. I don't remember that.

Q. How far is your pipe line, approximately, from the nearest producing well in the Hugoton field?

A. I don't know.

Q. Do you know approximately?

A. Yes, it is somewhere around 40 miles, I should say.

Q. It is not over that, is it?

A. I don't think so.

Q. It is less than that?

A. It could be.

Q. How much acreage does your company own in the Hugoton field?

A. Not any.

Q. How much acreage do the companies controlling your company own in the Hugoton field?

A. I don't remember.

Mr. Spencer: Now, again, Mr. Examiner, why is it necessary to go into this as far as any issues involved in our case here?

The Trial Examiner: That's just the point, Mr. March. You said a while ago that you wanted to establish a certain thing and now you are going way beyond that.

Mr. March: No, I want to try to establish here that they can get their requirements from the Hugoton field and wouldn't have to have the requirements from the Canadian River Gas Company.

Mr. Spencer: Why, Mr. March, we could get them from Oklahoma City or Oklahoma or any other field or from Louisiana. Is that a part of the issues in this case?

Mr. March: It makes a lot of difference in the money spent here in the well drilling program and what-not.

The Trial Examiner: Well, it seems to me, Mr. March,

that that is wholly a matter of conjecture of what they might do or what they might not do here.

Mr. March: That's the whole thing. These estimates here are a matter of pure guess.

Mr. Spencer: Why don't you let it go at that, then?

Mr. March: I just want to establish clearly that they are, if I can. If I can't I want the record to clearly show.

Then the Examiner thinks I shouldn't ask any more questions in regard to the Hugoton field in relation to this pipe line?

The Trial Examiner: I don't see how, Mr. March, or I don't see why for the purpose of this proceeding.

Mr. March: I would like to ask one more question:

If the companies controlling Texoma Natural Gas Company and Natural Gas Pipeline Company of America own substantial acreage in the Hugoton field.

Mr. Spencer: That is the same question and I object to it again.

The Trial Examiner: Well, if this witness knows he may state.

By Mr. March:

Q. Mr. Dickinson, do you know as to whether or not the companies which control your company own substantial acreage in the Hugoton field of Kansas?

A. Yes, they do.

Q. Then in conclusion I just want to ask you a couple of questions so that I can get into the record exactly the nature of these requirements which you say Texoma will require of Canadian River. So far as you know of your own knowledge they may not need any gas which is recorded here in this future estimate—your company may not need any of the gas, is that right?

A. No, I wouldn't want to make a statement of that kind. I think I would be willing to say that it is my judgment that they would need these figures.

Q. It is your judgment now that they would need these figures?

A. Yes.

Q. That they would have these requirements?

A. And I am perfectly willing to agree that they are based on Mr. Brown's—based on information which Mr. Brown gave me. Now, that is the extent of my knowledge. I am willing to qualify it to that extent.

Q. That's right. All you know as to these requirements is what Mr. Brown told you?

A. That's right.

Q. And of your own knowledge you don't know whether or not your company will require this gas or not, other than what Mr. Brown tells you?

A. My knowledge has been enhanced by the information which I got from Mr. Brown.

Q. And that is the only enhancement that you have got?

A. That is correct.

Q. Therefore, I want you to answer my question if you can: Of your own knowledge, you don't know whether your company will need any of this gas for the Milwaukee market?

A. I think I have answered the question.

Q. Will you answer that question directly so I can have it in the record yes or no? You can refuse to answer it.

A. I think that I am reasonably—I have confidence in Mr. Brown's estimate here. I think these are the quantities that will be required, and my knowledge is limited by the information furnished me by Mr. Brown.

Mr. March: Read the question to him there. I want to get a little more definite answer on that.

(The question referred to was read by the reporter, as set forth above.)

Mr. Spencer: Now, Mr. Examiner, he is coercing his own witness here. That's a very bad practice.

Mr. March: Sometimes I think that this witness is not my witness but it is Mr. Spencer's witness. He has been over on that side of the table all week.

Mr Spencer: I think he has answered your question.

The Witness: I think I have answered the question.

Mr. March: I would rather have you answer the question directly if you can, yes or no.

The Witness: I would rather not answer the question that way.

Mr. March: That's all I want you to say.

Mr. Spencer: You are perfectly willing to answer it the way you have answered it?

The Witness: Yes.

By Mr. March:

Q. Mr. Dickinson, has your company made any estimate of the reserves of the Panhandle field of Texas?

A. Yes, Mr. Peterson has made an estimate of that.

Q. Anyone else for your company?

Mr. Spencer: Now, Mr. Examiner, I am willing to let him go, but we'll get involved in something that—

Mr. March: I am not going to get involved. I have just got two or three questions.

The Trial Examiner: Try and cut this short.

Mr. Spencer: What difference does it make?

Mr. March: It makes a great deal of difference.

The Trial Examiner: Mr. March, did you ever make an estimate—Mr. Dickinson?

The Witness: No.

Mr. March: Is that as short as you want it, Mr. Examiner?

The Trial Examiner: That's as short as I want it.

Mr. March: It is not as short as I want it, but if the Examiner rules I won't—

The Witness: I have never made an estimate of reserves, if that's what you meant.

The Trial Examiner: That's what I meant.

By Mr. March:

Q. Has your company made an estimate of the reserves outside of the estimate of reserves made by Mr. Peterson?

Mr. Spencer: The company doesn't make an estimate of reserves.

By Mr. March:

Q. Have you employed anyone else to make an estimate of reserves for you?

A. Yes, we have.

Q. Who were those?

A. J. D. Thompson, Jr. and Mr. C. Don Hughes.

Q. The same individuals that have been here in this hearing room all week?

A. Well, I don't remember whether they have been here—

Mr. Spencer: They really haven't been here all the time.

The Witness: I don't think some of them have.

By Mr. March:

Q. What is Mr. Peterson's connection with your company?

A. Chief geologist for the Texoma Natural Gas Company.

Q. He is employed by your company?

A. Yes.

Drainage in Texas Panhandle Field.

Testimony of C. H. DUNLAP, Witness for Canadian.

C. H. Dunlap identified a series of pressure contour maps each titled "Rock Pressure Contour Map, Texas Panhandle Gas Field," which series of maps was marked for identification as Exhibit 239 and was later received in evidence. The witness' testimony concerning these maps is shown in Volume LXXXI, pages 11926 to 11942. The maps show pressure conditions in the Texas Panhandle Field for the years 1933, 1934, 1935, 1936, 1937, 1938, 1939 and 1940. The first map of the series which is dated 1925, shows the general outline of the field, all of which is colored in yellow, and shows the field in its original virgin pressure condition.

The 1933 and 1934 maps are based upon the pressure contour (isobar) maps prepared by C. J. Peterson, which maps were subsequently identified by Peterson, Volume LXXXII, pages 12275 to 12286.

The maps from 1935 to 1940, inclusive, are based upon

the pressure contour (isobar) maps prepared by the Railroad Commission.

The different colors on the maps represent different pressure bands, each color representing a 50-pound pressure band. There are seven colors in all, starting with pressures from zero to 150 pounds and going up to pressures above 400 pounds. The red color, as shown on the 1940 map, represents the area in which the pressures are lower than 150 pounds; the gray color, which is the next higher band, represents pressures from 150 to 200 pounds; the orange color, which is the next higher band, represents pressures from 200 to 250 pounds; the green color, which is the next higher band, represents pressures from 250 to 300 pounds; the blue color, which is the next higher band, represents pressures from 300 to 350 pounds; the brown color, which is the next higher band, represents pressures from 350 to 400 pounds, and the yellow color, which is the highest band, represents pressures above 400 pounds, as based upon the pressure survey made by the Railroad Commission in mid-summer, 1940. These colors represent the same pressure bands on the entire series of maps. It will be noted that the red color does not appear at all on the 1933 map. This is due to the fact that there were no pressures below 150 pounds that year. The red color shows up for the first time in a small area in Gray County on the 1934 map and is shown again in the area around Borger on the 1935 map.

Each map contains other data in the upper righthand corner, being average weighted rock pressures and withdrawals of gas. This portion of the maps was not received in evidence.

Dunlap had been preparing these maps over a period of years and they were not prepared for this particular hearing.

The witness testified on cross-examination that he was a draftsman and that the maps were as exact a duplication of the Railroad Commission's maps as he could make them.

C. H. DUNLAP further testified on cross examination (Vol. 81, pp. 11926-11936) as follows:

C. H. DUNLAP, called as a witness by and on behalf of the respondents, being first duly sworn, was examined and testified as follows:

Direct Examination.

By Mr. Keffer:

Q. Your name is C. H. Dunlap?

A. Yes, sir.

Q. You live in Amarillo, Texas, Mr. Dunlap?

A. Yes, sir.

Q. I hand you a series of maps, Mr. Dunlap, and I will ask you if those maps have been prepared by you and under your direction.

A. Yes, sir.

Mr. Keffer: I will ask, Mr. Examiner, that the series of maps be given an exhibit number for identification.

The Trial Examiner: Very well, Mr. Keffer. Is there any particular title for that map?

Mr. Keffer: It is a series of maps entitled "Rock Pressure Contour Map, Texas Panhandle Gas Field."

The Trial Examiner: It will be marked for identification as Exhibit No. 239.

(Exhibit 239, Witness Dunlap, marked for identification.)

By Mr. Keffer:

Q. Mr. Dunlap, referring to the rock pressure contour map of the Panhandle field which has been marked as Exhibit No. 239, I will ask you if that series of maps represents the Texas Panhandle gas field?

A. Well, so far as I know, yes.

Q. All right. Now, the first map at the top colored all in yellow, that is the outline of the Texas Panhandle gas field as it was before any depletion occurred?

A. Yes.

Q. And beginning with 1933 and covering 1934, 1935, 1936, 1937, 1938, 1939 and 1940, you have shown the same

outline of the field and have also shown pressure contours for those years, have you not?

A. Yes, sir.

Q. Take the map for 1933 and 1934. What is that based upon as far as the pressure contours are concerned?

A. Well, those maps were made by me when I worked for the Texoma Natural Gas Company under Mr. C. J. Peterson.

Q. The maps beginning with 1935 through to 1940, inclusive, with respect to pressure contours shown upon those, what is that based upon?

A. Copies of the Railroad Commission's maps.

Q. And are representative of the Railroad Commission's maps which show the pressure contour bands in the Texas Panhandle gas field?

A. Yes, sir.

Q. And shows the field as outlined by the Railroad Commission for those years?

A. Yes, sir.

Q. Now, those pressure bands represent 50 pounds differentials in pressure, do they not?

A. Yes, sir.

Q. You have how many colors? You might take the 1940 map as being illustrative.

A. One, two, three, four, five, six, seven.

Q. It starts with pressures below 150 and runs to pressures above 490, is that not correct?

A. That is correct.

Q. The red color represents pressures below 150 pounds, does it not?

A. Yes, sir.

Q. What would you call the next—a slate color?

A. A gray color.

Q. That represents pressures between 150 and 200 pounds?

A. Yes.

Q. What is the next color?

A. Orange.

Q. Orange represents pressures from 200 to 250 pounds?

A. That is right.

Q. The green represents 250 to 300 pounds?

A. Yes.

Q. And the blue represents pressures from 300 to 350 pounds?

A. That is right.

Q. And the brown from 350 pounds to 400 pounds?

A. That is right.

Q. And the yellow represents pressures above 400 pounds.

A. That is right.

Q. Now, what experience have you had in draftsmanship, Mr. Dunlap?

A. Well about fourteen years?

Q. Did you give a considerable part of your time to work of this character?

A. Practically all of it.

Q. Now, there is also shown on the map certain weighted average rock pressures. Was that taken from the Railroad Commission's records?

A. I think it was. I didn't get these figures myself but I think they are Commission's figures.

Q. All right. It also shows total withdrawal figures on a 14.65 base. Those figures as I understand it were furnished by Mr. McCue of the Columbian Carbon Company?

A. That is right.

Mr. March: Now, I object to leading the witness too much.

Mr. Keffer: It is such a simple matter, Mr. Examiner—

The Trial Examiner: It is not at all harmful, Mr. March.

Mr. Keffer: I am going to make just a statement in this connection with respect to those pressures and with respect to the withdrawal figures which were furnishind by Mr. McCue. If Commission's counsel have any objection to those going in, we will not offer them. I have no objection to it going in or not going in, it is entirely up to Mr. Lange and Mr. March.

Mr. March: I want to see the working papers immediately on these maps.

Mr. Keffer: What do you mean?

Mr. March: I don't want to waste three or four days. I want to see them right now.

Mr. Keffer: Why, the working papers are simply the maps of the Commission, Mr. March, which you have in the Commission reports, and just about the same scale that this is. Will not that suffice? There isn't any working papers except that this is a reproduction of the map. That's all there is to it.

Mr. March: I'll ask the witness a couple of questions.

By Mr. Keffer:

Q. You have been making these maps over a number of years, have you not, Mr. Dunlap?

A. Yes.

Q. And they have not been prepared for this case?

A. No.

Mr. Keffer: All right, Mr. March, that's all.

Cross Examination.

By Mr. March:

Q. You are just a draftsman?

A. That's right.

Q. And all you know is what somebody told you to put on these sheets?

A. That's right. I just copied the Commission maps.

Q. These are identical with the Commission maps?

A. As far as I could say, yes, sir. You see the Commission map is a large scale map. This has been reduced to approximately ten miles per square inch and as far as I could say, they are correct.

Q. There is a great deal of inaccuracy in here, isn't there, if you reduced them that much?

A. Well, it depends upon what you call inaccuracy. If you were to scale it off you might find a few pounds difference.

Q. Under whose direction did you prepare these maps?

A. These maps were prepared more or less just as a picture. They weren't prepared for this case.

Q. Under whose direction?

A. Under my direction.

Q. Under your direction?

A. Yes.

Q. Who gave you orders to prepare the map?

A. I made those for the Panhandle Eastern.

Q. Under whose supervision?

A. Mine.

Q. Do I understand this isn't more nor less than a copy of the Railroad Commission maps?

A. Yes.

Q. Up to what year?

A. 1940.

Q. How far did you go—you mean the 1933 map is a Commission map?

A. The 1933 and 1934 maps were Texoma's.

Q. Who gave you those?

A. Mr. Peterson. I worked for him at the time.

Q. You prepared these two under the direction of Mr. Peterson, this 1933 and 1934 map?

A. Yes, sir. Now, let me ask a question. Are you asking about this map or the originals?

Q. I am trying to find out under whose direction you prepared these maps—all of them.

A. These, I say, I prepared for Mr. Field. It was his idea. I did all the work. In other words, he is just a representative of the Panhandle Eastern in Amarillo and he wanted a map made and everything was my work.

Q. By whom are you employed now?

A. Hagy, Harrington & March.

Q. Now, let's see, is there any other data on here that was not taken from the Railroad Commission maps correctly?

A. Well, now, as I say—you mean on the contours, the map itself, or the figures.

Q. I mean any data on the face of these maps. You enumerate it and designate what has not been taken from the Commission maps.

A. Well, the maps from 1935 on were from the Commission direct. The figures, as Mr. Keffer told you, were from H. W. McCue. I think that he got them from the Commission, but I won't—

Mr. March: Mr. Keffer, I think we can talk about this off the record and see what working papers there are, and we would object to anything going in here that you don't have a witness to support.

Mr. Keffer: That's all right. Mr. Lange and Mr. March you have all of the Railroad Commission reports since 1935, and Mr. Examiner, those reports do show maps on the same pressure contour bands and they can very readily be checked.

Mr. March: I have some of them but they are in Washington, but I want to see your working papers on this.

Mr. Keffer: You seem to have a different conception of what a working paper is at times than what I have.

Mr. March: Those new maps aren't Railroad Commission maps.

Mr. Keffer: They were worked out by Mr. Dunlap.

Mr. March: All right, I want to see the basic data Mr. Peterson had in constructing those maps. I don't want to see it today but I don't want to wait two or three days.

Mr. Keffer: I don't know that they are here, Mr. March. If this witness says that these are a reproduction of those Commission maps, I fail to see how having the original maps here would add anything to it. The witness is under oath and he has stated that he has accurately reproduced them.

Mr. March: Yes, but I don't even know where Mr. Peterson got the maps.

Mr. Keffer: He made them up from the pressures existing in the field at that time. The basic data, of course, are pressures existing at those periods.

Mr. March: I am requesting those working papers.

The Trial Examiner: I think we might shorten this up, Mr. Keffer. Do you wish to offer the exhibit?

Mr. Keffer: Yes.

Mr. March: I object to it without having had an opportunity to look at the working papers.

The Trial Examiner: You have cross examined him, Mr. March.

Mr. March: I haven't cross examined him, Mr. Examiner. Here are two maps in here. He is just a draftsman. I

don't know where Mr. Peterson got the data on the 1933 and 1934 maps. They aren't Railroad Commission maps.

The Trial Examiner: So far as I am concerned, he has laid a proper foundation for the map. You may state your objection.

Mr. March: I want to cross examine the witness. If you are going to let these things go in without cross examination, we object to that.

The Trial Examiner: You have been afforded an opportunity to cross examine the witness on these maps.

Mr. March: Well, I'll cross examine him right now on them.

Q. I will show you the map for 1933 and I will ask you, do you know whether that is an accurate reproduction of the pressure contours in 1933?

A. As Mr. Peterson contoured them, yes, sir.

Q. I want to know if you know of your own knowledge.

A. As you said, I am just a draftsman. I am no engineer. I can't say that the pressures are correct or anything else.

Q. In other words, they might be something different as far as you know?

A. As far as I know, the map is correct.

Q. You have no idea what the pressure contours were as of 1933, do you?

A. Just how do you mean?

Q. I mean from an engineering standpoint, you didn't construct the map?

A. No, I did not.

Q. In 1934—I show you the pressure contour map for that year and I will ask you if you constructed it and the data was compiled by you.

A. I did not.

Q. I will ask you, have you any knowledge as to what the pressure contours were as of 1934.

A. I do not.

Q. You just took the information Mr. Peterson gave you?

A. That's right.

Testimony of J. B. Massa, Witness for Canadian.

Qualifications

He is thirty-nine years of age; resides at Pampa, Texas. He is a registered petroleum engineer "Natural Gas" State of Texas, and is now engaged in a consulting practice.

He has been engaged in the oil and gas business since 1920. His business experience has been as follows: (Vol. LXXXVI, pp. 13049-13051, Exhibit 256, p. 1.)

> Tide-Mex Oil Company, Zacamixtle, Vera Cruz, Mexico, 1920-1922. Engineering Department, doing surveying and construction work and oil production and transportation.
>
> Wooten Hughes Company, Ranger, Texas, 1923-1924, Natural Gasoline Plant Construction plant operation, gas measurement and testing and plant efficiency work.
>
> Phillips Petroleum Company, Ranger, Texas; Borger, Texas, and Pampa, Texas, 1925-1929; plant efficiency work, plant operation and gas supply supervision.
>
> White Eagle Oil & Refining Company, Pampa, Texas, 1930-1931, field superintendent, Gas Department.
>
> Railroad Commission of Texas, Oil and Gas Division, Pampa, Texas. Assistant Deputy Supervision in charge of Natural Gas Conservation Work in the Texas Panhandle Field.
>
> Consulting Engineer, Pampa, Texas, 1934 to date, during which time the major portion of his work has been in connection with the Texas Panhandle Gas Field.

Increase of Production in Canadian Area and Its Effect Upon Canadian Reserves

Direct testimony of Massa on this subject is contained in Volume LXXXVI, pages 13051 to 13086, Exhibit 256, pages 2 to 12.

Massa submitted on direct examination Exhibit 256, which exhibit consists of his study of the rate of production of natural gas from the Area therein referred to as the "Canadian River Gas Company Area," the increase in the rate of gas production from the area referred to, and the cause

of such increase in the rate of production, and an estimate as to the future rate of production from the Area, all of which matters have a bearing upon drainage from the leases and reserves owned by Canadian. The Area which Massa studied particularly is described by metes and bounds on pages 2 and 3 of Exhibit 256, and generally includes all of the proven gas field located in Hartley, Moore and Potter Counties, Texas, and that portion of the field located north of the Canadian River in Hutchinson County, Texas, and a small portion of the southwestern portion of Hutchinson County, Texas, and the northeast part of Carson County, Texas; and which is hereinafter referred to as the Canadian Area.

There is attached to Exhibit 256 and made a part thereof the following:

Exhibit A is a table showing the annual rate of gas production from the Canadian Area.

Exhibit A-1 contains curves showing (a) the annual rate of gas production by Canadian, and (b) the total annual rate of gas production from the Canadian Area.

Exhibit A-2 is a curve showing the annual rate of production of sweet gas by companies other than Canadian from the Canadian Area.

Exhibit A-3 is a curve showing the annual rate of production of sour and casinghead gas by companies other than Canadian from the Canadian Area.

Exhibit "B" is a table showing the cumulative production from the Canadian Area.

Exhibit B-1 contains curves showing (a) the cumulative production of Canadian and (b) the total cumulative production from the Canadian Area.

Exhibit "C" is a table showing the estimated future annual rate of production from the Canadian Area.

Exhibit "D" is a table showing the estimated future cumulative production from the Canadian Area.

All of the above described instruments constitute a part of Exhibit 256 and are found at the end of that exhibit.

Past Production from Canadian Area

Exhibits A and A-1 show that there has been an annual increase in the volume of production from the Canadian Area since 1929, the rate of increase varying from four billion to sixty-seven billion cubic feet per year. The rate of production from the Area during 1929 was twenty billion cubic feet per year compared to an indicated production from the Area for 1939 of three hundred billion cubic feet per year, an increase of two hundred eighty billion cubic feet. Stated another way there were almost fifteen times as much gas produced from the Area in 1939 as in 1929.

Exhibits A and A-1 show also that prior to the year of 1932 the production of Canadian exceeded the production of all others producing gas from the Area. However, in 1932 the combined sweet, sour and casinghead gas production of others exceeded that of Canadian for the first time, and by 1934 the production of sweet gas alone by others was in excess of the production of Canadian for the first time. Production from the Area by Canadian for the year 1939 will be approximately forty-one billion cubic feet. This amount represents 32% of the total sweet gas or 13.6% of the total sweet, sour and casinghead gas produced from the Area for the year.

Exhibits B and B-1 show that by the year of 1934 the cumulative production of other companies was equal to that of Canadian, and that by the year of 1936 the cumulative production of other companies was more than double the production of Canadian.

There has been an increase in the annual rate of production of gas from the Canadian Area in amounts shown by Exhibit A-1, and that the increase in the rate of production of gas from the Area is due primarily to the increased rate of production of companies other than Canadian.

Estimated Future Production from Canadian Area

The trend of the annual rate of production curve, Exhibit A-1, shows that an increase in the annual rate of production of gas in the Canadian Area may be expected in future years.

Any increase in the annual rate of gas production in the Area will be the result of a shift of current production from

other parts of the field to the Area, or increased market outlets.

From a study of existing conditions in the sweet gas producing zone of the field it is apparent that there will be some shift of production from the balance of the field to the Canadian Area in future years; however, no definite statement as to the amount of shift that will take place nor the time when such shift will occur can be made.

In the past, a large part of the shift of production of sweet gas that has occurred has been caused by lease consolidations on the part of Texoma Natural Gas Company. These consolidations have allocated more production to Texoma leases located in the Canadian Area due to the fact that Texoma owns large tracts of undrilled acreage in this Area but as a result of the lease consolidations this undrilled acreage is given consideration in the Company's allocation of production between its several leases, the allocation of production being based on total lease acreage multiplied by average lease open flow.

The consolidation of leases has been practically completed and most all of Texoma's acreage holdings are now considered in allocation of production. For this reason, only a small shift of production of sweet gas to the Canadian Area may be expected as a result of Texoma's consolidations of present acreage.

The operations of sweet gas pipe line companies, other than Canadian and West Texas Gas Company, now taking gas from the Canadian Area will result in a shift of sweet gas production to the Area for reasons that will be enumerated below.

One reason to expect a shift of production of sweet gas to the Canadian Area is a block of acreage, owned by Shamrock Oil and Gas Corporation, of approximately twenty thousand acres. At the present time this acreage has no market outlet but is bearing annual delay rentals. Naturally this company is and will continue to endeavor to secure a market for the gas that could be produced from this acreage.

Should the Shamrock acreage be sold to or given a market outlet by a gas pipe line company, there would be a shift in the production of sweet gas to the Canadian Area.

Since Northern Natural Gas Company's present supply of gas is located in Carson and Gray counties, where earlier abandonment of wells may be expected to occur, it is not unlikely that this company would be interested in the Shamrock acreage.

Texoma Natural Gas Company and Cities Service Gas Company are now producing large volumes of sweet gas from the field lying east of the Canadian Area and particularly in eastern Carson County and in Gray County. These areas already have a much lower gas pressure than the areas further west. It is reasonable to assume that such areas will be depleted earlier than the Canadian Area. It is apparent, therefore, that as pressures decline and less gas is available in such areas that both Texoma Natural Gas Company and Cities Service Gas Company will be forced to take an increasingly larger proportion of their total production from time to time from the Canadian Area and from lands adjacent thereto. Texoma Natural Gas Company has been increasing its withdrawals from the Canadian Area in recent years and is now taking more than half of its total production from this Area. Cities Service Gas Company has also been increasing its production from this Area during the past few years, and as above stated, will be forced to produce increasingly larger volumes from this Area and lands adjacent thereto as less and less gas becomes available in eastern Carson and Gray Counties.

The greater portion of the Panhandle Eastern reserves are already in the Canadian Area, but as pressures become lower in its wells outside of the Area and in the wells of Huber Petroleum Company, from whom it purchases gas, it will also be forced to take a larger proportion of its gas from the Canadian Area.

In addition to the gas pipe line companies now taking gas from the Canadian Area, there are other gas pipe line companies taking gas from that part of the field lying east of the Canadian Area, including a substantial quantity of gas sold by the Phillips Petroleum Company to the Northern Natural Gas Company, all of which is produced in Gray and Wheeler Counties where pressures are already very low. It is reasonable to expect a shifting of this gas production to the West, particularly the production of the Phillips Petroleum Company as this company has available

large quantities of sweet gas in or near the Canadian Area. It also is the largest owner of sour gas lands in Moore and Hutchinson Counties.

Exhibit A-3 shows that in the past there has been a rapid increase in production of sour gas in the Canadian Area. due partially to increased markets and partially to the rapid development of that part of the sour gas zone, thus causing a shift of sour gas production to the Area.

There will continue to be a shift of current production of sour gas to the Canadian Area due to the fact that sour gas production in the Texas Panhandle Field is regulated by a State proration order under which well allowables are determined on the basis of 1/3 on relative potentials and 2/3 on a relative acre/pound factor. The acre/pound factor is obtained by multiplying the lease acres by the well rock pressure.

The State proration order will bring about a shift of current production of sour gas to the Canadian Area due to the fact that there are approximately two-hundred-twenty-five undrilled, six hundred forty acre sour gas locations in the Area compared to about four such locations outside the Area. The weighted average pressure of the sour acreage in the Canadian Area is 357 pounds compared to 197 pounds for the sour acreage outside of the Area at August 1, 1939. The average open flow or potential of the sour wells in the Canadian Area is in excess of twenty-four million cubic feet per well per day compared to an average open flow or potential of nine million cubic feet per well per day for sour wells located outside the Area.

During the year of 1938 there were thirty-five sour gas wells drilled in the Canadian Area compared to eleven drilled outside the Area and during the year 1939 there were twenty-two sour wells drilled in the Area compared to five drilled outside the Area.

Practically all of the sour gas acreage in the field is under lease contracts, and in view of the past development it appears that a steady development of the present undrilled acreage may be anticipated.

As development takes place, it naturally follows that there will be a shift in current production of sour gas to the Canadian Area, for all of the undeveloped acreage lies

therein and the average well potential and average pressure of the Area are much higher than similar factors for the remainder of the sour zone. The effect of the proration formula is to give large allowables to areas of high potentials and large acre-pound factors and production occurs in relation to allowables.

The table appearing at the end of this paragraph illustrates the shift in production of sour gas from the balance of the field to the Canadian Area expected as a result of the complete development of the sour gas zone over a seven-year period. The table is based upon the application of the State proration order with a daily market outlet for 690,000,000 cubic feet of gas per day, 14.65 pound base.

It has been assumed that there will be an average of thirty-two wells drilled per year for seven years, and that pressure in the sour zone of the Canadian Area will decline at the rate of one pound per acre per 9,600,000,000 cubic feet of gas produced while the sour zone of the balance of the field declines at the rate of one pound per acre per 16,700,000,000 cubic feet of gas produced, these decline rates representing the average relation of pressure loss and production for the two year period July 1937 to July 1939, based on Railroad Commission figures. In addition, consideration was given to the fact that there are a number of sour wells lying outside the Canadian Area, having an annual production of approximately fifteen billion cubic feet per year, which are exempt from the proration order, and that the allowable gas allocated to the sour gas zone of the Canadian Area is approximately fifteen billion cubic feet per year in excess of production. Present rates of production of casinghead gas have been considered as constant:

Table

Annual Production—Sour and Casinghead Gas
1939—16.4 lbs.—174,780,000 Mcf.

	Estimated Production Sour and Casinghead Gas 16.4 lbs. Mcf.
1940	186,726,000
1941	188,657,000
1942	191,356,000
1943	193,380,000
1944	194,955,000
1945	196,081,000
1946	196,755,000
1947	197,205,000
1948	195,405,000
1949	193,605,000
1950	191,131,000
1951	188,431,000
1952	185,457,000
Total	2,499,144,000

There now exists a pressure differential of 24 pounds per acre between the sweet and sour zones of the Canadian Area. The sour zone comprises only 39% of the total acreage of the Area yet the sour production represents approximately 59% of the total production from the Area. Obviously the differential in pressure between the two zones will increase and large quantities of sweet gas will migrate to the sour zone.

Increased market outlets for the sweet gas zone is a subject on which Massa has not made a thorough study. However, a study has been made of this subject by Hendee (Exhibit 255) upon which Massa's figures as to future production from the sweet gas area are based.

In the sour zone, it is Massa's opinion that there will be an increase in the market outlet for sour gas by virtue of a decline in the production of casinghead gas, but that there will not be any material change in the combined total production of the two types of gas.

Exhibit "C" of Exhibit 256 shows his estimate of the

future annual rate of production of gas from the Canadian Area, based upon Hendee's estimate of sweet gas production for the field and Massa's estimate of the shift in production for sour gas. Exhibit "D" of Exhibit 256 shows cumulative production based on Exhibit "C."

Although he has recorded several instances where shifts in sweet gas production may reasonably be expected, the figures of future sweet gas production by companies other than Canadian from the Canadian Area are based upon current proportions of production as between the Canadian Area and other parts of the field, and do not reflect the shift of production that will undoubtedly occur. It must also be borne in mind that there are now three gas pipe lines serving Wheeler County, in addition to the Phillips Petroleum Company line, and as Wheeler County becomes more and more depleted these lines must necessarily be extended westward if the companies owning the same continue to take gas from the Texas Panhandle Field.

The witness further testified that Table A (Exhibit A) of Exhibit 256, shows that for 1928 and prior, the Canadian has produced slightly in excess of thirty billion cubic feet of gas from the Area being studied and that the total production of all companies through 1928 and prior, was only thirty-one and a half billion feet of gas and that Canadian therefore has produced practically all of the gas from the Area through the year 1928. That since 1928 the other companies operating in the Area produced an increasingly larger volume of gas as compared to the Canadian's production and that the increase has been out of all proportion to Canadian's increase. The production for the most part adjacent to the Canadian acreage has been sweet gas production. Exhibit 179 of the Commission's witness Hammer shows the sour gas line to be generally north and northeast of the Canadian acreage.

From the beginning of the life of the field to the end of 1933 Canadian produced more sweet gas every year than all of the other companies combined but during the year 1934 all of the other companies for the first time produced more sweet gas than Canadian produced.

Exhibit B (Table B) of Exhibit 256 shows cumulative production of all types of gas produced by Canadian and

also produced by Canadian and also produced by all other companies. The witness stated that a reference to this chart shows that in the year 1938 the cumulative production of sweet gas by all other companies producing in the Area being studied was in excess of the cumulative production of Canadian. The annual rate of production of all other companies, as shown by Exhibit A of Exhibit 256, became greater than the annual rate of production of Canadian for the first time in 1934, but Canadian had accumulated a back log of heavier production than all other companies during the preceding years and it took until sometime within the year 1938 for the total production of all other companies to equal the total production for all time of Canadian in so far as sweet gas production is concerned.

In 1938 the witness stated that the production of Canadian, as shown on Exhibit A of Exhibit 256, was 38,950,311 Mcf. and that the sweet gas production of all other companies for that same year was 73,995,612 Mcf., and in 1939 the rate of production of all other companies was more than twice that of Canadian, as shown by the same table.

Again referring to Exhibit B of Exhibit 256 the total cumulative production of sweet gas by Canadian at the end of 1937 was slightly in excess of 260 billion cubic feet, and the total cumulative production of sweet gas by all other companies producing in the Area was a little less than 243.5 billion cubic feet.

Starting with the year 1938 with a slight difference in favor of Canadian it was probably mid-year in 1938 before the cumulative production of sweet gas of all companies equaled the cumulative production of sweet gas by Canadian from the Area in question.

Referring again to Exhibit B (Table B) Exhibit 256, it is shown that in 1933 the total cumulative production of all companies, including Canadian and including production of all types of gas, was in excess of 209 billion cubic feet at the end of the year 1933 and the cumulative production of Canadian alone at the end of 1933 was in excess of 122 billion cubic feet. At the end of 1933, therefore, Canadian had produced more gas than all other gas production of

all types by all other companies in that area and it was during the year 1934 for the first time that all other gas companies, including all types of gas production, exceeded the production of Canadian.

The witness then referred to Exhibit A-1 (Chart A-1 of Exhibit 256) which chart contains a graph showing the annual rate of production of Canadian. It also contains a graph or curve showing the total annual rate or production of gas from the entire Area. This chart and the curves thereon show that since the end of the year 1933 particularly, the total annual rate of production has been increasing with respect to the annual rate of production of Canadian. The curve of Canadian is represented by a fairly straight line while the curve representing the total annual rate of production is represented by a sharply ascending line beginning at the end of the year 1933.

Accelerated Pressure Decline of Canadian Reserves And of Reserves Generally in Canadian Area

Massa also testified with respect to Exhibit 257 (Vol. LXXXVI, pp. 13067-13086, Exhibit 257, pp. 1-3) that this exhibit was prepared for the purpose of showing that in future years it is reasonable to expect that the volume of gas produced per pound loss of pressure will be smaller than the past and present rates of production per pound loss of pressure.

He stated that in considering this matter it must be borne in mind that much of the undeveloped high pressure acreage lies along the edges of the field. Past experience in the field has proved that most of the edge acreage will produce much smaller volumes of gas per pound oss of pressure than the average volume per pound for the field.

Another fact that must be borne in mind is the location of the leases of Canadian, both with respect to the edges of the field and with respect to pressure conditions in the field. These leases extend along the entire southern boundary of the field in Potter County and the southern and western boundaries of Hartley County. The leases of the Canadian for the most part lie in the highest pressure area of the field.

The graph (shown in Exhibit 257) of gas production per acre, in Mcf. 16.4 pound base, per pound loss of pressure, plotted in relation to cumulative production in billions of cubic feet, 16.4 pound base, shows clearly what is occurring in the western end of the Texas Panhandle Field in regard to declining gas production per acre per pound loss of pressure (that is, production per acre pound according to Hammer's figures).

The graph is based on data compiled from basic data used by Hammer, Commission Engineer, in making his estimate of gas reserves.

Curve "A" is based upon production and pressure data including all of Hartley, Moore and Potter Counties, Quadrant 4 of Carson County and Quadrants 3, 4 and 5 of Hutchinson County.

Data Used

	Acre Pounds	Acre Pound Loss	Production 16.4 lbs. Mcf.	Production Mcf. Acre Pound Loss	Cumulative Production
1935	320,492,239				
1936	317,641,213	2,851,026	210,940,635	73.99	210,940,635
1937	313,160,082	4,481,131	254,569,005	56.81	465,509,640
1938	306,397,165	6,762,917	289,318,127	42.78	754,827,767
1939	297,686,827	8,710,337	301,482,036	34.61	1,056,309,803

Curve "B" is based upon production and pressure data of those quadrants wherein lie the leases of the Canadian, including all of Hartley and Potter Counties, Quadrants 1, 2 and 3 of Moore County, Quadrant 4 of Carson County and Quadrant 3 of Hutchinson County.

Data Used

	Acre Pounds	Acre Pound Loss	Production 16.4 lbs. Mcf.	Production Mcf. Acre Pound Loss	Cumulative Production
1935	177,400,264				
1936	175,639,615	1,800,649	109,546,235	60.84	109,546,235
1937	173,671,356	1,968,259	117,805,591	59.85	227,369,826
1938	171,192,700	2,478,586	124,461,586	50.21	351,831,412
1939	167,605,974	3,586,796	133,135,223	37.12	484,966,635

The graph shows plainly that the volume of gas produced per acre pound loss of pressure has been declining

rapidly and the trends of the curves are such as to indicate that this decline will continue.

Declines in production of natural gas per acre pound loss of pressure in the Texas Panhandle Field can be attributed to but two causes, drainage and variations in the acre content of gas in various parts of the field.

Due to the fact that Curve "B," representing the area of the Canadian leases, is declining at a greater rate than is Curve "A," representing the western end of the field, it is reasonable to conclude that the leases of Canadian will produce a smaller volume of gas per acre pound loss of pressure than the average for the western zone and to conclude from both of the curves and the other enumerated facts that the rate of production per acre pound loss of pressure will continue to decline.

Massa referred to Exhibit 257 and explained the curves shown graphically in that exhibit. He stated the curves were constructed from data taken from witness Hammer's Exhibit 180 and the quadrants described in Exhibit 257 are the quadrants shown on Hammer's Exhibit 179. The quadrants, as shown on Hammer's Exhibit 179, correspond almost exactly with the Canadian Area which Massa defined and discussed in Exhibit 256, the only difference being that Massa had not included all of quadrant 3 in Hutchinson County in defining the Area which he described in Exhibit 256 as the Canadian Area. He had, however, included about half of Quadrant 3, Hutchinson County. The graph shown in Exhibit 257, however, includes all of Quadrant 3, Hutchinson County. It was necessary for him to do this because he was using Hammer's calculations and figures and he had no way to break it down into two parts in so far as Quadrant 3, Hutchinson County, was concerned.

The table on page 2 of Exhibit 257 shows that from mid-year, 1935, to mid-year, 1936, the cubic feet of gas per acre produced for each acre-pound loss in pressure was 73.99 thousand cubic feet, and from 1936 to 1937 the production per acre-pound loss had dropped to 56.81 thousand cubic feet and from 1937 to 1938 the production had dropped to 42.7 thousand cubic feet per acre-pound loss in pressure

and from 1938 to 1939 the production had still further dropped to 34.61 thousand cubic feet per acre-pound loss in pressure. There was less than half as much gas produced in the period mid-year, 1938, to mid-year, 1939, as there was produced from mid-year, 1935, to mid-year, 1936, with respect to the acre-pound loss in pressure. (It will be observed from an inspection of Hammer's Exhibit 180 that his production and pressure figures covered annual periods of mid-year one year to mid-year of the next.) The decline in pressure, as related to production, shows that the loss in pressure is greatly accelerated from year to year. If the production per acre-pound loss in pressure had been the same from year to year Curve A as shown on the graph in Exhibit 257, would have been a horizontal straight line.

Curve B, shown on the graph contained in Exhibit 257, represents comparative data plotted from Hammer's data, but pertaining only to quadrants which contain acreage of the Canadian and is the same data utilized by Hammer in making his estimate of Canadian reserves. This curve also shows a decline in acre-pounds from year to year with respect to production, or when correlated with production. The decline is not as rapid at the beginning of the period as it is for the Area as a whole and shown on Curve A but in the last two years particularly, the decline has been greatly accelerated. The four points shown on each curve represent mid-year 1936, midyear 1937, mid-year 1938, and mid-year 1939. If pressures were not dropping more rapidly than production, when related to production, Curve B would be a horizontal straight line: that is, if the production per pound loss in pressure was constant the curve would be represented by a horizontal straight line instead of a line that points sharply downward.

Cross Examination

The testimony on cross examination as to both exhibits (256 and 257) is abstracted together. The cross examination directed to each exhibit covers related subjects and the testimony is presented more clearly by considering them together.

Massa testified on cross-examination with respect to Exhibit 256 that the shift of production in the sour gas

area of northern Moore County, as shown on page 10, Exhibit 256, is based upon the application of the State proration order which he has assumed will remain in effect through 1952. (Vol. LXXXVIII, p. 13268.) In selecting the Area which he has described by metes and bounds in Exhibit 256 he took into account the acreage of Canadian and the surrounding area which contained high pressure acreage. This was done in order to study the future development and shift of production and determine the effect that it would have with respect to increased drainage. He did not include all of Quadrant 3, Hutchinson County, as delineated by Hammer in Exhibit 179, because at the time he made his study he had not seen Hammer's Exhibit and had never heard of Hammer's Quadrant 3, Hutchinson County. (Vol. LXXXVIII, pp. 13369-13370.) He was limiting his study primarily to the high pressure areas in the western part of the Texas Panhandle Field (Vol. LXXXVIII, p. 13373) for the purpose of studying the pressures and the trends of withdrawals. (Vol. LXXXVIII, p. 13374.)

It is the witness' opinion that low pressure areas will be created in northern Moore County and in northern Hutchinson County because of the tremendous withdrawals from those areas and that a situation will be created similar to the low pressure area around Borger and Sanford area. He has studied the production records in the Borger-Sanford area since 1928 and knows that that area has produced many, many, many times over the amount of gas that could possibly have been in place under the acreage in that area. (Vol. LXXXVIII, p. 13382.)

The witness studied the Canadian well pressures as they affected the weighted pressures of the Area. It is the witness' opinion that the wells in northern Moore and northern Hutchinson Counties will create an even greater difference in pressures than exists today and that the gas from the intermediate areas between Canadian leases and northern Moore and northern Hutchinson Counties will migrate northward into that area and that in turn gas from the Canadian leases will be drained to the intermediate areas. In like manner gas is being drained from Canadian acreage into Borger and Sanford area. The migration of gas is a progressive proposition. If a well is drilled and

starts producing that well at first will drain from a comparatively small area but as the pressure is reduced at the well bore and a greater pressure differential is established between that and the higher pressures in the reservoir, drainage starts and the well gradually increases its drainage area. That is what has occurred in the Borger-Sanford area. As the pressure has been pulled down and down and down the effect of the drainage into this area has been extended and is now showing up at remote parts of the field. Regardless of who produces the gas and regardless of where it is produced, when low pressure areas are created there will be a migration of gas to those low pressure areas. The witness further stated that the lower pressure differential existing in central Moore County was not caused entirely by withdrawals within that particular area. (Vol. LXXXIX, pp. 13388, 13891.)

It is not necessary to remove all of the gas from under a well to cause drainage. All that is necessary is to create a pressure differential and the greater the differential the greater the extent of the drainage. It is not necessary to create a void in order to have gas migrate into an area of lower pressure and as long as there is a pressure differential there is a movement of gas. (Vol. LXXXIX, pp. 13394, 13395.) The effect of the migration of gas into the Sanford area, and also the effect of the heavy withdrawals which are occurring in northern Moore County, northern Hutchinson County and central Moore County, are beginning to be reflected in the declining rate of production per pound loss of pressure from the Canadian leases. (Vol. LXXXIX, p. 13396.)

The witness was then asked to explain why the pressures in the Sanford area didn't remain at 430 pounds, the original pressure, if there was effective migration of gas into that area. The witness explained that it would be impossible for the pressures to remain at 430 pounds and that at the present time gas was migrating into the Borger-Sanford area more rapidly than it was being produced because the pressures were increasing. (Vol. LXXXIX, p. 13397.)

During the stripping days when the production from the

Borger-Sanford area was more rapid than the migration of gas into the area the pressures decreased but when the production was decreased then the ratio of production and migration was changed and more gas migrated into the area than was being produced, and therefore the pressures increased. (Vol. LXXXIX, pp. 13401, 13402.) There are some wells in the Borger-Sanford area that did not start repressuring in 1935 when the production was decreased. The area seems to be expanding as the back log of the migration is spreading out. There are some of the wells in which the pressure has increased only for a year or two. (Vol. LXXXIX, p. 13405.)

There was then marked for identification Exhibit 259, which was a list of the wells in the Borger-Sanford area in which the pressures had increased for the period 1935 to 1940. (Vol. LXXXIX, p. 13407.) The witness stated that effective drainage does not mean necessarily that the wells receiving the drainage will increase in pressure. It all depends on whether the rate of withdrawal from the wells was greater than the rate of migration. No one has ever questioned the fact that there was migration of gas into the Borger-Sanford area. The witness was again asked if it were not true that if there was effective drainage that pressures would be maintained notwithstanding the rate of production and the witness again answered that there couldn't be maintenance of pressure as long as the rate of production was in excess of the rate of migration. (Vol. LXXXIX, pp. 13408, 13409.) The witness has not attempted to evaluate the volume of migration of gas into low pressure areas. He has simply attempted to show the trend of drainage. (Vol. LXXXIX, p. 13411.) Migration of gas into the Sanford area has been reflected in lower pressures in central Moore County but is not entirely responsible for the low pressures in Moore County. (Vol. LXXXIX, pp. 13416, 13417.)

The witness further testified that although in his written statement introduced in his direct examination he had pointed out that there were a number of pipe lines operating in the east field, which lines would possibly be extended into the west part of the field as the east field became exhausted; nevertheless, he did not attempt to evaluate

this fact and did not give that possibility any effect in his study of the western part of the field. It is natural to expect, however, that abandonments will occur in the east field first because of the lower pressures existing there now. He did not consider this fact in his estimate of future production in the west field because it could not be definitely evaluated although he does believe that some of the companies operating in the east field will extend their lines into the west field. (Vol. LXXXIX, pp. 13420-13427.) The witness also stated that although he had mentioned that there was a great deal of undeveloped acreage owned by Shamrock Oil and Gas Company adjacent to Canadian and that this acreage would possibly find a market sooner or later, still he did not attempt to evaluate the extent of the possible production from this acreage and it is not reflected in any way in his computations but it is definitely in the picture so far as the future is concerned. (Vol. LXXXIX, p. 13342.)

Witness was then referred to Exhibit 187 by Thompson with particular reference to the Shamrock undrilled acreage in eastern and southern Moore County, which was shown to have pressures ranging from 300 to 350 pounds, and was asked what happened to the gas that came out of that undrilled acreage and the witness replied that it appeared to him that it probably migrated to the Borger-Sanford area. That it could not have gone to Texoma's acreage because the pressures in the Texoma acreage were higher than the pressures in the Shamrock acreage. (Vol. LXXXIX, pp. 13433-13434.) That Canadian in the early part of 1929 and prior and up to 1930 or 1931 was taking more gas from its area than the other companies but the market outlets acquired since then by other companies have enabled them to overcome the cumulative effect of the early Canadian production and that the increase in production of others has been greater than the increase in the Canadian production. (Vol. LXXXIX, p. 13441.)

The witness stated that the shift of production of sour gas into the Canadian Area is based upon the assumption that the market for sour gas will be constant at 690 million cubic feet of gas per day, which is the present allowable production. He has allowed for no increase in this pro-

duction but has considered that the sour gas acreage in the west part of the field will be developed over a seven-year period and that as additional wells are drilled, and additional potential and pro-ratable acre-pounds come into the picture that these wells will be allocated a certain production under the proration order, which is based largely upon acreage. (Vol. LXIX, 13452, 13453.) This estimate is based upon the conditions as they exist today and it was made from the witness' best judgment of the factors that were present. (Vol. LXIX, p. 13454.) The witness, upon being asked whether the use of sour gas for gasoline and carbon black was wasteful, replied that there are so many things involved that it is a relative proposition and as long as the gas is being utilized it might well be claimed that it is not wasteful. (Vol. LXIX, p. 13458.) The witness stated that he could not state definitely that sour gas would be used for carbon black purposes in the future but that he has assumed that things will go on just as they are today. (Vol. LXIX, p. 13459.)

The witness was questioned at length with respect to the compilation of his figures for sweet gas production, and he stated that these were taken from records in the Railroad Commission's office and that where the pressure base was not given he determined from the various producers in the area the pressure base that had been utilized in reporting their production. That the pipe line companies prior to August, 1935, reported their production on a 16.4 pound basis. (Vol. LXIX, pp. 13464-13471.) He also procured his production figures of gasoline plants from the plants that were operating in the area up to 1932 and subsequent to that from Form 3 reports filed with the Railroad Commission and made necessary corrections as to the pressure base. (Vol. LXIX, pp. 13476-13488.)

With respect to Exhibit 257 the witness testified on cross examination that the curve which he had constructed, and which was a part of Exhibit 257, was a very common curve and it showed the rate of production per acre-pound loss of pressure and that natural laws, Boyle's Law, governs the per pound loss of pressure as related to production. The witness plotted the curve in the manner that he did for the purpose of showing the comparison in

the two areas involved. There is nothing complicated about it. If both areas had been of uniform size and uniform acreage it would not have been necessary to reduce the vertical ordinate to acre-pounds but he could have stopped at simply showing pounds, but in order to make a fair comparison of the two curves it was necessary to relate it to acre-pounds. If the fundamentals of Boyle's Law were applied it would show a uniform drop in pressure as related to production, or approximately so, but where the rate of production per pound loss in pressure is constantly declining, as it is in the west part of the field, there is some unknown factor that is causing the simple application of Boyle's Law to give an erroneous answer. (Vol. LXXXIX, pp. 13505-13512.)

In plotting production or pressure loss against production in order to obtain a straight line (horizontal) you would have a constant rate of production per pound loss. This is production per pound loss brought down to an acre basis for the purpose of comparison of curves A and B which are based on different sized areas and since the Canadian curve is declining at a faster rate than Curve A this shows that the Canadian acreage is being drained by the remainder of the acreage in the area. At least the drainage has had its effect and the witness thinks that the variation in the original per acre content has also had its effect, but since 1937 there has undoubtedly been intensive drainage or a variation of the per acre content. In other words the effect of withdrawals is reaching out in the edge acreage which is likely to be less productive than the other acreage. (Vol. LXXXIX, pp. 13514, 13515.)

The trend of Curve B, Exhibit 257, indicates that the rate of production is declining faster in the quadrants which contain Canadian acreage than it is for the area as a whole, which also includes Canadian quadrants. The fact that Canadian acreage lies generally in the high pressure zones and the fact that there is so much of the Canadian acreage along the edge of the field leads to the conclusion that this acreage would produce at a much smaller rate in the future. (Vol. LXXXIX, p. 13527.) All figures indicate that the rate of production in the Texas Panhandle Field per pound loss in pressure is constantly decreasing.

that is, they show a decreasing rate of production per pound loss of pressure weighted as to area. We are constantly getting less production per pound drop. All of the available data indicates a downward trend but the witness cannot say definitely what this trend will be in the future. (Vol. LXXXIX, pp. 13528-13530.)

The witness stated on redirect examination that the production per acre pound loss was determined from the production figures and weighted pressure figures taken from Hammer's working papers. That he simply used Hammer's figures, and this being true, he necessarily included all of Quadrant 3, Hutchinson County, in Exhibit 257, although he had included only a part of it in his study reflected in Exhibit 256. The fact that he did use all of Quadrant 3, since he was using Hammer's figures, had a tendency to hold his curve up. In other words, if he had left out some of the low pressure wells in Quadrant 3, Hutchinson County, his curves would have declined more sharply, but in any event he had simply followed the foosteps of Hammer in his calculations as reflected by Exhibit 257 and used the same quadrants that Hammer had used in estimating the reserves for the Canadian acreage. (Vol. LXXXIX, pp. 13534-13537.)

The southwestern portion of Hutchinson County is gaining gas from the higher pressure areas to the southwest and is also losing gas by virtue of drainage away from the area to the northeast. The fact that pressures have declined a little, or greatly, in that area does not necessarily mean that it was not losing gas to the northeast toward the Sanford area. The movement of gas into the southwestern portion of Hutchinson County from the higher pressures on the southwest is replenishing some of the loss being suffered to the lower pressure areas to the northeast. Movement of gas cannot be restricted to small areas. Small areas cannot well be considered in arriving at the mass movement of gas that necessarily occurs from a high pressure area to a low pressure area. (Vol. LXXXIX, pp. 13538, 13539.) The wells listed on Exhibit 260 which are gaining in pressure in the Borger-Sanford area, do not constitute the only wells in southwest Hutchinson County that are receiving gas by drainage. There are other wells

that are producing gas with much lower than average pressure drops. There is a gradual increase in pressure drops as you get away from the low pressure areas. A well may be receiving gas by underground migration, even though it shows a reduction in pressure from year to year, where the pressure drop is slight in relation to the volume of gas produced. There is no doubt that a well in a lower pressure area is receiving some gas from the high pressure areas adjacent although it may not be retaining it. (Vol. LXXXIX, pp. 13542, 13543.)

With further reference to the increase in the drilling of wells in the Canadian Area, as described by the witness in Exhibit 256, he stated that in 1938 there were 107 wells drilled in the entire Texas Panhandle Field, both east and west fields, and there were 53 wells drilled in the Canadian Area, or 49.5% of all the wells drilled. In 1938 there were 98 wells drilled in the entire Texas Panhandle Field and 58 of these were drilled in the Canadian area, or 59% of the total number of wells drilled. In 1940 there were 94 wells drilled in the field as a whole, and of these 63 were drilled in the Canadian Area, or 67% of the total number of wells drilled. (Vol. LXXXIX, p. 13547.)

In 1940 there were 39 sour gas wells drilled in the field as a whole and of these 34 were drilled in the Canadian Area. The witness had estimated, as shown by his Exhibit 256, that there would be 32 sour gas wells drilled in the Area in 1940. His estimate was less than the number actually drilled. (Vol. LXXXIX, pp. 13547, 13548.)

The witness had previously testified in his direct examination that in 1939 there were 27 sour gas wells drilled in the field, and of these 22 were drilled in Canadian Area and that in 1938 there were 46 sour gas wells drilled in the entire field and of these 35 had been drilled in the Canadian Area. (Vol. LXXXIX, pp. 13061, 13062.)

The witness further testified on recross examination that the rate of decline of pressure in the Canadian acreage is now going down faster than the pressure of the other acreage in the Canadian Area and the Canadian acreage is so located around the edge of the field that gas loss cannot be replaced by drainage from other higher pressure

areas. The pressure in the Canadian acreage is declining more rapidly at the present time and it is quite likely that as the higher pressure areas decrease the pressure differentials will decrease, and for all intents and purposes the pressures will pretty well balance out. (Vol. LXXXIX, pp. 13553, 13554.)

EXHIBIT "A"

ANNUAL RATE OF GAS PRODUCTION FROM THE CANADIAN RIVER GAS COMPANY AREA

M.C.F.-16.4#

Year	Canadian River Production	Other Companies Sweet Production	Other Companies Sour Production	Other Companies Casinghead Prod.	Total Production
1928 & Prior	30,062,713	172,392	1,350,737		31,585,842
1929	16,688,962	1,935,533	618,307	2,694,028	21,936,830
1930	18,324,487	5,281,286	723,461	2,694,028	27,033,262
1931	18,566,131	8,313,794	1,766,241	2,694,028	31,340,194
1932	20,037,015	11,905,264	2,839,632	8,982,170	43,764,081
1933	19,258,673	15,678,678	10,364,723	8,778,402	54,080,416
1934	26,022,673	40,903,283	46,475,377	7,503,318	120,904,651
1935	30,525,547	45,701,194	60,991,983	15,865,171	153,083,895
1936	38,938,634	50,623,825	96,083,244	17,150,263	202,795,966
1937	41,636,594	62,888,884	142,656,697	15,588,088	262,770,463
1938	38,950,311	73,295,612	152,172,505	11,491,969	276,610,397
7-31-1939	23,979,010	51,519,703	93,948,136	8,007,037	177,453,886
Est. Total for 1939	41,106,996	88,319,496	161,053,944	13,726,344	304,206,660

Cause No. 398

4703

EXHIBIT "B"

CUMULATIVE GAS PRODUCTION FROM THE CANADIAN RIVER GAS COMPANY AREA

M.C.P. 16.4#

Year	Canadian River Production	Other Companies Sweet Production	Other Companies Sour Production	Other Companies Casinghead Prod.	Total Production
1928 & Prior	30,062,713	172,392	1,350,737		31,585,842
1929	46,751,675	2,107,925	1,969,044	2,694,028	53,522,672
1930	65,076,162	7,389,211	2,692,505	5,388,056	80,555,934
1931	83,642,293	15,703,005	4,458,746	8,082,084	111,896,128
1932	103,679,208	27,608,269	7,298,378	17,064,254	155,660,809
1933	122,937,981	43,286,947	17,663,101	25,842,656	209,740,625
1934	148,960,654	84,190,230	64,138,478	33,345,974	330,645,276
1935	179,486,201	129,891,424	125,130,461	49,211,145	483,719,171
1936	218,424,835	180,515,249	221,213,705	66,361,408	686,585,137
1937	260,061,429	243,404,133	363,870,402	81,949,496	949,295,600
1938	299,011,740	317,399,745	516,042,907	93,441,465	1,225,903,997
7-31-1939	322,990,750	368,919,448	609,991,043	101,448,502	1,403,359,682
Est. Total for 1939	340,118,736	405,719,241	677,096,851	107,167,809	1,530,112,656

Exhibit F. No. 233 in 4705

EXHIBIT "C"

ESTIMATED FUTURE ANNUAL RATE OF GAS PRODUCTION

FROM CANADIAN RIVER GAS COMPANY AREA in MCF

Year	By Canadian River	By Others Sweet Gas	By Others Sour & Casinghead	Total Production 16.4#
1940	43,021,625	90,978,797	186,700,000	320,700,422
1941	45,418,507	93,008,855	190,544,000	328,971,362
1942	50,120,688	100,962,190	194,183,000	345,265,878
1943	53,011,423	106,442,275	199,181,000	358,634,698
1944	56,533,809	112,427,258	202,753,000	371,714,067
1945	59,087,078	116,448,782	203,924,000	379,459,860
1946	59,087,078	116,448,782	204,625,000	380,160,860
1947	59,087,078	116,448,782	205,093,000	380,628,860
1948	59,087,078	116,448,782	203,221,000	378,756,860
1949	59,087,078	116,448,782	201,349,000	376,884,860
1950	59,087,078	116,448,782	198,776,000	374,311,860
1951	59,087,078	116,448,782	195,968,000	371,503,860
1952	59,087,078	116,448,782	192,875,000	368,410,860

Exhibit No. 25c

4707

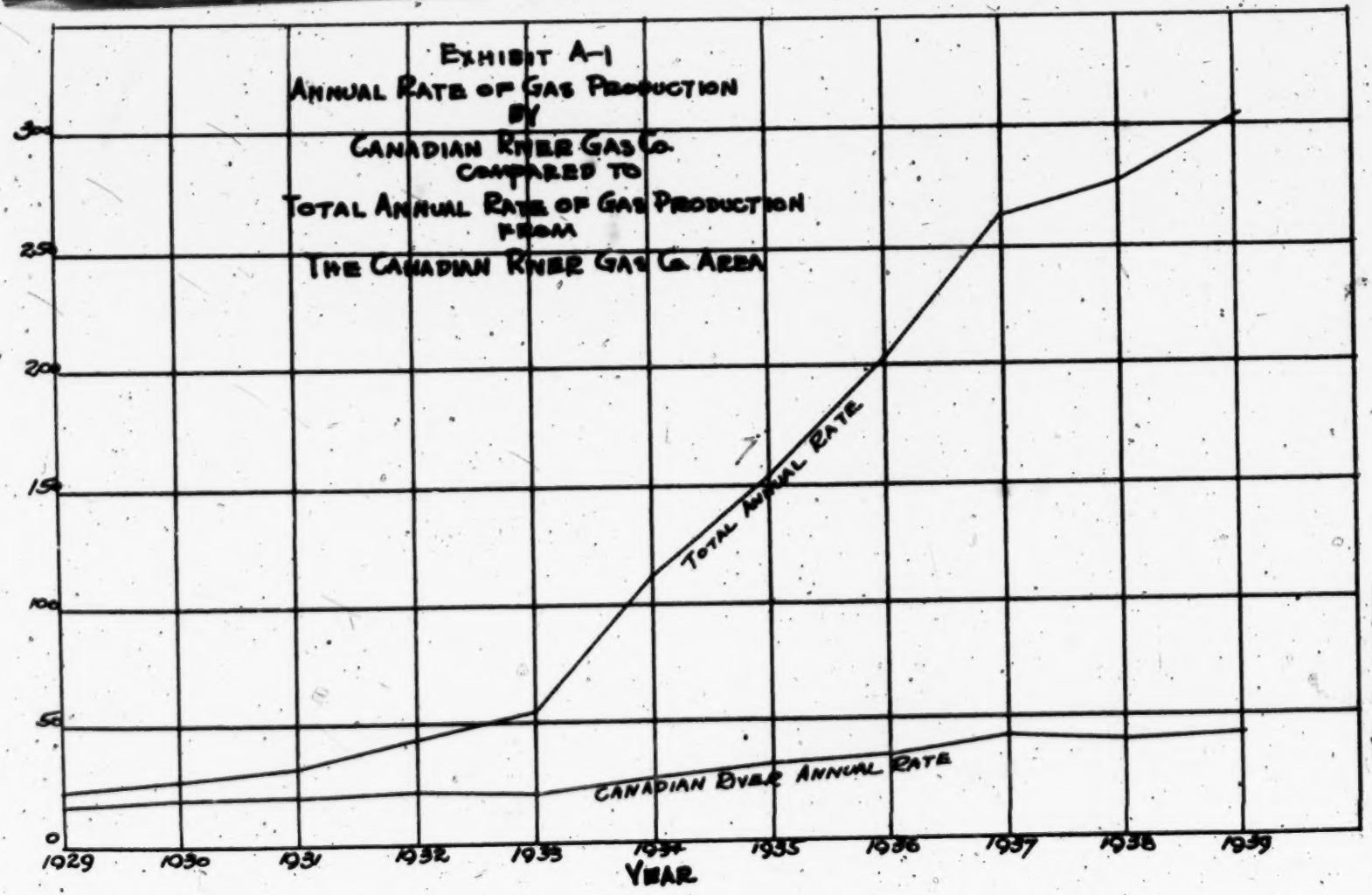


Exhibit No. 256

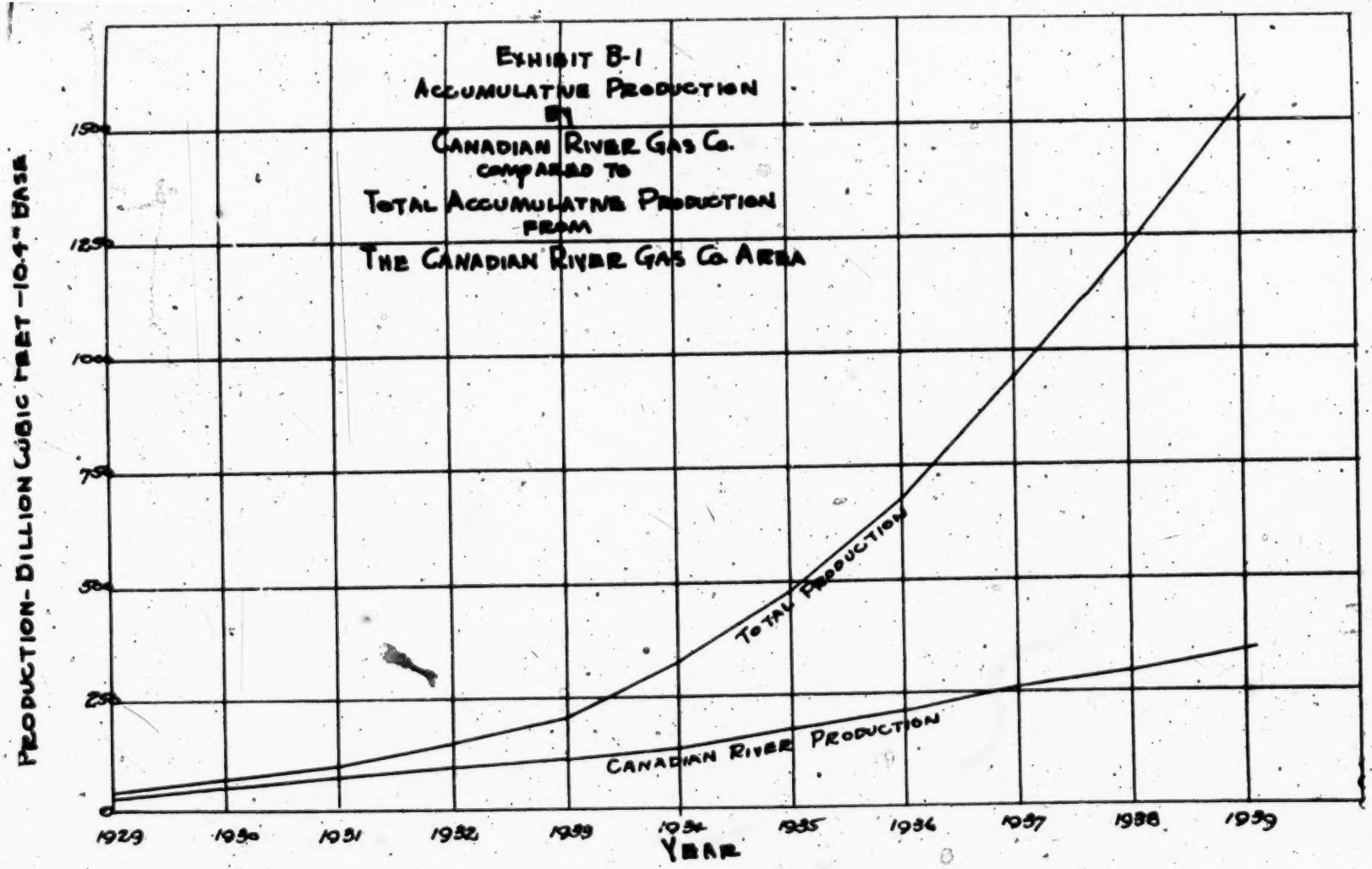


Exhibit No. 256. 4711

EXHIBIT "B"

ESTIMATED FUTURE CUMULATIVE PRODUCTION

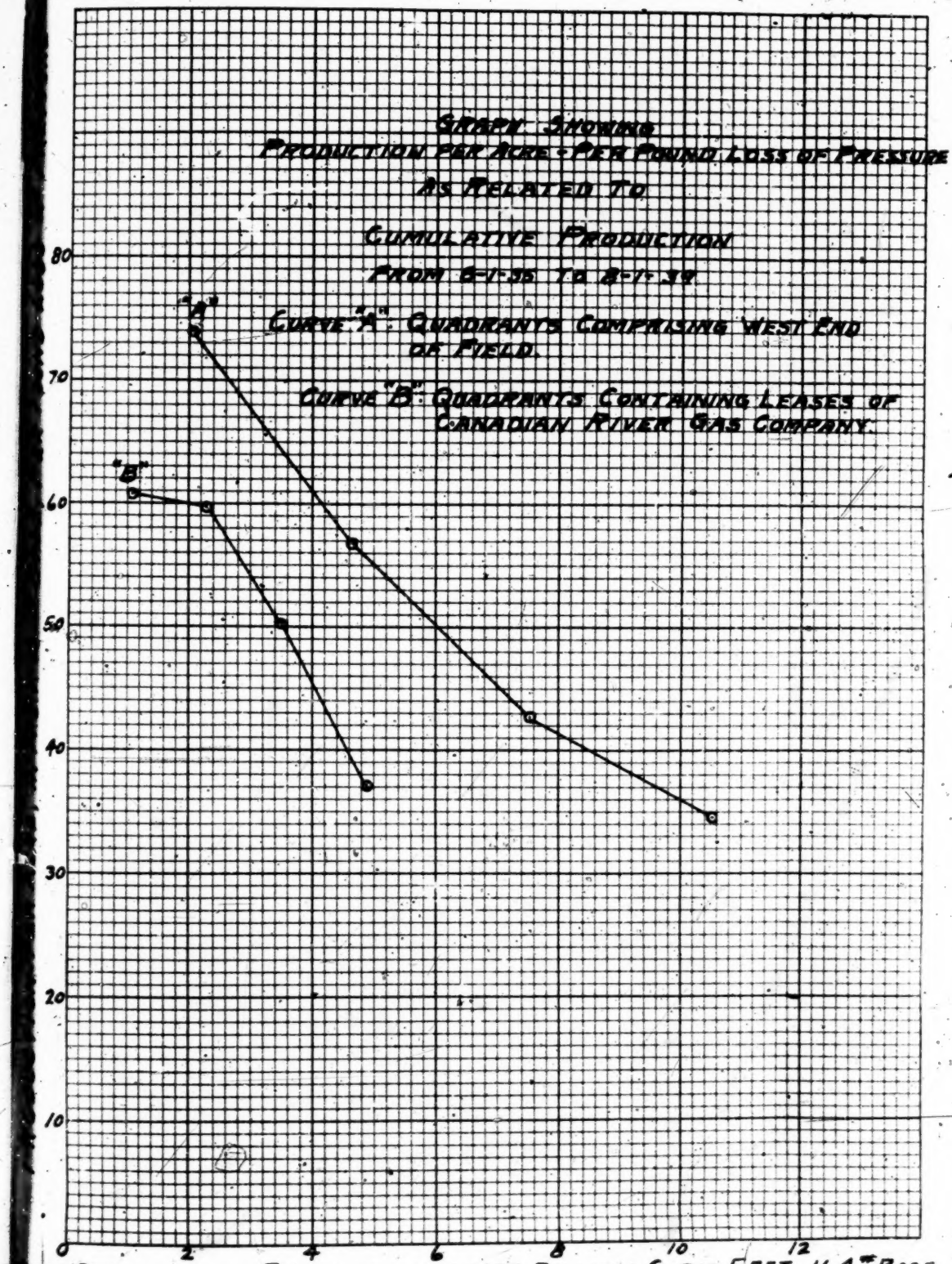
FROM CANADIAN RIVER GAS COMPANY AREA in MCF

Year	By Canadian River	By Others Sweet Gas	By Others Sour & Casinghead	Total Production 16.4#
1940	43,021,625	90,978,797	186,700,000	320,700,422
1941	88,440,132	183,987,652	377,244,000	649,671,784
1942	138,560,820	284,949,842	571,427,000	994,937,662
1943	191,572,243	391,392,117	770,608,000	1,353,572,360
1944	248,106,052	503,819,375	973,361,000	1,725,286,427
1945	307,193,130	620,268,157	1,177,285,000	2,104,746,287
1946	366,280,208	736,716,939	1,381,910,000	2,484,907,147
1947	425,367,286	853,165,721	1,587,003,000	2,865,536,007
1948	484,454,364	969,614,503	1,790,224,000	3,244,292,867
1949	543,541,442	1,086,063,285	1,991,573,000	3,621,177,727
1950	602,628,520	1,202,512,067	2,190,349,000	3,995,489,587
1951	661,715,598	1,318,960,849	2,386,317,000	4,366,993,447
1952	720,802,676	1,435,409,631	2,579,192,000	4,735,404,307

Exhibit No. 256

4713

4715
Exhibit No. 257



J. B. Massa further testified on cross examination (Vol. 89, pp. 13408-13414; 13416-13419; 13505-13515; 13538-13539; 13542-13544; 13547-13548; 13565-13569) as follows:

Q. If there had been effective drainage by these wells in the large area of the field, Mr. Massa, in the other wells over in the Sanford-Borger area, would not the pressures in all of the wells have been maintained?

A. No, because their rate of withdrawal was greater than the rate of migration and they just couldn't keep up with it, Mr. March. I think that is very evident in the fact that when the rate of production was decreased from the area it has gone ahead and shown up in the form of repressuring of the buildup in pressure for the area. I think it is just as apparent as it can be and I have never heard anybody question the fact there was any migration of gas to the area before.

Q. I am learning things in this case.

A. Yes, sir.

Q. If there had been effective drainage, Mr. Massa, the pressures would have built up or would have been maintained, would they not, without having to curtail the production in those wells to let the pressures build up?

A. There couldn't be maintenance of pressure as long as the rate of production was in excess of the rate of migration, Mr. March.

Q. Why would you ever have a rate of production in excess of the rate of migration?

A. Because—

Q. If you had effective drainage, that could not ever exist, could it?

A. Because of your difference—flow conditions out of a well bore through a formation.

Q. We come now to the obstacles.

A. Certainly, that is not a big can down there.

Q. And it isn't a big ice cream soda. The container has many obstacles which prohibits the free movement of the gas from the low pressures to the high pressures, doesn't it?

Mr. Spencer: He would have said that a long time ago if you had asked him, Mr. March.

The Witness: There is no flow through that reservoir like there is in your ice cream soda.

By Mr. March:

Q. Have you made a study of the geologic conditions, the formations through which the gas flows, to ascertain the rate of flow from one portion of the field to another?

A. No, sir, I have not attempted in any way to evaluate the quantity of gas that has migrated. I have simply pointed out by virtue of difference in pressures the fact that the pressures have increased and there must be a migration of gas in that direction. I have not evaluated it.

Q. Look at those averages there. They have all happened since 1936 and 1935, have they not?

Mr. Spencer: You are referring now to Exhibit 259?

Mr. March: Yes.

Q. They go all the way from one pound—I see one 57-pound well and one 46-pound well. That is the highest, 57 pounds?

A. Yes.

Q. From one to 57 pounds. Mr. Massa, don't you think that is a very very small increase in pressure considering the tremendous decrease in the production from those wells?

A. A buildup, Mr. March, of 57 pounds would represent approximately one-eighth of the gas in place under that land.

Q. How do you know how much gas was originally under the land?

A. I was talking in reference to pressures entirely. 57 pounds is about one-eighth of 430 pounds.

Q. Then you think you can tell how much gas is in place by plotting your production against pressure declines, is that right?

A. I have not evaluated it and I have not stated it in cubic feet at all. I have simply said that it represented one-eighth of the gas originally in place.

Q. Do you think you could use the pressure decline method in ascertaining drainage to and from an area?

A. Only as an estimate, not definitely. You can get ideas from it but I wouldn't attempt to and I have not attempted to evaluate the drainage that was there because of the fact that it does throw you too many curves. I have played with it too much.

Q. You have played with it too much?

A. Yes, sir.

Q. Well, 57 pounds is the highest pressure you have here, the highest increase in pressure. How much would you say one pound was of the gas originally in place there?

A. One 430th.

Q. You think the pressure decline method works like that in showing drainage? Do you think it really does?

A. It works like what, Mr. March?

Q. It enables you to tell how much gas has been lost there?

A. I have told you I haven't attempted to put any evaluation on it as I simply stated it showed the trend. No, I wouldn't attempt to evaluate it. I can give you some figures and let you draw your own conclusion, but I don't say they are right, because they jump around too much. If Boyle's Law is applicable, it would necessarily come out a constant figure.

Q. Have you ever made an estimate of reserves of the Texas Panhandle field?

A. No, sir.

Q. Are you a geologist?

A. No, sir.

Q. What are you? What is your profession?

A. I am a natural gas engineer.

Q. A natural gas engineer?

A. Yes.

Q. Did you ever have a course in geology?

A. No, sir.

Q. Do you think you have ability enough and your background enables you to make any interpretation or appraisal of the drainage conditions in the Panhandle field of Texas?

A. As relates to flow of gas by virtue of differentials in pressure, I think that I can very definitely say that I am not familiar with the flow of gas by virtue of the differential of pressures. I have not attempted to put a quantitative value on what these things will do because there are too many changes that can take place and the thing is not established enough to a definite trend to know where you can set a quantitative value on it.

Q. If the pressures will only increase this much, would you attempt to say how much gas had drained to the area?

Mr. Spencer: He has said time and time again he is not evaluating it as to quantities.

Mr. March: I want to know if he would do it as an engineer.

Mr. Spencer: I object, Mr. Examiner, as he has explained that very fully.

The Witness: I think I told you, Mr. March.

Mr. March: He has done plenty of evaluating. He has said there is drainage, and I am going to make him prove it.

Mr. Spencer: He has done that already.

Mr. March: He shouldn't make statements in his exhibit—

The Trial Examiner: There is no use in repeating the question, Mr. March.

By Mr. March:

Q. As an engineer, I want you to state how much drainage there has been in the area where you have the small increases of pressures in those wells, just whether you would attempt to do it. Would you?

A. I wouldn't attempt to do it on the basis of those pressures alone.

Q. These pressures alone show there has been little drainage in the area, doesn't it?

A. It is taking the fact that the increased buildup there would indicate a small thing, but when taken into consideration with the production during the period of time that those pressures were building up and back down to their low pressure periods, it would indicate a greater quantity. There is no way of evaluating this buildup and the only evaluation I could place upon it would be the volume of gas produced between the high and the low pressure or between the low and the high pressure, and then that this additional value has accrued for it, but we have no way of evaluating it because we have no definite and established amount of gas per acre pound.

Q. You mean originally?

A. Yes, sir.

Q. I thought your geologists told you that.

A. I am talking about it from my own knowledge, Mr. March.

Q. Oh, your own knowledge. I see.

A. In relation to the other factor, I would have to take it in conjunction with someone else's study.

* * * * *

Q. Now, my question is this, Mr. Massa. I want to know whether or not the pressure band of 380 to 360 pounds shown on Mr. Thompson's exhibit is due to withdrawals in that band or whether or not the decline is due to drainage.

A. I haven't studied that particular area. My study was made on a regional basis. I didn't use the smaller contours. It is true enough that they show in several instances local lows, but in considering the thing from a reional point of view, the wider contour bands give a better picture. I grant that those local lows there, that there is a movement of gas locally to that area.

Q. My question doesn't include that, though. My question is this: You made a voluntary statement here that the drainage of the *Sandord* area was now being reflected back up here in the Texoma acreage up in central Moore County in this 380 to 360 pressure area up there.

Now, I want to know whether or not of your own knowledge—

A. Did I say that?

Q. I understood that you did. Did you say that?

A. I don't think so.

Q. Then you are not contending that that area was drained by the Sanford area?

A. I contend that the Sanford area has had its effect, but I wouldn't say that the entire thing was responsible—that the Sanford area was responsible for the entire drop of pressure in there.

Q. I want to know this: whether or not you are able to state here of your own knowledge whether or not the pressure decline in the 360- to 380-pound band in central Moore County has been due to the intensive withdrawals since 1935 or due to drainage. Can you say positively?

A. I have made no study of that contour band there.

Q. I know, but you—have you made any study of the low pressures that have been created there in central Moore County in that Texoma acreage there?

A. As related to central Moore County?

Q. That's right.

A. No. I have given consideration to the rates of production in relation to the pressure loss—

Q. Are you through?

A. I was trying to state something.

Q. Excuse me.

A. I have given consideration to the decreasing rates of production per acre pound loss of pressure, Mr. March, and as I say, I made my studies from the Commission's pressure map and I have not studied that 260 to 280 pound band particularly or any other pound band. As a matter of fact, I didn't study it by pressure contours. It is more or less an area proposition.

Q. So, therefore, you can't state whether or not the pressures went down in Central Moore County because of the intensive withdrawals since 1935 or because of drainage?

A. Not any given spot in central Moore County, no, sir.

Mr. Keffer: Mr. March has asked a question two or three times referring to central Moore County and Texoma as to all of the acreage in that area owned by Texoma Natural Gas Company. I don't know as it makes a bit of difference, Mr. Examiner, but I do want the record straight on that and I would like to ask the witness if there are other companies producing in that area other than Texoma Natural Gas Company.

The Witness: Yes, there is some other production in there.

Mr. Keffer: What other companies produce large volumes of gas in that area other than Texoma Natural Gas Company?

The Witness: *Primcipally* Shamrock Oil & Gas Corporation and Panhandle Eastern.

Mr. Keffer: That is all I wanted.

Mr. March: All right.

Q. I want a little something now. Texoma produces most of the gas in that area you are referring to, don't they?

A. Yes, sir, I think Texoma is by far the largest producer of gas in that area.

Q. Their most prolific area is located in that band of 360 to 340 pounds in central Moore County, isn't it?

Mr. Lange: You are referring to Exhibit 187?

Mr. March: Yes.

The Witness: By "prolific acreage," you mean what?

By Mr. March:

Q. Prolific production. Most of their production comes from there. Their best acreage is located there.

A. I haven't studied it as to that particular point of production, Mr. March. They do have a large production in Moore County. As I said, I haven't studied it as to minute points of that sort.

Q. And you haven't studied the field at all on 20-pound contour pressure bands?

A. No, sir.

Q. And since you haven't done it on 20-pound pressure —contour pressure bands, you haven't done it on 10-pound contour bands?

A. No, sir.

Q. The only thing you have studied is these 50-pound bands of the Railroad Commission put in by Mr. Dunlap?

A. The Railroad Commission maps from which Mr. Dunlap's maps were reproduced are on 50-pound isobars.

* * * * * *

Q. Now we come to Exhibit 257. I refer you first to this curve you plotted over here, the last curve. Where did you ever hear of a curve like that before? Did you ever hear of a curve being plotted like that before?

A. Yes, sir.

Q. Where?

A. The rate of production curve is quite a common curve.

Q. Quite a common curve? When did you ever use such a curve like this in any other hearing or any place else?

A. I have used them in working in my office quite often. I don't know that I have ever used one in a hearing.

Q. This is the first time you have ever used one in a hearing, isn't it?

A. I don't know that I have ever used one before.

Q. Did you ever hear of one being put in a hearing before?

A. I don't know that I have, however, they could have readily have been and I wouldn't have heard of it.

Q. Let's see if I can understand what you have done

there. You have two curves, A and B, so you plot first—I will go through the three things I understand you did—you plot your gas withdrawals over one year against your gas taken out over several years; you plot one acre against many acres. I have calculated here as far as Curve A is concerned, you have plotted one acre against 790 thousand acres in regard to Curve A, and approximately 443 acres in curve B; then you plot one pound against the pounds lost for the production involved, is that right?

Mr. Spencer: Mr. Massa—

The Witness: I don't think it is, Mr. March, as nearly as I could follow you.

Mr. Spencer: Take it step by step.

By Mr. March:

Q. On your vertical tangent here you have production per acre in Mcf., 16.4 pounds per pound loss of pressure.

A. That is right.

Q. Then over on your horizontal—

A. In other words, that is the rate of production per pound loss of pressure, rate of production per acre.

Q. The rate of production from one acre?

A. That is the average rate per acre. It is the average.

Q. That would be one acre. What would it be for one acre?

A. And it would be the average for each acre over the whole area.

Q. That is what it would be for the average acre?

A. For the average acre and each one of the acres.

Q. But you use the word "per" which is the average acre. You are speaking of one acre?

A. It is the average acre. It refers to one acre or all of them.

Q. You referred to pounds lost; do you mean one pound lost?

A. Every pound loss per one acre.

Q. Average pound loss per one acre?

A. Yes, sir.

Q. Per one year?

A. For volume of gas produced.

Q. For one year?

A. It is an annual period that is represented there; however, the yearly periods on the chart are not uniform and are not controlled by time but by volume of gas produced during the year.

Q. But in so far as time is concerned in your vertical tangent it is one year?

A. The rate is for the gas produced during a given year. Each point represents a rate for the year previous.

Q. You plotted that against the cumulative production in one hundred billion cubic feet of gas at 16.4 pounds base?

A. That is right. The points are plotted to show the volume of gas produced at each given rate.

Q. Isn't that the same thing as—if it isn't, I want to know, and I am not trying to be funny—the same thing in that a hen lays in one year against the number of eggs she has laid in her lifetime?

A. You could plot a production rate on eggs, I believe.

Q. Isn't that a homely illustration of what you have done here? You have plotted cumulative against yearly, have you not?

A. That is quite true; however, there are no natural laws governing the rate of production of eggs per year and there is a natural law governing the rate of gas production per pound loss of pressure.

Q. Of course I could argue that, but what natural law is it that governs the per pound loss of pressure?

A. Your Boyle's Law.

Q. I thought you said Boyle's Law didn't work in the Panhandle field, or did you say that?

A. I don't think that it does and I think the graph shows it doesn't.

Q. Yet you used Boyle's Law to show that Boyle's Law didn't work?

A. To show that it is not applicable for the purposes for which it has been used.

Mr. Spencer: In the Texas Panhandle field?

The Witness: In the Texas Panhandle field.

By Mr. March:

Q. You have used Boyle's law to show that?

A. That is correct.

Q. I want to ask you this question: if Boyle's law does-

n't work in the Panhandle field, how can you use Boyle's law to show it doesn't work in the Panhandle field?

A. Just as I have used it here, Mr. March. If Boyle's law was applicable, instead of having these declining lines on this graph you would have a horizontal line and this is simply a method—

Q. Have you ever plotted in a field the production as you have plotted it here to determine whether or not Boyle's law would work in any given field?

A. No, sir.

Q. In the manner you have done it here?

A. I have seen this graph used to illustrate the accuracy of a curve to prove it in various articles.

Q What articles?

A. Different articles I have read from time to time.

Q. Did they teach you this in school in text books that it was a good way to show Boyle's law wouldn't work?

A. No, I don't think that they did.

Q. Did you ever see anything like this in a text book?

A. I don't recall that I have offhand.

Q. Who told you about this curve—Mr. Gill?

A. No, sir.

Q. You devised the curve yourself?

A. No, I have seen the curve used before.

Q. Who used it?

A. The reason I plotted this curve in this manner, Mr. March, is for the purpose of comparison of two areas. There is nothing so complicated about it. Had this curve for an area been of uniform acreage, it would not have been necessary to reduce the vertical ordinate to acre pounds but we could have stopped at pounds because it would have been a uniform area that we were comparing, but simply for the purpose of being fair in the comparison of the two curves, I reduced it down to a common denominator of acres. That is all the difference. One would be the lowest per pound and the other would be the lowest per acre pound.

Q. As I notice your exhibit, the first paragraph of it, it doesn't say anything about it showing Boyle's Law doesn't work. You are trying to show, as I get it, that you have a greater rate of production loss per pound in the Canadian River area than you do in the entire west of the field as you have delineated it.

Mr. Spencer: You brought that out on cross examination.

Mr. March: I just started the cross examination on this exhibit.

Mr. Spencer: You say that if Boyle's law doesn't work why use it here. You brought that up, Mr. March.

Mr. March: He says this exhibit has been prepared for the purpose of showing that in future years it is reasonable to expect that the volume of gas produced per pound loss of pressure will be smaller than the past and present rates of production per pound loss of pressure, and over on Page 3 he says "Due to the fact that curve B representing the area of the Canadian River Gas Company's leases is declined at a greater rate than his curve A, representing the western end of the field, it is reasonable to conclude that the leases of Canadian River Gas Company will produce a smaller volume of gas per acre pound loss of pressure than the average for the western zone."

Mr. Spencer: My only point is that you started into the discussion of Boyle's law by asking if he hadn't said that he didn't agree with Mr. Boyle; if Mr. Boyle's law wouldn't work, and that is the way he got on it—

Mr. March: I will ask the witness this:

Q. I will ask you if you applied any of the fundamentals of Boyle's law in any of the curves you drew?

A. Mr. March, your Boyle's law is the relation of the volume of gas under given pressures and the relation of gas production in pressure drop is necessary to base your Boyle's law as involved, and on this, as I say, under Boyle's law the production of a given amount of gas should bring about a uniform drop in pressure constantly or approximately so.

Naturally, you don't expect to get a perfectly straight line in a field that size, but where the rate is constantly declining it appears that there is some unknown there that is throwing Boyle's law off because Boyle's law is based on a uniform container.

Q. You say you wouldn't expect it to be exactly a straight line in a field that large?

A. No, sir, but I wouldn't expect declines such as this. In constants you would expect a variable line up and down.

Q. If you had a line like that you would say that Boyle's law was working fairly well?

A. I think if you had a constant line with not too much variation in it, there would be some logic in drawing a line through your points above and below.

Q. Have you ever in all your experience plotted the yearly decline in Canadian River's acreage against the yearly production from the wells in that acreage?

A. For Canadian River leases themselves?

Q. Yes.

A. No, sir.

Q. How do you know, if you didn't plot your pressure against your production in the Canadian River leases themselves, that you wouldn't get over a period of time a line which does go up and down but approaches a straight line on the average?

A. The same data can readily be plotted in that manner, and from this curve here you can readily see that it would not be a straight line as it would be—

The Trial Examiner: Which curve?

The Witness: Curve B.

By Mr. March:

Q. But this curve is not a plotting of your pressure decline against your production, it is a plotting of two unlike things against one another as I see it, because you plot production per acre Mcf. at a 16.4 base against cumulative production.

A. Mr. March, in plotting—

Q. You have production in both of these tangents here.

Mr. Spencer: Are you going to let him complete his answer?

Mr. March: Yes.

The Witness: In plotting production or pressure loss against production in order to obtain a straight line you would have to have a constant rate of production per pound loss to do it. This is production per pound loss or per acre pound loss brought down to an acre basis for the purpose

of comparison of curves A and B which are different areas, different sized areas.

By Mr. March:

Q. Do you have any idea of what sort of a curve you would have gotten if you had applied Boyle's law to the Canadian River wells and acreage alone and plotted your pressure decline against your production? Have you any idea what sort of a curve you would have gotten there?

A. No, I have never plotted their acreage.

Q. It looks to me like you have done quite a bit of experimenting in plotting these two curves here that you have in this exhibit.

A. A lot of experimenting?

Q. Yes, to find out the appropriate manner in which to plot it.

A. I don't get your point.

Mr. Spencer: Mr. Examiner, I object as to why the witness didn't prepare some other exhibit than he has prepared.

Mr. March: I will withdraw the question.

Q. As I gather, you are trying to show here that since the Canadian River curve declines at least some faster than Curve A that the Canadian River acreage is being drained by the rest of the acreage in the field, is that what you are trying to say?

A. I think that drainage has its effect and I think that the variation and the original per acre content has its effect.

Q. You think that the Canadian River has less per acre content to begin with than the rest of the west portion of the field you have delineated here?

A. I would not say of the Canadian River's acreage as a whole but undoubtedly from what has happened to these curves since 1937 there is very intensive drainage or a variation of the per acre content. In other words, the effect of withdrawals is reaching out into the edge acreage which is likely to be found to be less productive than the others.

• • • • •

Q. All right, now, back to Exhibit 256. Mr. March spent some little time with respect to the pressure drop in the southwestern part of Hutchinson County and in what you might term the four center areas around there.

Now, I will ask you whether it is a fact or not that that area, the southwestern portion of Hutchinson County, as production continued in there, that it did not necessarily gas in by migration of gas to the southwest; that is, gas from the southwest was moving into that area?

A. I think it is in the general trend of migration from the contour lines and being at a lower pressure there has naturally been gas going that way and the pressure has been maintained to some extent due to it.

Q. The gas has been going out on the other side, hasn't it?

A. Most likely.

Q. That is right. Now, as a matter of fact, whether pressures declined a little or greatly in that area, does not necessarily mean that it was not losing gas to the northeastward in the Sanford area?

A. I wouldn't think so.

Q. Because you have this drainage situation on the other side, that certainly is replenishing some of the loss, isn't it?

A. Yes, sir, your movement of gas cannot be restricted to any small area. The farther away you go from any well bore the area being drained by that well increases and the same can be said of the Sanford area, the Sanford-Borger area; the more it spreads out the greater becomes the area as it gets away from that. It can't be draining from one well to another or one minute area to another. It can't very well be considered in arriving at the mass movement of gas that necessarily occurs from a high to a low pressure area.

* * * * *

Q. Does the fact a producing well is losing pressure mean that it is also not receiving gas by drainage from higher pressure areas? In other words, maybe I didn't state that clearly.

Is it possible for a well to be receiving gas by underground migration even though it shows a reduction in pressure from year to year?

A. Yes, sir. Where your pressure drop is very slight in relation to volume of gas produced, it is quite logical that there is migration of gas to that tract.

Q. Isn't it a pretty safe assumption that any well in a

low pressure area is receiving some gas from the high pressure areas adjacent?

A. There is no doubt that there is gas flowing there, and as to whether or not they are retaining it is something else. There are all kinds of things that come in there. Your ratio of production to migration would be the whole thing. Of course there is gas flowing to the lease.

Q. Now, Mr. March, also asked you if you had studied the area which you have under consideration in your two exhibits with respect to the contour lines existing. As I recall it, you answered that you had made no specific study with respect to specific and particular segments between any two certain isobar lines. Is that correct?

A. That is true.

Q. But the figures which you have utilized in your Exhibit 257 were taken from Mr. Hammer's figures which were based upon his 10-pound isobar line contours, were they not?

A. Yes, sir, the figures in Exhibit 257 came from Mr. Hammer's 10-pound—his data was all taken from that map, as I understand it.

Q. As he computed it?

A. Yes, sir.

* * * * *

Q. There has been some question also about the drilling of new wells in the western portion of the west Panhandle field which you have referred to as the Canadian River area. Can you give me just briefly the drilling in that area for the last three years as compared to the drilling in the entire Panhandle field as a whole, east and west included?

A. In 1938 there were 53 wells drilled in the area as compared to 107 wells in the field, or 49.5 per cent of the wells drilled in that area.

Q. What was it in 1939?

A. In 1939 there was a total of 58 wells drilled in the Canadian River area. In referring to the Canadian River area here I mean what I designated in my Exhibit 256 as the Canadian River area. There were 58 wells compared to 98 wells for the field as a whole, or 59 per cent of the wells, and in 1940 there were 63 wells drilled there as compared to 94 total for the field, or 67 per cent.

Q. When you say the field, that includes the east field and west field, doesn't it?

A. Yes, sir, that includes Wheeler County.

Q. What was your drilling in 1940 with respect to sour gas wells?

A. There were 34 wells drilled in the area as compared to a total of 39, for the field.

Q. 39 sour gas wells included in the entire field and 34 are in the Canadian River area, is that correct?

A. That is correct.

Q. You made an estimate of how many sour gas wells would be drilled in 1940 and I am wondering if you missed that very far.

A. I used an average figure throughout the 7-year period of 32 wells.

Q. In the first year there were 34 wells?

A. Yes, sir.

* * * * *

Q. Have you ever made a study of the effect of Texoma wells upon the decline of pressure in Moore County?

A. Texoma wells?

Q. That is right.

A. No, sir.

Q. When did you prepare this Exhibit No. 260 showing the 1940 pressures from wells were remaining stable or increasing.

A. I prepared that with Mr. Thompson when I came back.

Q. Did Mr. Thompson prepare that or did you prepare it?

A. I helped him prepare it. We prepared it together. I got the production data.

Q. You got the production data?

A. Yes, and then I helped.

Q. Did you also get the production data of these wells for 1935 and compare them with 1940?

A. No, sir. I have 1940 production data.

Q. Do you know whether or not 1935 production was a lot more than the 1940 production?

A. Yes, sir; I so stated this morning that the production in 1935 and 1936 was much in excess of the present rates and that the fact that these wells were now repressuring was due to the difference of ratio that existed between the production and migration.

Q. Due to the production and the taking of gas from these wells?

A. Yes, sir.

Q. You haven't implied here that if you had included all of the Hutchinson County, and both the Sanford and Borger areas in your calculations of the Canadian River?

A. Sir?

Q. You have implied here on redirect examination as I understand it if you had included the Sanford area and the Borger area in the Canadian River—

Mr. Keffer: It wasn't that at all. It was all of Quadrant 3, Hutchinson County. He testified to that simply because you complained he had not included all of Quadrant 3, Hutchinson County.

By Mr. March:

Q. As a matter of fact you did include all of Hutchinson Quadrant 3 when you *hade* your curve B didn't you?

A. In Exhibit No. 257 all of Quadrant 3 is included, yes.

Q. According to your own theory then by including that all in Quadrant 3 you tended to decline the crop of the curve?

A. I didn't state that, Mr. March. What I said was that by including all of Quadrant 3, Hutchinson County, which includes some of the wells which are repressured, the tendency is to show a greater production per pound drop of pressure than is shown by the curve—than would have been shown in the curve if it had been left out. In other words, it shows a higher rate of production per pound drop than would have been shown if I had left it out, which is only natural. I don't know what the effect would have been as I haven't calculated it.

Q. You haven't calculated it out to ascertain it?

A. No, but if you have wells that are not *droping* in pressure and you have production from them you are adding to the production without decreasing or without increasing your pressure loss factor and naturally you are taking a greater amount of production and dividing it by the same or a lesser pressure loss and will get a greater production per pound loss.

Q. All of the wells you enumerated this morning are in Quadrant 3, Hutchinson County?

A. No, sir; I didn't say they were.

Q. Did you know in every one of Mr. Hammer's quadrants in Hutchinson County that the pressures are declining and not increasing in spite of the repressuring of some of the wells?

A. I haven't checked them. They may be.

Q. Do you know whether or not in Quadrant 3, Hutchinson County, the pressures are decreasing or increasing?

A. According to the way he has the quadrants laid out and the figures he has used in his quadrants I know the pressure is showing a decline, yes.

Q. It is showing a decline?

A. Yes.

Q. It is showing a decline in spite of the fact that some of the wells have showed a slight increase in pressures?

A. That is true.

Q. Have you made a study to ascertain what has been the pressure drop in Hutchinson County as a whole in 1940?

A. No, sir.

Q. In 1939?

A. I haven't made it in connection with this. I probably did some figuring on Hutchinson County back in 1939 but it wasn't in connection with this study. I figured around on different parts of the field in connection with other things. I don't recall.

Q. Do you know of your own knowledge now whether or not Hutchinson County quadrants are decreasing at a faster rate than Moore County Quadrants or at a lower rate?

A. What part of Hutchinson County?

Q. Do you know whether or not all of Moore County has the pressures declining at a faster rate than Hutchinson County or have you given that any consideration.

A. I didn't include the whole county. I didn't consider —I included part of Hutchinson County in the Moore County area—or study it by county lines.

Q. Then you don't know?

A. No, sir.

Testimony of J. D. Thompson, Jr., Witness for Canadian.

Thompson prepared and sponsored Exhibit No. 187, entitled "Texas Panhandle Gas Field Rock Pressure Map, July, 1939." His direct testimony concerning this exhibit is contained in Volume LXVIII, pp. 9973-9980, and Exhibit 207, pp. 5, 6.

This exhibit shows the extent of the Texas Panhandle Field as outlined by the Railroad Commission. The exhibit further shows 20-pound interval contour or isobar bands, which show the rock pressure conditions existing as of July 31, 1939. These contour (isobar) lines and colored bands are based upon the official wellhead gauge pressures recorded by the Railroad Commission during the summer of 1939.

The following legend which is indicated on the map, shows by colors the wellhead pressure conditions as follows:

	Pounds
Gray	0-200
Orange	200-220
Dark Blue	220-240
Pink	240-260
Green	260-280
Red	280-300
Purple	300-320
Yellow-Green	320-340
Light-Blue	340-360
Brown	360-380
Salmon Pink	380-400
Yellow	Above 400

It will be noted that the areas colored gray, where wellhead gauge pressures are 200 pounds or less, are confined to or adjacent to those portions of the field which produce oil; that the areas colored yellow, where wellhead pressures are 400 pounds or above, are situated in localities remote from the oil producing portions of the field, and, as a result, are generally near the south and southwestern edges of the field.

Thompson stated that originally the entire field had a pressure of 430 pounds at the wellhead. The pressure dif-

ferential, as shown on the exhibit, is the result of progressive depletion of the gas reserves of the field due to gas withdrawals incident to the production of oil and for pipe line use.

The witness also said that in the early life of the field gas was largely regarded as a nuisance which handicapped the development of oil production. There was no market outlet for the gas itself and as a result tremendous quantities were wasted. The earliest producing areas to be developed in the field were the Borger area in south-central Hutchinson County and the Lefors area in central Gray County. In these two areas gas was encountered in pay formations above the oil bearing formations and little interest was taken in conserving this gas. It was frequently allowed to flow from the hole along with the oil and was thus entirely wasted into the air. This situation gave rise to the casinghead gasoline industry. The casinghead plants removed the gasoline content from this gas and popped or vented the residue into the air. Enormous amounts of gas were wasted in this manner. Later the carbon black industry came into the field and utilized this gas. These two industries were, therefore, firmly established and used tremendous quantities of gas from the oil producing areas before the major gas pipe lines were built. These early withdrawals from the oil field resulted in the establishment of the pressure differential picture set forth in Exhibit 187. Without question there has been a tremendous drainage of dry gas from that portion of the field which produces dry gas only to the low pressure oil producing areas due to the long established differential in pressure. That drainage has continued progressively from year to year and is effective today.

The witness on cross-examination testified that at this time there was no effective drainage from the East Panhandle Field to the West Panhandle Field but that the gas in the high pressure area in south Gray County was being depleted by drainage (Vol. LXXVI, pp. 11135-11136), however, a situation might develop where drainage would be possible due to the fact that the east field is losing its pressures rapidly and pipeline companies which are now getting their gas from Wheeler County might build an extension over into the west field and add to the withdrawals from the

west field which would have a tendency to equalize the pressures between the east field and the west field. (Vol. LXXVI, pp. 11136-11137.) Both the east and the west fields are contributing to the repressuring of the oil producing area shown by the gray color in Exhibit 187, in the area immediately north of the block fault in Gray County (Lefors area). (Vol. LXXVI, p. 11137.)

Drainage extends progressively out from a well to higher pressure areas by reason of the fact that gas moves in from the higher pressure areas in order to replace the gas which has been produced. (Vol. LXXVI, p. 11222.) Drainage is a progressive affair. Gas flows from an area of high pressure to an area of low pressure and eventually the effect is far-reaching. (Vol. LXXVI, p. 11224.) Witness, upon being questioned as to the possibility of a well of large open flow draining from the area which contains a well of a low open flow, replied: "Drainage is caused not by the open flow of the wells but by the pressure differential existing." (Vol. LXXVI, pp. 11234-11236.) Production from the wells in southwestern Hutchinson County contributes to the lowering of the pressure in that area and also contributes to the lowering of the pressure in the higher pressure areas to the southwest of them. (Vol. LXXVI, p. 11235.) Canadian wells in the area of southwestern Hutchinson County are not getting their full share of the gas but are only getting some of it as it goes by. The pressure contours change from year to year. There is always a very noticeable change with encroachment of the low pressure southwestward from Hutchinson County into Moore and Potter Counties. (Vol. LXXVI, p. 11242.) The wells in that area contribute to the falling pressures but are not solely responsible. (Vol. LXXVI, p. 11243.) There is no question but that gas is migrating (from Canadian acreage) to the northeast into the Borger-Sanford area. In fact the Borger-Sanford area is actually increasing in pressure notwithstanding the fact that substantial production of gas is occurring in that area. (Vol. LXXVI, p. 11244.) A comparison of the rock pressures in the Borger-Sanford area makes it quite apparent that these wells are building up substantially and if these wells were not receiving gas from an outside source their pressures would not be building up while they were producing (Vol. LXXVI, pp. 11244-11245), and this fact is very significant regardless of whether the

production rate is high or low. (Vol. LXXVI, p. 11246.) The Borger-Sanford area is outlined on Exhibit 187 by a red line. (Vol. XCIV, p. 14365.) Repressuring is now occurring over the entire distance between Borger and Sanford area some eight or nine miles and about two miles west and southwest of the town of Sanford. (Vol. LXXVII, pp. 11280, 11281.) There are very few wells, if any, within the Borger-Sanford area that are not being repressured. (Vol. LXXVII, p. 11285.) The point has finally been reached where gas is migrating into the area faster than it is being produced from the wells. (Vol. LXXVII, p. 11286.) Drainage has a very considerable influence on the shape of the isobars (pressure bands as shown on Exhibit 187.) (Vol. LXXVII, p. 11289.) The shape of the isobars would be different if there wasn't any drainage. (Vol. LXXVII, p. 11288.) Lowering pressures in any pressure band is due both to production of the wells and to drainage to lower pressure areas. It is inconceivable that it is due entirely to production. If it were due entirely to production you would have a series of concentric circles scattered all over the field showing the pressure distribution. This is not true, but on the contrary, you have a great wide sweep of pressure differentials extending from western Moore County across to the Borger and Sanford area. If there was no drainage the concentric circles would appear as is shown on a small isolated area in northwestern Potter County, which is a low pressure area entirely surrounded by higher pressure areas, and in that one area the loss in pressure is due entirely to the production from the one well in the center of the concentric circle and demonstrates that gas is going into the well from every side. (Vol. LXXVII, pp. 11310, 11311.) Drainage into the Borger-Sanford area is very substantial, the gas migrating rapidly enough not only to provide the gas that is being produced but additional volumes of gas. (Vol. LXXVII, p. 11297.) This gas is moving into the area from the higher pressure areas outside of it. (Vol. LXXVII, p. 11297.) These wells are getting more gas by migration than they are producing. (Vol. LXXVII, p. 11298.)

Referring to Exhibit 187, and particularly the Borger-Sanford area, the witness stated that the wells in the Borger-Sanford area which were being repressured are in the orange colored band partially, and it is quite obvious that they are

receiving gas—migratory gas—from the next higher pressured band, the blue band. The blue band, it is obvious, is receiving migratory gas from the pink band, being the one next higher in pressure. Gas displaced from the pink band into the dark blue band is draining the immediately surrounding green band, which is of higher pressure. That gas in turn is being replaced by gas from the red pressure band, which is the next higher in pressure. The matter of drainage is a progressive thing which extends band by band clear out into the extreme portions of the field which are showing pressure decline. The lowering of pressures is a combination of production of the wells through the area and in addition to this, migratory gas is draining from the high pressure area progressively to the low pressure area. (Vol. LXXVII, pp. 11299, 11300.) There are areas that are receiving gas by drainage; that is, migration, and the pressures are still decreasing, which means that such areas are not receiving gas as rapidly from drainage as the gas is being produced. (Vol. LXXVII, p. 11313.)

The witness had been cross examined at length with respect to the migration of gas into the Borger-Sanford area and had stated that there were eighty wells or more in the area in which the pressures were increasing, notwithstanding substantial production from the wells. He later determined that there were 126 wells in the area which were gaining in pressure. (Vol. XCIV, pp. 14362-14364.) These wells are listed upon Exhibit 259. (Vol. XCIV, p. 14363.) Exhibit 260, which is a companion exhibit to Exhibit 259, shows the production from the 126 wells for the year 1940. (Vol. XCIV, p. 14366.)

The production from these wells in 1940 was in excess of 34,000,000,000 cubic feet. The area outlined in Exhibit 187 and which has been referred to as the Borger-Sanford, contains approximately 20,000 acres. Assuming a production, therefore, of around 46,000,000,000 cubic feet for the year 1940 from Canadian acreage, the Borger-Sanford area is producing about three-fourths as much on an acreage basis as the entire Canadian acreage. The Canadian acreage is about twelve times as great as the acreage in the Borger-Sanford area, therefore the rate of production in the Borger-Sanford area is approximately eight times as great on an acreage basis, as the production from the Canadian

acreage, but notwithstanding this heavy rate of production the rock pressure in the Borger-Sanford area is actually increasing and obviously gas is migrating into that area from the surrounding areas of higher pressure. (Vol. XCIV, pp. 14366-14370.)

The Railroad Commission lists a total of 139 wells in the Borger-Sanford area. Thirteen of these wells were ignored because of an erratic pressure history. That is, the pressures fluctuated greatly from year to year and it was obvious that they were not dependable. (Vol. XCIV, pp. 14371, 14372.)

The witness, referring to Exhibit 187 and the pressure isobar bands, stated that gas was migrating out of Moore County and northeastern Potter County in the gneral direction of the Borger-Sanford area; that this picture is shown by the isobar bands on the map and that Commission's witness Hammer's isobar map, Exhibit 179, shows substantially the same thing. (Vol. XCIV, p. 14372.)

Witness also stated that there was a low pressure area extending straight west from the Borger-Sanford area through southern Moore County which he called a pressure ditch and that gas was migrating from both the north and south into this low pressure area and that the gas that was not produced by wells located in the area would necessarily continue to migrate to lower pressure areas in the general direction of Borger and Sanford area. (Vol. XCIV, pp. 14372, 14373.) The flow of gas shown by isobar lines is at right angles to such lines. Pressure differentials west of the Borger-Sanford area are represented by comparatively wide pressure bands, and indicate high permeability of the formations producing the gas and also indicate a comparatively free movement of gas in that area. Just south of the pressure ditch or low pressure area in Moore County the pressure bands in the Canadian acreage are wide which indicates a free movement of gas northward and northeastward, out of the Canadian acreage into the low pressure area of southern Moore County and toward the Borger-Sanford area. (Vol. XCIV, pp. 14374, 14375.)

If you have a tight formation of low porosity or of low permeability, or both, the migration of gas underground is restricted and where you have that situation the pressure

bands or isobar lines on pressure maps are narrow. (Vol. XCIV, p. 14375.)

Movement of gas underground may be rather rapid even though pressure differentials are slight if the permeability is high, for example, if you were taking gas out of one side of a large tank that is 100% permeable, you could get it all without any pressure differential at all and the greater your restriction, therefore, the greater would be your pressure differential and as your restriction becomes less and less, your pressure differentials would become less and less, and you would have a free movement of gas. (Vol. XCIV, pp. 14376, 14377.)

The fact that Canadian acreage in north Potter County and south Moore County is of low productivity does not prevent the free migration of gas because the low productivity may be due to thin pay formations which are permeable. You could still have considerable drainage under these conditions. There is conclusive evidence that this actually happened. The Canadian's Masterson B-5 well did not produce a foot of gas between July, 1939, and July, 1940, yet it lost eight pounds in pressure which is conclusive evidence that it is suffering drainage. This well is comparatively isolated, the nearest well to it being about two miles away and ranging up to six miles to the westward. (Vol. XCIV, pp. 14381-14383.)

Testimony of C. Don Hughes,
Witness for Canadian.

C. Don Hughes, whose qualifications have heretofore been given, testified (Vol. XCIV, pp. 14455-14461) with respect to drainage that Canadian acreage has suffered and is suffering currently, and in that connection he also testified with respect to the original and remaining reserves of the acreage of Canadian.

Hughes' estimates of Canadian reserves on a 16.4 pound pressure base, and after application of a 90 per cent recovery factor are as follows:

Original Reserves

At	0# gauge	3,126,553,265 Mcf.
	25	2,948,648,943
	50	2,763,945,524
	75	2,579,209,882
	100	2,401,337,783
	125	2,216,634,364

Remaining Reserves on 7-1-1932.

At	0# gauge	3,010,764,851 Mcf.
	25	2,832,860,529
	50	2,648,157,110
	75	2,643,421,468
	100	2,285,549,369
	125	2,100,945,950

Remaining Reserves on 8-1-1938.

At	0# gauge	2,793,264,821 Mcf.
	25	2,615,360,499
	50	2,430,657,080
	75	2,245,921,438
	100	2,068,049,339
	125	1,883,345,920

Remaining Reserves on 8-1-1939.

At	0# gauge	2,719,785,851 Mcf.
	25	2,541,8[illegible],529
	50	2,357,[illegible]8,110
	75	2,172,442,468
	100	1,994,570,369
	125	1,809,866,950

Hughes arrived at the original reserves of Canadian, hereinabove set out, by totaling the reserves of each tract owned by Canadian. He classified all of the Canadian leases, section by section, according to the approximate virgin natural open flow or potential. The potential of each section was then multiplied by the acres it contained and the product multiplied by his factor of .919211. This factor, as heretofore stated, represents the relationship between the approximate virgin natural open flow and reserves per acre in place.

The witness then determined the remaining reserves (as

distinguished from original reserves) by classifying each tract as to pressure existing on the dates hereinafter set out. The pressure was obtained from contour maps. The volume of gas remaining under each tract at each particular survey date was that portion of the original volume in place that the pressure on that particular date bore to the original virgin pressure of 430 pounds. The difference between the remaining volume of gas in place and the original volume of gas in place represents the amount of depletion the acreage has suffered, whether by actual production from the wells located on the acreage or by drainage to adjacent wells, or by a combination of both. The results of these calculations are as follows:

Date	Cumulative Production	Cumulative Depletion
July 1, 1932	94,416,252 Mcf.	115,788,414 Mcf.
August 1, 1938	282,094,343 Mcf.	333,288,444 Mcf.
August 1, 1939	322,364,196 Mcf.	406,767,414 Mcf.

The above tabulation demonstrates that the cumulative depletion has been greater than the cumulative production. The witness stated that it could be definitely concluded that as gas production from the area adjacent to the Canadian leases increases that the drainage will increase. In fact, it is the witness' opinion that the increase in the rate of drainage is just now becoming important. This increase in drainage is due to the increase in production during the last few years from the area adjacent to Canadian leases. It is important to recognize this increase in the rate of production and its effect on drainage in any consideration of the estimated reserves of gas in place under the Canadian leases. It is evident that Canadian will produce only a portion of the gas now in place under its leases.

The witness referred to the fact that from the beginning of production to August 1, 1939, there was produced from Canadian leases 322,364,196 Mcf. and that during the same period the total depletion was 406,767,414 Mcf. The production, therefore, was 79.3% of the total depletion which indicated a loss by drainage of 20.7%. During the period beginning August 1, 1938, and ending August 1, 1939, the depletion was 73,478,970 Mcf. and the production was 40,269,853 Mcf. The production, therefore, was only 54.8% of the total

depletion, which indicates a loss by drainage for this one year of 45.2%. All figures are computed on a 16.4 pound pressure base.

In making the estimates on Canadian leases, computations were made at various dates: 7-1-1932; 8-1-1938 and 8-1-1939. This carried the production performance of its leases back to a date where it is concluded that its withdrawals from its wells alone account for most of the pressure drops in its Area. At that date and on that assumption a factor could be found correlating open flow with reserves however, it results in a slightly smaller factor than Hughes' .919211 factor, but in his opinion, indicates that it is a reasonable factor.

Hughes testified on cross examination that in estimating the reserves of the Canadian, he employed the same method that he employed on the field as a whole; that is, he classified the acreage according to potential and then applied a factor to convert it into reserves in place. It is not a version of the pressure-decline method. The estimate of the Canadian reserves was in more detail since he determined the reserves section by section, each section containing approximately 640 acres. However, some tracts were smaller. Each tract was classified in accordance with the potentials. The study for the Canadian was made subsequent to the time that he prepared Exhibit 212, which was prepared about the first of the year 1939. At the time that he made the study on the Canadian reserves he obtained from the Company a list of all their wells with the open flow of each well converted to virgin rock pressure and corrections were also made for the various size pipe that had been used in the wells so that the figure represented the corrected virgin potential at 430 pounds and at a uniform pipe size. This was the most precise information that he had ever attempted to procure and since it was the latest information he had, he utilized it in making the section by section or tract by tract appraisal of the Canadian acreage. The open flows were corrected very carefully and there is some deviation in this respect from his map, Exhibit 212. The map, however, is not erroneous for the field as a whole because he had also checked it by appraising each section of the field and the figure was so near the figure that would be reached from a

consideration of his zone map that he had no occasion to change it. In other words, differences in open flows on the field as a whole average out pretty well. He could have used his zone map on the Canadian acreage but followed the tract by tract appraisal because he thought it was a little more accurate to do so. (Vol. XCIV, pp. 14477-14486.)

Many tracts over the Canadian acreage do not have wells upon them and these tracts were classified in the light of the nearest wells to them. There were very few sections that had more than one well on the section. There are a few such cases and those sections were not necessarily appraised as to the arithmetical average of the open flows but were appraised with respect to geological conditions in the area. There were a number of those that were considered in appraising a given tract before the actual open flow figure was determined, but if there was more than one well to a section the information on both wells was used; for example, if a section of land had two wells down on one side that were pretty good sized wells and immediately to the north in the next section there was a small well, naturally he wouldn't appraise that section that had the two good wells along the south line according to the arithmetical average potential of those two wells. The small well along the north line would have a bearing on the classification assigned to that particular section. (Vol. XCIV, pp. 14489-14492.) If the section had a well in the middle of it he would not necessarily appraise that section in accordance with the open flow of that particular well. He would be influenced somewhat by the size of the wells immediately around that section. The witness cannot remember precisely without referring to his working papers what he did in each case. The working papers consist of thirteen pages with about 40 entries on each page—in excess of 400 entries in all, and representing approximately 400 tracts of land. (Vol. XCIV, pp. 14493, 14494.) The witness has estimated the reserves on each tract and ... is of the opinion that he secured a correct picture by doing so. (Vol. XCIV, p. 14495.) In estimating reserves for the field as a whole Hughes obtained his remaining reserves at different dates by subtracting the production at the various dates from his estimate of original reserves. He could not do this in the case of Canadian

reserves by reason of drainage away from the acreage. He could do it for the entire field because the field as a whole has no drainage into or out of it. (Vol. XCIV, p. 14501.) The pressure-decline method would work in the field as a whole if you had the proper weighted average pressure; for example, if pressure was weighted on volume of gas in place rather than on acreage, but it does not give the correct answer on the field as a whole where weighted on surface areas alone. (Vol. XCIV, p. 14503.) The witness has assumed that he could apply Boyle's Law to determine the depletion from any particular tract because he had just determined the volume of that particular tract and the depletion would be in the proportion that the pressure of that tract, at the time of the study, bore to the original virgin pressure. (Vol. XCIV, pp. 14505-14508.)

The witness was then asked to compare the original virgin potentials corrected to casing sizes furnished to him by Canadian with the initial potentials of some wells as described by the well logs, which in some cases varied from the figure shown on the well logs. The witness explained that there could very easily be a difference in some cases because frequently the potentials shown on well logs were estimates and were not actual gauges and certainly the well logs would not offer nearly as accurate information as the data which he actually used. He utilized the corrected potentials given to him by the company and he had no reason to question the accuracy of the data furnished. (Vol. XCV, pp. 14511-14518.) Witness also explained somewhat in detail the appraisal of various tracts in accordance with their proximity to the fault line, some of which were below the fault line of the Railroad Commission and some of which were partially below the fault line of the Railroad Commission, and he also explained in detail the effect that surrounding wells have as to the appraisal of a particular tract, and also the influence that acidization or shooting of a well in order to get a higher potential would have on his appraisal. Sometimes the appraisal would be higher and sometimes lower and if the witness had arrived at a higher estimate of Canadian reserves than he did, that this within itself would have shown greater drainage away from the Canadian acreage than his figures do show. (Vol. XCV, pp. 14519-14542.) The witness did not use the open flows as shown on the well logs

because his primary concern was to get the most correct and the latest available information on each well. If later developments showed, as it does in many cases, that the open flow shown on the well log was an erroneous figure, he would have been in error by shutting his eyes to this situation and using a figure taken from the well log, knowing that the figure was an erroneous one. (Vol. XCV, p. 14547.)

The Commission's counsel had marked for identification Exhibit 279, Hughes' working papers, showing the corrected potential used in estimating Canadian reserves, pages 1, 2, 3 and 4. They also had marked for identification Exhibit 280, the working papers of Hughes, page 1 through 13, showing the calculations made as to each tract. (Vol. XCV, p. 14551.) Pressures of different tracts were estimated from the slope of the pressure pattern at that particular point. There were some tracts where the pressures would be uniform throughout and others where the pressure would not be uniform, depending upon the pressure pattern. The actual pressure on each tract was determined by contouring the pressures in the area. The witness utilized a pressure contour map for each of the periods for which the reserve was estimated. The 1939 pressures were taken from Thompson's pressure map, Exhibit 187. (Vol. XCV, pp. 14553, 14563.) The drainage that Canadian has suffered has gone to areas where the pressures were lower than that obtaining in the Canadian acreage (Vol. XCV, pp. 14563, 14564), which would be northeast toward the Sanford and Borger area. (Vol. XCV, p. 14568.) If Canadian had suffered no drainage at all up through 1932 then that would be a very definite indication that the witness' pressure factor of .919211 was too high. If he then corrected his factor and applied a lower figure this would result in a lower estimate of reserves. (Vol. XCV, pp. 14569-14571.)

The witness stated that it was silly to attempt to point to a single well to which gas drained from the Canadian acreage but he did know that the gas drained to areas of lower pressure. The wells in the lower pressure areas are the ones that receive the gas. The lower pressure areas to the northeast receive gas from the Canadian acreage because the nearest low pressure areas were to the northeast and in the Borger and Sanford area. (Vol. XCV, pp. 14574.

14575.) Some of the wells in the Borger-Sanford area have produced staggering volumes of gas and the fact that some of the Canadian Wells in the southwest portion of Hutchinson County produced large quantities of gas resulted merely in those wells getting some of the gas as it went by toward the low pressure area to the northeast around Sanford. (Vol. XCV, pp. 14578-14580.) Gas migrates from areas of high pressure to areas of low pressure, and referring to Exhibit 239, gas would migrate from the yellow area, which is the highest pressure color, to the orange, which is the next lower pressure group, and from the orange to the blue, and from the blue to the green, toward Hutchinson County. That is the only conclusion you can make from the pressure conditions existing. (Vol. XCV, pp. 14588, 14589.) It is the witness' opinion that the Canadian acreage was suffering drainage subsequent to January, 1937, and also that the net effect was drainage away from Canadian acreage for the period from 1932 to 1938. There might be some areas which would be receiving gas as a result of drainage into it but there are certain other areas in which their leases were suffering from drainage during all those years. (Vol. XCV, pp. 14600-14602.) The pressure map for 1934, Exhibit 239, shows that there was a low pressure area around Borger and Sanford and high pressures existed to the southwest into the Canadian acreage. Therefore, the map would indicate that drainage was being experienced from the higher pressure leases of the Canadian located in the area of northeast Potter County, southeast Moore County and northwest Carson County. It is impossible to name a particular well that received the gas that drained away from Canadian acreage but one of the wells was likely the Polo well in the Sanford area which the witness stated had produced fifteen billion cubic feet of gas from one ten-acre lease at the time he made his study. (Vol. XCV, pp. 14602, 14603.) The Polo well is one of the outstanding examples of large production in the area referred to and that anyone familiar with the Sanford area is familiar with the enormous production of this well. The witness does not recall just what period this covered but he thinks it covered the period prior to about 1934 or 1935 and the early production from this well is not reflected by the Railroad Commission's records. No one would contend that any acreage in the Texas

Panhandle Field had as much as a billion and a half cubic feet per acre, which is what this well had produced. (Vol. XCV, pp. 14605, 14609.) The witness reiterated that drainage from Canadian acreage was in the direction of the areas of lower pressure which generally was to the northeast. That one or two wells didn't get all of the gas but the wells that are located between the area of the Canadian leases and the lowest pressure areas obtained it. It is entirely possible that some of the gas has migrated away from the Canadian leases hasn't even been produced yet. (Vol. XCV, pp. 14612, 14613.) The gas that has been lost by Canadian acreage could have been produced by all of the wells that are located in areas of lower pressure. The wells in the very lowest pressure area, which are producing gas without loss of pressure in the Borger-Sanford area, are merely picking up the final bit of gas that has reached that area. Much of the gas that started toward that general area was produced by other wells along the way. (Vol. XCV, pp. 14615, 14616.) Canadian wells alone in the northeast part of their reserves did not produce the gas that migrated from Canadian acreage. If that had been true you would have had a bunch of "sink holes" around those wells (concentric pressure bands). The fact that wells in the Borger-Sanford area began to increase in pressure as their production was retarded makes no difference with respect to the question of drainage; whether the Sanford production was increasing or not, drainage is going into that area, because while the pressures were increasing the wells were actually producing large volumes of gas. If the pressures were static this would still prove that drainage is taking place in view of the production from the wells. If the production is later increased from those wells and the pressures start going down again (Borger-Sanford area) they would still be receiving gas by drainage as long as the high pressure areas continue to exist back to the southwest. It is very likely true that the wells in the Borger-Sanford area are being repressured by local movement of gas into that area but as gas moves from the adjacent area into the next lower pressure area, gas from the next higher pressure area moves in to replace it and "local drainage" finally becomes long distance drainage. The pressures in southwest Hutchinson County have been maintained to a degree, notwith-

standing loss of gas by drainage into the Sanford area, because the higher pressure areas to the southwest are also furnishing gas to this area. (Vol. XCV, pp. 14619, 14622.)

Testimony of STANLEY GILL, Witness for Canadian.

Stanley Gill, witness for Canadian, whose qualifications have been stated heretofore, testified on the subject of drainage generally and particularly as it affected Canadian reserves. His testimony on direct examination may be found in Volume XCI, pp. 14023-14027.

Estimation of reserves of recoverable gas is obviously of fundamental importance in determining the future value of a group of gas-producing properties as a source of supply for a major pipe line system. However, reserve of gas in place is not by any means the only factor to be considered in investigating the future life of such gas-producing properties. As a whole, the solution of the problem for a given case involves many factors, but it can be resolved into a few simple elements. These elements relate to both physical and economic factors and are concerned not only with the particular properties under consideration, but also with the effect upon them of operations on other properties withdrawing gas from a common reservoir. These factors are of controlling importance in the Texas Panhandle Field in the case of properties producing gas to supply trunk pipe lines. (Exhibit 265, p. 41.)

It is an inescapable conclusion that the future productive life of wells and properties serving a trunk pipe line will be far more closely related to reserves and withdrawals of gas from the field as a whole than to reserves and future withdrawals from the specific properties in question. The Texas Panhandle gas reservoir constitutes essentially a single inter-connected system of porosity. Although there are differences in thickness and physical characteristics of the reservoir rock in different parts of the field and vertically through the reservoir system, the reservoir in a broad sense is definitely a single system, permeably inter-connected throughout. Therefore, withdrawals of gas from any part of the reservoir will affect, materially, the gas lying under other far distant parts of the field. Not only do such withdrawals bring about extensive drainage, but they are of im-

portance in controlling future trends of withdrawals. For example, heavy withdrawals of gas from Wheeler County may be expected to lead to premature reduction of pressure, and to a shift of withdrawals into the sweet gas area of Moore County. For a similar reason future heavy withdrawals may be anticipated from what is now a sparsely developed high-pressure sour gas area in Moore and Hartley Counties. (Exhibit 265, pp. 41-42.)

Because of the physical characteristics of gas, it is theoretically possible that a single gas well could eventually drain substantially all of the gas out of the Texas Panhandle Reservoir. This theoretical possibility is of course a practical absurdity because of the great time that would be required, but the reservoir characteristics, which make this theoretically possible, have had a tremendous influence on the performance of the field in the past and will continue to be of controlling importance down to the very end of its producing life. The effects of drainage of gas have been of particular importance in the Texas Panhandle Field because of the manner in which developments have been carried out and the manner in which withdrawals of gas have been distributed. The reasons for concentration of withdrawals along the northern flanks of the structure are so familiar that they need not be described. This concentration of withdrawals established, early in the life of the field, great trends of drainage, which were apparent in the very earliest pressure surveys and which have continued down to the present time. Gas has drained generally toward the north, from the high-pressure sweet gas areas, since the very beginning of oil development in the field, and this drainage may be expected to continue. In some parts of the field, and particularly in Moore County, it is reasonable to anticipate increased development of low pressures in the sour gas area in the future. (Exhibit 265, pp. 42-43.)

During the future producing life of the field, drainage from high-pressure areas to replenish the low-pressure areas will unquestionably continue, since withdrawals of gas from high-pressure sweet gas areas will be limited by the pipe line outlet and will be less in proportion to the high rates of withdrawal in the sour gas area. The conclusion that high-pressure sweet gas acreage will lose tremendous quantities of gas by drainage during future years is absolutely inescapable. (Exhibit 265, p. 43.)

It must be concluded that the future life of gas-producing properties serving gas pipe lines will be determined, not primarily by the reserves of gas which originally underlaid the particular properties or which now underlie them, nor by the future rates of withdrawal of gas from the particular properties in question. Rather, the future life of these properties will be determined by the total reserve of producible gas remaining in the field and by the future rates of withdrawal of this gas for all purposes, not only through wells on the particular properties under consideration, but through all of the wells in the field, wherever they may be located. There will be of course numerous minor exceptions to this generalized conclusion, but its validity as related to any considerable group of gas-producing properties in the Texas Panhandle Field is beyond question. (Exhibit 265, pp. 43-44.)

The situation of the Canadian properties in the field, and the effect upon them of present drainage and of the future drainage trends that may be expected to develop as withdrawals of both sweet and sour gas shift from other parts of the field to Moore County, make the foregoing statement particularly relevant when related to Canadian's holdings. (Exhibit 265, p. 44.)

Additional Canadian
Evidence on Drainage

Gill for the purpose of this study took into consideration all of the information and data set forth in his previous written statement (Exhibit 265) including all of the exhibits and testimony referred to therein, as well as the Commission's Exhibit No. 95 showing the acreage of Canadian in the Texas Panhandle Field. The word "drainage" as used by the witness means the general sub-surface migration of gas by reason of differentials in reservoir pressures within a given field.

The witness' testimony, with respect to the above matters appearing hereinafter, is contained in Volume XCI, pages 14031 to 14049, and in the written statement of Exhibit 266.

Gill stated that drainage inevitably takes place in a gas reservoir comprising an inter-connected porous system, between the various parts of which differences in pressure exist. Because of the low viscosity of gas, such drainage

takes place over very long distances and through formations of relatively low permeability. The gas reservoir of the Texas Panhandle Field is definitely a completely inter-connected porous system, and great pressure differentials were established early in the life of the field as a result of intensive development and production in the oil-producing areas. Subsequent operations, and particularly the withdrawals of sour gas and casinghead gas, have maintained these pressure differentials. The differences in per-acre withdrawal rates that originally established pressure gradients in the Texas Panhandle Field may be expected to continue. This expectation, as it bears upon properties in the western part of the Texas Panhandle Field, has been discussed by Massa in his Exhibit 256. (Exhibit 266, pp. 2-3.)

That the regional pressure gradients in the Texas Panhandle Field have actually brought about sub-surface migration of gas on a tremendous scale, resulting in great drainage of gas from large areas, becomes apparent upon examination of available factual data. This conclusion is grounded upon, and is positively supported by, four lines of analysis of the facts as to field performance:

1. The sequence of development of low-pressure areas from year to year, which is graphically illustrated in the series of isobar maps submitted by Dunlap (Exhibit No. 239), shows the consistent migration of gas into areas of low pressure, and the consequent reduction of pressures in areas of higher pressure.

2. That gas is draining into areas from which there have been heavy withdrawals of gas is conclusively demonstrated by the fact that pressures in such areas have been maintained in the face of continued withdrawals. In some large areas there has actually been an increase in pressure during recent years, despite the fact that substantial quantities of gas have been produced out of them during the period of pressure build-up. Specific data on this maintenance and build-up of pressure are contained in Massa's Exhibits No. 259 and 260.

3. As new wells are completed in the field, they encounter gas at pressures materially lower than virgin reservoir pressure, which is the direct result of prior withdrawals of gas out of other wells in the field.

4. Past pressure declines and past withdrawals of gas as between different parts of the field are definitely related to each other in such a manner as to show that extensive drainage of gas over long distance has taken place. (Exhibit 266, pp. 3-4.)

The most conclusive demonstration of definite regional drainage trends is found in the progressive changes of the field pressure pattern. Major trends of drainage are apparent from an analysis of the series of field isobar maps which were submitted by Dunlap as Exhibit No. 239. For example, the growth of a low-pressure area, resulting from drainage into the Borger-Sanford area, is very apparent from these maps. From year to year this low-pressure area has extended farther and farther to the west and southwest into Moore and Potter Counties. Up to about 1937, nosing of low-pressure contours into this area was caused almost entirely by drainage of gas into the Borger-Sanford area. Since that time the rate of production out of the Moore County and Potter County sweet gas area has increased, but rates of withdrawal of gas out of this area are still much lower in proportion to gas reserves than are withdrawals of sour gas out of the Borger-Sanford area. Continued extension of this low-pressure area since 1937 is definitely shown by the maps and is, to a great extent, the result of continued drainage of gas into the Borger-Sanford areas. (Exhibit 266, pp. 4-5.)

The Dunlap maps (Exhibit 239) also show an important drainage trend in northwestern Moore County. Beginning in 1935, a low-pressure area developed in this section of the field as a result of heavy gas withdrawals. The growth of this low-pressure area from year to year, and the extension of the low-pressure contours into the sweet gas field, are very apparent from the isobar maps. By 1940, drainage into northwestern Moore County had affected a very considerable area, as shown by the 350-pound contour. The low-pressure area from northwestern Moore County had almost met the low-pressure area resulting from drainage into the Borger-Sanford area. It is interesting to note that the development of these low-pressure areas has followed, in general, the zone of high productivity shown on Hughes' map, Exhibit No. 212. (Exhibit 266, p. 5.)

The effects of drainage are also strikingly apparent in the

pressure changes that have taken place in Carson County. There have been heavy withdrawals of gas along the northern part of the field in Hutchinson and northeastern Carson Counties. Withdrawals from the southern and western parts of the field in Carson County have been far lower in proportion to reserves. The progressive development of low pressures in this part of Carson County is evident from the pressure maps. Each map, when compared to that of the previous year, shows that there is rapid development of low pressures. It is significant also that in northeastern Carson County, the area having a pressure of less than 200 pounds has not increased in size since 1938, and that the area having pressures of less than 250 pounds has not shown any great increase in size. The significance of the above condition is, that long-distance drainage from higher-pressure areas is providing gas to the gray and orange colored bands (Exhibit No. 239), to the extent that the pressure drop in these bands is being retarded. Large quantities of gas are still being withdrawn from these areas, but as pressure differentials are set up across the field, gas is moving from long distances to replenish the depleted pay formations. (Exhibit 266, pp. 5-6.)

The fact that pressure gradients develop rapidly as a result of drainage is shown on Dunlap's maps, Exhibit No. 239, by the early pressure performance in Gray and Wheeler Counties. The map for 1934 shows a large area colored in brown in these counties, having rock pressures between 350 and 400 pounds. In the succeeding years the brown color is replaced with colors of lower pressures across the entire width of the field in these counties. Dunlap's map for 1940 shows a large area having rock pressures of 350 to 400 pounds in Moore and Potter Counties. It is to be expected that in future years, with the continuation of heavy withdrawals out of the Borger-Sanford area of southwestern Hutchinson County, pressure performance in this area will be similar to that which was the case in Wheeler and Gray Counties, and that increasing pressure differentials will be set up. Massa's Exhibit No. 256, which discusses the factors that will lead to a shift of production to the western portion of the Texas Panhandle Field, lends emphasis to the probability of this pressure differential becoming a very serious problem in this area. (Exhibit 266, pp. 6-7.)

An interesting comparison can also be made between the isobar maps (Exhibit No. 239) and the curves contained in Massa's Exhibit No. 257. These curves indicate that up until 1937, the production out of wells located in the Canadian Area was almost sufficient to account for the pressure drop which had occurred. Beginning in 1937, pressures in this area began to decline at a far more rapid rate, apparently because material sub-surface drainage out of the area began at about that time. This opinion arrived at by Massa as a result of study of the pressure-production relationship, is corroborated by the isobar lines on the maps submitted by Dunlap. (Exhibit 266, p. 7.)

Reference to Hammer's pressure map (Exhibit No. 179) shows that drainage from southern Moore County and from Potter County is in the direction of the Borger-Sanford area. The pressure bands to the west and southwest of Sanford are comparatively wide. This indicates that there is no effective barrier against long distance drainage. That this condition exists is also emphasized by reference to Hughes' map showing zones of productivity, which indicates that wells in the area southwest of Sanford are in a highly productive area and in an area where the permeability is comparatively high. The drainage condition above referred to is further substantiated by the results of Thompson's study (Exhibit No. 187), which shows that in spite of large production from wells in the Borger-Sanford area, pressures in this area during the past several years are higher than in 1935 and 1936. When pressure differentials are established, as shown by Hammer's map, the inevitable conclusion is that migration of gas will occur over long distances. (Exhibit 266, p. 8.)

It is to be expected that a low-pressure area of major consequence will develop along the western end of the field as the sour gas area in Moore and Hartley Counties is developed. The low pressures in this sour gas area will develop like the low-pressure area in northwestern Moore County, the rapid and progressive growth of which since 1935 is very clearly shown by Dunlap's maps (Exhibit 239). Massa has pointed out in Exhibit No. 256 that the high pressures in this sour gas area will provide the incentive for a rapid extension of sour gas operations into it. Due to the fact that wells of low productivity are to be expected in this area, it appears

probable that pressures will decline there rapidly once withdrawals are started, and that a low-pressure area of considerable size will develop. (Exhibit 266, pp. 8-9.)

The combined effect of continued drainage and of original differences in gas content of different parts of the Panhandle Reservoir is very clearly illustrated by the results of a study of the West Panhandle Field, which was made by witness during 1938. As a basis for this study, estimated withdrawals of gas from the discovery of the field down to January 1, 1938, were geographically allocated to the sections of the West Panhandle Field from which the gas had actually been produced. Although this process involved a great amount of estimation and assumption, it is believed that the final allocation was reasonably accurate. From rock pressure survey data of the Railroad Commission, losses of rock pressure from an assumed original rock pressure of 430 pounds were determined and a map of the West Panhandle Field was contoured with lines of equal rock pressure loss, 20-pound intervals being used. The areas of these zones of equal pressure loss were measured by planimetering, and the amount of gas that had been removed from the reservoir out of wells located in each of the zones was determined from the withdrawal allocation estimates previously described. Production per acre-pound out of each of the zones was then calculated. Results of this calculation as shown in the following table are plotted on a curve attached to Exhibit 266.

Loss of rock pressure from original 430 pounds	Area in Acres	Production to 1/1/38, MMCF. per Ac.-Lb.	Recovery per Ac.-Lb. as percentage of field average yield
0 - 10	124,665	0.0057	8.7%
10 - 30	347,803	0.01443	21.9
30 - 50	216,110	0.0393	59.5
50 - 70	67,437	0.0519	78.6
70 - 90	35,383	0.0264	40.0
90 - 110	32,677	0.0184	27.9
110 - 130	33,715	0.0194	29.1
130 - 150	27,803	0.0149	22.6
150 - 170	28,114	0.0301	45.6
170 - 190	28,535	0.0644	97.5
190 - 210	32,706	0.0522	79.1
210 - 230	24,840	0.133	201.7
230 - 250	19,758	0.0932	141.2
250 - 270	10.653	0.1251	189.8
270 - 290	16,548	0.1788	270.5
290 - 310	6,468	0.1110	168.2
310 - 330	7,335	0.1810	274.5
Over 330	8,506	0.2335	353.5

(Exhibit 266, pp. 9-10.)

The fact that actual recoveries per acre-pound out of the West Panhandle Field have varied over a range of nearly 40 to 1, and that these recoveries have varied continuously and regularly across the field, is strikingly apparent from these data. In effect, the data show the relationship between gas recovered through wells located in the particular areas, and pressure declines which are the combined result of such recoveries out of wells and of losses or gains of gas by subsurface drainage. (Exhibit 266, pp. 10-11.)

Similar disparities in recovery rates for the period August 1, 1935, to August 1, 1939, are reflected in the basic figures used by Hammer for his estimates of reserves of gas (Exhibit No. 180). Results of calculations made by witness from Hammer's basic data for his individual "quadrants" in the western part of the Texas Panhandle Field are tabulated below:

Hammer's "Quadrant" (Exhibit No. 179)	Area in Acres	Production 8/1/35-8/1/38, MMCF./Ac.-Lb.	Recovery per Ac.-Lb. as percentage of average for entire group
Hartley*	32,906	0.03672	64.5%
Potter I*	57,588	0.03888	68.4
Potter II*	44,937	0.02924	51.4
Potter III*	33,389	0.04006	70.5
Moore I*	62,173	0.06249	108.1
Moore II*	61,866	0.03487	61.4
Moore III*	56,614	0.03104	54.6
Moore IV	28,775	0.00854	15.0
Moore V	62,614	0.02134	37.5
Moore VI	79,556	0.03428	60.4
Moore VII	65,530	0.09296	163.7
Moore VIII	29,198	0.11054	195.2
Hutchinson I	9,660	0 35868	632.
Hutchinson II	50,658	0.22683	399.
Hutchinson III*	53,967	0.13077	229.5
Hutchinson IV	46,157	0.00744	13.1
Hutchinson V	35,097	0.01041	183.3
Carson I	52,814	0.00854	15.0
Carson II	82,997	0.09503	167.3
Carson III	79,985	0.05468	96.2
Carson IV*	40,251	0.05514	97.5

*"Quadrants" in which Canadian acreage is located.

Due to the configuration of Hammer's "quadrants," these figures fail to reflect the full, actual variations in recoveries between different parts of the producing area. Even so, the extreme ratio of 48 to 1 between the high and low "quadrants" proves definitely that sub-surface migration on a large scale took place during the period considered. (Exhibit 266, pp. 11-11a.)

The figures arrived at in both of the above studies reflect the effects both of drainage and of original differences in reservoir content. If it could be assumed that the original reservoir content expressed in terms of total gas per acre was the same in all parts of the field, these figures could be used to obtain a quantitative expression of the drainage that

had occurred into and out of the zones of pressure loss up to the time when the study was made. (Exhibit 266, p. 11a.)

Since original per-acre reserves in the Texas Panhandle Field varied widely as between different parts of its area, such a quantitative calculation cannot be made from the figures given in the table. However, these figures demonstrate conclusively that drainage is a major factor to be considered in estimating the future life of the high-pressure gas reserves from which the gas pipe lines are supplied. (Exhibit 266, p. 11a.)

Remaining Life of Gas Reserves of Canadian in Texas Panhandle Field as a Source of Supply for Long Distance Pipe Lines

Testimony of STANLEY GILL, Witness for Canadian.

The witness' general opinions as to the factors determining the economic life of gas reserves serving trunk pipe lines in the Texas Panhandle Field, were presented in his written statement, Exhibit No. 265. His conclusions as to these factors are re-stated in the introduction to this statement on the actual effects of drainage of gas in the Texas Panhandle Field. He is very definitely of the opinion that the useful life of Canadian's gas reserves in the Texas Panhandle Field, as a source of supply for transmission through their lines to distant markets, will be determined to a controlling extent by sub-surface drainage of gas from beneath their properties. This conclusion rests upon the probability, amounting practically to a certainty, that per-acre rates of withdrawal out of Canadian's acreage to meet their pipe line requirements, will continue to be materially lower than per-acre rates of withdrawal out of other parts of the West Panhandle Field. This conclusion is supported by the fact that this acreage is now and will continue to be affected by extensive sub-surface drainage at an accelerating rate. Because of these conditions, he believes that for all practical purposes the economic life of Canadian's gas-producing properties in the Texas Panhandle Field will closely approximate the economic producing life of the field as a whole, and will bear but little relationship to the quantities of gas which may currently underlie Canadian's leases. While it is probably true that pressures in the area operated by

Canadian will be somewhat higher than the field average, down to the very end of their producing operations, it is equally true that abandonment of operations designed to serve a trunk pipe line system will be higher than the average abandonment pressure for the field as a whole, because of the economic factors controlling pipe line operations. Therefore, it seems to the witness very reasonable to assume that the economic life of Canadian's reserves will be determined by the economic life of the Texas Panhandle Field as a whole. (Exhibit 266, pp. 11a, 12, 13.)

Gill stated that by reason of the foregoing, it is his opinion that Canadian will be unable, economically, to supply all of its anticipated market requirements from its gas reserves in the Texas Panhandle Field beyond the year 1951, but that it will be able to supply a portion of such markets at declining rates until about the year 1956, when the economic life of the property for the purposes required by Canadian will definitely terminate. This conclusion on the part of the witness is modified only by his opinion that the economic limitation on development and the economic limitation on producing operations may very probably be reached before the dates stated. (Exhibit 266, p. 14.)

Gill testified on cross examination that the life of the Canadian reserves are far more closely related to the total life of the field than to the quantities of gas currently in place under their particular properties. The witness stated that it would be physically possible for Canadian to recover all of the gas currently in place under their properties by blowing the gas into the air, but as a practical matter they will not ever recover the quantity of recoverable gas which now exists under their properties. The witness stated that Hammer, Commission witness, might have the idea that it would be physically possible for Canadian to recover the volume of gas under its properties, and it may be physically possible for it to do so, but from a practical situation such an assumption is sophistry of the wildest sort. The witness further stated that if he desired to indulge in pure sophistry he would say that Canadian could recover all of its recoverable gas now under its property but it would be necessary for them to drill a lot of wells and blow a tremendous quantity of gas into the air. That as a practical matter Canadian would never recover anywhere near all of the

quantity of gas which now exists under its properties. (Vol. XCIII, pp. 14264, 14266-14269.)

The witness has examined the individual pressure performance of some of Canadian's wells and has examined in some detail the performance of pressures over the Canadian Area as a whole from year to year, and he has related withdrawal pressure performance in the Area involved to withdrawal pressure performance in other parts of the field on production and pressure performance from the beginning down to January 1, 1938. His study has been made not so much with respect to particular wells but with respect to the isobaric contourings of the area which were determined by the pressures of individual wells. The witness has not followed the pressures through from year to year on a specific well because that isn't the important thing. The important thing is the pressure in the area as reflected by proper isobaric contours which is of significance. He has constructed pressure maps of the Texas Panhandle Field at various times and to that extent he has considered the pressures of all the wells. (Vol. XCIII, pp. 14295, 14296.) Upon being asked whether he thought that Canadian could recover all of the gas under its acreage by the present wells within a reasonable length of time he replied that he did not think it would ever recover all of the gas under its acreage out of existing wells, or out of existing wells combined with any wells they might drill. As a practical matter Canadian will never recover anywhere near the quantity of gas which now underlies their leases in the Texas Panhandle Field. The question of how much gas can be recovered out of a given existing group of wells is a question of the period of time involved. Canadian will have to drill additional wells in order to hold their potential production, their open flow, up to a point where it can meet its daily demands. It will have to drill additional wells in order to recover and utilize the quantity of gas which it will eventually recover out of the property which will be much less than the quantity of gas that now underlies the property. Additional wells will necessarily be drilled, not for the purpose of adding anything to the quantity of gas existing under the property, because this would not do it, but of adding to the daily producing ability which Canadian must have to meet its market demands. (Vol. XCIII, pp. 14316, 14317.)

The witness stated that in making an estimate of the

future expectancy of the wells of Canadian it would be necessary to study the probable future life of the Texas Panhandle Field as a whole. (Vol. XCVIII, pp. 14334, 14335.)

The witness reiterated the statement made in his direct testimony that if given a sufficiently long period of time a single well could drain all of the recoverable gas out of any permeably inter-connected porous system, even though the size of the system was as great as that of the Texas Panhandle Field, and that the reservoir characteristics which makes this theoretically possible have had a tremendous influence on the performance of the field in the past and would be of controlling importance down to the very end of its producing life. (Vol. XCIII, p. 14321.)

Gill then was referred to the series of pressure maps prepared by Dunlap (Exhibit 239). He was then asked if he had studied the individual production from individual wells in each one of the pressure bands to ascertain whether or not the movement of the particular pressure bands from year to year is due to drainage or production within the area. The witness replied that he had not made a specific study band by band as to those particular maps but that he had made those studies generally in the field and was thoroughly familiar with the general facts as to the gas withdrawals. He has studied the withdrawals from various parts of the field in sufficient detail to state very definitely that the pressure changes, as reflected by the maps, are caused by drainage. His only detailed study with respect to pressure bands and the movement of the same, is summarized in the written statement in Exhibit 266 and in the table on page 10. The witness stated in his direct testimony, as shown by page 10 of Exhibit 266, and the table in connection therewith, that actual recoveries per acre pound out of the West Panhandle Field have varied over a range of nearly forty to one, and that these recoveries have varied continuously and regularly across the field. The data contained in the table shows the relationship between gas recovered in various pressure bands. It will be noted that where the loss in pressure, for example, has been only ten pounds, the recovery per acre pound has been only 8.7% of the average yield for the field as a whole, and where the loss in pressure has been over 330 pounds, the

recovery per acre pound has been 353.5% of the average yield for the field. In other words, the lowest pressure area in the field has recovered approximately forty times as much gas per acre pound loss in pressure as the highest pressure area in the field. The witness stated that much of this discrepancy in the rates of recovery is due to subsurface drainage of gas. (Exhibit 266, p. 10.) Slight changes in the form of the pressure contour bands (isobars) on the Railroad Commission's maps from year to year is of very little importance. The important thing is the general trend as shown by the large features as to pressure changes. Looking at the entire series of maps there is shown a great over-all eating back of a low pressure area into Moore and Potter Counties from the Borger-Sanford area. This indicates a great drainage trend, although there have been local effects within the area. It is entirely possible that some portions of Canadian acreage would pick up some gas out of other parts of Canadian acreage. The high pressure area in Potter County represents acreage of Canadian from which much of the drainage would necessarily come. The witness has made a study to determine physically the cause of the over-all sequence of development of low pressure back into Moore and Potter Counties. Very definitely that general over-all development is occasioned by the large regional drainage of gas out of that area into the area of very heavy withdrawals which lie generally in southwestern Hutchinson County. The tabulation on page 10, Exhibit 266, (hereinabove referred to) shows very positively that the Canadian acreage in Potter and Moore Counties has suffered extensive drainage. (Vol. XCIX, pp. 15295-15300, 15325.)

Gill stated that Dunlap's series of pressure maps, Exhibit 239, do show exactly what has taken place when considered in general as to broad details which reflect the trends of drainage in the sequences that are shown from year to year. The series of maps show very well and very thoroughly that drainage has occurred. (Vol. XCIX, p. 15302.) Witness again reiterated that the study of individual wells would have no bearing with respect to the question of regional drainage. It is true that the gas that was withdrawn came out of individual wells, but it is the average withdrawals over large geographical units that prove conclusively that the extension of low pressure back into Moore and Potter Counties is the result of drainage of those areas. The low

pressure area extending out from the Borger-Sanford area didn't reach over into Potter County instantly. The effective drainage into the Borger-Sanford area was beginning to show up in Potter County along about 1937. (Vol. XCIX, pp. 15307, 15308.) . The witness stated that he had made a particular study as to the general accumulated per-acre withdrawals averaged over the areas included in various pressure bands and this showed conclusively that the extension of the low pressure area in pressures of less than 400 pounds which had extended into Potter and southern Moore Counties over a period of years resulted primarily from drainage of gas out of Potter and southern Moore Counties rather than from withdrawals of gas out of wells located within those areas. The general extension of low pressure contours in a southwesterly direction outward from the Borger-Sanford area has resulted primarily from drainage of gas out of Potter and Moore Counties rather than from withdrawals of gas out of wells located within those areas. The general extension of low pressure contours—in a southwesterly direction outward from the Borger-Sanford area has resulted primarily from drainage of gas out of Potter and Moore Counties toward the lower pressure areas. (Vol. XCIX, pp. 15310-15312.)

The witness further stated that the pressure decline of practically every well lying in southeastern Moore County and in southwestern Hutchinson County has been influenced by drainage of gas out of Potter County acreage. This does not mean that a cubic foot of gas that originally lay in Potter County has moved on over and come out of a well in the Sanford area. It does mean that gas which was originally close to that well in the Sanford area has been moved toward the well by expansion which carried back from pressure band to pressure band and which ties into expansion of gas over into Potter County and drainage of gas out of Potter County. (Vol. XCIX, pp. 15314, 15315.) It is obvious that gas is draining into the Sanford area as reflected by the increase in pressures of many wells in that area since 1935. (Vol. XCIX, pp. 15316, 15317.)

The witness was then asked if it was not true that if there was any drainage out of Canadian acreage it would be out of that portion of its acreage located in the southwestern part of Hutchinson County. The witness replied that there

undoubtedly was drainage out of such acreage but at the same time the acreage was receiving extensive replenishment of gas as a result of drainage from the southwest, and it was losing gas extensively to the northeast. Canadian leases in southwestern Hutchinson County show a general decline in pressure. The replenishment from the southwest has been less in total effect than the combined effect of production and drainage loss, and therefore, there has been a decline in pressure. The fact that the pressure band from 300 to 350 pounds in southwestern Hutchinson County has moved slowly to the southwest indicates that the combined effect of drainage of gas out of that area and the production of gas out of wells in that area slightly exceeded the replenishment that that area had received by drainage into it from the southwest. (Vol. XCIX, pp. 15320, 15321, 15324.) The witness does not have the exact figures as to the production by Canadian from its leases in southwestern Hutchinson County, although he does know the approximate volume that has been produced. Witness did state, however, that the average per-acre withdrawals in that area had been less than the average per-acre withdrawals in the immediate adjacent sour gas area. (Vol. XCIX, p. 15321.)

Testimony of the Various Witnesses Relating to the Life of Canadian's Reserves.

Stanley Gill has testified at length on this question, which testimony has been heretofore abstracted. During the course of his testimony on the subject, generally, he stated the following:

> "It seems * * * very reasonable to assume that the economic life of Canadian River Gas Company's reserves will be determined by the economic life of the Texas Panhandle Field as a whole." (Vol. XCI, p. 14047, Exhibit 266, p. 13.)

Thompson testified that the life of Canadian's reserves as a practical matter is the same as the life of the Texas Panhandle Field as a whole. (Vol. XCIV, p. 14387.)

Hughes testified that the life of Canadian's gas reserves was about the same as the life of the field as a whole for the production of natural gas for long distance pipe lines. (Vol. XCV, pp. 14638-14639.)

Massa testified that the life of the field as a whole and the life of Canadian's reserves are the same. (Vol. LXXXIX, p. 13551.)

Peterson did not testify specifically on this point but did testify generally that:

> "The life of each lease must depend upon the life of the field." (Vol. LXXXII, p. 12229.)

Dickinson, witness for the Commission, testified generally that the life of Canadian's reserves was about twelve years from January 1, 1940, and that his company, which gets a portion of its gas from Canadian's acreage, considered that there would be no more pipe line property in service by the end of 1952. (Vol. LXIV, p. 9232.)

Additional Testimony With Respect To Canadian Acreage.

MAX K. WATSON, witness for Canadian, also testified on cross examination (Vol. 21, pp. 2968-2974; 2979-2980; 2990-3004; 3013-3018) as follows:

Q. Now, on Page 2, right below that listing of wells for each year you have this statement:

"With the exception of five so-called exploratory wells involved in lease obligations, the above drilling program contemplates that the wells to be drilled * * *" and so forth.

What five so-called exploratory wells do you have in mind?

A. This one well on the City of Amarillo section called the City of Amarillo test No. 1 and four wells to be drilled on the Bivins Consolidated lease, according to the contracts.

Q. Now, then, those five are included in this total of 41?

A. Yes, sir.

Q. Now, one has been drilled and that is the dry hole that you referred to, the City of Amarillo?

A. Yes, sir.

Q. Now, is any one of these remaining four so-called exploratory wells involved in your 1941 figure of five wells?

A. 1941 estimate?

Q. Yes.

A. Yes, there is one well included in 1941.

Q. Now, under what lease or leases are these five so-called exploratory wells set forth or where are the obligations to drill those wells set forth?

A. The four exploratory wells in the Bivins Consolidated lease.

Q. Four of them?

A. And one in the acreage acquired from the City of Amarillo.

Q. All right, one is already drilled. Now where in the Bivins Consolidated lease acreage are these exploratory wells to be drilled that you say are obligations under that lease?

A. We are to designate, as I recall it, the blocks of acreage. I'm afraid I can't answer that question. I am trying to say it from memory and we better refer to the lease.

Q. Those provisions are set forth in the lease, in the Bivins Consolidated lease?

A. Yes, sir.

Q. And do you have any independent knowledge of where that acreage is located with reference to the other acreage of Canadian River Gas Company?

A. In general?

Q. Yes, the acreage on which these exploratory wells are to be drilled.

A. They are south of that white line we called "Fault Line."

Q. In other words, south of the "Fault Line" on this exhibit 13-A, aren't they?

A. Generally south of there. Now, I don't know whether that is the same line to which I am thinking or not, but if that is our fault line they are south of it.

Q. All right, what does this fault line indicate on this map?

A. It indicates the probable limits of production with the information we have available today.

Q. Probable limits of production and that production has been north and east of the fault line, hasn't it?

A. Yes, sir.

Q. But this group of wells termed "Exploratory Wells" would be drilled south of that fault line?

A. I believe in every instance they would be drilled south of our fault line, as established by our own engineers.

Q. South of the boundary of the field?

A. That established by our own engineers.

Q. Yes. Well, is there any production in that area south of that fault line?

A. Yes, sir.

Q. Gas?

A. Yes, sir.

Q. In the Bivins lease?

A. Yes, sir.

Q. In this lease under which you are proposing to drill these exploratory wells?

A. Not in the consolidated lease, no.

Q. Not in the consolidated lease?

A. No, sir.

Q. And you are drilling these so-called exploratory wells specifically under drilling obligations, is that the reason you have them set forth?

A. As I remember it, they are specifically required.

Q. You wouldn't drill them down there if you didn't have a drilling obligation?

A. Well, possibly. When—

Q. You mean you would drill them in the area south of the fault line on this lease with the view of obtaining gas if you had no drilling obligation to do it?

A. Well, there may be gas down there.

Q. Has the company drilled any wells down there excepting these that they propose to drill under, as you say, a drilling operation?

A. The one City of Amarillo test.

Q. Is that in the Bivins field?

A. No, sir, it is in the area.

Q. I am talking about this great big block of acreage under this Bivins Consolidated lease that you would call the exploratory well area, whether the company has drilled any wells in that area itself before this.

A. Yes, sir.

Q. When?

A. 1928 or 1929.

Q. That is right. What did it find? How did the wells turn out?

A. Gas wells.

Q. Where are they located?

A. In the helium structure—the Cliffside structure.

Q. The Cliffside structure?

A. Yes, sir.

Q. I still say that it isn't within the acreage upon which you propose to drill the exploratory wells.

A. I don't know. We won't know until we drill.

Q. You don't mean to say the Cliffside structure is included in the Bivins Consolidated lease at present?

A. Maybe there are some sections in it. I don't know.

Q. Do you know exactly where these groups of acreages are upon which these exploratory wells are to be drilled?

A. It is fairly well scattered from Amarillo north clear into our present block of proven acreage.

Q. You yourself said the fault line is the line indicated on that map as representing the outline of the field, the proven field, didn't you?

A. I said as defined by present information.

Q. That is right. That is what we are going by. This is your company's map.

The so-called exploratory wells that you are proposing to drill and you have in this drilling program are being drilled to comply with the drilling obligations under the Bivins Consolidated lease?

A. They may also be to prove the information available today.

Q. Is that why you gave instructions to put in it this list, or did you put it in here to have them here involved in drilling obligation?

A. I put them in this list because the lease says specifically that they have to be here.

Q. Why do you make this statement—in other words, that is the only reason you put them in this lease, because the lease obligation requires you to drill them?

A. That isn't the reason I put them in here.

Q. That is the only reason you based the drilling on?

A. The only reason I based this drilling personally.

Q. You *way* that with the exception of five so-called exploratory wells involved in lease obligation, the above drilling program contemplates that the wells to be drilled will be completed as wells capable of producing gas in average quantities. In other words, in that statement you

are proposing to drill the other wells with a view of getting gas but you don't have such hopes with these exploratory wells?

A. It isn't very probable.

Q. It isn't very probable that you would get gas?

A. I don't know. You might say that that is a layman's opinion; not being a geologist, I don't know.

• • • • •

Q. And the Cliffside structure is not in this acreage upon which you are going to drill the exploratory well?

A. It is not in there, no.

Q. Where is it located with reference to this acreage upon which you are going to drill these exploratory wells, the Cliffside structure in relation to this acreage?

A. It is possibly—some of this acreage in the Consolidated Bivins lease may be in close proximity if not on the Cliffside structure.

Q. From your lease records you can certainly determine whether the Cliffside structure is separate or is a part of this acreage on which you are going to drill these exploratory wells, can't you?

A. I don't think the Cliffside structure is defined by the Government—that any of the acreage on the Cliffside structure is defined by the Government as included in this Bivins Consolidated lease because the Government had already purchased all the land which they thought at that time was in the Cliffside structure, but it is possible some of the acreage lies close to the Cliffside structure.

Q. Let me ask you this: Is there any producing gas well in this acreage in the Bivins lease that is set aside for these exploratory wells?

A. No, there is no gas produced from any of the acreage which is set aside for these exploratory wells.

• • • • •

Q. Now, then, this acreage on which these exploratory wells would be drilled, the first well in that group, is that reflected on this map?

A. The first well drilled when?

Q. To be drilled on that exploratory program.

A. It is somewhere on that exploratory lease.

Q. Where would that be located?

A. It isn't designated yet.

Q. Aren't those tracts set out as to each year, the num-

ber of acres in each tract, and then you determine where the well is to be drilled during that year?

A. I don't recall. As I understand it, the tracts are designated just before they are drilled, however, it may be those tracts have been designated and the map not definitely located on those tracts.

Q. I see. Now, that first well that was drilled on that exploratory program that you mentioned this morning—I want to come back to that. Where was that drilled, the well that resulted in a dry hole?

A. We have drilled two exploratory wells, you might say, since we acquired the Consolidated Bivins lease.

Q. The last one that resulted in a dry hole, what section was that drilled in?

A. In the Bivins exploratory lease?

Q. Yes.

A. The only one drilled was in Section 49, D & P Railroad, Block 018.

Q. That is colored yellow on the map?

A. Yes, sir.

Q. Now, then—

A. That well was drilled in 1939.

Q. 1939?

A. Yes.

Q. What did that well cost?

A. I don't have any figure on that.

Q. You don't have any figure on that?

A. No.

Q. Was the drilling of it contracted out or did your company drill it?

A. It was drilled the same as all the other wells have been drilled in the last several years.

Q. By the Phoenix Drilling Company?

A. Yes.

Q. And to what depth did they drill?

A. Possibly I have that information here. (Examining documents.) Yes, here it is.

Do you want the definite location on that?

Q. Yes.

A. Bivins A-26 was located 2,640 feet from the west line, 3,068 feet from the south line, Section 49, Block 018, D & P

Railroad Company survey, Potter County, Texas. The drilling was completed December 16, 1939. It was drilled to a total depth of 3,547 feet.

Q. No production at all was shown from that well?

A. No gas production, no, sir.

Q. Was there any oil production?

A. No, sir. It had a lot of salt water production, though.

Q. And you will get the cost of that well?

A. Yes, we can get that.

Q. All right. After that was drilled, isn't it a fact that the company, instead of drilling on a second block of that acreage, exercised its option and released the whole acreage, that whole block, rather than drill on the acreage?

A. I believe they did but I don't think I would know that definitely.

Q. You don't know whether on April 27, 1940 they exercised the option not to drill on the second block of that acreage and released it back to the lessor under the lease agreement?

A. I recall discussing that with Mr. Ford but I have never seen correspondence or a release on that.

Mr. Lange: We have a copy. It is not certified, but we would like to file it. We will have to make copies of it for counsel, it being subject to check for accuracy.

(The document referred to was passed to counsel.)

Mr. Keffer: We have no objection to the instrument being offered, if Mr. Lange desires to offer it, with the reservation, however, that we will have an opportunity to check it as to accuracy.

Mr. Lange: Oh, yes. It will be subject to check for accuracy.

The Trial Examiner: Now, Mr. Lange, I don't believe you stated exactly what the document was.

Mr. Lange: While the instrument doesn't bear any particular label, it purports to be a release of a certain block of acreage under the Bivins Consolidated lease, purportedly under provisions of that lease which are referred to in the instrument.

The Trial Examiner: What was the date of that instrument, Mr. Lange?

Mr. Lange: It is executed by Canadian River Gas Company, R. E. Wertz, Vice President, bearing the company's seal, and it is attested to by the Secretary, bearing date of April 27, 1940. We will have copies of it made in order to supply them to counsel.

The Trial Examiner: Very well. It will be marked for identification as Exhibit No. 96.

(Exhibit 96, Witness Watson, marked for identification.)

The Trial Examiner: I understand that you offer it in evidence, do you not?

Mr. Lange: Yes, sir.

The Trial Examiner: You have no objection to it being received in evidence subject to the provision you stated?

Mr. Keffer: That is right.

The Trial Examiner: Exhibit No. 96 will be received in evidence.

(Exhibit 96, Witness Watson, received in evidence.)

By Mr. Lange:

Q. Mr. Watson, do you know of the execution of that release of a block of this exploratory acreage on the Bivins lease?

A. No, sir, I have never seen it before.

Q. Will you read it and check it for accuracy in so far as you are informed as to the acreage involved?

A. I couldn't check it by just reading it, no.

Q. This is, as you have heard, a release of a certain acreage executed by Canadian River Company, It includes in that release designated acreage totaling 10,102.70 acres and gives that acreage by sections, and wherever it is only a portion of a section it so indicates.

Now, then, from that description could you point out on this map where the acreage is situated?

A. Yes, from that description I can pick it out on the map.

Q. Now, with reference to the Bivins lease indicated in yellow on this map, can you mark with an X mark those sections that are included in that release?

A. I expect I can find them.

Q. All right. Read each one when you check it so the reporter can get it down. If it is only a part of the section, so indicate.

A. This is designated as Drilling Block No. 1 in the so-called Bivins Consolidated lease. Section 17, the west-half and south quarter of Hartley County, 480 acres—this is going to take me some time.

Q. Well, I can read them off to you and you can locate them on the map. Will that speed it up?

A. I might as well have the data in my hands. To locate these sections as they are spread out on the map, I am going to have to check and double-check it. It is no simple job to check the sections.

Q. Where are they located generally?

A. This is a definite location or section which I will have to put a cross through.

Q. Very well, mark each one as you locate it.

The Trial Examiner: Are you putting a cross in there to signify the section?

Mr. Lange: He is putting an X mark in there to signify the section included in the release.

The Witness: I just mentioned this section which I will designate on the map now by an X mark.

Section 18, north 480 acres in Hartley County. The heading of this list of acreage should have been designated as Capital State Syndicate Survey, Block No. 21.

Q. All right.

A. It is designated on this map as B21-CSS.

Section 19, portion, all; located in Hartley County, 640 acres.

Section 29, portion, all; located in Hartley County, 365.7 acres.

Section 30, portion, all; located in Hartley County, 608 acres.

In the Capital State Syndicate Survey, Block No. 20, the following sections or portions of sections:

Section 26, portion, all; located in Hartley County and Oldham *Counties*, 597.6 acres.

Section 27, portion, all; Hartley and Oldham Counties, 640 acres.

Section 25, portion, all; in Oldham County, 234.4 acres.

Section 24, portion, all; located in Oldham County, 640 acres.

The next heading is Gunter & Munson, Block No. 2.

The Trial Examiner: How do you spell the first name?

The Witness: Gunter, G-u-n-t-e-r.

Did I read that for Section 24, portions all, in Oldham County, 473 acres? (No response.)

Section 23, portion, all; in Oldham County, 640 acres.

Section 67, portion, all; in Oldham County, 657 acres.

Section 27, portion, all; Oldham County, 322 acres.

Section 26, portion, all; in Oldham County, 325 acres.

Section 68, portion, all; Oldham County, 755 acres.

Section 64, portion, all; Oldham County, 640 acres.

Section 65, portion, all; Oldham County, 6440 acres.

The next group is East Line and Red River Railroad Survey, Block 9.

Section 1, portion, all; in Oldham County, 320 acres.

Section 2, portion, all; Oldham County, 320 acres.

That concludes this list, subject, of course, to correction.

Q. That is the total acreage indicated on this instrument, this release of approximately 10,102.70 acres?

A. Yes, sir, according to this instrument.

Q. Now, then, this block of acreage of 10,102.70 acres was released by the company in the exercise of its option under the Bivins lease not to drill that well, but, rather, to release this acreage and eliminate it from the lease?

A. According to that instrument, that is correct.

Q. So, under that the company would not have to—strike that.

In view of this release, the company did not have to drill that well and spend the amount of money that you had indicated as a minimum amounting to $30,000 per well that would have to be spent for the drilling of that well?

A. According to that instrument, that is correct.

Q. The only other well they drilled under these exploratory provisions resulted in a dry hole?

A. That is correct.

Q. Now, then, as I understand it, the company has the privilege under the Bivins Consolidated lease to release a similar block of acreage each year rather than drill and expend that amount of money in a minimum of at least $30,000? They could do that, couldn't they?

A. (Pause.)

Q. They could release the acreage rather than spend the money for the drilling of the well, couldn't they?

A. I believe that instrument states that.

Q. And if that is correct, the provision of the lease provided that that could be done with reference to these remaining four wells that you included in your drilling program, couldn't it?

A. Not according to that instrument. That covers only one 10,000-acre block.

Q. It covers only one 10,000-acre block?

A. Yes.

Q. But the company could proceed in like fashion for each of those four years if they desired?

A. I do not know whether that is right or not.

Q. You don't know?

A. No.

Q. You wouldn't say they could not do it?

A. No.

Q. It depends upon how long the lease reads?

A. That is right.

Q. You do know they did it in this one instance?

A. Yes, sir.

Q. And if they had the privilege to do it under the lease in this one instance and would exercise such an option each year, it would obviate the drilling of four wells out of their 1941 well program?

A. It would eliminate the exploratory wells.

Q. Yes, or a total minimum cost estimated by you as $120,000, being $30,000 per well?

A. That is correct.

Q. I notice this block of acreage that was included in this lease was all lying south of the fault line. Isn't that correct?

A. Yes, sir.

Q. You haven't had the opportunity to determine the accuracy of the map with reference to the several leases reflected thereon; however, all of this group of acreage which you said was designated in that release is in the portion shaded yellow, isn't it?

A. All that I have marked on the map as designated in that instrument, Exhibit No. 96, was.

Q. Yes.

A. It was in the territory colored yellow on the map.

Q. The legend on the map recites that the acreage colored yellow is the Bivins acreage embracing a total of 167,994.94 acres?

A. The legend on this map shows the same color as far as I can tell, designated yellow on the map; designation, number 30; lease named, Bivins; acreage, 167,994.94; per cent, 51.69.

Q. And this lease of some 10,000 acres comes out of that total acreage?

A. I don't know what it comes out of.

Q. The release cites it as out of Bivins acreage?

A. That is correct. It comes out of the Bivins consolidated acreage. As to whether it is that figure or not, I do not know.

Q. This figure in the legend is subject to correction as to accuracy and you are not substantiating that at this time.

Now, then, I notice this map carries the descriptive matter, as far as acreage and geographical locations are concerned, down to the City of Amarillo. This morning we were not able to spot-check the exact location of that dry hole drilled by your company in the vicinity of Amarillo. Can you do that now, Mr. Watson?

A. If I refer to my working papers to find the definite location of it, I can. (Examining document.) 167, 1980 feet

from the east line; 2640 feet from the south line of Section 167, Block 2, A. B. & M. Survey, Potter County, Texas.

The Trial Examiner: How did you designate it there? with a circle?

The Witness: With a circle.

By Mr. Lange:

Q. Now, that section isn't colored, is it, Mr. Watson?

A. No, sir. On this map it is not colored.

Q. It is not colored on this map. Now, it is joining a section that is colored yellow?

A. That's correct.

Q. That is Section 190?

A. Section 190.

Q. Then there is some other yellow sections, aren't there?

A. Yes.

Q. In that group. What are the others that are contiguous to the 190 that are colored yellow?

A. There is 480 acres out of Section 223; 480 acres out of Section 191.

Q. All of those that join the yellow group?

A. Section 192—full section 192; two-quarters of Section 221; two-quarters of Section 193. All of those are sections joining the section in which the City of Amarillo well was drilled, or joining each other.

Q. You haven't drilled on any of those sections, have you?

A. We have not.

Q. Any of those yellow sections that you just named.

A. We have drilled no wells on any of those yellow sections just named.

Q. And you stated this morning on request that you would get the copy of the lease on that section that you drilled the dry hole. You said you didn't have it but would get it.

A. A copy of the lease on Section 167?

Q. Yes.

A. Yes, sir.

Q. As well as the assignment of any part of the acreage.

A. We can get that.

Q. Now, do you have any information on which you can block this acreage in the Bivins lease on which these exploratory—on which the next exploratory well is to be drilled?

A. No.

Q. Well, could you block all of the acreage on which this group of four exploratory wells would be drilled regardless of their location?

A. Not from the information I have at present with me.

Q. Well, you have it available, don't you?

A. I expect it will be included in that Bivins Consolidated lease.

Q. From which you could block all of the acreage included in this area where the four exploratory wells would be drilled?

A. If those areas you designate are in that Consolidated lease, then I could tell in general where those wells would be drilled, but not the year in which each individual well would be drilled in each specific block.

Q. That's right, but you could mark an X on each of the blocks just as you did on the—as it has now been marked. Given those sections, why, you can mark all of those on the map?

A. All of those included in the exploratory lease.

Q. That's right.

* * * * *

Q. Now let's go to 1942. You have got six wells planned for that year?

A. Yes, sir.

Q. One of which is this exploratory well and in connection with that as with the exploratory well for 1941, if the provisions of the lease of the Bivins Consolidated are such that the company may exercise an option to release that block of acreage in lieu of incurring drilling obligations, why, that would eliminate one of those wells, wouldn't it, in 1942? If that is correct?

A. I don't know what that would be. This is my schedule.

Q. But I say, if the company has that option and exercises it like it did under this block under which they got a release, then there would be one well less in that program?

A. Then they would instruct me not to drill that exploratory well.

Q. Then that would leave five wells for 1942.

A. That is correct.

Q. Now, then, what is the first of those five wells? Where is it going to be and why is it going to be drilled?

A. Two wells will be drilled on a Bivins Consolidated lease for the same reasons for those drilled in prior years.

Q. Under this provision (b), to satisfy obligations under the lease?

A. As the period which we have estimated our development program to cover, as that period progresses the wells that we will drill will also begin to come under the requirements of our peak day, average peak month demands, that we will need that gas for other than such lease requirements.

Q. All right, let's see the first well that you are going to need. Is 1942 going to get into that part of the picture as to additional well requirements or additional amounts of gas to meet peak requirements?

A. It is going to be most difficult for me to say in what year any one well might be required for that purpose. I have looked at this program over the period from 1940 to 1947 and I have considered only average conditions, the probabilities, and although I have designated the well each year, it was for the purpose of only developing an early program, as being more economical and more practical from an operating point of view. Now, as to whether I drill a well in 1942 to supply my peak day will be most difficult to determine.

Q. All right, then, assuming that when you get to 1942 you are going to begin needing such a situation where peak days are going to require additional gas and therefore you have reached the conclusion that then you will have to drill another well.

A. No, I would believe that in 1942 we probably wouldn't need either of those wells for a peak day, but, however, a prudent operator would never drill right up to only his requirements. He would have a certain leeway, as explained this morning, for emergencies which the hazards of the business always force you to face one day or another.

Q. Well, how have you arrived at any even remote conclusion that by 1942 your peak days are going to require the gas that you could produce from an additional well?

A. Well, we'll refer to my Exhibit No. 94, Page 2, the middle of the paragraph, middle of the page:

"In arranging the program, the period covered has been considered as a whole and the total number of wells required has been to some extent apportioned over the years covered.

in order to avoid an abnormally large drilling program in any one year and to obtain the benefit of the knowledge gained from drilling a few wells for the purpose of most advantageously locating subsequent wells."

Q. Is that the basis on which you are proceeding in your drilling program for 1942?

A. Yes, sir.

Q. All right, now, aside from this lease obligation that you refer to, just tell us by what method you arrive at this conclusion that you are going to require this additional gas that will be produced from that well in order to take care of your peak days.

A. I figured my requirements in 1947, the number of wells I would require between the date of 1940 to 1947 and I distributed the drilling of those wells as uniformly as possible over the period covered from 1940 to 1947. Therefore, my requirements were estimated over the total period, as for any lease.

Q. All right, what are the mechanics that you went about in estimating those requirements?

A. We used the official Railway Commission tests as obtained in July and August of 1940 as to the potential of the wells on that date, on the date of which it was tested and the same curve would indicate the potential of any well at any other rock pressure. Now, that is as to the wells that are now drilled. I have the definite back pressure curve as obtained from the Railway Commission tests on the dates indicated.

Q. You have plotted that curve?

A. Yes, sir.

Q. Do you have a copy of it?

A. Yes, sir.

Q. Can we have it?

A. That curve?

Q. Yes.

A. They are in my work sheets and all bound together—quite a little book of it.

The Trial Examiner: We will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Lange:

Q. What does this represent, Mr. Watson, this document?

A. They are sheets or curves plotted on log log paper in the back of this book which represents the test on each individual well as conducted jointly by the Railway Commission and the Canadian River Gas Company.

The Trial Examiner: The Railway Commission of Texas?

The Witness: The Railway Commission of Texas and the Canadian River Gas Company.

By Mr. Lange:

Q. How did you arrive at the construction of the average curve that you have on the first page?

A. The average curve—this book also contains a curve which I have designated as an average back pressure test, sweet and sour wells, from Railway Commission tests in 1940. That curve represents an average of all of the tests included as to each well in this same book.

Q. Now, how did you arrive at the rock pressure tests that you have for the year 1947?

A. I would like to read from my exhibit which is explicit. Page 3, the paragraph in the middle of the page:

"The future drilling program outlined above is based upon an average rock pressure decline of approximately 100 pounds during the period estimated, within the general area in which future wells of the company will be drilled. This is a judgment figure based upon my observation of the past performance of gas wells of the company as well as other gas wells in the field; also upon my knowledge of general conditions prevailing in the field."

MAX K. WATSON further testified on cross examination (Vol. 22, pp. 3055-3057; 3058; 3065-3070; 3081; 3100-3102) as follows:

Q. Now, referring to this Exhibit 94, Page 3, the center of the page, you make this statement:

"The future drilling program outlined above is based upon an average rock-pressure decline of approximately 100 pounds during the period estimated."

That is a period from what time to what time?

A. From 1940 to 1947.

Q. The period estimated?

Mr. Keffer: Are those years inclusive?

The Witness: Those years are inclusive.

By Mr. Lange:

Q. Then you continue on:

"• • • within the general area in which future wells of the company will be drilled. This is a judgment figure based upon my observation of the past performance of gas wells of the company as well as other gas wells in the field; also upon my knowledge of general conditions prevailing in the field."

Now, then, in arriving at this so-called judgment figure, what relation did you make to this so-called 100 per cent drop in pressure?

A. 100 per cent?

Q. 100 pound figure. I beg your pardon—drop in pressure.

A. I referred to the performance of the whole field, the trend within our own block of acreage and specific wells, the history of specific wells within our acreage, the history of specific wells throughout the Panhandle field.

Q. Well, did you consider the amount of past production of your company's wells, let's say during the past three years?

A. No, sir. That had no bearing at all on what I was studying.

Q. It had no bearing at all?

A. No, sir.

Q. The past production from your wells?

A. I was taking the trend of rock-pressure decline. As to its cause, I didn't investigate.

• • • • •

A. We possibly will not have rock pressures on all wells in any one month in any one year because they couldn't be shut in for sufficient time—

• • • • •

Q. You are still of the opinion that the judgment figure that you have used on Page 3 is better than just confining yourself to the company's actual past history?

A. Yes, sir.

Q. Why?

A. For this reason: We had not suffered appreciable drainage prior to about 1938. If you will look at your rock-pressure map of the Panhandle field, our acreage is the only one with the exception of a smaller part of the Cities Service in which there is practically—not practically, but close to virgin rock pressure, so it is obvious that somebody must supply the gas that has already been withdrawn from the field. Since the pressure is higher on our acreage than where it is being produced, we are going to suffer increased rate of migration.

Q. With reference to—

A. Therefore, the rock pressure would decline at a faster rate than increasing increment.

Q. Has there been any increases in rock pressures in any of your wells?

A. There has been an increase in indicated rock pressure but any individual rock pressure is subject to errors of the observer, for one thing, and another is that the well may have been pulled continually at a high rate and had not recovered its rock pressure. If you take any specific date on any specific well and pay no attention to the trends of before and after, there you will find it will be misleading. because a well cannot have an increase in rock pressure as rock pressure when there are withdrawals continuing in the field.

Q. How do you account for that showing of an increase when there is such a showing?

A. As I explained, the first might be that a person, a man observes that pressure and reads it as he sees it. Of course, he is reading a pressure gauge or dead-weight gauge and he might misread it and not knowing he has misread it report it to the office. We record that pressure because it has an observation. He may have read it right.

The next observation, if it shows an increase, shows that pressure was not rock pressure but some other pressure and it may have been a partial rock pressure or an error in observation. Therefore, a specific rock pressure taken by it self may be a normal increase or an abnormal decrease, but

the trend is if enough pressures are taken you have eliminated the possibility of the things I have just mentioned.

Q. Just as you mentioned, too, there may be that same character of error reflected in a reading that shows a decrease of pressure?

A. Yes. It is the same way unless the decrease continues for subsequent and prior rock-pressure recordings. If it is a consistent decline, you can check that pressure as being correct because you don't make the same error each time you read it.

Q. In your experience, how frequently or how common are such errors in the reading of the pressures?

A. I don't believe a man would make the same error twice for the reason that if we see an abnormal pressure, either high or low, we call it to the tester's attention. When he goes back to the well he is as much interested as we are in getting the right answer. He would be careful in taking the pressures as of that date and the well would be left shut in if it did not increase in pressure any more, if it was possible to do so, and the next pressure would be; more than likely the correct pressure, although still the error might be there as to the length of time shut in.

Here is what I am trying to point out: If I go to a well on January 1, 1940 and I get 390 pounds; then I go there in March and get 400 pounds, and I go there in June and I get 400 pounds; I go there in July and I get 398 pounds, and I go there later in the year and get 397 pounds—I never did observe a pressure less than 390 pounds—I naturally could eliminate 390 pounds because the trend was from 400 pounds down, indicating that the 390 pounds should have been 400 or 401 pounds, and the other pressures, because they showed the trend carried on throughout the subsequent observation period was declining, which it should do. There can be no reason for a well increasing in pressure unless the production around that well or in that area has decreased or you might say ceased. That has been the case in the Borger area, but they were withdrawing a normal amount of gas and it was migrating in. When the distributing law was passed the field was shut in and the heavy withdrawals were discontinued. Then the pressures began to build up. We have one well which I am satisfied the pressure has built

up two or three pounds over a period of a year. It was over in that heavy withdrawal area.

Q. Which well is that?

A. Bivins B-5.

Q. Bivins B-5?

A. Yes.

Q. And how did that behave?

A. It builds up, as I recall it, two or three pounds after the shut-down order was made and stripping was stopped it built up a few pounds because it was close to heavy withdrawals. Naturally, the withdrawals were holding that pressure down and as soon as it shut down the pressure built up. It built up possibly for a year or two and the natural decline took effect again as it started down and has continued down.

Q. Do you have any other well that behaves in a similar fashion?

A. That builds up?

Q. Yes.

A. A continuous buildup over a period of time that I would be willing to accept as a buildup?

Q. Yes.

A. I don't believe there was. Possibly our Bivins B-2, the closest to the Bivins B-5, may have built up or the rate of decline may have decreased but I am not certain of that. It is an area in there that was suffering excessive drainage.

Q. How do you know that it was suffering excessive drainage?

A. From the rapid decline of rock pressure.

Q. You relate that directly to the rapid decline of rock pressure as indicated in those wells?

A. I don't necessarily, but it certainly indicates the rapid decline and certainly indicates rapid withdrawals and we weren't withdrawing it at any rapid rate so it must have been migrating out of that area.

Q. Well, why has there been no drilling on those leases and the company continues to hold them anyway?

A. Because drilling wasn't required.

Q. And those leases, then, don't get any protection under the company's equitable prorations program?

A. I presume they are protected by some other means other than including them in the proration picture.

Q. Now, then, in any of these proposed wells you have set forth on this list on Page 2, eliminating those so-called exploratory wells, would any of those wells in the remaining list be drilled in the sweet gas area, all of them in the sweet gas area?

A. All of them would be drilled in the sweet gas area.

Q. They would?

A. Yes.

Q. Now, then, on Page 8 of Exhibit No. 94 you have this provision: "Sour Gas Treating Plant"—before I get to that I wish to ask you this: Does the company have no producing wells at present that have sufficient—strike that "sufficient"—that have a volume of gas—no, that have a quantity of sour gas sufficient to keep them off the line?

A. We can produce from those sour gas wells a small quantity of gas which will not contaminate the total amount of gas pressure so it will not be usable for pipe line use, so if all of the wells with the exception of one are producing small quantities of gas—

Q. Into the line at present?

A. Very small quantities to the line at present.

Q. Can you spot those wells on the map?

A. Yes, sir.

Q. Will you do so?

A. Bivins A-9, located in Section 6, C & S S, Block 21; Bivins A-10, Section 18, G & M, Block 2; A-8, Section 4, E L & R R R, Block 25; Bivins A-22, Section 13, G & M, Block 2, which is not connected. Those locations, especially the block numbers, are subject to correction.

Q. Yes. That is the total of how many wells that produce sour gas?

A. Four wells.

Q. What is the percentage? Have they been tested with reference to the quantity of sour gas?

A. Yes.

Q. What do they show?

A. Varying quantities. Beginning with the well closest to the sour line it is a little less than two grains as determined by the Texas Railroad Commission, and getting progressively more sour west to, as I recall it, it is approximately 9 grains or 12 grains, on Bivins A-9 as tested by the Canadian River Gas Company. The Railroad Commission was only interested in locating the sour gas line and they

assumed that all wells west of that line were sour and did not test them, and such is the case.

Q. What are the open flows of those wells, the last that you have record of?

MAX K. WATSON further testified on cross examination (Vol. 30, pp. 4156-4159) as follows:

Q. Now, Mr. Watson, the company proceeded with the drilling and actually completed the drilling of that Amarillo No. 1, didn't they?

A. Yes, sir.

Q. And what was the approximate total cost of that well?

A. Approximately $49,000.

Q. Approximately $49,000?

A. Yes.

Q. And just so that it ties right in at that point—it may be in the record heretofore—what was the approximate time that that well was completed? What month and year?

A. Early in 1940.

Q. Early in 1940. Do you recall the month?

A. No. I can find that in the record here somewhere. The City of Amarillo No. 1, completed June 17, 1940.

Q. Completed June 17, 1940?

A. Yes, sir.

Q. Now, then, if that well had been brought in as a producing gas well—strike that.

Are there any producing gas wells right in that locality on any of that acreage in that locality?

A. The Helium structure produces about ten miles northwest of that location.

Q. Not any gas producing well is in existence on any of the yellow Bivins blocks on this map, Exhibit No. 95, is there?

A. No, sir.

Q. And you stated that the company had not heretofore drilled any of those blocks on the Bivins acreage?

A. Oh, yes.

Q. Contiguous to the acreage on which this Amarillo No. 1 was drilled?

A. That block to which you are referring on that Bivins consolidated lease—

Q. Yes.

A. —is not all contiguous to that City of Amarillo test. That block is spread out all over Potter County.

Q. But the block itself, all of which is contiguous to one block of Bivins acreage—

A. Some of the acreage is contiguous to the City of Amarillo test but not all of it.

Q. That's right, but not on any one of those sections in that yellow acreage designated on the map, Exhibit No. 95, contiguous to or adjoining the acreage on which Amarillo No. 1 was drilled has heretofore been drilled by Canadian River Gas Company?

A. No. There are only two thousand acres of that block contiguous. The other eight thousand acres is somewhere else.

Q. I see, but I want to get definitely fixed that there is no well drilled by Canadian River Gas Company as a test on any of this Bivins acreage contiguous to Amarillo—

The Trial Examiner: What is that section number, Mr. Lange?

Mr. Lange: Section 190.

Q. Now, then, if this well Amarillo No. 1 had been brought in as a producing gas well, where would delivery of that gas have been made?

A. Probably would have been made on the Amarillo Oil Company lines supplying Amarillo with gas, if there had been a gas well.

Q. If it had been an oil well, according to this Exhibit 123, the Amarillo Oil Company having retained the oil rights, what would have happened to the well?

A. I don't know. I suppose the Amarillo Oil Company would have had an oil well.

Q. You don't know under what arrangements that would have been handled?

A. No, sir.

Mr. Keffer: Right in that connection, Mr. Lange, I believe the agreement shows precisely how it would have been handled.

Mr. Lange: I was asking whether this witness knew of his own knowledge.

We will prepare the necessary copies of the three exhibits 122, 123 and 124, Mr. Examiner, and make them available.

Exhibit 123 introduced by Commission constitutes the agreement between Amarillo Oil Company and Canadian River Gas Company with respect to the well drilled by Canadian River Gas Company on land owned by the City of Amarillo, and which was drilled near the city limits of Amarillo. Said Exhibit provides that Amarillo Oil Company should assign to Canadian the gas rights on oil and gas leases aggregating in excess of 4,000 acres, including three tracts that Amarillo Oil Company had contracted for but had not at that time acquired title.

The contract among other things provides:

"Amarillo Oil Company will assign the leases listed above and such leases as it acquires under the contracts mentioned above, to Canadian River Gas Company on the following terms and conditions:

"A. Amarillo Oil Company will assume the entire cost of acquiring such leases and contracts for leases;

"B. Amarillo Oil Company will retain the oil and oil rights;

"C. Canadian River Gas Company will assume the obligation as to the drilling of the test well as provided for in the proposed lease from City of Amarillo to Amarillo Oil Company, covered by the agreement with the City of Amarillo above described;

"D. Amarillo Oil Company and Canadian River Gas Company shall enter into an Operating Agreement for the purpose of defining their respective rights and obligations with respect to such leases as are assigned, the terms and provisions of such Operating Agreement to conform with those contained in that certain Operating Agreement dated January 3, 1928, entered into originally between Canadian River Gas Company and Amarillo Oil Company, subject to such changes and modifications thereof as may be deemed necessary or advisable by counsel or agreed upon by the parties; provided, however, that in the event of conflict between the terms and provisions of said Operating Agreement last above referred to and the terms and provisions of the leases to be assigned, it is understood and agreed that the terms and provisions of said leases shall control."

The gas rights on the entire acreage were to be assigned to Canadian free of cost to Canadian but with the obligation upon Canadian to drill a test well on such acreage.

If the well drilled had been an oil well Amarillo Oil Company would have been obligated also to have paid for the well. Exhibit 16.

J. D. THOMPSON, JR., testified that he had recommended that this well be drilled. His testimony is as follows:

"Q. (March) Did you recommend the dry hole drilled down here by the city limits of Amarillo?

"A. Yes.

"Q. I notice Canadian River has some acreage there. Did you think possibly that there was gas there?

"A. Yes.

"Q. You wouldn't recommend the drilling of a dry hole if you knew there wasn't any gas there, or had good reason to believe there wasn't any gas there, would you?

"A. No. * * *" (T. 11168-11169).

Mr. Thompson further testified as follows:

"Q. Do you know whether or not, Mr. Thompson, that well showed both oil and gas?

"A. Yes, they had a show of oil and a show of gas, and it showed a favorable structural situation, just about as had been anticipated from our work, * * *" (T. 11169).

The Bivins consolidated lease at the time of the hearing contained approximately 40,000 acres in exploratory drilling blocks of approximately 10,000 acres each which had not been drilled or released. This acreage is designated as undeveloped acreage. The lease provides that the obligation to drill upon any one of these 10,000 acre tracts may be eliminated by surrendering the acreage. The lease also provides that such acreage may be held in force and effect in the absence of drilling by the payment of an annual delay rental of $1 per acre as to each 10,000 acre block upon which a well is due but has not been drilled. (Exhibit 129.)

J. D. THOMPSON, JR. further testified with respect to the exploratory drilling blocks contained in the Bivins consolidated lease as follows:

"Q. (March) • • • Do you consider all that acreage worthless?

"Mr. Keffer: To which acreage are you referring?

"Mr. March: The acreage of the Canadian River Gas Company below the southern boundary of the field (below the fault line).

"The Witness (Thompson): No.

"Q. (March) What do you mean by saying it is not worthless if it is outside the boundary of the field?

"A. In my opinion it has oil and gas possibilities, although it is not proven." (T. 11162.)

Thompson then elaborated still further upon the production possibilities of this acreage. He called attention to the fact that the Helium Dome in Potter County from which the United States Government produces large volumes of gas is also located south of the Potter County fault line and is not within the boundaries of the Texas Panhandle Field. He said that the Helium Dome constituted a local structural high which had trapped a large volume of gas. He also called attention to the fact that there was a well located in Section 37, Block 5 G&M Survey, Potter County, which originally had a good flow of gas. It will be noted from an examination of Commission's Map 95 that this well is located only about one and one-half miles from Canadian acreage south of the fault line (T. 11163-11164).

Thompson also made the following statement:

"Now, it has been quite a problem to me to try to evaluate the oil and gas possibilities of the Canadian River acreage below that fault line. I have spent a lot of time considering it and there have been surface geological surveys made in areas where we have outcrops that permit that and certain areas have shown favorable conditions from the standpoint of surface geology.

"I have also taken into consideration the favorable indications from the standpoint of sub-surface geology such as this anticlinal structure that I have already described, and then there has also been made a magnetometer survey which indicates certain favorable areas and that has been further checked by torsion bal-

ance survey which indicates favorable areas and in several instances these favorabl indications by these various methods coincide in a given area and that makes me very reluctant to dispose of that acreage until we have had test wells drilled, and even though the results of one test well on one area might turn out to be a dry hole, it might develop information which would cause me to make—or to recommend a location in that immediate area not far from the dry hole." (T. 11164-11165.)

Thompson further stated that he could not give the Canadian acreage south of the fault line any reserve figure at this time because it was unproven acreage (T. 11168). Thompson stated that the acreage does have production possibilities.

On further redirect and recross examination with respect to Canadian acreage south of the fault line (Vol. 76, pp. 11168-11170) the witness stated:

Q. Well, Mr. Thompson, now, if your estimate of reserves is a correct figure, why is it that you leave out all of this area that you think will be productive of gas?

A. I didn't say I thought it would be productive. I said that I thought it should be explored before we released it.

Q. Hasn't a great part of it been explored?

A. No.

Q. You would consider it too valuable to release?

A. Yes.

Q. Did you recommend the dry hole drilled down here by the city limits of Amarillo?

A. Yes.

Q. I notice Canadian River has some acreage there. Did you think possibly that there was gas there?

A. Yes.

Q. You wouldn't recommend the drilling of a dry hole if you knew there wasn't any gas there, or had good reason to believe there wasn't any gas there, would you?

A. No. You drill a great many dry holes in exploratory work. That's how oil and gas fields are found is just to hop out in the middle of an undrilled area and see what you get, and the use of geology and geophysics merely reduces the hazards a little bit.

Q. Now, so much for that end of the field south of the Potter County fault line.

Mr. Keffer: I wonder if I could ask a question on the Amarillo well?

Mr. March: Why, certainly. Go ahead.

Mr. Keffer: Do you know whether or not, Mr. Thompson, that well showed both oil and gas?

The Witness: Yes, they had a show of oil and a show of gas, and it showed a favorable structural situation, just about as had been anticipated from our work, but where these shows occurred the porosity was so limited—I don't suppose there was more than six inches of formation that showed any porosity at all and that was very low porosity.

By Mr. March:

Q. What was the per cent porosity of that well?

A. I don't know, but I looked at the samples and I could see that it was very tight and just one sample in each instance, as I remembered it, showed some pore spaces in the rock, and I considered that had the porosity and permeability been present we would have had a commercial well. The structural situation was favorable.

Q. That well wasn't drilled on Canadian River acreage, was it?

A. I believe it was.

Q. Mr. Thompson, before we go to the north, I want to ask you this question about the helium dome: Do you think there is any possibility of any drainage between the Panhandle field proper and the helium dome?

A. No.

Q. Why is that?

A. Because there is no interconnection.

Q. How do you know there is no interconnection?

A. The helium dome has a much higher rock pressure than the main Panhandle gas field.

Wallace testified (Vol. 52, pp. 7266-7276) as follows:

Q. Now, what other acreage in the Bivins lease have you classified at $1 per acre?

A. 64,748.34 acres. Generally that acreage that I have classified in "C" classification is below the fault line; that

is, the recognized southwestern boundary of the field and the acreage from the field south to the city of Amarillo, Texas.

Q. And the fault line is the staggered line indicated on Exhibit No. 95?

A. I believe that fault line is as it is staircased by the Canadian River Gas Company but I have used the fault line as nearly as possible that has been adopted by the Texas Railway Commission. A fault line usually runs straight. It doesn't run stairsteps.

Q. All of this acreage is below both of those lines, isn't it?

A. Yes, with the exception of possibly a portion of some of the leases that may extend over the fault line.

Q. Now, this acreage in that Section 190, right immediately north of Amarillo, that is, you say, in your opinion, one that has a value of $1 an acre?

A. At this time I don't think it has a value of more than a dollar an acre.

Q. You would say it even has a value of $1 an acre for gas production purposes?

A. A dollar an acre does not entirely represent the value for gas. I have given it $1 an acre—$1 an acre for this acreage, because it is part of one lease; it is all validated, and there is a great deal of it that is "Wild-Cat," of which you know, and I have considered a dollar an acre was a fair value as a carrying charge, not as a value of gas.

Q. What in your opinion do you define as "Wild-Cat" acreage?

A. Acreage that is not accepted as proven acreage.

Q. As a matter of fact, there is no gas well that has ever been brought in on any of that acreage?

A. No, but there are some dry holes on some of it.

Q. The dry holes have a very definite indication there is no gas in that particular area?

A. No, just in the well.

Q. But every well that has been drilled in that area has been a dry hole?

A. That is right.

Mr. Keffer: Just a minute, Mr. Lange. What do you mean "in that area"?

Mr. Lange: This acreage he has under "C" below the fault line.

Mr. Keffer: You mean in the area on that acreage or in the general area?

Mr. Lange: On that acreage.

Mr. Keffer: There are two different things there. There are gas wells in that area but none of it is on this particular acreage.

By Mr. Lange:

Q. There is no producing gas well that has ever been drilled on what you classified under "C" in the Bivins lease?

A. No.

Q. Do you know the provisions of the Bivins Consolidated lease and what has to be done by the lessee in connection with that lease?

A. Yes, they are to drill or cancel.

Q. To drill or cancel?

A. Yes.

Q. There is no definite obligation for them to drill if they desire to exercise an option to cancel?

A. No.

Q. In any year they so desire they can cancel that particular drilling block or that block of acreage by so notifying the lessor?

A. That is correct.

Q. Without drilling and without any obligation?

A. That is right.

Q. And without any way affecting the remainder of the leasehold?

A. That is right.

Q. Then you still believe that in the light of the history of that particular acreage that you classified as "C" under Bivins, what has happened to it is it is still worth $1 an acre?

A. Yes, I do, because it covers such a large acreage and there are so many unknown quantities. It may be possible a pool may be discovered where that acreage is located.

Mr. Keffer: Could I interpose a question there, Mr. Lange?

Mr. Lange: Yes.

Mr. Keffer: Would you come to the map which is marked

as Exhibit No. 95 and look in Section 37 in G-M Block 5 Potter County, and tell me what you find there on the Commission's map?

The Witness: A gas well is marked there.

Mr. Keffer: What is the size of that gas well?

The Witness: It came in originally purported to be 7,000,000 cubic feet. I don't know what it is at this time.

Mr. Keffer: What is marked on the map?

The Witness: 7,000,000.

Mr. Keffer: 7,000,000?

The Witness: Yes.

Mr. Keffer: Is that well south of the fault line?

The Witness: It is south of the fault line and it is a very deep well.

Mr. Keffer: How far is it from a substantial portion of this "C" acreage that is contained in the Bivins Consolidated lease?

The Witness: Approximately a mile and a half or a mile and three-quarters.

By Mr. Lange:

Q. Whose well is that? Who owns that well?

A. It is purportedly owned by the Humble. I do not know the ownership of it just now. It may still belong to Humble.

Q. Going back to this 190 acres immediately north of the city of Amarillo, do you know anything about the well that was drilled by Canadian River on an acreage adjoining that?

A. Yes, I observed the drilling of that well from practically top to bottom.

Q. You did?

A. Yes.

Q. That was a dry hole?

A. Yes, sir.

Q. And what other drilling operations took place on that particular acreage?

A. On that particular lease?

Q. Yes.

A. There was an old well drilled about 2,000 feet deep, as reported on that map, that seems to correspond with the place on the map where I have indicated there. I think it was drilled by the City of Amarillo. It was a dry hole. It was only drilled 2,000 feet deep.

Q. When was it drilled?

A. I don't have the history of it.

Q. Was it drilled prior to the other well?

A. It was drilled prior to the well of the Canadian River.

Q. How far is that acreage from the nearest producing gas well?

A. This map—if this map was marked up to date—I don't believe it is—indicates it is about seven or eight miles from the helium gas field that is controlled by the United States Government.

Q. Is there any producing gas well closer than that?

A. Not unless that map is not accurate. I don't believe we have marked our map accurately, at least, I have not on the helium pool. I would have to check it. There are more wells in on the helium pool than I see on that map, but I don't know the location. I will say they are not close to that acreage as they are several miles removed.

Q. Now, the Bivins Consolidated lease aside from this acreage that is below the fault line, *covera* acreage above the fault line that is in the producing area, doesn't it?

A. Yes.

Q. And as you stated, this group of acreages that are covered by the Bivins lease below the fault line are subject to the company releasing them if they don't drill or pay delay rentals?

A. Yes.

Q. And you have given that acreage a value of $1 an acre?

A. Yes.

The Trial Examiner: You said something about there being a carrying charge, Mr. Wallace. What do you mean by that?

The Witness: That is a term we use in our industry. We quite often have leases that we don't consider of very much value but yet there is a remote possibility, particularly if they are scattered over large areas where there are

deeper sands or something that they might come in; but yet at the present time, there is nothing to indicate any lease value; for the fact that they are part of one large lease or within or are checker-boarded, we usually call it a carrying charge or a carrying value of a dollar an acre. It doesn't represent the commodity. The oil and gas rights might be worth more, but it might cost more than that to secure a lease from a landowner so we call that a carrying charge in oil field terms.

By Mr. Lange:

Q. When you speak of a carrying charge, that is not to be in any way related to what you term market value?

A. Yes, it goes into the market value with a lease of 313,588.38 acres and having 64,000 of it that is not determined as proven acreage and not in the generally accepted proven acreage. I believe that all Class C acreage probably would sell. The 64,000 acres covers such an enormous area as it does there might be a possibility of some pools coming in.

Q. Let's take the Class C acreage standing alone, what about that?

A. That 64,000 acres amounting to $64,000, I believe there is enough evidence—the well we spoke of I presume is the Humble which will give you some encouragement—

Mr. Keffer: Just a correction there. The Humble at one time owned that but it has been sold to the Government. It serves as part of their helium reserve.

The Witness: I don't know what disposition was made of it. Another factor is that some of the dry holes that have been drilled in there have had some small showing of gas.

By Mr. Lange:

Q. You still value them at $1 an acre?

A. Yes.

Q. Do you think it is good operating management for Canadian River Gas Company to just release a whole block of 60,000 acres like that because they don't want to drill on it?

A. Yes, I think with the enormous proven acreage they have I would release it.

Q. You would just let that go and charge it off?
A. I would.

Mr. Keffer: I didn't get your answer.

The Witness: I said, yes, with a proven—with a large proven acreage I think I would personally consider the lease practically of the same value and accept $64,000 as it is.

By Mr. Lange:

Q. And if they release subsequent blocks, as they have the right to do, that would be good operating management?
A. I don't see that it would affect the producing lease in the least. I think the earnings that property would show—producing property and proven property wouldn't be affected in the least by the surrender of the "C" acreage.
Q. That would wipe out your Class C valuation there?
A. Yes, sir, that is right. If they didn't own it, I wouldn't classify it, but owning it I considered a dollar an acre sufficient.

* * * * *

Wallace further testified (Vol. 52, pp. 7277-7278) as follows:

Q. Now, as I understand from your statement, referring to all of the remainder of the Class C acreage under the Bivins lease, do you know—first of all, on which of those sections there have been any drilling operations heretofore?
A. On Class C acreage?
Q. Yes, C leases.
A. I am afraid I will have to get my own map. I may be able to find it from this one. There is in Section 2, A, B & M 20, there has been a dry hole drilled or indicated as a dry hole on this map. The records show that that well did have some gas but apparently too small to class as a commercial well.
Q. I see.
A. You asked just for the Bivins C acreage?
Q. Yes.
A. In Section 49 of Beatty and Moulten Survey, Block 2, there was a dry hole drilled which is on the Class C acreage. that is all.

Mr. Keffer: How far apart are those two dry holes?

The Witness: Those two dry holes are—

Mr. Keffer: Just approximately. Guess at it, is all. 20 miles?

The Witness: I would say approximately 30 or 35 miles apart.

The well log of Masterson D-4, introduced by Commission Counsel and marked Exhibit 229, is as follows:

This is the best this can be photographed because it is very tightly bound.

4803

Exhibit No. 229

ANADIAN RIVER GAS COMPA
ENGINEERING DEPARTMENT
COMPLETION REPORT

Work Order No. 469
Project Commenced Aug 5, 1938
Project Completed Sept. 19, 1938

DIVISION Production
TITLE OF PROJECT Recondition Well
LOCATION Masterson D-4
Description of Work Completed

Contractor: Company tools

Cement bridge in well, take down well fittings. Run 10-3/4" O. D. casing on bridge & cement

Gas Used M.c.f.

CASING & TUBING RECORD

e	Wgt.	Thds per Inch	Casing Run	Pulled	Set At	Cement Record
3/4"	40# & 45½#	8 thd	1465'		1465'	Cemented with 160 sacks quickstrength

PACKER RECORD

Size: Make: Type: Set At:

CLEANING OUT RECORD

Cleaned out From: 1465' To: 1510'

Production Before: ? R.P. 261# After: 100,000 M. R.P. 386#

LINER RECORD

ze	Wgt.	Thds per In.	Liner Run	Pulled	Set At

arks: Put in cement bridge (60 sacks) on top of mud at 1440'. T.D.1670'. Ran 1465' 10-3/4" casing and cemented with 160 sacks cement. Drilled out plugs & cement to 1510' when well blew out.

Reported by E. E. Masterson 11/4/38 Approved By, R A Ford Date 11-5

This is the best this can be photographed because it is very tightly bound.

4805

Exhibit No. 229

WELL RECORD

COMPANY: Canadian River Gas Company

COMPANY WELL NUMBER: 8

R. B. Masterson "D" 55 N. Y. 134

LOCATION: 384' fr NL, 270' fr EL, Sec. 108, Blk O-18, D&P Survey, Potter County, Texas

LOCATION MADE BY

ELEVATION: 3496' BY

DRILLING COMMENCED: 10-15-19 11-29-19

ANY TOOLS WERE USED FROM FEET TO

ABLE TOOLS WERE USED FROM FEET TO

NAME AND ADDRESS OF DRILLING CONTRACTOR

CASING AND TUBING RECORD

WT. PER FT.	THREADS PER IN.	CASING DIA.	CASING PULLED
		20"	80'
		5½"	182'
		3"	None

OIL AND GAS SAND RECORD

FROM	TO	TOTAL FEET	VOLUME	
1640	1645	5		1/2 Mil. Cu. Ft. Gas
1660	1665	5		Gas Sand
1665	1670	5	107,000 MCF	

WATER SAND RECORD

FROM	TO	TOTAL FEET	VOLUME	
416	420	4		Water
475	485	10		Water
698	715	23		Water
735	780	45		Water

TOTAL DEPTH OF WELL: 1670' DEPTH AFTER PLUG

INITIAL PRODUCTION: 107,000 M.C.F. DATE

INITIAL ROCK PRESSURE: 430# DATE

REMARKS (CASH RECORDS, PACKERS, PLUGGING BACK, LOST TOOLS, CROOKED HOLE DATA ETC.)

(Drilled by Amarillo Oil Company)

(See Supplemental Report on Reconditioning Well)

2118

FEDERAL POWER COMMISSION

EXHIBIT NO. 229 (FOR IDENTIFICATION)

DATE IDENTIFIED

APPROVED BY

2118
229

MASTERSON D-4 FORMATION RECORD

0	38	38	Soil
38	44	6	Red rock
44	48	4	Lime
48	58	10	Grey shale
58	145	87	Red rock
145	150	5	Gyp
150	155	5	Red rock
155	160	5	Gyp
160	270	110	Red rock
270	285	15	Water sand
285	310	25	Red rock
310	324	14	Gyp
324	370	46	Red rock
370	380	10	Red rock & Gyp
380	395	15	Gyp
395	410	15	Red rock
410	445	35	Gyp & gravel
445	460	15	Red rock
460	485	25	Gyp
485	490	5	Red rock
490	510	20	Gyp
510	520	10	Red rock
520	545	25	Gyp
545	550	5	Red rock
550	580	30	Gyp
580	585	5	Red rock
585	605	20	Gyp
605	610	5	Red rock
610	657	47	Gyp
657	692	35	Brown shale
692	715	23	Quicksand-water
715	725	10	Gumbo
725	735	10	Red rock
735	780	45	Quicksand-water
780	786	6	Red rock
786	805	19	Blue gyp
805	940	135	Red rock
940	960	20	Gyp
960	1020	60	Red rock
1020	1045	25	Gyp
1045	1095	50	Red rock
1095	1160	65	Gyp
1160	1170	10	Red rock
1170	1190	20	Gyp
1190	1205	15	Red rock
1205	1225	20	Gyp
1225	1235	10	Red rock
1235	1255	20	Gyp
1255	1260	5	Red rock
1260	1300	40	Gyp
1300	1310	10	Red rock
1310	1360	50	Gyp
1360	1370	10	Red rock
1370	1420	50	Sand
1420	1425	5	Red rock
1425	1490	65	Brown rock
1490	1510	20	Red rock
1510	1635	125	Lime
1635	1660	25	Blue shale
1660	1665	5	Gas sand - 1/2 mil. Cu. Ft. Gas
1665	1680	15	Blue shale
1680	1685	5	Gas sand
1685	1690	5	Gas sand - 107,000 C.F. gas

(Well completed and shut in November 29, 1917.)

The well log of Bivins A-18, introduced in evidence by Commission Counsel and marked Exhibit 221, is as follows:

Exhibit No. 221

WELL RECORD

CANADIAN RIVER GAS COMPANY

Well Number 28 — Other Well Number

Divine "A" — Lease Number 30

2619' F. N. [illegible]' F. W. Sec. 17, Blk M-20, GH&H Survey,

Potter County, Texas

Map Coordinates: O-13

Location Made 8/28/36 by W. M. Clifton

Elevation 3068' by W. M. Clifton

Drilling Commenced 9/28/36 Date Drilling Completed 11/5/36

Rotary Tools Were Used From [illegible] Feet To [illegible] Feet, and From [illegible] Feet To [illegible] Feet, and From

Name and Address of Drilling Contractor Wynnewood Drilling Company, Amarillo, Texas

CASING AND TUBING RECORD

20"	90'	A.S.A.	1/2"	42'0"		
8 5/8"	2252'	8 "	2252'		2250'	Cemented with 100 sacks cement.
15½"	200'	A.S.A.	203'10"	None	203'10"	Cemented with 50 sacks cement.
12½"	528'	"	513'0"	513'0"		
10"	1458'	"	1512'1"	1512'1"		

OIL AND GAS SAND RECORD

From	To	Total Depth	Volume	Cumulative Volume	Remarks
12'	180	878			Sand
430	440	10			Sand
535	545	10			Sand
855	865	10			Sand
875	900	25			Sand
955					Heaving sand
1810	2250	450			Show of gas
2370	2610	240			Gas Increase
					Final Cague 1.P 18,720 MCF

WATER SAND RECORD

From	To	Total Depth	Volume	Remarks
885				Hole full of water.
115	160			Sand Water
430	440			Sand water.

Total Depth of Well 2720 — Depth After Plugging Back

Initial Production 18,720 M.C.F. — Date 11/21/36

Initial Rock Pressure 1434 — Date 11/21/36

Remarks (Body Records, Packers, Plugging Back, Lost Tools, Crooked Hole, Data, etc.)

Approved By: [signature]

BAD PRINT

Exhibit No. 221

FORMATION RECORD

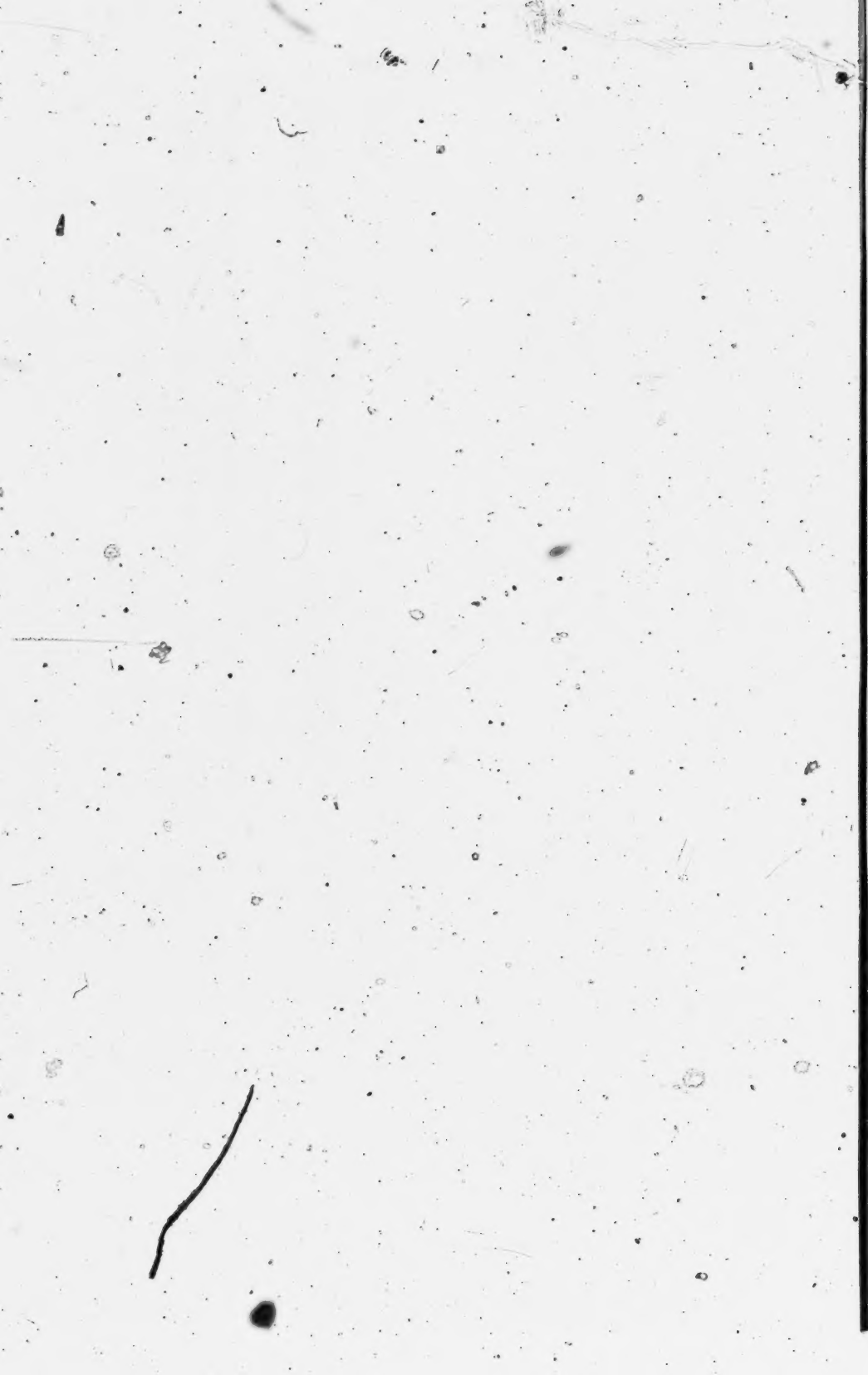
0	12	12	Caliche	1620	1670	10	Red rock & Salt
12	55	43	Sand	1670	1735	65	Salt & gyp
55	115	60	Sand	1735	1763	28	Salt & red rock
115	180	65	Sand	1763	1765	30	Gyp
	190	10	Sand	1765	1780	15	Blue shale
	200	10	Red rock	1780	1795	15	Dark blue shale
	213	13	Gyp	1795	1800	5	Red rock
	215	2	Gyp	1800	1820	20	Gyp
	295	80	Red rock	1820	1870	50	Red rock
	370	75	Red rock	1870	1875	5	Green shale
	420	50	Red rock	1875	1898	24	Red rock
	430	10	Red rock	1898	1905	7	Red rock & gyp
	440	10	Sand water	1905	1960	55	" " & blue shale
	530	90	Red rock	1960	1980	20	" " "
530	535	5	Red rock	1980	2000	20	Lime broken
535	545	10	Red sand	2000	2005	5	Red rock
545	550	5	Red shale	2005	2020	15	Lime broken
550	555	5	Gyp	2020	2060	40	Broken lime
555	558	3	Gyp	2060	2110	50	" "
558	561	3	Red rock	2110	2135	25	" "
561	595	34	Gyp	2135	2150	15	Lime
595	598	3	Red rock	2150	2185	35	Lime
598	615	17	Gyp	2185	2210	25	"
615	665	50	Gyp	2210	2240	30	"
665	675	10	Gyp	2240	2252	12	"
675	710	35	Gyp	2252	2275	23	"
710	725	15	Red rock	2275	2300	25	"
725	750	25	Gyp	2300	2315	15	"
750	785	35	Gyp	2315	2330	15	"
785	825	40	Blue shale	2330	2360	30	"
825	835	10	Hard sand-Water	2360	2380	20	"
844	865	21	Sand	2380	2460	80	"
865	875	10.	Shale	2460	2460	80	"
875	885	10	Sand	2460	2510	50	"
885	895	10	Sand	2510	2525	15	"
895	900	5	Sand	2525	2565	40	"
900	905	5	Red rock	2565	2585	20	"
905	908	3	Gyp	2585	2600	15	"
908	945	37	Red rock	2600	2603	3	Red rock
945	955	10	Red rock	2603	2605	2	Lime
955	980	25	Heaving sand	2605	2625	20	Lime
980	1000	20	Sand	2625	2640	15	"
000	1020	20	Red rock	2640	2644	4	"
020	1045	25	Red rock	2644	2651	7	Green shale
045	1075	30	Red rock	2651	2665	7	Red rock
075	1105	30	Red rock	2665	2675	10	Lime
105	1115	10	Red rock	2675	2715	40	Granite wash
115	1135	20	Sand	2715	2720	5	" "
135	1150	15	Red rock				
150	1175	25	Sand	2720	Total depth.		
175	1185	10	Red rock				
185	1205	20	Red rock & salt				
205	1235	30	Red rock & salt				
235	1260	25	Red rock				
260	1263	3	" "				
263	1265	2	Gyp				
265	1280	15	Red rock & salt				
280	1300	20	" " "				
300	1320	20	" " "				
320	1345	25	Red sand				
345	1365	20	Sand				
365	1375	10	Sand				
375	1395	20	Sand				
395	1400	5	Red rock				
400	1465	65	Red rock & gyp				
465	1515	50	" " "				
515	1560	45	Salt & shale				
560	1590	30	Salt				
590	1620	30	Anhydrite				

FEDERAL POWER COMMISSION DOCKET NO.
EXHIBIT NO. 221 (PRO [illegible])

[illegible] SION

B 118

224



60. Amortization, Depreciation and Depletion—Canadian.

Accumulated Depreciation and Depletion and Its Application to the Original Cost of the Producing and Gathering Properties of Canadian as of December 31, 1938.

For the respondent there was introduced and received in evidence (Vol. XCVIII, p. 15279) Exhibit No. 272, entitled as above, and prepared by Witness H. E. Roberts.

The identity and qualifications of Witness Roberts (Vol. LXXXXIV, pp. 14413, et seq.) are as follows:

Full name: H. Emmett Roberts, 39 Broadway, New York City; age 44; graduate of East Orange, N. J., High School and Sibley College, Cornell University, with M.E. Degree in 1918. Upon graduation entered employ of Westinghouse Lamp Company, Bloomfield, New Jersey, and from there went with Thomas A. Edison Company, West Orange, N. J. In the summer of 1919 entered employ of FB&D, Inc., where he has remained since. His work with FB&D has been in the capacity of an engineering specialist in the valuation of industrial and public utility properties, including the valuation of pipe lines for public utilities, oil refineries and industrial plants, distribution properties of gas, water and electric companies, oil and gas wells, electrical and miscellaneous equipment of public utilities and industrial plants, and retrospective appraisals.

Some of the principal companies on the valuation of which he has worked are: Atlantic Refining Company; Livingston Oil Corporation; Standard Oil of California; Peoples Natural Gas Company; Keen & Woolf Oil Company; Oklahoma Natural Gas Company; Okmulgee Gas Company; Kansas City Gas Company; Richfield Oil Company of California; Hope Natural Gas Company; Arkansas Natural Gas Company; New York Steam Company; Ponca City Gas Company; Amarillo Gas Company; West Plains Gas Company; Sinclair Consolidated Oil Company; Ohio Fuel Gas Company; Panhandle Pipe Line Company; the East Ohio Gas Company; Philadelphia Suburban Water Company; United Fuel Gas Company; Natural Gas Company of West Virginia; Indianapolis Gas Company; Indiana Gas Utilities; Pennsylvania State Water Corporation; Colorado Interstate, and Canadian.

In connection with the valuation of pipe lines he made field studies of the performances attained in the construction of pipe lines. One of these studies covered the whole construction period of a 60-mile long pipe line (4 in.) for the Carbide and Carbon Chemicals Corp. from Leach, Kentucky, to South Charleston, West Virginia.

Mr. Roberts has worked with Mr. Rhodes in connection with the reproduction cost appraisals of the pipe line properties of Canadian and Colorado Interstate. He has spent a good part of his time during the last year or so in connection with the work which FB&D has been doing in the present rate case, beginning in March, 1939. As assistant to Mr. Rhodes he was Field Engineer in Charge and worked on depreciation, that is, condition of the property, as well as on reproduction estimates. (Vol. LXXXXIV, pp. 14415, et seq.)

Exhibit 272 consists of three statements numbered 1, 2 and 3.

Statement No. 1 is captioned: "Canadian River Gas Company Accumulated Depreciation and Depletion of the Original Cost of Production and Gathering System Property as of December 31, 1938."

Statement No. 2 is captioned: "Canadian River Gas Company Segregation of the Original Cost of the Production and Gathering Properties to Direct Costs and General Construction Costs, as of December 31, 1938."

Statement No. 3 is captioned: "Canadian River Gas Company Accumulated Depreciation of Original Cost of General Properties and its Allocation by Property Systems, as of December 31, 1938."

Statement No. 1 is as follows:

Statement No. 1
Canadian River Gas Company
Accumulated Depreciation and Depletion of the Original Cost of Production and Gathering System Property as of December 31, 1938
Summary of Accounts

Item No. (1)	Account No. Company (2)	Description (3)	Original Cost Adjusted (A) (4)	Accumulated Depreciation and Depletion Per Cent (5)	Accumulated Depreciation and Depletion Amount (6)
		Production System			
1.	205	Leaseholds	$ 5,075,906	36%	$ 1,827,326
2.	211	Gas Well Construction	2,189,659	31	678,794
3.	212	Gas Well Equipment	931,900	31	288,889
4.	209	Field Measuring Station Structure	8,543	17	1,452
5.	215	Field Measuring Station Equipment	46,854	11	5,154
6.	216	Drilling and Cleaning Equipment	24,244	....	.....
7.	218	Field Measuring Station Land	100	....	.....
8.		Total	$ 8,277,206		$ 2,801,615
9.		General Property (Allocated) (B)	56,273	25	14,169
10.		Total Production System	$ 8,333,479		$ 2,815,784
		Gathering System			
11.	206	Rights of Way	$ 13,485	....	.....
12.	213	Field Line Construction	282,334	7	$ 19,763
13.	214	Field Line Equipment	864,495	7	60,515
14.	221	Field Compressor Station Structures	2,969	18	534
15.	224	Field Compressor Station Equipment	13,779	16	2,205
16.		Total	$ 1,177,062		$ 83,017
17.		General Property (Allocated) (B)	44,781	22	9,855
18.		Total Gathering System	$ 1,221,843		$ 92,872
19.		Total Production and Gathering Systems	$ 9,555,322		$ 2,908,656
20.		General Construction Costs Applicable to Production and Gathering System	586,193		161,041
21.		Total Original Cost of Production and Gathering System Property	$10,141,515		$ 3,069,697

Notes: (A) As shown on Exhibit No. 183, adjusted as shown on Statement No. 2 attached.
(B) As shown on Statement No. 3 attached.

This Exhibit 272 is prefaced by an explanatory statement of H. E. Roberts. (Vol. LXXXXIV, pp. 14418, et seq.) We quote somewhat at length from this explanatory statement:

"Scope of This Exhibit

This exhibit shows the depreciation and depletion accumulated at December 31, 1938, in the production and gathering facilities of Canadian River Gas Company, which are described in Exhibit No. 89 by Max K. Watson, and its application to the original cost of these facilities, presented by W. A. Lusk in Exhibit No. 183.

"The depreciation accumulated in the property was determined by studies of the extent to which the physical phenomena that ultimately lead to the retirement of items of property had progressed. Depreciation as determined is separate and distinct from accruals for amortization against the possible termination of or major changes in the Canadian River business.

"Depletion computed herein refers to the using up of the gas supply and is based on the gas withdrawn from the Panhandle gas field from May 31, 1928, to December 31, 1938, in relation to the estimated recoverable gas reserves at the first date.

"Leaseholds

"Accumulated depletion in leaseholds has been computed each year from 1928 to 1938, inclusive, in direct ratio to the relation of gas withdrawn from the Panhandle field each year to the gas reserves remaining at the beginning of each year. This computation is based on the depletion of the field as a whole as testified by other witnesses.

"The original gas reserves estimated as recoverable at 50-lb. gauge by J. D. Thompson in his Exhibit No. 207 less the gas withdrawn through 1927, as shown by C. J. Peterson in Exhibit No. 206, gives the remaining gas reserves as of January 1, 1928. The annual withdrawals in that year, as shown by Mr. Peterson in Exhibit No. 206, divided by the reserves as of January 1, 1928, then gives a ratio which indicates the percentage depletion of the gas reserves in the field in 1928. The

successive reduction of the remaining reserves at January 1 by the annual withdrawals each year, as reported by C. J. Peterson in Exhibit No. 206, gives the reserves remaining at January 1 of each of the following years. Successive division of the reserves at January 1 each year into the gas withdrawn in that year, gives the percentages of depletion for each year since 1928.

"The depletion ratios determined as above, applied to the Company's remaining investment at January 1 each year, gives the depletion sustained by the Company in that year except that in the first year of the Denver line operations the Company's investment at June 1 in its presently held acreage (as of December 31, 1938) was depleted at seven-twelfths of the rate of depletion in the field as a whole. Deduction of this Company depletion during 1928 from its June 1 investment, plus the investment added during the year, gives the Company's remaining investment in leaseholds at January 1, 1929. Thereafter the successive deduction of depletion sustained and the addition of new investment added December 31, 1938, of $3,248,580 which is 64 per cent of the original cost of the leaseholds held at that date. Therefore, the accumulated depletion in the Company's leaseholds at that time is taken at 36 per cent.

"Land and Rights of Way

"No depreciation on land and rights of way has been allowed in this exhibit.

"Gas Well Construction (Account 211)

"Gas well construction which comprises the intangible well drilling costs is depleted by the same method as leaseholds. This determination resulted in 31 per cent depletion as of December 31, 1938.

"Gas Well Equipment (Account 212)

"Owing to the difficulties of physical examination of gas well equipment, this equipment has not been depreciated but has been depleted in accordance with the depletion accumulated in the gas well construction account.

"Buildings and Structures

"The depreciation existing in buildings was determined by a detailed inspection of the buildings and structures in the field. Field inspections were tabulated and summarized and the condition of the buildings determined in groups such as those at a compressor station. In determining such depreciation existing in these buildings there was taken into account the depreciation found to exist in the various parts, the relative extent to which parts contributed to the whole cost of the structure and the relative extent to which the individual structures contributed to the total cost of the whole group.

"Field Line Construction and Equipment

"The depreciation suffered by the Company's production system pipe lines was determined from inspections made in the summer of 1939. Inspection points, numbering 125, were chosen on those lines spaced at intervals representing roughly $10,000 in cost. On the 22-inch main gathering line this spacing was three-eighths of a mile and on the 6-inch line about one and seven-eighths miles. On each size of line the locations of the points of inspection were at substantially uniform intervals. The locations were chosen in the office from maps and were marked out in the field from the nearest available landmarks.

"At each location a hole was dug uncovering the pipe for a length of about 4 feet of width and depth sufficient to permit inspection of the pipe on the bottom as well as on the sides and the top. In each test hole the pipe was thoroughly cleaned for a length of about 3 feet and in this length the central 24-inch section of pipe was inspected. Records were made as to the general character, extent and severity of corrosion and of the principal conditions affecting corrosion in that location. The depths of many deepest pits were measured and recorded, generally 30 in each 24-inch section. This number was chosen as necessary to insure a dependable knowledge of the depths of the deepest pits. In measuring these pits special care was exercised to clean them

out thoroughly at the bottom thus insuring a full measure of depth.

"The depreciation sustained by the pipe lines was determined from a consideration of the field inspections above described. The records of the field work were tabulated and summarized. They were subjected to study and analysis both scientific and practical. Consideration was given to the many factors affecting depreciation through corrosion which are described in the succeeding paragraphs.

"Renewals of pipe are most commonly the result of a troublesome succession of leaks caused by corrosion. As leaks occur they are stopped by bolting band clamps around the pipe with a rubber backing over the leaks. Sometimes two or more leaks develop at widely separated dates in the same joint of pipe. The development of leaks first occurs in stretches of lines where for various reasons local conditions are favorable to corrosion. These are called 'hot spots' and range from a few joints to thousands of feet in length. When the leaks occur with troublesome frequency not only is the pipe in the 'hot spot' itself removed but also pipe for an appropriate distance on either side. In practice the worst joints of pipe may have two or more leaks. Stretches of pipe 100 feet long may contain five to ten leaks and other stretches may have no leaks at all. Some pipe is suitable for reuse with a simple cleaning operation, some requires welding the pits before it can be reused and other pipe is reduced to junk.

"The progress of corrosion has universally been found to fall off with age. When pipe is first buried it starts to corrode rapidly. As time goes on the intensity of corrosion slows down. Not enough inspections were made of the Company's lines nor was there enough range in age to permit a field determination of the extent to which this corrosion slows down. However, the United States Bureau of Standards has investigated this characteristic of slowing down in corrosion as related to 47 soils scattered throughout the country. There were only 6 soils found in which the depth of pits increased

more than 50 per cent through doubling the age and these soils are decidedly unusual in their characteristics. In soils characteristic of Canadian River's territory the increased depth with doubling the age was much less than 50 per cent. Accordingly, it was considered in determining the depreciation accumulated in the Company's pipe lines that corrosion would slow down to such an extent that doubling the age would result in not more than a 50 per cent increase in the depth of pits.

"It is also the universal experience that the greater the lengths of pipe examined on inspection the greater will be the average depths of the deepest pits found. A study of the relative depths of the deepest pits in the 24-inch sections was made, from which was determined by scientific analysis the average depths that could be expected in greater lengths of the Company's pipe of 10, 20, 40 or 50 feet, as the case may be. This study also determined the number of pits required to be welded in reconditioning.

"Through a correlation and application to the field insections of the rules of corrosion outlined above by the proper use of engineering methods, it was determined that the Company's production system pipe lines had depreciated 7 per cent.

"Field Compressor Station Equipment

"The condition of this equipment was determined by field inspection and observation of all parts above ground. Underground piping was conditioned as having 23 per cent greater depreciation than the field line pipe, the difference having been determined from a comparison of the condition of the underground pipe in the main line station at Bivins and the transmission line pipe.

"Minor Property Accounts

"The depreciation existing in the minor property accounts was in general determined by observation as in the major accounts, in detail appropriate to the importance of the respective accounts.

"General Construction Costs

"The depreciation determined as having accumulated in Canadian River's depreciable property is based on the system as a continuing property without important change except as to extensions. Items of equipment retired in such property in the natural gas business are commonly replaced in kind and accordingly only a portion of the undistributed construction costs depreciates with the property itself. The replacement of that property involves little or no engineering cost and little or no interest. Portions of the property, however, that are retired and replaced with property of a different type, which occasionally takes place, involve a repetition of most of the undistributed construction costs. All things considered, one-half of the total amount of undistributed construction costs is appropriately considered as depreciating with the depreciable property.

"General construction costs applying to the original cost of depleted items have been depleted with the property to which they apply.

"Adjustments to Original Costs

"To apply the determined extent of depreciation and depletion to original cost it was necessary to segregate therein certain general construction costs which had been distributed to the several accounts, which adjustment is shown on the attached Exhibit No. 2.

"The general property allocated to systems in Exhibit No. 183 has been adjusted and reallocated on Statements Nos. 3 and 4 herein on account of the Fritch and Masterson Camps which were not included as part of the general property in Exhibit No. 68.

"Summary

"The percentages of depreciation accumulated in the depreciable property and the percentages of depletion accumulated in the depletable property are summarized and applied to original costs account by account on Statement No. 1 to obtain the accumulated amount of depreciation or depletion shown the several classes of

property. The total accumulated depreciation and depletion in the original cost of the producing and gathering properties of Canadian River Gas Company at December 31, 1938, herein considered, determined as set forth above and supported by Summary Statement No. 1, amounted to $3,069,697."

Roberts was examined and cross-examined at length on Exhibit No. 272 and his statement with reference thereto quoted above. (Vol. LXXXXIV, pp. 14413-14438; Vol. XCVII, pp. 15023-15122; and Vol. XCVIII, pp. 15214-15240.)

Roberts restated that he had depleted the leaseholds, wells and well construction account in accordance with the methods described by him in his general statement which was a new computation different than in any of the exhibits on reproduction costs of the Denver pipe line properties, but that with respect to the gathering lines, the compressor stations and the general property and other miscellaneous properties, the same methods were used in arriving at depreciation, as testified to by Mr. Rhodes when he explained such methods in connection with his Exhibit No. 68 concerning Canadian properties and Exhibit No. 70 concerning Colorado Interstate properties. The percentages of depreciation set forth in the exhibit were those arrived at and the conclusion reached by Mr. Rhodes and Mr. Roberts as a result of observations of their assistants. The Masterson and Fritch camps are not in Exhibit 68, so depreciation as to them after conference with Mr. Rhodes was determined separately on the same basis of depreciation as set forth in Exhibit 68. Mr. Rhodes' explanation with reference to Exhibits 68 and 70 is applicable to Exhibit 272. (Vol. LXXXXIV, pp. 14431-14433.)

Mr. Roberts was in charge of field work under Mr. Rhodes and worked with him in setting the final figures for depreciation. Most of the work was done in 1939. (Vol. XCVII, p. 15028.) In most other instances in which he was connected with the valuations of property there was involved an estimate of reproduction cost new. (Vol. XCVII, p. 15037.) In connection with the field inspections indicated in Exhibit 272 this involved an inspection of the major buildings, the pipe lines and the measuring stations, a chronological list of which was made and an inspection made

of every fourth building and measuring station in the order in which constructed. The accumulated depreciation figure given in Exhibit 272 is the converted per cent condition used by Mr. Rhodes in his reproduction cost new estimate; that is, where there is a 93% condition related to reproduction cost new, there is a 7% accumulated depreciation figure. (Vol. XCVII, p. 15038.) Mr. Roberts did not, except in one instance, accompany the inspection gangs on the inspection trips. These were in charge of Mr. W. T. Smith of FB&D. The method, however, was the same, as explained by Mr. Rhodes in his testimony. (Vol. XCVII, pp. 15039, et seq.) In connection with the pits discovered by inspection in the pipe lines it was not necessary to determine the age of the pits in order to determine the condition of the pipe lines or the percentage of depreciation, as the age of the pits under the method used was immaterial. (Vol. XCVII, pp. 15042, et seq.)

WITNESS ROBERTS testified on cross-examination: (Vol. XCVII, p. 15030.)

Q. Now, in connection with these several valuation matters in which you participated, did you ever have occasion to compute any service lives of property, units of property?

A. Service lives?

Q. Yes.

A. I have done some studies on the amount that the companies wished to set up on their books for depreciation rate.

Q. Involving the computing of service lives as an engineering matter?

A. Just a determination of what was the proper allowance to set up on the books to cover depreciation.

WITNESS ROBERTS further testified on cross-examination: (Vol. XCVII, pp. 15040-15045.)

Q. I want particularly to confine myself at this time to the method that you pursued in relating those inspection figures to your so-called accumulated depreciation.

A. This was done in exactly the same way as it was done on the estimates of reproduction of the Canadian River transmission, and the Colorado transmission—exactly the same as Mr. Rhodes testified.

Q. You followed the same theory that he had with reference to the deceleration of the corrosion that takes place in the field lines?

A. That's correct.

Q. In other words, your inspection made in 1939, related the per cent condition as of December 31, 1938?

A. That is correct. At least, we used it for that.

Q. You used it for that. Well, now, these determinations as to corrosion, as I recall Mr. Rhodes' version of that, you determined that after a certain period of time corrosion would decelerate, is that right?

A. No, not exactly that, not after a certain period of time.

Q. Well, when?

A. As soon as the pit is started it forms a little protection there and the penetration from that time on slows up.

Q. It decelerates, then, as he put it?

A. That's right.

Q. How long will that continue before the deceleration begins; or, once you have a pit, how long will it be before there will be deceleration?

A. As soon as the pit starts, there is sort of a scale that usually forms over that and there are other factors that enter into it, it decelerates at that time—it doesn't decelerate at that time, from that time on it decelerates.

Q. From what time on?

A. From the time there is some pit starting and some material in that pit.

Q. In other words, prior to that time there is acceleration of the pit, or what takes place?

A. It is not acceleration. When the pipe is put in the ground—

Q. All right.

A. —the depreciation starts—

Q. What do you mean by the depreciation starts?

A. I mean depreciation. The principal thing being pitting, one of the principal things—

Q. When you say "depreciation," you mean the pitting starts?

A. The pitting would start, and when that starts, usually in a pit there is some scale and other matter which tends to decelerate that.

Q. All right, now, at the time you made this inspection of the field lines in 1939, how could you determine how long

any of those pits had been—or, how long prior to that time the pits had formed?

A. I didn't need to know.

Q. You didn't need to know that?

A. No.

Q. Why?

A. Because I know from that time on it was going to decelerate and by doubling the age the pit would only go half again as far as it had gone.

Q. Yes, but if you didn't know when that pit had actually started on its course on that pipe, how do you know when it will stop?

A. I don't need to know that. I don't need to know when it is going to stop.

Q. Well, then, how can you determine your per cent condition of that pipe, or the depth of the pit, or how far that pit will eventually go?

A. I know because there is a certain depth at that particular time, and we used a formula which is a very conservative formula of doubling the age that the pit would only penetrate fifty per cent further.

Q. Although you don't know how long that pit had been in the actual process of either forming or how long it had been on the pipe at the time you made your inspection?

A. There is a period covered there. It could be from zero to a hundred and it might be from 1 to 50, but the relation between those things is what we got.

Q. You pay no attention or give no consideration whatsoever in making that determination as to that pit inspection as to how long the pit had been on the pipe at the time of the inspection?

A. No, sir.

Q. It is not necessary to do that to arrive at your per cent condition in utilizing your formula?

A. No.

Q. And the time element doesn't enter into that at all?

A. Time is expressed as the speed of the penetration. As I stated, it decelerates. Of course, the deceleration, the time element is considered in that, but that is the extent, the rate is something having to do with time—speed.

Q. Some of these pits you inspected in 1939 were still in the process of decelerating at that time?

A. In 1939?

Q. Yes.
A. Yes.
Q. Well, how much further, then, in the future will that deceleration continue?
A. How much?
Q. Yes, how long?
A. It would continue to decelerate until the time it becomes necessary to remove the pipe, when the pit has gone through the wall, and at such time as it is advisable to remove the pipe. Of course, then the pipe is out.
Q. That is true, but this inspection made in 1939 where you found certain pits that were at that time decelerating, that deceleration would continue for some period in the future?
A. Yes.
Q. Do you know how long?
A. I didn't need to know how long.
Q. You didn't need to know how long?
A. No, all I was interested in was when it would get through the pipe.
Q. You didn't need to know in determining your per-cent condition how long that would take?
A. No.
Q. And in determining that per cent condition you arrived at it from that particular physical inspection?
A. From the inspections and correlated data.
Q. And you didn't take into consideration the age of the pipe; how long it had been in the ground?
A. No.
Q. You limited your determination of per cent condition to that physical inspection?
A. And other correlated facts.

WITNESS ROBERTS further testified: (Vol. XCVIII, pp. 15241-15278.)

Q. You have Exhibit 274 before you, Mr. Roberts?
A. I have, Mr. Lange.
Q. This Exhibit 274, as I understand it, relates to the accumulated depreciation as you state, on an hypothetical resale system applicable to the producing and gathering facilities of Canadian River Gas Company?
A. That isn't what the exhibit reads.
Q. Well, what does it—

A. It says: "Canadian River Gas Company accumulated depreciation and depletion and its application to equivalent original cost of producing and gathering facilities for resale gas alone as of December 31, 1938."

Q. Maybe I should have stated it differently. I will ask you this, then, first: The producing and gathering facilities of Canadian River Gas Company have not been utilized exclusively for resale gas alone, have they?

A. No, sir.

Q. Neither in the past nor at the present time?

A. No, sir.

Q. Very well. This exhibit contemplates, however, the use of those facilities for resale gas alone?

A. Yes.

Q. And sets forth some difference, first of all, in property units as distinguished from the use of these facilities for all gas?—as set forth in Exhibit 272. Isn't that correct?

A. Yes, sir, it is based upon the property described in Exhibit No. 121 by Mr. Max K. Watson and their application to the equivalent original cost as presented in Exhibit 193 by Mr. William A. Lusk.

Q. Yes, and the difference in property units that would be utilized under a resale system alone is set forth in Mr. Rhodes' Exhibit 98, isn't it? Isn't that correct?

A. 98?

Q. Yes.

A. I don't recall that exhibit.

Q. "Denver Pipe Line for Resale Only." I beg your pardon, that doesn't apply to production and gathering properties.

A. That refers to Exhibit 121 by Mr. Max K. Watson.

Q. Now, I note that under Statement 1, "Leaseholds," Item 1, you have original cost of leaseholds in your Exhibit 274 at $5,075,906 and accumulated depletion of 36 per cent, converted to dollars, $1,827,326, is that right?

A. That's right.

Q. Well, I see that that is exactly the same, both original cost as well as accumulated depreciation that you have on—depletion, I mean—

A. Yes, sir.

Q. —that you have set up in your exhibit 272 applying to sales of all gas.

A. That is correct.

Q. Would you include the same property here for the resale gas as you do to the sale of all gas?

A. Yes. I applied these percentages to the original cost in the exhibit prepared by Mr. Lusk, No. 193.

Q. Yes, you utilized the same figures that Mr. Lusk has set up which in turn contemplated no allocation whatsoever as between the utilization of these—of this item of property—these leaseholds, for all gas, as distinguished from resale gas alone?

A. No. Those leaseholds would have been required for resale gas alone.

Q. All of the leaseholds?

A. Yes.

Q. All right, then, in your opinion would those leaseholds have lasted just as long and you would have had the same accumulated depreciation applicable if you related the use of all gas, or to resale gas alone?

A. Taking this property as a whole, why, those percentages would apply against both.

Q. All right, let's say that your opinion is correct, that you would have to have all of the leaseholds in each instance for all gas as well as resale.

A. Yes.

Q. All right, but then we move to your depletion of those leaseholds. How can you say that you would deplete those leaseholds exactly in the same fashion for the same period of time in the resale gas estimate alone as you do for the all gas estimate?

A. If there is drainage in the field and they didn't take it out for one purpose, someone else would take it out for another purpose.

Q. Well, then, the matter of withdrawal or the rate of withdrawal didn't interest you at all, did it?

A. I took the withdrawals each year as compared to the reserves at the start of that year.

Q. Don't you think there would be a different rate of withdrawal in connection with contemplation of all gas sales as distinguished from resale gas sales alone?

A. This refers to the withdrawals for all types of gas.

Q. Yes, I know, Exhibit 272, but when you move over to Exhibit 274 you are limiting yourself to resale gas alone.

A. This is the property which would be required for resale gas alone.

Q. I say, let's assume for the sake of argument you would have to have those same leaseholds.

A. Yes.

Q. But you would still deplete those leaseholds in the same fashion at the same rate and on the same basis whether they applied to all gas sales and the withdrawals under that as distinguished from your resale gas sales and the withdrawals under that character of system?

A. That's what I have done in this exhibit, applied the same percentage of depletion.

Q. All right, even though you had the same base. What I want to know is whether in your opinion that would be a correct calculation in both instances; be exactly the same depletion?

A. That is so considered here.

Q. I know, but you set this up. I want to know what opinion or reason you have for that.

A. I have taken the field as a whole and based it on the basis of withdrawals.

Q. You made no distinction as between the withdrawals that would take place under resale gas distinguished from all gas sales?

A. These are both depleted the same.

Q. Well, are the withdrawals at the same rate under resale as they are under all sales?

A. Withdrawals from the field are.

Q. They would—you say—

A. I say, they have been. I based this on the actual withdrawals from the field.

Q. That is in your Exhibit 272, where you have all gas. Now we are moving to Exhibit 274 where you confine yourself to resale gas alone. You say the rate of withdrawals are the same?

A. It is based upon the amount of gas that was taken from those leases—from the entire field.

Q. This is just an assumption under Exhibit 274. You had no experience there.

A. I have applied the same rate of withdrawals as I did the other exhibit.

Q. I want to know why. That's the whole thing, I just want to know why.

A. Because that represents the fair amount of depletion applying to those leaseholds.

Q. And it bears no relation to what the difference would be under such a system?

A. Will you repeat that?

Q. It bears no relation to what the difference in rate of withdrawals or amounts there would be under a resale system?

A. Well, if the gas wasn't withdrawn for one purpose it might have been withdrawn for another purpose. It still would have been depleted.

Q. But your problems as to field are in the picture in your Exhibit 272 where you have accurate figures on withdrawals.

A. Yes, sir. We have taken those same ones as the withdrawals as applying to these leaseholds.

Q. You computed your depletion in Exhibit 272 on actual figures. You had actual figures on withdrawals in Exhibit 272, didn't you?

A. As accurate as the geologists could give us.

Q. And you began with an estimate or estimates of your geologists as to reserves?

A. Yes.

Q. And computed your figures in Exhibit 272 to give you the accumulated depletion?

A. That is right.

Q. Now, then, you have no actual figures, or none at all, as to withdrawals that would occur under your resale estimate, do you?

A. Those leases would have been required for—

Q. I am not asking you about the leases. We'll concede you would need the same leases just for the sake of argument. We don't concede it, but for the sake of argument, the same leases are there.

A. We might have reduced the amount of depletion there. That wouldn't have—

Q. You would have?

A. We could have done it another way.

Q. You could have, but you didn't.

A. I think this is the proper way.

Q. You didn't take into consideration, then, what such withdrawals would be as distinguished from your all gas sales?

A. I took the total withdrawals from the field to date.

Now, if you had taken less withdrawals there, you couldn't have had as much depletion.

Q. And your accumulated depletion would have been different in your Exhibit 274?

A. I would have had less accumulated depletion.

Q. Yes. How much less?

A. I haven't figured that out.

Q. Oh, you haven't? This depletion study in connection with leaseholds as set forth in both Exhibits 272 and 274, the rate of withdrawals would have a very distinct bearing upon the life of the field or the life of the—the producing life of the acreage of Canadian River Gas Company?

A. If you didn't withdraw so much gas—

Q. It would last longer?

A. The whole field would last longer.

Q. That is right. Now, these units of property that you set forth in Exhibit 274 that differs from those in Exhibit 272, how were you able to arrive at your per cent condition of those units of property which do not in fact exist?

A. They are such a small part of the property that they wouldn't affect the overall conditions we have used.

Q. They would not?

A. No.

Q. So you just assumed the same per cent condition would obtain there as did in Exhibit 272, although the units of property don't exist and you couldn't apply your method of physical inspection?

A. The majority of the units do. It is just a slight change in the property which wouldn't affect the overall condition enough to make any adjustment.

Q. But you were not able in connection with the construction of Exhibit No. 274 in determining your accumulated depreciation on any of these units of property to actually inspect the property?

A. To actually inspect it?

Q. To physically inspect it.

A. We did inspect those properties.

Q. These properties applicable to resale gas alone differ from the units on the other, the latter are in actual existence?

A. These are the same properties with an elimination of a few items.

Q. Which items?

A. There were some wells that were eliminated and

maybe a small meter station and maybe one small well line. The difference between the two, from $10,141,515 total for resale alone is $10,042,308, so the percentage change there is negligible.

Q. This Exhibit No. 274 reflecting your computation of accumulated depreciation and depletion of production and gathering system facilities is limited to resale gas alone and is not applicable to any operating conditions of the Canadian River Gas Company?

A. Not applicable to operating—

Q. Not applicable to any operating conditions of the Canadian River Gas Company?

A. It is the same property except for those items that I said were not needed for resale.

Q. But it contemplates an assumed limited operating condition of the property?

A. It contemplates what property would have been required for resale gas alone.

Q. Which has not taken place in fact?

A. No, they are still selling direct sale gas.

Q. They haven't at any time in the past limited the use of the facilities to that purpose?

A. No, sir.

Q. As far as you know they don't contemplate limiting it in that fashion?

A. Not as far as I know.

Q. It is being used and has always been used for resale as well as all sale?

A. The entire properties have been. This part is the amount that would be required for just resale alone.

Q. But these facilities have never been limited to resale gas operations alone?

A. The entire properties haven't, no.

Mr. Lange: No further questions on that exhibit.

Redirect Examination.

By Mr. Dougherty:

Q. Mr. Roberts, are you familiar with the quantity of direct sale gas the Colorado Interstate sells a year?

A. I have seen the figures but I am not good in remembering figures.

Q. It would be an easy computation to take that quantity and subtract each year from the total field withdrawals and

determine what, if any, variations in your 36 per cent would result, would it not?

A. Yes, sir.

Q. And assuming for the moment the amount sold each year to the direct sale customers was about 10 billion feet with an average of around 600 billion feet a year sold, or total field withdrawals. That is around 600 billion Mcf. per year. Now, if you had 10 billion off that, could you tell me at about what fraction or percentage that might make in each year?

A. It would be under two per cent; a little over one per cent.

Q. That is over the whole period?

A. Over the whole period, yes.

Q. It would be somewhere above 34 per cent and under 36 per cent?

A. That should be applied, I believe, against the 36.

Q. And—I see what you mean. And subject to your computation—

A. It would be one per cent of 36 per cent.

Q. Subject to your computation as to what it would be, this method you have used gives a greater amount of accumulated depletion than if you had made the deduction of the direct sale gas from the total field withdrawals each year?

A. Yes, I believe I have stated that.

Mr. Dougherty: That is all I have.

Mr. Lange: Just one other question.

Have you made any computation to show what accumulated depletion would be as applicable to direct sales alone?

The Witness: No, sir.

Mr. Lange: That is all.

The Trial Examiner: We will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

Mr. Lange: I have just one other question on Exhibit 274.

The Trial Examiner: All right.

Mr. Lange: As I understand it, you pursued in the same fashion the computation of your accumulated depletion and depreciation in constructing Exhibit 274 as you did in constructing Exhibit 272; that is, you applied the same general principles?

The Witness: Yes, sir.

(Witness excused.)

Whereupon—

H. E. ROBERTS

recalled as a witness by and on behalf of the respondents, having been previously duly sworn, was examined and testified further as follows:

Cross Examination.

By Mr. Lange:

Q. We will take up Exhibit 273. That is the Denver line property of Canadian River Gas Company?

A. Yes.

Q. You have that exhibit before you, Mr. Roberts?

A. I do.

Q. Turn to your Statement 1.

A. Statement 1?

Q. Yes.

A. All right.

Q. Let's first go to your written statement, Page 2, the second paragraph—I mean the paragraph beginning with "Original cost as given by Mr. Lusk in Exhibit No. 267 were first rearranged to separate the general construction costs from the direct account costs as shown on Statement 2." Where do you make that rearrangement in Statement 1?

A. There is a notation over Columns 5, 6, 7, 8, and 9, Deduct General Construction Costs. They were deducted from the original cost of Exhibit 67 which first had been further divided and included with the general construction costs down below.

Q. That is in Statement 2 of the exhibit?

A. Yes.

Q. In other words, the treatment of those items was handled in the same fashion as in Exhibit 272?

A. Yes, sir.

Q. And in that connection you of course separated those general construction costs and set them apart differently from the way they are presently reflected on the company's books?

A. Yes.

Q. In all other respects you proceeded in the same fashion in setting up your accumulated depreciation of the several units of property in this Exhibit 273 as you did in the previous exhibit?

A. That is correct.

Mr. Lange: I think that is all on Exhibit 273.

The Trial Examiner: You have no questions, Mr. Dougherty, on Exhibit 273?

Mr. Dougherty: No.

(Witness excused.)

Whereupon—

H. E. ROBERTS

recalled as a witness by and one behalf of the respondents, having been previously duly sworn, was examined and testified further as follows:

Mr. Lange: We will proceed with Exhibit 275.

Cross Examination

By Mr. Lange:

Q. That related to the determination of accumulated depreciation applied to the Denver pipe line for resale gas alone?

A. That is correct.

Q. I believe it is in connection with that exhibit that the different units of property are set up by Mr. Rhodes in his Exhibit 98 to distinguish them from units of property actually in the line at present, is that true?

A. I believe that is the exhibit, No. 98.

Q. You referred to it in your written statement?

A. That is right, yes.

Q. Now, then, let's turn to Statement 1, Exhibit 275. Item No. 6, Transmission Line Equipment, Account 226, is the largest item of property that contemplates maintenance?

A. Yes.

Q. Under Mr. Rhodes' classification or distinction of the property to be utilized on a resale plant set up, you would have 20-inch main line in lieu of the present 22-inch main lines, wouldn't you?

A. That is correct.

Q. And your total original cost would differ materially for that item, too?

A. Yes, because there is a reduction in cost.

Q. About $300,000—in Exhibit 273, it is $2,313,572 and in your Statement No. 1 of Exhibit 275 it is $2,002,808.

A. That's right.

Q. I note that in both cases your per cent accumulated depreciation is the same, seven per cent.

A. That's right.

Q. Now, the line contemplated in your Exhibit 275 devoted to resale gas alone would be a 20-inch line that is presently not in existence.

A. It is a line that would have been in existence if they constructed that line for resale gas alone.

Q. And this item on Statement 1, "Transmission Line Equipment," that you have shown to have a seven per cent accumulated depreciation is presently not in existence.

A. We simply reduced the size and assumed that that pipe would be in the same location as this present line, which would have been under the same soil conditions as this same particular line, but would not offer as much surface to those soil conditions as a 22-inch line.

Q. It would be 20 inches in diameter as distinguished from 22 inches?

A. That's right.

Q. So without having had any opportunity to make an inspection of this assumed 20-inch line, you give it the same per cent condition as you did the 22-inch line that is in place?

A. I believe it is a fair assumption that if you had that one pipe line in there that was 20 inches and another in there that was 22 inches, it would be under the same soil conditions, the same kind of pipe, there would be less surface of that pipe exposed to the soil as in the case of the 22-inch. In the case of the 20-inch line there would be less surface exposed to the soil conditions than in the case of the

22-inch line; so we have given it the same accumulated depreciation.

Q. That is purely an assumption. You didn't have an opportunity, or couldn't have had an opportunity to make any calculations on that.

A. We inspected the 22-inch line in the place that the 20-inch line would be, under the same conditions, the same materials, and it seems to me it is a reasonable assumption that the pitting wouldn't have been any more in the 20-inch line than in the 22-inch line.

Q. So in that connection you had to base an assumption on an assumption. First, you had to assume that there would be a 20-inch line in lieu of the 22-inch line and then you had to assume what the per cent condition of the 20-inch line would be if constructed.

A. We were the engineers that designed this line and we came to the conclusion that the 20-inch line would have been built at that time if it were being built for resale gas alone; so it isn't a very far-fetched assumption on the first part, and on the second part it doesn't seem to be a far-fetched assumption because of the fact, as I have stated before, that line would have been placed in the exact same soil, and it would have been of the same material.

Q. And without having had any opportunity to make any actual inspections, you give it the same per cent condition?

A. We gave it the same per cent conditions that we found for the 22-inch pipe that was there in that same location under the same soil conditions.

Q. And I notice that Item 3, Statement 1 of Exhibit 275, "Compressing Station Equipment," that differs materially—well, not very materially, but to some extent, from your Exhibit 273. You have given that the same per cent condition also, haven't you?

A. $34,000 difference there, approximately.

Q. In what respect does that unit differ on your resale gas—what physical difference?

A. I think that there was one 600-horsepower unit as I recall it that was deferred to a later date.

Q. One less unit, isn't there, in place there? You contemplated to have one less unit?

A. Yes.

Q. So the—

A. That is a small unit there, not the 1,000-horsepower unit. It is a 600-horsepower unit.

Q. Did you take into consideration the difference in the volumes of gas that would be compressed in the resale gas alone as distinguished from all gas?

A. I didn't myself make that calculation. I applied it against the calculations that had already been made and the information which Mr. Rhodes gave in his Exhibit 98.

Q. Well, what I was getting at, how do you know that the compressor units that would actually be in operation would be required to compress the same Mcf. of gas for each system?

A. I say, I didn't make that calculation. Mr. Rhodes did.

Q. Mr. Rhodes made that?

A. Yes.

Q. But you related the accumulated depreciation—you had to satisfy yourself on that, didn't you?

A. I applied it against the property. It was practically the same property with the elimination of that one unit.

Q. Did you just take Mr. Rhodes' per cent condition on that particular unit without giving any other consideration at all, and just mathematically calculated that?

A. No. It was $34,000 against $504,000, a difference that would hardly affect the overall condition.

Q. Well, what I want to know is, did you just take Mr. Rhodes' per cent condition and convert it into dollars?

A. I applied the same per cent condition because the difference in the property was so slight and it was going into too fine a detail to try to figure out a fraction of a per cent on the condition of the property.

Q. That was probably in dollars, the cost of the two items, but what consideration did you give to the difference in operating conditions that would obtain?

A. I didn't give any consideration—

Q. Well, didn't that have a very—isn't that a very material matter to take into consideration as to compressor units?

A. In just what respect do you mean?

Q. Well, don't you take into consideration at all the conditions under which compressor units operate in determining the per cent condition or accumulated depreciation in each of those units?

A. We considered that if they were overloaded and

worked under overloaded conditions probably at the time we observed the conditions we would have found more depreciation.

Q. Yes, it is very necessary to determine the character of operation and the size of the load and the rate at which the units are operated to tell what the condition of those units is.

A. You determine that at the time you look at them.

Q. But you didn't have available for your inspection that substitute plant.

A. It takes a wide fluctuation in load, as I say. If the machinery is overloaded and wasn't being taken care of properly, why, that would affect the condition to a certain degree, but ordinarily variable loads would not affect the condition.

Q. You don't know to what extent those units are going to be called upon to deliver under your proposed resale plant?

A. Mr. Rhodes made that calculation and he would assume that they would be under the normal operating conditions.

Q. But you then just again, just took his per cent condition and just by applying simple arithmetic determined what you say is the accumulated depreciation in these units that will be installed in a resale plant?

A. I considered for resale these engines would be operated similar to the way they are operated for the combined gas.

Q. Regardless of the rate of flow of gas or the demand that would be made on these units?

A. I considered that the difference would not be sufficient to make any refinement.

Q. And of course you had no opportunity to make those refinements?

A. Well, Mr. Rhodes determined what units would be required and he wouldn't have had—he would have put in sufficient units to handle the load.

Q. And in the construction of this exhibit, again, you applied the same methods and principles as you did in the previous exhibits in computing your depreciation?

A. Yes, sir.

Mr. Lange: I believe that is all.

Redirect Examination

By Mr. Dougherty:

Q. Mr. Roberts, there are some blanks that ought to be filled in on the bottom of the schedules referring to other exhibits which I don't think we have done yet. Turn to Exhibit 273, Statement 1, Note (B). There is a blank there. The statement says "As shown on Statement No. 3, Exhibit No. blank relating to depreciation and depletion of original cost." What number should be in there?

A. 272.

Q. 272?

A. Yes.

Q. And then on Statement 2, also, Note (E).

A. Well, will you refer again to that Exhibit 273? I don't see that. Where is that shown?

Q. On Statement 1, at the bottom of Statement 1, Exhibit 273, Note (B) at the bottom of the page, Statement 1.

A. Yes, that is correct, referring to Statement 3, Exhibit 272.

Q. At the bottom of the page of the same exhibit, in Statement No. 2, Note (E), what should go in there? What other exhibit does that refer to? Is that Exhibit 272 also?

A. Yes, Exhibit 272.

Q. Now, then, Exhibit 274, on Statement 1, there is a Note (B) at the bottom that refers to general property also.

A. That refers to Exhibit 272 also.

Q. And then also on Statement No. 2, Note (C), that refers to general property also.

A. Yes, that's Exhibit 272.

Q. And then on Exhibit 275, Statement No. 1, you again have a reference to general property in your Note (P).

A. That refers to Exhibit 272 also.

Q. And then on Statement No. 2, Note (E), at the bottom, should that also be 272?

A. That also refers to the same exhibit, 272.

Mr. Dougherty: If the reporter could, Mr. Examiner, make those notations in the exhibits—

The Trial Examiner: Yes, we'll have them make the insertions in the official copy.

Mr. Dougherty: I had no questions on that exhibit.

Mr. Lange: We'll take up Exhibit 283 of Mr. Roberts. It refers to the Denver line properties of Colorado Interstate Gas Company.

(Witness excused.)

H. E. ROBERTS

recalled as a witness by and on behalf of the respondents, having been previously duly sworn, was examined and testified further as follows:

Cross Examination

By Mr. Lange:

Q. Exhibit 283 refers to the Denver pipe line properties of Colorado Interstate Gas Company, is that correct?

A. Yes.

Q. You again proceeded in the same fashion as you did in constructing the previously named exhibits?

A. I did.

Q. Now, in connection with the construction of this exhibit I find that during the year 1939 I have a notation as to at least two retirements that were made. I wish you would make a note of that and let me know whether my memo is accurate.

A. All right.

Q. The voucher reference is No. M-36.

A. What year? 1939?

Q. Yes, 1939.

A. All right.

Q. The account numbers covered in that one voucher, are 220-D, 226-D, 222-M, and 225-M. The units of property are the transmission lines and measuring stations in connection with the Littleton lateral and the Santa Fe lateral. The Littleton lateral shows a cost retired of $5,161.89, no salvage; the Santa Fe lateral shows the cost retired at $17,981.70, no salvage.

I find that in both instances those units of property were given a 95 per cent condition in Mr. Rhodes' estimate.

A. Yes.

Q. Now, what I wanted you particularly to make a note of was whether the figures I gave you were correct.

A. Do you want me to find out whether those figures are correct?

Q. All items I gave you, whether I have related the particular units of property to Mr. Rhodes' account number with those percentages of condition as he gave it, yes.

A. I have explained before that the condition we gave represented the average of those accounts and as he set the condition opposite them.

Q. You, of course, made no investigation or gave no consideration to retirements that were made by Colorado Interstate Gas Company during the year 1939?

A. Those particular retirements were handled as retirements of property sold when we adjusted our valuation from 1938 to June 30, 1940. Those properties were sold and we removed them from our reproduction cost inventory.

Q. You removed them from your 1938 inventory?

A. Yes, sir.

Q. How do you know they were sold, Mr. Roberts?

A. I saw the sales agreement, I believe, on the Littleton lateral. One of the men went into the field when the Santa Fe lateral was sold.

Q. According to my memo there is no salvage value on either one of the properties.

A. There wouldn't be if they sold them.

Q. Wouldn't there be any record there as to the amount of salvage if there was a sale made and funds realized for the sale?

A. I didn't quite understand you.

Q. Wouldn't there be any salvage indicated on that voucher at all?

A. They got so much money for the property if they sold it.

Q. How did you determine that the two properties were sold at any particular price?

A. I didn't investigate—

Q. Or at any price.

A. I believe I saw something having to do with the Littleton sale, but I was advised by the company—at least the representative I sent out here was advised by the company that the lines had been sold and we removed them from the inventory when we adjusted from December 1938 to June 30, 1940.

Q. Well, at the end of 1938 they were still in the property, weren't they?

A. They were at that time?

Q. Your inventory as of December 31, 1938 would include them?

A. It would.

Q. You say it is your understanding that they were sold, either one or both?

A. Both were sold.

Q. Will you find out whether that information you have is correct or not; if so, for what they sold?

A. At what price they were sold?

Q. Yes.

A. I guess I can determine that.

Q. I see there is another item of retirement during 1939, voucher reference K-29-8, Account No. 224-C, Compressor Station Equipment, four water wells, 1, 2, 5, and 6, that were retired. The cost of them retired is $11,731.19.

A. As I recall it, those were wells not included in our valuation. I can check that.

Q. I see there is no salvage indicated there, either. That unit of property is given a per cent condition of 88 per cent in Mr. Rhodes' estimate, is it not?

A. I believe you are mistaken but I will check it. As I remember it, we did not include those wells in our evaluation.

Q. You did not?

A. As I recall it we did not.

Q. As of December 31, 1938?

A. That is correct.

Q. Will you make a note of those wells?

A. Yes, I have a note of it.

Q. Under that same voucher No. K-29-25, under "Compressor Station Equipment at River Dam," there is $5,972.83.

A How much?

Q. $5,972.83.

A. That was another item we didn't have in the valuation.

Q. There was no salvage indicated in that unit of property under that account number given an 88 per cent condition in Mr. Rhode's testimony?

A. I believe you are mistaken, as we did not include that dam. I will check on it, though. Maybe I can check it right here.

Q. Please do.

A. That dam was at Canon, was it not? Wasn't it at the Canon water pumping station?

Q. I don't have that in this memorandum.

A. It is the Canon water pumping station we included in Exhibit 70. If you will leaf through here you will find there is no dam included.

Q. What exhibit are you referring to—Exhibit 68?

A. Exhibit 70.

Q. What page?

A. Page 222.

Q. Those two items weren't considered in connection with the preparation of the estimate?

A. They were not included in Exhibit 70.

Q. You will make a check and determine with reference to the other two items?

A. Relative to those wells?

Q. No, the Littleton and Santa Fe lateral.

A. Yes, I will check them. We have Well No. 3, Well No. 4—we didn't have the other wells. I will check into the Littleton situation and find the information on it.

Q. Find the information, please, on the Littleton and Santa Fe lateral.

A. Yes.

Q. In this exhibit as stated by you in your testimony, or, rather, in your written statement in the exhibit, you proceeded in the same fashion as you did in previous ones?

A. That is correct.

Q. In connection with your computation of the accumulated depreciation as set forth in Statement 1 and as referred to on Page 2 of the written statement you recorded the same treatment and proceeded in the same fashion in setting forth those general construction costs upon which you then computed the accumulated depreciation?

A. Yes, it was done the same way.

Q. Then in computing the accumulated depreciation on those general construction costs as set forth in your Statement 1, Line 15, you again assumed that one-half of the general construction cost did not depreciate?

A. Yes.

Mr. Lange: I believe that's all on that exhibit.

Mr. Dougherty: I have no questions.

Mr. Lange: We'll take up Exhibit 284, Mr. Roberts.

The Witness: I have it here.

By Mr. Lange:

Q. That relates to resale gas line of Colorado Interstate Gas Company?

A. That's correct.

Q. Now, in connection with the construction of such a line devoted to resale gas or limited to resale gas alone, there are certain differences in construction as well as units of property that would be made as set forth in Mr. Rhodes' Exhibit 98?

A. That's correct.

Q. And the largest change that would take place, of course, particularly in units of property as well as dollars, would be the transmission line equipment, item 5, of statement 1?

A. That is right.

Q. Now, in connection with this assumed resale line contemplated under your Exhibit 284, you would have a 20-inch main instead of a 22-inch?

A. Part of the line would be reduced from 22 inches to 20 inches and the remainder would still stay at 20 inches.

Q. Now, I note a 5-per cent accumulated depreciation applicable in your Exhibit 284 for the 20-inch main transmission line and that is the same percentage that you relate to acumulated depreciation in your Exhibit 283 of the 22-inch line.

A. That is correct.

Q. Is this just a mathematical computation of Mr. Rhodes per cent condition?

A. No. Mr. Rhodes estimated what size line would have been required for resale gas alone and this pipe line would have gone in the same locations as the 22-inch; would have been under the same soil conditions as the 22-inch, and there would have been less surface exposed to the elements, and the pipe would be the same kind of pipe, and therefore I assumed that the depreciation as applied to the one would apply to the other.

Q. So you proceeded in the same fashion, then, as you did on the resale line of Canadian River Gas Company?

A. That is correct.

Q. And in this instance again, this assumed 20-inch line, of course, does not in fact exist?

A. Well, part of the 20-inch is the same as the 22-inch —I mean of the gas for resale alone there would be required the same 20-inch line as there now is, but the 22-inch would be reduced in size.

Q. That's what I mean. The present 22-inch line would be substituted by a 20-inch line.

A. That's right.

Q. And that assumed substitution of the 20-inch line does not in fact exist?

A. No, that is a 22-inch line at the present time.

Q. I note that there would be no difference in compressor units at all.

A. No other units would be required for resale according to the estimate that Mr. Rhodes made.

Q. You contemplate the exact same compressor units for both lines?

A. I believe that that must be right. They are both the same figures.

Q. Would they be used in each instance; that is, in connection with all sales as distinguished from resale gas alone in the same manner?

A. They would be used for the same purpose. More gas would go through the compressors if you had the combined sales than there would if you had just the one.

Q. Well, in determining this per cent condition on compressor station equipment, Exhibit 284, did you give any consideration to the difference in volumes of gas and the rate at which these compressor units would be required to function or operate, in one instance, as compared with the other?

A. No. There might have been some increase in per cent condition if they had been pretty well overloaded for the combined and for the resale they weren't, but that would be a refinement that would be such a small percentage that we did not make any increase in our per cent condition.

Q. Did you attempt to ascertain what the difference in volumes of gas would be?

A. Mr. Rhodes did that.

Q. Oh, he did. You just took his figures, then, after he had arrived at the particular conclusions made?

A. I knew that if you had the same units and had less gas, you certainly wouldn't be using the units harder than you would before.

Q. Well, did you have before you any figures estimating the difference in volumes of gas?

A. Well, we know that the combined gas is more than the gas for resale alone.

Q. You mean the present combined volumes of gas that you have actual records of?

A. Yes.

Q. But you were setting up an assumed resale gas line alone, weren't you?

A. Yes.

Q. And you didn't make any estimate as to the volumes of gas that would be required or that there would be a demand for, or the peak load of such resale plant, did you?

A. No, sir. Mr. Rhodes took that into his calculation when he figured the property would be needed.

Q. And he did all of that himself? You just took his figures, then?

A. Well, I knew that the compressors wouldn't have to pump as much gas because there would be less gas involved on resale gas alone than there would be for the combined.

Q. That's it, and the volumes of gas that a compressor unit is required to handle or the peak load conditions of the line, have a very material bearing on what the condition or the per cent condition of the compressor unit handling such gas is, isn't that true?

A. I have stated before that if it has been overloaded for long extended periods there is liable to be more depreciation, but for ordinary operations any difference in condition is so slight that it could hardly be determined.

Q. But you did know that the demands that would be made upon the compressor units for resale plant alone would be different than those that would be made upon these particular units for all sale gas?

A. I assumed that the difference would be so slight that it wouldn't affect the condition as a whole.

Q. It would not?

A. No.

Q. And for that reason you just gave them the same per cent depreciation?

A. They are the same items. They are the same compressors and they would be used practically the same way.

Q. And of course you couldn't have had an opportunity to have any record of performance under the assumed conditions. That would be, of course, impossible.

A. I could have estimated what it would have been if I wanted to go into the condition of those engines. I didn't do that, however.

Q. Knowing there would be a difference, you didn't think it was of sufficient amount to justify making any change in your per cent of accumulated depreciation applicable?

A. That's correct.

Q. And is that the approach you had to any of the other units of property that differed from the all sale gas properties of the Colorado Interstate Gas Company?

A. In most cases we found that the condition of these remaining items fell in pretty well with the average and there weren't any items of 50 per cent and others with 90 per cent there. They generally fell pretty close to the average, so the elimination of an item here and there would not affect the condition, and the other amounts in here are small compared with the total, so we applied the same per cent condition to those properties as we had applied in Exhibit No. 283.

Q. Then in all other respects you pursued the same methods and applied the same principles in the construction of Exhibit 284 as you did in previous exhibits?

A. That's right.

* * * * *

Additional cross-examination of WITNESS ROBERTS appears under title 27 supra.

Depletion, as used in this exhibit as applied against wells, for instance, is based upon the reserves at the time the wells were drilled compared with the reserves at the time the depletion was determined. (Vol. XCVII, p. 15060.) These reserve figures and the figures covering gas withdrawn are covered by Exhibits 206 and 207, Exhibit 206 being Mr. Peterson's exhibit on gas withdrawn, and Exhibit 207 being Mr. Thompson's exhibit on gas reserves estimated recoverable, at 50 pounds gauge. Mr. Roberts ascertained how much gas was withdrawn in a year as compared with the

gas at the start of that year and applied that factor against the investment of leaseholds in that particular year. (Vol. XCVII, p. 15061.)

This Exhibit 272 does not purport to cover amortization. (Vol. XCVII, p. 15066.) Depletion and depreciation are figured differently. The depreciation determined from observation is an accumulated depreciation showing the condition of the property at the time of the inspection and is an average depreciation for all the properties. (Vol. XCVII, pp. 15069, et seq.)

In depreciating the physical properties he did not take into consideration the life of the gas supply but he found the condition of the property from a physical inspection at a particular date. (Vol. XCVII, pp. 15084, et seq.) The determination of accumulated depreciation is not based upon possibilities of retirement of any particular piece of property, but is the average weighted condition of all the property inspected. (Vol. XCVIII, pp. 15085, et seq.)

Gas well construction was depleted rather than depreciated on the same theory as leaseholds because it was impossible to inspect the insides of the gas wells to determine actual physical condition. (Vol. XCVII, pp. 15087, et seq.)

Mr. Roberts was not interested in the method in which the company may have set up depreciation or depletion on its books, as he used what he considered proper and substantial methods. (Vol. XCVII, pp. 15091, et seq.)

In concluding his testimony upon redirect examination Mr. Roberts stated that the percentage of depreciation shown, for instance, on field line equipment is an overall percentage for the whole field pipe line of Canadian and the percentage figure given is not with reference to any particular section or any particular line, but is weighted percentage applicable to the account as a whole. (Vol. XCVIII, pp. 15218, et seq.) Some pipe might be in only a 70% condition and others might be in a 98% condition. His inspection was to determine where between zero and 100% the depreciation or condition of the property existed, and what he did in this case was by observation to determine that the relationship between zero and 100% was 7% for depreciation overall. (Vol. XCVIII, p. 15219). When the inspections of the Canadian pipe line were made the engineers of the FPC

were present and made observations of their own. (Vol. XCVIII, p. 15220.) When the depreciation of the physical condition is determined, it is then necessary to apply the percentage of depreciation to a dollar figure in order to determine the amount of depreciation in dollars. This has been done by applying the percentage of depreciation and depletion, determined as above, to original cost adjusted, as shown by Statement No. 1 in Exhibit 272. (Vol. XCVIII, p. 15221, et seq.)

Further cross-examination of MR. ROBERTS is abstracted under title 27 supra.

Accumulated Depreciation and Depletion And Its Application to the Equivalent Original Cost of the Producing and Gathering Facilities for All Gas, Except Colorado Interstate's Direct Sale Gas, as of December 31, 1938.

For the Canadian there was introduced and received in evidence (Vol. XCVIII, p. 15279) through the witness, H. E. Roberts, Exhibit 274 captioned as above. This exhibit is prefaced by Mr. Roberts' written statement appearing in the record. (Vol. LXXXXIV, pp. 14434, et seq.)

As explained by Mr. Roberts in his statement, this exhibit covering the subject shown in the heading of this subdivision shows the depreciation and depletion accumulated at December 31, 1938, in the producing and gathering facilities required for all gas, except Colorado Interstate's direct sale gas on the Denver line, as testified to by Mr. Watson and shown in Exhibit No. 121 and as applied to the equivalent original cost of such production and the gathering facilities as shown by Lusk's Exhibit No. 193. The accumulated depreciation and depletion in the production and gathering facilities as of December 31, are shown in Mr. Roberts' Exhibit No. 272. The same percentages of accumulated depreciation and depletion as determined in Exhibit No. 272 have been used in this Exhibit 274.

Further testifying on cross-examination concerning Exhibit No. 274 (Vol. XCVIII, pp. 15241, et seq.) Mr. Roberts reiterated the statements made in his preface to the exhibit, and further testified that no change had been made in the

figures applicable to leaseholds because in his opinion all of the leaseholds would be necessary for the resale gas alone. (Vol. XCVIII, p. 15244.)

Statement No. 1 in Exhibit 274 summarizing the accumulated depreciation and depletion covered by the exhibit is as follows:

Canadian River Gas Company — Statement No. 1

Accumulated Depreciation and Depletion and Its Application to the Equivalent Original Cost of Production and Gathering System Facilities for Resale Gas Alone, as of December 31, 1938.

Summary by Accounts

Item No. (1)	Account No. Company (2)	Description (3)	Original Cost (A) (4)	Accumulated Depreciation and Depletion Per Cent (5)	Accumulated Depreciation and Depletion Amount (6)
		Production System			
1.	205	Leaseholds	$ 5,075,906	36%	$ 1,827,326
2.	211	Gas Well Construction	2,126,986	31	659,366
3.	212	Gas Well Equipment	906,529	31	281,024
4.	209	Field Measuring Station Structures	8,315	17	1,414
5.	215	Field Measuring Station Equipment	46,103	11	5,071
6.	216	Drilling and Cleaning Equipment	24,241	....	.....
7.	218	Field Measuring Station Land	100	....	.....
8.		Total	$ 8,188,183		$ 2,774,201
9.		General Property (Allocated) (B)	56,273	25	14,169
10.		Total Production System	$ 8,244,456		$ 2,788,370
		Gathering System			
11.	206	Rights of Way	$ 13,485	....	.....
12.	213	Field Line Construction	280,540	7	$ 19,638
13.	214	Field Line Equipment	860,376	7	60,226
14.	221	Field Compressor Station Structures	2,969	18	534
15.	224	Field Compressor Station Equipment	13,779	16	2,205
16.		Total	$ 1,171,149		$ 82,603
17.		General Property (Allocated) (B)	44,781	22	9,855
18.		Total Gathering System	$ 1,215,930		$ 92,458
19.		Total Production and Gathering Systems	$ 9,460,386		$ 2,880,828
20.		General Construction Costs Applicable to Production and Gathering Systems	581,922		159,813
21.		Total Original Cost of Production and Gathering Systems	$10,042,308		$ 3,040,641

Notes: (A) As shown in Exhibit No. 193 adjusted as shown on Statement No. 2 attached.

(B) As shown on Statement No. 3 of Exhibit No. 272 relating to Depreciation and Depletion of Original Cost.

With further reference to this exhibit Mr. Roberts testified that he had depleted the leaseholds in the same fashion and at the same rate as in Exhibit 272. (Vol. XCVIII, p. 15245.) It will be noted that the leaseholds are depleted on Statement No. 1 at a 36% rate. Upon request (Vol. C, pp. 14467-15470) Mr. Roberts had caused a computation to be made based upon an elimination of the quantiies of gas sold to industrial customers described as direct sale gas. He stated that the 36% depletion shown in Statement No. 1, Exhibit 272, really should be 36.04% but was rounded out in this exhibit to 36%. The new calculation of leasehold depletion with the direct sale gas eliminated gave 35.62% which was also rounded out to 36% since the estimate is based upon an estimate of reserves and he did not feel it could be brought down to a fraction of a per cent. Mr. Roberts also stated as to the 31% depreciation shown in Exhibit 272 applicable to gas well construction and gas well equipment the absolute accurate figures on this were 31.19% which was rounded out to the nearest per cent, namely, 31%, but that a new calculation based upon the elimination of the direct sale gas shows 30.82% which rounded out to the nearest per cent, still gives the 31%.

Further cross-examination of Mr. Roberts appears under title 27 supra.

Accumulated Depreciation and Its Application to Original Cost of Canadian's Portion of the Denver Line as of December 31, 1938.

The accumulated or actual or observed depreciation existing in this property, as distinguished from the book reserves, was determined by Witness Rhodes in Exhibit 68, pages 35 and 36, abstracted under Title 23. Witness Roberts, whose identity and qualifications have already been stated, in Exhibit 273 adopted and applied such observed depreciation to the original cost as of December 31, 1938, as determined in Exhibit 67, Witness Lusk, abstracted supra. The results are shown in Statement I of Exhibit 273, as follows:

Canadian River Gas Company

Accumulated Depreciation of the Original Cost of the Physical Properties of the Denver Pipe Line as of December 31, 1938

Summary by Accounts

Item No. (1)	Account No. Company (3)	Description (4)	Original Cost (A) (5)	Accumulated Depreciation Per Cent (6)	Accumulated Depreciation Amount (7)
		Transmission System			
1.	218	Compressing Station Land	$ 1,516	.....	.....
2.	221	Compressing Station Structures	102,172	10%	$ 10,217
3.	224	Compressing Station Equipment	504,275	17	85,727
4.	218	Transmission System Land	1,021	.....	.....
5.	220	Transmission System Rights of Way	35,430	.....	.....
6.	226	Transmission Line Equipment	2,313,572	7	161,950
7.	223	Other Transmission System Structures	6,188	19	1,176
8.	227	Other Transmission System Equipment	34,775	18	6,260
9.	218	Measuring Station Land	404	.....	.....
10.	222	Measuring Station Structures	5,602	11	616
11.	225	Measuring Station Equipment	14,575	11	1,603
12.	900	Gasoline Plant Land	615	.....	.....
13.	902	Gasoline Line Rights of Way	236	.....	.....

14.	903;906	Gasoline Plant Structures	49,352	15	7,403
15.	904;905	Gasoline Plant Equipment	282,701	27	76,329
16.	255	Telephone System Equipment	74,508	16	11,441
17.	255	Telephone System Rights of Way	12,508		.....
18.		Total	$ 3,435,450		$362,722
19.		General Property (Allocated) (B)	170,206		36,080
20.		Total Transmission System	$ 3,605,656		$398,802
		General Construction Costs			
21.		Applicable to Transmission System	395,255		.....
22.		Applicable to General Property	11,469		.....
23.		Total	$ 406,724		$ 22,493
24.		Total Original Cost	$ 4,012,380		$421,295

Notes: (A) As shown on Exhibit No. 67 adjusted as shown on Statement No. 2 attached.

(B) As shown on Statement No. 3, Exhibit No. 272 relating to Depreciation and Depletion of Original Cost.

Accumulated Depreciation and Its Application to Equivalent Original Cost of Canadian's Portion of a Denver Line for All Gas, Except Colorado Interstate's Direct Sale Gas.

In Exhibit 275 Witness Roberts, following precisely the same method as described in connection with Exhibit 273 supra, applied the observed depreciation as of December 31, 1938, to the equivalent original cost of Canadian's portion of the Denver line, as shown in Exhibit 134, Witness Lusk abstracted supra. The results are shown on Statement 1 attached to Exhibit 275, as follows:

Canadian River Gas Company

Accumulated Depreciation and Its Application to the Equivalent Original Cost of the Physical Properties of "A Denver Pipe Line for Resale Gas Alone" as of December 31, 1938

Summary by Accounts

Item No. (1)	Account No. Company (3)	Description (4)	Original Cost (A) (5)	Accumulated Depreciation Per Cent (6)	Accumulated Depreciation Amount (7)
		Transmission System			
1.	218	Compressing Station Land	$ 1,516	....	.....
2.	221	Compressing Station Structures	102,803	10%	$ 10,280
3.	224	Compressing Station Equipment	470,234	17	79,940
4.	218	Transmission System Land	1,021	....	.....
5.	220	Transmission System Rights of Way	35,507	....	.....
6.	226	Transmission Line Equipment	2,002,808	7	140,197
7.	223	Other Transmission System Structures	6,188	19	1,176
8.	227	Other Transmission System Equipment	34,775	18	6,260
9.	218	Measuring Station Land	404	....	.....
10.	222	Measuring Station Structures	5,602	11	616
11.	225	Measuring Station Equipment	14,575	11	1,603
12.	900	Gasoline Plant Land	615	....	.....
13.	902	Gasoline Line Rights of Way	236	....	.....
14.	903;906	Gasoline Plant Structures	49,352	15	7,403
15.	904;905	Gasoline Plant Equipment	282,701	27	76,329
16.	255	Telephone System Equipment	71,508	16	11,441
17.	255	Telephone System Rights of Way	11,508	....	.....
18.		Total	$ 3,090,903		$335,245
19.		General Property (Allocated) (B)	170,206		36,080
20.		Total Transmission System	$ 3,261,109		$371,325
		General Construction Costs			
21.		Applicable to Transmission System	378,318	....	.....
22.		Applicable to General Property	11,469	....	.....
23.		Total	$ 389,787		$ 22,192
24.		Total Original Cost	$ 3,650,896		$393,517

Notes: (A) As shown on Exhibit No. 134 adjusted as shown on Statement No. 2 attached.

(B) As shown on Statement No. 3 of Exhibit No. 272 Relative to Depreciation and Depletion of the Original Cost of Producing and Gathering Facilities.

Further cross-examination of MR. ROBERTS appears under title 27 supra.

Provision for Depreciation and Depletion and Corresponding Reserves, as Shown by Company Books.

Under Title 27, "Amortization and Depreciation," supra the evidence is abstracted showing the basis upon which both companies in the beginning dealt with the subject of depreciation. Colorado Interstate began to amortize its cost of contracts on the basis of a 20-year project term and Canadian River began to set up a reserve for depletion for its leaseholds and other depletable costs on the same basis.

WITNESS LUSK testified on direct examination: (Vol. XIX, pp. 2618-2619.)

Q. I notice an item of income taxes in this statement. Will you explain how the company might have income subject to income tax under this character of contract?

A. Well, it all came about with the rulings of The Internal Revenue Department that certain depreciation was not allowable. Therefore, the company was assessed amounts of income taxes from approximately 1931 right down to 1939.

Q. That is to say that there is a difference be ween the amortizations under the contract and the amortizations, broadly speaking, that are allowed by the Bureau of Internal Revenue for income tax purposes?

A. Well, the Bureau of Internal Revenue wouldn't allow amortization of debt to be included in amortization under any other form, under any circumstances.

Q. Did the original contract, Exhibit 16, make any provision for income taxes?

A. No, sir, it specifically exempted all forms of income tax.

Q. When income taxes developed by reason of this difference in amortization, were arrangements then made to include income taxes as a part of the cost of gas?

A. Yes, sir.

Q. And they have been included subsequently?

A. Yes, sir.

MR. LUSK on cross-examination testified: (Vol. XIX, pp. 2640-2644.)

Q. Refering back to your statement with reference to the changes made or recommended by the Internal Revenue Department, what did the Internal Revenue Department have to say with reference to the company's method of setting up depreciation or depletion on its books?

A. Well, the principal objection of the Internal Revenue Department in the early years was the disallowance of the difference between the cost of the leases and the amount that the company had taken as a depletable base.

The Internal Revenue Department also recommended certain changes and they were adopted by the company, adopted in 1931, in which the company accepted depreciation on a 25-year life basis.

Q. And what had the company set up on its books before that time?

A. The company originally started out to depreciate all of its depletable property on a 20-year life basis, five per cent.

Q. And what was the company's reason for setting them up on a 20-year life basis?

A. It was the life of the contract.

Q. That was for the purpose of tieing in with the provision of that contract?

A. That was the original intent, yes, sir.

Q. Then, when the Internal Revenue Department suggested the change did the company set up its depreciation on that basis as recommended by the Internal Revenue Department?

A. They did—unfortunately, they did.

Q. What year was that?

A. About 1931.

Q. 1931?

A. Yes, sir.

Q. Why do you say it was unfortunate that the company had to do it on that basis?

A. I am glad you asked that question, Mr. Lange.

Q. All right.

A. Because that is one—

Q. We want to air the whole thing. Let's get the reason for it.

A. I could never understand why the Canadian River Gas Company accepted the rule of the Internal Revenue Department and attempted to fit those rulings into the corporation accounting. They should be set up following their own practices and thoughts. The Internal Revenue Department is interested in taxes and not in corporation accounting.

Q. Well, but you just said they didn't set that up according to their own plans and thoughts but set it up to be complying with the provision of that contract.

A. No, I didn't.

Q. You say they set it up on a 20-year basis according to the contract?

A. That is correct.

Q. Their opinions or views didn't enter into that after that became fixed?

A. What I am quarreling about is why did they have to accept the Internal Revenue Department's rulings? They could still have gone on a 20-year life basis.

Q. Well, when the Internal Revenue Department made those changes or required those changes to be made, who was in charge of the acounting department of the company at that time?

A. Either—I think it was Mr. Simpson.

Q. Mr. Simpson?

A. Yes, sir.

Q. He is the Mr. Simpson referred to previously in this testimony?

A. Yes, sir.

Q. What was his opinion about it?

A. Why, I imagine that he took the matter up with New York and Amarillo and he was instructed to follow the Internal Revenue Department's ruling.

Commission WITNESS KENNETH L. SMITH testified on cross-examination: (Vol. XLIX, pp. 6792-6797.)

Q. Mr. Smith, I take it that you assume no responsibility for the service life estimates which were furnished by the Bureau of Engineering.

A. As to supporting them, no I do not.

Q. You just accepted them as they gave them to you?

A. I have accepted them and I have no reason to consider them unreasonable to the best of my knowledge.

Q. Well, a matter of determining service life is primarily an eingineering matter rather than an accounting matter.

A. That is true.

Q. It requires knowledge of the type of property through which it is put, the country through which it runs all of those things.

A. Any number of things which, of course, were not a part of my assignment. I merely made that statement to say that I accepted them in good faith and in good confidence as an accountant.

Q. Now, do you have with you or can you furnish us a copy of the service life estimates of various types of property which you used?

A. Service life estimates I think are set forth in my exhibit. Take, for example—turn to Schedule 2 on Page 16 as an example, Line 6, the annual rates are shown—

Q. Well, from that—

A. —that is, the percentages.

Q. That indicates that for main line, the service life is fifty years?

A. That is correct.

Q. Well, what I would like to have is the report and whatever reasons are in the report that support fifty years.

A. Well, in that case I think I will refer that question to counsel.

Mr. Lange: Yes, that will be in a separate tabulation and exhibits supported by the engineer that prepared them. Yes, sir, that will be in detailed form.

By Mr. Dougherty:

Q. I take it that you are applying this at the same rate each year, that is, on a straight line basis, two per cent each year?

A. Yes, that is correct.

Q. What is your definition of depreciation?

A. Well, I have adhered to the definition in the Uniform System of Accounts of the Commission for natural gas companies. It appears on Page 4.

Q. Yes. That is No. 14?

A. No. 14.

Q. Will you read that, please?

A. "Depreciation, as applied to depreciable gas plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of gas plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities, and, in the use of natural gas companies, the exhaustion of natural resources."

Q. Did you or do you know whether in the determination of the service life by the engineering bureau that that last phrase was considered; that is, the exhaustion of natural resources?

A. I so understand that that was given consideration but I do not know the particulars.

Q. Well, the reason I ask that, the word "service life" ordinarily implies the physical life of the particular property and what I was interested in is whether this estimate of service life was made without consideration of the exhaustion of natural resources which move through the line.

A. No, it is my understanding that the Bureau of Engineering did give that consideration but, as I say, they made the determination. I did not and therefore I do not know the particulars except that I know they have given it consideration.

Q. Well, I take it what you have done is really take their percentages or percentages that represent the service life and then applied those retroactively to the various classes of physical property of the company year by year and in that way arrived at the accrued depreciation as of December 31, 1939.

A. I don't know the significance of your word "retroactively," but I did employ those percentages from the beginning or the inception of the company.

Q. The word as I understand it and I used it to mean, applying to a period prior to the date you made your computations.

A. Well, I applied these service life estimates or percentages derived therefrom commencing as of the inception of the company.

Q. And the date when you did make that computation was when?

A. Well, these computations were, of course, made in the summer and fall of 1940.

Q. You probably learned that the rates of depreciation which the company had actually been accruing on its books had been accepted by the Internal Revenue Bureau each year as the Federal income tax settlement was made for such year?

A. Well, I have no knowledge of any pending litigation or discrepancy between the company's accounts as kept by its books and the settlements for income tax purposes. It is my general understanding that they were using a basis for depreciation which was in conformity with requirements of the Bureau of Internal Revenue.

Q. Did you make any investigation of the records of the Bureau of Internal Revenue on this company to obtain what information you could with respect to the question of depreciation?

A. No, I didn't go into detail on it. My study is predicated upon the service life estimates furnished by the Bureau of Engineering and as to what extent they studied that situation I don't know.

Q. That is, if any inquiry were made it probably would have been by them rather than by you?

A. It seems to me that getting to the heart of the thing, it would be related to the service life estimates.

Q. So that your exhibit primarily is a series of computations that change or depend upon the basic data furnished you by the Bureau of Engineering. I am leaving out of that now the question of the base against which you applied: that is, the plant account.

A. Yes. The result of my exhibit here would be dependent as one of the significant factors in the computation upon the service life estimates furnished by the Bureau of Engineering.

* * * * *

Mr. Smith further testified: (Vol. XLIX; p. 6806.)

Q. Well, you are recommending it now, I take it. You are recommending it to the Commission for the purpose of

assisting the Commission in determining how much depreciation should be included in the rate structure?

A. Yes. I am showing here a result which shows what I consider to be the proper provisions chargeable to expense and as a result of that same computation the proper accrued depreciation as of December 31, 1939.

* * * * *

MR. SMITH further testified: (Vol. XLIX, pp. 6821-6830.)

Q. I will ask you at this time whether in connection with your accounting work in the matter of Canadian River Gas Company you have prepared an exhibit entitled "Annual and Accrued Depletion and Depreciation of Gas Plant Accounts and Examiner's Adjustments"?

A. That exhibit is, generally speaking, my work so far as the annual accrued depreciation is concerned and Mr. Luttring's work so far as annual accrued depletion is concerned.

Q. Oh, yes, I intended to ask you whether some other accountant on the Commission's staff also worked with you in the preparation of this exhibit.

A. Yes.

Q. That is Mr. Carl E. Luttring?

A. Yes, sir, that is correct.

Q. And is this exhibit that I am now handing you the one that was prepared by you and Mr. Luttring?

A. That is correct.

Mr. Lange: Will the reporter please identify it?

The Trial Examiner: It will be marked for identification as Exhibit No. 176.

(Exhibit 176, Witnesses Smith and Luttring, marked for identification.)

By Mr. Lange:

Q. Now, Mr. Smith, did you in connection with the preparation of this exhibit also prepare a written statement summarizing the main portions and pieces of the exhibit?

A. Yes, I have.

Q. Will you please read that into the record?

A. "This report sets forth the annual and accrued de-

pletion and depreciation of the gas plant accounts of Canadian River Gas Company for the years 1928 to 1939, inclusive. By account classification, it shows annual accruals for depletion and depreciation, based on estimated recoverable gas reserves and service life estimates furnished by the Bureau of Engineering of the Federal Power Commission. It also shows original cost of property retired, salvage on retirements, and other credits, as adjusted by this and other Examiners.

"A comparison of the reserves for depletion and for depreciation of gas plant in service, per books, with those reserves as adjusted by the Examiner, is as follows:

Components of Reserve for Depletion 1928-1939

	As Adjusted by Examiner (Schedule No. 1 Column 3)	Per Books (Schedule No. 5)	Difference
Provision for Depletion charged to Expense	$ 283,170.98	$1,541,371.16	$1,258,200.18
Reserves Acquired	66,929.97	66,929.97	—
Retirements			
Original Costs Retired	(283,657.37)	(432,038.49)	(148 381.12)
Salvage	259,523.00	44,625.00	(214,898.00)
Adjustments of Prior Years' Depletion through Surplus		(69,721.49)	(69,721.49)
Profit and Loss on Retirements (net)		337,203.92	337,203.92
Applicable to Gas Plant held for future use	(1,423.16)		1,423.16
Balance in the Reserve, December 31,1939	$ 324,543.42	$1,488,370.07	$1,163,826.65

Components of Reserve for Depletion 1928-1939

	As Adjusted by Examiner (Schedule No. 1) Column 4	Per Books (Schedule No. 7)	Difference
Provision for Depreciation			
Charged to Expense	$1,679,038.38	$3,764,067.58	$2,058,029.20
Charged to Plant Account	8,031.60	8,031.60	—
Reserves acquired	113,205.45	116,738.18	3,532.73
Retirements			
Original costs retired	(732,713.88)	(813,054.40)	(80,340.52)
Salvage	369,833.15	249,138.31	(120,696.84)
Adjustments of Prior Years' Depreciation through surplus		(636,598.22)	(636,598.22)
Profit or Loss on Retirements (net)		267,205.42	267,205.42
Applicable to Gas Plant held for future use	(2,339.96)		2,339.96
Balance in the Reserve, December 31, 1939	$1,435,056.74	$2,955,528.47	$1,520,471.73

"The Examiner's adjustments were effected through the medium of reclassification and adjusting entries, which were made by this Examiner and others. Of these entries, those which relate primarily to depletion and depreciation are given in this report, and are designated by the numbers 400 to 413, inclusive.

"Entries Nos. 400 to 406, inclusive, which were made in connection with the adjustment of annual and accrued depletion were prepared by Mr. Carl E. Luttring, and the other seven were prepared by this Examiner.

"Entries of the '100' and '200' Series which affected this study are contained in the reports on this company entitled 'Income Account and Supplemental Data including Examiner's Reclassifications and Adjustments' and 'Gas Plant Account and Examiner's Adjustments,' respectively.

"The entries are principally of two kinds, those that affect only the reserves for depletion and depreciation and serve only to adjust the amounts of the several elements of the reserves, which entries are denoted by the letter 'R' prefixed to the numeral, and those entries that involve not only the reserve for depletion or depreciation but one or more other accounts as well. The chief purpose of all these entries is to adjust the annual provisions for depletion and depreciation expense and, concurrently, to adjust the reserves for depletion and for depreciation so that those reserves will properly reflect the total depletion and the depreciation *ligitimately* accrued on gas plant.

"The company's reserves for depletion and depreciation and the depletion and depreciation expense accounts have been reclassified and adjusted to correct various errors and to conform the annual and accrued depletion and depreciation to the remaining natural gas reserve estimates and to the service life estimates made by the Federal Power Commission's Bureau of Engineering.

"The natural gas reserve estimate and service life estimates on depreciable property, furnished by the Bureau of Engineering, yield results substantially different from those obtained by the company on its books, whose annual accruals were based principally on the policy of amortizing property within twenty-five years from January 1, 1931. The methods and the results of adjusting the reserves are set forth in considerable detail in the adjusting entries, each of which states specifically the reason and basis for each adjustment.

"Briefly, the facts about the adjustment of the reserve for depletion are these: As of August 1, 1939, the volume of the company's remaining gas reserve was estimated by the Bureau of Engineering as being 3,656,158,000 Mcf. at 14.65 lbs. per square inch absolute pressure; the production of gas from the company's wells on its acreage by periods, from June 1, 1928, the date of the company's inception, to December 31, 1939, was translated to the 14.65 lbs. base; the number of Mcf. produced during the eleven year and two months' period, from June 1, 1928, to August 1, 1939, plus the 3,656,158,000 Mcf. was considered the original volume of gas, so determined; the undepleted cost (cost less

reserve) of leases and gas well intangibles was diminished for each annual period by an amount which bore the same ratio to the total undepleted cost as Mcf. of production in each period bore to the estimated volume in Mcf. of gas reserves at the beginning of each period.

"Depreciation was computed for purposes of adjustment, based on the adjusted balances in each depreciable plant account. In a majority of instances the appropriate annual depreciation rate was applied to the adjusted plant account balance at the beginning of the year. If a substantial item of plant was added during the year, six months' depreciation rate was, as a rule, computed on that item in the year acquired. All minor plant additions and retirements were, for the purpose of this study, ignored for the year in which they occurred. They were, of course, taken into account in succeeding years.

"Following the adjusting entries, at Page 19 of the report, appears Schedule No. 1. This tabulation contains the information described in the first paragraph of this text except that it gives this information by major functional groups of plant rather than by accounts. It shows separately the depletable and depreciable plant in service and shows depreciable plant, subdivided into production, transmission, and general and undistributed plant. Schedule No. 1 is supported by Schedules Nos. 2, 3 and 4, and their subschedules, and they give, by plant account, the same kind of information that appears on Schedule No. 1. Schedule No. 2 shows six subclassifications of production plant; and Schedule No. 4, nine subclassifications of general and undistributed plant. Schedule No. 2 is supported by two subschedules which furnish subclassifications of other field facilities and gasoline plant, and Schedule No. 3 by one subschedule which shows main line and laterals in four subclassifications consisting of one main line and three laterals.

"The information given on the first five lines of Schedules Nos. 1 to 4, inclusive, and their subschedules are explainable as follows:

"Line No. 1, original charges per books, represents the cost of the company's initial construction and acquisitions plus subsequent gross additions, exclusive of construction

work in progress and gas plant adjustments. In most instances, therefore, the amounts on Line No. 1 may be arrived at by adding to the December 31, 1939 balance per books all retirements from the inception of the company to December 31, 1939, exclusive of construction work in progress and gas plant adjustments.

"Line No. 2, adjustments, represents the net adjustments to these plant accounts made by the Examiner who prepared the report entitled "Gas Plant Accounts and Examiner's Adjustments.'

"Line No. 3, is the sum of Lines Nos. 1 and 2 and represents the adjusted total cost subject to depletion and depreciation.

"Line No. 4 represents total retirements from the inception of the company to December 31, 1939, as adjusted.

"Line No. 5 is the difference between Lines No. 3 and 4 and represents the adjusted balance in the plant accounts as at December 31, 1939. The amounts on Line No. 5 agree with the adjusted totals shown in Column 7 of Schedule No. 1 of the report entitled 'Gas Plant Accounts and Examiner's Adjustments.'

"The depreciation rates used in the computations which appear in Schedules 1 to 4, inclusive, are based in general on service life estimates furnished to the Commission's Division of Accounts by its Bureau of Engineering. With respect to a gasoline delivery line to Amarillo and a loading rack at that place, which were retired in 1935, their costs adjusted for salvage were written off or depreciated on the basis of the actual periods of service rather than on the basis of estimates.

"The computation of depreciation on garage equipment, which is included in Schedule No. 4, was handled in a slightly but not essentially different manner than other depreciation computations. The total cost of the autos and trucks purchased in any one year was considered as a group cost, and after that group cost had been fully depreciated, which was usually about four years after the year of purchase, no more depreciation was accrued on that group.

"It will be noted that there were no charges to the re-

serve for depreciation for costs of removal. The company consistently charged these costs to expense. We have made no adjustment for them because they could not be determined without an unjustifiable amount of detailed analyses of payrolls, trucking tickets, and other records. *Approximately* 75 per cent of retirements were of such a nature that they involved no removal costs.

"Schedules Nos. 5 and 7 are analyses of the reserves for depletion and depreciation for gas plant in service, per books, for the period begun with the inception of the company in 1928, and ended December 31, 1939, and show the debits and credits to the two reserves classified by years in the manner set forth in the tabulations in this text, above.

"Schedules Nos. 6 and 8 are analyses of the reserves for depletion and depreciation for gas plant in service, as adjusted, for the period beginning with the inception of the company in 1928, and ended December 31, 1939.

"The classifications given in those schedules are the same as the major classifications shown in Schedule No. 1 and show the debits and credits to the reserves classified by years in the manner set forth in the tabulations in this text, above. The minor differences in the amounts as classified in the tabulation in the text, above, and as shown by Schedules Nos. 6 and 8, are caused by a variation in classification of $1,423.16 and $2,339.96, which are set forth in the tabulation above, as 'Applicable to Gas Plant held for Future Use.'

"Schedule No. 9 gives the net retirements of plant costs charged to reserve for depreciation, per books, and as adjusted, and provides a recapitulation of the Examiner's reclassification and adjusting entries affecting net retirements. It shows the amount of net retirements by years and supports Line 22, Column 4 of Schedule No. 1.

"Schedule No. 10 sets forth retirements as adjusted, by years and by accounts; it supports Line 4 of Schedule No. 1.

"Schedule No. 11 sets forth salvage on plant retired as adjusted, by years and by accounts; it supports Line 20 of Schedule No. 1."

* * * * *

MR. SMITH further testified on cross-examination: (Vol. L, pp. 6849-6871.)

Q. Mr. Smith, on Friday you submitted your Exhibit No. 174 which set forth the annual and accrued depreciation of the gas plant accounts of Colorado Interstate Gas Company for the years 1928 to 1939, inclusive.

A. Yes, sir, that is correct.

Q. And at the same time you submitted your Exhibit No. 176 which contains the same information for the same period for Canadian River Gas Company and also accrued depletion with respect to Canadian River Gas Company?

A. Yes, sir.

Q. Now, Mr. Dougherty is about to cross examine you on Exhibit 174, and for the purpose of shortening my cross examination on Exhibit No. 176 which relates to Canadian River Gas Company, I would like to ask you if your answers to his questions relating to the general principles of accounting involved and your accounting methods used would be the same, or will be the same—would be the same with respect to Canadian River Gas Company, and if that is true, and if you will keep that in mind, I do not need to go all over that same field again.

A. I believe that the questions which I answered on Friday afternoon with respect to the principles employed and the engineering support upon which I was relying, the accounting method and the references to the system of accounts of the Federal Power Commission for natural gas companies, I believe that all those answers on Friday would apply equally to Canadian River in so far as the depreciation is concerned.

Q. Yes, I think that is true, also to that part of Canadian River's plant which consists of the transmission line extending from Bivins station to Clayton Junction, your depreciation problem of Canadian River is almost identical with the depreciation problem of Colorado Interstate, is that correct?

A. As far as the accounting principles are concerned. Of course, as to what the engineers found in their study of service lives, I don't know, except that I do know they are adopting similar rates.

Q. Well, suppose you keep that in mind and then when Mr. Dougherty gets through I will ask you a few general questions along that line and we will save time as far as you and I are concerned on Exhibit 176?

Mr. Lange: Right at that point, when Exhibit 176 went on, I did not on Friday afternoon have Mr. Luttring identify his portion of it.

Mr. Spencer: Only as to your portion of it, Mr. Smith.

The Witness: All right. And here is a point, I think:

I don't want to adopt anything I say about Colorado Interstate as applying also to Canadian River until after this cross examination on Colorado Interstate is over. Now, I will consider the adoption at that time if that is all right with you.

Mr. Spencer: That is very satisfactory.

The Witness: As far as my answers from now on are concerned, when Mr. Dougherty is cross examining me, my answers will apply to Colorado Interstate and I will adopt them for Canadian River later on if I can, if that is what you want.

Mr. Spencer: That is very satisfactory. My only point in bringing it up is so that you will have it in mind.

By Mr. Dougherty:

Q. Mr. Smith, did you make some special study of the principles of depreciation accounting as part of the preparation for doing this work in Exhibit 174 and 176?

A. I probably reviewed and intensified my study of the principles of accounting back of depreciation. Naturally I would in order to do a competent job. However, so far as my previous study of the principles of accounting underlying depreciation, that has been going on from time to time over a period of years—a number of years.

Q. There are special principles that apply to depreciation accounting, are there not?

A. I doubt if I would agree with you. I think that the general principles of accounting apply to depreciation the same as any other accounting, whether prepaid insurance or operating expenses or what-not.

Q. In applying those principles, however, it is a fact, isn't it, that many special text books are written on depreciation accounting, particularly to take up the problems that are peculiar to depreciation accounting and the things that you must consider in doing it?

A. There have been several text books written especially on depreciation accounting, that is true, but the underlying principles go right back to fundamental accounting principles.

Q. Well, I would assume that you wouldn't have anything contrary in the depreciation accounting theory that would be contrary to the general principles, but what I am getting at, it is considered as a special problem that must be dealt with specially and a lot of literature has been written on the question of depreciation accounting.

A. There have been special works written on depreciation accounting, that is true.

Q. And isn't it so also that you have to consider many factors in depreciation accounting that you don't have to consider with respect to your income statements, operating expenses, and so forth?

A. Well, I am not sure that I follow that exactly. I think the underlying principle is exactly the same.

Q. Well, you aren't bothered with service lives in operating expenses or income statement accounting, are you?

A. Well, you are involved with something that is very similar in principle when you go to spreading unexpired insurance for example. From an accounting standpoint the principle is practically identical.

Q. Of course, unexpired insurance you definitely know the end date of that.

A. That is the distinguishing feature in the application of the principle, but the principle is the same.

Q. And in service lives, of course, it is not a thing you can fix with mathematical accuracy?

A. Of course, you understand I haven't attempted to fix the service lives. You assume I understand that no one could set them with mathematical accuracy?

Q. That's right.

A. Well, of course, I haven't considered the problems of setting service lives. I think that is the engineering phase of this study, and to what degree the engineer thinks that his method approaches mathematical accuracy, I believe is a question for him to answer.

Q. Now, in depreciation accounting, do you then consider it the duty of an accounting officer of the company in determining what the accounting shall be for depreciation to

accept any information on service lives without any consideration of whether they might be accurate or whether all factors have been considered in arriving at those service lives?

A. I think the accounting officer should satisfy himself that the engineer who prepared the service life estimates is qualified and competent, and if he had any experience, things that he knew of his own knowledge, facts on which to question the engineering estimate, it would probably be his duty to question it, but I do not believe that the accounting officer, unless he happened to be an engineer also, would be qualified nor duty-bound to question it from a technical sense.

Q. I didn't ask you whether he should question it from a technical sense, but what I want to know is, what do you consider the responsibility of an accounting officer in laying down a policy for depreciation accounting with respect to accepting without inquiry what the other officers say with respect to service lives and whether or not you think that such accounting officer would have fulfilled his obligation and responsibilities without making further inquiries as to the method pursued and things that were done.

A. Well, I am not sure but what I have answered your question.

Q. Well, you added the qualifying phrase "technical matters," and there is a lot of practical knowledge brought into use in depreciation accounting, is there not, Mr. Smith?

A. What do you mean by practical knowledge?

Q. Some knowledge of the actual operations of the company, what type of a business it is, what its problems are from an operating standpoint.

A. I don't see that it is essential to the application of the accounting principles, if the engineering factors have been supplied to the accountant.

Q. You think it is purely, then, a theoretical application of accounting principles without the accounting officer himself having any practical knowledge or bringing into play any practical knowledge about the company's business?

A. He doesn't need any practical knowledge as to setting service lives estimates.

Q. I didn't ask you that question. I know you got the service lives from somebody else. I am trying to find out whether you think the accounting officer's work is just that

of a clerk making computations by figures, or whether he must exercise some discretion and have some responsibility about it.

A. He has the responsibility of the matters that are in accounting—

Q. If somebody gives you two per cent times the plant account, that is an easy job. I could do that and the clerk could do that.

A. That is true, but that is not the whole story.

Q. That is what I am trying to find out. What is the whole story? What is it the accounting officer should do in addition to taking the percentage that is given him by the engineer?

A. Well, it is his responsibility to see that after the service life estimates are determined, to see that that is in fact carried out in making the computation side of the entry. Now, as far as accruing depreciation expense and setting up the entries for accruing depreciation expense, applying the percentage is, as you say, somewhat clerical, but there is a lot more to depreciation accounting than merely getting out a calculating machine and applying some percentages.

The depreciable base must be kept in mind and that is the responsibility of an accounting officer and the retirement accounting, the items which are charged against the depreciation reserve in the normal course of business is almost entirely accounting and that is the responsibility of the accounting officer to see that proper charges are made against the reserve from time to time and it is also his responsibility—largely his responsibility, to set up a proper system of control in his accounting organization so that the charges against the reserve for retirement expenses and salvage are properly recorded and so that a proper distinction is drawn between maintenance and depreciation or retirement accounting at all times. Those things are very definitely the responsibility of the accounting officer.

Q. You have left out what you think his responsibility is with respect to the determination of the annual rate of accruals and is the responsibility to the executives of the company for that determination after he has got the service lives, or has he no responsibility for it?

A. Well, that might vary with the expectations of the

officers of the company. I don't know whether I can make a statement about that categorically or not.

Q. I see. It would depend on whether he had assumed responsibility for it, or from an accounting standpoint you have mentioned these other things which the accounting officer is responsible for. You don't think he is to the same extent responsible for the determination for the annual rate which depreciation should be accrued?

A. I don't believe that he is.

Q. Is there any difference in considering depreciation accounting particularly with respect to the annual rate of accrual as between public utility companies and industrial companies?

A. From a strict accounting viewpoint, I can't see that there is.

Q. Well, now, of course, the situation with a utility company is that the annual accrual of depreciation is one of the items that goes into the determination of what the rates to be charged shall be?

A. Speaking now of the annual accrual, now, you mean the depreciation expense account?

Q. That's right.

A. Of course, what goes into computing the rate is a matter that is just outside of the accounting field, I believe. I am not attempting to avoid your question at all, but I will say from the standpoint of accounting principles in order to have the cost of operation for any period that you must include an item of expense for the annual accrual for depreciation.

Q. And in a utility company it is the cost of operation that is determined before the rates are fixed by a regulatory body?

A. Well, I would assume that the regulatory body would want to have that information and would make use of it, but as to how they apply it in making rates, I am not prepared to make a statement.

Q. Now, with an industrial company, their prices are fixed by matters that are determined many times prior to the determination of the depreciation expense, if they have any, isn't that correct? That is, an industrial company or any type of organization or company that does not have its rates subject to regulation fixes its prices without reference

to depreciation expense but it may be in the operating expenses?

A. I am not prepared to say how the prices for industrial concerns are set, but I will say this, that they cannot compute their true cost of operation without including a proper provision for depreciation. That is elementary and fundamental in accounting.

Q. That is true whether they know them in advance or know them after the cost has occurred or before the sale or after the sale is made?

A. Well, it is true as an accounting principle, regardless of anything else, whether they sold a nickel's worth or not.

Q. You are relating this matter of depreciation accounting in your exhibit only to the problem of accounting and without having in mind any bearing that the exhibit might have on the question of fixing rates under investigation by the Commission in this case?

A. I applied the very best accounting principles that I could conceive of and learn about through study and what I have gained from my own experience, so as to come to what I thought not only applied for depreciation but for all of the other elements we put into the income statement, which I supervised the preparation of, so that we have come to what we consider to be as near as it is possible to get the figures for the true cost of gas operations.

Q. You did that just the same as if you had been applying accounting principles to a steel mill or grocery store or any other type of enterprise?

A. The accounting principles are exactly the same whether they are for a steel mill, grocery store, or public utility, or what-not.

Q. And you are not giving any special consideration to the fact that the depreciation expense is one of the important factors in determining reasonableness of rates in a rate case?

A. That hasn't been an integral part of my study as such. The use of my exhibit that might be made in setting rates is something I haven't had a part of and possibly will not have a part in directly

Q. When you as an accounting officer made up your mind about these annual rates of accrual, I suppose you have in mind that if you want to be certain that your reserves will

accrue in the full amount required that there must be an adequate accrual to do that?

A. Will you read the question again, please?

(The question referred to was read by the reporter, as set forth above.)

The Witness: Maybe we can state this another way and shorten it a little bit.

What you mean is that the annual accruals must be of sufficient amount to retire the property at the end of its service life?

Mr. Dougherty: Quite so, yes.

The Witness: Yes, I think that is correct.

By Mr. Dougherty:

Q. If there is any question of doubt as to whether an estimated annual return will accrue depreciation to sufficiently retire the property, is it proper as a matter of conservative accounting practice to lean towards the side of a greater amount of annual accruals rather than a lesser, assuming that you have two figures which you are considering?

A. Well, I don't believe that an accountant has any choice after the service life estimates are figured. After the service life estimates are fixed I can't say that I am going to lop five years off of this and ten years off of that. There wouldn't be any rhyme or reason to that.

Q. Supposing the engineer says that his service life would be between thirty-five and forty years but he couldn't give you any more of an exact figure. What would be your practice?

A. If he said between thirty-five and forty years?

Q. Yes.

A. I would ask him to make up his mind and give me the figures.

Q. Then if there is any question about it he would have to decide whether he would take 35, 36 or 37 years?

A. I think so because I think I would be getting into the field of engineering if I made up his mind for him.

Q. What would you do if you asked two engineers and both of them gave you different answers and both of them were of equal reputation?

A. You are speaking of me now as an accounting officer of a *compny*?

Q. Yes.

A. Of course, I don't think that situation would exist.

Q. You think the fixing of service life is a matter of mathematical calculations, it is as easy as that?

A. I didn't mean that. I mean that I don't know about that because I am not an engineer. Of course, this is a situation I have not dealt with but I just can't conceive of it coming up that two engineers on the staff of a company would come to me with two different answers and want me to use two different bases.

Q. You would just ask one engineer or you would tell them to get together on it?

A. I would want to know all of the facts and circumstances. I don't know. It is a very hard thing to do in answering these hypothetical situations, especially so when it is a little bit more removed from what might happen actually. I would naturally have to come to some result eventually, but I would want to get it from the engineers rather than get into the field of engineering myself and decide their engineering problems for them.

Q. Do you recognize any difference in depreciation accounting as applied to an company which owns a hydroelectric plant or an electric public utility which has an indefinite period of service as a base, and a natural gas company which is dealing in an exhausting asset or resource?

A. The principles are no different. The whole objective is to spread the cost over the service life. Now, as to the factors which enter into the computation of service lives, it looks to me that when the service life is set, naturally those things are taken into consideration in that service life but as far as applying to accounting, I think the application of the accounting principles are exactly the same.

Q. Do you have when you get your service life the element included in there of depreciation which I think is referred to as "functional"?

A. It is my understanding that the engineers have carefully considered and have arrived at conclusions in arriving at functional depreciation. It is not a part of my study.

Q. Well, do you recognize that in a business dealing with an exhausting resource or asset, such as a coal mine

or gold mine or oil well, or natural gas company, that you have a problem of the ending of that operation for reasons other than the mere ending of service life for physical units of property?

A. One in accounting frequently comes into contact with the fact that that probably exists. For example, a coal mining company often pays dividends out of its depletion reserves and I understand that it is legal for it to do that, and you see evidence of those things, but as far as taking those factors into consideration and setting a rate of depreciation that is to be accrued, of course, that is purely an engineering problem.

Q. Assuming that you were the accounting officer for a coal mine and you had the various physical facilities, the tracks, the tipples, and whatever other machinery they use around a coal mine, and the engineer came in and said to you that the service life of that property was fifty years, would you consider it any part of your duty to inquire of him whether or not the economic life of the coal mine would be fifty years, that is, whether the coal mine would last that long?

A. You mean, in other words, if its reserves would be exhausted before that time?

Q. Yes, wouldn't it be a part of the responsibility of the accounting officer to find out whether the reserves would be exhausted before fifty years' time?

A. Of course, he couldn't make that determination up on his own account. You mean he would have to rely upon his expert—

Q. All right, but isn't it part of his duties to make inquiry and consider it, and if not, to have it considered?

A. Of course, as an accounting officer I think his responsibilities would end with the authority and responsibility that had been delegated to him by the management of the company or by the directors in any particular instance.

If the management of the company had instructed the accounting officer to have used the service lives and delegated the responsibility of setting proper service lives forth to the engineers for the coal mining company, I am not so certain but what the accounting officer would have discharged his real responsibility.

Now, if he had any reason to doubt the competency of the

engineers who gave the estimates or felt that it was necessary to inquire into their procedure, I think it would be a responsibility for him to do that because he would want to see some support, some sort of a statement from the engineers as to their methods, but he couldn't pass upon whether that method was technically sound.

Maybe I have gone all around your question and haven't wound up at the exact point you wanted me to, but if this accounting officer had knowledge of the fact and knew it either through reliable information that he had obtained, or otherwise, information upon which he could rely, and he knew the exhaustion of those resources would take place before the service lives set for the physical property, then obviously he would not be using good accounting practice not to go into it further.

Q. My question is this, that the accounting officer is the principal and responsible accounting officer of the company; that he has been told by the president that he can use all of the engineering figures made by the engineers but that he was going to hold you responsible. The next step was that you called in your engineers who gave you a service life. Don't you feel that it is the responsibility of that officer to find out whether the engineers have considered the exhaustion of the coal and what consideration they have given to it even though you don't know a thing about it?

A. Yes, I believe that would certainly be a higher class practice than to ignore or overlook it.

Q. Isn't the first thing an accounting officer would do would be to check with the engineer as to the relationship of his service life to your estimates of the exhaustion of this coal mine? Isn't that one of the first questions you would ask?

A. I think that he would have to recognize that relationship and he ought to be satisfied on that point but he couldn't make the determination.

Q. No, but I say this: Wouldn't he have to say it had been made and given consideration?

A. I believe in order to follow out his responsibility as chief accounting officer on a high plane from a professional and ethical standpoint, he would have to make some investigation that he would have to rely upon in forming his opinion as to the estimate by technical experts in that field.

Q. Now, do you recognize in such a case as a coal mine that by the time that the exhaustions of the coal had taken place there should have been accrued a depreciation reserve sufficient to retire all of the physical property used in connection with that coal mine less salvage?

A. That is correct.

Let me restate it to you to make sure that we are on the right track.

Q. Surely.

A. By the time the exhaustion of the mineral deposit is made there must also be enough money in the depreciation reserve to retire the equipment less salvage, less net salvage?

Q. That is right. That is my problem.

A. Yes, that is exactly right and that is in accordance with sound and accepted accounting practices.

Q. That would be true even if the physical service life of the equipment were a greater number of years than the period of life of the mineral deposits, that is, to put it specifically, let's assume that the physical service life of the equipment was fifty years for each piece of equipment and that the exhaustion of the resources would take place in forty years; you would have to base your depreciation on forty years rather than on fifty years?

A. Yes, that is correct.

Q. Now, in connection with that problem, do you know whether in this case—that is, the current case at hand—the engineers based their 50-year life of transmission line pipe of Colorado Interstate Gas Company on the physical factors or did they give any consideration to the exhaustion of the source of supply of gas which goes through that line?

A. They, as I understand it, did give consideration to the exhaustion of the source of supply of the gas which moves through that line. I don't know the particulars of that but I do know that it was considered and that the source of supply and the availability studies do have detail from an engineering standpoint in such a way there was no flaw in the service lives they adopted.

That is my understanding of the situation, that is, the understanding upon which I have proceeded.

Q. You say there is no flaw in it; is that your own judgment?

A. No, that is my understanding, that there is no flaw in it.

Q. That would apply with respect to that part of the Canadian River Gas Company's property from Bivins north, the same 50-year life as assigned, because you have used two per cent in the exhibit on transmission line?

A. It seems to me that the situation there is entirely comparable to the main line of the Colorado Interstate Gas Company.

Q. Do you know whether or not the fifty years is the life of the field or is the physical life of the pipe, or is it a composite figure that has been arrived at after giving consideration to both the physical and functional factors as involved in this matter?

A. It is my understanding the physical and functional factors have all been given proper consideration from an engineering standpoint.

Q. I assume that the period of exhaustion of the gas reserves would not be less than fifty years, which is the service life used; that is, isn't that a fair assumption to make?

A. I believe from everything I have said here and the evidence that is in my exhibit, you could fairly conclude that.

* * * * *

MR. SMITH further testified on cross-examination and redirect examination as follows: (Vol. L, pp. 6922-6936.)

Take the Bivins camp, for instance. There you have under "Structures" 2.86 per cent. I think that is on Page 23.

A. Column 10.

Q. Excuse me?

A. That is Column 10 you are referring to?

Q. Yes. Do I understand that that is a composite rate or is that a rate that is applicable to the Bivins camp only?

A. The 2.86 per cent representing 35 years is a composite life, as I understand it. There again the engineering staff is I believe the ones that can give you better information on that than I can.

Q. All right, now, you have a rate of 2.86 per cent on structures relating to the Bivins camp, and you have a rate of 4 per cent applicable to equipment. Am I correct in assuming that the equipment is going to wear out before the structures do, is that right, at this Bivins camp?

A. Well, it would seem that a shorter service life would imply that that equipment would wear out earlier than the structures, other factors being equal.

Q. Yes. that is right.

A. But it doesn't necessarily follow—

Q. Well, wait. We are just on these figures here, on your figures using the four per cent of the equipment, that means the equipment has a service life of twenty-five years and using your figures 2.86 per cent for structures that is approximately thirty-five years life for the structures, is that not so?

A. Yes.

Q. Now, what I want to ask you, at the end of twenty-five years when the equipment is worn out, been fully depreciated, do you have in mind in your study that you have made here that the company shall replace the equipment and put in new equipment to carry that along, to replace that that is worn out?

A. Well, of course, all of the equipment won't wear out in exactly tweny-five years and I don't think a composite rate of four per cent or a composite service life of twenty-five years means that—there is some of that equipment that will wear out and may have already worn out. Some of it might be less than twenty-five years and some of it might be more than twenty-five years. Twenty-five years is the composite life. Now, in treating this as a going concern which will operate so long as a supply of gas is available, I think it does follow that there will be placements of equipment which might have a short service life.

Q. Let me put my question another way: Of what use to the company would the structures be for thirty-five years when the equipment that is in it will be gone in twenty-five years?

A. You are assuming now that there will be no equipment replaced?

Q. I don't know. I am trying to find out what you are assuming in making this study. That's all I'm trying to do here.

A. Well, I have stated my assumption in the previous answer.

Q. Perhaps I didn't understand. Will you repeat to me again—

A. Well, we have assumed throughout this study that

the Canadian River Gas Company will be a continuing enterprise so long as a supply of gas is available.

Q. Will you put right in there which, according to your calculations here, will not be less than how many years?

A. I didn't make those calculations.

Q. Well, the calculations that you use. Perhaps you don't understand me. You do assume here in using 50-year life, for instance, for transmission lines that Canadian River Gas Company will have an available gas supply for not less than fifty years, isn't that correct?

A. Yes.

Q. You so testified this morning I understood.

A. Yes, that is a fact, and I have in effect at least testified that the engineering data will provide a sufficient margin over fifty years.

Q. To give you an average even on the fifty?

A. I don't understand that.

Q. I mean an average by this: Some are going to wear out before fifty years and maybe some will last longer than fifty years. You think that fifty years is adequate for the purpose of this study, taking both the shorter life and the longer life into consideration? That is what I understood from your testimony this morning.

A. I am not sure that I understand whether there is a question pending or whether that is a question.

Q. Well, I have forgotten, so we will withdraw it.

Now, turning to your written statement, Mr. Smith, did I understand it you had nothing to do with the depletion work in connection with this exhibit? That was done by Mr. Luttring?

A. Yes, that is correct. Mr. Luttring has prepared the depletion.

Mr. Lange: Mr. Spencer, are you now referring to Exhibit 176?

Mr. Spencer: Yes.

Mr. Lange: Well, as I stated this morning, there is a certain portion of that that was prepared by Mr. Luttring and I was going to have him identify that whenever you reached the point in interrogating on that.

Mr. Spencer: My only point in asking Mr. Smith now

was to avoid asking him questions that Mr. Luttring will testify about; so I will ask you questions only about the depreciation features of this exhibit.

Mr. Lange: We might have the witness indicate at this time, Mr. Spencer, to facilitate it also as to which of the Examiner's entries as well as which of the schedules were prepared by him and which by Mr. Luttring.

Mr. Spencer: Well, his written statement indicates what entries he is responsible for but I guess it does not indicate as to schedules.

Mr. Lange: No, it does not as to schedules. I think that will facilitate it on that.

Mr. Smith, turn to your Exhibit 176, the contents page preceding Page 1, the Examiner's Entries Nos. 400 through 406, as I understand were prepared by Mr. Luttring?

The Witness: That is correct.

Mr. Lange: And Entries Nos. 407 through 413 were prepared by you?

The Witness: That is correct.

Mr. Lange: And in so far as the schedules shown on the table of contents are concerned, which of the schedules were prepared by you?

The Witness: Schedule No. 1 and all of the schedule No. 2 except Column 3. Column 3 relates to depletion; then all the rest of the schedules from 2-A through 11, inclusive, are mine except Schedules 5 and 6 which relate to depletion, and those are Mr. Luttring's.

Mr. Lange: All right, with that information, then, I think that will segregate those.

You may proceed, then, Mr. Spencer.

Mr. Spencer: All right, thank you.

Q. Now, turn to Page 2 of your written statement. You have a schedule there which is entitled "Components of Reserve for Depreciation, 1928-1939," and in your first column you show your figures as adjusted by the Examiner which is Scheduled 1, Column 4; the second column showing per books, Schedule No. 7, and then you show the differ-

ence in the third column. The net result of your work and Mr. Luttring's work here being that the company loses approximately a million and a half depreciation and depletion heretofore accrued on its books, is that correct?

A. This million and a half applies to depreciation.

Q. Oh, that's right. I should have confined that to depreciation only. That's right, but applying it only to depreciation, is my conclusion correct?

A. Your conclusion is that we have reduced the accrued depreciation on the books?

Q. Approximately a million and a half dollars.

A. Yes, as of December 31, 1939.

Q. That's right. That, then, operates as a credit to surplus, is that correct?

A. Yes, we have treated any decrease in the reserve for depreciation as a result of this study as a contra increase in the surplus accounts in our balance sheet exhibit.

Q. Now, have you any idea what the Securities and Exchange Commission would say to a holding company or one of the holding company's operating companies that, subject to the Public Utilities Holding Company Act, which attempted to increase its surplus by rewriting its depreciation account or its depletion account? I have had some experience, so I'm trying to get what you know about it.

A. No, I haven't the slightest idea what the Securities and Exchange Commission would say under any circumstances.

Q. You wouldn't be able to testify about their attitude towards this sort of—I was going to say "manipulation." That probably isn't the right word—they probably would use it—this sort of a program. You have no knowledge of what they would say about it or their accounting rules with reference to it?

A. No, I am not in a position to state what the Securities and Exchange Commission would do—

Q. You do know that Southwestern Development Company is a registered holding company under the Public Utilities Holding Company Act, do you not?

A. Well, I don't know that to be a fact. Anything that I would say would be hearsay. I don't know it to be a fact.

Q. You do know that Canadian River Gas Company is a wholly-owned subsidiary of Southwestern Development Company?

A. Yes, there is evidence to support that in this case, as I understand it.

Q. You could move out and make a definite statement that it is for the purpose of the record—it is a 100-per cent subsidiary of Southwestern Development Company? I think counsel would stipulate that.

A. I understand that it is.

The Trial Examiner: I thought Mr. Smith so stated.

Mr. Dougherty: He said it was in the record.

The Witness: It is my understanding that testimony is in the record to that effect.

Mr. Spencer: Excuse me. I thought you had not answered.

Q. Now, on Page 3 of your written statement down about the tenth line we meet the old friend again: "• • • so that it will properly reflect the depreciation legitimately accrued on Gas Plant." You are not saying, I assume, that what the company has done is illegitimate?

A. I don't believe there is any such intention on my part.

Q. You mean by the word "legitimately" so that it will show depreciation properly in your opinion for the purpose of this particular study?

A. Well, I will go along with you on the word "properly." Now, I wouldn't like to leave the impression that I had adopted a set of accounting principles just for this study or this particular proceeding. I think we have followed good accounting principles all the way through and I think that the revised reserve for depreciation was properly accrued, not only from the standpoint of this particular study but from the standpoint of good accounting.

Q. But you aren't purporting to say that what the company has done is illegitimate?

A. No, I haven't intended to imply that.

Q. In the next paragraph, however, you do mention reclassifications and adjustments to correct various errors. I notice in the Exhibit 174 which relates to Colorado Interstate you specified some things which you thought were in error specifically. Here you do not specify specifically what errors you had in mind. Can you enlighten me on that, please?

A. Well, I think I can point out probably the principal—one of the principal objections. On Page 11, supporting Entry No. 407, I have a summary there that shows what the company's depreciation policy has been.

Q. Yes.

A. Now, they adopted a policy on January 1st, 1931 of amortizing their accounts over a 25-year period effective from that day.

Q. Would it upset your train of thought to ask you why that was done as of that date?

A. Well, of course, it is my understanding that I have gained through information obtained—from what vague information I obtained from the accounting examination, that it related to their income tax problem.

Q. Well, didn't they set their books up at that time exactly in conformity with their agreement on this subject with the Internal Revenue Bureau? And haven't they subsequently maintained their books on exactly that basis?

A. Well, as to your first question I don't know, and as to your second question, they have maintained the books on this basis with one minor exception, I believe, since 1931.

Q. All right, now, excuse me for interrupting you. Go back to the errors that you had in mind, using that phrase on Page 3 of your written statement. I think you were going to tell me why you thought this was in error.

A. As I pointed out this morning, I think that when a change in depreciation policy is made as of a certain date that the adjustments of prior accrued depreciation should be made through an adjustment of surplus as of that date if it is a significant amount, rather than spreading a correction of those errors over a series of years in the future and thereby having the wrong net income for each year of the company's existence. That is what it amounts to from an accounting point of view and from the standpoint of good accounting practice and principles and, of course, that is exactly what the company has done as I interpret the way their books were recorded.

Q. What you said on that subject this morning in connection with Exhibit No. 174 would be generally applicable here, is that correct?

A. Yes, the facts in the two situations might be slightly different, but I believe the principle is exactly the same.

Q. I believe you also brought out on cross examination

by Mr. Dougherty that the Internal Revenue Bureau would have nothing to do with your theory so far as income tax calculations are concerned, is that correct?

A. What I mean is this, If I may restate it, is that whatever expedient the Bureau of Internal Revenue uses in applying the statute under which it operates would have, would not necessarily have any bearing at all on the establishment of good accounting principles.

Q. Do you think the company should keep two sets of books, one for income tax purposes and one for rate making purposes, let us say?

A. Well, of course, you are getting into an assumption there.

Q. I am just trying to find out ultimately how many sets of books this company is going to have to keep to satisfy everybody.

A. Well, are you making the assumption that the company has to keep its set of books to obtain its statutory deductions under the Income Tax Act?

Q. Well, it may not be a complete set of books, but they have to keep certain independent data and records for that purpose which in a sense are duplications of some other set, if we followed your principles here.

A. Well, I know that in earlier years in the 1930s, a great many utility companies did keep an auxiliary set of records in order to support their deductions for income tax purposes. Now, I have been away from public accounting practice since about 1936 and I haven't kept up to date on that particular practice of companies, but I have generally understood that the recent attitude of the Bureau was such that they did not have to do that, that they were entitled to the statutory deductions under the law even though they might not agree exactly with the way they kept their general books.

Now, that is my understanding. It is not any legal conclusion on my part.

Q. All right, Mr. Smith, that is one error that you point out. Let us say an error in your opinion. Did you have any others that you thought of sufficient importance to mention?

A. I think another one of those errors shows up in one of Mr. Luttring's adjustments, probably the recorded ac-

counting on the Ingerton lease and that—on the sale of the Ingerton lease. I think that is one of the things we had in mind in making this statement in the written statement.

Q. Well, maybe I can clear it up this way sufficiently for my purposes: Your inclusion of the clause "to correct various errors" is of no serious importance here in connection with this study at all? You see I am very sensitive.

A. Yes, I have been considering, and that statement probably is a little blunt. There are a couple of things of very minor importance a couple of reclassifications there in entries 409 and 410, too, but they aren't serious.

Q. All right, we'll leave it. As I understand your testimony this morning, this exhibit is intended to be informative to the Commission and anyone else who has occasion to study this record for rate making purposes, is that right?

A. Yes, I believe that is correct.

Q. And you aren't intending by this exhibit to recommend that the company change its books and records for this period to conform to what you have found?

A. No, I don't believe that my introduction of this exhibit carries that implication with it at all.

Mr. Spencer: Well, I didn't get that impression.

That is all.

Redirect Examination.

By Mr. Lange:

Q. Mr. Smith, this morning in connection with your cross examination on Exhibit 174, Colorado Interstate Gas Company, some reference was made by you concerning a figure that you understood the Internal Revenue Bureau had used as to the life of the field or the reserves of Canadian River Gas Company and what is your information about that? What support, if any, did you have for it?

A. Well, the information that I had was just general knowledge, the general understanding of the situation that was disclosed in the accounting examination. I did not see any documents to support that theory and I got the information that the company—

Mr. Spencer: Now, wait a minute, Mr. Smith. If he knows—any figures he knows, he can put in, but if he is

going to put geological figures in here that he knows something about—

Mr. Lange: That is the very thing I want to ask him, whether that was based on any kind of an estimate or whether it was an agreed figure or whether he knows any of the facts about it at all.

The Witness: No, I really don't know what the understanding was, if any, between the Bureau and the company and I don't know any documents on which it was based. So far as I am concerned, it is hearsay that I gained from talking to our Examiners who had been down there and who had questioned—it was a natural question to want to know what the company had based its depreciation accounting policy on and that was the understanding that I gained, that it has to do with income tax purposes, and I don't know what, if anything, there was to back that up on the part of the company.

Exhibit 176, in part, is as follows:

Docket G-124

CANADIAN RIVER GAS COMPANY

EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES

RELATING TO ANNUAL AND ACCRUED DEPLETION AND DEPRECIATION.

Particulars	Debit	Credit
No. 405		
Surplus - Operating Revenue		
Deductions - Depletion	$110,241.42	
Reserve for Depletion of Producing Natural Gas Lands		$110,241.42

To provide annual depletion of operated acreage based on undepleted gas reserves estimated by Bureau of Engineering, undepleted cost and annual production in amounts for the years as follows:

Year	Annual Depletion	Retirements	Reserve Acquired	Depletion Reserve
as of 12/31/1927	$	$	$55,338.33	$55,338.33
1928	895.30	173.61		56,060.02
1929	2,865.07			58,925.09
1930	5,760.42			64,685.51
1931	6,225.13			70,910.64
1932	6,864.98			77,775.62
1933	6,926.97			84,702.59
1934	9,346.59			94,049.18
1935	10,908.04	3,127.78		101,829.44
1936	13,730.85			115,560.29
1937	14,682.23			130,242.52
1938	13,509.62			143,752.14
1939	18,526.22			162,278.36
Total	$110,241.42	$3,301.39	$55,338.33	$162,278.36

Undepleted reserves, annual production and total annual depletion are as follows:

(continued)

No. 405 (Continued)

Year	Gas Reserves (M.C.F.)	Annual Production (M.C.F.)	Annual Depletion			Rate per M. C. F.
			Leaseholds	Gas Well Intangible Costs	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1928(6 months)	3,991,866,963	6,675,097	$ 895.30	$ 2,150.05	$ 3,045.35	$ .000466
1929	3,985,331,866	19,100,448	2,865.07	6,150.34	9,015.41	.000472
1930	3,966,231,418	20,646,678	5,760.42	9,043.24	14,803.66	.000717
1931	3,945,584,740	20,819,847	6,225.13	9,473.03	15,698.16	.000754
1932	3,924,764,893	22,883,266	6,864.96	10,389.00	17,253.96	.000754
1933	3,901,881,627	21,990,394	6,926.97	10,401.46	17,328.43	.000788
1934	3,879,891,233	29,577,801	9,346.59	13,990.80	23,336.89	.000789
1935	3,850,313,432	34,628,708	10,908.04	15,998.46	26,906.50	.000777
1936	3,815,684,729	43,590,010	13,730.85	21,664.23	35,395.08	.000812
1937	3,772,094,719	46,610,252	14,682.23	24,516.99	39,199.22	.000841
1938	3,725,484,467	42,483,068	13,509.62	22,813.41	36,323.03	.000855
1939	3,683,001,399	46,783,394	18,526.22	26,339.05	44,865.27	.000959
1940	3,636,218,005					
Totals	x x x x	355,648,958	$110,241.42	$172,929.56	$283,170.98	$.000796

NOTES:

(1) All M.C.F. data above are stated on a pressure base of 14.65 pounds per square inch absolute.

(2) Gas reserves shown in column (2) represent remaining gas reserves to 25 pounds per square inch above atmosphere at beginning of each period. All amounts in column (2) were derived by adding M.C.F. produced to remaining gas reserves of 3,656,158,000 M.C.F., August 1, 1939, per estimate of Bureau of Engineering.

Exhibit No. 176

4901

Exhibit No. 176

Docket G-124

CANADIAN RIVER GAS COMPANY

EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES

RELATING TO ANNUAL AND ACCRUED DEPLETION AND DEPRECIATION.

Particulars	Debit	Credit
No. 406		
Surplus - Operating Revenue		
Deductions - Depletion	$ 172,929.56	
Reserve for Depletion of Gas Well Intangible Costs		$ 172,929.56

To provide annual depletion of gas well intangible costs based on undepleted gas reserves estimated by Bureau of Engineering, undepleted cost and annual production in amounts for the years as follows:

Year	Annual Depletion	Retirements	Reserve Acquired	Depletion Reserve
as of 12/31/1927	$	$	$ 10,168.48	$ 10,168.48
1928	2,150.05	6,487.11		5,831.42
1929	6,150.34			11,981.76
1930	9,043.24			21,025.00
1931	9,473.03			30,498.03
1932	10,389.00			40,887.03
1933	10,401.46			51,288.49
1934	13,990.30			65,278.79
1935	15,998.46	14,345.87		66,931.38
1936	21,664.23			88,595.61
1937	24,516.99			113,112.60
1938	22,813.41			135,926.01
1939	26,339.05			162,265.06
Total	$172,929.56	$20,832.98	$10,168.48	$162,265.06

See data at end of entry No. 406 for undepleted reserves annual production and total annual depletion.

Exhibit No. 176

Docket G-124

Sheet 1 of 3

CANADIAN RIVER GAS COMPANY

EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES RELATING TO ANNUAL AND ACCRUED DEPLETION AND DEPRECIATION

Particulars	Debit	Credit
No. 407		
Reserve for Depreciation	$3,095,285.02	
Surplus -		
Operating Revenue		
Deductions - Depreciation		$3,095,285.02

To reverse accruals for depreciation provided in the following years:

Year	Amount
1928	$ 173,793.94
1929	346,033.71
1930	342,833.67
1931	233,846.62
1932	231,282.06
1933	234,706.42
1934	241,579.78
1935	245,288.75
1936	250,079.92
1937	256,497.10
1938	266,950.01
1939	273,391.04
	$3,095,285.02

Exhibit No. 176

4907

Sheet 3 of 3

11

Exhibit 6-124

CANADIAN RIVER GAS COMPANY

SCHEDULE OF COMPANY DEPRECIATION AND AMORTIZATION RATES

FROM INCEPTION TO DECEMBER 31, 1939

Particulars	Periods and Effective Rates		
	1928, 1929 and 1930	1931 through 1935	1931 through 1939 1/
(1)	(2)	(3)	(4)
No. 407 (Cont'd)			
Production System			
Tangible Gas Well Equipment	10.00%	10.00%	25 Years
Drilling and Cleaning Equipment	25.00	25.00	25.00%
Field Lines			
Right-of-Way	5.00	5.00	25 Years
Construction	5.00	5.00	25 "
Equipment	5.00	5.00	25 "
Other Field Facilities			
Field Measuring Station Structures	5.00	5.00	25 Years
" " " Equipment	5.00	5.00	25 "
Field Compressor Station Structures	-	5.00	25 "
" " " Equipment	-	5.00	25 "
Gasoline Investment			
Rights-of-Way	5.00	5.00	25 Years
Structures	5.00	5.00	25 "
Equipment	8.33	8.33	8.33%
Delivery Line	5.00	5.00	25 Years
Loading Rack	8.33	8.33	8.33%
Transmission System			
Mains and Laterals			
Rights-of-Way	5.00	5.00	25 Years
Equipment	5.00	5.00	25 "
Dehydration Plant			
Structures	-	-	25 "
Equipment	-	-	25 "
Main Compressor Station			
Structures	5.00	5.00	25 Years
Equipment	5.00	5.00	25 "
Measuring Stations			
Structures	5.00	5.00	25 Years
Equipment	5.00	5.00	25 "
Rivins Camp Investment			
Structures	5.00	5.00	25 Years
Equipment	5.00	5.00	25 "
Undistributed Fixed Capital	5.00	5.00	25 Years
General Property			
Office Structures	5.00	5.00	25 Years
Other Structures	5.00	5.00	25 "
General Office Equipment	10.00	10.00	10.00%
" Store "	5.00	5.00	25 Years
Telephone System	5.00	5.00	25 "
General Tools and Implements	10.00	10.00	12.50%
Other General Equipment	5.00	5.00	25 Years
General Garage Equipment (Autos and Trucks)	33.33	33.33	2/ 33.33%

The Respondent adopted as of January 1, 1931, with the minor exceptions disclosed in column (4), an amortization basis of computing annual and accrued depreciation, the period for such amortization being set at 25 years. The company's plan contemplates, in general, that the accrued depreciation (amortization) reserve at the end of 25 years from January 1, 1931 will be equal to the book cost of depreciable plant.

2/ Rate of 33.33 percent was in effect to December 31, 1938; for the year [illegible] rate of 25 percent was in effect.

Exhibit No. 176

12

cket G-124

CANADIAN RIVER GAS COMPANY

EXAMINER'S RECLASSIFYING AND ADJUSTING ENTRIES

RELATING TO ANNUAL AND ACCRUED DEPLETION AND DEPRECIATION.

Particulars	Debit	Credit
No. 408		
rplus - Operating Revenue		
Deductions - Depreciation	$1,679,038.38	
Reserve For Depreciation		$1,679,038.38

To provide annual depreciation based on rvice lives estimated by Engineering Bureau for ars and in amounts as follows:

Year	Amount
1928	65,278.93
1929	139,348.16
1930	139,358.26
1931	144,877.76
1932	146,929.13
1933	147,896.12
1934	150,131.45
1935	147,867.57
1936	145,632.19
1937	144,723.45
1938	153,008.23
1939	153,987.13

See Schedule No. 1 for summary of details.

Docket G-124

CANADIAN RIVER GAS COMPANY

SUMMARY OF ANNUAL AND ACCRUED DEPLETION AND DEPRECIATION OF GAS PLANT IN SERVICE AT DECEMBER 31, 1939

Schedule No. 4

Line No.	Particulars	Total	Total Depletable Plant	Total Depreciable Plant	Depreciable Plant: Production Plant	Depreciable Plant: Transmission Plant	Depreciable Plant: General and Undistributed	Non-Depreciable Plant 1/
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Costs subject to Depletion and Depreciation							
1	Original Charges Per Books	$15,536,159.96	$ 8,041,115.85	$7,467,175.44	$3,116,797.48	$3,424,819.95	$ 925,558.01	$ 4,868.67
2	Adjustments	(4,596,458.77)	(3,966,934.14)	(628,348.29)	(12,899.99)	(12,625.44)	(602,822.86)	(1,176.34)
3	Adjusted Total Cost Subject to Depletion and Depreciation	$10,939,701.19	$ 4,074,181.71	$6,838,827.15	$3,103,897.49	$3,412,194.51	$ 322,735.15	$ 3,692.33
4	Less Retirements (Adjusted)	1,016,371.25	283,657.37	732,713.88	579,230.58	33,107.17	120,376.13	-
5	Adjusted Book Cost at December 31, 1939	$ 9,923,329.94	$ 3,813,524.34	$6,106,113.27	$2,524,666.91	$3,379,087.34	$ 202,359.02	$ 3,692.33
	Depletion and Depreciation, Computed Annually; depletion computed on remaining gas reserves estimated by Bureau of Engineering and annual production of Canadian River Gas Co.; depreciation based on service life estimates furnished by Bureau of Engineering:							
	YEAR							
	1928 (6 mos.)	$ 68,324.28	$ 3,045.35	$ 65,278.93	$ 29,734.28	32,772.40	$ 2,712.25	
6	1929	148,363.57	9,015.41	139,348.16	58,099.46	65,544.83	15,703.87	
7	1930	154,161.92	14,803.66	139,358.26	56,453.99	67,514.15	15,390.12	
8	1931	160,575.92	15,698.16	144,877.76	62,677.79	68,686.37	13,513.60	
9	1932	164,183.11	17,253.98	146,929.13	61,778.38	68,844.16	13,306.59	
10	1933	165,224.55	17,328.43	147,896.12	65,999.67	69,409.62	12,886.83	
11	1934	173,468.34	23,336.89	150,131.45	67,777.59	69,754.94	12,598.92	
12	1935	174,774.07	26,906.50	147,867.57	70,265.07	69,836.68	7,765.82	
13	1936	181,027.27	35,395.08	145,632.19	66,210.75	69,896.89	9,524.55	
14	1937	183,922.67	39,199.22	144,723.45	64,207.96	70,024.17	10,491.32	
15	1938	189,331.26	36,323.03	153,008.23	65,174.09	74,404.97	13,429.17	
16	1939	198,852.40	44,865.27	153,987.13	66,888.96	74,735.40	12,362.77	
17								
18	Total annual accruals to December 31, 1939	$ 1,962,209.36	$ 283,170.98	$1,679,038.38	$ 757,927.99	$ 801,424.58	$ 139,685.81	-
	Less Retirement Losses:							
19	Retirements (Adjusted) (See Schedule No. 10)	$ 1,016,371.25	$ 283,657.37	$ 732,713.88	$ 579,230.58	$ 33,107.17	$ 120,376.13	
20	Salvage (See Schedule No. 11)	(633,022.23)	(259,523.00)	(369,835.15)	(316,587.07)	(15,986.67)	(40,965.53)	
21	Profit on retirements transferred to maintenance	3,664.08			3,664.08			
22	Loss on Retirements charged to reserves	$ 387,013.10	$ 24,134.37	$ 362,878.73	$ 266,307.62	$ 17,120.50	$ 79,390.60	
23	Net (Annual Accruals less Retirement Losses)	1,575,196.26	259,036.61	1,316,159.65	471,620.36	784,304.08	60,295.21	
24	**Add:** Reserves acquired	180,135.42	66,929.97	113,209.45	110,084.57	3,120.88		
25	Accrual charged to construction	8,031.60		8,031.60			8,031.60	
26	Deduct - Reserve applicable to Gas Plant Held for Future Use	(3,763.12)	(1,423.16)	(2,339.96)	(2,339.96)			
27	Total Reserves for Depletion and Depreciation as Adjusted of Gas Plant in Service at December 31, 1939	$ 1,759,600.16	$ 324,543.42	$1,435,059.74	$ 579,364.97	$ 787,364.96	$ 68,326.81	-
	Net Adjusted Book Cost at December 31, 1939							
28	Adjusted Original Book Cost	$ 9,923,329.94	$ 3,813,524.34	$6,106,113.27	$2,524,666.91	$3,379,087.34	$ 202,359.02	$ 3,692.33
29	Adjusted Depletion and Depreciation Reserves	1,759,600.16	324,543.42	1,435,056.74	579,364.97	787,364.96	68,326.81	
30	Net Book Cost - Gas Plant in Service	$ 8,163,729.78	$ 3,488,980.92	$4,671,056.53	$1,945,301.94	$2,591,722.38	$ 134,032.21	$ 3,692.33

Note 1/ Includes Land and Organization Expense

Parentheses denote red figure

Exhibit No. 176

4911

19

ANNUAL AND ACCRUED DEPLETION AND DEPRECIATION OF PRODUCTING PLANT

Line No.	Particulars	Total	Depletion: Leaseholds & Gas Well Intangible Costs	Depreciation: Gas Well Tangible Costs (212)	Depreciation: Drilling and Cleaning Equip. (216)	Depreciation: Field Lines (206-213-214)	Depreciation: Other Field Facilities	Depreciation: Gasoline Property
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Costs subject to Depletion and Depreciation							
1	Original Charges Per Books	$11,180,913.33	$8,064,115.85	$1,051,932.91	$ 85,338.68	$1,442,136.53	$108,965.05	$430,424.36
2	Adjustments	(3,979,894.13)	(3,966,934.14)	(15,094.69)	-	133.00	15.33	1,986.37
3	Adjusted Total Cost Subject to Depletion and Depreciation	$ 7,201,019.20	$4,097,181.71	$1,036,838.22	$ 85,338.68	$1,442,269.53	$108,980.38	$432,410.73
4	Less Retirements (Adjusted)	862,887.95	283,657.37	216,791.34	58,699.09	191,095.58	30,754.91	81,989.66
5	Adjusted Book Cost at December 31, 1939	$ 6,338,191.25	$3,813,524.34	$ 820,106.88	$ 24,679.54	$1,251,173.95	$ 78,225.47	$350,481.07
	Depletion and Depreciation, computed annually; depletion computed on remaining gas reserves estimated by Bureau of Engineering and annual production of Canadian River Gas Company; depreciation based on service life estimates furnished by Bureau of Engineering:							
	Year			2.56% per annum	25.00% per annum	2.50% per annum	various rates	various rates
6	1938 (6 mos.)	$ 32,839.63	$ 3,045.35	$ 8,538.87	$ -	$ 12,415.65	$ 786.90	$ 8,052.86
7	1939	67,114.87	9,015.41	15,397.61	2,251.64	22,932.91	1,411.91	16,105.39
8	1930	71,857.65	14,803.66	13,647.66	4,962.10	20,936.18	1,854.73	15,653.30
9	1931	78,375.95	15,698.16	17,220.53	5,724.64	21,817.92	1,333.31	16,581.39
0	1932	82,032.36	17,253.98	18,437.75	5,262.10	22,545.35	1,888.47	16,650.71
1	1933	82,928.10	17,328.43	17,914.85	5,742.73	23,106.60	2,228.11	16,607.40
2	1934	91,114.48	23,336.89	18,525.39	6,903.56	23,434.07	2,309.58	16,605.01
3	1935	97,171.57	26,906.50	18,645.09	6,902.74	24,308.44	2,633.94	17,774.86
4	1936	101,605.83	35,395.08	17,776.43	6,573.14	27,477.92	2,695.86	11,687.30
5	1937	105,407.18	39,199.22	18,755.43	2,986.68	27,779.47	3,098.86	11,587.82
6	1938	101,497.12	36,323.03	19,647.59	558.88	29,979.54	3,236.96	11,749.52
7	1939	111,754.23	44,865.27	20,178.20	1,314.81	30,434.51	3,283.83	11,747.91
8	Total Annual Accruals	$ 1,021,098.97	$ 285,170.98	$ 204,685.38	$ 49,185.02	$ 287,193.56	$ 26,297.36	$170,605.47
	Less Retirement Losses:							
9	Retirements (Adjusted)	$ 862,887.95	$ 283,657.37	$ 216,791.34	$ 58,699.09	$ 191,095.58	$ 30,754.91	$ 81,989.66
10	Salvage	(576,110.03)	(259,523.00)	(108,932.22)	(34,967.69)	(127,880.72)	(20,222.67)	(24,583.73)
11	Profit on retirements transferred to maintenance	3,664.08			3,664.08			
12	Loss on Retirements	$ 290,442.00	$ 24,134.37	$ 107,859.12	$ 27,395.48	$ 63,214.86	$ 10,532.24	$ 57,405.93
13	Net (Annual Accruals less Retirement Losses)	730,656.97	259,036.61	96,826.26	21,827.54	223,943.70	15,765.32	113,257.54
14	Add - Reserve Acquired from Amarillo Oil Co. As of December 31, 1927	177,014.54	66,929.97	110,084.57				
15	Deduct - Reserve applicable to Gas Plant Held For Future Use	(3,765.12)	(1,423.16)	(2,339.96)				
16	Reserve for Depletion and Depreciation of Production Plant in Service at December 31, 1939	$ 903,906.39	$ 324,543.42	$ 204,570.87	$ 21,827.54	$ 223,943.70	$ 15,765.32	$113,257.54
	Supporting subschedule reference						2-A	2-B
	Net Adjusted Book Cost at December 31, 1939							
17	Adjusted Original Book Cost	$ 6,338,191.25	$3,813,524.34	$ 820,106.88	$ 24,679.54	$1,251,173.95	$ 78,225.47	$350,481.07
18	Adjusted Depletion and Depreciation Reserves	903,906.39	324,543.42	204,570.87	21,827.54	223,943.70	15,765.32	113,257.54
19	Net Book Cost - Production Plant	$ 5,434,282.86	$3,488,980.92	$ 615,536.01	$ 2,852.00	$1,027,230.25	$ 62,460.15	$237,223.53

Note: Parenthesis denote red figure

4913
Exhibit No. 176
20

Line No.	Particulars	Total	Field Compressor Station Structures (221B)	Field Compressor Station Equipment (224B)	Field Measuring Stations Structures (205M)	Field Measuring Stations Equipment (215M)
	(1)	(2)	(3)	(4)	(5)	(6)
	Costs subject to Depreciation					
1	Original Charges Per Books	$108,965.05	$ 3,308.84	$ 16,193.38	$ 13,436.07	$ 76,026.76
2	Adjustments	15.33	--	--	--	15.33
3	Adjusted Total Cost Subject to Depreciation	$108,980.38	$ 3,308.84	$ 16,193.38	$ 13,436.07	$ 76,042.09
4	Less Retirements (Adjusted)	30,754.91		431.36	4,134.67	26,188.88
5	Adjusted Book Cost of Dec. 31, 1939	$ 78,225.47	$ 3,308.84	$ 15,762.02	$ 9,301.40	$ 49,853.21
	Depreciation, computed annually, based on service life estimated furnished by Bureau of Engineering:					
6	Annual Rates		3.33%	4.00%	4.35%	4.35%
	Year					
7	1928 (6 mos.)	$ 786.90	$ --	$ --	$ 110.15	$ 676.75
8	1929	1,411.91	--	--	162.25	1,249.66
9	1930	1,254.75	--	--	106.81	1,147.94
10	1931	1,333.31	--	--	115.40	1,217.91
11	1932	1,882.47	45.97	282.42	127.51	1,426.57
12	1933	2,228.11	91.95	564.84	133.14	1,438.18
13	1934	2,309.56	104.28	609.37	132.74	1,463.17
14	1935	2,633.94	109.95	632.19	252.72	1,639.08
15	1936	2,895.96	109.95	632.33	309.79	1,843.89
16	1937	3,098.56	109.95	632.57	352.90	2,003.14
17	1938	3,238.56	109.95	632.57	385.50	2,110.54
18	1939	3,223.53	109.95	620.06	383.36	2,110.16
19	Total Annual Accruals	$26,297.56	$ 791.95	$4,606.39	$ 2,572.27	$18,326.99
	Less Retirement Losses:					
20	Retirements (Adjusted)	$30,754.91	$ --	$ 431.36	$ 4,134.67	$26,188.88
21	Less Salvage	20,222.67	--	330.55	1,800.56	18,091.56
22	Loss on Retirements	$10,532.24	$ --	$ 100.81	$ 2,334.11	$ 8,097.32
23	Reserve for Depreciation of Other Field Facilities at Dec. 31, 1939	$15,765.32	$ 791.95	$4,505.54	236.16	$10,229.67
	Net Adjusted Book Cost at Dec. 31, 1939					
24	Adjusted Original Book Cost	$78,225.47	$ 3,308.84	$15,762.02	$ 9,301.40	$49,853.21
25	Adjusted Depreciation Reserves	15,765.32	791.95	4,505.54	238.16	10,229.67
26	Net Book Cost - Other Field Facilities	$62,460.15	$ 2,516.89	$11,256.48	$ 9,063.24	$39,623.54

Exhibit No. 176

4915

	Particulars (1)	Total (2)	(202) (3)	(204) (4)	(205) (5)	(302) (6)	(305) (7)
0	Costs subject to Depreciation						
1	Original Charges per Books	$430,424.36	$48,552.41	$300,913.15	$242.13	$44,320.93	$36,395.74
2	Adjustments	1,986.37		1,986.37			
3	Adjusted Total Cost Subject to Depreciation	$432,410.73	$48,552.41	$302,899.52	$242.13	$44,320.93	$36,395.74
4	Less Retirements (Adjusted)	81,929.66	7.20	7,800.43	-	41,528.45	32,593.58
5	Adjusted Book Cost at December 31, 1939	$350,481.07	$48,545.21	$295,099.09	$242.13	$ 2,792.48	$ 3,802.16
	Depreciation, computed annually, based on service life estimates furnished by Bureau of Engineering:						
6	Annual rates		2.08%	3.57%	2.00%	1/ 3.33%	1/ 3.57%
7	Year 1928 (6 months)	$ 8,052.86	$ 389.20	$ 4,152.05	$	$ 2,201.97	$ 1,309.64
8	1929	16,105.39	778.41	8,304.10		4,402.93	2,619.95
9	1930	15,653.30	732.10	7,898.32		4,402.93	2,619.95
10	1931	16,582.39	872.73	8,685.78		4,402.93	2,619.95
11	1932	16,650.71	873.12	8,754.71		4,402.93	2,619.95
12	1933	16,607.40	887.54	8,696.98		4,402.93	2,619.95
13	1934	16,605.01	898.31	8,683.82		4,402.93	2,619.95
14	1935	17,774.86	936.13	9,712.17	2.42	4,149.43	2,674.71
15	1936	11,487.30	983.91	10,296.13	4.84	92.99	109.43
16	1937	11,587.82	984.48	10,373.49	4.84	92.99	132.02
17	1938	11,743.52	1,009.74	10,508.85	4.84	92.99	133.10
18	1939	11,747.91	1,009.74	10,505.81	4.84	92.99	134.53
19	TOTAL ANNUAL ACCRUALS	$170,603.47	$10,355.41	$106,572.21	$ 21.78	$33,440.94	$20,213.13
	Less Retirement Losses:						
20	Retirements (Adjusted)	$ 81,929.66	$ 7.20	$ 7,800.43	$ -	$41,528.45	$32,593.58
21	Less Salvage	24,583.73	6.68	3,128.79	-	8,505.97	12,942.29
22	Loss on Retirements	$ 57,345.93	$ .52	$ 4,671.64	$ -	$33,022.48	$19,651.29
23	Reserve for Depreciation of Gasoline Plant at December 31, 1939	$113,257.54	$10,354.89	$101,900.57	$ 21.78	$ 418.46	$ 561.84
	Net Adjusted Book Cost at December 31, 1939						
24	Adjusted Original Book Cost	$350,481.07	$48,545.21	$295,099.09	$242.13	$ 2,792.48	$ 3,802.16
25	Adjusted Depreciation Reserves	113,257.54	10,354.89	101,900.57	21.78	418.46	561.84
26	Net Book Cost - Gasoline Plant	$237,223.53	$38,190.32	$193,198.52	$220.35	$ 2,374.02	$ 3,240.32

1/ The delivery line to Amarillo and loading rack at Amarillo, installed in 1928, were retired in 1935. Annual depreciation as computed above from 1928 to 1935 includes an amount equal to the net retirement loss on that property. The rates indicated above apply, in effect, only to the delivery line to Exell and loading rack at Exell.

Exhibit No. 176

CANADIAN RIVER GAS COMPANY

Annual and Accrued Depreciation of Transmission Plant

Line No.	Particulars	Total	Transmission Mains & Laterals (220 & 226D)	Main Compressor Station Structures (221C)	Main Compressor Station Equipment (221C)	Measuring Stations Structures (222M)	Measuring Stations Equipment (225M)	Dehydration Plant Structures (223D)	Dehydration Plant Equipment (227D)	Elvins Camp Investment Structures (228BC)	Elvins Camp Investment Equipment (227BC)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Costs Subject to Depreciation										
	Original Charges per Books	$3,424,819.95	$2,528,415.04	$95,069.80	$550,017.16	$ 6,050.85	$17,085.84	$6,193.62	$35,501.77	$164,167.42	$22,318.45
	Adjustments	(12,625.44)	(7,737.69)	3,710.00	(5,953.38)	3.19	(2,741.06)	--	--	--	93.50
	Adjusted Total Cost Subject to Depreciation	$3,412,194.51	$2,520,677.35	$98,779.80	$544,063.78	$ 6,054.04	$14,344.78	$6,193.62	$35,501.77	$164,167.42	$22,411.95
	Less Retirements (Adjusted)	33,107.17	19,530.01	9.15	10,576.05	4.95	1,470.55	--	362.94	921.34	232.18
	Adjusted Book Cost at Dec.31,1939	$3,379,087.34	$2,501,147.34	$98,770.65	$533,487.73	$ 6,049.09	$12,874.23	$6,193.62	$35,138.83	$163,246.08	$22,179.77
	Depreciation computed annually, based on service life estimates furnished by Bureau of Engineering:										
	Annual rates		Various	2.00%	2.86%	2.90%	3.57%	2.86%	4.00%	2.86%	4.00%
	1928 (6 mos.)	$ 32,772.40	$ 23,367.95	$ 1,017.09	$ 6,529.78	$ 62.89	$ 193.44	$ --	$ --	$ 1,577.36	$ 214.49
	1929	65,544.83	46,735.90	2,034.18	13,059.56	124.58	386.89	--	--	3,154.72	429.00
	1930	67,514.15	49,309.77	1,927.95	12,501.86	122.52	373.67	--	--	3,228.60	439.78
	1931	68,686.37	49,412.41	2,014.02	13,322.72	127.47	407.62	--	--	3,352.35	449.78
	1932	68,844.16	49,338.61	1,931.42	13,384.38	127.43	381.91	--	--	3,608.20	728.21
	1933	69,409.52	49,777.71	1,931.42	13,341.54	133.51	420.02	--	--	3,650.76	154.66
	1934	69,754.94	50,090.63	1,931.42	13,348.79	137.11	439.70	--	--	3,650.74	156.55
	1935	69,836.68	50,102.73	1,931.42	13,343.86	138.07	442.15	--	--	3,700.04	178.41
	1936	69,896.89	50,102.42	1,945.56	13,365.05	143.28	442.64	--	--	3,721.84	176.10
	1937	70,024.17	50,117.48	1,945.70	13,430.36	143.28	440.56	--	--	3,772.05	174.74
	1938	74,404.97	50,343.23	1,946.93	15,189.62	145.71	444.61	176.99	1,391.18	4,361.29	405.43
	1939	74,735.40	50,198.30	1,975.26	15,147.15	145.91	436.39	176.99	1,390.99	4,493.90	770.51
	Total Annual Accruals	$801,424.58	$ 568,897.14	$22,532.37	$155,964.67	$ 1,551.16	$ 4,809.60	$353.98	$2,782.17	$ 42,271.85	$ 2,261.64
	Less Retirement Losses:										
	Retirements (Adjusted)	$ 33,107.17	$ 19,530.01	$ 9.15	$ 10,576.05	$ 4.95	$ 1,470.55	--	$ 362.94	$ 921.34	$ 232.18
	Less Salvage	15,926.67	9,255.16	7.35	5,367.44	3.09	722.29	--	31.55	174.17	65.62
	Loss on Retirements	$ 17,180.50	$ 10,274.85	$ 1.80	$ 5,208.61	$ 1.86	$ 748.26	--	$ 31.39	$ 747.17	$ 166.56
	Net (Annual Accruals less Retirement Losses).	$784,244.08	$ 558,622.29	$22,530.57	$150,756.06	$ 1,549.30	$ 4,061.34	$353.98	$2,750.78	$ 41,524.68	$ 2,095.08
	Add - Reserve acquired from Colorado Interstate Gas Co., 5-31-33	3,120.88	2,873.00	--	--	42.74	205.14	--	--	--	--
	Reserve for Depreciation of Transmission Plant in Service at Dec. 31, 1939	$787,364.96	$ 561,495.29	$22,530.57	$150,756.06	$ 1,592.04	$ 4,266.48	$353.98	$2,750.78	$ 41,524.68	$ 2,095.08
	Supporting subschedule reference		3-A								
	Net Adjusted Book Cost at Dec. 31, 1939										
	Adjusted Original Book Cost	$3,379,087.34	$2,501,147.34	$98,770.65	$533,487.73	$ 6,049.09	$12,874.23	$6,193.62	$35,138.83	$163,246.08	$22,179.77
	Adjusted Depreciation Reserves	787,364.96	561,495.29	22,530.57	150,756.06	1,592.04	4,266.48	353.98	2,750.78	41,524.68	2,095.08
	Net Book Cost - Transmission Plant	$2,591,722.38	$1,939,652.05	$76,240.08	$382,731.67	$ 4,457.05	$ 8,607.75	$5,839.64	$32,388.05	$121,721.40	$20,084.69

Note: Parentheses denote figure in red.

4919 Exhibit No. 176

CANADIAN RIVER GAS COMPANY
ANNUAL AND ACCRUED DEPRECIATION OF TRANSMISSION MAINS AND LATERALS
(ACCOUNTS 220D & 286D)

Subschedule No. 3-A

Line No.	Particulars (1)		Total (2)	Main Line (3)	Clayton Lateral (4)	Dalhart Lateral (5)	Texline Lateral (6)
	Costs Subject to Depreciation						
1	Original Charges per Books		$2,528,415.04	$2,478,159.00	$34,716.02	$6,257.51	$9,282.51
2	Adjustments		(7,737.69)	(3,239.42)	(4,498.27)	-	-
3	Adjusted Total Cost Subject to Depreciation		$2,520,677.35	$2,474,919.58	$30,217.75	$6,257.51	$9,282.51
4	Less Retirements (Adjusted)		19,530.01	10,608.87	8,812.88	99.42	8.84
5	Adjusted Book Cost at December 31, 1939		$2,501,147.34	$2,464,310.71	$21,434.87	$6,158.09	$9,243.67
	Depreciation, computed annually, based on service life estimates furnished by Bureau of Engineering:						
6	Annual rates	YEAR		2.00%	2.50%	2.50%	2.50%
7		1928 (6 months)	$ 23,367.95	$ 23,194.31	$	$ 99.18	$ 114.15
8		1929	46,735.90	46,388.62		118.99	228.29
9		1930	49,309.77	48,938.68		144.31	226.78
10		1931	49,412.41	49,039.40		146.23	226.78
11		1932	49,338.61	48,961.38		150.67	226.56
12		1933	49,777.71	49,961.86	438.69	150.60	226.56
13		1934	50,090.63	48,961.85	751.62	150.60	226.56
14		1935	50,102.73	48,970.31	751.66	154.20	226.56
15		1936	50,102.42	48,969.92	751.74	154.20	226.56
16		1937	50,117.48	48,988.61	753.11	154.20	226.56
17		1938	50,343.23	49,204.74	753.24	154.20	231.05
18		1939	50,198.30	49,278.73	534.53	153.95	231.09
19	Total Annual Accruals		$ 568,897.14	$ 559,853.41	$ 4,734.59	$1,631.64	$2,617.50
	Less Retirement Losses:						
20	Retirements (Adjusted)		$ 19,530.01	$ 10,608.87	8,812.88	99.42	8.84
21	Less Salvage		9,255.16	6,763.94	2,402.31	80.07	8.84
22	Loss on Retirements		$ 10,274.85	$ 3,844.93	$ 6,410.57	$ 19.35	$ -
23	Net (Annual Accruals less Retirement Losses)		$ 558,622.29	$ 556,008.48	$(1,675.98)	$1,672.29	$2,617.50
	Add - Reserve Acquired from Colorado Interstate Gas Co., 5-31-33		2,873.00		2,873.00		
	Reserve for Depreciation of Transmission Mains and Laterals at December 31, 1939		$ 561,495.29	$ 556,008.48	$ 1,197.02	$1,672.29	$2,617.50
	Net Adjusted Book Cost At December 31, 1939						
26	Adjusted Original Book Cost		$2,501,147.34	$2,464,310.71	$21,434.87	$6,158.09	$9,243.67
27	Adjusted Depreciation Reserves		561,495.29	556,008.48	1,197.02	1,672.29	2,617.50
28	Net Book Cost - Transmission Mains & Laterals		$1,939,652.05	$1,908,302.23	$20,237.85	$4,485.80	$6,626.17

Note: Parentheses denote red figure.

Exhibit No. 176

49621

Docket U-176

CANADIAN RIVER GAS COMPANY

Schedule No. 6

ANNUAL AND ACCRUED DEPRECIATION OF GENERAL AND UNDISTRIBUTED PLANT

Particulars	Total	Undistributed Plant Capital 1/	General Office Structures (390)	Other General Structures (390)	General Office Equipment (391)	General Stores Equipment (393)	General Garage Equipment (Autos, etc.) (394)	Telephone System Equipment and Right-of-Way (397 and 399)	General Tools and Equipment (398)	Other General Equipment (399)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Costs Subject to Depreciation	$425,998.01	$618,838.70	$2,793.03	$34,380.00	$14,686.65	$6,804.67	$145,396.48	$87,667.38	$12,368.63	$3,388.46
Original Changes per Books	(606,882.86)	(605,483.75)						1,824.00		896.89
Adjustments	$182,775.15	$ 13,348.95	$2,793.03	$34,380.00	$14,686.65	$6,804.67	$145,396.48	$89,491.38	$12,368.63	$4,175.35
Adjusted Total Cost Subject to Depreciation	180,175.13	-	-	753.96	2,951.38	50.48	109,678.08	3,066.82	4,017.77	878.88
Less Retirements (Adjusted)	$362,950.02	$ 13,348.95	$2,793.03	$33,626.04	$11,735.27	$6,754.19	$ 36,078.40	$86,424.56	$ 8,350.86	$3,296.47
Adjusted Book Cost at December 31, 1939										
Depreciation, computed annually, based on service life estimates furnished by Bureau of Engineering		2.00%	2.866	2.866	4.00%	2.866	25.00%	3.126	6.67%	5.00%
Annual rates										
1938										
1938 (6 months)	$ 2,718.85	$ 136.04	$ 38.96	$ 51.49	$ 885.86	$ 32.57	$ 785.11	$ 1,039.06	$ 382.45	$ 21.71
1939	15,703.67	272.08	77.92	188.98	951.71	65.14	11,849.60	2,078.13	682.69	43.76
1940	15,390.12	272.08	78.50	829.88	910.88	78.68	11,549.75	2,106.92	535.79	86.76
1941	13,513.60	266.98	78.57	880.79	534.93	130.51	9,875.79	2,137.71	889.05	89.19
1942	13,306.99	266.98	78.57	880.79	387.96	132.04	9,871.08	2,548.47	180.44	84.96
1943	13,306.99	266.98	233.94	880.79	387.96	141.41	8,585.53	2,586.22	177.86	119.09
1944	12,886.83	266.98	78.57	880.79	595.55	183.13	8,088.98	2,987.77	306.08	186.86
1945	12,598.92	266.98	78.57	808.06	597.17	183.13	3,194.96	2,988.00	371.19	118.88
1946	7,765.82	266.98	79.80	830.43	573.05	139.42	4,657.55	1,207.63	600.57	182.76
1947	9,589.95	266.98	79.80	831.57	808.67	139.42	5,584.78	2,609.66	811.08	183.98
1948	10,931.32	266.98	79.80	888.54	880.37	150.86	5,584.78	2,693.86	828.14	198.76
1949	13,489.17	266.98	79.80	895.62	674.41	153.67	8,369.57	2,693.86	959.30	196.45
1950	12,362.77	266.98	79.88	937.86	905.75	176.98	6,676.35	2,693.86	1,006.30	198.45
1951	$193,685.81	$ 3,083.02	$1,061.11	$ 4,511.77	$ 7,505.89	$1,486.98	$ 88,572.51	$27,994.85	$ 8,486.30	$1,183.98
TOTAL ANNUAL ACCRUALS										
Less Retirement Losses:										
Retirements (Adjusted)	$180,376.13	$ -	$ -	$ 753.96	$ 2,951.38	$ 50.48	$109,678.08	$ 3,066.82	$ 4,017.77	$ 878.88
Less Salvage	40,883.53	-	-	93.59	794.53	67.93	35,133.61	1,183.67	3,538.68	888.60
Less on Retirements	$ 19,390.60	$ -	$ -	$ 846.57	$ 2,156.85	$ 8.57	$ 74,544.54	$ 1,883.15	$ 478.78	$ 11.72
Net (Annual Accruals less Retirement Losses)	$ 60,295.81	$ 3,083.02	$1,061.11	$ 3,865.40	$ 5,347.04	$1,483.81	$ 14,888.07	$26,070.47	$ 4,007.58	$1,150.71
Add Accrual charged to Construction	8,031.60						8,031.60			
Reserve for Depreciation of General and Undistributed Plant at December 31, 1939	$ 68,326.81	$ 3,083.02	$1,061.11	$ 3,865.40	$ 5,347.04	$1,483.81	$ 22,919.67	$26,070.47	$ 4,007.58	$1,150.71
Net Adjusted Book Cost at December 31, 1939:										
Adjusted Original Book Cost	$202,339.02	$ 13,348.95	$2,793.03	$33,588.04	$11,735.27	$6,154.19	$ 36,078.40	$86,813.14	$ 8,350.86	$3,297.14
Adjusted Depreciation Reserve	68,326.81	3,083.02	1,061.11	3,865.40	5,347.04	1,483.81	22,919.67	26,070.47	4,007.58	1,150.71
Net Book Cost - General and Undistributed Plants	$134,012.21	$ 10,265.93	$1,731.92	$29,722.64	$ 6,388.23	$4,670.38	$ 13,158.73	$60,742.67	$ 4,343.28	$2,146.43

1/ Excludes organization expense in the amount of $387.45.

Note: Parentheses indicate red figures.

Exhibit No. 176

25

4923

ocket G-124

CANADIAN RIVER GAS COMPANY
ANALYSIS OF RESERVE FOR DEPLETION OF LEASES AND
GAS WELL INTANGIBLE COSTS PER BOOKS FROM INCEPTION TO
DECEMBER 31, 1939

Schedule No. 5

ear (1)	Balance at Beginning of Period (2)	Annual Accruals For Depletion (Expense) (3)	Retirements: Plant Cost (4)	Salvage (5)	Profit or Loss on Retirements (6)	Net Charge to Reserve (Col. 4, 5 & 6) (7)	Adjustments of Prior Years Depletion (through surplus) (8)	Miscellaneous (9)	Balance at End of Period (10)
928	-	$ 41,960.01						1/ $66,929.97	$ 108,889.98
929	$ 108,889.98	125,130.79	$(346,832.70)		$340,171.98	$(6,660.72)			227,360.05
930	227,360.05	85,711.54	(38,221.38)			(38,221.38)			274,850.21
931	274,850.21	92,910.21				-			367,760.42
932	367,760.42	114,997.29				-			482,757.71
933	482,757.71	130,809.28					$(3,337.13)) 9,803.52)		620,033.38
934	620,033.38	151,736.27				-			771,769.65
935	771,769.65	87,314.17	(46,984.41)	$44,625.00	(2,968.06)	(5,327.47)			853,756.35
936	853,756.35	118,821.44					(2,657.33)		969,920.46
937	969,920.46	130,661.30					3,337.13) (11,489.57))		1,092,429.32
938	1,092,429.32	140,959.72					(65,378.11)		1,168,010.93
939	1,168,010.93	320,359.14							1,488,370.07
	$1,541,371.16		$(432,038.49)	$44,625.00	$337,221.92	$(50,209.17)	(69,721.49)	$66,929.97	

Note: 1/ Accrued depletion as of 12-31-27 acquired from Amarillo Oil Company

Parentheses denote red figure.

Exhibit No. 176 49225

ANALYSIS OF RESERVE FOR DEPLETION OF LEASES AND GAS WELL INTANGIBLE COSTS, AS ADJUSTED, FROM INCEPTION TO DEC, 31, 1939

Year (1)	Balance at Beginning of Period (2)	Annual Accruals for Depletion (Expense) (3)	Retirements: Plant Cost (4)	Retirements: Salvage (5)	Retirements: Miscellaneous (6)	Balance at End of Period (7)
1928	$	$ 3,045.35	($214,513.29)	$207,852.57	$ 65,506.81	$ 61,891.44
1929	61,891.44	9,015.41				70,906.85
1930	70,906.85	14,803.66				85,710.51
1931	85,710.51	15,698.16				101,408.67
1932	101,408.67	17,253.98				118,662.65
1933	118,662.65	17,328.43				135,991.08
1934	135,991.08	23,336.89				159,327.97
1935	159,327.97	26,906.50	(69,144.08)	51,670.43		168,760.82
1936	168,760.82	35,395.08				204,155.90
1937	204,155.90	39,199.22				243,355.12
1938	243,355.12	36,323.03				279,678.15
1939	279,678.15	44,865.27				324,543.42
		$283,170.98	($283,657.37)	$259,523.00	$ 65,506.81	

Note: Parentheses denote red figure

Exhibit No. 176

27

4927

Docket G-124

CANADIAN RIVER GAS COMPANY
ANALYSIS OF RESERVE FOR DEPRECIATION OF GAS PLANT IN SERVICE, PER BOOKS,
FROM INCEPTION TO DECEMBER 31, 1939

Schedule No. 7

Year	Balance at Beginning of Period	Annual Accruals For Depreciation Expense	Annual Accruals For Depreciation Plant	Retirements Plant Cost	Retirements Salvage	Retirements Profit or Loss on Retirements	Retirements Net Charge to Reserve (Col. 5, 6 & 7)	Adjustment of Prior Years Depreciation (through surplus)	Miscellaneous	Balance at End of Period
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1928	$ -	$162,737.99	$8,031.60	$ (1,546.53)	$ 1,546.53	$ -	$ -	$ -	1/ $144,315.05	$ 335,084.64
1929	335,084.64	349,500.15		(175,074.69)	9,700.55	132,546.52	(32,827.62)	(8,944.05)	2/ (34,230.48)	608,582.64
1930	608,582.64	348,462.58		(32,307.78)	8,406.30	3,140.18	(20,071.30)			936,373.92
1931	936,373.92	370,225.88		(44,353.21)	27,872.75	5,562.99	(10,917.47)	(1,322.02)		1,294,460.31
1932	1,294,460.31	371,508.20		(104,666.46)	51,723.89	5,917.39	(47,025.18)			1,618,943.33
1933	1,618,943.33	367,198.32		(18,774.43)	8,910.01	2,287.03	(7,577.39)	(1,096.52)		1,977,467.74
1934	1,977,467.74	368,961.45		(39,612.47)	15,984.62	8,792.45	(14,835.40)		3/ 6,653.61	2,336,247.40
1935	2,336,247.40	362,209.28		(197,547.57)	33,635.93	90,459.22	(73,452.42)	(4,676.33)		2,620,327.93
1936	2,620,327.93	247,809.29		(52,761.45)	31,001.97	3,092.98	(18,666.50)			2,849,470.72
1937	2,849,470.72	257,113.39		(77,814.31)	30,350.53	17,075.54	(30,388.24)	(660,832.62)		2,415,363.25
1938	2,415,363.25	266,950.01		(43,037.80)	15,804.42	(1,537.10)	(28,770.48)	40,273.32		2,693,816.10
1939	2,693,816.10	273,391.04		(25,557.70)	14,010.81	(131.78)	(11,678.67)			2,955,528.47
		$3,764,367.58	$8,031.60	$(813,054.40)	$ 242,136.31	$257,105.45	$(296,210.67)	$(636,567.25)	$116,738.18	

Note: 1/ Accrued depreciation as of 12-31-27 acquired from Amarillo Oil Co.

2/ Adjustment of accrued depreciation acquired from Amarillo Oil Co. (See Note 1/).

3/ Accrued depreciation on Clayton Lateral acquired from Colorado Interstate Gas Co.

Parentheses denote red figure.

Exhibit No. 176

29

CANADIAN RIVER GAS CO.

Analysis of Reserve for Depreciation of Gas Plant in Service
As Adjusted, from Inception to Dec. 31, 1939

	Balance at Beginning of Period	Annual Accruals For Depreciation Expense	Annual Accruals For Depreciation Plant	Retirements: Plant Cost	Retirements: Salvage	Retirements: Profit on Drilling and Cleaning Equip't Credited to Acct. 367	Retirements: Net Charge to Reserve	Miscellaneous	Balance at end of Period
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	$	$ 65,278.93	$ 8,031.60	($146,833.88)	$124,885.24	$	($21,948.64)	1/ $107,744.61	$159,106.50
	159,106.50	139,348.16		(23,471.88)	9,700.55		(13,771.33)		284,683.33
	284,683.33	139,358.26		(32,925.17)	15,560.17		(17,365.00)		406,676.59
	406,676.59	144,877.76		(32,743.32)	20,908.88		(11,834.44)		539,719.91
	539,719.91	146,929.13		(104,666.46)	51,736.87	1,098.76	(51,840.83)		634,808.21
	634,808.21	147,896.12		(18,774.43)	8,992.61	(1,029.45)	(10,811.27)		771,893.06
	771,893.06	150,131.45		(38,682.47)	15,134.95	(3,278.34)	(26,825.86)	2/ 3,120.88	898,319.53
	898,319.53	147,867.57		(140,792.90)	34,587.93	(321.48)	(106,529.45)		939,657.65
	939,657.65	145,632.19		(52,761.45)	31,812.93	19.72	(20,928.80)		1,064,361.04
	1,064,361.04	144,723.45		(78,181.31)	30,420.13	(146.35)	(47,907.53)		1,161,176.96
	1,161,176.96	153,008.23		(37,322.91)	15,758.16	(3.94)	(21,568.69)		1,292,616.50
	1,292,616.50	153,987.13		(25,557.70)	14,010.81		(11,546.89)		1,435,056.74
		$1,679,032.38	$ 8,031.60	($873,713.88)	$373,499.23	($3,664.08)	($504,378.73)	$110,865.49	

Note: 1/ Accrued Depreciation as of 12-31-27 acquired from Amarillo Oil Co. (Adjusted)

2/ " " " on Clayton Lateral acquired from Colo. Interstate Gas Co.

Parentheses denote red figure.

Commission WITNESS LUTTRING testified as follows: (Vol. L, pp. 6937-6950.)

Direct Examination

By Mr. Lange:

Q. You are the same Carl E. Luttring who has heretofore testified in these proceedings?

A. Yes, sir.

Q. Mr. Luttring, I will ask you whether or not in—strike that.

I will ask you whether you assisted in the preparation of Exhibit 176 that has been identified in this proceeding?

A. I have.

Q. And turning to the contents table of that exhibit, I will ask you whether you prepared the entries numbered 400 through 406, inclusive?

A. I did.

Q. And now which schedules did you prepare in connection with that exhibit?

A. I supplied the figures relating to depletion which were used in Schedule No. 2. I also prepared Schedules Nos. 5 and 6.

Q. Now, as I understand this Exhibit 176, in connection with the preparation of which you devoted your time, and on completion of the exhibit it was approved by Charles W. Smith, Chief, Bureau of Accounts, Finance and Rates of the Federal Power Comission?

A. That is correct.

Q. And bears such approval on its title page?

A. That is correct.

Q. And you heard the written statement in connection with that exhibit that was read by Mr. Smith on direct examination?

A. I did.

Q. And in so far as it refers to those entries and schedules that you prepared, that may also be taken as your written statement of that portion of the exhibit?

A. It can.

Mr. Lange: I believe that is all at this time.

Cross Examination

By Mr. Spencer:

Q. These schedules of yours, Mr. Luttring, Schedules 5 and 6 on Pages 26 and 27 of Exhibit 176, summarize your work in connection with this exhibit, Schedule No. 5 showing—

A. Schedule No. 5 on Page 26 and Schedule No. 6 on Page 27 represent my work.

Q. Well, can't we get a good picture of what you have done by reference to those tables?

A. These schedules combined with the journal entries will give you a complete picture of what the books were before we adjusted them in our exhibit and what the results are after applying our adjustments.

Q. All right, now, let's get some idea about the depletable base that we are talking about here. I assume that you start off with depletion accrued on—by deducting the depletion accrued on the books of the Amarillo Oil Company at the time it sold its gas properties and rights to Canadian River Gas Company?

A. The depletion accrued that was acquired from Amarillo Oil Company has remained intact. In other words, the figure was not disturbed and it forms a part of the accrued depletion as of December 31, 1939.

Q. You did not disturb that?

A. No, sir.

Q. Now, the depletable base here includes your adjusted cost of leaseholds, is that right?

A. That is correct.

Q. Adjusted in your original cost study exhibit 146?

A. Exhibit 146 is correct.

Q. You carried that original cost over here as related to leaseholds for the purpose of depletion, is that right?

A. That is correct.

Q. Which is somewhat less than the company is depleting on its books?

A. I think it was considerably less.

Q. Now, in addition to your adjusted original cost for leaseholds you also include in the depletable base the company's original costs of intangibles, I mean particularly intangibles in connection with the drilling of wells, is that correct?

A. Yes, what is known as gas well intangible costs.

Q. And those consist generally of what?

A. Drilling, labor, teaming and freight and incidentals which are not in the nature of depreciable items.

Q. That's right. The physical property in the wells such as the pipe or casings and well fittings are subject to depreciation and not depletion, is that correct?

A. That is right, and it has been so treated in our depreciation exhibit.

Q. What is the depletable base you find here as of December 31, 1939, representing leasehold cost and intangible well costs as adjusted by you?

A. On Schedule No. 1, Line No. 5—

Q. That page is 20—

A. 19.

Q. Yes.

A. Column No. 3.

Q. Yes.

A. That is the total depletable plant. The adjusted book cost as of December 31, 1939 of total depletable plant can be found in Exhibit 146 if you wish to refer back to it.

Q. No, I think that's all right. What was your original cost of gas leaseholds and gas rights and wells acquired by Canadian River from Amarillo Oil Company? Do you remember what that was?

A. The operated leasehold costs amounted to $835,271.68 and the inoperated leasehold costs amounted to $158,228.70. That will be shown on Schedule No. 2 in Exhibit 146.

Q. Yes, but you had some wells to add to that, too, on which you put inventory value as I remember. I am trying to arrive at the total original cost of the properties sold by Amarillo Oil Company to Canadian River Gas Company as you show it.

A. I am just wondering whether I won't have to refer back to my working papers.

Q. Can you give me the rough figures? Is a million and a half approximately correct?

A. That is approximately correct, yes.

Q. Well, that's sufficient for my purpose here. Now, I believe you also testified here that there is no question but what Canadian River paid five million dollars for these properties?

A. That is correct.

Q. Now, what I wanted to ask you, as an accountant how would you recommend that the company go about amortizing this three and a half million dollars that you are throwing out?

A. Well, knowing what I do about the company, I would hesitate to do anything with the three and a half million dollars.

Q. Do you mean you would just leave it in a state of suspended animation or something?

A. If I had to set it up I would probably set it up as I have in here, set it up as a separate item.

Q. It has got to be written off in some fashion, hasn't it, at some time?

A. Well, it probably would be a good thing to get it off the books.

Q. I wish you would consider that. I may have some more questions to ask you on that.

Now, I would like to go to your basis of computing depletion during this period. The explanation given in the written statement starts at the bottom of Page 3. I would like to follow through with you on that. Have you found that?

A. Yes.

Q. It states: "As of August 1st, 1939, the volume of the company's remaining gas reserve was estimated by the Bureau of Engineering as being 3,656,158,000 thousand cubic feet, at 14.65 pounds per square inch absolute pressure."

That figure was furnished to you by the Bureau of Engineering of the Federal Power Commission?

A. It was.

Q. Did you ask for it?

A. No, I did not.

Q. Well, you didn't give the Engineering Department instructions about doing this engineering work for you in connection with this study, then?

A. No, sir.

Q. Who did give instructions?

A. As far as I know, the Engineering Department.

Q. Did you get your instructions from the Engineering Department?

A. No. I say, the Engineering Department gave instructions to get these gas reserves.

Q. Well, where did you get your instructions from?

A. Well, I didn't really need any instructions after I was supplied with this gas reserve figure shown in our statement—the written statement. It was a matter of using it in application in determining the new annual depletion amounts.

Q. Well, isn't this a fact, that you were instructed to work on and prepare these depletion schedules here and in that connection you needed the reserve figure and it was handed to you by the Engineering Bureau of the Federal Power Commission and you accepted it, isn't that correct?

A. That is correct.

Q. You didn't stop to think whether it was the right figure or the wrong figure, you took it, didn't you?

A. I would have no way of knowing. Of course, that particular work is not in my line.

Q. Did you ever set up a depletion schedule for gas companies before?

A. I don't believe I did.

Q. You had no previous experience in preparing a depletion schedule of this character for a natural gas company?

A. I have had some experience but it was something that had already been set up.

Q. I mean in reconstructing or originating depletion schedules for a natural gas company, you haven't done that?

A. Not in this same type of work.

Q. Are there different methods utilized by natural gas companies in setting up depletion schedules?

A. I don't know of any other than the one that is used here.

Q. This is the only one you know about?

A. That's right.

Q. All right, are you familiar with the company's now using it—of computing this depletion?

A. Yes, sir.

Q. That is a different one, isn't it?

A. Well, it is very much on the same order as this one.

Q. Oh, they seem to be the same to you?

A. Very much so.

Q. Very similar—what is the company's method of computing depletion?

A. The company, instead of using a reserve applicable

to its own acreage, used a gas reserve which is applicable to the entire Amarillo gas field and in determining its annual depletion it used the production of the entire Amarillo gas field.

Q. That is correct, and from that they arrive at the unit cost depletion factor to apply to their own production is that right?

A. That is correct.

Q. Now, in other words, the company in computing its depletion costs has based it upon the life of the field, that is correct, is it not?

A. Under the company's method—

Q. Yes.

A. Yes.

Q. Now, state for the Examiner in the same way what the method has been employed by the Commission's engineers and by you in computing the depletion.

A. Well, under this method the engineers have given us a gas reserve estimate which applies to the actual acreage owned by Canadian River Gas Company. The production we used is the production which was actually taken from this same acreage.

Q. By whom?

A. By Canadian River Gas Company. The unit cost of depletion is determined by dividing the undepleted cost of the investment in the leases by the unrecovered gas reserves in those leases. The unit cost so obtained is then applied to the production which the company has taken from those leases.

Q. Have you finished?

A. Yes.

Q. All right, then, arriving at the unit cost of depletion for the purpose of your study here, you have taken into consideration no withdrawals from Canadian River Gas Company reserves as computed except its own production, is that correct?

A. That is correct.

Q. Now, did you ask your Engineering Department before you started computing these schedules to furnish you with a figure of withdrawals that might be sustained by the company through drainage to show how much the property had been actually depleted?

A. By "drainage," do you mean drainage by other operators?

Q. Certainly, certainly, that and any other kind of drainage.

A. That is not an accounting problem as far as I can see it.

Q. Well, did you ask them for that?

A. No, sir.

Q. Were you concerned about it?

A. I was not.

Q. Then, so far as you were concerned, the only figure that you needed was the withdrawals as shown by Canadian River production—nothing more?

A. That is correct.

Q. Had your engineers told you that the property was going to sustain withdrawals through drainage, it would have changed your figures, wouldn't it?

A. I don't think so because you have got both sides of the question there. You have got drainage in as well as out.

Q. No, I said to you, if your engineers had told you that the property was going to sustain a loss of gas reserves through drainage, let us assume—you can assume that for the purpose of this question—it would have changed your figures, would it not?

A. It may have changed the geologist's figures if he had to give some weight to that.

Q. No, I am talking only about production withdrawals. Let the other figure stand. Depletion is suffered by production by a loss of gas from the property, whether it comes through our own wells or somebody else's wells.

A. It would not change my figures.

Q. No matter what drainage we might suffer, it wouldn't change your figures?

A. No, sir.

Q. You would stay right with your guns?

A. Yes, sir.

Q. Now, I believe you stated that the reserve figure that you use here is treating all of Canadian River Gas Company's leases as one *reservoir*?

A. That is correct.

Q. Now, from the standpoint of accounting, then, you are treating the whole reserve as one reservoir?

A. That is correct.

Q. You do recognize, then, that as between leases in the total reservoir the gas moves all around, back and forth, is that correct?

Mr. Lange: Well, I think—

Mr. Spencer: Now, wait a minute—go ahead.

Mr. Lange: Between leases the gas travels back and forth; that is purely an engineering problem.

Mr. Spencer: I'll come to it in just a minute.

The Trial Examiner: Did you question—your question is whether or not he recognized that?

Mr. Spencer: Yes, sir.

The Trial Examiner: He may answer that.

The Witness: I think we have.

Mr. Spencer: I think you have, too.

Q. If you weren't going to treat it as a whole and assumed it was going to be produced as a whole, you would set up each leasehold separately and give its own gas reserve, wouldn't you?

A. That is correct.

Q. You recognize this drainage between leases—you treat this entire block of acreage as one reservoir, but when you get over to a different title you ignore that and say there isn't any drainage. Did you give that any thought?

A. I did not give any thought to it in this study here.

Q. You are including unoperated leases in here for depletion purposes, aren't you?

A. That is correct.

Q. Leases with no wells on them, is that right?

A. That is correct.

* * * * *

MR. BUTTRING further testified: (Vol. L, pp. 6952-6956.)

Q. All right, now, the last one that you had to do with, Entry 406 on Page 8?

A. Entry No. 406 on Page 8 sets up annual depletion according to our computation of gas well intangible costs based on undepleted gas reserves estimated by the Bureau

of Engineering and undepleted cost and annual production in amounts for the years as set forth in the body of that journal entry.

Q. You can go back on Page 7 of the chart there, it is included there, too?

A. Yes, in support of Journal Entry No. 406, are statistics which support also Entry No. 405.

Q. And 406?

A. I said also.

Q. You said also 405, did you not?

A. All right, make it "and 406."

Q. All right, I believe that clears that up as to what you have done.

With your permission and counsel's permission we have a photostatic copy of one of our working papers relating to intangible well costs and on that sheet under the column headed "Balance December 31, 1939" there is a figure of $162,391.84 appearing opposite the description "Miscellaneous." Will you tell me what that is, please?

A. On the gas well investment records of Canadian River Gas Company they carry a column headed "Miscellaneous." In this column is entered items which cannot fall under the description of labor, teaming and freight, drilling, torpedoes, depreciation and adjustment, rigs. It is a sort of a dumping ground for items which cannot be classified into the features just stated.

Many of the items in this miscellaneous column cannot be identified without a great deal of analysis work and for that reason we have used the entire charges in the miscellaneous account as a part of our depletable base of intangible well costs. Our Bureau of Engineering felt that it was advisable to do this rather than spend a great deal of time to try to identify such depreciable items as may be in that account. I think that about covers it.

Q. That is sufficient, Mr. Luttring.

Now, the company on its books and records carries this miscellaneous well cost as a depreciable item, does it not?

A. That is correct.

Q. And if that classification were correct, or assuming it were correct, under your study here the company would

be entitled to take depreciation against the item in the amount of 2.56 per cent per year, is that right?

A. Yes, whatever rate of depreciation applies against gas well equipment.

Q. Well, I am taking the gas well tangible cost rate as shown on Page 20 of your exhibit. Now, you have taken that out of the classification of depreciable property and put it over into depletable property, that is correct, isn't it?

A. That is correct.

Q. Where based upon past experience, at least, and based upon your computations, it would draw a much lower rate of depletion than it would have of depreciation, is that not correct?

A. Well, just how much lower depletion on that would be over the other, I am not prepared to say, but I do think it will be lower.

Q. Well, that is a matter of calculation?

A. Yes, that is what it is.

Q. Now to clear that up, then, you can't tell from the company's books exactly what items of property go into these miscellaneous—this miscellaneous account?

A. That is correct.

Q. That would involve a lot of work which you did not do?

A. Not only that, but I think that even if you do it you will still find that a lot of those items will be intangible items even after analysis.

Q. Well, that may be true; we do not know that it is true right at the moment, though?

A. No, that is correct.

Mr. Spencer: I think that is all.

The Trial Examiner: Do you have some redirect, Mr. Lange?

Mr. Lange: Just this:

Redirect Examination

By Mr. Lange:

Q. You were interrogated with reference to the recoverable gas reserves of the Canadian River Gas Company. What is your understanding of the use of that term as employed?

A. My understanding of the use of the word "recoverable" is that it represents the gas which will be ultimately recovered from the leases owned by Canadian River Gas Company.

Mr. Lange: That is all.

The Trial Examiner: Is that all? Do you have anything further?

Mr. Spencer: Let me see.

Recross Examination

By Mr. Spencer:

Q. Then your computations are based upon the theory that Canadian River will recover all of the gas that is shown here as constituting its reserve?

A. That is my understanding.

Q. To-wit: three trillion plus cubic feet?

A. That is my understanding.

Q. Down to twenty-five pounds? I guess they have that qualification. That is some place here, is that correct?

A. That is correct.

Q. And if anything went wrong with that assumption at any point, then your computations would be incorrect to that extent?

A. That is correct.

Through the WITNESS HILL the Commission presented Exhibit 178, in which exhibit the service lives of the physical properties of Canadian are set forth. This exhibit is similar to Exhibit 177 which was also presented by this witness in connection with Colorado Interstate. The service lives for the main transmission lines and for the structures in Bivins Compressor Station are estimated at 50 years. Other structures and equipment range from 20 to 48 years; gas well equipment, 39; field lines, 40 years; other field line facilities from 23 to 30 years; and general garage and general office equipment, 4 years and 12½ years, respectively.

Exhibit 178 is, in part, as follows:

Statement of Composite Service Lives Determined for Property of Canadian River Gas Company

Account Number and Name		Adjusted Book Cost 12-31-39	Service Life (Years)	Annual Straight Line Rate—%
Leaseholds				
205	Leaseholds—Operated	$ 1,545,877.52		
205	Leaseholds—Unoperated	58,143.09		
	Total Leaseholds	$ 1,604,020.61		
Gas Wells				
211	Construction	$ 2,209,503.73		
212	Equipment	820,106.88	39	2.56
	Total Gas Wells	$ 3,029,610.61		
Drilling and Cleaning Equipment				
216	Drilling and Cleaning Equip.	$ 24,679.54		
Field Lines				
206-B	Rights-of-Way	$ 21,413.66	40	2.50
213-B	Construction	337,605.21	40	2.50
214-B	Equipment	892,155.08	40	2.50
	Total Field Lines	$ 1,251,173.95		
Other Field Facilities				
209-M	Field Measuring Station Structures	$ 9,301.40	23	4.35
215-M	Field Measuring Station Equipment	49,853.21	23	4.35
221-B	Field Compressing Station Structures	3,308.84	30	3.33
224-B	Field Compressing Station Equipment	15,762.02	25	4.00
	Total Other Field Facilities	$ 78,225.47		
Gasoline Investment				
900	Land (Amarillo)	$ —	—	—
902	Rights-of-Way	242.13	50	2.00
903	Structures	48,545.21	48	2.08
904	Equipment	295,099.09	28	3.57
905	Delivery Line	2,792.48	30	3.33
906	Loading Rack	3,802.16	28	3.57
	Total Gasoline Investment	$ 350,481.07		

Statement of Composite Service Lives Determined for Property of Canadian River Gas Company

Account Number and Name		Adjusted Book Cost 12-31-39	Service Life (Years)	Annual Straight Line Rate—%
Main Compressing Station (Bivins)				
218-C	Land	$ 1,515.66	Non-depreciable	
221-C	Structures	98,770.65	50	2.00
224-C	Equipment	533,487.73	35	2.86
	Total Main Compressing Station	$ 633,774.04		
Bivins Camp Investment				
218-BC	Land	$ 826.25	Non-depreciable	
223-BC	Structures	163,246.08	35	2.86
227-BC	Equipment	22,179.77	25	4.00
	Total Bivins Camp Investment	$ 186,252.10		
Transmission System				
218-D	Land	$ 18.00	Non-depreciable	
220-D	Rights-of-Way	56,392.84	50	2.00
226-D	Equipment	2,444,754.50	50	2.00
	Total Transmission System	$ 2,501,165.34		
Dehydration Plant (Part of Transmission System)				
218-D	Land	$ 441.22	Non-depreciable	
223-D	Structures	6,193.62	35	2.86
227-D	Equipment	35,138.83	25	4.00
	Total Dehydration Plant	$ 41,773.67		
Transmission Line Measuring Stations				
218-M	Land	$ 503.75	Non-depreciable	
222-M	Structures	6,049.09	40	2.50
225-M	Equipment	12,874.23	28	3.57
	Total Measuring Stations	$ 19,427.07		

Statement of Composite Service Lives Determined for Property of Canadian River Gas Company

Account Number and Name		Adjusted Book Cost 12-31-39	Service Life (Years)	Annual Straight Line Rate—%
	General Property			
247-E	General Office Structures	$ 2,793.03	35	2.86
248-E	Other General Structures	33,588.04	35	2.86
249-E	General Office Equipment	11,735.27	12½	8.06
250-E	General Stores Equipment	6,154.19	35	2.86
255	Telephone System—Rights-of-Way	13,332.14	50	2.00
255-E	Telephone System—Equipment	73,081.00	30	3.33
256-E	General Tools and Implements	8,350.86	15	6.67
257-E	Other General Equipment	3,897.14	20	5.00
253-E	General Garage Equipment.	36,078.40	4	25.00
	Total General Property	$ 189,010.07		
	Undistributed Fixed Capital			
200	Organization Expense	$ 387.45	Non-depreciable	
203	Other Undistributed Fixed Capital	8,843.16	50	2.00
	General Construction Items	2,196.01	50	2.00
262	Law Expenses During Construction	1,279.45	50	2.00
266	Interest During Construction	1,030.33	50	2.00
	Total Undistributed Fixed Capital	$ 13,736.40		
	Total Gas Plant Accounts	$ 9,923,329.94		
	Miscellaneous			
100-4	Gas Plant Held for Future Use Gas Well Investment	$ 80,952.45		
107	Gas Plant Adjustments	4,091,880.88		
110	Other Physical Property	1,176.34		
	Construction Work in Progress	150,582.36		
	Total	$14,247,921.97		

Commission WITNESS HILL testified on direct examination: (Vol. L, pp. 6980-7000.)

Q. Mr. Hill, did you also in connection with this assignment prepare another exhibit entitled "Determination of Composite Service Lives for Canadian River Gas Company Property"?

A. I did.

Q. Is this the exhibit which I now show you the one which you prepared?

A. It is, yes, sir.

Mr. Lange: May the stenographer please identify it?

The Trial Examiner: It will be marked for identification as Exhibit No. 178.

(Exhibit 178, Witness Hill, marked for identification.)

By Mr. Lange:

Q. Mr. Hill, will you turn t Page 1 of the exhibit?

A. Yes, sir.

Q. Where there is a written statement prepared by you. Will you read that statement, Mr. Hill?

A. "This exhibit was prepared by me and under my direct supervision, and shows composite service lives, by accounts, applicable to the operative gas plant property of Canadian River Gas Company as of December 31, 1939. The annual straight-line depreciation rates shown in this exhibit have been determined from the composite service lives shown therein.

"In August and September 1939 an inspection of the physical plant of the company was made by Federal Power Commission engineers. Production, gathering, compressing, gasoline extraction, and transmission system property was inspected. The location, type of construction, operating conditions, degree of maintenance, exposure to weather, and other factors causing deterioration, and the extent to accrued physical depreciation and of accrued obsolescence were noted for all property inspected. The age of most of the units of property was determined from dates of installation as recorded on the books of the company. Operating and maintenance methods were observed, and operating experience was discussed with company officials and supervisory employes.

"Service lives and composite service lives have been based primarily on the physical lives of the various units of property; however, consideration was given to other causes of property retirement whenever such factors were determinative.

"Company records, from the inception of operation, were analyzed to determine the causes of all major property retirements. These included physical deterioration, caused by wear, tear, rot, rust, decay and the action of the elements; inadequacy, obsolescence; requirements of public authorities; and other causes.

"Probable future conditions of operation compared with past service conditions were considered. The probable life of the natural gas reserves and other factors which have a bearing on the probable service life of the property in each account were taken into consideration. The system was considered a continuing enterprise which will operate so long as a supply of natural gas is available. The net salvage value of the physical plant of the company at retirement is considered negligible, and no salvage value has been assigned.

"In this exhibit 'adjusted book cost' represents the legitimate original cost of gas plant as shown in reports presented in this proceeding by accounting examiners of the Federal Power Commission. 'Service Life,' as used in connection with this exhibit, means the period during which a particular unit of property is used or performs a useful function in the rendering of service. 'Composite service life' means the weighted average service life of all units of property within a primary account classification, determined by dividing the total capital in each primary account by the sum of the annuities applicable to the individual units.

"The general plan of presentation and methods that have been followed in this exhibit are as follows:

"Leaseholds (Account 205). The life of property in this account has not been determined by me and is not shown in this exhibit.

"Gas Well Construction (Account 211). The life of property in this account has not been determined by me and is not shown in this exhibit.

"Gas Well Equipment (Account 212). A composite service life of 39 years has been determined for gas well equipment. A 40-year life is deemed applicable to all wells completed by Canadian River Gas Company and affiliate predecessor owners; the adjusted book costs of such wells are their original costs. 17 wells were acquired from other companies, presumably as depreciated cost. The life applied to each of these 17 wells is 40 years, less the expired life, to the nearest whole year, at time of acquisition by Canadian River Gas Company.

"In determining service lives for gas well equipment 10 inspections of the above-ground property were made at locations picked at random throughout the field. No inspections on well casing were made as the company has had very little casing retirements.

"Factors taken into consideration in determining the service life of gas well equipment included the following:

"1. The company's experience with deterioration of well casing.

"2. Inspection of field lines.

"3. Estimates prepared by Federal Power Commission geologists as to the volume of natural gas which may be produced from the present property of the company.

"It was found that the company has had to replace well casing on some of its older wells because of casing deterioration due to various causes, but has not experienced any serious trouble to date. Our studies indicated that a reasonable physical life for the company's field lines is 50 years; in my judgment, it is reasonable to expect well casing to deteriorate at the same rate, or possibly at a more rapid rate, than the field lines which are laid in the same area. A 40-year life has been adopted as reasonable, due to the fact that well casing is subject to some hazards to which field lines are not exposed. Estimates prepared by Federal Power Commission geologists concerning the volume of gas which may be recovered from the present property of the company indicated that the gas reserves would last longer than the 40-year life adopted for gas well equipment.

"Drilling and Cleaning Equipment (Account 216). Inspections were made of some of this equipment, but informa-

tion was not compiled to determine a life. Investigation by Federal Power Commission accounting examiners revealed that depreciation of this equipment is charged directly to fixed capital and operating expense accounts. It also revealed that the balance of the equipment in this account, as of December 31, 1939, has been 88.44 per cent depreciated. Therefore, it was not considered practical nor necessary to revise the company's depreciation rate for this equipment.

"Field Lines. The property carried under this heading includes Field Line Rights of way (Account 206-B), Field Line Construction (Account 213-B), and Field Line Equipment (Account 214-B). Account 213-B includes costs incident to construction of the field lines, including labor, teaming, supervision and engineering, overheads, and other expenses. Account 214-B includes cost of pipe, couplings, fittings, valves, and other accessory equipment.

"A total of 147 inspections was made on the various field lines, each inspection representing, on the average, approximately $8,500 of investment. These inspection locations were selected by the company, with the exception of a few additional locations which were requested by engineers for the Commission. Inspections were made in August and September 1939.

"At each location selected for inspection, a section of pipe approximately 40 inches long was cleaned. The procedure followed by the Commission's engineers at each inspection was to divide a 36-inch section of clean pipe into three 12-inch sections and take 10 or more pit measurements on each section. These pit depths and the general condition of the pipe were recorded.

"In addition, if the pipe was coated, the kind and condition of coating in the adjacent uncleaned sections of the pipe were recorded; notes were also made regarding type of soil, soil hydration, drainage, the description of adjacent property. The pipe inspection data, together with calculations relating to them, an analysis of the major retirements as shown on the company's records, and other pertinent information were used as guides in arriving at a service life for field lines.

"Based on analysis of data obtained during pipe inspections and analysis of retirements since inception, a 50-year

service life is considered reasonable for the main trunk line, F-1, the investment in which is nearly half of the total investment in field lines. The same life appears to be reasonable for the gathering lines, as a group, but the company's past experience indicates that a number of the gathering lines have been relocated and that there have been substitutions of larger diameter lines for smaller diameter lines.

"It seems likely that these relocations and substitutions will continue in the future as field pressure declines. Due to these facts, a service life of 35 years is considered reasonable for the gathering lines. Using 50 years for the main trunk line, F-1, and 35 years for the remaining lines, gives a composite service life for field line equipment (Account 214-B) of 40 years.

"The same service life has been assigned to field line rights of way (Account 206-B) and field line construction (Account 213-B). Because the average life of the wells is assumed to be at least as long or longer than that of the field lines, field line construction cost has been given the same life as determined for field line equipment. Owing to the fact that field lines may not be replaced in exactly the same location, rights of way also have been assumed to have the same life as field line equipment.

"Other Field Facilities. The property carried under this heading includes field measuring station structures (Account 209-M), field measuring station equipment (Account 215-M), field compressing station structures (Account 221-B), and field compressing station equipment (Account 224-B).

"A number of detailed inspections of field measuring station structures and equipment were made. The stations inspected were picked at random throughout the field. It was found from inspection and from an examination of company records that all but one of the field measuring stations were similar, being constructed of corrugated iron on wood frame.

"The Chicago measuring station is constructed of brick. A composite service life of 23 years has been determined as applicable to Account 209-M and to Account 215-M.

"The company owns and operates one field compressing

station; this is called Field Compressing Station No. 1. The principal items of property and plant, constituting the field compressing station accounts—Structures (Account 221-B) and Equipment (Account 224-B)—as shown on the company's records, were checked and identified in the field.

"Type of construction, condition of the property, and the degree of care used in maintaining the property were observed. Three inspections were made of the underground piping at this station to determine its condition. The station is operated only a few days each month, and this fact was taken into consideration in establishing service lives. A composite service life of 30 years has been determined for structures, and a composite service life of 25 years for equipment.

"Gasoline Investment. The property carried under this heading includes Rights of way (Account 902), Gasoline Plant Structures (Account 903), Gasoline Plant Equipment (Account 904), Gasoline Delivery Line (Account 905), and Gasoline Loading Rack (Account 906).

"The principal items of property and plant as shown on the company's records were identified and inspected in the field. The service lives adopted for major equipment are based on information obtained from these inspections from analysis of company records and from manufacturers of such equipment, with consideration given to the continued technological improvements in gasoline extraction.

"A service life of 50 years has been assigned to rights of way (Account 902), 40 years having been determined as reasonable for gasoline plant structures (Account 903), 28 years for the gasoline plant equipment (Account 904), 30 years for the gasoline delivery line (Account 905), and 28 years for the gasoline loading rack (Account 906).

"Bivins Compressing Station. The property carried under this heading consists of land (Account 218), which is non-depreciable, compressing station structures (Account 221-C), and compressing station equipment (Account 224-C).

"The principal items of property and plant constituting the Bivins compressing station as shown on the company's records were checked and identified in the field. Type of construction, condition of the property, and the degree of care used in maintaining the property were observed.

"Investigation revealed that very little difficulty has been encountered with this equipment. An analysis made of engine-hours operated since installation indicates that the main compressors were operated very little during the period 1929 to 1935, inclusive, but that they have been operated regularly for the past four years.

"All of the above facts, as well as the probability of retirement due to obsolescence and to depletion of gas in the field, were taken into consideration in establishing service lives for this property. A composite service life of 50 years has been determined for compressing station structures (Account 221-C), and 35 years for compressing station equipment. (Account 224-C).

"Bivins Camp Investment. The property carried under this heading consists of land (Account 218), which is non-depreciable, other structures (Account 223-BC), and other equipment (Account 227-BC). This camp is at the same location as the Bivins Compressing Station and gasoline plant, and is used to house the personnel of both plants. The camp consists of one 16-room frame hotel, 32 frame dwellings, one frame recreation hall, four frame garages, one frame paint house, and one frame fire house.

"The same type of construction has been used for the entire camp, and it is apparent that all structures are kept in a good state of repair. The other equipment carried under this heading consists of water distribution system, electric distribution system, gas distribution system, sewer system, and miscellaneous other equipment, such as an ice plant and hotel furnishings and equipment. A composite service life of 35 years was determined for other structures (Account 223-BC), and 25 years for other equipment (Account 227-BC).

"Transmission system. This heading consists of transmission system land (Account 218-D), transmission line rights of way (Account 220-D), and transmission line equipment (Account 226-D). Transmission system land is considered non-depreciable, and rights of way have been given a service life of 50 years. A total of 120 pipe inspections was made on the main 22-inch transmission line running from the Bivins compressing station to Clayton Junction, New Mexico, and six inspections were made on the various

lateral lines, or, on the average, one inspection for approximately each $20,000 of investment. The inspection procedure described under 'field lines' was also followed in connection with transmission lines.

"Studies indicate that 50 years is a reasonable service life for pipe and equipment in the main transmission line, and 40 years for the lateral lines as a group. A service life of 30 years is considered reasonable for general emergency equipment. The aggregate book cost of the equipment with service lives of 30 and 40 years is less than 1½ per cent of the account total. A composite service life of 50 years has been determined for transmission line equipment (Account 226-D).

"Dehydration Plant. Property carried under this heading consists of land (Account 218-D), which is considered non-depreciable, structures (Account 223-D), and equipment (Account 227-D). This plant is located on the main transmission line near Hartley, Texas.

"The principal items of property and plant constituting the dehydration plant as shown on the company's records were checked and identified in the field. The type of construction, condition of the property, and the degree of care used in maintaining the property were observed. In addition to this inspection of the physical property at the plant, inquiries were made of responsible parties as to the probable service life of this type of equipment. A composite service life of 35 years was determined as reasonable for structures (Account 223-D), and 25 years for equipment (Account 227-D).

"Transmission System Measuring Stations. The property carried under this heading consists of measuring station land (Account 218-M), which is considered non-depreciable, measuring station structures (Account 222-M), and measuring station equipment (Account 225-M).

"These accounts include a main line measuring station, which measures gas delivered into the Denver line, and several smaller stations located on the various lateral lines. The principal items of property and plant constituting the above accounts as shown on the company's records were inspected and identified in the field.

"The type of construction, condition of the property, and

the degree of care used in maintaining the property were observed. All but one of these stations are similar, being constructed of corrugated iron on wood frame. The main line measuring station, located at Bivins station, is built of brick. A composite service life of 40 years has been determined for measuring station structures (Account 222-M), and 28 years for measuring station equipment (Account 225-M).

"General Property. The property carried under this heading is comprised of:

"1. General Office Structures (Account 247-E) consisting of one frame office building located at the Bivins compressing station. The same type of construction as used in the Bivins camp was also used in this building, and it is equally well maintained. A service life of 35 years is likewise applicable to this account.

"2. Other General Structures (Account 248-E) consisting of Masterson G-2 camp and Fritch maintenance camp, Bivins Warehouse, Bivins garage and welding shop. All these structures were inspected, and it was found that the majority of this property has been kept in a good state of repair. A composite service life of 35 years is determined as reasonable for this account.

"3. General Office Equipment (Account 249-E) consists of furniture, office machines, and similar property. After giving consideration to the kind of property, its use, and to the company's past experience, 12½ years was determined as a reasonable composite service life of equipment in this account.

"4. General Stores Equipment (Account 250-E) consisting of shelving and bins in the Bivins warehouse, pipe and casing racks, and miscellaneous equipment used for handling and storing material. A composite service life of 35 years has been determined as reasonable for this account.

"5. Telephone System (Account 255-E) consisting of telephone rights of way and telephone equipment. Telephone rights of way have been given a service life of 50 years. Telephone equipment consists of copper, copperweld, and iron wire, together with poles, brackets, crossarms, pins, insulators, guys, and miscellaneous hardware.

"The telephone system consists of lines from Bivins compressing station to Amarillo, Bivins station to Red River Gas Company at Fritch, Texas, and from Bivins station to Clayton Junction. One pole in each mile of line was carefully inspected for checks, condition of butt, and condition of treatment.

"A general inspection of the condition and type of construction of the entire line was also noted. Based on the information obtained from this inspection and the company's past experience, a composite service life of 30 years was adopted for telephone equipment.

"6. General Tools and Implements (Account 256-E) consists of miscellaneous tools, construction, and maintenance equipment. The physical life of much of this equipment is affected by deterioration with time as well as with use. A composite service life of 15 years is considered reasonable for this account.

"7. Other General Equipment (Account 257-E) consists of miscellaneous materials and equipment of many descriptions, but, since the majority of the investment represents materials and equipment with a physical life of 20 years or more, 20 years has been adopted as a reasonable composite service life for the entire account.

"8. General Garage Equipment (Account 252-E) consists of passenger cars, pickups, trucks of various capacities, trailers, tractors, and excavators. Some of this property is more in the nature of work equipment than automotive equipment. The service lives of the different types of equipment included in this account vary with the nature of the equipment and with the character and amount of its use.

"The fairest method for determining accruals for loss in the service value of this equipment is on the basis of use. However, an accurate record of use has not been maintained. In the absence of such information, loss in service value must be based on age.

"From an analysis of the experience of the company, a composite service life of four years is determined as the reasonable composite service life for this account.

"Undistributed Fixed Capital: The investment carried under this heading includes:

"1. Organization Expense (Account 200). The articles of incorporation provide for perpetual existence of the company and grant the company authority to engage in many activities in addition to its present principal functions. Due to these facts, the amounts in this account are not considered to be subject to amortization or depreciation.

"2. Other Undistributed Fixed Capital (Account 203). The analysis of this account by the Commission's accounting examiners indicates that all amounts therein represent pre-construction expenditures, which are primarily expenditures for engineering service and for reports on the feasibility of the project. A period of 50 years for amortization of these costs was determined as reasonable.

"3. General Construction Items. The amounts so designated represent adjustments in general property construction overhead. In view of the nature of the charges included in this account, it is considered that 50 years is a reasonable period over which these costs should be amortized.

"4. Law Expense During Construction (Account 262). The analysis of this account by the Commission's accounting examiners reveals that all charges included in the account represent expenditures which may reasonably be amortized over a period of 50 years from the beginning of operations.

"5. Interest During Construction (Account 266). Taking into consideration the service life of the entire system, a reasonable period of amortization for this account is 50 years."

The Trial Examiner: Does that complete your direct, Mr. Lange?

Mr. Lange: Yes, just this other:

Q. Turning to the exhibit, Mr. Hill, just following Page 15, marked "Sheet 1 of 3," the figures appearing under the first column "Adjusted Book Costs, December 31, 1939" were taken from Exhibit 146, the plant account of Canadian River Gas Company on Page 62?

A. Yes, sir.

Q. Is that correct, Mr. Hill?

A. Yes, sir.

Q. And that continues over into Sheet 2 of 3 of the same Schedule No. 1 of Exhibit 146 to Page 62, 63 and 64?

A. Well, I don't know, Mr. Lange.

Q. On the plant account of Canadian River Gas Company?

A. Yes, they are the same figures.

Q. And the service life figures under the second column, were those computed by you on the basis of the manner as outlined in the preceding pages of this exhibit in your written statement?

A. Yes, sir.

Q. And the percentages appearing in the third column were then computed by you on the basis of those service life computations?

A. Yes, sir.

Mr. Lange: I believe that is all for the present, Mr. Examiner.

Mr. Spencer: Just one or two questions, Mr. Hill.

Recross Examination.

By Mr. Spencer:

Q. Reading what you have to say on Pages 2 and 3—rather, commencing at the bottom of Page 2 and ending with the first paragraph beginning on Page 3, I assume you have not furnished any computations here with respect to property that is subject to depletion rather than depreciation?

A. No, sir, I have not.

Q. In other words, you have made no computation in connection with leaseholds or intangible well costs?

A. Absolutely.

Q. This study of yours has been confined and limited solely to depreciable property?

A. Depreciable property, yes, sir.

Q. I assume your working papers with reference to this exhibit will likewise be available to us for examination?

A. Yes, sir.

* * * * *

MR. HILL further testified, on cross-examination: (Vol. LII; pp. 7126-7176.)

Q. Mr. Hill, I would like to ask you some additional questions this morning regarding your Exhibit No. 178 which relates to determination of composite service lives of physical properties of Canadian River Gas Company.

At least you have testified heretofore and your written statement so indicates that in determining the lives of the various classes of property owned and operated by Canadian River Gas Company you took into consideration the probable life of the natural gas reserves of the company, is that correct?

A. Yes, sir.

Q. Now, on two or three bases and perhaps more, you found the probable life of these natural gas reserves to be variable terms. The one I have a note on here is indicated as being 56 to 62 years.

A. Yes, sir.

Q. Is that correct?

A. Yes, sir.

Q. Then I believe you had a somewhat longer life on some other bases, did you not?

A. Yes, sir. The only basis that I recall putting in was 56 to 62 years according to my calculations.

Q. Well, that was the probable life that you ultimately used in making your calculations here.

A. Yes, sir.

Q. All right, now, I would like to ask you some questions about that probable life. The spread that you have there of 56 to 62 years, or a spread of eight years, is accounted for how?

A. Well, I merely took the reserve figure furnished to me by the geologists of the Federal Power Commission and then merely made estimates of withdrawals from those reserves. I took the Denver line—I put this in the record yesterday. Do you want me to put it in again?

Q. Perhaps so, because I want to go a little further with that part of it and if we have it in the record at this point it would make the succeeding answers more intelligible, I believe.

A. All right, sir. The approximate annual requirements in Mcf. at 16.4, on the basis—these are all—

Q. Does it bother you if I interrupt you? Have you—Well, strike that.

Give me the figure given to you by your engineering department. I believe it is in your written statement.

A. No, it isn't in my written statement.

Q. All right, that figure is not in your written statement?

A. No.

Q. Will you give it to me for the record the figure you obtained from the geologist department?

A. The reserve at the end of 1939 at 25-pound abandonment was 3,636,000,000 Mcf., at a base pressure of 14.65 per square inch absolute.

Q. In making your estimates, are you reconverting or are you converting again back to 16.4 pressure base?

A. I have taken the annual requirements on a 16.4 base because that is the way I could get them the nearest without converting and at the end of this I have converted back to 14.65 so it gives me nearly the same thing.

Q. So you have taken into consideration in your calculation the difference in pressure base?

A. Yes, I have.

Q. Go ahead with your explanation as to how you computed this period.

A. These will all be in Mcf. at 16.4. Approximate annual requirements Colorado Interstate Gas Company, Denver line—

Q. Will you go slow with those so that I can write them down?

A. All right. 22,000,000—

Q. Even?

A. Yes, sir, these figures have all been rounded off.

Q. All right.

A. Chicago line, the present Chicago line—

Q. Yes.

A. —22,000,000; the second Chicago line, 11,000,000; total, 55,000,000.

Amarillo Oil Company and Clayton Gas Company, 7,000,000—

Q. All right.

A. —company use, 1,000,000; total, it being at a 16.4 base, 63,000,000; total at 14.65 base pressure, 71,000,000.

Q. I see.

A. In the remaining life from 1939, taking the figure that was furnished to me by the geologists, 3,636,000,000 Mcf. It gave me a remaining life of 51 years; the expired life, 1928 to 1939—am I going too fast for you, Mr. Spencer?

Q. Well, the 51-year life you mentioned is 51 years from 1939?

A. That is right.

Q. Now you are talking about the expired life?

A. Yes, sir, that is from 1928 to 1939—

Q. Yes.

A. —eleven years. Total life—

Q. Yes.

A. —in 1928, 62 years.

Q. I think that is good.

Now, you made some adjustments?

A. Yes, I did.

Q. Go ahead with your adjustments.

A. Stimulation due to rate reduction voluntarily or otherwise—

Q. Excuse me. Was that word "stimulation"?

A. Yes.

Q. What do you mean by that?

A. The increase in business.

Q. The increase in sales?

A. The increase in sales.

—Percentage increase, 15 per cent, is adjustment figure based upon results obtained on Denver line after reduction and space heating rates in 1934, and giving consideration to saturation of load.

Q. Saturation where, Mr. Hill?

A. Mostly in domestic gas.

Q. Geographically where?

A. Well, in the Denver area, Colorado Springs, Pueblo—

Q. Is that all?

A. Do you want domestic figures—

Q. Is that the only point you are talking about a saturation?

A. I think most of the saturation would be in the Denver area.

Q. All of the figures you have given me here are what you term approximate annual production requirements for Canadian River Gas Company?

A. That is right, they are approximate figures used in service life estimates.

Q. Now you have assumed that the annual production

requirements of Canadian River Gas Company with the adjustments which you have made for stimulation, as you call it, would remain constant over a period of 56 years?

A. Well, I don't think they remain constant, but at the time this was made these are the best figures.

Mr. March: You didn't say that they remained constant, did you?

The Witness: No, I don't think it will remain constant, but at the time these calculations were made it is the best that we had.

Mr. Spencer: I see.

Q. Before I come to that, perhaps you had better indicate for the record how you dropped down from 62 to 56 years by applying your stimulation factors.

A. All right, sir.

Colorado Interstate Gas Company, Denver line, 25,000,000—

Q. Just a minute. Let me write that down.

A. Yes.

Q. All right.

A. Present Chicago line 25,000,000—

Q. All right.

A. Second Chicago line, taken as one-half of the first, 13,000,000—

Q. Total?

A. Total, 63,000,000.

Q. Amarillo Oil and Clayton Gas Company?

A. Amarillo Oil Company and Clayton Gas Company, 8,000,000; company use, 1,000,000; total at 16.4, 72,000,000; total at 14.65 81,000,000; using the same reserve figure to cover the gas gave me a remaining life from 1939 of 45 years; expired life, 1928 to 1939, 11 years; total life from 1928, 56 years.

Q. I think that explains it, Mr. Hill. Have you ever had any experience in market forecasting?

A. I have made potential load surveys, yes, sir.

Q. For natural gas companies?

A. Yes, sir.

Q. For whom?

A. Southern Natural Gas Company?

Q. When?

A. Well, I have made them all along in town plant distribution systems from 1930 through 1937.

Q. What was the purpose of them?

A. The purpose was for installation of town plants.

Q. The size of pipe, and so forth?

A. I designed the distribution system that was to be put—

Q. You made your forecasting in connection with the construction program?

A. Yes, sir, that is right. It was a potential load survey.

Q. How did your forecasting work out, do you know?

A. Well, the forecasting—sometimes it worked out that we were low and sometimes it worked out we were high; it is just a forecast and that is all you can say for it.

Q. Do you recall the specific period for which you made those forecasts?

A. Well, we would usually make them for maybe five years in advance.

Q. Five years in advance?

A. Five years or so.

Q. Did you ever make a forecast for natural gas production 56 years before?

A. I haven't made a forecast of natural gas production for 56 years—

Mr. March: I object to the question because the question presents something that the witness never testified to. He never testified he made no forecast as to gas in this field. He got those figures from his geologist and all he knows is that his geologist gave him the figures. The geologist was on the stand and he can cross examine him on it. I move the question and answer be stricken from the record.

Mr. Spencer: I don't believe the witness answered the question. It is true, Mr. Examiner, he has used the figures here as to gas reserve that were furnished to him by the geological department of the Commission; it is also true in order to find out what the probable life of these gas reserves is—he says that he gave consideration to it and it is here in his written statement—he would have to find out or make some computation with respect to rate of withdrawals from this reserve and he has just testified at length about the figures he has for the purpose of stating withdrawals.

Now, there is no use quibbling about words; when we are talking about withdrawals here we are talking about markets. It is very important to us to know the basis upon which these withdrawals are figured over a period of years. Otherwise, this whole house of cards falls. Our depreciation and depletion rates are being figured upon this rate of withdrawal which is nothing more than markets. I think we are entitled to explore, Mr. Examiner.

The Trial Examiner: I think you are permitted to. Mr. Spencer.

Mr. Spencer: Now, the question, please, Mr. Reporter.

(The question referred to was read by the reporter, as set forth above.)

The Trial Examiner: I take it, Mr. Spencer, you referred to withdrawal forecast rather than production forecast?

Mr. Spencer: Perhaps so. I will change the question so as to make it less objectionable to counsel perhaps.

Q. We are clear, are we not, Mr. Hill, that you are talking about wtihdrawals here from the gas reserves of Canadian River Gas Company which represents its estimated annual production into the future based upon existing markets? Is that true?

A. Well, these figures that I have used were sales of gas and we have gone back on the company's records and found out what their annual requirements were and have estimated—that is, what they have been in the past and estimated these figures.

Now, if annual sales and withdrawal from the field are the same, well, I'll say yes.

Q. You have nothing here but sales except company used gas in your figures, isn't that right?

A. That is all.

Q. Well, when you get all through with your computation and arrive at 56 to 62 years, you have projected those into the future, haven't you?

A. Yes, we have.

Q. As you understand it, am I doing a violence to the English language when I call that forecasting?

A. I don't know. You can call it estimates or forecasting, either one, but I would call it estimates myself.

Q. Have you ever made any study of this nature covering a period of 56 years or 50 years?

A. I don't understand the qusetion.

Q. Have you ever made any similar study for a period of 50 or 56 years?

A. No, sir.

Q. Well, perhaps we can shorten this by asking this question: Do you consider yourself qualified and competent to forecast markets for a period of 50 years?

A. Well, I don't think I have—

Q. Now, just the question.

The Trial Examiner: You may answer it your own way, Mr. Hill.

The Witness: I don't think I have forecasted a market of 56 years, Mr. Spencer. I have merely estimated the amount of gas that would ultimately be the sales for this line. It is an estimated figure.

By Mr. Spencer:

Q. We come to this, then, that you do not pretend to say that the actual withdrawals of gas from this property by Canadian River Gas Company are going to be *anywheres* near what you have indicated here?

A. Well, I couldn't say because the figures were just what we had to determine service lives on this property and that is the only way we have used them.

Q. As a matter of fact, within five years Canadian River Gas Company may be producing and selling twice as much gas as you have indicated here?

A. If I have overlooked things that may happen, yes, sir, it will. I have taken everything into consideration that I had at the present time.

Q. Well, that is what a forecaster does. He takes all of those things into consideration.

A. I tried to—I have taken those into consideration in arriving at these figures.

Mr. March: Mr. Spencer, I think I can help you clear this up if you will let me ask a question in the record here.

Mr. Hill, as I understand, you just had the past withdrawals before you and just for the purpose of this study you assumed that—you just projected those into the future. You don't mean to state here in the record that you would attempt to state that that is what will happen in the future, do you?

The Witness: No, sir.

Mr. March: You don't make any future withdrawals—they may be double—you are familiar with the testimony—

The Witness: They may triple, I don't know. These are the best figures I had for my study.

Mr. March: You are familiar with the testimony that has been given here that there will be some increase in the withdrawals in the future?

The Witness: Yes.

Mr. March: And for the purpose of your study here you just projected this past performance in to the future but you are not stating here that that is what will happen in the future or attempting to state that that is what will happen in the future?

The Witness: No, sir, I am not. I used them for my purpose and that is all.

Mr. March: Mr. Hill, you have made no detailed study of the future requirements for Chicago or the proposed Milwaukee market drainage upon Canadian River acreage?

The Witness: No, I have not.

Mr. March: The only thing you know about that is what the company has put in evidence in this case?

The Witness: That is all.

Mr. March: And that was after you prepared this exhibit?

The Witness: Yes, sir, after I have used these figures.

By Mr. Spencer:

Q. And the company has put in no figures estimating future markets beyond 1947, is that correct?

A. As I recall it, yes, sir, it is.

Q. And in addition to the present market specified by Mr. March in his questions I assume neither have you taken into consideration any additional pipe line markets that Canadian River might have in the future? I think that follows, does it not?

A. Yes, sir, none other than this Chicago second line.

The Trial Examiner: Well, that Chicago second line, Mr. Hill, is that the line that is contemplated to include service to the City of Milwaukee?

The Witness: Well, there was two proposals in there, now. I don't know how it worked out—the Natural Gas Pipeline Company of America and I think the Western Natural or something like that, trying to get a line in.

The Trial Examiner: Just proposed a loop line initially?

The Witness: Yes, sir, as far as Natural Gas Pipeline Company of America it would be.

By Mr. Spencer:

Q. When the geological department of the Commission gave you this Canadian River Gas Company reserve figure of three trillion, six, plus, did they give you a report with it just what it represented?

A. No, sir, they just said that that was the recoverable gas under the Canadian River acreage.

Q. Did they say recoverable by whom?

A. No, sir, they did not.

Q. And you have just assumed it would all be recoverable by Canadian River Gas Company?

A. Yes, sir, that is right.

Q. You have not taken into consideration that it might be recovered by somebody else through drainage or otherwise?

A. I have made no study of that, Mr. Spencer. I wouldn't know. I just accepted these figures as they were handed to me, that's all.

Q. You just made straight mathematical calculations using the figures that they gave you, using the production figures that you have estimated?

A. Yes, sir, that is all.

Q. And arrived at a certain number of years?

A. Yes, sir, that is right.

Q. And that figure assumes that Canadian River Gas Company will recover all of the gas shown in the figure given to you by the geological department?

A. Yes, sir.

Q. You have testified regarding your natural gas pipe line experience. Have you ever had any experience in the producing of natural gas?

A. Very little, Mr. Spencer.

Q. Very little?

A. I have had some experience with it in the Monroe field but it has been limited.

Q. Did you ever supervise the drilling of wells?

A. No, sir, I have not.

Q. Did you ever supervise the gathering of natural gas?

A. No, sir.

Q. Most of your natural gas experience has been connected with the transmission and distribution end of the business, is that correct?

A. Yes, sir, most of it.

Q. Now, this figure of Canadian River gas reserves which was handed to you by the geological department is based upon a 25-pound abandonment pressure, is it not?

A. Yes, sir.

Q. Do you know anything about abandonment pressures in the gas field?

A. Well, I know that in the Monroe field the abandonment pressure there was fifty pounds.

Q. But I take it you had no experience in trying to figure out what the abandonment pressure should be, for instance?

A. No, sir, I have not made any study of that, Mr. Spencer.

Q. Well, now, let me ask you this: We have a life of 45 years, let us assume, according to your calculations, commencing August 1, 1939. Do you have any idea how many hundred wells would have to be drilled by Canadian River Gas Company in order to recover the gas that you have indicated here down to a 25-pound abandonment pressure?

A. No, sir, I do not. I have made no study on it.

Q. Well, doesn't that become of some importance and some significance in determining what your rate of depreciation should be for the well investment?

A. Well, yes, it does, and I have, as far as I could see, I have given that some consideration.

Q. Well, you can come to that in a minute. I want to follow with a couple of other questions here. Let us assume that in order to recover all of this gas down to a 25-pound abandonment pressure it became necessary for the company to drill during the last two years of the life you have indicated here, two hundred wells. Over what period and at what rate would you judge the two hundred wells should be amortized for retirement purposes?

A. Well, in the first place, I don't think they will drill two hundred wells.

Q. Well, in the first place I asked you to assume it and let's see how it develops.

A. Well, in assuming that you would take into consideration, which I have, the present wells of the Canadian River Gas Company.

Q. Do you mean to say, then, that whatever wells they may be required to drill the last few years of the life indicated by you, they will still take the composite rate for retirement purposes that you have indicated here?

A. Some of these wells, Mr. Spencer, may go twenty years, some may last sixty. This is an average life that I put on that, and over that time. I have made an estimate of the average life and I think that is a fair and reasonable figure.

Q. And the well or wells drilled by the company for the purpose of recovering the gas that you have indicated here drilled during the last two or three years would still be entitled only to a rate of 2.56 per cent?

A. This is a group depreciation rate. As I said before, some of these wells may live longer. Some may live shorter. The average life that I placed on them of 40 years will mean that you would maybe over-accrue on some of them and under-accrue on some of them, but this is the average life I have put on them, and it is a fair and reasonable life according to the knowledge that I had.

Q. I am not questioning that you haven't attempted here to be fair and reasonable. I am questioning whether or not you have taken into consideration all of the factors that you should have taken into consideration in order to arrive at the correct answer.

Now, let me ask you this: Do you know as an engineer

that the lower the abandonment pressure that you use, the greater the number of wells which would be required to take out the gas, is that correct?

A. Yes, sir.

Q. That is axiomatic almost, isn't it?

A. Yes.

Q. Don't you think as an engineer that before arriving at this composite rate of yours for our well account that it would have been advisable for you to determine the number of wells which the company would have had to drill to recover the gas down to a 25-pound abandonment pressure, and don't you think that would have given you a little better picture upon which to base your rate?

A. No, sir, I don't think so, because I am setting a service life under present conditions there and I put an average life on it and some of those present wells may live to be 60 or 70 years or they may live to be a hundred, I don't know. I placed an average life on there which I think, to my best information that I had, is a fair life.

Q. Is your average life based upon existing wells?

A. Yes, it is based on existing wells.

Q. And the number is what?

A. Number of wells?

Q. Yes.

A. 97, if I remember right, Mr. Spencer.

Q. And for the purposes of your calculation you did not need to take into consideration the number of wells and the time at which they would be required in the future?

A. Well, I have made that allowance—

Q. Was it necessary?

A. I didn't understand the question.

Mr. Spencer: Read the question, Mr. Reporter.

(The question referred to was read by the reporter as set forth above.)

The Witness: I don't think so as far as an average life or composite rates.

By Mr. Spencer:

Q. And am I correct in saying that substantially your composite rate is based upon existing wells?

A. Well, as I stated, it is an average rate.

Q. Well, you haven't—you have to have something to get an average from, Mr. Hill.

A. And it is based—some of them may live longer and some of them may live shorter, as I have stated. I have no doubt, as I say, that some of those wells might live 70 years or a hundred years, but some of them may go shorter and according to my calculations I have arrived at 40 years.

Q. All right, the point I am making is this, that quite aside from the physical life of these wells the company is going to have to drill wells during the latter part of this period you have indicated in order to get gas out of them, and the lives of those wells are not limited by the physical elements involved here; they are limited by these reserves which are going to play out. Did you take those wells into consideration in arriving at your average composite rate?

A. I have not determined any salvage on well casing for the Canadian River Gas Company wells drilled at a later period. Like you say, for two years before this field was depleted you should have—get your money back out of that well, that is true, but it would have a higher salvage value than was figured on present well equipment on the basis of 40 years service life.

Q. Are you familiar with a rotary drilling operation which the company now is using?

A. Yes, I have seen rotary drills work, yes, sir.

Q. How much salvage do you think there is in a rotary drilled well in the Texas Panhandle field?

A. Well, are you talking about the hole or the casing now, Mr. Spencer?

Q. When I speak of salvage I am speaking of anything that will return to the company some amount of dollars when they abandon the well.

A. They have salvage value in some casing there—

Q. Isn't it a fact that salvage value is very low on a rotary drilled well?

A. Yes, sir, it is.

Q. You say that the company now has 97 wells?

A. I think that is correct, yes, sir.

Q. Now let us assume that everything is going to work out just the way you pictured it here and that your reputation as an estimater is going to be approved one hundred per cent; that at the end of your 40 years the company has

700 wells instead of 97 wells. Would that mean anything to you in determining your average composite rates for the purposes of determining what should be done with reference to this well account?

A. No, sir, not on the present day wells.

Q. All right. One other question before I forget it.

As I understand it, the Canadian River Gas Company's reserve figure of three trillion, six hundred billion is handed to you by the geological department of the Federal Power Commission?

A. Yes, sir.

Q. And then you hand it on to the accounting department?

A. Well, I think they get it from the geological department, too, just like I did.

Q. You hand it on to them in so far as it is included in your retirement rates here?

A. Yes, sir, that is right.

Q. Turn to Page 3 of your written statement. Under the heading "Gas Well Equipment," Account 212, you state that a composite service life of 39 years has been determined for gas well equipment. What classes of property have you included in that for the purposes of determining a composite rate?

A. We have included the casing and the Christmas trees.

Q. Oil well fittings?

A. That is right.

Q. The bulk of the investment would be in casing?

A. Yes, sir, I think so.

Q. The intangibles in the well you have not included?

A. I have not, no, sir.

Q. Those are subject to depletion and not depreciation?

A. Yes, sir.

Q. I believe you testified before that your study does not include any depletible property as distinguished from depreciable property?

A. I think I stated right above there, Mr. Spencer, that gas well construction was not determined by me.

Q. Now, if it wasn't for your composite rate and you were fixing an individual rate for the well equipment, you would have established a 40-year life, as I understand it?

A. Well, the 17 wells that were acquired from other com-

panies is what brought it down to 39 years, if that is what you mean.

Q. Is that what brought it down?

A. Yes, sir.

Q. Are those 17 wells that have been acquired by the Canadian River Gas Company since the beginning of its operation in 1928?

A. Well, I would have to get my working papers if you wanted to know exactly when they were acquired.

Q. It isn't that important.

You do not include in the category the wells that Canadian River Gas Company acquired from Amarillo Oil Company?

A. No, sir.

Q. Have you treated those differently?

A. I have treated the Amarillo Oil Company's wells and the wells acquired by the Canadian River Gas Company from the Amarillo Oil Company the same.

Q. The same?

A. Yes, sir.

Q. You might as well have included them in the figures you use here—I mean the figure of 17 wells—because they were acquired from another company.

A. Well, we have treated the Amarillo Oil Company as a predecessor company of Canadian River Gas Company.

Q. You have treated the wells acquired from the Amarillo Oil Company the same as the wells acquired from other companies?

A. No, sir, we presumed the wells acquired from other companies were wells that had presumably had the depreciated cost allowed for that life of the wells before they were acquired by the Canadian River Gas Company.

Q. And in the case of Amarillo Oil Company wells you have done something differently?

A. Yes, sir.

Q. That is what I wanted to bring out, that there is a distinction in your treatment of them.

Now, you say here in the determination of service lives for gas well equipment ten inspections of the above-ground property were made at locations picked at random through the field. What did you inspect, Mr. Hill?

A. We merely looked at what equipment we could see on top of the ground. We didn't inspect any casing, as cas-

ing retirements have been very light on the Canadian River's property.

Q. Have you ever had any experience before in the Texas Panhandle field?

A. No, sir, I have not.

Q. Did you examine the logs of the wells now owned and operated by Canadian River Gas Company?

A. No, sir, I did not.

Q. Do you know anything about the formations that they go through or the conditions of the holes?

A. Just a general knowledge is all I have.

Q. I believe you say that no inspections on well casing were made?

A. Yes, sir.

Q. You are not prepared to testify, then, from your knowledge of the formations in which this casing is fixed or the condition of the hole, as to what composite rate should be on gas well equipment?

A. As I say, I have just a general knowledge of the field. I have made no study. I have seen some well logs of that field but I have made no study of them.

Q. Do you know anything about the problems encountered by gas companies operated in the Texas Panhandle field with respect to the salting up of wells?

A. Well, I know that they are not troubled with salt water there. I have made inquiry into that, about the experience the company has had with wells there, and the information I received back was that they hadn't had a great deal of trouble with water encroachment and the only trouble they had had was some surface water trouble.

Q. Do you know that we do have salt formations?

A. Yes, sir.

Q. We have those?

A. Yes, sir.

Q. Do you know that the Texoma Natural Gas Company has abandoned several wells—I think seven—by reason—

Mr. March: If the Examiner please—

Mr. Spencer: Just a minute. I want to find out how much he knows here—

Mr. March: I want to state for the record, Mr. Spencer, that the questions should be directed to our geologists. Our

witness doesn't know anything about geological formations in the Texas Panhandle field, and if you insist on asking the question he can only state that he doesn't know.

The Trial Examiner: He can state whether he knows.

Mr. March: It is improper, Mr. Examiner—

Mr. Spencer: I would like to answer, Mr. March, that the only thing he has testified to so far is that he obtained from the geologist the gas reserve figures and he has taken that and then from his knowledge and experience the company, as he indicates in his own judgment as an engineer, has fixed retirement rates on this property. All I want to find out is how much he knows. If he doesn't know about it or if he got this from the geological department, he can say so.

Perhaps I had better restate the question again.

Q. Do you know that the Texoma Natural Gas Company which owns and operates gas wells in the same field has been required to plug and abandon several wells by reason of this salting condition I mentioned to you?

A. I know that they have abandoned some wells over there, but I don't know the reason for it.

Q. Do you know how many wells have been reported to the Texas Railway Commission as making salt water in the Texas Panhandle field?

A. I don't know of any of the present wells of the Canadian River Gas Company.

Q. Do you know how many in the field have been reported?

A. No, sir, I don't. I do know that the acreage of the Canadian River Gas Company is on the high part of the field. I know that.

Q. Are we speaking geologically now, Mr. Hill?

A. No, sir, I am not speaking geologically.

Q. You mean it is just the high place there?

A. Yes, sir, it is just from general knowledge and that is all.

Q. Don't you know as a matter of fact that the Canadian River Gas Company has wells that are making salt water right now?

A. Well, not from the information I had, Mr. Spencer. I can give you the information I have had if you want it.

Q. No, what I want to know is from your own information if that is not so.

A. I would like to check that if you don't mind.

Q. All right.

A. Would you like for me to read this letter from Mr. Hendee?

Q. If it answers the question it is perfectly satisfactory.

A. This is a letter written by Mr. Robert W. Hendee to Mr. J. B. O'Connor—

The Trial Examiner: What is the date of that letter, Mr. Hill?

The Witness: October 26, 1940.

"Confirming our telephone conversation this morning regarding request contained in your letter of September 23, 1940, the following is quoted from a letter which Mr. R. A. Ford wrote me some time ago:

"'Referring to your letter of the 25th enclosing copy of the letter from Mr. O'Connor asking for certain information concerning factors causing deterioration of well casing, beg to advise we have never conducted any series of tests to develop any information along the lines of the request. We are beginning to give some consideration, but to date no data has been assembled whereby it would reflect any authentic information. We have, of course, had some repair work on old wells where there had been water intrusion through pipe that had holes in it and in others where water was leaking in by the shoe but all of the well repairs have been different and we cannot assign any of the conditions he refers to in any particular wells we have worked over.'".

Mr. March: If you have no objection, Mr. Spencer, he might read Mr. O'Connor's letter so that we can tell what Mr. Hendee is talking about.

Mr. Spencer: That will be satisfactory.

Mr. March: Do you have that letter, Mr. Hill?

The Witness: I don't have a copy of it here.

Mr. March: Please get that letter later so we can have the continuity of it carried out because he is talking about

things there we wouldn't know anything about unless we had it.

The Witness: All right.

By Mr. Spencer:

Q. Did you make a study, Mr. Hill, as to the character of the 97 wells that Canadian River Gas Company now owns and operates, that is to say, whether they were rotary wells or cable tool wells?

A. I talked with Mr. R. A. Ford and from my understanding from him they use a rotary well down to what he determines the rock and then he goes to a rock outfit. That was my information from Mr. Ford.

Mr. Lange: Who is Mr. Ford.

The Witness: Mr. R. A. Ford is General Superintendent, I believe, of the Canadian River Gas Company.

By Mr. Spencer:

Q. All of the earlier wells drilled were acquired by Canadian River Gas Company, were they cable-drilled wells?

A. That is my understanding from Mr. Ford.

Q. Now, in determining your composite life here for gas well equipment, did you make any distinction between cable tool wells and rotary wells?

A. I don't think that would have any effect upon the life of the casing.

Q. You did not take it into consideration?

A. No, I did not take that into consideration.

Q. How many strings of casing do you ordinarily find down there in a cable tool hole?

A. I know back in the cable tool days that you would have maybe three or four strings of casing in there; at the present time it is my understanding from Mr. Ford that they are using entirely 8-inch casing.

Q. How many strings of casing are there in a rotary hole?

A. Well, he may use one or maybe two strings. Sometimes he may go to the bottom of the hole with 8-inch casing.

Q. Now, do you feel as an engineer that the additional strings of casing in the hole might have any bearing upon the life of the well?

A. You mean the life of the well or the life of the casing?

Q. The life of the well.

A. I am not determining the life of the well, merely the casing that is in the well is what I have set a life on.

Q. Well, if you have to abandon a well, the life of the casing has expired for the purposes of your work hasn't it?

A. Yes, we have taken that into consideration—

Q. Are you talking about the same thing? The life of the well is the life of the casing for that purpose, isn't it?

A. Read the question, please.

(The question referred to was read by the reporter, as set forth above.)

The Witness: That is, for forecasting purposes, yes, sir.

By Mr. Spencer:

Q. I mean to say this: If you have to abandon a well, you lose both the well and the casing; you are figuring no salvage value?

A. That is right.

Q. So they are the same thing?

A. Yes, sir. I figured no salvage value on it.

Q. And you do not feel that the added strings of casing in the well has any bearing upon the life of the well?

A. I think you are getting out of my line. I am not attempting to testify as to that.

Q. All right.

A. All I have figured depreciation rate on is the casing.

Q. I thought we had come to the point where the life of the well and the life of the casing were synonymous for all practical purposes to the company, at least?

A. No, sir. There might be some salvage value on casing if you abandoned a well in five, six, or two years after you put it in, but I figure no salvage value at all. In that case the life of the well would naturally be the life of the casing, and if you salvaged that casing—

Q. You think the life of the well might be longer than the life of the casing?

A. Yes, sir.

Q. Might the life of the well be shorter than the life of the casing?

A. Yes, sir.

Q. Which means nothing if you take out the factor of salvage, which you have done?

A. I haven't figured any salvage at all.

Mr. Spencer: We might take a short recess, Mr. Examiner.

The Trial Examiner: Very well, we will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Spencer:

Q. Mr. Hill, I have been asking you questions concerning your knowledge of the field and well conditions of the Canadian River Gas Company. Now, I wish you would tell me as briefly as you can how you arrived at a 40-year life for gas well equipment on the Canadian River Gas Company.

A. Well, I think the method I have stated in my written statement.

Q. You mean, first you have used the company's experience with the deterioration of well casing?

A. Yes, sir, that is right.

Q. And second, you have relied upon your inspection of the field lines?

A. That was taken into consideration, yes.

Q. And third, your estimate of natural gas which will be produced in the present properties of the company?

A. Yes, sir.

Q. And in that connection you say that you have made no inspections on well casing?

A. That is right.

Q. You have made no examination of well logs?

A. No, I didn't make an examination of well logs.

Q. You have no special knowledge of the condition of the wells of Canadian River Gas Company?

A. None other than what was given me by Mr. Hendee.

Q. I would like to ask you another general question.

I take it that the life that you have found for transmission lines, namely, 50 years, is the maximum life that you use here?

A. Yes, sir, that is right.

Q. And that if the life of a well is 40 years we must assume, then, that all of the present well will have been abandoned and passed out of existence prior to the end of your 50-years, is that correct?

A. No, sir, this is an average life I have figured. Some of those wells may live to be 60 years and some may go in 30 years. This is an average life I have put in—not of the well, but on the casing.

Q. An average life for the wells?

A. For the casing.

Q. For the casing?

A. Yes, sir. As I have stated in my written statement here "Gas Well Construction Cost," Account 211. "The life of property in this account has not been determined by me and is not shown in this exhibit."

Q. Well, if the average life is 40 years, then we must assume that some of these wells will have gone out of existence prior to the end of the 50-year life of the transmission line? Some of them will be gone.

A. More than likely will have.

Q. That follows, doesn't it?

A. Yes, sir. Some may go earlier and some may go later.

Q. Is it fair to say that those wells must be replaced with new wells—I mean, the wells that are going to be abandoned and will pass out of existence?

A. Well, if they are abandoned, they will have passed out of existence.

Q. The question was directed to replacement, Mr. Hill.

A. The replacement of that well will be up to the company.

Q. After all, we have to have something out of which to produce gas if we are going to have the production you have indicated here, is that not correct?

A. Well, I don't know. I haven't indicated the production. These are sales.

Q. What is the difference between sales and production as far as Canadian River?

A. I don't know whether it requires all the wells you have to produce this or not. You may be able to produce more than this on the present wells.

Q. You haven't taken into consideration the number of

wells required to produce the gas over the period which you estimate?

A. No, sir, and I don't think I would have in figuring average life, with casing.

Q. And the additional wells with casing in them or replacement wells as I have termed them before, are not taken into consideration here in your computation?

A. They are taken into consideration in so far as I have cut the life of the casing back—will you read the question, please?

(The question referred to was read by the reporter, as set forth above.)

The Witness: I don't think that would have anything to do with the life of the present casing.

By Mr. Spencer:

Q. Well, they weren't taken into consideration, then?

A. No, sir.

Q. All right. Now, you mentioned specifically here the company's experience with deterioration of well casing, and I believe in many other instances you have relied upon or at least considered the company's experience in making your calculations.

I have taken it into consideration, yes, sir.

Q. Now, what has been the length of the company's experience to date?

A. Well, you mean the Canadian River Gas Company?

Q. Yes.

A. I would say approximately eleven years.

Q. And your maximum life figure is 50 years?

A. Yes, sir.

Q. That is to say, you have only eleven years experience upon which to base an estimate for a period of 50 years, is that correct?

A. Well, as far as this company is concerned, yes, sir.

Q. As far as this company is concerned?

A. Yes, sir.

Q. And I presume it follows that if there are any errors in your calculations they will come off the last end of your term rather than the first end?

A. What was that question?

(The question referred to was read by the reporter as set forth above.)

The Witness: Well, these are all average lives, Mr. Spencer.

By Mr. Spencer:

Q. Yes.

A. And they all have a tendency to equalize themselves out.

Q. In other words, we have had eleven years experience and we have 38 years within which the errors, if any, may develop?

A. Well, these are estimates of life and—

Q. Well, I think that follows, Mr. Hill. I won't ask you—

Do you know anything, Mr. Hill, about the requirements of Texas statutes or the Texas Railroad Commission—

Mr. March: To which question we object.

The Trial Examiner: He hasn't finished the question yet, Mr. March.

Mr. March: We object to any question regarding the statutes—

Mr. Spencer: Wait a minute. I just asked him if he knew.

Before I was so interrupted, what did I say?

(The record referred to was read by the reporter, as set forth above.)

By Mr. Spencer.

Q. —relating to the production of natural gas in the state of Texas and particularly with respect to limitations upon production in connection with open flow capacity?

Mr. March: We object to that question. It is an improper question. It involves a question of statutes and is something that the witness did not have to consider in this exhibit and we don't think the witness should be required to answer it.

The Trial Examiner: He can state whether he knows.

The Witness: I know in a general way, yes, that they have proration laws in the state of Texas.

By Mr. Spencer:

Q. Now, did you take those requirements into consideration in making your calculations?

A. No, sir, I did not.

Q. Now, in your written statement under the heading "Field Line," you find that a 50-year service life is reasonable for the main trunk line? Is that correct?

A. Yes, sir.

Q. Did you make that finding because you considered it had the same permanency as transmission lines?

A. I think it has, yes, sir.

Q. In other words, you felt it was of such a character as to take the same rate as transmission lines?

A. Yes, sir, I think it is permanent. I don't think it will be moved, if that is what you mean.

Q. Well, did you find any factor that in your investigation, that would lead you to increase the life of the main field line over the transmission line?

A. No, I considered them the same, Mr. Spencer. I don't think the line will be moved.

Q. Now, do you know the wall thickness of this main field line?

A. Yes, sir.

Q. Can you give me that, please?

A. You have several different sizes and weights, Mr. Spencer. Do you want all of them?

Q. Give the wall thickness.

A. They are all the same wall thickness, 5/16ths of an inch.

Q. All right, now, will you give me the wall thickness of the transmission line of Canadian River Gas Company out of the Bivins station?

A. Three-eighths of an inch.

Q. Three-eighths?

A. Yes, sir.

Q. So we have a difference in wall thickness of how much between the transmission line and the main field line?

A. Well, that would be—

Q. One-sixteenth of an inch, isn't it?

A. One-sixteenth, yes, sir.

Q. Now, do you think that wall thickness has anything to do with the life of a piece of pipe?

A. Yes, sir.

Q. Did you take it into consideration here?

A. Yes, sir.

Q. And for the purposes of your study you find the same life for a piece of pipe with a wall thickness of 5/16ths of an inch as you do for a piece of pipe with 3/8 of an inch wall thickness?

A. No, sir, but the physical life is not determined the determined factors for the life of this pipe. It is the functional life of the field that has been given consideration in cutting the life of this pipe back to 50 years.

Q. I see. What you are expressing here in your 50 years, then, is the life of the gas reserves as you find them rather than the physical life of the pipe?

A. According to my calculations, yes, sir.

Q. I didn't get that out of your statement, Mr. Hill. I think you have answered it sufficiently, then.

For instance, on Page 5 of your written statement, the second paragraph, you state: "A 50 year service life is considered reasonable for the main trunk line F-1."

A. Yes, sir.

Q. And I certainly obtained the impression there that you were finding service life for the physical property itself without relation to gas reserves and in that I am incorrect?

A. That is not the determining factor, Mr. Spencer.

Q. Now, turn to your written statement which relates to other field facilities, and there you find a composite service life of 23 years as being applicable to the field measuring stations structures and field measuring station equipment; that is correct?

A. Yes, sir.

Q. Do you know as a matter of fact that the company has rebuilt every field measuring station that was originally constructed in 1928 as of this date?

A. I don't know that they have rebuilt them all, Mr.

Spencer. I know that they have rebuilt some houses there.

Q. Well, assume I am correct, that during the past eleven years the company has rebuilt every field measuring station that it had in 1928. Would that not indicate a life of eleven years rather than 23 years for those structures?

A. If they have all been replaced in eleven years it would, yes, sir.

Q. And in answering some of Mr. Dougherty's questions you—

A. I want to correct that last statement I made Mr. Spencer—

Q. Very well.

A. —if you don't mind. That would not be the life of eleven years because we figured this on an average life basis and it may be that some of them would go out in five years and some of them might last longer, because all the lives that we have figured have been on an average life basis.

Q. All right. If we have had to rebuild every one of them that we had in 1928 in eleven years, and you arrive at a composite service life of 23 years, it looks to me like you are going to have to build some brick houses or something in order to raise that average up to 23.

A. Taking into consideration the brick meter stations on the Chicago line that is included in this account is what runs the composite of this account up a little.

Q. Are you familiar with corrugated iron structures in the Texas Panhandle field?

A. Well, I am familiar with corrugated iron structures. As I stated before, I have not had a lot of experience in the Panhandle field.

Q. Well, they are a little different in the Texas Panhandle field. In riding along the highways of the Texas Panhandle field, did you notice the corrugated iron strung all along the highway, pieces of it all wound up here and there?

A. Yes, sir, I have noticed some of it.

Q. Where did you think that came from?

A. I have no idea.

Q. It may be very dry in the Texas Panhandle field, but they also have wind and sand to contend with, too, do they not?

A. Yes, sir.

Q. From the evidence you see over the terrain, this wind perhaps has something to do with the tearing these corrugated iron structures, does it not?

A. Well, they may blow off a sheet, but that is a maintenance job to put it back.

Mr. March: It doesn't destroy the iron, does it—the wind?

The Witness: Well, it might bend it up, but that is a maintenance job.

Mr. March: There would still be some sort of salvage to that, wouldn't there?

The Witness: I don't think so.

Mr. Spencer: You can have it.

Mr. March: It must be in awful fine pieces.

By Mr. Spencer:

Q. Well, one brick structure you say raised the composite rate which you found?

A. Yes, sir.

Q. How many other field measuring stations are there?

A. Well, I would have to go back in my working papers.

Q. About the same number of field measuring stations as there are wells?

A. Approximately, yes. There are some additional measuring stations, of course the measuring station on the gas to Amarillo Oil, that was taken into consideration, too. I would have to go back to my working papers.

Q. You have one brick structure and ninety some corrugated iron structures, is that not true?

A. I wouldn't want to state until I had my working papers to check it.

Q. We have ninety some wells, do we not?

A. Yes, sir.

Q. We have one of those structures at about every well, do we not?

A. I think so, and also measuring gas to the Amarillo Oil Company. I might have that number here.

The Trial Examiner: What rate did you put on the

galvanized iron structures, Mr. Hill, or did you put any specific rate on those structures?

The Witness: It was all figured in a composite rate. I have placed 20 years on them. That is figured in the composite.

By Mr. Spencer:

Q. 20 years for corrugated iron structures?

A. Yes, sir, on a wood frame.

Q. Now, turn to Page 10, Mr. Hill, of your written statement, that paragraph which is headed "Dehydration Plant." You find the composite service life of 25 years for dehydration plant equipment, did you not?

A. Yes, sir.

Q. To what extent did you consider obsolescence in fixing that rate?

A. Well, I considered—in fact, I talked with people that were familiar with this property and—

Q. I believe you mention in your statement, inquiries were made of responsible parties?

A. Yes, sir.

Q. Who were they?

A. Stearns-Roger Manufacturing Company.

Q. Denver, Colorado?

A. Yes, sir.

Q. And is your rate here based upon what they told you or is it based upon your own judgment?

A. My rate is lower than what they told me, Mr. Spencer.

Q. Well, is it based upon your judgment or—

A. Yes, sir, entirely on my judgment. I just merely used that as a guide to get all the information. The plants are relatively young and there has not been a great deal of experience with them.

Q. Would you consider that the company has a modern plant; that is to say, a plant that has the benefits and advantages of all recent improvements and inventions for dehydration of gas?

A. Well, if that is all you want to do, I would say yes it is. Of course, there are better systems, but I don't think that Canadian River Gas Company will abandon this dehydration plant to put in one just because of a different design. I don't think that.

Q. There are better systems?

A. I think the Glycol system is a better system. That is my own opinion.

Q. What is the chemical they use here for dehydration medium?

A. They use some type of—not being a chemist, I can't carry these things in my mind—some sort of sodium chloride or hypochlorite or something like that.

Q. Any time I get out of your field, you just say so. Do you know whether or not that is highly corrosive chemical.

A. It is corrosive with the presence of free oxygen, which you shouldn't have in this plant.

Q. That would be one factor that you would have to look at in determining the life of this particular plant?

A. Well, according to the best information that I have, as long as there is absence of free oxygen, it is not very corrosive. That is my information.

Q. Do you know as a matter of fact, that the piping in the brine storage tank at this plant was completely replaced in a period of three years?

A. Yes, sir. I know that there has been some replacements there and that is the reason I have cut this life back to 25 years. The majority of your investment is not in the brine storage tank.

Q. Well, would you consider replacement of piping in the brine storage tank to be maintenance, then?

A. Well, I adhered to the retirement units shown in the appendix of the classification of accounts, and that would govern that as far as I am concerned.

Q. I am talking only about replacements of these particular items of property.

A. If it was a unit within itself it would be a replacement unit, yes, sir.

Q. And it would not be considered as maintenance by you for the purpose of your study here?

A. No, sir.

Q. It would not?

A. If it was an entire unit that you took out.

Q. But you do know that this particular part of the dehydration plant required replacement in three years? You are aware of that fact?

A. Yes, sir. It is a very minor part of the whole plant, though, Mr. Spencer.

Q. Now, in making your determination of service lives as contained in this study, Exhibit 178, did you give any consideration to service lives as used by the company for income tax purposes?

A. No, sir.

Q. Did you find out that, in the course of your examination that engineers for the Bureau of Internal Revenue has made an investigation of this same subject matter?

A. I understand they have, yes, sir.

Q. Did you find out the results of their study?

A. I know the depreciation rates the company is using, yes, sir.

Q. But you gave no consideration to that here?

A. Not in determining my service lives, no, sir.

Q. In making your determinations of service lives here, did you give any consideration to the lives of the principal contracts under which the company operates?

A. No, sir, I gave no consideration,—if you are speaking of contracts between the Colorado Interstate Gas Company and the Canadian River Gas Company, I gave no consideration to that.

Q. Nor to the contracts between Colorado Interstate Gas Company and the Public Service Company of Colorado?

A. No, sir, I have no reason to—

Q. Well, whatever you have done here is without regard to those contracts?

A. Yes, sir.

Q. Or any terms fixed therein?

A. Absolutely. That is right.

MR. HILL also testified in connection with this subject under title 27 supra.

The determination of the necessary annual allowances for depreciation and depletion on a regulatory rate basis during the period January 31, 1939, to December 3, 1956, is contained in Exhibits 276 and 277, Witness Lusk, and is abstracted infra. Mr. Lusk in those exhibits, in using the period mentioned, adopted the testimony of the Witness Hendee, General Manager of respondent (Exhibit 255),

showing that the economic life of the field would cease by the end of 1956, and he also used the sinking fund method, with interest at 2¾%.

The Commission also presented Exhibit 190 setting forth an alternate method of accruing depletion. MR. LUTTRING testified in connection with this exhibit as follows: (Vol. LVIII, pp. 8253-8267.)

Direct Examination.

By Mr. Lange:

Q. You are the same Carl E. Luttring that has heretofore testified in these proceedings?

A. I am.

Q. Mr. Luttring, I will ask you whether in connection with your work you have prepared another exhibit in connection with the Canadian River Gas Company matter that would give effect to an alternative method of accruing annual and accrued depletion of gas well intangible costs?

A. I have.

Q. Is this the exhibit prepared by you?

A. Yes, sir, it is.

Mr. Lange: May the stenographer mark it for identification?

The Trial Examiner: It will be marked for identification as Exhibit No. 190.

(Exhibit 190, Witness Luttring, marked for identification.)

By Mr. Lange:

Q. Now, Mr. Luttring, in connection with the preparation of that exhibit did you also prepare a written statement summarizing the main portions of the exhibit and explaining it?

A. I have, yes, sir.

Q. Will you proceed to read that written statement into the record?

A. "The purpose of this supplementary report is to reflect in the balance sheet at December 31, 1939, and income and earned surplus account of Canadian River Gas Company for the year ended that date, the effect of depletion of well construction costs as determined in accordance with the alternative method proposed by the Division of Gas

Engineering. The following schedules which form this report reflect the effect of the depletion computed pursuant to the alternative method:

"Schedule No. 1 Condensed Income and Earned Surplus Account As Adjusted for the Year Ended December 31, 1939, Giving Effect to Alternative Depletion as Proposed by Supplemental Entry.

"Schedule No. 2 Balance Sheet As Adjusted December 31, 1939, Giving Effect to Alternative Depletion as Proposed by Supplemental Entry.

"Schedule No. 3 Examiner's Supplemental Entry to Give Effect to Alternative Method of Accruing Depletion of Gas Well Intangible Costs as Proposed by the Division of Gas Engineering.

"Schedule No. 4 Summary of Annual and Accrued Depletion and Depreciation of Gas Plant in Service at December 31, 1939, After Giving Effect to Alternative Depletion as Proposed by Division of Gas Engineering.

"The exhibit already presented on annual and accrued depletion and depreciation reflects annual depletion of well construction costs based on the recoverable gas reserves under all of the leases of Canadian River Gas Company. The company used the same method in its determination of annual and accrued depletion. Under this method the Mcf. unit cost of depletion increases with the construction costs of each new well added to the depletable base.

"The Division of Gas Engineering in the alternative method proposes that annual and accrued depletion of well intangible construction costs be depleted on the basis of recoverable gas reserves under the producing gas wells as of the beginning of each accounting period. Under this method the Mcf. unit cost of depletion tends to remain more nearly constant. Schedule No. 4, Column 4, shows the annual and accrued depletion resulting from the alternative method of computing depletion of well intangible costs.

"The alternative method, as computed in Schedule No. 3, results in total annual depletion in the amount of $324,884.26 as compared with $172,929.56 under the method already presented, or an increase of $151,954.70 for the period from June 1, 1928 to December 31, 1939.

"The increase of $151,954.70 in annual depletion is reflected in Schedule No. 1 in the following manner:

"Increase in 1939 operating revenue deductions	$ 13,286.48
"Decrease in earned surplus account at January 1, 1939, representing additional annual depletion from June 1, 1928 to December 31, 1938, inclusive	138,668.22
"Total	$151,954.70

"The accrued depletion at December 31, 1939, as is shown in Schedule No. 2 was increased by the amount of $151,954.70, representing the total additional annual depletion produced by the alternative method.

"The assets and other debits and liabilities and other credits at December 31, 1939, as adjusted, as stated in Schedule No. 2, and income and earned surplus for the year ended December 31, 1939, as adjusted, as stated in Schedule No. 1 represent the balances which appeared in the following reports presented by Examiner L. B. McKinstry:

"Balance sheet and supplemental data

"Income accounts and supplemental data including Examiner's reclassifications and adjustments

"Depletion of intangible well construction costs based on the recoverable gas reserves under all of the leases of Canadian River Gas Company or depletion of intangible well construction costs based on the recoverable gas reserves under the producing gas wells each have merit and either will provide a reserve at the expiration of the gas reserves sufficient to retire the related investment.

"The principal difference is that the depletion of intangible well construction costs based on the recoverable gas reserves under the producing wells provides a larger reserve as of December 31, 1939 and will provide larger annual amounts for the next several years, depending upon the company's drilling program. Additional expenditures of approximately $1,000,000 would be required before either method would produce the same amount of annual depletion. The alternative method will meet the requirements

of accepted accounting practice and is also being presented to the Commission for its consideration in these proceedings."

Q. You have completed your statement, Mr. Luttring?

A. I have.

Q. Turn back to it again, in order that it may be more complete and tied in with the other exhibit referred to, on Page 1 of the written statement at the bottom, the last paragraph on the page, the exhibit reads: "The exhibit already presented on annual and accrued depletion and depreciation * * *" that is Exhibit 176 heretofore presented in evidence, was prepared by Mr. Kenneth L. Smith and yourself, isn't that correct?

A. Yes, sir.

Q. Turn to the last page of the written statement. At the top of the page where you refer to the balance sheet and supplemental data, that is Exhibit No. 169 heretofore presented in evidence in these proceedings?

A. That is correct.

Q. And the income accounts and supplemental data including Examiner's reclassifications and adjustments have been presented here as Exhibit No. 168?

A. That is correct.

Mr. Lange: That is all for the present.

Cross Examination.

By Mr. Spencer:

Q. Now, Mr. Luttring, turning to your written statement here, the first sentence on the first page, in it you state that what you have done here is to give effect to depletion of well construction costs as determined in accordance with the alternative method proposed by the Division of Gas Engineering.

A. That is correct.

Q. Your Exhibit 176, I assume, was the first method that you employed for this purpose?

A. That is right, and that method is very similar to the one that the company is now using.

Q. Yes.

Mr. Lange: The one set up in Exhibit No. 176?

The Witness: That is correct.

By Mr. Spencer:

Q. Before I go any further, the principal difference here is in the one case we are depleting against total recoverable reserves, and in the other case we are depleting against recoverable gas allocable to producing wells?

A. That is correct. In Exhibit 190, of which we are talking about here, you have depletion on a basis of reserves which are in place under the existing wells.

Q. Now, the first method that you used in Exhibit 176 was a method that was also proposed by the Division of Gas Engineering, I assume?

A. No, sir.

Q. They did not propose that method?

A. No, sir.

Q. Where did you get that method?

A. The method, as I explained in Exhibit 176, you might say was identical to the one which the company is now using. The only difference was the amount of reserves which we used in our calculations.

Q. Did you adopt that method in Exhibit 176 because it had been followed by the company or for some other reason?

A. Principally because the company was using it.

Q. Is it a method that is generally practiced by gas companies?

A. Yes, the basic factors used in it are quite similar to all methods of that form of depletion.

Q. When you used your first method which follows very closely what the company is now using, you did that based wholly upon your own judgment?

A. Yes.

Q. You received no instructions to do that from anyone?

A. No, sir.

Q. Now, in this case you have presented an exhibit here to carry out an alternative method which has been proposed by the Division of Gas Engineering?

A. That is correct.

Mr. Spencer: Now, I don't want to get ahead of the story here, but is this method to be supported by the Division of Gas Engineering or do I get it from the witness on cross examination, or how is it to be handled?

Mr. March: Let the witness explain it.

Mr. Spencer: All right.

The Witness: We can only go this far, that the gas reserves that were used under the existing wells at December 31, 1939, that information was furnished to us by the Division of Gas Engineering. The reserves that were under the existing wells at the dates ending December 31st for the years prior to December 31, 1939, were also supplied to us by the Division of Gas Engineering.

Mr. Lange: They will be here ready to support that?

The Witness: I think that has already been introduced in Exhibit 181 by Mr. Stevens.

Mr. March: That is the reserves of the well and the others are the reserves on leases, that exhibit being prepared by Mr. Hammer. As far as the reserve figures are concerned, they were furnished to the accountants, the reserves under wells and the reserves under leases. They just used those reserve figures, but their application is their own—

Mr. Spencer: Quit testifying, Mr. March.

Mr. March: Is that correct, Mr. Luttring?

The Witness: Yes, that is correct.

Mr. Spencer: All I wanted to know was where to go and get the facts. That may be right, Mr. Luttring.

Q. I can get all of my facts and data from Mr. Stevens' Exhibit 181 that I need to check the computations which you made in Exhibit 190, is that correct?

A. That is correct. They would either come out of Exhibit 181, or his working papers.

Q. Mr. Stevens has let me have his working papers and we will try to check the figures from what we have.

What working papers do you have, Mr. Luttring?

A. The working papers which I have would be exactly similar to this Exhibit 190.

Q. Do you mean you would hand me a copy of Exhibit 190 for your working papers?

A. It would be a rough draft of this particular exhibit.

Q. I won't go into the particulars of your calculations at this time, Mr. Luttring, until we have checked with Mr.

Stevens' Exhibit No. 181 and his working papers to see if we have the necessary data upon which to check it. However, I do have a few general questions I would like to ask you.

At whose request did you make this particular exhibit?

A. I can't tell specifically. I do have some letters in the files that originated with the Bureau of Gas Engineering of the Federal Power Commission. Possibly Mr. Stevens would be able to enlighten you specifically on that matter.

Q. Well, for the moment I am interested in this: This is purely with reference to your functions in the matter: You have already prepared an exhibit here which contains a specific method for computing depletion and that method and your computations have been carried into a great many other exhibits which follow. I am wondering why the alternative method at this time—I wonder if you were dissatisfied with the method you used in the first instance and thought something else should be done about it.

A. No, we were not dissatisfied with the depletion as computed under Exhibit No. 176. In the first place we wanted to complete our schedule and at that time I don't think this information was quite available.

Mr. March: May I ask a question there, Mr. Spencer?

Mr. Spencer: Surely.

Mr. March: As a matter of fact, Mr. Luttring, it was determined by your superiors that both methods would be used and the Commission would be given the benefit of both calculations and they could choose which one they wanted?

The Witness: I think that is correct.

Mr. March: Doesn't that clear it up?

Mr. Spencer: I think so.

Q. You had no function here except to mechanically carry out something that was handed to you?

A. That is correct. As I say, it originated—

Q. You exercised no judgment—you didn't initiate any judgment in carrying out a policy or program outlined by someone else?

A. Only to this extent, that we did feel that this particular method was practical from an accounting standpoint.

Q. You placed your approval on it from an accounting standpoint?

A. That is correct.

Q. Does the Bureau of Internal Revenue recognize this particular method for the purpose of computing income taxes?

A. I am sure they do.

Q. Do they?

A. That I don't know.

Q. On the second line, Page 1 of your written statement, Exhibit 190, you refer to the balance sheet of the company at December 31, 1939. I assume that balance sheet is after the multitudinous adjustments that have been made in it by the Commission, or is that per company books?

A. The balance sheet would be as adjusted and as shown in Exhibit No. 169 is our starting point. Exhibit No. 169—

Q. That is the balance sheet you are using as a starting point?

A. Yes, sir.

Q. All right, I have that. That is as adjusted, is it not?

A. That is as adjusted.

Q. That is all I need on that.

The first paragraph commencing on Page 2 of your written statement, the second sentence, states: "Under this method the Mcf. unit cost for depletion tends to remain more nearly constant." That is correct?

A. That is correct.

Q. That is your statement, is it not?

A. That is correct.

Q. Are you intending thereby to place your stamp of approval on the method?

A. No, I am merely stating a fact.

Q. Are you intending thereby to express any preference between methods?

A. No, sir, I have not.

Q. Have you any preference as between the two methods?

A. I would have if I had to make a choice.

The Trial Examiner: Mr. Luttring, that is just what the Examiner is going to be faced with and I would very much appreciate your expression as an accountant as to which method you feel is a preferable one.

Mr. March: Only with this observation: Of course this observation—we don't object to the asking of questions of this witness but it does involve some engineering matters. For example, here is the thing involved. You have a lease and some wells on the lease. The difference here is in one case he has depleted the reserves under leases, and in the other case the reserves under wells. It brings in an engineering question as to whether or not the present reserves could be depleted by those present wells. We don't object to him answering the question as long as there is no engineering matter in there. That is the whole heart of the thing. It really comes down to the engineering proposition as to whether or not the user is depleting the wells over a period of years. You are going to do it by the reserves under the wells or the reserves under leases. It is well known that it is an engineering question as to whether or not present wells could draw all of that gas out of those leases and we are depleting wells here; we are not depleting leases, and so there you are. It does bring in the basic engineering question but we don't have any objection to this witness answering this thing from an accounting standpoint with that observation.

Mr. Spencer: I am not going to ask him any engineering questions and I am not going to ask him to commit the Commission, which he wouldn't do in any event. I am merely asking him as an accountant whether he has a personal opinion—

Mr. March: You mean preference.

Mr. Spencer: A personal preference between the two methods, and I believe he said that he did have a choice.

The Witness: I would prefer using the alternative method.

By Mr. Spencer:

Q. The method in Exhibit 190?

A. Yes, for the reason that the expenses from year to year would be slightly more accurate.

Q. Well, you mean they would be more constant or more stabilized?

A. That is right.

Commission Witness Stevens testified on cross-examination and redirect examination: (Vol. LXIII, pp. 9016-9042.)

Q. Do you have a copy of Exhibit 190 there, Mr. Stevens?

A. 190?

Q. Yes.

A. No, sir, I don't.

(The document referred to was passed to the witness.)

The Witness: Schedule 5, I believe it is, Mr. Spencer is that right?

By Mr. Spencer:

Q. Yes, that's right. Now, Mr. Stevens, in his written statement regarding Exhibit 190, Mr. Luttring said:

"The purpose of this supplementary report is to reflect in the balance sheet at December 31, 1939, and income and earned surplus account of Canadian River Gas Company for the year ended that date, the effect of depletion of well construction costs as determined in accordance with the alternative method proposed by the Division of Gas Engineering."

Is he referring there to your proposal?

A. Yes.

Q. Now, was your proposal made in writing of some character?

A. I don't recall. Except to state these figures shown in Column 2 on Schedule 5. Mr. Luttring could perhaps answer that point a little more accurately.

Q. But I must ask you what your proposal was, Mr. Stevens.

A. I didn't write any letter, if that answers your question more specifically.

Q. Well, what did you propose?

A. Simply these figures as representing the gas reserves—recoverable gas reserves in place at the ends of those years, that is all.

Q. That means you merely supplied data?

A. That is the fact of the case.

Q. Well, then, is it true to say that you made no proposal to the accounting department of the Commission?

A. Verbally I believe—

Mr. Spencer: I don't want to follow this thing around if we can get somebody to say when it was done and why it was done.

Mr. March: He is going to answer.

The Witness: Before we came out here to Denver this figure was requested—I say "figure"—in its multiple aspects, reserves as of the ends of various years, and we supplied that.

By Mr. Spencer:

Q. The figure was requested by whom, Mr. Stevens?
A. I don't know who made the original request.
Q. What department?

Mr. March: I will state this for the record so there won't be any difficulty. All requests of the Federal Power Commission as far as divisions are concerned come through the Bureau Chiefs. Now, Mr. Stevens was given an assignment. He was given this assignment to prepare this exhibit to show what the remaining gas reserves—or the remaining gas you would get out using just the present wells. We will stipulate to that as far as that goes.

By Mr. Spencer:

Q. Well, who made the proposal referred to here as having been made by the Division of Gas Engineering to suggest an alternative method of figuring depletion on intangible well costs?

The Trial Examiner: Mr. Stevens just testified that that was his proposal.

Mr. Spencer: That is one of the first questions he answered in the affirmative.

Mr. March: He furnished the figures, Mr. Examiner.

The Trial Examiner: Perhaps he wants to change the answer, but that is the answer he made.

Mr. March: He said he furnished the proposal in so far as he furnished the data. He furnished just the data.

The Trial Examiner: Maybe he misunderstood Mr. Spencer's question, but that isn't what he said.

The Witness:- I think the interpretation of the word "proposal" at the instant it was mentioned, our interpretations may not have been exactly the same: I have nothing to hold back on this. I would like to state an exact answer to your question but the fact is that this request for these reserves as of these years came through, I suppose, approximately the channel that Mr. March stated.

Now, as to having a part of the proposal, I recall that we were—several of us, including Mr. Luttring and Mr. Hammer and myself, discussing the use of these figures and the element of proposal was rather minor, Mr. Spencer. We thought that this reserve figure as calculated here for the various years back to 1928 was a reasonable figure in terms of this kind of an exhibit. I am not an accountant myself and it was not made up from any accounting standpoint. It was simply stated as what we considered to be a reasonable way to do it and in so stating there was no competition, you might call it, between the accountants and us as to what should be used or what had to be used. It was merely a suggestion more than a proposal, and they worked up this exhibit incorporating those figures and that is the extent of the proposal. It was more a suggestion and discussion rather than a strong proposal. It certainly wasn't a strong proposal. It was simply our idea of one way to do this.

By Mr. Spencer:

Q. Well, you didn't propose to Mr. Luttring or anybody in the accounting department to go ahead and us this data for the purpose of compiling Exhibit 190?

A. Well, in the sense that a suggestion is a proposal, it is a proposal as he states. It hinges apparently around the exact definition here of the word "proposal." I believe that states the facts of the case as much as I know them.

Q. Well, maybe they will become more apparent as we go along, what I have in mind.

About when did you receive your request or your instructions to compile these figures that have been used in Exhibit 190?

A. I don't recall that date. I believe it was in August or September. I am not sure.

Q. Of last year?

A. Yes, 1940.

Q. That was prior to the time that you had prepared Exhibit No. 182, your exhibit?

A. No, that wasn't prior to the time that that was completed. As I recall, the Exhibit 182 was completed just prior to supplying the accountants with these figures. They are more or less the conclusion of Exhibit 182, and the completion of these occurred approximately at the same time. I know that Exhibit 182 had not been done long.

Q. Now turning to Page 5 of Exhibit No. 190 which is sheet 2 of 2, Schedule No. 3, there are five columns in the schedule at the top of that page. Will you point out the schedule, or the column that contains data furnished by you?

A. It should be explained I think here at this point that where we considered reserves as of the end of one year, Mr. Luttring apparently has used that same reserve as being the beginning of the following year which is the same thing.

Q. May I stop you there? I mean, as I understood it over here, you calculated reserves in the middle of the year—

A. The figures were as of the ends of years, Mr. Spencer.

Q. These figures over here in 190?

A. Yes. You see that 2238 at the bottom of Column 2?

Q. Sir?

A. You see the 2238 at the bottom of Column 2?

Q. Yes.

A. That is the gas reserves as of 1940. He means the beginning of 1940 and I stated it as of the end of 1939. That is the point I just mentioned. Look on the last page of my written statement.

Q. I am trying to tie that statement into Exhibit 182.

A. You will see on the last page of my written statement, Mr. Spencer, not the tabulation, just the last typewritten page.

Mr. Lange: Of your Exhibit 182?

The Witness: 182, yes.

Mr. Spencer: Yes.

The Witness: See that 2238 as being the reserve?

By Mr. Spencer:

Q. That's right, I see.

A. The difference is that he calls it the beginning of 1940, which as I said, is the same thing.

Q. Yes, I understand that. Now, go ahead with the designation by columns of data that you furnished for this schedule, Page 5, Exhibit 190.

A. At this point it is necessary to make another explanation. You see the figure for the beginning of 1939 of 2,285,632,410,000?

Q. Yes.

A. That is the reserve as of the beginning of 1939 inclusive of production figures I actually supplied him excluding production. That is the difference between the figures I supplied Mr. Luttring and the ones he shows here. It is necessary to make that explanation and involves the point of view of the accountants as to whatever they used it for, which was depreciation, I believe.

Q. Depletion?

A. As I understand it, the reason it was necessary to divide this into money before production was taken out was in order to determine the rate of per Mcf, which was shown in Column 5. That is the character of this work that made it desirable to do that; and that is the only point of difference between the figures I actually gave him and the figures he uses here.

It is further stated that these figures are based on the figures that I did actually supply.

Q. Well, you haven't quite answered my question, Mr. Stevens, as you got off on another explanation. What you did furnish for Mr. Luttring on Page 5 of Exhibit 190, his exhibit, was the gas reserves shown in Column 2 with the explanation that you have made?

A. With the explanation I have made. I might make it a bit simpler by saying this: The figures Mr. Luttring shows in Column 2 are the ones I gave him but including production for the year in question and that is the difference.

Q. You also furnished him, I take it, with the annual production figures in Column 3?

A. I don't recall whether we did or not. Did he say so?

Mr. Spencer: May Mr. Luttring answer that question from where he is?

Mr. March: Just a moment. There is a way to do this.

This witness can tell, Mr. Examiner, every figure he furnished here, but as to tell how and why Mr. Luttring uses these figures, that is Mr. Luttring's obligation.

Mr. Spencer: I haven't asked him how they were used. I am asking him what was furnished.

The Trial Examiner: He hasn't been asked how.

The Witness: That can be stated very simply. It is the reserve figures for the end of the year 1939 backwards to 1928 to which he added production for the years in question to arrive at the figures shown in Column 2 for the reason explained; and if that reason isn't explained enough I think Mr. Luttring can explain that better because he is an accountant.

By Mr. Spencer:

Q. It is perfectly clear to me, Mr. Stevens. There is no complication about it except in Mr. March's mind. I am clear on it. All I want to know is, did you furnish any production figures or did Mr. Luttring get them some place else?

A. I don't recall whether he did or did not, or whether that was supplied by the Denver office.

Q. Have you figures in your working papers you could spot check to see whether they agree with your production figures?

A. Yes.

Mr. Lange: Mr. Spencer, you are referring to the figures in Column 3, Page 5, Exhibit 190?

Mr. Spencer: Yes.

Mr. March: Did he testify he didn't furnish the figures?

The Trial Eaxminer: He is testifying that he is trying to find out.

The Witness: I have them here, Mr. Spencer.

By Mr. Spencer:

Q. Don't check them all. Just spot them.

A. I am doing that So far they do check.

Yes, they are the same and it is possible that we supplied them, although I am not sure on that point.

Q. I think you did but it doesn't make any difference particularly.

Now, Mr. Stevens, correct me if I am wrong, but I understood from your cross examination by Mr. Keffer that through the calculations and computations made in your Exhibit 182 you arrived at a reserve figure for the end of 1939, did you not?

A. Yes, sir.

Q. And that figure is what?

A. 2,238,849,016.

Q. Which is shown here as you have explained it as being at the beginning of 1940?

A. He has so designated it.

Q. Now, in arriving at your reserve for prior years, as I understand it you figured backwards from your 1939 figure?

A. Yes.

Q. Tell me how you did that, just generally. Make it as simple as you can.

A. Well, I believe that if I read this statement which consists of a few notes of consecutive calculations that it would clarify it probably better than picking my way back out. Is that satisfactory?

Q. Go ahead.

A. Method of calculation of future expectancy for December 31st of any given year—1929 is used as an example.

The Trial Examiner: 1929?

The Witness: 1929. We could have used 1939. You can look at it going ahead or looking backwards in time in figuring it out.

1939 is the year I started. It is possible, however, in this note—I say it is possible because it was a reverse of the preceding discussion, but starting with 1939, if that makes it simpler, it is also possible to use the expectancy of 12-31-39 as a starting point to work back to 1928 by years by reversing the procedure that would be followed if they were calculated from 1928 forward.

Adopting the reverse procedure, all columns are avail-

able as basic data except Columns 7 and 8 and Column 7 and 8 on—

Mr. Spencer: Wait a minute, Mr. Stevens. Let's identify the columns you are talking about.

The Witness: They are not anything you have there. It is my working sheet. I was going to name them, except the expectancy of the start of the year including production of all wells—I believe that is the only thing it does not include.

We have the expectancy of 12-31-39 of 2,238,849,016 cubic feet. Now the production for 1939 of all wells is then added because to get back to the beginning of 1939 it is necessary to add the production of 1939. That production, to simplify the description can be considered as negative expectancy or expectancy that has been used up in the form of production.

By Mr. Spencer:

Q. I thought we were going backward instead of forwards.

A. Yes. By adding production you get back to the expectancy it was at the beginning of the year.

Q. Go ahead.

A. And that comes to the figure of 2,285,632,410,000 cubic feet. That, you see, is a figure that Mr. Luttring uses. The difference between my figures and his is that he includes that production and considers the expectancy to have been brought in at the beginning of the year and to serve as a basis for calculations of the latter part in the columns in his Schedule 5.

From this figure we must subtract the expectancy of the five wells that were drilled in 1939 to get back into the previous year for the reason that at a certain point those wells that were drilled had no expectancy whatever.

We must also subtract their production. This figure amounts to 123,479,112,000 cubic feet.

Q. What does that make for the well, approximately? Is that your same 24 billion figure, approximately?

A. 124?

Q. I asked you what the average was per well. Then I asked you if that was the same 24 billion used for adding wells in 1940.

A. That is right. These expectancy figures, the calculations you will note in all cases with regard to previous years, the expectancy figure calculations start as of 1939 and that average is used to go backwards in this case.

Q. The same average throughout?

A. Yes, because it is all as of the date of 12-31-39.

By the way, it isn't 24. At the end of 12-31-39 it is 23 something. It is 23,817,543,000. At the end of 1939 the average expectancy is, of course, less than at the middle of 1939 and that is the figure. In that case it represents one well. I don't recall the figures as appearing in the record at all.

Q. You gave me a figure of 123 billion that you deducted for five wells in order to arrive at the figure at the first of the year that you are talking about, which would make it, if my calculation is correct, 24 billion instead of 23 billion. It is relatively unimportant—

A. This is 23,817,000,000. It is almost 24 billion, Mr. Spencer.

Q. All right.

A. Unless you figured it out exactly, that perhaps accounts for the difference. There is almost 24 billion.

Q. Five divided into 123 must go at least 24 times. Isn't that correct?

A. I see what you mean. That figure there is the expectancy and the start of its life with respect to five wells only and includes the 5 times 23815 plus whatever it produced.

We were up to the point of subtracting the expectancy and production of the five wells. That gets us back to the expectancy as of 12-31-38 of the wells producing at that date, which is not excluded in the five wells brought in in 1939 both as to their expectancy and their own production.

This reversed procedure can be continued back to the end or to the beginning of the early years, earlier years such as 1928. It would have been easier to have considered this from 1928, Mr. Spencer, in spite of the fact that the original

start was in 1939. However, you can work it from either direction. I think it makes a more comprehensive picture to start in 1928.

Q. Can it be done briefly the other way?

A. Yes, sir.

Q. All right, reverse it and put it in the other way, if the Examiner has no objection.

The Trial Examiner: No. However, I don't seem to follow him on this procedure he is going through now. It is probably clear if one would read it in the record. If it can be made plainer, Mr. Stevens, by reversing it, do so.

The Witness: I think it can. I think it can be better understood by most people a little better by starting in 1928, although I do start with a 1939 figure, to calculate back from there. You can start at the front and you can start at the back.

The Trial Examiner: Perhaps we might give you a few minutes to thrash it over.

We will stand in recess for five minutes.

(At this point a short recess was taken, after which proceedings were resumed as follows:)

The Trial Examiner: The hearing will be in order.

By Mr. Spencer:

Q. Now, Mr. Stevens, suppose we adopt your suggestion and put into the record an explanation of the method you utilized in figuring gas reserves as shown in Column 2, Page 5 of Mr. Luttring's Exhibit 190 by reversing the process.

A. The method of calculation of future expectancy for December 31st of any given year—the year 1929 is used in the example. The figures are in Mcf. on a 16.65 base. The term "expectancy" or "future expectancy" is synonymous with gas reserves recoverable by present wells for the years in question and is used for reasons of brevity and simplicity.

First, the expectancy of all wells as of 12-31-39 is 2,239,849,016 Mcf., or 23.817543 billion for the average of 94 wells. That is as of the date of 12-31-39. This figure was derived from projection of pressure versus accumulative production

curve to intersect with an assumed 25-pound abandonment pressure and represents the gas reserves recoverable by Canadian River Gas Company as of 12-31-39.

The expectancy of the nine wells having first production in 1929 was obtained by multiplying the average well expectancy of 23,817543 Mcf. by 9, obtaining 214,357,887,000 Mcf. as of 12-31-39. To the expectancy as of 12-31-39 and to this expectancy of 4-12-39 is added the entire life of the production of the nine wells from the beginning of 1929. If it were shown by example from 1928 it would be the 35 wells as of 1928 but we are talking about 1929 in which nine wells were added. This amount is 30,876,429 Mcf.

The addition referred to gives 245,234,316 Mcf.

Q. In what year?

A. What this does is it has the effect of bringing the total expectancy of the nine wells back to the start of their lives which is at the beginning of 1929. It gets them to the instant which they were drilled in or assumed to be drilled in at the start of that year.

As the beginning of 1929 is considered the end of 1928, the expectancy at the first of 1929 of wells drilled in that area is added to the expectancy of other wells in existence at the first of 1929; that is, to the expectancy of other wells at the end of 1928.

Thus 245,234,316 Mcf. plus 1,029,892,131 Mcf. equals 1,275,126,447,000 Mcf. This figure includes production for the year in question and can be considered as the expectancy at the start of the year. The production that is included consists of production naturally for the nine wells drilled in 1929 as the entire life production was added previously, and the years production for the 35 wells already producing in 1928.

Therefore, to arrive at the expectancy for 12-31-29 it is necessary to subtract the production for 1929 of the 44 wells then involved. The production of 19,100,446 Mcf. is subtracted, giving 1,256,025,999 Mcf. This is the expectancy of the 44 wells producing at 12-31-39. The basic principle of the method used is started from 1928 to give yearly addition of wells, their proper contribution to expectancy. This expectancy is, of course, reduced by production.

The basic plan further considers addition of bands of wells for sucessive years and if this problem is considered as addition of successive bands of years and the expectancy of wells drilled in in those years followed by subtraction of the production of all wells operating at the end of those years, such operations arriving at an expectancy for the wells in existence at the end of those years.

Mr. Spencer: Is that clear to the Examiner?

The Trial Examiner: I think I can follow it in the record, as I have before.

By Mr. Spencer:

Q. Now, Mr. Stevens, you started out with 35 wells in 1928 and ended up with 94 wells in 1939, isn't that correct?

A. Yes, sir.

Q. In order that we may make our calculations, I wish you would from your working papers give the number of wells involved by years as you have used them.

A. 1928, 35; 1929, 44; 1930, 57; 1931, 65; 1932, 66; 1933, 71; 1934, 71, there being no additions in 1934; 1935, 74; 1936, 82; 1937, 86; 1938, 89; 1939, 94.

Q. Your list of wells contains wells that the company acquired by purchase rather than drilled, I assume you treated them no differently than you did those that were drilled by the company?

A. Well, these numbers of wells are the numbers of wells producing as of the end of those years when owned by Canadian River and when they are owned by Canadian River, of course, their expectancy is owned by the Canadian River. I believe that answers your question.

Q. Well, I think it does. You have made no distinction in your formula or method you have described here as between wells drilled by the company and wells acquired by the company but drilled by third parties?

A. Not when they were under Canadian River ownership. Then they were Canadian River wells, and no differential was made between those owned by Canadian River and their expectancy was owned by Canadian River.

Q. You didn't take into consideration production which might have come from those wells during their prior ownership, is that correct?

A. During their prior ownership their production didn't show up in your production and hence they are excluded for that reason.

Mr. Spencer: May I talk to the witness off the record a bit? There is no use of involving the record here.

The Trial Examiner: Yes. Off the record.

(Discussion outside the record.)

The Trial Examiner: On the record.

By Mr. Spencer:

Q. Now, Mr. Stevens, I take it from your testimony that you are an engineer by profession, is that right?

A. Yes.

Q. Have you ever made any particular studies or had any particular experience in determining proper rates of depreciation or depreciation for properties of oil and gas companies.

A. No.

Q. And is the same answer applicable to depletion?

A. Yes.

Q. Am I correct in stating that you are not recommending the treatment given to the data furnished by you in Mr. Luttring's Exhibit 190?

A. Well, that is a bit difficult to answer. Under your term "recommending," I believe that is a logical way to do but from an engineering point of view I suppose that the equipment in a gas well is used as long as the gas is there that is going to be recovered from those wells. Beyond that point of thinking that it is a logical thing to do, my recommendation probably has no value as such for the reason that be ond that point accounting features enter in upon which I don't feel competent to testify. It is simply a logical method and that is the extent of the recommended value that the tabulation may have.

Q. What Mr. Luttring has done, you did not recommend him to do?

A. I don't recall recommending that he make that specific report. The recommendations as far as they are recommendations were a statement of principle that we had some confidence in as being equitable in terms of a physical gas

property. That is really the sum and substance of the degree of recommendation.

Q. After all, a matter of depreciation and depletion is largely a question of amortizing your investment and getting it back at the proper time, is that correct?

A. That is my understanding.

Q. What part would you think that business judgment of the management might play in determining those questions?

A. I gave no consideration to that. I don't know whose business management or judgment is involved in that. The point of view given in these figures is irrespective of anything but what you might call physiologic. It incorporates no point of view of the management or accountants.

Q. I think that is right. You admit, however, that the question is not an academic one?

A. Not in its application.

Q. Who determined, if you know, that the reserve figures you furnished here should be applied to intangible wells cost?

A. I don't know specifically.

Q. Do you know why it was not applied to leaseholds, for instance.

A. This figure for reserves?

Q. Yes, in determining the rates for that.

A. The general reason is that it is clear it is not the lease reserve because some other figure is incorporated in Mr. Hammer's reserve as the figure for lease reserve.

Q. But still if this is all you are going to get out of present wells you would be wanting to get it out and get your money back on your leaseholds?

A. That isn't considered to be the fact, this being the reserve under wells, and the lease reserve being the total under leases to be recovered.

Q. You still have to get your money back through whatever wells you have, isn't that right?

A. Yes.

Q. Let me ask you this. You have made your calculation of reserves here as of 1939?

A. Yes, sir.

Q. Had you made that calculation for any of the pre-

ceding years down to 1928, the rate that Mr. Luttring arrived at would be changed, would it not?

A. Had we made it to some early date?

Q. Any date prior to this. You would have come out with a different rate, wouldn't you?

A. Whatever the reserve showed would have influenced the rate, I suppose. You are referring to Column 5 there. I suppose it would have its effect, however, they were made as of 1939, which is the present estimate.

Q. If we make it any date in the future, undoubtedly there would be some change in the rate, is that not right?

A. I am not thoroughly familiar with Mr. Luttring's procedure there and I would hesitate to answer affirmatively on that.

Q. Confine it to your reserves for the purpose of determining rate.

A. That is what he used—do I misunderstand you—

Q. I will shortcut.

You can use your method here in making your calculation for any year in the past and undoubtedly for any year in the future and find different reserves upon which to base your depletion computation, is that not correct?

A. This reserve is for present wells, of course, and those calculations are, I suppose, on present wells since they are on this figure.

Q. That is right.

A. As to what he would do in the calculation or in the application of any future reserve changed from our curve or staying on our curve, I don't know what he would do in that case, Mr. Spencer.

Q. He has stayed with your figure, hasn't he? He hasn't made any adjustment in your figures except the ones that you mentioned.

A. No, but they are as of 1939 and we are talking about the future, I believe.

Q. Yes, that is right. I won't go any further with that.

You say you have made no particular study of the depreciation and depletion and what a corporation should do with that?

A. No, sir.

Mr. Spencer: That is all.

The Trial Examiner: Do you have some redirect, Mr. March?

Mr. March: Yes.

Redirect Examination.

By Mr. March:

Q. Mr. Stevens, which one of these methods do you prefer for depleting the wells over the life of the wells or the life of the leases?

Mr. Spencer: Mr. Examiner, let us have him qualify the witness first. When I left him he wasn't qualified.

Mr. March: I asked him which one he preferred and that is all that is necessary for him to answer, if he has an opinion.

The Trial Examiner: I believe he just stated in response to cross examination, Mr. March, that he had made no study of the property depreciation and depletion other than that this system he proposes would be the logical method to use.

Mr. March: I want to know why he thinks it is the logical method.

The Trial Examiner: Is that what you want to know?

Mr. March: Yes.

The Trial Examiner: All right.

By Mr. March:

Q. Which one of the methods do you prefer and why?

A. Personally, I prefer this one described here as far as preference has any significance. Of course, it seemed that it was the logical one because it was tied in intimately with the life of the well or the use of the well—is tied in logically with the period of use and that is really the fundamental and probably the only basis of preference that the depletion is tied in with, the amount of gas that is going to be depleted. That seemed the very logical thing to me and that is probably the only and main reason for the preference.

Q. Your position is that you are depleting wells and that you should have the depletion period over the life of the wells?

A. Which is the history of the recoverable reserves, which is the period of producing from the recoverable reserves of the period in question. That is stating the same thing I believe.

Exhibit 190 is, in part, as follows:

CANADIAN RIVER GAS COMPANY

CONDENSED INCOME AND EARNED SURPLUS ACCOUNT AS ADJUSTED
FOR THE YEAR ENDED DECEMBER 31, 1939
GIVING EFFECT TO ALTERNATIVE DEPLETION AS PROPOSED BY SUPPLEMENTAL ENTRY

Sheet 1 of 2

Description (1)	As Adjusted (Note 1) (2)	Examiner's Supplementary Revision (Note 2) (3)	As Alternatively Adjusted (Note 3) (4)
Utility Income			
Operating Revenues	$2,393,386.99		$2,393,386.99
Operating Revenue Deductions			
Operating expenses	$ 665,286.93		$ 665,286.93
Depreciation	153,987.13		153,987.13
Depletion	44,865.27	$ 13,286.48	58,151.75
Taxes	175,141.03		175,141.03
Nonrecurring expenses	222.60		222.60
Total Operating Revenue Deductions	$1,039,502.96	$ 13,286.48	$1,052,789.44
Net Operating Revenues	$1,353,884.03	($ 13,286.48)	$1,340,597.55
Exploration and Development Costs			
Delay rentals	$ 10,401.58		$ 10,401.58
Nonproductive well drilling	29,293.73		29,293.73
Abandoned leases	1,878.18		1,878.18
Total Exploration and Development Costs	$ 41,573.49		$ 41,573.49
Net Utility Income	$1,312,310.54	($ 13,286.48)	$1,299,024.06
Other Income			
Interest revenues	$ 17.88		$ 17.88
Miscellaneous nonoperating revenues	292.39		292.39
Total Other Income	$ 310.27		$ 310.27
Gross Income	$1,312,620.81	($ 13,286.48)	$1,299,334.33
Income Deductions			
Interest on debt to Colorado Interstate Gas Company			
Bonds	$ 327,235.00		$ 327,235.00
Notes and current account	104,962.71		104,962.71
Other interest charges	11,403.39		11,403.39
Miscellaneous income deductions	29,372.17		29,372.17
Total Income Deductions	$ 472,973.27		$ 472,973.27
Net Income for Year Ended December 31, 1939	$ 839,647.54	($ 13,286.48)	$ 826,361.06
Earned Surplus			
Credits			
Balance January 1, 1939	$4,998,551.16	($138,668.22)	$4,859,882.94
Balance from income account (above)	839,647.54	(13,286.48)	826,361.06
Total credits	$5,838,198.70	($151,954.70)	$5,686,244.00
Debit - Premium on bonds retired	11,900.00		11,900.00
Balance December 31, 1939	$5,826,298.70	($151,954.70)	$5,674,344.00

Exhibit No. 190

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Exhibit No. 190

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Schedule No. 1
Sheet 2 of 2

CANADIAN RIVER GAS COMPANY
CONDENSED INCOME AND EARNED SURPLUS ACCOUNT AS ADJUSTED
FOR THE YEAR ENDED DECEMBER 31, 1939
GIVING EFFECT TO ALTERNATIVE DEPLETION AS PROPOSED BY SUPPLEMENTAL ENTRY

Notes:

(General) This supplementary statement of Respondent's income and earned surplus account for the year ended December 31, 1939, embraces the income and earned surplus account as adjusted and presented in the accounting report "Income Accounts and Supplemental Data Including Examiner's Reclassifications and Adjustments", and after giving effect to an alternative computation of annual depletion of gas well intangible costs, differing from the computation of annual depletion as made for the income and surplus account as first adjusted.

(1) The figures in this column are taken from column 9 of Statement B 1 of the report entitled "Income Accounts and Supplemental Data Including Examiner's Reclassifications and Adjustments and represent the Condensed Income and Earned Surplus Account for 1939 as adjusted.

(2) Basis of revision of annual depletion of gas well intangible costs for the year 1939 is as follows:

Depletion, per entry on Schedule No. 3 hereof	$39,625.53
Depletion, per entry 406 of report entitled "Annual and Accrued Depletion and Depreciation of Gas Plant Accounts and Examiner's Adjustments"	26,339.05
Additional depletion for the year 1939 on alternative basis	$13,286.48

(3) Although the Examiner's Suspensions for the Consideration of the Commission shown in Statement B 1 of the report entitled "Income Accounts and Supplemental Data Including Examiner's Reclassifications and Adjustments" are as pertinent to this schedule as they are to that statement, they have not been here repeated.

CANADIAN RIVER GAS COMPANY
BALANCE SHEET AS ADJUSTED, DECEMBER 31, 1939
GIVING EFFECT TO ALTERNATIVE DEPLETION
AS PROPOSED BY SUPPLEMENTAL ENTRY

Assets and Other Debits (1)	As Adjusted (Note 1) (2)	Liabilities and Other Credits (3)	As Adjusted (Note 1) (4)	Examiner's Supplementary Revision (Note 2) (5)	As Alternatively Adjusted (6)
Utility Plant:		Capital Stock - Common capital stock			
Gas plant in service	$ 9,923,329.94	25,000 shares, no par value (all issued			
Construction work in progress	150,582.36	to Southwestern Development Company)	$ 1.00		$ 1.00
Gas plant held for future use	80,952.46				
Gas plant adjustments	4,091,880.88	Long-Term Debt (All owed to Colorado			
Total Utility Plant	$14,246,745.64	Interstate Gas Company):			
		First Mortgage and Collateral Trust			
Investment and Fund Accounts -		Twenty Year Six Per Cent Sinking Fund			
Other physical property	$ 1,176.34	Gold Bonds, due June 1, 1948	$ 5,057,000.00		$ 5,057,000.00
		Advances	1,348,254.14		1,348,254.14
Current and Accrued Assets:		Total Long-Term Debt	$ 6,405,254.14		$ 6,405,254.14
Cash	$ 9,517.29				
Special deposits	266.82	Current and Accrued Liabilities:			
Working funds	1,492.36	Accounts payable to other than			
Notes receivable (all from employees)	365.00	associated companies	$ 134,256.95		$ 134,256.95
Accounts receivable from others,		Payables to associated companies	272,037.81		272,037.81
excluding associated companies	5,617.31	Taxes accrued	81,291.82		81,291.82
Receivables from associated companies	43,917.86	Other current and accrued liabilities	11,097.53		11,097.53
Materials and supplies:		Total Current and Accrued Liabilities	$ 498,684.11		$ 498,684.11
Held for use in gas business	87,452.29				
Gasoline held for sale	3,484.62	Reserves:			
Prepayments	4,145.40	Reserve for depreciation of gas plant	$ 1,437,396.70		$ 1,437,396.70
Total Current and Accrued Assets	$ 156,558.92	Reserve for amortization and depletion			
		of producing natural gas land and			
Deferred Debits:		land rights (See Schedule No. 4)	325,966.58	$ 151,954.70	477,921.28
Rate case expenses	$ 54,600.61	Total Reserves	$ 1,763,363.28	$ 151,954.70	$ 1,915,317.98
Other	34,519.70				
Total Deferred Debits	$ 89,120.31	Earned Surplus	$ 5,826,298.70	$(151,954.70)	$ 5,674,344.00
Total Assets and Other Debits	$14,493,601.23	Total Liabilities and Other Credits	$14,493,601.23		$14,493,601.23

Notes:

(General) This supplementary statement of Respondent's balance sheet at December 31, 1939, embraces the balance sheet as adjusted and presented in the report entitled "Balance Sheet and Supplemental Data" and after giving effect to an alternative computation of annual and accrued requirement for depletion of gas well intangible costs, differing from the computation of such requirement in the balance sheet as first adjusted by the amount shown in column 5.

(1) The figures in this column are taken from column 5 of Statement A 1 of the report entitled "Balance Sheet and Supplemental Data" and represent the Balance Sheet as at December 31, 1939, as originally adjusted.

(2) See Schedule No. 3 for Examiner's entry supporting revision.

Exhibit No. 190

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Exhibit No. 190

Docket G-124

Schedule No. 3
Sheet 1 of 2

CANADIAN RIVER GAS COMPANY
EXAMINER'S SUPPLEMENTAL ENTRY TO GIVE EFFECT TO
ALTERNATIVE METHOD OF ACCRUING DEPLETION OF GAS WELL
INTANGIBLE COSTS AS PROPOSED BY DIVISION OF GAS ENGINEERING

Particulars	Debit	Credit
(1)	(2)	(3)
Surplus - Operating Revenue Deductions - Depletion	$151,954.70	
Reserve for Depletion of Gas Well Intangible Costs		$151,954.70

To provide annual depletion of gas well intangible costs based on undepleted gas reserves under the existing producing wells as estimated by the Bureau of Engineering, undepleted cost and annual production in amounts for the years as follows:

Year	Annual Depletion	Retirements	Reserve Acquired	Depletion Reserve
As of 12/31/27			$10,168.48	$ 10,168.48
1928	$ 8,286.50	$ 6,487.11		11,967.87
1929	19,138.65			31,106.52
1930	22,236.47			53,342.99
1931	20,632.47			73,975.46
1932	22,356.95			96,332.41
1933	20,802.91			117,135.32
1934	27,980.60			145,115.92
1935	30,404.00	14,345.87		161,174.05
1936	37,182.27			198,356.32
1937	40,084.82			238,441.14
1938	36,153.09			274,594.23
1939	39,625.53			314,219.76
	$324,884.26*	$20,832.98*	$10,168.48*	$314,219.76*
Previously set up by Examiner's Entry No. 406	172,929.56	20,832.98	10,168.48	162,265.06
Additional depletion	$151,954.70			$151,954.70

* Refer also to column 4 of Schedule No. 4, this report.

See data attached as per sheet 2 for undepleted reserves, annual production and annual depletion.

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Exhibit No. 190

Docket G-124

Schedule No. 3
Sheet 2 of 2

CANADIAN RIVER GAS COMPANY

EXAMINER'S SUPPLEMENTAL ENTRY TO GIVE EFFECT TO ALTERNATIVE METHOD OF ACCRUING DEPLETION OF GAS WELL INTANGIBLE COSTS AS PROPOSED BY DIVISION OF GAS ENGINEERING

Year	Gas Reserves (MCF)	Annual Production (MCF)	Annual Depletion Gas Well Intangible Costs	Rate per MCF
(1)	(2)	(3)	(4)	(5)
1928 (7 months)	1,036,427,228	6,535,097	$ 8,286.50	$ .001268
1929	1,275,126,447	19,100,448	19,138.65	.001002
1930	1,596,070,291	20,646,678	22,236.47	.001077
1931	1,777,717,880	20,819,847	20,632.47	.000991
1932	1,781,467,070	22,883,266	22,356.95	.000977
1933	1,894,232,604	21,990,394	20,802.91	.000946
1934	1,872,242,210	29,577,801	27,980.60	.000946
1935	1,937,068,722	34,628,703	30,404.00	.000878
1936	2,110,160,888	43,590,010	37,182.27	.000853
1937	2,177,058,509	46,610,252	40,084.82	.000860
1938	2,204,636,366	42,483,068	36,153.09	.000851
1939	2,285,632,410	46,783,394	39,625.53	.000847
1940	2,238,849,016			
Totals	x x x x	355,648,958	$324,884.26	$ .000913

All MCF data above are stated on a pressure base of 14.65 pounds per square inch absolute.

Gas reserves shown in column 2 represent remaining gas reserves under the existing wells as of the beginning of each accounting period. All amounts in column 2 were derived by adding the annual production to the remaining gas reserves under the producing existing wells at the end of each accounting period.

AS THEY WOULD BE RECORDED AT DECEMBER 31, 1939
AFTER GIVING EFFECT TO ALTERNATIVE DEPRECIATION
AS PROPOSED BY DIVISION OF GAS ENGINEERING

Particulars	Total (2)	Total Depletable Plant (3)	Depletable Plant — Gas well intangible costs (4)	Depletable Plant — Leasehold costs (5)	Total Depreciable Plant (6)	Non-Depreciable Plant (7)
Costs Subject to Depletion and Depreciation						
Original Charges Per Books	$15,536,159.96	$8,064,115.85	$2,175,390.13	$5,888,125.72	$7,467,375.44	$4,804.67
Adjustments	(4,596,458.77)	(3,966,934.14)	286,547.99	(4,253,482.13)	(916,348.29)	(1,176.34)
Adjusted Total Cost Subject to Depletion and Depreciation	$10,939,701.19	$4,097,181.71	$2,462,538.12	$1,634,643.59	$6,551,027.15	$3,632.33
Less Retirements (adjusted)	1,036,371.25	283,657.37	253,034.39	30,622.98	732,713.88	
Adjusted Book Cost at Dec. 31, 1939	$ 9,903,329.94	$3,813,524.34	$2,209,503.73	$1,604,020.61	$5,818,313.27	$3,632.33
Depletion and Depreciation, computed annually; depletion computed on remaining gas reserves estimated by Bureau of Engineering and annual production of Canadian River Gas Co., depreciation based on service life estimates furnished by Bureau of Engineering:						
Year						
1928	$ 74,460.73	$ 9,181.80	$ 8,286.50	$ 895.30	$ 65,278.93	
1929	161,351.88	22,003.72	19,138.65	2,865.07	139,348.16	
1930	167,355.15	27,996.89	22,236.47	5,760.42	139,358.26	
1931	171,735.36	26,857.60	20,632.47	6,225.13	144,877.76	
1932	176,151.06	29,221.93	22,356.95	6,864.98	146,929.13	
1933	175,626.00	27,729.88	20,802.91	6,926.97	147,896.12	
1934	187,458.64	37,327.19	27,980.60	9,346.59	150,131.45	
1935	189,179.61	41,312.04	30,404.00	10,908.04	147,867.57	
1936	196,545.31	50,913.12	37,182.27	13,730.85	145,632.19	
1937	199,490.50	54,767.95	40,084.82	14,682.23	144,723.45	
1938	202,670.94	49,662.71	36,153.09	13,509.62	153,008.23	
1939	212,138.88	58,151.75	39,625.53	18,526.22	153,987.13	
Total Annual Accruals	$ 2,111,164.06	$ 435,125.68	$ 324,884.26	$ 110,241.42	$1,679,038.38	
Less Retirement Losses						
Retirements (adjusted)	$ 1,016,371.25	$ 283,657.37	$ 253,034.39	$ 30,622.98	$ 732,713.88	
Salvage	(633,022.23)	(259,523.00)	(232,201.41)	(27,321.59)	(375,499.23)	
Profit on retirements transferred to maintenance	3,664.08				3,664.08	
Loss on retirements charged to reserve						
Net (annual accruals less retirement losses)	$ 387,013.10	$ 24,134.37	$ 20,832.98	$ 3,301.39	$ 362,878.73	
	$ 1,727,150.06	$ 410,991.31	$ 304,051.28	$ 106,940.03	$1,316,159.65	
Add						
Reserves acquired	180,135.42	66,929.97	10,139.54	56,790.43	113,205.45	
Accrual charged to construction	8,031.60				8,031.60	
Total Reserves for Depletion and Depreciation applicable to Gas Plant	$ 1,915,317.98	$ 477,921.28	$ 314,190.82	$ 163,730.46	$1,437,396.70	
Deduct - Reserves applicable to Gas Plant Held for Future Use	3,763.12	1,423.16	(28.94)	1,452.10	2,339.96	
Total Reserves for Depletion and Depreciation applicable to Gas Plant in Service at December 31, 1939, as adjusted	$ 1,911,554.86	$ 476,498.12	$ 314,219.76	$ 162,278.36	$1,435,056.74	

Exhibit No. 190

50027

Docket G-124

Schedule No. 4
Sheet 2 of 2

CANADIAN RIVER GAS COMPANY
SUMMARY OF ANNUAL AND ACCRUED DEPLETION AND DEPRECIATION
OF GAS PLANT IN SERVICE AT DECEMBER 31, 1939
AFTER GIVING EFFECT TO ALTERNATIVE DEPLETION
AS PROPOSED BY DIVISION OF GAS ENGINEERING

Particulars	Total	Total Depletable Plant	Depletable Plant		Total Depreciable Plant	Non-Depreciable Plant
			Gas Well Intangible Costs	Leasehold Costs		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Net Adjusted Book Cost at Dec. 31, 1939						
Adjusted Original Book Cost	$ 9,923,329.94	$3,813,524.34	$2,209,503.73	$1,604,020.61	$6,106,113.27	$3,692.33
Adjusted Depletion and Depreciation Reserves Applicable to Gas Plant in Service	1,911,554.86	476,498.12	314,219.76	162,278.36*	1,435,046.74	
Net Book Cost - Gas Plant in Service	$ 8,011,775.08	$3,337,026.22	$1,895,283.97	$1,441,742.25	$4,671,066.53	$3,692.33

Exhibit No. 196

50129

The testimony with respect to salvage is also abstracted under Title 27 supra as to Colorado Interstate's salvage. As shown in Exhibit 281, WITNESSES TAUBMAN, SMITH and SOLOW, the salvage value as of January 1, 1956, of Canadian's property is stated to be $198,384.69.

61. **Rate of Return.**

Under title 28 supra the evidence on rate of return submitted by WITNESSES COFFMAN, Exhibit 73, GILMAN, Exhibit 74, SANDS, Exhibit 92, and BOSWORTH, Exhibit 93, for Canadian and Colorado Interstate, and KNAPP, Exhibits 225 and 225-A, for the Commission, is abstracted.

62. **Company's Statement as to Revenue Required to be Received by Canadian on a Regulatory Rate Basis for all Gas Delivered Colorado Interstate at Clayton Junction in Order to Produce a Fair Return on the Fair Value of Canadian's Property.**

This is shown in Exhibit 276 (Vol. LXXXXIV, pp. 14439, et seq.), Witness Lusk.

The costs of operations of Canadian from 1939 to 1947, inclusive, are computed on a regulatory rate basis without regard to the contract between Canadian and Colorado Interstate (Exhibit 16). Such costs of operation are related to the original cost of the property owned by the company, as set forth in Exhibits 183 and 184 for production and gathering facilities, and Exhibits 67 and 133 as to Canadian's portion of the Denver Line. The costs are divided between the well mouth production system, the gathering system and the transmission system, and there is shown the portion of such costs which constitute the cost to Colorado Interstate of all gas delivered to it at Clayton Junction, New Mexico.

Lusk testified the revenue thus required, in his opinion, would provide: (a) costs arising from operating and maintaining the property, including income and all other taxes; (b) proper allowance for depletion and depreciation; and (c) a reasonable return on the fair value of the property.

Most of the costs arising from the operation and mainte-

nance of the property are directly charged to the production system, the gathering system and the transmission system. The costs which are undistributed on the company's books be divided as between the three systems pro rata with the directly charged expenses relating to each.

The costs of operations in 1939 is shown in Exhibits 91 and 163 (previously abstracted) were reduced by the amounts of certain general construction costs related to property additions made in 1939, which are included as capital charges in Exhibits 67, 133, 183 and 184, also above abstracted.

The total costs of operations are summarized on Statement 6, and their division by major operating accounts and systems is shown on Statements 7, 8 and 9.

Statement 6 is shown below in three sections:

Calendar Year (1)	Gas Expenses (A) (2)	Taxes (B) (3)	Other Expenses (E) (4)	Total Expense (5)	Less Other Revenues (F) (6)
1939	$341,959	$114,597	$451,082	$ 907,638	$177,691
1940	419,752	118,900	493,763	1,032,415	140,261
1941	380,077	124,300	492,566	996,943	151,221
1942	333,402	132,400	538,300	1,004,102	154,551
1943	366,127	138,400	560,924	1,065,451	155,522
1944	374,952	144,900	590,455	1,110,307	158,713
1945	378,377	150,600	581,849	1,110,826	161,904
1946	381,002	149,100	528,209	1,058,311	161,904
1947	390,327	133,100	323,669	847,096	161,904

Notes: (A) As shown on Statement No. 7 attached.

(B) As shown on Statement No. 10 attached.

(C) As shown on Statement No. 11 attached.

(D) As shown on Statement No. 13 attached.

(E) As shown on Statement No. 18 attached.

(F) Corresponds to total shown on Statement No. 5 attached.

(G) As shown in Column 5, Statement No. 9 attached.

(H) Includes an allowance of 8 per cent return, and depletion, depreciation and amortization of property by a sinking fund method with interest at 2¾ per cent annually.

Net Operating Expense (7)	Replacement Reserve (B) (8)	Provision for Depreciation and Depletion (B) (9)	Amount Required for 8 Per Cent Return (C) (10)	Federal Taxes (D) (11)	Total (F) (12)
$729,947	$10,614	$570,664	$ 868,233	$ 74,705	$2,254,163
892,154	10,614	570,664	909,027	137,318	2,519,777
845,722	10,614	570,664	939,262	194,658	2,560,920
849,551	10,614	570,664	968,430	229,147	2,628,406
909,929	10,614	570,664	1,010,501	279,763	2,781,471
951,594	10,614	570,664	1,029,637	337,574	2,900,083
948,922	10,614	570,664	1,042,829	401,734	2,974,763
896,407	10,614	570,664	1,056,365	520,500	3,054,550
685,192	10,614	570,664	1,070,221	780,743	3,117,434

The rate base used as of January 1, 1939, is the original cost as of December 31, 1938, less the accumulated depreciation as of said date, shown in Exhibits 272 and 273, Witness Roberts, above abstracted, plus working capital as of that date, shown in Exhibit 192, also abstracted above under that heading.

For the years after 1939 there were added, to obtain the property rate base at January 1 of each year, subsequent additions actually made in 1939, as shown in Exhibits 67 and 183, and as estimated, for subsequent years through 1947 by Exhibits 133 and 184, all of which exhibits have been abstracted above. Such property rate base, separated as between production, gathering and transmission systems, including the gasoline plant, as of January 1 of each year, 1939 to 1948, inclusive, is shown on Statement 10 as follows:

1939	$10,662,903
1940	11,157,829
1941	11,520,772
1942	11,875,372
1943	12,386,265
1944	12,605,465
1945	12,760,365
1946	12,919,565
1947	13,102,765
1948	13,135,965

Allowance was made for depletion and depreciation by the sinking fund method, whereby the annual installments, accumulated by compound interest at 2¾%, will return such depreciated original cost of the property in use on January 1, 1939, and the additions through 1947, at the end of 1956. Such period of time was based upon Exhibit 255, elsewhere abstracted, in which the respondent's witness Hendee testified the economic life of the field would cease by the end of 1956.

The rate of 2¾% interest used in connection with the sinking fund was taken from the rates shown for ten public utility AAA bonds and U. S. Treasury Bonds, as shown on Schedules 3 and 4 in Exhibit 225, Commission Witness Knapp.

An allowance was also made for the annual accumulation of funds needed for the replacement of short-lived property, such as automobiles, trucks and drilling and cleaning equipment, separate and apart from the provision made in the sinking fund requirement for depletion and depreciation. An 8% return was adopted, using as a basis Exhibits 73, 74, 92 and 93, abstracted under Title 28, "Necessary Rate of Return," supra.

Federal income taxes, at presently existing rates and without considering the possibility of increased rates in the future, were computed on the estimated earnings of the company under such regulatory rate basis.

The total gas revenues to which Canadian states it is entitled on a regulatory rate basis are summarized on Statement 5 by operating systems for the years 1939 to 1947, inclusive, and are shown below:

Year (1)	Production (2)	Transmission (3)	Gathering (4)	Total (5)
1939	$1,417,743	$255,486	$580,934	$2,254,163
1940	1,550,558	267,621	701,598	2,519,777
1941	1,565,750	269,275	725,895	2,560,920
1942	1,612,886	289,256	726,264	2,628,406
1943	1,671,724	308,999	800,748	2,781,471
1944	1,743,001	325,285	831,797	2,900,083
1945	1,773,903	340,193	860,667	2,974,763
1946	1,805,776	355,701	893,073	3,054,550
1947	1,806,694	377,724	933,016	3,117,434

This is also shown on Statement 6 by principal operating accounts. The distribution of such costs and revenues are summarized by production, gathering and transmission systems on Statements 2, 3, and 4, supported by Statements 7 to 12, inclusive.

The agreement of January 3, 1928, between Canadian and Colorado Interstate (Exhibit 16) makes provision for the division of costs as between separate deliveries of gas which make joint use of certain facilities.

In this Exhibit 276 such methods provided in the contract are used in assigning the required revenues of the company to the deliveries of all gas at Clayton Junction. For example, the required revenues from transmission line operations are

assigned to Clayton Junction deliveries in the proportion that those deliveries bear to the total amount of gas delivered from Canadian's transmission line; the required revenues from gathering operations are assigned to Clayton Junction deliveries in the proportion that the gas gathered to make such deliveries (including a pro rata share of gas used at Bivins) bears to the total gas gathered; and the required revenues from well mouth operations are assigned to Clayton Junction deliveries in the proportion that the gas produced to make such deliveries (including the pro rata share of gas used in gathering) bears to the total well mouth production.

The percentages of production, gathering and transmission revenues chargeable to Colorado Interstate for all gas delivered at Clayton Junction as used in the exhibit are shown in the next to the last column on Statements 2, 3 and 4, and are identical with those used in the cost determination made for all gas under the basic contract terms in Exhibit 164, Statement 9, hereinabove abstracted. These percentages for the years 1939 to 1947, inclusive, shown on Statements 2, 3 and 4, for production, gathering and transmission, are as follows:

Production	Gathering	Transmission
45.36%	50.57%	97.70%
45.69	52.47	97.76
46.91	54.32	97.91
42.80	48.73	97.95
40.72	46.01	97.95
38.98	43.69	97.99
38.05	42.43	98.02
42.50	48.04	98.02
77.44	98.02	98.02

Applying these percentages to the total figures (all gas) in Statement 5 above, Statement 1 summarizes the amounts determined in the manner above described that Canadian states it is entitled to receive under a regulatory rate basis from Colorado Interstate for all gas delivered at Clayton Junction, as follows:

Year	Production	Gathering	Transmission	Total
1939	$ 643,088	$129,199	$567,573	$1,339,860
1940	708,450	140,421	685,882	1,534,753
1941	734,493	146,270	710,724	1,591,487
1942	690,315	140,954	711,376	1,542,645
1943	680,726	142,170	784,333	1,607,229
1944	679,422	142,117	815,078	1,636,617
1945	674,970	144,344	843,626	1,662,940
1946	767,455	170,879	875,390	1,813,724
1947	1,399,104	370,245	914,542	2,683,891

Additional testimony of MR. LUSK in connection with this exhibit appears under title 32 supra.

63. Revenue Claimed to be Required by Canadian on a Regulatory Rate Basis for all Gas Delivered to Colorado Interstate at Clayton Junction, Except Colorado Interstate's Direct Sale Gas, in Order to Produce a Fair Return on a Fair Value of Canadian's Property.

Under the title preceding this one (Exhibit 276), the evidence is abstracted, showing Canadian's claimed required revenues under a regulatory rate basis from all gas delivered at Clayton Junction, New Mexico, to Colorado Interstate.

In this Exhibit 277 (Vol. LXXXXIV, pp. 14753, et seq.), Witness Lusk testified that if Colorado Interstate's direct sales were eliminated, the total annual costs would be lower, due to the reduced facilities and the reduced volumes of gas required.

Such lower costs were reflected in Exhibits 134 and 193, showing the equivalent original costs of Canadian's property for resale gas only; Exhibits 274 and 275, showing the accumulated depreciation as applied to such equivalent original cost, and Exhibit 165, showing the costs of operations, involving resale gas alone by Colorado Interstate. The costs of operation shown in the latter exhibit were further reduced in this Exhibit 277 by the amount of certain

general construction costs related to property additions in 1939, which were included as capital costs (Exhibits 134 and 193).

This Exhibit 277 shows the annual revenues required from all gas, except Colorado Interstate's direct sale gas, at Clayton Junction, New Mexico, determined in a manner identical with that for all gas delivered at Clayton Junction in Exhibit 276, abstracted in Title 34. The percentages of production, gathering and transmission chargeable to Colorado Interstate on Statements 2, 3 and 4 are identical with those used in the cost determination for resale gas in Exhibit 167, abstracted in Title 30.

(All of the exhibits above referred to have been abstracted above.)

Statement 1 of Exhibit 277 shows the claimed required revenues from all gas delivered to Colorado Interstate at Clayton Junction except its direct sale gas on a regulatory rate basis, for years 1939 to 1947, inclusive, as follows:

Required Revenues from Gas on a Regulatory Rate Basis (A) Resale Gas Delivered at Clayton Junction, New Mexico, to Colorado Interstate Gas Company, 1939 to 1947, Inclusive.

Year (1)	Production (B) (2)	Gathering (B) (3)	Transmission (B) (4)	Total (5)
1939	$ 399,115	$ 85,430	$566,534	$1,051,079
1940	461,301	99,940	693,264	1,254,505
1941	485,734	105,900	709,237	1,300,871
1942	454,798	100,578	714,040	1,269,416
1943	453,881	101,618	771,254	1,326,753
1944	456,048	102,175	826,520	1,384,743
1945	457,472	104,682	854,009	1,416,163
1946	536,437	128,653	880,991	1,546,081
1947	1,201,815	378,896	909,202	2,489,913

Notes: (A) Includes an allowance of 8 per cent return and depletion, depreciation and amortization of property by a sinking fund method with interest at 2¾ per cent annually.

(B) Amounts in Columns (2), (3) and (4) from Statements Nos. 2, 3 and 4 respectively.

Additional testimony of MR. LUSK in connection with this exhibit appears under title 32 supra.

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64. Canadian's Statement of Operating Costs Under Basic Contract Terms for all Gas Delivered to Colorado Interstate at Clayton Junction Apportioned Between Resale Gas and Direct Sale Gas.

Under title 35 supra, Exhibit 316, Witness Rhodes (Vol. CII, p. 15881), is abstracted. That exhibit is entitled "Methods of Apportioning Costs of the Producing and Gathering Facilities of Canadian River Gas Company and of the Denver Line Between Resale Gas and Direct Sale Gas 1928 to 1947, Inclusive." Colorado Interstate's brief, however, dealt mainly with the Denver Line.

MR. RHODES further testified in connection with Exhibit 316 as follows:

3. Apportionment of Gas Leaseholds

Gas leaseholds are owned for the purpose of supplying the current and future market requirements of gas. The markets served and delivery points named in the order of their priority or preference, as provided by existing contracts, are:

1. To Amarillo Oil Company for its markets in Amarillo and its environs and to domestic consumers in North Texas as described in the third paragraph of the Canadian River-Colorado Interstate agreement of January 3, 1928, which is Exhibit No. 16 in this proceeding. Deliveries are presently made from the well mouth for certain of these markets and from the Denver line for Hartley, Dalhart and Texline, Texas.

2-A. To Colorado Interstate Gas Company for its customers in and near Denver, Pueblo and Colorado Springs, Colorado and others served from the Denver line as described in Paragraph Fifteenth of Colorado Interstate's agreement with Natural Gas Pipeline Company of America dated October 15, 1931 which is Exhibit No. 7-G in this proceeding. Deliveries are made to Colorado Interstate from the Denver line at Clayton Junction, New Mexico.

2-B. To Clayton Gas Company which company was originally a customer of Colorado Interstate Gas Company. Deliveries are made from the Denver line near Clayton, New Mexico.

3. To Colorado Interstate Gas Company for delivery to Natural Gas Pipeline Company of America. Deliveries are made by Canadian River Gas Company at Gray's Junction, Oklahoma. Deliveries at this point are made possible by lease and operating agreements between Canadian River Gas Company and Texoma Natural Gas Company relative to the use of transportation facilities from the Fritch compressor station of Texoma Natural Gas Company in Texas to the delivery point at Gray's Junction, Oklahoma.

The contract of October 15, 1931 with Natural Gas Pipeline Company further requires that Colorado Interstate refrain from making hereafter and consenting that Canadian River Gas Company may make hereafter any sales exclusive of those indicated above, of any gas from the gas properties of Canadian River Gas Company in quantities in excess of 18,250,000 Mcf. per year.

Notwithstanding the Denver line's priority rights in the gas supply of Canadian River over those of the Chicago line, Canadian River's acreage has been apportioned with the aggregate volumes of gas heretofore marketed and anticipated to be marketed within a reasonable period in the future. Chicago gas might appropriately have been charged for the use of leaseholds on an incremental basis whereby the base or foundation costs would have to be borne by and divided between the Denver line gas and Amarillo gas on some equitable basis.

This ratio is designated as the project volume ratio which as applied to any class of business is the ratio of the volume of gas required for that business during the period under consideration to the total volume of all classes of business during the same period. For the purpose of this study there have been taken the actual and estimated volumes produced from the begining of regular operation of the Denver line through 1947. The volumes of gas sold or required in future operations for each delivery point and class of business used in the development of the project ratios

shown on Statement No. 1, have been taken from Exhibits Nos. 78 and 80. In determining this ratio all requirements must be converted into the net amounts of gas required to be produced on account of the facts that (a) deliveries to the Denver line are made at the Bivins Station discharge (i.e., less gas used at Bivins), (b) all other sales including deliveries for the Chicago line are at the Fritch Station suction and (c) deliveries to Amarillo Oil Company for certain markets are at the well mouth. These ratios taken from the column footings of Statement No. 1 are as follows:

Resale Gas From the Denver Line:	
Local deliveries to Amarillo Oil Company and Clayton Gas Company	1.05%
Colorado Interstate Gas Company	24.85
Total Resale	25.90%
Direct Sale Gas From the Denver Line:	
Colorado Interstate Gas Company	22.23
Total Denver Line	48.13%
All Other Sales	51.87
Total Net Well Mouth Requirements	100.00%

The operating costs related to leaseholds are royalties and delay rentals. The royalties are paid pro rata with the volumes produced each year. They are properly apportioned pro rata with the net amounts of gas required to be produced each year, also shown on Statement No. 1. The delay rentals are properly apportioned on the same basis as the leaseholds.

4. Apportionment of Other Well Mouth Production Costs

The number of wells required in the development of natural gas acreage is fixed both by the maximum demands for gas to be produced and by leasehold requirements. The maximum daily production of any one of Canadian River's wells is limited by State control to 25 per cent of the daily open flow of that well. The maximum production from any lease is fixed by internal proration among leases under which

the company operates. This internal proration is based on total monthly requirements. It thus appears that the number of wells required by Canadian River is controlled both by the maximum daily demand and by the maximum monthly demand.

Canadian River's total original cost of wells and annual expenses on account of the wells (except royalties and taxes based on the volume of production) is controlled largely by the number of wells required. These costs are not affected by the volume of gas produced in any year. These costs are thus controlled by the maximum daily production and by the maximum monthly production.

The maximum daily production of Canadian River's wells on account of Denver line resale gas and Denver line direct sale gas is determined not only by the requirements of these two classes of gas on that day but by the amount of gas delivered into the Denver line for storage through building up of line pressures which is in control of the operator. The ratio of maximum daily requirements to maximum monthly requirements of resale gas is higher than such ratio related to direct sale gas and to gas for the Chicago line. In this exhibit the maximum monthly requirements are used as a basis of apportionment thus charging to resale gas less than its full share of the Company's costs.

The apportionment of Canadian River's original cost of wells and of annual expenses of well mouth production (except royalties and taxes based on volume of production) are thus appropriately apportioned as between the several classes or gas pro rata with the respective maximum monthly volumes of gas produced to meet their requirements. The ratios to be determined for any year are based upon the maximum monthly requirements during the winter in which the year begins. The independent monthly maximum for each class of gas is used and expressed in terms of a 31 day month. These maximum monthly requirements are shown both in terms of gas sold and gas produced on Statement No. 5 together with the determination of the maximum month ratios for the several classes of gas involved for each year of the project period.

The apportionment of royalties and delay rentals is de-

scribed in Section 3 above. The remaining well mouth production costs are principally controlled by the annual volume of gas handled and in general comprise gas purchased and severance taxes assessed on the basis of annual volume of production. These remaining items of cost are appropriately apportioned as between the several classes of gas pro rata with the respective annual volumes of gas produced to meet their requirements. These annual volumes expressed both in terms of gas sold and of gas produced are shown on Statement No. 1, together with the determination of the annual volume ratios for the several classes of gas for each year of the project period.

2. Apportionment of Gathering Costs

The costs of gathering gas are wholly unaffected by the volume produced each year. They are controlled by peak loads like well equipment costs. These costs, both capital and operating, are appropriately apportioned on the basis of the maximum month ratios. These ratios for gathering system costs have been developed as shown on Statement No. 6.

* * * * *

Other apportionments of pipe line capacities should not be used for the reasons outlined below:

(A) If the resale business and the direct sale business had equal primary rights to the net capacity of the line, instead of the resale gas having the first call and the direct sale gas having only what was left, then the direct sale gas would have 38.2 per cent of the net firm capacity of the line or 33,000 Mcf. per day as a primary business instead of 8,000 Mcf. per day as the secondary business, as shown above. With equal primary rights in the line then the resale gas and the direct sale gas might expect to share the costs pro rata with their quotas in the flow capacity of the line.

Since the resale gas and direct sale gas do not have equal rights in the line, equal sharing of the costs would result in a gross overcharge to the direct sale business and a gross undercharge to the resale business. The direct sale gas would have the right to 8,000 Mcf. per day of the net firm capacity of the line but would pay

for 33,000 Mcf. per day. It would get about 24 per cent of the net capacity it paid for. On the other hand, the resale gas would get 78,500 Mcf. per day of the net firm capacity of the line but would pay for only 53,500 Mcf. per day. It would get over 147 per cent of the net capacity it paid for. The direct sale gas would thus pay about six times (147/24) as much per unit of firm capacity as the resale gas. Sharing of costs between resale gas and direct sale gas pro rata with their respective peak load obligations (namely, 61.8 per cent and 38.2 per cent respectively) is seen to result in a gross overcharge to direct sale gas.

(B). The error would be further magnified if costs were shared pro rata with annual volumes of gas because the estimated 1940 sales were 52.87 per cent resale gas and 47.13 per cent direct sale gas. Such a basis of charge would result in the direct sale gas paying about eight and one half ($8\frac{1}{2}$) times as much for its line capacity as the resale gas.

* * * * *

Canadian River Gas Company — Statement No. 6

Maximum Month Ratios of Gas Gathered and Sold

By Delivery Points and Kinds of Denver Line Business, 1928 to 1947 Inclusive

Item No.	Winter of Years	Net Gas Gathered		Less Fritch Deliveries		Apportionment of Denver Line Business: Bivins Input		Total Resale		Clayton & A.O.C. Resale		Deliveries to Colorado Interstate: Resale		Deliveries to Colorado Interstate: Direct Sale	
		Mcf. (A)	Per Cent	Mcf. (A)	Per Cent	Mcf. (A)	Per Cent	Mcf. (B)	Per Cent	Mcf. (B)	Per Cent	Mcf. (B)	Per Cent	Mcf. (B)	Per Cent
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	1928-1929	985,461	100.00%	—	—	985,461	100.00%	434,096	44.05%	38,039	3.86%	396,057	40.19%	551,365	55.95%
2	1929-1930	1,544,106	100.00	—	—	1,544,106	100.00	798,303	51.70	48,022	3.11	750,281	48.59	745,803	48.30
3	1930-1931	1,665,685	100.00	130,443	7.83%	1,535,242	92.17	874,627	52.51	40,223	2.42	834,404	50.09	660,615	39.66
4	1931-1932	2,571,311	100.00	915,486	35.60	1,655,825	64.40	988,362	38.44	42,058	1.64	946,304	36.80	667,463	25.96
5	1932-1933	2,069,976	100.00	583,842	28.21	1,486,134	71.79	888,708	42.93	39,977	1.93	848,731	41.00	597,426	28.86
6	1933-1934	2,452,024	100.00	1,016,518	41.46	1,435,506	58.54	741,726	30.25	40,481	1.65	701,245	28.60	693,780	28.29
7	1934-1935	2,702,806	100.00	1,315,202	48.66	1,387,604	51.34	794,126	29.38	41,212	1.52	752,914	27.86	593,478	21.96
8	1935-1936	3,618,765	100.00	1,531,545	42.32	2,087,220	57.68	1,058,012	29.24	55,312	1.53	1,002,700	27.71	1,029,208	28.44
9	1936-1937	3,844,999	100.00	1,638,783	42.62	2,206,216	57.38	1,248,056	32.46	62,656	1.63	1,185,400	30.83	958,160	24.92
10	1937-1938	3,396,333	100.00	1,620,557	47.71	1,775,776	52.29	1,097,074	32.30	57,713	1.70	1,039,361	30.60	678,702	19.99
11	1938-1939	3,838,407	100.00	1,631,216	42.50	2,207,191	57.50	1,317,031	34.31	64,450	1.68	1,252,581	32.63	890,160	23.19
12	1939-1940	4,018,123	100.00	1,645,204	40.94	2,372,919	59.06	1,463,379	36.42	69,289	1.73	1,394,090	34.69	909,540	22.64
13	1940-1941	4,391,332	100.00	1,716,382	39.90	2,584,950	60.10	1,602,927	37.27	72,895	1.70	1,530,032	35.57	982,023	22.83
14	1941-1942	4,852,609	100.00	2,208,921	45.52	2,643,688	54.48	1,657,857	34.16	73,230	1.51	1,584,627	32.65	985,831	20.32
15	1942-1943	5,144,456	100.00	2,484,490	48.29	2,659,966	51.71	1,702,378	33.09	73,415	1.43	1,628,963	31.66	957,588	18.62
16	1943-1944	5,505,860	100.00	2,791,267	50.70	2,714,593	49.30	1,752,541	31.83	73,837	1.34	1,678,704	30.49	962,052	17.47
17	1944-1945	5,770,268	100.00	3,001,527	52.02	2,768,741	47.98	1,802,450	31.23	74,202	1.28	1,728,248	29.95	966,291	16.75
18	1945-1946	5,945,208	100.00	3,176,467	53.43	2,768,741	46.57	1,802,450	30.32	74,202	1.25	1,728,248	29.07	966,291	16.25
19	1946-1947	2,768,741	100.00	—	—	2,768,741	100.00	1,802,450	65.10	74,202	2.68	1,728,248	62.42	966,291	34.90
20	Total	66,996,470	100.00%	27,407,850	40.91%	39,588,620	59.09%	23,826,553	35.56%	1,115,415	1.66%	22,711,138	33.90%	15,762,067	23.53%

Notes: (A) Column Nos. 1, 3 and 5 from Statement No. 8 Column Nos. 8, 9 and 10 respectively.

(B) Column Nos. 7, 9, 11 and 13 obtained by multiplying Column No. 5 by percentages shown on Statement No. 7 Column Nos. 4, 6, 8 and 10 respectively.

Commission WITNESS LESTER (whose qualifications are given at pp. 12877 to 12881), testified as follows: (Vol. CI, pp. 15641-15647.)

Q. On Page 4-B of the statement, if you will turn back to that page now, you have on Page 4-B and 4-A recited certain provisions of the contract between the Canadian River Gas Company and Colorado Interstate Gas Company, and then at the bottom of Page 4-B you make a statement that this subjection of the deliveries to the Interstate company to preference obligations of other contracts is most unusual.

Now, haven't you found in studies of contracts in other fields or other gas companies that frequently where contracts for the sale of gas have been in effect for some time and later contracts are made, that the later contracts are made subject to the obligations of the prior ones?

A. I wasn't referring to that particular thing. What I was referring to as the most unusual thing was that the lower priced gas was being given preference to a higher priced gas. That's actually what I had reference to.

Q. It, of course, was prior in point of time that the deliveries to Amarillo Oil Company were made?

A. That's correct.

Q. Yes. That's where the preference lies, was the fact that the Amarillo Oil Company had been getting gas from them before Colorado Interstate ever came into existence?

A. That's correct.

Q. Now, if you will turn to Exhibit 262 and to your written statement, Page 3, the two items at the top of the page referring to sales of Colorado-Wyoming Gas Company for transportation and resale and to Natural Gas Pipeline Company of America for transportation and resale, now in the use of the word "transportation," I take it you did not mean to imply that those companies were transporting gas for Colorado Interstate Gas Company?

A. No. They are transporting gas for themselves. They are called transportation companies and I was using the phrase merely to mean that the Colorado-Wyoming Gas Company received the gas from the Colorado Interstate Gas Company and transported it for resale.

Q. Yes, I see. Now, then, on Page 4 you have at the

bottom of the page and again on Page 5, certain figures. Do I understand that all of those prices per Mcf. are on the basis of the pressure base of 14.65 pounds?

A. Yes, I'm pretty sure. I'll look it up and see.

Q. The reason I asked you that, for example, you show average revenue for domestic gas 42.1 cents and that is higher than any of the schedules provide for, so I assume that your figures there must be on the uniform pressure base which the Commission uses rather than on the contract pressure base?

A. These are on the uniform pressure base.

Q. That's 14.65?

A. 14.65 pounds.

Q. And using that pressure base would cause a higher cents per Mcf. to be shown than if the contract pressure base of the company were used?

A. Yes, that is correct.

Q. And those figures on Page 5 also are on the same pressure base?

A. They are on the same pressure base.

Q. And again on Page 6 where you have some prices stated?

A. Yes, on the uniform pressure base.

Q. Is that true also of those prices at the top of Page 7?

A. They are on the uniform pressure base of 14.65.

Q. Now if you will turn back to Page 5 with reference to the information at the bottom of the page where you indicate and state that the City of Colorado Springs pays one cent per Mcf. more for gas that it sells to domestic and spaceheating customers and for gas sold at the same city gates of Pueblo and Denver, you no doubt are familiar with the provisions in the Colorado Springs contract under which it would earn certain refunds on the gas for spaceheating, providing certain increases in numbers of customers and volumes were accomplished.

A. Yes.

Q. And in making your study, did you observe that whereas Pueblo and Denver—that is, the Public Service Company of Denver, had made such increases in numbers of customers and volumes of gas that they earned the full 2 cent refund?

A. The Denver and Pueblo earned the full 2-cent refund, yes.

Q. But the City of Colorado Springs has not yet accomplished that thing; that is, they pay a cent more per Mcf.

A. They may be so. The computations is taken directly from the revenues of what actually did take place.

Q. Now, I see what you have done here is just take the actual revenues and relate them without making any attempt to determine whether the schedules were similar or gave them similar rights?

A. The schedule gives them similar rights.

Q. It does?

A. Yes.

Q. Now with respect to the notation you have as to the domestic block of gas for the Citizens Utilities Company and the Arkansas Valley Natural there, those consumers in those towns use less gas per customer than they do other places, do they not?

A. Well, the consumption on the first step is less in the rate than for those towns. I believe they are 1.8 Mcf. instead of the 3 on the first block.

Q. Those are all small communities compared to Pueblo, Colorado Springs and Denver?

A. That's right.

Q. All right, now, if you will turn to Page 9, you make certain reference to certain curtailments of service and have stated that that has never taken place because of the shortage of gas supply in the field, but that there have been certain interruptions because of line breaks and some domestic peak loads.

Now, so far as the industrial customer is concerned, to him the curtailment of his gas is substantially the same thing whether that is caused by a shortage of supply from break in the line or shortage of supply available to him because of increase in demands for domestic customers, would that not be so?

A. Will you read that question, please?

(The question referred to was read by the reporter as set forth above.)

The Witness: As far as he is concerned, that might or might not be so. What I am driving at is that one would be classed an act of God and another one would be at your request due to high domestic peaks.

By Mr. Dougherty:

Q. Well, when you have a break in the line and in order to keep up whatever your domestic load is at that time, then it becomes necessary to shut off or curtail the industries?

A. Yes, that is necessary, too.

Q. That is, whether the lack of capacity is due to increased demands of domestic customers or lack of capacity due to a break which lowers your normal capacity, the result is the same in either event to the industry?

A. Yes, it could be the same.

Q. He doesn't get his gas.

A. I was referring rather to the cause.

Q. I see. Now turn to Page 10, will you, please? You make reference there in the second paragraph; that is, the first full paragraph on the page, that the gas which is sold for resale to the Denver line has preference over that which goes to the Chicago line but that the gas sold to the Chicago line is at a higher price.

Now, so far as the Canadian River Gas Company is concerned, doesn't it get the same price for gas from the Colorado Interstate Gas Company that goes to Chicago as well as to Denver?

A. Since June the 1st, 1938, that is correct.

Q. Previously the statement you made was true; that is, before that date?

A. Before that date, but is true that— well, as far as Canadian River goes, but as far as Colorado Interstate that is not so.

Q. Well, what Colorado Interstate does is sell gas to the Chicago line at a fixed price?

A. That is correct, and it is higher than the average price that is delivered to the two lines.

Mr. Lange: You mean higher than the average price delivered to what lines?

The Witness: To Chicago line than to the Denver line.

* * * * *

MR. LESTER further testified: (Vol. C1, pp. 15653-15657.)

Q. Mr. Lester, returning to your Exhibits 261 and 262, I will ask you whether or not they contain tables showing interruptions in service, point of delivery, date, customer, duration, and cause?

A. There is a table in there showing that information.

Q. Now, then, these Exhibits 262 and 261 were prepared by you and include matters pertaining to both of these companies down through December 31, 1939?

A. That is correct.

Q. Have you had occasion since the completion of these exhibits to study the history of all interruptions in service of both companies, particularly the information that was set forth in the company's exhibit 290, prepared by Mr. Beardsley?

A. Yes, I have reviewed that exhibit.

Q. Please refer to Exhibit 290 at this time and state what your opinions and conclusions are in connection with the interruptions in service of both companies.

A. There has been no further interruption of the Canadian River Gas Company.

Q. Of the Canadian River Gas Company?

A. Of the Canadian River Gas Company during 1940.

Q. So those interruptions set forth in your Exhibit 261 are all that you have any knowledge of?

A. That is all I have any knowledge of and I commented upon those interruptions.

Q. All right, let us move to the Colorado Interstate Gas Company.

A. In reviewing the information in Exhibit 290, on Table 2 in that Exhibit is a statement of total interruptions in service to December 31, 1940.

Q. That is Table 2 pertaining to which company?

A. The Colorado Interstate Gas Company—I guess there is a mixup on the table numbers in the exhibit.

Q. Is the table the second to the last one in the exhibit?

A. Yes, the second to the last table in the exhibit.

Q. What statement did you have to make with reference to that table?

A. This is the total interruptions of the company and it shows the hours of duration, also indicates the cause for the total interruptions. The cause of the total interruptions in all cases was due to either pipe failure or washout. Washout, of course, is a cause of pipe failure. It is more or less due to the act of Nature.

The main line industrial total interruptions due to physical causes for the 13 years amounted to 111.5 or 1.7 hours per main line industrial customer.

Q. During the entire history of the company?

A. During the entire history of the company. There are also washouts for the Colorado-Wyoming Gas Company and to the city gate included in there. They amounted to 157.5 hours for the entire service of the company.

Q. In the course of the prepartion of these two exhibits you have had all relevant data and records available to you for your inspection?

A. Yes, except the last year.

Q. Except the year 1940?

A. Yes, sir.

Q. Now, then, from your examination of the company's records, particularly those records pertaining to suspensions, interruptions, reduction or interruptions in service, did you find during the entire history of the companies that they lost any customers due to interruptions or suspensions of service?

A. No.

Q. If there had been such a customer loss for any one of those reasons, you would have learned of it in connection with your search of the records?

A. Yes, sir, prior to 1940. I haven't searched the record in 1940.

Q. In so far as 1940 is concerned, does this Exhibit 290, which sets forth reductions and suspensions in service, indicate that any of the customers shown ceased purchasing gas from the company?

A. Not for those causes, no. There is one that has—the Citizens Utilities Company took part of the operation over but they are delivering to all of the city gates and same delivery points during 1940. As to those companies who

interruptions are referred to there, they are still delivering to them.

Q. Borrowing Mr. Keffer's use of the homely illustration about "proof of the pudding is in the eating," would you say that the proof of the pudding with reference to whether these customers of the company are taking these suspensions, reductions, or interruptions in service, as a reason for not purchasing further supplies of gas is not in this picture?

A. No.

Q. In other words, there has been no loss of customers in so far as you know due to any one or all of those factors?

A. That is correct. There has been none. No loss.

Now turning over to the reduction in there, the reduction to the main line industrials amounts to 1.7 hours per year per main line customer.

Q. And you have heard—or, I'll ask you whether you did hear any of the testimony that was given by either one or more of the rate of return witnesses setting forth the fact that these interruptions or reduction in service were risks that the company had to face in its business?

A. I heard some of them testifying to that.

Q. Well, it didn't result in their loss of any customers so far as you know?

A. No, it did not result in the loss of any customers.

* * * * *

MR. LESTER further testified: (Vol. CI, pp. 15664-15665.)

Q. Mr. Lester, as I understand it, in arriving at the total number of hours of interruptions that you mentioned a moment ago in connection with Mr. Beardsley's Exhibit 290, you merely added up the hours from his exhibit? That was a matter of calculation?

A. That is correct.

Q. You take no exceptions to the accuracy of the data contained in Exhibit 290, do you?

A. Neither pro or con. I don't know. I have accepted it in my additions to be correct.

Q. You were asked by Mr. Lange whether there was any loss in customers as the result of any of these interruptions, I believe, and I think your answer was that there had been none?

A. Yes.

Q. Whose customers did you have in mind when you gave that answer?

A. I had in mind the Colorado Interstate's customers and the Canadian River's customers.

Q. That is all?

A. Yes, that is all.

Q. You didn't have in mind in that answer the customers of any of the distributing companies?

A. No, sir.

Q. So that your only check on that proposition as to whether there had been any loss in customers was to determine, I assume, from the records of the company that the company was continuing to furnish the same customers with gas as heretofore?

A. Yes, it is the same companies that the interruptions referred to.

Witness Lusk, in Exhibit 318, applying the methods and percentages so arrived at by Mr. Rhodes in Exhibit 316, apportioned the costs to Colorado Interstate for gas delivered to it at Clayton Juntion, as between resale and direct sale gas. The costs so to be apportioned are the total costs by operating systems as set forth in Exhibit 164, abstracted under Title 29, supra. Such costs cover (a) costs arising from operating and maintaining the property owned by the company, and (b) payments reimbursing Colorado Interstate, with interest for the funds advanced by it and used in the purchase and development of the property. The method of determining the costs of operations of Canadian is the basic method used in its contract for the sale of gas to Colorado Interstate, in Exhibit 16.

In Mr. Rhodes' Exhibit 316 he did not treat of the apportionment of amortization of debt, interest and Federal taxes. Mr. Lusk, in his Exhibit 318, pointed out that in Exhibit 164 the cost of amortizing the debt to Colorado Interstate was used (in lieu of depletion and depreciation) in accordance with the basic terms of the contract. He therefore concluded that the amortization of debt applicable to leaseholds and the gas well construction is appropriately apportioned to the several classes of business pro rata with

their respective property apportionments, and that amortization of debt applicable to all other property is appropriately apportioned pro rata with the apportionment of the property for which the debt was incurred.

The same method of apportionment was adopted with respect to interest.

With respect to the Federal taxes, Mr. Lusk stated that these taxes, as determined and set forth in Exhibit 164, arise from all classes of business of Canadian, and that they are appropriately apportioned to the several classes of business in proportion to the respective taxable net incomes arising from these classes of business. (Pp. 1 to 3 of Exhibit 318.)

Mr. Lusk then stated that in Exhibits 164 and 167, abstracted supra under Titles 29 and 30, he determined the computed costs under basic contract terms for all gas and for resale gas only under the contract between Colorado Interstate and Canadian of January 3, 1928 (Exhibit 16, which, under Exhibit 164, for all gas was $1,221,008, and under Exhibit 167 for resale gas alone was $954,874, indicating an apparent cost of direct sale gas of $266,134.

As shown on Statement 1 of Exhibit 318, the amount apportioned to direct sale gas in 1939 was $439,497. (P. 4 of Exhibit 318.)

Statements 3 to 8 attached to the exhibit show the detailed apportionment of operating costs under basic contract terms for the year 1939 to the several classes of business, and to resale gas and direct sale gas deliveries to Colorado Interstate at Clayton Junction.

Statement 2 summarizes the apportionment of costs by operating systems for each year from 1928 to 1947, inclusive, by principal classes of business, and by resale and direct sale gas deliveries to Colorado Interstate at Clayton Junction.

Statement No. 1 summarizes Canadian's costs under the basic contract terms of gas delivered to Colorado Interstate at Clayton Junction for resale and direct sale gas as follows:

Canadian River Gas Company

Apportioned Costs of Gas Under Basic Contract Terms
Between Resale Gas and Direct Sale Gas Deliveries
To Colorado Interstate Gas Company,
At Clayton Junction, New Mexico

Summary by Years—1928 to 1947, Inclusive (A)

Year (1)	Resale Gas (2)	Direct Sale Gas (3)	Total (4)
1928 (B)	$ 123,266	$105,650	$ 228,916
1929	483,635	379,429	863,064
1930	956,310	646,666	1,602,976
1931	1,041,655	646,762	1,688,417
1932	902,561	504,860	1,407,421
1933	871,014	477,082	1,348,096
1934	763,112	485,517	1,248,629
1935	706,233	402,846	1,109,079
1936	708,623	465,774	1,174,397
1937	762,301	439,856	1,202,157
1938	817,456	390,354	1,207,810
1939	823,932	435,497	1,259,429
1940	894,520	462,201	1,356,721
1941	885,198	427,550	1,312,748
1942	874,827	405,642	1,280,469
1943	899,824	398,326	1,298,150
1944	885,135	385,442	1,270,577
1945	870,354	373,371	1,243,725
1946	858,444	371,651	1,230,095
1947	1,151,046	565,428	1,716,474

Notes: (A) From Statement No. 2 attached.

(B) 7 Months.

65. Company's Statement as to Revenues Required to be Received from Colorado Interstate on a Regulatory Rate Basis for Gas Delivered at Clayton Junction Apportioned Between Resale Gas and Direct Sale Gas.

Exhibit 317 (Vol. CII, p. 15954), Witness Lusk, is entitled, "Apportioned Revenues from Gas Required on a Regulatory Basis Between Resale Gas and Direct Sale Gas Deliveries to Colorado Interstate Gas Company, at Clayton Junction, New Mexico. Summary by Years 1939 to 1947, Inclusive."

Here again he adopts and applies the methods of apportionment described in Mr. Rhodes' Exhibit 316, and on such basis determines the revenues required from Colorado Interstate for gas delivered at Clayton Junction, apportioned as between resale and direct sale gas.

Mr. Lusk stated that the costs of operation and required revenue to be apportioned are those shown in Exhibit 276, abstracted supra under Title 34.

As Mr. Rhodes, in Exhibit 316, did not treat of the apportionment of depletion, depreciation or amortization, return and Federal income taxes, Mr. Lusk adopted the following methods for the apportionment of these items. As to the apportionment of amortization, he stated that in Exhibit 276 the cost of amortizing the property by 1956 was used in lieu of depletion and depreciation, and that no provision was made for replacing any property except facilities such as drilling and cleaning equipment and automobiles and trucks. The amortization costs applicable to leaseholds and gas well construction were apportioned by Lusk to the several classes of business pro rata with respect to their property apportionment. The amortization costs applicable to all other property were apportioned by Lusk pro rata with the apportionment of the property itself. (P. 1, Exhibit 317.)

As to return, he apportioned it to the several classes of business pro rata with the total amount of property so apportioned.

As to Federal taxes, as determined and set forth in Exhibit 276, he apportioned them to the several classes of business in proportion to the respective taxable net incomes

arising from these several classes of business. (P. 2, Exhibit 317.)

He then referred to Exhibits 276 and 277, where there was determined the required revenues from gas on a regulatory rate basis delivered at Clayton Junction to Colorado Interstate, for all gas and for resale gas only, respectively, which determinations were made under the provisions of the contract of January 3, 1928, between Canadian and Colorado Interstate (Exhibit 16). The required revenue there shown for the year 1939, in Exhibit 276 (all gas), is $1,339,860, and in Exhibit 277 (resale gas alone), $1,051,079, with an apparent cost of direct sale gas in the amount of $288,781.

Following the procedure in the exhibit last above abstracted, Statements 3 to 8 show the detailed apportionment of operating costs and required revenues for the year 1939, as shown in Exhibit 276, to the several classes of business, and between resale and direct sale gas at Clayton Junction.

Statement 2 summarizes the apportionment of costs by operating systems for each year from 1939 to 1947, inclusive, by principal classes of business and by resale and direct sale gas deliveries to Colorado Interstate at Clayton Junction. (P. 4, Exhibit 317.)

Statement 1 summarizes the amounts apportioned in accordance with the methods set forth in Mr. Rhodes' Exhibit 316, that Canadian is entitled to receive on a regulatory rate basis from Colorado Interstate for resale and direct sale gas delivered at Clayton Junction, as follows:

Canadian River Gas Company

Apportioned Revenues Required from Gas on a Regulatory Basis (A) Between Resale Gas and Direct Sale Gas Deliveries

To Colorado Interstate Gas Company, at Clayton Junction, New Mexico

Summary by Years—1939 to 1947, Inclusive

Year (1)	Resale Gas (2)	Direct Sale Gas (3)	Total (4)
1939	$ 920,265	$446,153	$1,366,418
1940	1,051,028	510,927	1,561,955
1941	1,104,761	504,625	1,609,386
1942	1,096,698	482,165	1,578,863
1943	1,165,938	488,910	1,654,848
1944	1,205,216	489,657	1,694,873
1945	1,239,457	488,045	1,727,502
1946	1,288,770	510,559	1,799,329
1947	1,816,663	842,830	2,659,493

Note: (A) Includes an allowance of 8 per cent return on a depleted and depreciated original cost rate base at January 1, 1939, plus additions thereafter at cost, and provision for depletion, depreciation and amortization by a sinking fund method with compound interest at a rate of 2¾ per cent per annum.

66. Company's Statement as to Revenue Required to be Received from Colorado Interstate for Gas Delivered at Clayton Junction Based Upon 7c Per Mcf. Market Value of Gas at Bivins Intake.

Under title 22 supra there has heretofore been abstracted the Company's evidence as to the 4-cent per Mcf. wellhead market value of gas and an estimated 7-cent per Mcf. market value at Bivins Intake after gathering.

Through the WITNESS LUSK there was introduced and received in evidence respondent's Exhibit 321. (Vol. CII, Second Part, page 16020.) Statement No. 2 of Exhibit 321 is shown as follows:

Statement No. 2

Canadian River Gas Company

Required Revenues on a Regulatory Rate Basis from All Gas Sales Based on a Cost of Gas at Bivins Station of 7c per Mcf. (16.4 Lb.)

1939 to 1947, Inclusive

Item No.	Description	1939	1940	1941	1942	1943	1944	1945	1946	1947
1.	Gas Deliveries at Bivins Station—Mcf. Input (Exhibit No. 164, Statement No. 10)	19,351,503	19,835,803	21,386,114	21,872,483	22,005,038	22,457,139	22,905,308	22,905,308	22,905,308
2.	Cost of Gas at 7 Cents per Mcf.	$1,354,605	$1,388,506	$1,497,028	$1,531,074	$1,540,353	$1,572,000	$1,603,372	$1,603,372	$1,603,372
3.	Transmission Cost (Exhibit No. 276, Statement No. 4)	580,934	701,598	725,895	726,264	800,748	831,797	860,667	893,073	933,016
4.	Total Canadian River Gas Co.	$1,935,539	$2,090,104	$2,222,923	$2,257,338	$2,341,101	$2,403,797	$2,464,039	$2,496,445	$2,536,388
	Cost of Gas to C.I.G. Co. at Clayton Junction:									
5.	Per Cent (Exhibit No. 276, Statement No. 4)	97.70%	97.76%	97.91%	97.95%	97.95%	97.99%	98.02%	98.02%	98.02%
6.	Amount	$1,891,022	$2,043,286	$2,176,464	$2,211,063	$2,293,108	$2,355,481	$2,415,251	$2,447,015	$2,486,168

This Statement No. 2 and the other two statements in Exhibit 321 are explained by Mr. Lusk in his testimony. (Vol. 102, Second Part, pages 16010 to 16020.) As indicated by Statement No. 2, the gas deliveries at Bivins Station for the different years, 1939 to 1947, are taken from Exhibit No. 164, Statement No. 10, and the transmission cost from Bivins Station to Clayton Junction, shown on line 3 of Statement 2, is taken from Exhibit No. 276, Statement No. 4.

Exhibit 164, Canadian's WITNESS LUSK, Statement No. 10, column 15, states the actual deliveries of gas by Canadian to Colorado Interstate at Clayton, New Mexico, at 16.4-pound pressure base in Mcf. for the years 1928 to 1947, inclusive, as follows:

Year	Gas Delivered at Clayton to C.I.G. Co. (15)
1928	2,926,886
1929	9,775,441
1930	11,847,757
1931	12,511,839
1932	12,170,499
1933	11,466,028
1934	11,982,834
1935	12,993,828
1936	16,905,187
1937	17,836,960
1938	16,015,373
1939	18,377,500
1940	18,830,639
1941	20,345,148
1942	20,807,395
1943	20,915,828
1944	21,343,807
1945	21,767,854
1946	21,767,854
1947	21,767,854

Cross-examination of WITNESS LUSK has been abstracted under title 40 supra.

Transcript of record filed September 9, 1942.

And thereafter the following proceedings were had in said cause in the United States Circuit Court of Appeals for the Tenth Circuit:

Order of Submission.

Sixth Day, September Term, Tuesday, September 14th, A. D. 1943. Before Honorable Sam G. Bratton, Honorable Walter A. Huxman and Honorable Alfred P. Murrah, Circuit Judges.

These causes came on to be heard, Elmer L. Brock, Esquire, and E. R. Campbell, Esquire, appearing for Colorado Interstate Gas Company; John P. Akolt, Esquire, and Charles H. Keffer, Esquire, appearing for Canadian River Gas Company; Donald C. McCreery, Esquire, appearing for Colorado-Wyoming Gas Company; Edward H. Lange, Esquire, appearing for Federal Power Commission; Thomas H. Gibson, Esquire, appearing for City and County of Denver.

Thereupon argument was commenced by counsel and continued to the hour of adjournment.

Order of Submission.

Seventh Day, September Term, Wednesday, September 15th, A. D. 1943. Before Honorable Sam G. Bratton, Honorable Walter A. Huxman and Honorable Alfred P. Murrah, Circuit Judges.

These causes came on further to be heard, Elmer L. Brock, Esquire, and E. R. Campbell, Esquire, appearing for Colorado Interstate Gas Company; John P. Akolt, Esquire, and Charles H. Keffer, Esquire, appearing for Canadian River Gas Company; Donald C. McCreery, Esquire, appearing for Colorado-Wyoming Gas Company; Edward H. Lange, Esquire, appearing for Federal Power Commission; Thomas H. Gibson, Esquire, appearing for City and County of Denver.

Thereupon argument by counsel was concluded and the causes were submitted to the court.

Opinion.

[May 16, 1944.]

Elmer L. Brock and E. R. Campbell (Wm. A. Dougherty and C. W. Cooper were with them on the brief) for Petitioner, Colorado Interstate Gas Company.

John P. Akolt and Charles H. Keffer (P. C. Spencer was with them on the brief) for Petitioner, Canadian River Gas Company.

Donald C. McCreery (Lee, Shaw and McCreery, and Wm. A. Bryans, III, were with him on the brief) for Petitioner, Colorado-Wyoming Gas Company.

Edward H. Lange (Charles V. Shannon, L. W. McKernan, and Milford Springer were with him on the brief) for Respondent, Federal Power Commission.

Thomas H. Gibson (Malcolm Lindsey was with him on the brief) for Respondent, City and County of Denver, Colorado.

Before BRATTON, HUXMAN and MURRAH, Circuit Judges.

BRATTON, Circuit Judge:

These cases bring here for review orders of the Federal Power Commission requiring Canadian River Gas Company, Colorado Interstate Gas Company, and Colorado-Wyoming Gas Company to make reductions in their respective rates for natural gas transported in interstate commerce and sold for resale for ultimate public consumption. Reference will be made to the companies as Canadian, Colorado, and Wyoming, respectively.

The City and County of Denver filed with the Commission a complaint charging that the rates of Canadian, Colorado, and Public Service Company were unjust and unreasonable; similarly, the Public Service Commission of the State of Wyoming filed with the Commission a complaint charging that the rates of Wyoming were unjust and unreasonable; and the Commission instituted on its own motion an investigation into the reasonableness of the rates of Canadian, Colorado, and Wyoming. Canadian and Colorado filed with the Commission their joint application for

a stay of the order directing that the investigation be instituted; the Commission denied the application; the companies sought review; and it was denied on the ground that the order was merely preliminary and procedural and therefore not open to review. Canadian River Gas Co. v. Federal Power Commission, 110 F. (2d) 350, 113 F. (2d) 1010, certiorari denied, 311 U. S. 693. By order of the Commission, the three proceedings were consolidated for purposes of hearing. At the conclusion of extended hearings, the Commission found that the revenues and costs of the companies for 1939 were fairly representative of the relationship which would exist between such items in the immediate future, and that use of the figures for that year resolved most of the doubts as to future operation conditions in favor of the companies. Using the figures for 1939, the Commission determined that the rates and charges of Canadian for gas sold to Colorado and Clayton Gas Company were unjust and unreasonable to the extent of $561,000 annually; that the rates and charges of Colorado were unjust and unreasonable in the amount of $2,065,000 annually; and that those of Wyoming were unjust and unreasonable in the sum of $119,000. The Commission ordered the companies to reduce their rates and charges by not less than such amounts, respectively, and directed that schedules of rates be filed effecting such reductions. The companies applied for a rehearing; the Commission denied the applications; and the companies severally sought review.

Southwestern Development Company, through its wholly owned subsidiary, Amarillo Oil Company, owned gas leaseholds in more than 315,000 acres of land in the Texas Panhandle Field; Cities Service Company, through its wholly owned subsidiary, Public Service Company, at Denver, Colorado, and its wholly owned subsidiary, Pueblo Gas and Fuel Company, at Pueblo, Colorado, controlled the resale market for gas in the two cities, but did not have an adequate supply of natural gas or pipeline facilities for the transportation of natural gas to such cities. After extended negotiations, Southwestern, Cities Service, and Standard Oil Company of New Jersey, entered into an agreement denominated "Memorandum of Stipulations", and dated April 5, 1927. The primary objectives of the contracting parties, as expressed in the agreement, were

the acquisition of natural gas properties in the gas field, the construction of a pipeline from the field to the City of Denver via Pueblo and Colorado Springs, the sale and delivery of natural gas at the city gate of Denver and other cities for distribution in such cities, and the supplying of natural gas to Colorado Fuel and Iron Corporation at Pueblo. Under the terms of the contract, Southwestern was to cause to be transferred to a new wholly owned subsidiary the leaseholds and gas producing properties, and to develop such properties into a source of supply of natural gas; Standard was to cause a corporation to be formed which would construct and maintain a natural gas pipeline and appurtenant facilities for the transmission and sale of gas; and Cities Service, through its subsidiaries, was to obtain franchises and rate ordinances in Denver and Pueblo, respectively, for the sale of natural gas, and convert the artificial gas distribution plants then in use in such cities into natural gas distribution plants. The newly formed subsidiary of Southwestern was to sell at cost gas to the pipeline company; and, with provisions for revision which need not be detailed, the pipeline company was to sell and make delivery at the city gate at the rate of forty cents per thousand cubic feet. The producing company and the pipeline company, and the pipeline company and the distributing companies, were to enter into contracts carrying out the commitments made in the Memorandum of Stipulations; and such contracts were to be for a term of twenty years from and after the execution of the first thereof, and as long thereafter as natural gas might be profitably sold by the pipeline company. The contract further provided that in case an acceptable rate ordinance was not secured in the City of Denver, on or before July 1, 1927, the parties thereto, or any of them, might terminate participation therein, and each thereupon be free to act as though such stipulations and any agreements thereunder had never been made.

Franchises and rate ordinances were obtained in Denver and Pueblo; Canadian was incorporated as the subsidiary of Southwestern; and Standard caused Colorado to come into existence. Canadian and Colorado, Colorado and Public Service Company, and Colorado and Pueblo Gas and Fuel Company, respectively, entered into contracts as pro-

vided in the Memorandum of Stipulations; and by contractual arrangements, Colorado obligated itself to sell natural gas to the City of Colorado Springs for distribution by the city in its municipally owned distribution system and for sale to industrial and commercial consumers. Southwestern caused Amarillo Oil Company to convey the leases to Canadian. Canadian paid Amarillo Oil Company the sum of $5,000,000 for the leases and the then producing wells. Southwestern and Standard had agreed upon that amount, and it was paid with funds furnished by Standard. Canadian was financed through the issuance of bonds in the amount of $11,000,000, all of which were purchased by Colorado with funds furnished by Standard. Colorado issued 1,250,000 shares of common stock without par value, of which forty-two and one-half per cent was issued to Southwestern, forty-two and one-half per cent to Standard, and fifteen per cent to Cities Service; and it issued preferred stock valued at $2,000,000, one-half to Standard and one-half to Southwestern. Standard paid Colorado $1,000,000 in cash for the common stock issued to it and a like sum for its preferred stock. No cash consideration was paid for the stock issued to Southwestern or Cities Service. Colorado issued bonds in the amount of $19,200,000. These were sold to Standard for cash at par, and the proceeds, along with the cash which Standard paid for the stock issued by Colorado, aggregating $21,200,000, was used to finance the project. Canadian developed the leaseholds, and constructed a main transmission pipeline from the field to Clayton Junction in New Mexico, a distance of approximately 86 miles; and Colorado constructed a main transmission line from Clayton Junction to the city gate at Denver, a distance approximating 254 miles, three compressors, and various laterals extending from the main line to customers of the company, including a lateral to the plant of Colorado Fuel and Iron Corporation. On December 31, 1939, Canadian had in operation a total of 94 gas wells; and its gathering system consists of about 144 miles of pipe, and has two terminals. One terminal is located at the Bivins Station where the gas there gathered is compressed and then transmitted through the transmission line to Clayton Junction where virtually all of it is sold to Colorado but a small amount is sold to Clayton Gas Company.

The other terminal is located at Fritch Station where the gas there gathered is compressed and then transported through the facilities of Texoma Natural Gas Company to Gray Junction, in Oklahoma, where it is sold to Colorado. Colorado sells that gas to Natural Gas Pipeline Company, and it moves to its destination, known as the Chicago market.

The facilities of Wyoming consist of a main transmission pipe line extending from a point near Littleton, Colorado, to the city gate at Cheyenne, Wyoming, compressor stations, and a number of laterals extending from the main line to city gates and industrial plants in Colorado and Wyoming. From the inception of the project until the latter part of 1929, the company obtained its entire supply of natural gas from the Wellington Field in Colorado. But early in 1929, the supply from that field began diminishing rapidly; it became essential that the company secure another source in order to continue in business; in October of that year, it entered into a contract with Colorado for the purchase of gas from that company with which to supply its customers in the States of Colorado and Wyoming; and ever since Colorado has sold gas to Wyoming, deliveries being made at the point adjacent to Littleton.

In 1939, Canadian sold for resale approximately 46,000,000 Mcf of gas, of which about 41,000,000 Mcf were sold to Colorado; Colorado sold about 20,000,000 Mcf of such gas to Natural Gas Pipeline Company, about 7,000,000 Mcf to Colorado Fuel and Iron Corporation, and about 6,000,000 Mcf to Public Service Company; and Wyoming transported and sold 2,860,000 Mcf, some to affiliates for resale through distribution systems in towns and communities in Colorado and Wyoming, some to other companies for like distribution, some to industrial consumers, and some to United States Army posts.

The Motions to Dismiss—The City and County of Denver filed separate motions to dismiss the petitions for review of Canadian and Colorado, and Public Service Commission of Wyoming filed a like motion to dismiss the petition for review of Wyoming. We denied the motions, but thereafter the City and County filed a brief, and later its counsel participated in the oral argument, renewing the con-

tention that the petitions should be dismissed for want of jurisdiction. The grounds of each motion are that it appears from the face of the petition for review that the petitioning company is a private corporation organized and existing under the laws of Delaware; that the petition fails to allege that the company is located in this circuit; and that it affirmatively appears from the face of the petition, the face of the record, the testimony of the company's own witnesses, and facts dehors the record that the company is not located and does not have its principal place of business in this circuit. These companies were incorporated under the laws of Delaware, and therefore their legal residence and domicile is in that state. Shaw v. Quincy Mining Co., 145 U. S. 444; Southern Pacific Co. v. Denton, 146 U. S. 202; Home Powder Co. v. Géis, 204 F. 568; Continental Coal Corp. v. Roszelle Bros., 242 F. 243; Dryden v. Ranger Refining & Pipe Line Co., 280 F. 257, certiorari denied, 260 U. S. 726; In re Hudson River Navigation Corp., 59 F. (2d) 971.

But section 19(b) of the National Gas Act, 52 Stat. 821, 15 U.S.C.A. § 717r(b), provides that any party to a proceeding under the act who is aggrieved by an order of the Commission made in the proceeding may obtain a review of the order in the Circuit Court of Appeals of any circuit in which the natural gas company to which the order relates is located or has its principal place of business, or in the Court of Appeals of the District of Columbia, by filing in such court within the time specified a petition in writing praying that the order be modified or set aside in whole or in part. It is to be noted that the statute provides in clear language that review may be had either in the circuit where the company is located or in the circuit where its principal place of business is located, the pivotal language being stated in the disjunctive. It is commonplace for a corporation chartered in one state to conduct much or all of its business in another state far distant from that of incorporation. No doubt mature considerations of convenience gave rise to the deliberate care with which Congress, in the exercise of its discretion, authorized review in the circuit within which the principal business of the company is conducted. And the principal place of business is where the actual business of the corporation is conducted or trans-

acted. It is a question of fact to be determined in each particular case by taking into consideration such factors as the character of the corporation, its purposes, the kind of business in which it is engaged, and the situs of its operations. Cf. In re Guanacevi Tunnel Co., 201 F. 316; In re Hudson River Navigation Corp., supra; Chicago Bank of Commerce v. Carter, 61 F. (2d) 986.

Section 5, chapter 65, Revised Code of Delaware, provides that the certificate of incorporation shall set forth the name of the county, and the city, town, or place within the county, in which the principal office or place of business of the corporation is located in that state; and section 32 provides that every corporation shall maintain a principal office or place of business in the state. Here, in each instance, the certificate of incorporation states the location of the principal office of the company in Delaware, but it is completely silent in respect of the place of business. All of the physical properties and business operations of Colorado and Wyoming are located and conducted within this circuit. Wyoming maintains offices in Denver where its executive officers and agents supervise and administer its properties and operations. Canadian transports almost ninety per cent of the natural gas which it produces into this circuit, part into New Mexico and part into Oklahoma, where virtually all of it is sold to Colorado. The properties of Canadian and Colorado are operated as a unit. The two companies have a single general manager and jointly maintain an office in Colorado Springs, under the charge of such manager, where the supervision, direction, and management of the affairs of both companies are conducted. There are approximately thirty-six employees in the office, some devote their entire time to the business of Colorado and are paid by that company, some divide their time between the business of the two companies, and their salaries are paid partly by each company. The general manager is in charge of all operations of Canadian, including the gas fields and a field operating office in Texas; the chief dispatcher, who keeps in constant touch with the expected demands for gas and gives orders for the amount of gas to be piped, has his office in Colorado Springs and is under the supervision of the general manager. The principal books of account are kept in Colorado

Springs, under the direction of the assistant treasurer of the company who maintains his office there. All major purchases for both companies are made and all bills for materials purchased are paid by vouchers issued out of the office there; all dealings between the two companies in connection with the purchase and sale of gas are conducted in and through the office there; and the principal bank account of Canadian is kept in banks in that city. We think it is clear that the principal place of business of each company is in this circuit, within the meaning of the statute. Continental Coal Corp. v. Roszelle Bros., supra; Dryden v. Ranger Refining & Pipe Line Co., supra; In re Lone Star Shipbuilding Co., 6 F. (2d) 192. And we therefore adhere to the view that the motions to dismiss are illfounded.

Jurisdiction of Production and Gathering Properties—Canadian attacks the order relating to the reduction in its rates and charges on the ground that the Commission erroneously undertook to exercise unauthorized rate-regulatory jurisdiction over the production and gathering properties, facilities and business of the company. Section 1(a) of the Act, supra, declares "that the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest, and that Federal regulation . . . relating to the transportation of natural gas and the sale thereof in interstate . . . commerce is necessary in the public interest". Section 1(b) limits the act in its application "to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale", and further provides in express terms that it "shall not apply . . . to the production or gathering of natural gas." Section 2(6) provides that a natural gas company is a company engaged in the transportation of natural gas in interstate commerce, or the sale in interstate commerce of such gas for resale. Section 4(a) declares that rates and charges in connection with the transportation of natural gas subject to the jurisdiction of the Commission "shall be just and reasonable, and any such rate or charge that is not just and reasonable is hereby declared to be unlawful". Section 5(a) directs the Commission to

"determine the just and reasonable rate . . . and shall fix the same by order". Section 6(a) empowers the Commission to "investigate and ascertain the actual legitimate cost of the property of every natural-gas company, the depreciation therein, and, when found necessary for rate-making purposes, other facts which bear on the determination of such cost or depreciation and the fair value of such property". Section 7 vests in the Commission certain powers relating to the improvement, establishment of physical connections, abandonment, construction, or extension of transportation facilities of natural gas companies. Section 8 enables the Commission to require natural gas companies to keep and maintain accounts and records. Section 9 charts the authority of the Commission in relation to rates of depreciation and amortization of the several classes of property of natural gas companies. Section 10 concerns the filing with the Commission of periodic and special reports. Section 11 is addressed to the duties of the Commission respecting state compacts dealing with the conservation, production, transportation, or distribution of natural gas. And section 14(a) authorizes the Commission to "investigate any facts, conditions, practices or matters which it may find necessary or proper to determine whether any person has violated or is about to violate any provision of this Act." The primary legislative purpose in the passage of the Act was to provide comprehensive regulation of the wholesale distribution to public service companies of natural gas moving interstate, and to vest in the Commission as the instrumentality of Congress power to exercise such regulation. Illinois Natural Gas Co. v. Central Illinois Public Service Co., 314 U. S. 498; Public Utilities Commission v. United Fuel Gas Co., 317 U. S. 456. And the grant of powers expressly conferred upon the Commission carried with it by implication all authority reasonably necessary and fairly appropriate to make such powers fully efficacious, and to render effectual the discharge of the duties of the Commission. But, under section 1(b) the Commission does not have express or implied rate-regulatory jurisdiction of the production and gathering of gas.

Canadian is engaged in the business of producing, gathering, transporting and selling interstate natural gas for

resale for ultimate public consumption. It therefore is a natural gas company, subject to the jurisdiction of the Commission in respect to its rates and charges for the gas transported and sold in such commerce. Its production and gathering properties and facilities are parts of its integrated operations. Still, under section 1 of the Act they lie beyond the range of the rate-regulatory jurisdiction of the Commission. But the Commission did not prescribe charges for the production; did not fix rates for the gathering of gas; and did not exercise other rate-regulatory jurisdiction over production or gathering as such, within the meaning of the limiting and forbidding provisions of the Act. The Commission did not attempt to affect in any manner the acquiring and maintaining of gas leaseholds, gas rights, or gas wells. Neither did it undertake to affect anywise the location, construction, extension, or physical connections of pipelines, or the operation of pipelines or other facilities constituting the gathering properties. The rate-regulatory jurisdiction of the Commission was exerted only in respect of rates and charges for natural gas transported in interstate commerce and sold in such commerce for resale for ultimate public consumption. The Commission inquired into and considered the production and gathering properties in respect to cost, depreciation, operating expenses, and revenues. But the inquiry was merely in their relation to the fixing of reasonable rates to be exacted and received for the natural gas moved in interstate commerce and sold for resale. And the order of the Commission in each instance operated only upon such rates and charges. We fail to find in the act anything which expressly or by fair implication indicates a Congressional purpose to restrict or withhold from the Commission jurisdiction in a case of this kind to take into consideration the production and gathering properties only as they have bearing upon the question of the fixing of reasonable rates for gas moved interstate and sold for public consumption.

Abrogation of Prices Fixed by Contract Prior to Effective Date of the Act—While not challenging the constitutional validity of the Act on its face, or as it may be applied in general, Canadian and Colorado advance the contention that here the Commission erred in applying it retrospectively in such manner as to abrogate prices

agreed upon in contracts of limited term entered into and substantially performed prior to the enactment of the Act, at a time when neither company was in fact or in law a utility or common carrier, and when each disclaimed all of the privileges and obligations as such. The contracts between Canadian and Colorado, Colorado and Public Service Company, Colorado and Pueblo Gas and Fuel Company, Colorado and the City of Colorado Springs, and Colorado and Wyoming, respectively, were each executed prior to the date on which the act became effective; they were of limited term; and they had been performed in substantial part at the time the Act went into effect. But at all times, the transportation and sale of natural gas in interstate commerce for wholesale distribution to public service companies or municipalities for resale to domestic consumers was subject to regulation by Congress. Missouri v. Kansas Gas Co., 265 U. S. 298; Illinois Natural Gas Co. v. Central Illinois Public Service Co., supra; Federal Power Commission v. Natural Gas Pipeline Co., 315 U. S. 575; Public Utilities Commission v. United Fuel Gas Co., supra. And the exertion of the power of Congress in its regulation of interstate commerce is not fettered by pre-existing contracts or arrangements. The exercise of power under the Commerce Clause cannot be subordinated to arrangements or stipulations previously effected. Contracts and arrangements of that kind necessarily are entered into with knowledge of the paramount authority of Congress to regulate commerce among the states. Union Bridge Co. v. United States, 204 U. S. 364; Monongahela Bridge v. United States, 216 U. S. 177; Philadelphia Co. v. Stimson, 223 U. S. 605; Philadelphia, Baltimore and Washington Railroad Co. v. Schubert, 224 U. S. 603; Greenleaf Lumber Co. v. Garrison, 237 U. S. 251; Continental Co. v. United States, 259 U. S. 156; Sproles v. Binford, 286 U. S. 374; Radio Commission v. Nelson Bros. Co., 289 U. S. 266.

It is emphasized that at the time the contracts were entered into neither of these companies was in fact or in law a public utility or common carrier, and that each disclaimed all of the privileges and obligations as such. These companies have never sought or acquired any certificate of public convenience and necessity, any franchise, or any right to enter a municipality; they have never advertised or rep-

resented that they would sell gas to the public generally; and they have never filed any rate schedule with any regulatory commission or any other authority. At the time the Act became effective, and since, Canadian transported and sold interstate gas to Colorado, and also made sales for resale to a distributing company; and Colorado made sales for resale to one municipality, four or five distributing companies, and two pipelines, and made direct sales to five industrial customers, under private contracts respecting price, quantity, time of delivery, and so forth. But freedom of contract does not place it within the power of companies engaged in business of that kind to restrict or withhold from the control of Congress at a later time so much of the field of regulation of interstate commerce as they choose to bring within the range of their arrangements. Even though executed prior to the enactment of the Act, contracts of that nature are subject to regulation in the public interest. Cf. Mississippi River Fuel Corp. v. Federal Power Commission, 121 F. (2d) 159.

The companies made large investments on the strength of the contracts but that is not decisive, as in the very nature of things they were made subject to the exercise of the paramount authority of regulation. Radio Commission v. Nelson Bros. Co., supra.

Requiring the Impossible of Canadian—Canadian attacks the order relating to its rates and charges on the further score that it requires the company to do the impossible, and violates due process. The contract between Canadian and Colorado requires Canadian to develop, operate, and maintain its properties with diligence, so as to produce sufficient natural gas to meet the requirements of Colorado; to sell the gas to Colorado at cost; to make no contract for the sale of gas that might impair its capacity to produce gas for delivery to Colorado; to credit Colorado with all revenues, income, or profits which it may receive from any other source; and to disburse funds received from any source only in the discharge of its obligations under the contract with Colorado and any other contracts permitted under its provisions, and in payment of principal and interest on its outstanding indebtedness. It is argued that the contract forecloses any possibility of profit to Canadian

and therefore the order exacts the impossible and is confiscatory. The power to regulate commerce is subject to the limitations and guarantees of the Constitution. Monongahela Navigation Co. v. United States, 148 U. S. 312; United States v. Chicago, Milwaukee, St. Paul and Pacific Railroad Co., 282 U. S. 311. But permissible regulation of rates does not insure that the business shall produce net revenues, and any rate may be decreased which is not the lowest reasonable rate. Federal Power Commission v. Natural Gas Pipeline Co., supra.

This contention in its entirety proceeds upon the premise that since Canadian under the contract sells gas to Colorado at cost, there is no possibility of profit accruing to Canadian. But apparently the argument fails to give consideration to the fact that in connection with the contract under which Canadian furnishes and Colorado accepts the gas, Canadian received initially $5,000,000 in cash from Standard; that Colorado without cash consideration issued to Southwestern forty-two and one-half per cent of all its common stock, and preferred stock of the value of $1,000,000; that Southwestern shares on that basis in the beneficial ownership of Colorado and in its net earnings from time to time; and that in view of the relation existing between Southwestern and Canadian, Canadian in effect shares accordingly. Taking these and other factors into account, there is no basis for challenging the order on the ground that it exacts the impossible and is confiscatory.

The Sufficiency of the Evidence to Support the Finding of Unreasonableness of Rates and Charges—The finding of the Commission that the rates and charges of the companies were unjust and unreasonable is questioned for want of substantial evidence to support it. The passage of the Act did not automatically overthrow the contracts into which these companies had previously entered. Neither did it *ipso facto* set aside the schedules of charges upon which they had agreed. Such rates and charges could be modified only after an express finding of unreasonableness. Wichita Railroad & Light Co. v. Public Utilities Commission, 260 U. S. 48; Allen W. Hinkel Dry Goods Co. v. Wichison Industrial Gas Co., 64 F. (2d) 881. And the right of the Commission to make a finding of unreasonableness

depends upon the existence of the fact. In the absence of substantial evidence to show that the rates and charges in existence are unreasonable, a finding to that effect constitutes the arbitrary exercise of power by administrative fiat and cannot stand. Interstate Commerce Commission v. Louisville and Nashville Railroad Co., 227 U. S. 88.

But a finding of unreasonableness made after a full hearing carries with it a presumption of correctness, and the burden rests upon him who attacks it on review for want of substantial evidence to show the absence of such evidence. An extended analysis of the voluminous evidence would not serve any useful purpose as no two cases of this kind are alike in point of fact. We are content to say that a careful examination of the entire record convinces us that the finding is supported by substantial evidence, and therefore under section 19(b) of the Act, it is conclusive.

The Question of Value—Coming to the question of the rate base, Canadian and Colorado each submitted evidence tending to show reproduction cost new, less observed depreciation, and they also submitted evidence as to the original cost of the property. Wyoming introduced evidence as to actual construction costs, less observed depreciation, plus working capital and additions to plant. The evidence of the Commission staff was restricted to original cost. After considering the estimates of reproduction cost new, less observed depreciation, the Commission concluded that they were too conjectural to have probative value, as they were not based upon established facts, but were subject to the vagaries of theories and imagination. Turning to the evidence of original cost, the Commission found that the properties were all of comparatively recent acquisition or construction; that the accounting records had been sufficiently adequate and well maintained to permit a ready determination of all costs involved; that the major portion of all cost of Canadian and Colorado had been incurred since the adoption by such companies of an accounting system based on the Code of Accounts of the Public Service Commission of Pennsylvania; that the basic facts were clear and essentially undisputed; that they represented the best and only reliable evidence respecting property values; and that, in accordance with section 6 of the act, supra, and under the record in the proceeding, no necessity existed to consider

other factors than original cost. The Commission then determined original cost as of December 31, 1939, deducted a sum representing accrued depreciation, depletion, and amortization, added an amount for working capital and additions to plant, and in the case of Wyoming made a deduction for customer contributions. The amount reached by that method of computation, denominated by the Commission as prudent investment, was adopted as the rate base. The companies contend that the rate base should have been grounded upon present fair value. It must be conceded that the contention finds support in many cases holding that while actual cost, cost of reproduction new, and other elements affecting value should be taken into account and given their proper weight, the final basis of calculation in the regulation of rates of a public utility is a fair return upon the present fair value of the property used for the convenience of the public. Smyth v. Ames, 169 U. S. 466, 546; San Diego Land Co. v. National City, 174 U. S. 739, 757; San Diego Land & Town Co. v. Jasper, 189 U. S. 439, 442; Wilcox v. Consolidated Gas Co., 212 U. S. 19, 41; The Minnesota Rate Cases, 230 U. S. 352, 434; Southwestern Bell Telephone Co. v. Public Servcie Commission, 262 U. S. 276, 287; Bluefield Water Works & Improvement Co. v. Public Service Commission, 262 U. S. 679, 690; Board of Public Utility Commissioners v. New York Telephone Co., 271 U. S. 23, 31; McCardle v. Indianapolis Water Co., 272 U. S. 400, 410; St. Louis & O'Fallon Railway Co. v. United States, 279 U. S. 461, 484; Los Angeles Gas & Electric Corp. v. Railroad Commission, 289 U. S. 287, 305.

But the late case of Federal Power Commission v. Natural Gas Pipeline Co., supra, involved an order of the Commission reducing the rates of two companies engaged in business as a single enterprise in the production and transportation interstate of natural gas for sale at wholesale to public utilities, and the court there held that the "Constitution does not bind rate-making bodies to the service of any single formula or combination of formulas. Agencies to whom this legislative power has been delegated are free, within the ambit of their statutory authority, to make the pragmatic adjustments which may be called for by particular circumstances. Once a fair hearing has been given,

proper findings made and other statutory requirements satisfied, the courts cannot intervene in the absence of a clear showing that the limits of due process have been overstepped. If the Commission's order, as applied to the facts before it and viewed in its entirety, produces no arbitrary result, our inquiry is at an end." And the later case of Federal Power Commission v. Hope Natural Gas Co., 320 U. S. 591, similarly involved an order of the Commission requiring a reduction in rates of a company engaged in the business of producing, purchasing, transporting and selling at the state line natural gas for continuous movement and ultimate distribution in other states. There the rate base adopted by the Commission was substantially identical with that here; and there, as here, it was attacked on the ground that present fair value is the only permissible rate base. But the court rejected the contention and upheld the order. In doing so, the court said that, "Under the statutory standard of 'just and reasonable' it is the result reached not the method employed which is controlling . . . It is not the theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unjust and unreasonable, judicial inquiry under the Act is at an end. The fact that the method employed to reach that result may contain infirmities is not then important." These two cases are controlling. And guided by them; it is clear that neither of these orders is to be invalidated for failure of the Commission to use present fair value as the rate base; unless in its totality it oversteps the limits of due process.

Disallowances in Arriving at Original Cost—In arriving at the original cost of the properties, the Commission eliminated certain items appearing on the books of the companies. Canadian paid to Amarillo Oil Company the sum of $5,000,000 in cash for the leaseholds. Their original cost to Amarillo Oil Company was only $1,879,504. Since Canadian and Amarillo were wholly owned subsidiaries of Southwestern, the Commission eliminated $3,120,496, representing the difference between the cost to Amarillo Oil Company and the amount which Canadian paid. By the Memorandum of Stipulations, Southwestern, the parent of Canadian and Amarillo Oil Company, obligated itself to cause the leaseholds to be devoted to the proposed project.

Disregarding the fiction of separate corporate entity, and looking to substance, the contention that the leaseholds should be included at the figure which Canadian paid Amarillo Oil Company rather than the original cost to Amarillo Oil Company amounts in substance to receiving a return on $5,000,000 for property which actually cost less than $2,000,000. There is no proper place in the field of rate-making for synthetic inflation of that kind. Pennsylvania Power & Light Co. v. Federal Power Commission, 139 F. (2d) 445.

As to Colorado, the Commission eliminated $2,352,940, representing the recorded value of stock payments made to Southwestern and Cities Service for entering into contracts for the sale and purchase of gas. By the Memorandum of Stipulations, Southwestern was obligated to require its subsidiary, Canadian, to enter into a contract to sell gas to Colorado, and Cities Service was similarly obligated to require its subsidiaries, Public Service Company and Pueblo Gas and Fuel Company, each, to enter into a contract for the purchase of gas from Colorado. But, according to the records of Colorado, Canadian refused to enter into the contract for the sale of gas to Colorado, and Cities Service refused to direct or permit its subsidiaries to enter into the contracts for the purchase of gas from Colorado; and thereupon Colorado issued to Southwestern as the nominee of Canadian 10,000 shares of preferred and 531,250 shares of common stock, and issued to Cities Service 187,500 shares of common stock. The resolution of the Board of Directors of Colorado authorizing the issuance of such stock recited that the stock first described be issued as part of the consideration for Canadian entering into the contract, and the stock last described be issued in consideration of Cities Service directing its subsidiaries to enter into contracts. The record offers little or no explanation of the refusal to enter into the contracts as provided with binding effect in the Memorandum of Stipulation, or of the failure of Colorado to exact that they be entered into without additional consideration or inducement. Though the reasons may have been satisfactory to the parties in interest, it is manifest that the legitimate cost of Colorado's property for rate-base purposes could not be swelled by the issuance of

stock in circumstances of that kind. Cf. Northwestern Electric Co. v. Federal Power Commission, 321 U. S. 119.

As to Wyoming, the Commission rejected $82,792.57, representing sums paid to Henry L. Doherty & Company for engineers fees. Wyoming and the Doherty Company maintained a contractual arrangement under which the Doherty Company placed at the service of Wyoming its combined experience, advice, and assistance in solving such problems as might arise in connection with the conduct of the business of Wyoming. The tendered advice and assistance related to numerous services, including designing and construction engineering, and fixed the compensation for each, including an engineering fee equal to five per cent of the cost of construction. An affiliate relationship existed between the two companies; Wyoming was unable on request to furnish the Commission any showing that any cost had been incurred in connection with the rendering of engineering services; and there was testimony that the books and records of Wyoming failed to contain any indication that the fees represented any actual cost of services for which the amount was paid. In short, there was no showing satisfactory to the Commission that any engineering services were rendered. The general rule in rate-making against profits in connection with transactions between affiliates warranted the Commission in eliminating the item. Cf. Pennsylvania Power & Light Co. v. Federal Power Commission, supra.

The Commission eliminated from the capital account of Canadian the sum of $129,032, being expenditures previously charged to current operating expense but now sought to be capitalized; it made a like deduction of $440,050 from the account of Colorado; and that action is challenged. In each instance the company added or sought to add the amount in arriving at its claimed original cost. The amount represented reaccounting rather than the correction of accounting, for the charges were made to operating expense in conformity with the established accounting policy of the company in effect at the time, and they were never considered capital investment until the Commission began its investigation. In respect of many expenditures there is at best an indistinct line of demarca-

tion between operating costs and capital costs. It often is difficult to blueprint a clear distinction between expenditures made for operation and maintenance and those made for construction. And therefore a natural gas company, as defined by the Act, must be allowed to exercise a measure of discretion in making its determination between the two. But a method, reasonably acceptable to good accounting, must be adopted and adhered to consistently. Consistent principles and practices of accounting must be followed. Change cannot be made at will. These companies deliberately exercised their discretion in charging these expenditures to expenses; Canadian has fully recovered from Colorado its expense now sought to be capitalized; and Colorado has treated its expenditures now in question as necessary operating expense to be deducted from earnings before arriving at net profits. The Commission was well within the ambit of its authority in making the deductions on the ground that it would do violence to recognized principles of equity to permit these companies at this late hour to shift their position and treat retroactively these items as capital investment upon which they are entitled to receive return. Cf. Federal Power Commission v. Natural Gas Pipeline Co., supra; Northwestern Electric Co. v. Federal Power Commission, 125 F. (2d) 882, affirmed, 321 U. S. 119; City of Wheeling v. National Gas Co., 175 S. E. 339; Peoples Gas Light & Coke Co. v. Slattery, 25 N. E. (2d) 482.

The Commission made a deduction of $366,507 from the original cost claimed by Canadian for interest during construction, and that action is challenged. Canadian recorded on its books a charge for interest during construction, computed on the basis of a construction period beginning May 1, 1927, and ending October 31, 1928, and including the full amount which Canadian paid Amarillo Oil Company for the leaseholds. The Commission found that regular deliveries of gas commenced the latter part of June, 1928, and continued thereafter. The Commission determined that the construction period ended July 1, 1928, and disallowed interest after that date. The books of Wyoming showed the capitalization of interest during construction. The amount included interest on main line construction and on lateral construction. The Commission disallowed the claim in part on the ground that it represented interest computed on a

proportion of the total cost of the property, estimated by the company to be in excess of that required to handle the business actually done during the period. The Commission characterized the claim as the capitalization of a fictitious and arbitrary amount after the close of the construction period, and stated that interest ceases to be a cost of the original plant when commercial operations begin. These companies were not entitled to interest after the construction period ended and they began to receive earnings. Alabama Power Co. v. McNinch, 94 F. (2d) 601.

Elaboration is unnecessary concerning the disallowance of interest on the amount which Canadian paid Amarillo Oil Company for the leaseholds in excess of the original cost to Amarillo Oil Company. We have previously said that, due to the affiliate relation between Canadian and Amarillo Oil Company, the Commission in arriving at the original cost providently included the property at the amount of the original cost to Amarillo Oil Company. That being its cost for rate-base purposes, it follows that interest on the excess could not be included in the rate base.

The Claim for Going Concern Value—Wyoming claimed an allowance for going concern value as part of its rate base. In rejecting the claim and failing to make any allowance for that element, the Commission found that the amount claimed represented a judgment figure wholly unrelated to any costs or outlays, and was therefore deemed unjustified. It is well settled "that there is an element of value in an assembled and established plant, doing business and earning money, over one not thus advanced" and that such "element of value is a property right, and should be considered in determining the value of the property, upon which the owner has a right to make a fair return when the same is privately owned although dedicated to public use." Des Moines Gas Co. v. City of Des Moines, 238 U. S. 153, 165; City and County of Denver v. Denver Union Water Co., 246 U. S. 178, 191, 192; McCardle v. Indianapolis Water Co., supra; Los Angeles Gas & Electric Corp. v. Railroad Commission, supra. But even though it is an element for appropriate inclusion in the rate base, there is no constitutional exaction that it be separately stated as such and added to cost figures attributable the physical properties. Columbus Gas & Fuel Co. v. Public Utilities

Commission, 292 U. S. 398, 411; Denver Stock Yard Co. v. United States, 304 U. S. 470, 479; Driscoll v. Edison Light & Power Co., 307 U. S. 104; Federal Power Commission v. Natural Gas Pipeline Co., supra. The requirement may be satisfied if a reasonable allowance is "reflected in the other items and particularly in the appraisal of the physical assets as part of the assembled whole." Columbus Gas & Fuel Co. v. Public Utilities Commission, supra.

The amount claimed by the company was $175,000. A valuation engineer residing in New Jersey testified in support of the claim. He stated that he did not employ any mathematical formula in arriving at his conclusion as to amount, and he admitted that it was only a judgment figure. He stated with commendable candor that he reached it "just as a horsetrader looks at a horse and decides what it is worth". The record fails to indicate affirmatively whether the element was indirectly reflected to any extent in other items and in the appraisal of other properties as part of the assembled whole. But in any event, there is no basis on which to rest the conclusion that the failure of the Commission to state separately and add an amount as going concern value overstepped the limits of due process.

Allocation of Cost of Service—The orders are assailed for failure of the Commission to make a separation or allocation of the property used in regular business from that used in unregulated business. Under section 1 of the Act, natural gas moved in interstate commerce and sold for ultimate distribution to the public is subject to regulation by the Commission, but gas transported in interstate commerce and not sold for such distribution to the public as well as gas sold intrastate is not subject to regulation. Each of these companies is engaged in both kinds of business. The Commission expressed its awareness of the necessity of determining the reasonableness or unreasonableness of the rates and charges subject to its jurisdiction, observed that this required the distribution of the total costs of operations, including depreciation, taxes, and a fair return, among the various customers served, individually or by appropriate groups, and commented that to the extent that such costs allocated to sales under the jurisdiction of the Commission were less than revenues received, the rates

and charges made were unjust and unreasonable, and revenues must be reduced accordingly. The Commission further stated that it did not follow from that obligation that an allocation of physical property or portions thereof must be made before any excessive returns were determined. After observing that nowhere in all the evidence submitted by Canadian and Colorado was there a complete presentation of the entire operations, broken down between jurisdictional and nonjurisdictional operations, the Commission determined that all which could be accomplished by an allocation of physical properties could be attained by allocating costs including the return. And the Commission added that such method was by far the most practical and business-like. Following these observations, statements, and findings, the Commission made the allocation as to each company.

Where, as here, a natural gas company is engaged in an integrated business, part of which is subject to regulation and part of which lies beyond the reach of the regulatory jurisdiction of the Commission, some separation of the property, capital, and revenue is essential in order that regulation may be confined to its permitted field. The separation may be appropriately effected by estimating or appraising the value of the property used in the regulated business and that used in the unregulated business. Smith v. Illinois Bell Telephone Company, 282 U. S. 133. But that method in its completeness is not always exclusive of others. The separation or allocation may be effected by application of any formula which makes the principle a working one suitably adapted to the particular circumstances. Columbus Gas & Fuel Co. v. Public Utilities Commission, supra.

The integrated properties of these companies were designed and are being used in making both direct sales and resales. The companies rely on the same transmission and other facilities in serving both classes of customers, and both classes of customers jointly share the benefit of the same facilities and gas supply. In these particular circumstances, an allocation of the cost of supplying gas service to customers cannot be said to be a fatally inappropriate or infirm means of effectuating a separateness of the property and capital used in the integrated business.

But, assuming that the requisite separation may be accomplished by an allocation of cost of service, the method used by the Commission is said to be erroneous. It is argued among other things that it assumes that all of the property is used in common in the conduct of all business, whereas a large portion is used exclusively in the regulated portion, another part is used exclusively in the unregulated portion, and only a part is used in common in both businesses; that in respect to the property which is used in common for both businesses, it fails to give consideration to the priority or preferential use of such property in supplying gas for domestic consumption as against unregulated business, and ignores actual peak demands and load factors; that it operates to minimize all costs, produces apparent cost much less than actual cost, and shifts cost from regulated to unregulated business; and that it is unsound both in fact and law. It may be conceded, without deciding, that the method is not free from defects or imperfections in all its aspects. But even so it cannot be said that as the consequence, the impact of the orders of reduction, each in its totality, produces arbitrary results or oversteps the bounds of due process. Therefore the orders are not open to further judicial inquiry on these grounds. Federal Power Commission v. Natural Gas Pipeline Co., supra; Federal Power Commission v. Hope Natural Gas Co., supra.

Depletion, Depreciation and Amortization—The companies introduced evidence relating to accrued depreciation. It was based upon observed per cent condition of the property. Accrued depletion as determined by Canadian was based on estimates of original and remaining gas reserves. The evidence of the staff of the Commission treated accrued and annual allowances for depreciation on the basis of the application of the service-life principle. The Commission observed that if the theory of observed per cent condition of the property were carried out consistently, it might be considered as having some elements of reasonableness; that the small observed depreciation would find its counterpart in an equivalently small annual charge to operating expenses to cover the yearly added amount of observed depreciation; that this was not done in the estimates submitted by these

companies; that, instead, in calculating expenses chargeable to the consumer high depreciation charges were computed, and in computing return to the company a small deduction from the cost of plant was computed. And after full consideration, the Commission adopted the service-life principle for determining annual and accrued depreciation and the production method for determining annual and accrued depletion of production facilities.

Section 6 of the Act empowers the Commission to determine the depreciation in property used by a natural gas company, but it fails to prescribe the method to be used in the discharge of that function. Depreciation represents the loss, not restored by current maintenance, causing the ultimate retirement of the property. The factors entering into it usually are wear and tear, decay, inadequacy, and obsolescence. And in determining reasonable rates to be charged by a public utility, it is proper to include in the operating expenses an allowance for consumption of capital in order that the integrity of the investment in the service may be maintained. Lindheimer v. Illinois Bell Telephone Co., 292 U. S. 151.

As we understand, the Commission in arriving at accrued depreciation determined the amount to be deducted from original cost on the age-life basis by applying the straight life service method to the property. The contention that the testimony of valuation engineers who examined the property and made estimates in respect of its condition should have been accepted in preference to calculations based on averages and assumptions finds its genesis in Pacific Gas & Electric Co. v. City and County of San Francisco, 265 U. S. 403, and McCardle v. Indianapolis Water Co., supra. But there is no basis in this record on which it can be concluded that the determination of depreciation in the manner adopted by the Commission will result in any of these orders in its entirety causing a failure to restore the capital investment at the end of the term, and therefore no deprivation of property is involved. Once more, in the absence of impingment upon due process, review is ended. Federal Power Commision v. Natural Gas Pipeline Co., supra; Federal Power Commission v. Hope Natural Gas Co., supra.

Gas Reserves—In connection with its determination of annual allowances for depreciation and depletion, the Commission found that Canadian's remaining recoverable gas reserves as of December 31, 1939, were not less than 2,800,000,000 Mcf at 14.65 pounds pressure base and an abandonment pressure of approximately 50 pounds; and that at the then present and expected future rate of production of about 55,000,000 Mcf per year, such reserves would last 53 years. The finding is characterized as arbitrary, capricious, and without any basis in the record. It is said that the reserves were much less in amount and that as a source of supply for long distance pipe lines they will not extend in width beyond 1956. The field is about 125 miles long and varies from 10 to 40 miles. It comprises approximately 1,500,000 acres, of which about 1,000,000 acres produce sweet gas, and some 500,000 acres produce sour gas. Oil is produced in a portion of the field. Natural gas was discovered in 1918, on acreage now owned by Canadian; and at the time of the hearings in these proceedings there were about 1650 wells producing gas only, and about 4200 wells producing both oil and gas.

The two methods most frequently used in estimating recoverable gas reserves are the rock pressure decline method and the sand thickness porosity method. Using the pressure decline method, an experienced geologist and petroleum engineer on the staff of the Commission testified at length. He estimated that the reserves for the entire field were 22,420,000,000 Mcf, and that those of Canadian were 3,645,213,000 Mcf. For the purpose of determining the true average or equilibrium pressure prevailing throughout the field, he divided the field into areas of comparatively equal pressures, called quadrants, and made an estimate for each quadrant. His estimate in the aggregate was the sum of his estimates for the several quadrants. A scientific article published in 1933 was introduced in evidence in which the recoverable reserves in the field were estimated to be 16,100,000,000 Mcf. Two qualified experts testified for Canadian. One used the sand thickness porosity method, and he estimated that the reserves in the field amounted to 9,532,027,596. The other used the open flow method which is a variation of the sand thickness porosity method, and his estimate of the field was 8,910,132,111 Mcf. And there

was much other evidence having bearing upon the question. The Commission found itself unable to accept in toto any of the estimates. The Commission observed that the pressure decline method is recognized as a satisfactory method of estimating gas reserves in fields that are depleted as much as fifteen per cent or more and where reliable pressure and production data are available; that the Texas Panhandle Field met these qualifications; that it was a well developed field; and that the pressure and production records maintained by the Railroad Commission of that state were adequate and satisfactory. The Commission found that the pressure decline method was to be desired over the methods used by the witnesses for the company; that the estimates of the witnesses for the company were not founded on proper data and must be considered essentially unreliable; that if the method of averaging quadrants was incorrect, it favored the company position of lower reserves; that the acreage of the company was among the very best in the entire field; and that after weighing all pertinent facts of record and making due allowance for the criticisms of the estimate submitted by the Commission staff, the recoverable reserves were found to be not less than 2,800,000,000 Mcf of gas.

The rock pressure decline method of estimating recoverable reserves of natural gas is not only accepted practice among mining engineers but it has been accorded judicial recognition. Dayton Power & Light Co. v. Public Utilities Commission, 292 U. S. 290. It lay within the discretion of the Commission to select that method as the most satisfactory and reliable means of determining the reserves of Canadian. And the Commission was not required to accept at face value the opinion evidence of the witnesses who testified as experts in respect to volume. The weight to be given to their evidence was a matter for the appraisal and judgment of the Commission, in the light of the circumstances. Existing volume, pressure differentials and consequent drainage, and other recovery factors should be given consideration in arriving at a final conclusion concerning the reserves. But it nowhere appears that the Commission failed appropriately to weigh these elements.

As has already been said, section 19(b) of the Act

provides that a finding of fact made by the Commission shall be conclusive on review if it is supported by substantial evidence. Congress thus committed to the Commission the function of weighing evidence, drawing inferences from the facts and circumstances established, and choosing between conflicting inferences. And a court is not free to substitute its view of the facts for that of the Commission. The underlying considerations which actuated Congress in vesting that power in the Commission are clear. The Commission often deals with subjects which are specialized, technical, and complex. It is relatively better staffed for its task than are the courts. And its members frequently bring to the discharge of their duties rich experience in those particular fields. The determination of the recoverable reserves of this company necessarily involved specialized and technical factors. The evidence relating to the question extends to great lengths. No useful end would be served by a detailed analysis of it. We think the finding is supported by substantial evidence and therefore is not vulnerable to the charge of lacking basis in the record.

Fair Rate of Return—The evidence submitted by the companies relating to a fair annual return upon the rate base varied in amount from 8 per cent to 9.17 per cent, while that of the Commission staff was 6½ per cent. The Commission fixed 6½ per cent for all three companies. The Commission stated in that connection that there was no exact formula for determining a reasonable rate of return: that in the final analysis the rate must be the best judgment of the Commission, founded upon the evidence and guided by the basic facts required by law to be considered; that consideration must be given to the return earned by like investments which are attended by corresponding risks and uncertainties in the same vicinity over the same period of time; that Canadian had a long-term and essentially cost of service contract with its affiliate, Colorado; that the sales of Colorado and Wyoming were also principally to subsidiaries or affiliates and to stable markets; that Colorado's principal industrial sales were also to an affiliate—Colorado Fuel and Iron Corporation; and that all these facts materially reduced basic business risks that might be present under other circumstances.

The rate of return which will constitute just compensation depends upon the circumstances. A public utility is entitled to such rates as will permit it to earn a return on the value of its property devoted to the convenience of the public substantially equal to that generally being earned in that area by other business enterprises which are attended by corresponding characteristics, including uncertainties, risks, hazards, and other elements affecting the operations. The return should be sufficient in amount to assure confidence in the financial soundness of the utility, and to enable it under efficient management to maintain its credit. Bluefield Water Works & Improvement Co. v. Public Service Commission, supra. But no formula can be laid down which will apply uniformly in all cases or to all kinds of utilities. That which is fair for one may be quite inadequate for another, depending upon the difference in circumstances. And the ascertainment of a fair return in a given case is a matter incapable of exact mathematical demonstration. It is one of reasonable approximation having its basis in a proper consideration of all relevant facts. Willcox v. Consolidated Gas Co., supra; United Railways and Electric Co. v. West, 280 U. S. 234.

Making application of these principals, and taking into consideration the history of these companies, their relations and opportunities, their position for future financing, the stability of demand for their product, and other relevant factors, we think that a return of 6½ per cent on the rate base as fixed by the Commission is not so inadequate as to amount to confiscation. Federal Power Commission v. Natural Gas Pipeline Co., supra; Federal Power Commission v. Hope Natural Gas Co., supra.

Finally, the Commission made allowances for working capital and additions to plant of all three companies, and these are attacked for insufficiency in amount; the Commission rejected some claims, and the companies predicate error on that action; and the Commission made certain adjustments, of which the companies complain. We do not discuss these seriatim. To do so would only extend this opinion, without adding anything of value to the accelerating accumulation of judicial utterances. The Commission was empowered to make pragmatic adjustments for which the

particular circumstances call. Federal Power Commission v. Natural Gas Pipeline Co., supra. On the whole record, we are unable to say that any of these orders in its total effect produces any arbitrary result or does violence to due mission v. Natural Gas Pipeline Co., supra; Federal Power Commission v. Hope Natural Gas Co., supra.

The orders are severally

AFFIRMED.

Decree, No. 2550.

Twenty-seventh Day, May Term, Saturday, July 8th, A. D. 1944. Before Honorable Orie L. Phillips, Honorable Sam G. Bratton and Honorable Alfred P. Murrah, Circuit Judges.

This cause came on to be heard on the transcript of record from the Federal Power Commission, and was argued by counsel.

On consideration whereof, it is now here ordered, adjudged and decreed by this Court that the orders of March 18, 1942 and April 22, 1942 of the Federal Power Commission in this cause be, and the same are hereby affirmed.

Decree, No. 2551.

Twenty-seventh Day, May Term, Saturday, July 8th, A. D. 1944. Before Honorable Orie L. Phillips, Honorable Sam G. Bratton and Honorable Alfred P. Murrah, Circuit Judges.

This cause came on to be heard on the transcript of record from the Federal Power Commission, and was argued by counsel.

Upon consideration whereof, it is now here ordered, adjudged and decreed by this Court that the orders of March 18, 1942 and April 22, 1942 of the Federal Power Commission in this cause be, and the same are hereby affirmed.

Stay Order.

Twenty-seventh Day, May Term, Saturday, July 8th, A. D. 1944. Before Honorable Orie L. Phillips, Honorable Sam G. Bratton and Honorable Alfred P. Murrah, Circuit Judges.

This matter coming on for hearing this day before the Court on the motion of petitioner for continuance of stay order and stay of issuance of mandate; and the Court having considered said motion, as well as motion of the City and County of Denver to dismiss said motion of petitioner, and the argument thereon:

And the Court having this day entered its judgment herein pursuant to the Court's opinion heretofore filed in this cause:

It is now ordered that the stay order entered herein on May 16, 1942, on the terms and conditions therein set forth, be and the same is hereby continued in full force and effect for the period of 60 days from and after the date hereof, and if within said period of 60 days a petition for certiorari is filed in the Supreme Court of the United States and a certificate thereof is filed in this Court within said 60 days pursuant to Rule 28 of this Court, then said stay order shall continue in full force and effect until final disposition of said cause by the Supreme Court of the United States.

It is further hereby ordered that issuance of mandate is hereby stayed for said period of 60 days from and after the date hereof, and if within said 60 day period petition for certiorari shall be filed in the Supreme Court of the United States, with due certification as aforesaid, then issuance of mandate shall be stayed until final disposition of said cause by the Supreme Court of the United States.

Clerk's Certificate.

United States Circuit Court of Appeals, Tenth Circuit.

I, Robert B. Cartwright, Clerk of the United States Circuit Court of Appeals for the Tenth Circuit, do hereby certify the foregoing, consisting of eight volumes, as a full, true, and complete copy of the designated transcript of the record from the Federal Power Commission, and full, true,

and complete copies of certain pleadings, record entries and proceedings, including the opinion (except full captions, titles and endorsements omitted in pursuance of the rules of the Supreme Court of the United States) had and filed in the United States Circuit Court of Appeals for the Tenth Circuit in certain causes in said United States Circuit Court of Appeals, No. 2550, wherein Colorado Interstate Gas Company, a corporation, was petitioner, and Federal Power Commission et al. were respondents, and No. 2551, wherein Canadian River Gas Company, a corporation, was petitioner, and Federal Power Commission et al. were respondents, as full, true, and complete as the originals of the same remain on file and of record in my office.

In Testimony Whereof, I hereunto subscribe my name and affix the seal of the United States Circuit Court of Appeals for the Tenth Circuit, at my office in Denver, Colorado, this 19th day of July, A. D. 1944.

(Seal, U. S. Circuit Court of Appeals, Tenth Circuit.)

ROBERT B. CARTWRIGHT,
Clerk of the United States Circuit Court of Appeals, Tenth Circuit.

SUPREME COURT OF THE UNITED STATES, OCTOBER TERM, 1944

No. 379

ORDER ALLOWING CERTIORARI—Filed November 13, 1944

The petition herein for a writ of certiorari to the United States Circuit Court of Appeals for the Tenth Circuit is granted, limited to the fifth and sixth questions presented by the petition for the writ. The case is assigned for argument immediately following No. 296.

And it is further ordered that the duly certified copy of the transcript of the proceedings below which accompanied the petition shall be treated as though filed in response to such writ.

SUPREME COURT OF THE UNITED STATES, OCTOBER TERM, 1944

Nos. 379 & 380

ORDER ALLOWING CERTIORARI, ETC.—January 2, 1945

A petition for rehearing and for enlargement of the scope of review having been filed in case No. 380 by counsel for the Canadian River Gas Company.

Upon consideration thereof, it is ordered by this Court that the said petition for rehearing in case No. 380 be, and the same is hereby, granted.

It is further ordered that the order entered November 13, 1944, be, and the same is hereby, vacated; and that the petition for writ of certiorari herein be, and the same is hereby, granted limited to question 1, 2, 3, and 8 presented by the petition for the writ and the case is assigned for argument immediately following No. 379. Case No. 379 is transferred to the summary docket.

It is further ordered that the duly certified copy of the transcript of the proceedings below which accompanied the petition shall be treated as though filed in response to such writ.

"* * * While the difficulty in making an exact apportionment of the property is apparent, and extreme nicety is not required, only reasonable measures being essential (Rowland v. Boyle, 244 U. S. 106, 108, 61 L. Ed. 1022, 1023, P.U.R. 1917E, 685, 37 S. Ct. 577; Groesbeck v. Duluth, S. S. & A. R. Co., 250 U. S. 607, 614, 63 L. Ed. 1167, 1172, P.U.R. 1920A, 177, 40 S. Ct. 38) it is quite another matter to ignore altogether the actual uses to which the property is put. It is obvious that, unless an apportionment is made, the intrastate service to which the exchange property is allocated will bear an *undue burden*—to what extent is a matter of controversy. We think that this subject requires further consideration, to the end that by some practical method the different uses of the property may be recognized and the return properly attributable to the intrastate service may be ascertained accordingly." (Emphasis supplied.)

Not only does the lack of a separation of property in the Commission's evidence and findings leave its conclusion as to rates a matter of guesswork and baseless, but we submit that we have in the respects above specified been able to demonstrate that its substitute, "cost allocation," has actually operated to shift the cost from the regulated to the unregulated business, and that its Order thereby operates to deprive the petitioner of earnings truly applicable to its unregulated business. The Order, in thus shifting the cost from the regulated to the unregulated business, not only violates statutory standards, but deprives the petitioner of its property, contrary to the due process clause of the Fifth Amendment to the Constitution.

The court below in its Opinion apparently recognized these defects in the Commission's "allocation of costs," but refused us any relief from the Commission's Order, because of its interpretation, erroneous we believe, of this Court's decisions in *Federal Power Commission v. Hope Natural Gas Co.*, supra, and *Federal Power Commission v. Natural Gas Pipeline Co.*, 315 U. S. 575. The Circuit Court (142 Fed. (2d) 943; at 959) said:

"* * * It may be conceded, without deciding, that the method is not free from defects or imperfections in all

its aspects. But even so if cannot be said that as the consequence, the impact of the orders of reduction, each in its totality, produces arbitrary results or oversteps the bounds of due process. Therefore the orders are not open to further judicial inquiry on these grounds. Federal Power Commission v. Natural Gas Pipeline Co., supra; Federal Power Commission v. Hope Natural Gas Co., supra."

Apparently the Circuit Court construes this Court's opinion in the two cases to mean that if "the total effect of the rate order cannot be said to be unjust and unreasonable," then methods and standards are no longer important and judicial inquiry is at an end. Our first observation is, that the "total effect" or "impact" of the rate order in this case is, on its face, unjust and unreasonable. An order which fixes the cost of gas delivered at La Junta to be 24.3 cents per Mcf, and the cost at Denver to be only 15.4 cents per Mcf (R. V. 1, p. 181), despite the fact that the Denver gas has to be compressed more often, and is transported approximately 145 miles farther; is not only unjust and unreasonable, but obviously arbitrary.

Our next observation is that we do not believe that this Court intended to construe the Act to mean that no separation of property is necessary in a case like the present one. In the *Hope* case, 320 U. S. 591, this Court said:

> "* * * The Committee Report stated that the Act provided 'for regulation along recognized and more or less standardized lines' and that there was 'nothing novel in its provisions.'"

It cannot be denied that property separations were recognized and standard procedures in rate making at the time of the adoption of the Act. Even though it be claimed for the Commission that it now possesses some mysterious instinct for reasonable rates, there is nothing in the Act to support any construction that the Commission can so fix rates without regard to such standards, and we do not interpret this Court's decisions as placing any such construction upon the Act.

But if the Act be construed as containing no such standards

and requirements, then it amounts to a naked delegation of the legislative power of Congress, contrary to the Constitution. Either it does contain such standards, in which case the Order is invalid because of their nonobservance, or it does not include such standards, in which case the whole Act and all orders based thereon are void because of such an unconstitutional delegation of legislative power.

No appraisal by this Court of the "end result" or "impact" of the Order, or of the rates fixed as being reasonable, can possibly excuse the admitted failure to make any separation of property, and the consequent violation of constitutional and statutory limitations. To put any such construction on the statute, and to approve any such order, would not only make Congressmen out of the members of the Power Commission, but would grant to them an immunity from constitutional limitation that even Congress itself does not possess.

THE RELATIONSHIP BETWEEN THE ORDER IN THIS CASE AND THAT INVOLVED IN CANADIAN'S CASE, No. 380.

In our petition for certiorari we called attention to the fact that Canadian River Gas Company was simultaneously filing a petition for certiorari, and that the two petitions were made on a joint Printed Record in the Circuit Court of Appeals, and that the two cases were companion cases. On page 9 of Colorado Interstate's petition we said:

> "A part of the reduction of $2,065,000 per year ordered by the Commission as against your petitioner is based upon a reduction ordered in the Canadian case in the price of gas sold by Canadian to petitioner in the amount of $551,000 per annum. In the companion case involving Canadian, it is contended that the Commission and the Court erred in ordering and approving this reduction in the cost of gas, and should Canadian be sustained in its contention that this reduction of $551,000 should not have been ordered, in whole or in part, then it would necessarily follow that the $2,065,000 reduction should be reduced accordingly, and this is a very special reason why, as already indicated, the two petitions for certiorari should be considered together."

This is all the more important now that this Court on petition for rehearing has enlarged the issues to be reviewed in Canadian's case to include three additional questions, because if for any one of the reasons assigned by Canadian in such enlarged review it should be held that the Commission's order reducing the price of gas charged by Canadian to Colorado Interstate is erroneous, then it would follow that the $2,065,000 reduction ordered in Colorado Interstate's case should be reduced accordingly.

When an order is entered in this case it should require the Commission to take cognizance of any revision of the reduction ordered in the Canadian case, and should require the Commission correspondingly to reduce the ordered reduction made by it against Colorado Interstate.

CONCLUSION.

For the reasons set forth herein, the judgment of the Circuit Court of Appeals should be set aside and the case remanded with instructions to enjoin the Order of the Commission.

Respectfully submitted,

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January 8, 1945.

APPENDIX A.

The pertinent provisions of the Natural Gas Act of 1938 (52 Stat. 821, et seq.; Title 15, U.S.C.A., Sec. 717) are as follows:

Sec. 1 (b). "The provisions of this Act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas."

Section 4 (a). "All rates and charges made, demanded, or received by any natural-gas company for or in connection with the transportation or sale of natural gas subject to the jurisdiction of the Commission, and all rules and regulations affecting or pertaining to such rates or charges, shall be just and reasonable, and any such rate or charge that is not just and reasonable is hereby declared to be unlawful.

(b). "No natual-gas company shall, with respect to any transportation or sale of natural gas subject to the jurisdiction of the Commission, (1) make or grant any undue preference or advantage to any person or subject any person to any undue prejudice or disadvantage, or (2) maintain any unreasonable difference in rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service.

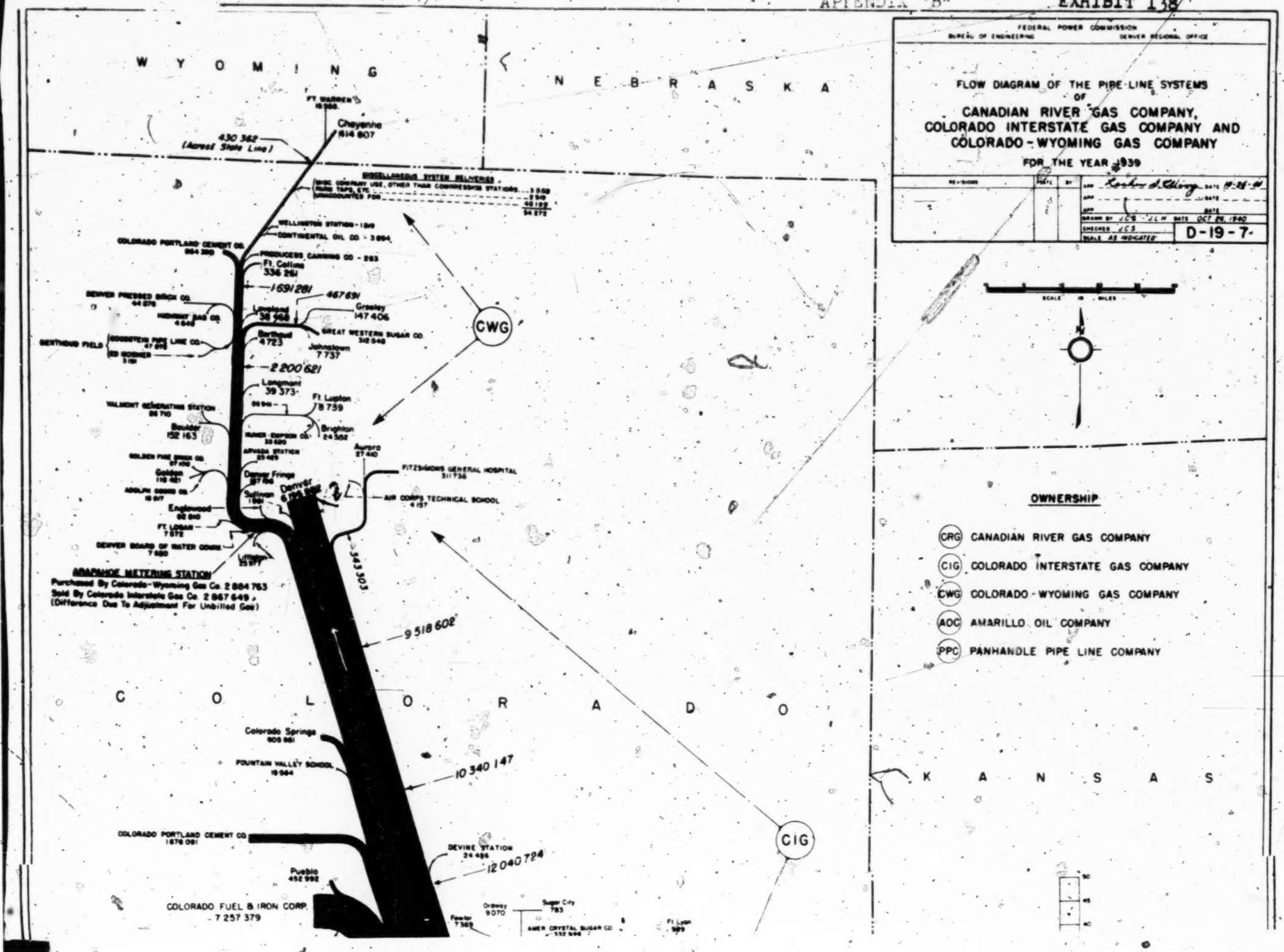
(c). "Under such rules and regulations as the Commission may prescribe, every natural-gas company shall file with the Commission, within such time (not less than sixty days from the date this Act takes effect) and in such form as the Commission may designate, and shall keep open in convenient form and place for public inspection, schedules showing all rates and charges for any transportation or sale subject to the jurisdiction of the Commission, and the classifications, practices, and regulations affecting such rates and charges, together with all contracts which in any manner affect or relate to such rates, charges, classifications, and services."

Section 5 (a). "Whenever the Commission, after a hearing had upon its own motion or upon complaint of any State, municipality, State commission, or gas distributing company, shall find that any rate, charge, or classification demanded, observed, charged, or collected by any natural-gas company in connection with any transportation or sale of natural gas, subject to the jurisdiction of the Commission, or that any rule, regulation, practice, or contract affecting such rate, charge, or classification is unjust, unreasonable, unduly discriminatory, or preferential, the Commission shall determine the just and reasonable rate, charge, classification, rule, regulation, practice, or contract to be thereafter observed and in force, and shall fix the same by order: *Provided, however*, That the Commission shall have no power to order any increase in any rate contained in the currently effective schedule of such natural gas company on file with the Commission, unless such increase is in accordance with a new schedule filed by such natural gas company; but the Commission may order a decrease where existing rates are unjust, unduly discriminatory, preferential, otherwise unlawful, or are not the lowest reasonable rates."

Section 6 (a). "The Commission may investigate and ascertain the actual legitimate cost of the property of every natural-gas company, the depreciation therein, and, when found necessary for rate-making purposes, other facts which bear on the determination of such cost or depreciation and the fair value of such property."

Section 19 (b). "Any party to a proceeding under this Act aggrieved by an order issued by the Commission in such proceeding may obtain a review of such order in the circuit court of appeals of the United States for any circuit wherein the natural-gas company to which the order relates is located or has its principal place of business, or in the United States Court of Appeals for the District of Columbia, by filing in such court, within sixty days after the order of the Commission upon the application for rehearing, a written petition praying that the order of the Commission be modified or set aside in whole or in part. A copy of such petition shall forthwith be served upon any member of the Commission and thereupon the Commission shall certify and file with the

court a transcript of the record upon which the order complained of was entered. Upon the filing of such transcript such court shall have exclusive jurisdiction to affirm, modify, or set aside such order in whole or in part. No objection to the order of the Commission shall be considered by the court unless such objection shall have been urged before the Commission in the application for rehearing unless there is reasonable ground for failure so to do. The finding of the Commission as to the facts, if supported by substantial evidence, shall be conclusive. If any party shall apply to the court for leave to adduce additional evidence, and shall show to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for failure to adduce such evidence in the proceedings before the Commission, the court may order such additional evidence to be taken before the Commission and to be adduced upon the hearing in such manner and upon such terms and conditions as to the court may seem proper. The Commission may modify its findings as to the facts by reason of the additional evidence so taken, and it shall file with the court such modified or new findings, which if supported by substantial evidence, shall be conclusive, and its recommendation, if any, for the modification or setting aside of the original order. The judgment and decree of the court, affirming, modifying, or setting aside, in whole or in part, any such order of the Commission, shall be final, subject to review by the Supreme Court of the United States upon certiorari or certification as provided in sections 239 and 240 of the Judicial Code, as amended (U.S.C., title 28, secs. 346 and 347)."


WYOMING
NEBRASKA
COLORADO
KANSAS
Cheyenne
814 807
430 362
(Across State Line)
MISCELLANEOUS SYSTEM DELIVERIES
WELLINGTON STATION - 1 549
CONTINENTAL OIL CO. - 3 894
COLORADO PORTLAND CEMENT CO.
PRODUCERS CANNING CO. - 283
Ft. Collins
336 261
1 691 281
467 691
Loveland
38 908
Greeley
147 406
GREAT WESTERN SUGAR CO.
342 948
Berthoud
4 723
Johnstown
7 737
2 200 621
Longmont
39 373
Ft. Lupton
8 739
Brighton
24 582
Boulder
152 163
Aurora
27 440
FITZSIMONS GENERAL HOSPITAL
311 756
AIR CORPS TECHNICAL SCHOOL
4 157
Denver Fringe
Denver
6 178 582
Englewood
Ft. Logan
7 572
ARAPAHOE METERING STATION
Purchased By Colorado-Wyoming Gas Co. 2 884 763
Sold By Colorado Interstate Gas Co. 2 867 649
(Difference Due To Adjustment For Unbilled Gas)
543 303
9 518 602
Colorado Springs
805 881
FOUNTAIN VALLEY SCHOOL
10 340 147
COLORADO PORTLAND CEMENT CO.
1 676 081
DEVINE STATION
24 486
12 040 724
Pueblo
452 992
COLORADO FUEL & IRON CORP.
7 257 379
Ft. Lyon
CWG
CIG
FEDERAL POWER COMMISSION
BUREAU OF ENGINEERING
DENVER REGIONAL OFFICE
FLOW DIAGRAM OF THE PIPE LINE SYSTEMS
OF
CANADIAN RIVER GAS COMPANY,
COLORADO INTERSTATE GAS COMPANY AND
COLORADO - WYOMING GAS COMPANY
FOR THE YEAR 1939
DRAWN BY J.C.S. J.L.H. DATE OCT 26, 1940
CHECKED J.C.S.
SCALE AS INDICATED
D-19-7-
SCALE IN MILES
OWNERSHIP
CRG CANADIAN RIVER GAS COMPANY
CIG COLORADO INTERSTATE GAS COMPANY
CWG COLORADO - WYOMING GAS COMPANY
AOC AMARILLO OIL COMPANY
PPC PANHANDLE PIPE LINE COMPANY

FILE COPY

FEB 2 1945

CLERK

IN THE

Supreme Court of the United States

OCTOBER TERM, 1944.

No. 379.

COLORADO INTERSTATE GAS COMPANY, a Corporation,
Petitioner,

v.

FEDERAL POWER COMMISSION, ET AL., *Respondents.*

REPLY BRIEF OF PETITIONER.

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February 2, 1945.

PRESS OF BYRON S. ADAMS, WASHINGTON, D. C.

IN THE

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v.

FEDERAL POWER COMMISSION, ET AL., *Respondents.*

REPLY BRIEF OF PETITIONER.

The Commission, commencing on Page 54 of its Brief, assumes without argument or proof that it is vested with administrative discretion in the matter of allocation. As to sales within its jurisdiction, Petitioner does not dispute that proposition. Here, however, the question relates to the Commission's power over business not subject to its jurisdiction. In that respect the statutory limitations must be given effect. This Court held in the case of *Siler v. L. & N. Railway Company*, 213 U. S. 175, as follows:

> "The Commission as an extraordinary tribunal of the State must have the power therein exercised conferred by a statute in language free from doubt. The

power is not to be taken by implication; it must be given by language which admits of no other reasonable construction."

Additional authorities supporting this proposition are cited on page 34 of the Brief of Canadian River Gas Company, Petitioner in No. 380.

Whatever the Commission's administrative discretion in the adoption of a method of allocation relating to sales under its jurisdiction, it is not true that Congress has left to the expert judgment of the Commission any discretion with respect to sales of gas for consumption. The decisions of this Court in the *Minnesota Rate Cases*, 230 U. S. 352 and in *Smith* v. *Illinois Bell Telephone Company*, 282 U. S. 133, clearly distinguish between the power of a regulatory authority over business subject to its jurisdiction and that business not so subject.

Commission Counsel attempts to distinguish these cases by characterizing them as decisions concerning the power of State agencies over interstate operations, which are constitutionally immune from State regulation. Whatever the power of Congress may be over sales to consumers by a natural gas company, it is certain that as yet such sales are constitutionally immune from Federal Power Commission regulation. The seizure and exercise of authority by the Commission over business not committed by Congress to its jurisdiction is in violation of the 5th Amendment to the Federal Constitution. The duty of the Commission here was first to determine the property used and useful in serving the regulated business and to charge that business with the full costs of the construction and operation of that property.

THE COMMISSION'S ALLOCATION.

Respondent seeks to bring this proceeding within the administrative discretion which it is authorized to exercise in order that Petitioner may be denied its claim of constitutional violation. The reasonableness of the allocation used

by the Commission is not the issue here. Rather, we must determine if the allocation used resulted in a violation of the jurisdictional prohibitions of the Act.

We do not contend that the treatment by the Commission of a transmission line as a unit is beyond its jurisdiction when related solely to the sales over which it has jurisdiction. Such jurisdictional sales were involved in the cases cited by Respondent on Pages 69, 71 and 73 of its Brief. However, when the Commission seeks to charge the unregulable business with costs of construction and operation of property not used and useful in serving that business, it is exceeding its jurisdiction and taking from this Petitioner earnings from that business which Congress has said it may keep. The fact that uniform rates have been established by Petitioner for gas sold at wholesale for distribution in Pueblo, Colorado Springs and Denver, recognizes the treatment of the transmission line as a unit where the sales are subject to jurisdiction. However, the prices charged industrial customers by Petitioner are not uniform, they are not in relation to the quantity of property used but are based on the competitive value of natural gas. These contracts are found in the record Vol. 1, Pages 936 to 956.

THE LACK OF FINDINGS.

Apparently Respondent recognizes the inadequacy of the findings made in respect of the costs assigned to this Petitioner in its opinion. The testimony on allocation of the Commission witness is found in Vols. 4 and 5 of the record, Pages 2316 to 2450. This testimony and the exhibit of the witness treat the operations of Canadian River Gas Company and Petitioner as a unit. Counsel for the Commission now attaches to their Brief as an Appendix certain schedules for the purpose of supplying the information which should have been included in its findings. These are not a part of the record, and when Petitioner requested the Commission to furnish it with such data at the time the order was entered the request was preemptorily refused.

We submit that the Commission cannot now cure that error in its order by such means.

CONCLUSION

The Commission clearly has no jurisdiction over the business carried on by this Petitioner in the sale of gas for consumption by its customers. The Brief of Respondent, Pages 20 and 21, quotes from the report of the House Committee that portion stating that the exceptions contained in Section 1(b) were not necessary stating that "since no jurisdiction is given to the Commission to regulate sales to consumers, the Commission would have no authority over distribution, whether or not local in character." In the Annual Report of the Commission for the year 1940 the lack of jurisdiction over such sales is stated and discussed. This being so, the Commission does not have the discretion which is accorded it when acting within the ambit of its statutory authority.

The use of an allocation method which fails to segregate property on the basis of use and places costs on the non-jurisdictional business, is wholly beyond the Commission's authority. The dollar result is not the only important consideration since it is a matter of principle we are discussing. Whatever may be the dollar result in this particular case, there should now be established the correct principles to govern future Commission action. Large quantities of gas may be sold for consumption by this company and other Companies in the future and a wrong interpretation of the Commission's authority in this case might have serious financial repercussions in future years.

We respectfully submit that the judgment of the Circuit Court of Appeals should be reversed and the case should be remanded to the Commission with instructions to determine the property used and useful in the service under its

jurisdiction under the principles contended for by this Petitioner and heretofore announced by this Court.

Respectfully submitted,

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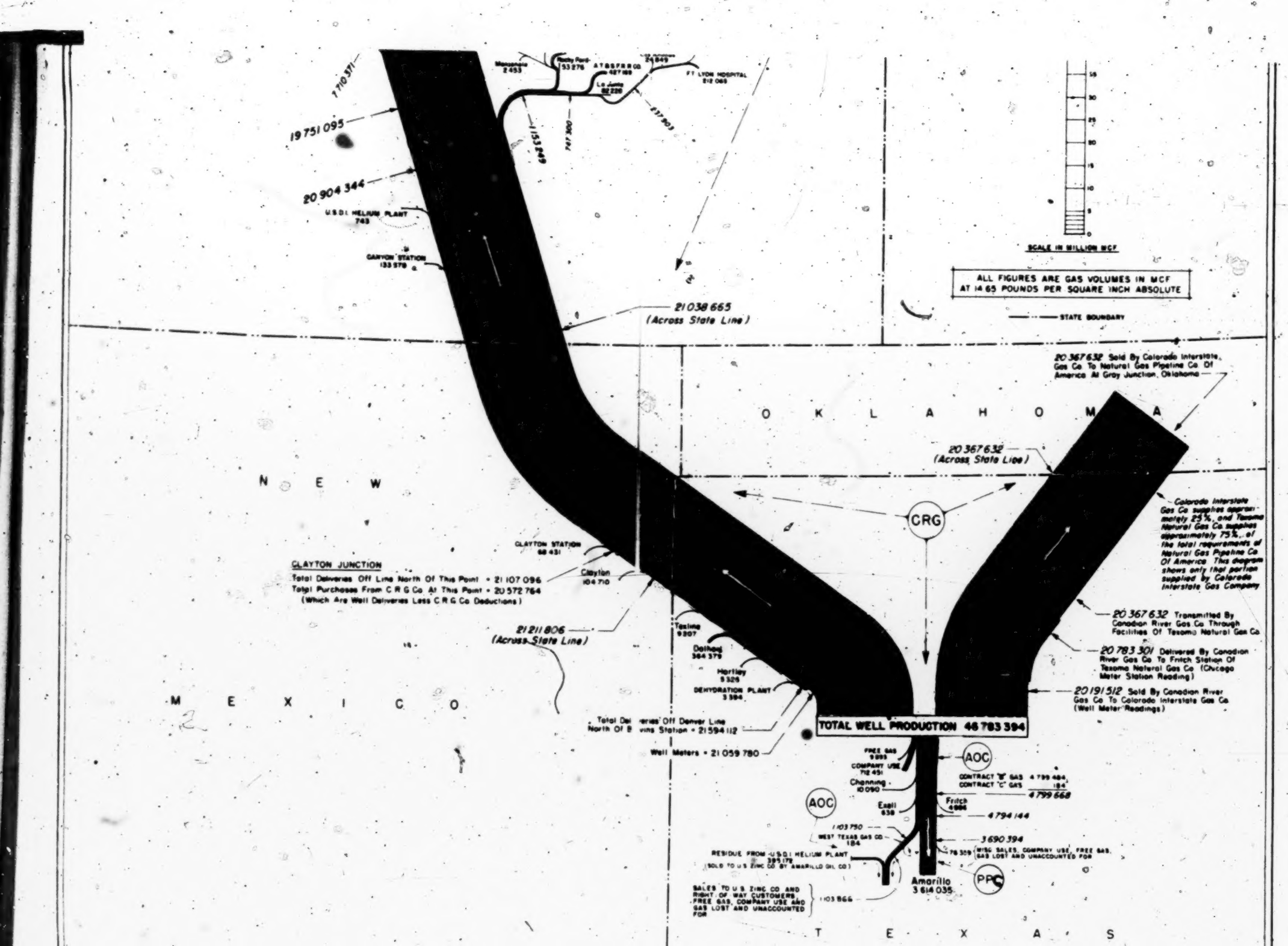
1 710 371
19 751 095
20 904 344
U.S.D.I. HELIUM PLANT 743
CANYON STATION 133 570
Mansanola 2 453
Santa Fe 53 276
A T & S F R R CO 487 189
La Junta 82 220
Ft Lyon 24 849
FT LYON HOSPITAL 242 069
1 153 849
300 741
217 903
21 038 665 (Across State Line)
SCALE IN MILLION MCF
ALL FIGURES ARE GAS VOLUMES IN MCF AT 14 65 POUNDS PER SQUARE INCH ABSOLUTE
STATE BOUNDARY
20 367 632 Sold By Colorado Interstate Gas Co To Natural Gas Pipeline Co Of America At Gray Junction, Oklahoma
O K L A H O M A
20 367 632 (Across State Line)
CRG
Colorado Interstate Gas Co supplies approximately 25%, and Tesoma Natural Gas Co. supplies approximately 75%, of the total requirements of Natural Gas Pipeline Co Of America This diagram shows only that portion supplied by Colorado Interstate Gas Company
20 367 632 Transmitted By Canadian River Gas Co Through Facilities Of Tesoma Natural Gas Co
20 783 301 Delivered By Canadian River Gas Co To Fritch Station Of Tesoma Natural Gas Co (Chicago Meter Station Reading)
20 191 512 Sold By Canadian River Gas Co To Colorado Interstate Gas Co (Well Meter Readings)
N E W
M E X I C O
CLAYTON JUNCTION
Total Deliveries Off Line North Of This Point = 21 107 096
Total Purchases From C R G Co At This Point = 20 572 764
(Which Are Well Deliveries Less C R G Co Deductions)
CLAYTON STATION 68 431
Clayton 104 710
21 211 806 (Across State Line)
Tesina 9 807
Dalhart 364 579
Hartley 9 326
DEHYDRATION PLANT 3 394
Total Deliveries Off Denver Line North Of Stevens Station = 21 594 112
Well Meters = 21 059 780
TOTAL WELL PRODUCTION 46 783 394
FREE GAS 9 899
COMPANY USE 712 451
Channing 10 090
AOC
CONTRACT "B" GAS 4 799 484
CONTRACT "C" GAS 184
4 799 668
Exell 638
Fritch 6 006
4 794 144
1 103 750
WEST TEXAS GAS CO 184
3 690 394
RESIDUE FROM U.S.D.I. HELIUM PLANT 385 178
(SOLD TO U S ZINC CO BY AMARILLO OIL CO)
78 309 (MISC SALES, COMPANY USE, FREE GAS, GAS LOST AND UNACCOUNTED FOR
SALES TO U S ZINC CO AND RIGHT OF WAY CUSTOMERS FREE GAS, COMPANY USE AND GAS LOST AND UNACCOUNTED FOR
1 103 866
Amarillo 3 614 035
PPG
T E X A S

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CITATIONS

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In the Supreme Court of the United States

OCTOBER TERM, 1944

NOS. 379 AND 380

COLORADO INTERSTATE GAS COMPANY, A CORPORATION, PETITIONER

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND CANADIAN RIVER GAS COMPANY

CANADIAN RIVER GAS COMPANY, A CORPORATION, PETITIONER

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND COLORADO INTERSTATE GAS COMPANY

ON PETITIONS FOR WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE TENTH CIRCUIT

BRIEF FOR THE FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, AND PUBLIC SERVICE COMMISSION OF WYOMING, IN OPPOSITION

OPINIONS BELOW

The opinion and orders of the Federal Power Commission (R. I, 140–192) are reported in 43 P. U. R. (N. S.) 205. The opinion of the circuit court of appeals (R. VIII, 5066–5094) is reported in 142 F. (2d) 943.

JURISDICTION

The judgment of the circuit court of appeals was entered July 8, 1944 (R. VIII, 5094). The petitions for writs of certiorari were filed on August 22, 1944. Jurisdiction of this Court is invoked under Section 19 (b) of the Natural Gas Act, and Section 240 (a) of the Judicial Code, as amended by the Act of February 13, 1925.

QUESTIONS PRESENTED

1. Whether the Commission, in determining Canadian's rate base, properly disallowed that portion of Canadian's claimed cost of gas producing properties and leaseholds which was found to consist of profits obtained by Canadian's affiliates, and, in determining Colorado's rate base, properly disallowed the amounts claimed as cost to Colorado of certain gas purchase and sale contracts, which amounts were also found to be intercompany profits.

2. Whether the Commission's findings with respect to Canadian's gas reserves are supported by substantial evidence.

3. Whether the allocations of cost made by the Commission between petitioners' intrastate and direct industrial sales, and their interstate sales for resale, are appropriate.

4. Whether the rates prescribed for petitioners are confiscatory.

STATUTES INVOLVED

The applicable portions of the Natural Gas Act are set forth in the Appendix, *infra*, pp. 23–27.

STATEMENT

The proceedings before the Commission arose out of a complaint filed on December 22, 1938, by the City and County of Denver, Colorado, against Public Service Company of Colorado, and petitioners, Colorado Interstate Gas Company ("Colorado") and Canadian River Gas Company ("Canadian"), alleging that the rates charged by Colorado for natural gas purchased from Canadian and sold to Public Service Company of Colorado for resale in Denver were excessive, unreasonable, unjust, and discriminatory (R. I. 302). On January 9, 1939, the Public Service Commission of Wyoming filed a complaint with the Commission alleging that the rates of Canadian and Colorado for natural gas sold to Colorado-Wyoming Gas Company for resale to Cheyenne Light, Fuel and Power Company, which distributes such gas in Cheyenne, Wyoming, were unjust, unreasonable, and discriminatory (R. I, 333). The Commission,

on its own motion, instituted an investigation, on March 14, 1939, of all interstate wholesale rates and charges of petitioners, Colorado and Canadian, and of Colorado-Wyoming Gas Company (R. I, 317).[1]

Hearings on the complaints and the investigation were consolidated by the Commission, begun on October 28, 1940, and held on 102 days (R. I, 141). After submission of briefs, the Commission, on March 18, 1942, issued its opinion and orders here under review, finding that the interstate wholesale rates of Canadian were excessive by $561,000 per year and those of Colorado by $2,065,000 per year, and requiring petitioners to reduce such rates accordingly (R. I, 185–192).[2] The following facts, found by the Commission, are clearly established by the evidence:

The Petitioners.—Canadian and Colorado were incorporated and financed, and are operated pursuant to an agreement dated April 5, 1927, between

[1] On April 12, 1939, petitioners filed with the Commission a joint application praying for a stay of the order instituting the investigation, which the Commission denied by order dated May 9, 1939. A petition to review the latter order was dismissed by the Circuit Court of Appeals for the Tenth Circuit in *Canadian River Gas Company, et al.* v. *Federal Power Commission*, 110 F. (2d) 350, rehearing denied, 113 F. (2d) 1010, certiorari denied, 311 U. S. 693.

[2] Canadian's reduction includes $551,000 which is applicable to its sales to Colorado, and the portion of this amount allocated to Colorado's interstate sales for resale is included in the $2,065,000 reduction prescribed for Colorado (R. I, 176, 177).

Southwestern Development Company ("Southwestern"), Standard Oil Company (N. J.) ("Standard") and Cities Service Company ("Cities Service") (R. I, 381–401). By this agreement Southwestern, Standard and Cities Service pooled their respective gas reserves, finances and distribution markets, to bring natural gas from the Panhandle field to the Denver and Pueblo, Colorado, markets. This pooling was effected in the following manner:

Southwestern, through a wholly owned subsidiary, Amarillo Oil Company ("Amarillo"), controlled certain gas leaseholds and producing properties in the Texas Panhandle field, which Southwestern agreed to transfer to a new subsidiary (Canadian) which it would organize for that purpose (R. I, 381–382). Standard agreed to form a new corporation (Colorado) and to finance its construction of pipeline facilities to connect with and transport gas from Canadian's facilities to the Denver market and intermediate points including Pueblo (R. I. 385). Cities Service was to procure franchises through its subsidiaries under which such natural gas could be distributed in Denver and Pueblo (R. I, 391). It was agreed that Canadian would sell gas to Colorado at "cost" for at least 20 years from 1928, such "cost" to include amortization of all of Canadian's indebtedness over the twenty-year period and to be decreased by any profits Canadian might obtain from other sources, including local

sales permitted by Colorado (R. I, 392; R. II, 719–732). Canadian, under the "cost" contract, would have nothing available for dividends on its common stock during the first 20 years (R. III, 1436) and so long thereafter as Colorado might choose to purchase its gas at "cost" (R. III, 1435).

Pursuant to the agreement, Southwestern organized Canadian to which were transferred the gas leaseholds and producing properties of Amarillo, also a wholly-owned subsidiary of Southwestern. The cash consideration for this transfer was $5,000,000, stipulated in the tripartite agreement, and advanced by Standard for this purpose at 6% interest (R. I, 392, R. V, 2936–2937).[3] To repay the advance and to finance the acquisition and construction of additional facilities, Canadian issued $11,000,000 of twenty-year 6% sinking fund bonds, which Colorado purchased from the proceeds of its $19,200,000 of twenty-year 6% sinking fund bonds, which, in turn, were purchased by Standard, in accordance with the 1927 agreement (R. I, 496).

As had been further agreed, Standard organized Colorado with $2,000,000 par value of 6% preferred stock and 1,250,000 shares of no par common stock, and paid $1,000,000 in cash for half of the preferred stock and another $1,000,000 in

[3] As hereinafter discussed, *infra*, pp. 12–13, the Commission, in determining Canadian's rate base, disallowed the $3,249,030 portion of this amount which was in excess of the $1,750,970 cost of such properties to Amarillo and its affiliates.

cash for its portion (42½%) of Colorado's common stock (R. II, 626). Southwestern (as nominee of Canadian) also received half of Colorado's preferred stock and 42½% of the common stock (R. II, 626), the remaining 15% of the common stock being issued to Cities Service (R. I, 395–396, R. II, 627). It was implicit in the tripartite agreement, therefore, that Southwestern, Standard, and Cities Service would receive their profits from the operations of the enterprise by way of dividends on Colorado's stock.

The preferred stock was recorded on Colorado's books at the par value of $2,000,000 and the no par common stock (1,250,000 shares) was recorded at $2,352,941.17, based on what Standard had paid in cash for its 42½% (531,250 shares) of such stock (R. II, 627). These entries were balanced by charges to Colorado's asset accounts totalling $4,352,941.17 (R. II, 626, 627; R. III, 1427).[4]

The Commission's Orders.—In requiring Canadian to reduce its interstate wholesale rates by $561,000 annually, the Commission found the actual legitimate cost of the Company's plant at December 31, 1939, to be $10,784,464 (R. I, 186).

[4] As hereinafter discussed, *infra*, pp. 11–12, the Commission, in determining Colorado's rate base, disallowed the $2,352,941.17 portion of this amount (R. I, 152), which was in excess of the $2,000,000 which Standard paid in cash for its share of Colorado's preferred and common stock.

From this amount it deducted $2,134,629 for accrued depreciation and depletion as of that date, and added $150,738 for working capital and $571,923 covering gross plant additions to December 31, 1941. This resulted in a rate base of $9,372,496, which was rounded to $9,375,000 (R. I, 187). In requiring Colorado to reduce its interstate wholesale rates by $2,065,000 annually, the Commission found the actual legitimate cost of the company's plant at December 31, 1939, to be $11,879,409 (R. I, 190). From this amount it deducted $2,793,410 for accrued depreciation and amortization as of that date; and added $109,065 for working capital and $337,000 covering gross plant additions to December 31, 1941. This resulted in a rate base of $9,532,064, which was rounded to $9,535,000 (R. I, 190). Petitioners' estimates of reproduction cost were considered by the Commission and were found to be too conjectural to have probative value (R. I, 148). The Commission further found that actual costs, which could be readily determined from petitioners' accounting records, represented the best and only reliable evidence as to rate base (R. I, 148).

The Commission allowed a 6½% return on the rate base of each petitioner, which return it found to be "fair and reasonable" (R. I, 187, 190), noting that Colorado in 1940 had refinanced its outstanding bonded indebtedness at an interest rate of 2¾% (R. I, 173). With certain minor

exceptions, the Commission allowed each petitioner the taxes, operating expenses, exploration and development costs, shown by its books for the test year, 1939, adjusted to reflect accrual accounting (R. I, 166–169; R. VI, 3387). The Commission also allowed amounts to amortize rate case expenses over a five-year period (R. I, 166, 168). Annual allowances for depreciation, depletion and amortization were determined on the basis of the economic service lives of petitioners' properties,[5] such allowances being consistent with the amounts deducted for accrued depreciation, depletion and amortization in arriving at the rate bases (R. I, 160, 156). The Commission found that, based on the present and expected future rate of production, Canadian's gas reserves would last 53 years after 1939 (R. I, 159), and rejected, as not supported by any reliable evidence, petitioners' contentions that the enterprise would have to be abandoned by 1956 (R. I, 160).

In arriving at the amount of the reductions in the interstate wholesale rates, the Commission made an allocation of the cost of service of each petitioner, including in such cost the fair return on the rate base, and determined the excess of revenues over costs for intrastate sales, direct industrial sales, and interstate sales for resale (R. I, 176–177).

[5] Depletion of Canadian's production properties was computed by the unit-of-production method based on its recoverable gas reserves (R. I, 160).

The petitioners, on April 14, 1942, applied for a rehearing and stay of the Commission's orders (R. I, 203, 238, 277, 284), and on May 13, 1942, the Commission issued its supplemental opinion and orders denying such petitions (R. I, 296–301). Thereafter, petitions for review were filed in the Circuit Court of Appeals for the Tenth Circuit, which heard argument on September 14–15, 1943, handed down its opinion on May 16, 1944, and entered its judgment on July 8, 1944, affirming the Commission's orders (R. VIII, 5065–5094).

ARGUMENT

In any rate proceeding, and particularly in cases such as these which involve an enterprise with unusually complicated intercompany arrangements, errors can readily be alleged and controversies arise in respect of many of the adjustments which the Commission may be compelled to make in determining just and reasonable rates. We submit that the only issues posed by the numerous questions raised in the petitions which are of significance at this stage of the proceedings are the Commission's elimination of intercompany profits from the rate bases, the sufficiency of the evidence to support the findings as to gas reserves, the method of allocation, and the question of confiscation.

1. *The Commission properly eliminated the intercompany profits from the rate bases of Canadian and Colorado.*—As has already been noted,

Southwestern, Cities Service and Standard, acting under the 1927 agreement, pooled their respective gas reserves, distribution markets and finances, and agreed upon an apportionment of the profits of the joint enterprise. Standard paid $2,000,000 in cash for its half of Colorado's preferred stock and its 42½% of the common stock (R. II, 626). This equity capital was reflected in Colorado's rate base and accordingly allowed by the Commission. But neither Southwestern nor Cities Service paid any cash consideration for their portions of Colorado's stocks (R. II, 628). The preferred stock (50%) and the common stock (42½%) issued to Southwestern was recorded on Colorado's books at $2,000,000 and the common stock (15%) issued to Cities Service was recorded at $352,941.17 (R. II, 627). The book value thus assigned to this stock was based upon what Standard had paid in cash for its portion (R. II, 627), and was balanced by a $2,352,941.17 charge to Colorado's plant accounts (R. III, 1749). This charge, which was recorded as "Cost of Contracts" (R. II, 628), did not represent any investment of cash or tangible property in the enterprise and was properly disallowed by the Commission, which realistically recognized it as promoters' profit. Cf. *Northwestern Electric Company* v. *Federal Power Commission*, 321 U. S. 119. Moreover, any arm's length bargaining between the parties to the 1927 agreement was

limited to the division of profits to be effected through the distribution of Colorado's stock. *Niagara Falls Power Company* v. *Federal Power Commission*, 137 F. (2d) 787, 793–794 (C. C. A. 2), certiorari denied, 320 U. S. 792.

Similarly, with respect to the $5,000,000 of cash allotted to Southwestern under the agreement, the court below properly affirmed the Commission's disallowance of the $3,249,030 portion thereof which was found to be in excess of actual cost to Amarillo and its affiliates (R. I, 150). There is no merit in Canadian's contentions that Southwestern's transfer of these properties, in accordance with the 1927 agreement, from one wholly-owned subsidiary (Amarillo) to another (Canadian), constituted a purchase and sale, or that the $5,000,000 represented the purchase price agreed upon "after prolonged arm's-length bargaining" (Can. Pet. 18). On the contrary, the record shows that this allotment of cash was made to Southwestern because of its poor financial condition (R. I, 520, 559) and was as much a part of Southwestern's share in the profits of the joint enterprise as its allotment of Colorado's stock (R. I, 392). The $5,000,000 was actually paid by Standard directly to Prairie Oil and Gas Company, a holding company affiliated with Southwestern, and was used by Prairie in discharging certain obligations of Southwestern and Amarillo, in advancing $1,000,000 to West

Texas Gas Company, and in furnishing $310,000 to Amarillo (R. V, 2937, 2932–35). Canadian was not formed until after the $5,000,000 had been paid, and, significantly, none of the companies involved paid any income tax as a result of the so-called "sale" (R. V, 2936, 2638). The intercompany profit which disappeared on the consolidated tax return of Southwestern and its subsidiaries, including Amarillo and Canadian, "is too lacking in substance to be treated as an actual cost." *Pennsylvania Power & Light Company* v. *Federal Power Commission,* 139 F. (2d) 445, 450 (C. C. A. 3), certiorari denied, 321 U. S. 798. Moreover, until 1939, Canadian carried the intercompany profit on its books as "Appreciation".[6] (R. V, 2630–2632).

The "no profits to affiliates" rule, which the Commission here applied, precludes any allowance in the rate bases for the items in question. The propriety, as well as the constitutionality, of the Commission's action in enforcing the rule has been before the courts on numerous occasions, and has uniformly been upheld. *Alabama Power Company* v. *McNinch,* 94 F. (2d) 601, 608, 615, 618 (App. D. C.); *Alabama Power Company* v. *Federal Power Commission,* 128 F. (2d) 280, 284

[6] The Commission's Uniform System of Accounts under the Natural Gas Act (p. 17), like that prescribed under the Federal Power Act (p. 19), does not permit the recording of appreciation in the plant accounts. *Northwestern Electric Company* v. *Federal Power Commission,* 321 U. S. 119.

(App. D. C.), certiorari denied, 317 U. S. 652; *Alabama Power Company* v. *Federal Power Commission*, 134 F. (2d) 602, 609 (C. C. A. 5); *Puget Sound Power & Light Co.* v. *Federal Power Commission*, 137 F. (2d) 701, 703 (App. D. C.); *Niagara Falls Power Company* v. *Federal Power Commission*, 137 F. (2d) 787, 793–794 (C. C. A. 2), certiorari denied, 320 U. S. 792; *Pennsylvania Power & Light Co.* v. *Federal Power Commission*, 139 F. (2d) 445, 450 (C. C. A. 3), certiorari denied, 321 U. S. 798.

2. *The Commission's allowances for depreciation and depletion are adequate.*—The principal controversy in respect to depreciation and depletion arises from the Commission's finding that Canadian's gas reserves have an estimated life of 53 years from 1939. Canadian contends that because of drainage by other wells in the Panhandle field, its reserves will be exhausted within 27 years from 1939, which it now claims to be the maximum life of the Panhandle field as a whole. Canadian further contends that the Commission ignored the question of drainage and thus erred as a matter of law (Pet. 36–37). We submit that these contentions are without merit.

The Commission is entitled to evaluate the evidence and to draw rational inferences therefrom, and the finding by the Commission that Canadian's gas reserves had a potential life of 53 years clearly has ample support in the record.

The Commission's expert calculated the recoverable reserves by the "pressure decline method," the soundness of which was recognized by this Court in *Dayton Power and Light Company* v. *Commission,* 292 U. S. 290, 306, and testified that on an assumed annual withdrawal of fifty billion cubic feet, Canadian's remaining reserves would last 73.7 years (R. VI, 3628–3629). The Commission considered Canadian's objections to this estimate, which included the contention that "account was not taken of the migration of gas under Canadian's acreage," and noted that theoretically such migration is automatically accounted for under the "pressure decline method" and is actually accounted for if the iso-baric maps are properly drawn (R. I, 158–159).

As the lower court properly held, "it nowhere appears that the Commission failed appropriately to weigh" the "existing volume, pressure differentials and consequent drainage, and other recovery factors" (R. VIII, 5091). The lower court also observed that the determination of Canadian's recoverable reserves necessarily involved "specialized and technical factors," as to which the informed judgment of the Commission, when supported by substantial evidence, should be controlling [Secs. 9 (a) and 19 (b) of the Act, *infra,* pp. 25–27] (R. VIII, 5092).

Moreover, as pointed out by the Commission in its opinion, "it makes little difference whether the

service life principle based on the longer expected life, or the company's amortization principle based upon a 1956 expiration, is adopted. The net results as to excess earnings are substantially the same, provided consistency is maintained in computing the annual expense and the accrued depreciation and depletion reserve requirement" (R. I, 160). As the lower court properly held, "there is no basis in this record on which it can be concluded that the determination of depreciation in the manner adopted by the Commission will result in any of these orders in its entirety causing a failure to restore the capital investment at the end of the term, and therefore no deprivation of property is involved" (R. VIII, 5089).

Certain incidental contentions which petitioners advance in this connection may be dealt with briefly. Canadian contends (Pet. 25) that it will be required to invest $6,500,000 in future replacements and Colorado contends (Pet. 23) that the depreciation allowance made to it will be inadequate to amortize future replacements. As this Court ruled in *Federal Power Commission* v. *Natural Gas Pipeline Company*, 315 U. S. 575, 587, n. 5 "the refusal to include in the rate base capital expenditures not yet made can not involve confiscation." It follows that amortization of such expenditures is likewise not required.

3. *The cost allocations made by the Commission are appropriate.*—Both Canadian and Colorado contend that the allocations of costs which the Commission made between regulable and non-

regulable sales did not comply with the jurisdictional requirements in Section 1 (b) of the Act (Appendix, *infra*, p. 23). Canadian's principal objection is that the Commission had no jurisdiction to reduce its charges to Colorado for gas which the latter resells directly to industrial customers (Pet. 27). An adequate answer to Canadian's view that such reduction "serves no useful purpose" (Pet. 39), is that the Act specifically applies to its interstate sales for resale "for domestic, commercial, *industrial,* or any other use" (Sec. 1 (b)). Moreover, the absence of jurisdiction over Colorado's direct industrial rates was recognized by the Commission, and only that portion of the annual reduction in Canadian's rates to Colorado properly allocable to Colorado's interstate sales for resale was reflected in the annual reduction prescribed for Colorado (R. I, 176, 177).

Colorado advances the contention (Pet. 23–30), in which Canadian joins (Pet. 40), that the Commission instead of making a determination of costs properly chargeable against the regulable sales, was required to make an allocation of property (Colo. Pet. 11). We submit that this contention is without merit. The decisions cited by Colorado (Pet. 24–28) cannot be read as precluding a federal administrative judgment as to the best method of allocation under the circumstances of a particular case. The Natural Gas Act does not prescribe any method of allocation, or even require

that any formal allocation be made. As the Commission noted, Canadian and Colorado failed to make a complete presentation of their entire operations "broken down between jurisdictional and non-jurisdictional operations." The Commission found that "all that can be accomplished by an allocation of physical properties can be attained by allocating costs including the return" (R. I, 175). This method, which the Commission termed "by far the most practical and business-like" (R. I, 175), was described in its opinion as follows: "* * * costs are divided essentially into two groups, fixed and variable. Fixed costs are largely joint costs which do not vary with volume of sales. The total amount of such costs are largely proportional to the maximum demand on the system or system capacity. Accordingly, these costs have been allocated basically in proportion to each customer's responsibility for the peak day demand. Variable costs are largely those that vary proportional to output or volume of sale. Accordingly, these costs have been allocated in proportion to volume of gas purchased by each customer." (R. I, 175-176). We submit that this method of allocation was, as the lower court observed, "a working one suitably adapted to the particular circumstances" (R. VIII, 5087).[7]

[7] Canadian's contention that by finding the cost of its facilities employed in the production and gathering of natural gas the Commission exceeded its jurisdiction under Section 1 (b) of the Act is without merit. Canadian's sales at wholesale in

4. *The Commission's orders do not involve confiscation.*—Canadian contends that any reduction in its rates is confiscatory because its contractual obligation to sell gas to Colorado at "cost" precludes any possibility of its making a profit under its existing rates (Pet. 19–20). But the alleged "cost" under the contract includes the amortization of Canadian's entire indebtedness [representing all its capital except its common stock, issued for $1.00 (R. II, 688)] over a twenty-year period, which is admittedly much less than the life of the enterprise. Thus, to the extent that such amortization exceeds proper depreciation and depletion,[3] Canadian is necessarily making substantial profits on which it has been required to pay an income tax (R. III, 1745). The fact that Colorado did not obligate itself under the contract to purchase Canadian's gas beyond the twenty-year period, and thus made it desirable for Canadian to amortize all its costs within that period, is no longer of any

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interstate commerce are subject to regulation under the Act. The Commission was required to fix rates that are just and reasonable. This it would be unable to do if it were not in a position to ascertain the rate base upon which to determine the reasonableness of the rates charged and, in order to determine the rate base, it was necessary to consider the production and gathering facilities. A similar argument was summarily rejected by this Court in *Federal Power Commission* v. *Hope Natural Gas Company*, 320 U. S. 591, 614, n. 25.

[3] At the end of the test year, 1939, Canadian's "cost" of gas under the contract had included amortization of debt totaling $9,073,565 (R. VI, 3581). The Commission deducted $2,134,629 for depreciation and depletion in finding Canadian's rate base (R. I, 161).

significance, since neither Colorado nor Canadian can abandon its interstate facilities or service without the prior approval of the Commission. Sec. 7 (b)). The contractual prohibition against Canadian's sale of gas without the consent of Colorado is likewise subject to the Commission's authority to require extensions of service (Sec. 7 (a)). Canadian complains, however, that it is left with the obligation of the contract without the ability to collect the income it will need thereunder (Pet. 33). The answer to this contention is to be found in *Chicago, B. & Q. R. R. Co.* v. *Iowa*, 94 U. S. 155, 162–163, where this Court held in a rate proceeding, that it was immaterial that the company, prior to regulation, "had pledged its income as security for the payment of debts incurred, and had leased its road to a tenant that relied upon the earnings for the means of paying the agreed rent."

Nor does the financial history of the enterprise sustain the validity of a "confiscation" argument on the part of Colorado or Canadian. All of the properties of both Colorado or Canadian were acquired or constructed with the proceeds of loans, with the exception of $2,000,000 of equity capital invested by Standard. Colorado by December 31, 1939, had paid dividends totalling $8,005,000 (R. III, 1691) and accumulated a depreciation reserve of $4,994,352.35, a reserve for amortization of contracts of $1,471,546.15, and an undistributed surplus of $2,479,133.92 (R. III,

1711). Moreover, by that date, Colorado's outstanding debt had been reduced to $8,865,000 represented by bonds (R. III, 1711), the interest on which was reduced to 2¾% in 1940 (R. II, 632). Canadian's financial condition is comparable. Its claimed "total cash investment" in plant of $15,220,744 at December 31, 1941, had been recovered, except for $4,368,703, in the "cost" of gas by December 31, 1941 (R. VI, 3581). The Commission's allowance of $838,157 for annual depreciation, depletion and return on plant (R. I, 171, 173), thus represents approximately 20% of Canadian's unrecovered claimed investment. We submit that under these circumstances there is no confiscation. See *Federal Power Commission* v. *Natural Gas Pipeline Company*, 315 U. S. 575, 578–579, and *Federal Power Commission* v. *Hope Natural Gas Company*, 320 U. S. 591, 603–606.[9]

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[9] Canadian's objections to the amount of revenues found available for return are similarly predicated upon the "cost" contract (Pet. 22–23). Contrary to the implication in the petition (p. 23), the Commission's accountant restated Canadian's revenues, as well as its expenses, during the test year on an accrual basis (R. VI, 3387). Canadian's contention that its revenues were overstated is accordingly based on the provision in the "cost" contract that any reduction in Canadian's costs necessarily reduces its rates to Colorado. Similarly, the $13,056.24 adjustment for profits to an affiliate in connection with extraction of gasoline (Pet. 23) was allocated exclusively to sales to Amarillo Oil Company at the wells (R. IV, 2317, 2382), and these rates were not affected by the Commission's order. Canadian's contentions with respect to the $26,350 increase in the Texas gross production

CONCLUSION

The decision below is correct and there is no conflict. We respectfully submit that the petitions for writs of certiorari should be denied.

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SEPTEMBER 1944.

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taxes (Pet. 24) were first raised in its brief in the court below. This amount, in any event, is more than offset by the Commission's allowance of $66,403 for Federal income tax for which there appeared to be no liability if Canadian's return were limited to that found fair and reasonable by the Commission (R. I, 297).

APPENDIX

The pertinent provisions of the Natural Gas Act of 1938, c. 556, 52 Stat. 821 (15 U. S. C. 717 *et seq.*), are as follows:

SEC. 1. (b) The provisions of this Act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas.

SEC. 5. (a) Whenever the Commission, after a hearing had upon its own motion or upon complaint of any State, municipality, State commission, or gas distributing company, shall find that any rate, charge, or classification demanded, observed, charged, or collected by any natural-gas company in connection with any transportation or sale of natural gas, subject to the jurisdiction of the Commission, or that any rule, regulation, practice, or contract affecting such rate, charge, or classification is unjust, unreasonable, unduly discriminatory, or preferential, the Commission shall determine the just and reasonable rate, charge, classification, rule, regulation, practice, or contract to be thereafter observed and in force, and shall fix the same by order: *Provided, however,*

That the Commission shall have no power to order any increase in any rate contained in the currently effective schedule of such natural gas company on file with the Commission, unless such increase is in accordance with a new schedule filed by such natural gas company; but the Commission may order a decrease where existing rates are unjust, unduly discriminatory, preferential, otherwise unlawful, or are not the lowest reasonable rates.

SEC. 6. (a) The Commission may investigate and ascertain the actual legitimate cost of the property of every natural-gas company, the depreciation therein, and when found necessary for rate-making purposes, other facts which bear on the determination of such cost or depreciation and the fair value of such property.

SEC. 7. (a) Whenever the Commission, after notice and opportunity for hearing, finds such action necessary or desirable in the public interest, it may by order direct a natural-gas company to extend or improve its transportation facilities, to establish physical connection of its transportation facilities with the facilities of, and sell natural gas to, any person or municipality engaged or legally authorized to engage in the local distribution of natural or artificial gas to the public, and for such purpose to extend its transportation facilities to communities immediately adjacent to such facilities or to territory served by such natural-gas company, if the Commission finds that no undue burden will be placed upon such natural-gas company thereby: *Provided*, That the Commission shall have no authority to compel the enlargement of transportation facilities for such purposes,

or to compel such natural-gas company to establish physical connection or sell natural gas when to do so would impair its ability to render adequate service to its customers.

(b) No natural-gas company shall abandon all or any portion of its facilities subject to the jurisdiction of the Commission, or any service rendered by means of such facilities, without the permission and approval of the Commission first had and obtained, after due hearing, and a finding by the Commission that the available supply of natural gas is depleted to the extent that the continuance of service is unwarranted, or that the present or future public convenience or necessity permit such abandonment.

SEC. 9. (a) The Commission may, after hearing, require natural-gas companies to carry proper and adequate depreciation and amortization accounts in accordance with such rules, regulations, and forms of account as the Commission may prescribe. The Commission may from time to time ascertain and determine, and by order fix, the proper and adequate rates of depreciation and amortization of the several classes of property of each natural-gas company used or useful in the production, transportation, or sale of natural gas. Each natural-gas company shall conform its depreciation and amortization accounts to the rates so ascertained, determined, and fixed. No natural-gas company subject to the jurisdiction of the Commission shall charge to operating expenses any depreciation or amortization charges on classes of property other than those prescribed by the Commission, or charge with respect to any class of property a per-

centage of depreciation or amortization other than that prescribed therefor by the Commission. No such natural-gas company shall in any case include in any form under its operating or other expenses any depreciation, amortization, or other charge or expenditure included elsewhere as a depreciation or amortization charge or otherwise under its operating or other expenses. Nothing in this section shall limit the power of a State commission to determine in the exercise of its jurisdiction, with respect to any natural-gas company, the percentage rates of depreciation or amortization to be allowed, as to any class of property of such natural-gas company, or the composite depreciation or amortization rate, for the purpose of determining rates or charges.

SEC. 19. (b) Any party to a proceeding under this Act aggrieved by an order issued by the Commission in such proceeding may obtain a review of such order in the circuit court of appeals of the United States for any circuit wherein the natural-gas company to which the order relates is located or has its principal place of business, or in the United States Court of Appeals for the District of Columbia, by filing in such court, within sixty days after the order of the Commission upon the application for rehearing, a written petition praying that the order of the Commission be modified or set aside in whole or in part. * * *. No objection to the order of the Commission shall be considered by the court unless such objection shall have been urged before the Commission in the application for rehearing unless there is reasonable ground for failure

so to do. The finding of the Commission as to the facts, if supported by substantial evidence, shall be conclusive. * * *. The judgment and decree of the court, affirming, modifying, or setting aside, in whole of in part, any such order of the Commission, shall be final, subject to review by the Supreme Court of the United States upon certiorari or certification as provided in sections 239 and 240 of the Judicial Code, as amended (U. S. C., title 28, secs. 346 and 347).

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In the Supreme Court of the United States

OCTOBER TERM, 1944

Nos. 379 and 380

COLORADO INTERSTATE GAS COMPANY, A CORPORATION, PETITIONER

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND CANADIAN RIVER GAS COMPANY

CANADIAN RIVER GAS COMPANY, A CORPORATION, PETITIONER

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND COLORADO INTERSTATE GAS COMPANY

ON WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE TENTH CIRCUIT

BRIEF FOR THE FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, AND PUBLIC SERVICE COMMISSION OF WYOMING[1]

OPINIONS BELOW

The opinion and orders of the Federal Power Commission (R. I, 140–192) are reported in 43 P. U. R. (N. S.) 205. The opinion of the circuit court of appeals (R. VIII, 5066–5094) is reported in 142 F. (2d) 943.

JURISDICTION

The judgment of the circuit court of appeals was entered July 8, 1944. (R. VIII, 5094). The petitions for writs of certiorari were filed on August 22, 1944. Writs of certiorari were granted on November 13, 1944, limited to Questions Nos. 5 and 6 presented in the petition in No. 379 and to Question No. 8 presented in the petition in No. 380. By order entered January 2, 1945, the scope of review in No. 380 was enlarged to include Questions Nos. 1, 2 and 3 presented in the petition. Jurisdiction of this Court

[1] Although Nos. 379 and 380 present for review two separate orders of the Commission, those orders were entered in a consolidated proceeding instituted upon complaints filed with respect to both companies. The cases were heard on a single record both before the Commission and before the court below, and were disposed of in a single opinion in that court. Moreover, the issue to which review was limited by the original orders of this Court granting certiorari is common to both cases. For these reasons, it has appeared appropriate to deal with both cases in a single brief.

rests upon Section 19 (b) of the Natural Gas Act, and Section 240 (a) of the Judicial Code, as amended by the Act of February 13, 1925.

QUESTIONS PRESENTED

The questions as to which a writ of certiorari was granted in No. 379, as stated in the petition in that case, are as follows:

> "5. Whether consistently with the requirements of the Fifth Amendment to the Constitution of the United States and the Natural Gas Act the Commission could determine reasonable rates for gas sold for resale in interstate commerce without making a separation or allocation of the property of Canadian and petitioner which, in this case, is used in making intrastate sales in Texas and interstate sale of both resale and direct sale gas, the Commission having no jurisdiction over intrastate sales or over direct sales in interstate commerce to industrial consumers.
>
> "6. Whether the Commission's substitute method of allocation of cost of service which results in burdening non-regulable gas with costs actually chargeable against regulable gas violates the Fifth Amendment to the Constitution of the United States and the Natural Gas Act."

The questions as to which a writ of certiorari was granted in No. 380, as stated in the petition in that case, are as follows:

"1. Whether the Circuit Court, after correctly holding that the Commission has no rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, erroneously concluded and ruled that the Commission in this case did not exercise such prohibited jurisdiction."

"2. Whether, even assuming, *arguendo*, that the Commission has rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, the Commission can, consistently with the Fifth Amendment to the Constitution of the United States, the requirements of the Act, and the decisions of this Court in the Natural Gas Pipeline, Hope and other cases, limit Canadian generally to a return only on the 'wildcat' or original cost of its gas leaseholds to predecessor companies prior to discovery and development over 20 years ago, to the exclusion of all evidence of value, market or otherwise, the result of this procedure being, among other things, the inclusion in the Commission's rate base of a substantial block of Canadian's most valuable leaseholds at zero valuation and a still larger block of valuable leaseholds at only 10¢ per acre valuation."

"3. Whether, even assuming, *arguendo*, that the Commission has rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, and further assuming, *arguendo*, that it is proper in this case to include Canadian's leaseholds and wells in the rate base on the basis of original cost, the Commission can, consistently with the Fifth Amendment to the Constitution of the United States, the requirements of the Act, and the principles announced by this Court in the Natural Gas Pipeline, Hope and other cases, disallow and eliminate more than $3,000,000, plus interest during construction paid thereon, from the amount actually invested by Canadian in its original acquisition of production properties in about 1928 solely upon the ground that the sum so eliminated allegedly represented a profit between affiliated companies, and, therefore, formed no proper part of the cost of said properties, where the Record clearly demonstrates that the transaction resulting in the acquisition of said properties was not between affiliates and that the price paid therefor was not excessive."

"8. Whether the Commission can, consistently with the Fifth Amendment to the Constitution of the United States and the provisions of the Act, reduce the rates and charges of Canadian on that part of its

natural gas sales to Colorado Interstate which is not sold by the latter for ultimate distribution to the public but is sold by it directly to its industrial customers; furthermore, independent of the above question, whether the Commission erred in making no separation or allocation as between Canadian's properties devoted to intrastate sales in Texas and its properties devoted to interstate sales, or as between the properties of Canadian and the properties of Colorado Interstate, and in using in lieu thereof a substitute method of allocation of cost of service which results in burdening non-regulable gas with costs actually chargeable against regulable gas, in violation of the Fifth Amendment to the Constitution of the United States and the Act."

STATUTES INVOLVED

The applicable portions of the Natural Gas Act are set forth in Appendix A, *infra*, pp. 89–104.

STATEMENT

The proceedings before the Commission arose out of a complaint filed on December 22, 1938, by the City and County of Denver, Colorado, against Public Service Company of Colorado, and petitioners, Colorado Interstate Gas Company ("Colorado") and Canadian River Gas Company ("Canadian"), alleging that the rates charged

by Colorado for natural gas purchased from Canadian and sold to Public Service Company of Colorado for resale in Denver were excessive, unreasonable, unjust, and discriminatory (R. I, 302). On January 9, 1939, the Public Service Commission of Wyoming filed a complaint with the Commission alleging that the rates of Canadian and Colorado for natural gas sold to Colorado-Wyoming Gas Company for resale to Cheyenne Light, Fuel and Power Company, which distributes such gas in Cheyenne, Wyoming, were unjust, unreasonable, and discriminatory (R. I, 333). The Commission, on its own motion, instituted an investigation, on March 14, 1939, of all interstate wholesale rates and charges of petitioners, Colorado and Canadian, and of Colorado-Wyoming Gas Company (R. I, 317).

Hearings on the complaints and the investigation were consolidated by the Commission, begun on October 28, 1940, and held on 102 days (R. I, 141). After submission of briefs, the Commission, on March 18, 1942, issued its opinion and

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On April 12, 1939, petitioners filed with the Commission a joint application praying for a stay of the order instituting the investigation, which the Commission denied by order dated May 9, 1939. A petition to review the latter order was dismissed by the Circuit Court of Appeals for the Tenth Circuit in *Canadian River Gas Company, et al.* v. *Federal Power Commission*, 110 F. (2d) 350, rehearing denied, 113 F. (2d) 1010, certiorari denied, 311 U. S. 693.

orders here under review, finding that the interstate wholesale rates of Canadian were excessive by $561,000 per year and those of Colorado by $2,065,000 per year, and requiring petitioners to reduce such rates accordingly (R. I, 185–192).[2] The following facts, found by the Commission, are clearly established by the evidence:

The Petitioners.—Canadian and Colorado were incorporated and financed, and are operated, pursuant to an agreement dated April 5, 1927, between Southwestern Development Company ("Southwestern"), Standard Oil Company (N. J.) ("Standard") and Cities Service Company ("Cities Service") (R. I, 381–401). By this agreement Southwestern, Standard and Cities Service pooled their respective gas reserves, finances and distribution markets, to bring natural gas from the Panhandle field to the Denver and Pueblo, Colorado, markets. This pooling was effected in the following manner:

Southwestern, through a wholly owned subsidiary, Amarillo Oil Company ("Amarillo"), controlled certain gas leaseholds and producing properties in the Texas Panhandle field, which Southwestern agreed to transfer to a new sub-

[2] Canadian's reduction includes $551,000 which is applicable to its sales to Colorado, and the portion of this amount allocated to Colorado's interstate sales for resale is included in the $2,065,000 reduction prescribed for Colorado (R. I, 176, 177).

sidiary (Canadian) which it would organize for that purpose (R. I, 381–382). Standard agreed to form a new corporation (Colorado) and to finance its construction of pipeline facilities to connect with and transport gas from Canadian's facilities to the Denver market and intermediate points including Pueblo (R. I, 385). Cities Service was to procure franchises through its subsidiaries under which such natural gas could be distributed in Denver and Pueblo (R. I, 391). It was agreed that Canadian would sell gas to Colorado at "cost" for at least 20 years from 1928, such "cost" to include amortization of all of Canadian's indebtedness over the twenty-year period and to be decreased by any profits Canadian might obtain from other sources, including local sales permitted by Colorado (R. I, 392; R. II 719–732). Canadian, under the "cost" contract, would have nothing available for dividends on its common stock during the first 20 years (R. III, 1436) and so long thereafter as Colorado might choose to purchase its gas at "cost" (R. III, 1435).

Pursuant to the agreement, Southwestern organized Canadian, to which were transferred the gas leaseholds and producing properties of Amarillo, also a wholly-owned subsidiary of Southwestern. The cash consideration for this transfer was $5,000,000, stipulated in the tripartite agreement and advanced by Standard for this purpose at

6% interest (R. I, 392, R. V, 2936–2937).[1] To repay the advance and to finance the acquisition and construction of additional facilities, Canadian issued $11,000,000 of twenty-year 6% sinking fund bonds, which Colorado purchased from the proceeds of its $19,200,000 of twenty-year 6% sinking fund bonds, which, in turn, were purchased by Standard, in accordance with the 1927 agreement (R. I, 496).

As had been further agreed, Standard organized Colorado with $2,000,000 par value of 6% preferred stock and 1,250,000 shares of no par common stock, and paid $1,000,000 in cash for half of the preferred stock and another $1,000,000 in cash for its portion (42½%) of Colorado's common stock (R. II, 626). Southwestern also received half of Colorado's preferred stock and 42½% of the common stock (R. II, 626), the remaining 15% of the common stock being issued to Cities Service (R. I, 395–396, R. II, 627). It was implicit in the tripartite agreement, therefore, that Southwestern, Standard, and Cities Service would receive their profits from the operations of the enterprise by way of dividends on Colorado's stock.

The Commission's Orders.—In requiring Canadian to reduce its interstate wholesale rates

[1] As hereinafter discussed, *infra*, pp. 37–53, the Commission, in determining Canadian's rate base, disallowed the $3,249,030 portion of this amount which was in excess of the $1,750,970 cost of such properties to Amarillo and its affiliates.

by $561,000 annually, the Commission found the actual legitimate cost of the company's plant at December 31, 1939, to be $10,784,464 (R. I, 186). From this amount it deducted $2,134,629 for accrued depreciation and depletion as of that date, and added $150,738 for working capital and $574,923 covering gross plant additions to December 31, 1941. This resulted in a rate base of $9,372,496, which was rounded to $9,375,000 (R. I, 187). In requiring Colorado to reduce its interstate wholesale rates by $2,065,000 annually, the Commission found the actual legitimate cost of the company's plant at December 31, 1939, to be $11,879,409 (R. I, 190). From this amount it deducted $2,793,419 for accrued depreciation and amortization as of that date; and added $109,065 for working capital and $337,000 covering gross plant additions to December 31, 1941. This resulted in a rate base of $9,532,064, which was rounded to $9,535,000 (R. I, 190). Petitioners' estimates of reproduction cost were considered by the Commission and were found to be too conjectural to have probative value (R. I, 148). The Commission further found that actual costs, which could be readily determined from petitioners' accounting records, represented the best and only reliable evidence as to rate base (R. I, 148).

The Commission allowed a 6½% return on the rate base of each petitioner, which return it found to be "fair and reasonable" (R. I, 187, 190), noting that Colorado in 1940 had refinanced its

outstanding bonded indebtedness at an interest rate of 2¾% (R. I, 173). With certain minor exceptions, the Commission allowed each petitioner the taxes, operating expenses, exploration and development costs, shown by its books for the test year, 1939, adjusted to reflect accrual accounting (R. I, 166–169; R. VI, 3387). The Commission also allowed amounts to amortize rate case expenses over a five-year period (R. I, 166, 168). Annual allowances for depreciation, depletion and amortization were determined on the basis of the economic service lives of petitioners' properties, such allowances being consistent with the amounts deducted for accrued depreciation, depletion and amortization in arriving at the rate bases (R. I, 160, 156).

In arriving at the amount of the reductions in the interstate wholesale rates, the Commission made an allocation of the cost of service of each petitioner, including in such cost the fair return on the rate base, and determined the excess of revenues over costs for intrastate sales, direct industrial sales, and interstate sales for resale (R. I, 176–177).

The petitioners, on April 14, 1942, applied for a rehearing and stay of the Commission's orders (R. I, 203, 238, 277, 284), and on May 13, 1942, the Commission issued its supplemental opinion and orders denying such petitions (R. I, 296–301). On review the court below affirmed the Commission's orders (R. VIII, 5065–5094).

SUMMARY OF ARGUMENT

I

The action of the Commission in reflecting Canadian's production and gathering facilities in the rate base at cost and then limiting Canadian's return to 6½% was not a regulation of "production or gathering" forbidden by Section 1 (b) of the Act. That section withholds from the regulatory authority of the Commission the *activity* of producing or gathering natural gas, but there is nothing therein to indicate a Congressional intent to preclude the Commission from considering either such facilities in calculating the rate base or the expenses incident thereto for the purpose of determining the reasonableness of the interstate wholesale rates. *Federal Power Commission* v. *Hope Natural Gas Co.*, 320 U. S. 591, 614, n. 25. The legislative history of the Act confirms this view. The Committee report, after stating that the negative language in Section 1 (b) was largely surplusage, also stated that the Act contemplated regulation along "more or less standardized lines". The valuation of production and gathering facilities historically has been an integral part of the regulatory rate fixing procedure. *Dayton Power & Light Co.* v. *Commission*, 292 U. S. 290.

Sections 6 (a), 6 (b), 8 (a), 9 (a), and 10 (a) of the Act all contain language authorizing the Commission to ascertain the costs of production and

gathering facilities. The language and legislative history of Section 14 (b) confirm the view that the Commission is required to investigate such costs. The uniform administrative interpretation of the Commission consistently has been to consider production and gathering facilities in fixing the rate base and the Commission has so reported to Congress. Finally, legislative approval of the administrative interpretation may be inferred from the fact that when Section 7 was amended in 1942, no legislative change was made in respect of this matter although the Commission's administration of the Act was thoroughly reviewed.

II

The Commission's failure to allow a market value for Canadian's leaseholds in the rate base as well as its refusal to allow a "field" or "commodity" price for natural gas which Canadian produces was not a deprivation of due process. Canadian's contention to the contrary is inconsistent. If the Commission lacked jurisdiction over production and gathering facilities, the inclusion of leaseholds in the rate base at their market value would not confer jurisdiction. If it had jurisdiction, it is a matter for the informed judgment of the Commission to select the appropriate basis for reflecting the leaseholds in the rate base. Evidence of market value of the character submitted by Canadian is not compelling or even persuasive. *Dayton Power & Light Co.* v. *Commission*, 292 U. S. 290, 296–301.

Canadian's evidence of field or commodity price of gas as an alternative measure of the value of its leaseholds is open to the same objections. This is particularly true of the Panhandle field where the available gas greatly exceeds demands. The only substantial market is that furnished by the large pipelines which fix their own prices, and to speak of commodity value in such circumstances is unrealistic. This Court has recognized the peculiar situation which there obtains in *Thompson* v. *Consolidated Gas Co.*, 300 U. S. 55. The cost system adopted by the Commission on the other hand is just to consumers and pipelines alike. It considers costs as best calculated to insure continuity in the production of natural gas and the financial soundness of the pipelines themselves. The fact that it has become possible to finance such enterprises at progressively lower rates discloses that the investing public appreciates the ultimate soundness of the Commission's approach.

III

In respect of the leaseholds the Commission properly allowed the $1,750,000 cost of such properties to Amarillo and rejected Canadian's claim that $5,000,000 represented the "price" which it paid in acquiring these properties from Amarillo. There was no actual purchase or sale of the properties, which Southwestern merely transferred from one of its wholly-owned subsidiaries

(Amarillo) to another (Canadian). The alleged "purchase price" of $5,000,000 came from the proceeds of bonds issued by Canadian and did not represent any additional investment in the properties. In reflecting the so-called "payment" on their books, the parties recognized the true nature of the "purely intercompany profit" which the Commission has disallowed, and neither Southwestern, Amarillo, nor Canadian paid any income tax as a result of the so-called "sale".

Viewed from the standpoint of Standard and Cities Service, the $5,000,000 represented an advance of part of Southwestern's portion of the profits of the project. This amount is no more a part of the rate base than the dividends on Southwestern's stock holdings in Colorado Interstate. While Southwestern, Standard and Cities Service may have bargained extensively as to the distribution between them of the profits of the joint enterprise, such profits are not part of the rate base, even though one of the parties (Southwestern) received a portion ($5,000,000) of its share in advance because of its poor financial condition.

IV

In determining the amount of the reductions in petitioners' interstate wholesale rates, the Commission made an appropriate allocation of the cost of service between petitioners' regulable and non-

regulable sales. The Commission was not required, under the Constitution, the Act or the prior decisions of this Court, to take the preliminary step of first allocating the physical properties. Use of the established "commodity-demand" method of allocation represented a reasonable exercise of the Commission's administrative discretion in the circumstances.

V

All of the gas which Canadian sells to Colorado Interstate is sold "for resale" in interstate commerce and the rate charged therefor is subject to regulation by the Commission. As the provisions of Section 1 (b) of the Act and its legislative history make clear, the fact that Colorado Interstate sells a portion of such gas directly to industrial customers, rather than for resale, is not material in determining which of Canadian's rates are subject to the Commission's jurisdiction.

ARGUMENT

I

THE COMMISSION DID NOT EXCEED ITS JURISDICTION WITH RESPECT TO CANADIAN'S PRODUCING AND GATHERING FACILITIES

Canadian contends that the Commission, contrary to Section 1 (b) of the Act which makes the provisions thereof inapplicable to the "production or gathering of natural gas", exercised

rate regulatory authority over its production and gathering facilities by reflecting such properties in the rate base at cost and then limiting Canadian's return to 6½% (Can. Br. 14–19). It also urges that, in fixing rates, the Commission should determine the commodity or field price of gas (Can. Br. 21). While it is of course clear under Section 1 (b) of the Act that the Commission has no jurisdiction to regulate "production and gathering" as such, the Commission, in determining the reasonableness of a natural gas company's interstate wholesale rates, properly reflects its production and gathering facilities in the rate base, and properly considers the expenses, including depletion, applicable to such properties. We submit that there is no merit to Canadian's contention in this respect. *Federal Power Commission* v. *Hope Natural Gas Co.*, 320 U. S. 591, 614, n. 25. This is apparent from the purposes and provisions of the Natural Gas Act, as well as its legislative history.

Section 1 (a) of the Natural Gas Act declares that "Federal regulation *in matters relating to* the transportation of natural gas and the sale thereof in interstate and foreign commerce is necessary in the public interest" (emphasis supplied), and in accordance with this declaration of policy, Section 1 (b) provides that the Act "shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of

natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural gas companies engaged in such transportation or sale."

The above quoted provision in Section 1 (b), considered alone, clearly vests the Commission with jurisdiction over the production and gathering facilities of a natural gas company. Canadian contends, however, that the Act as a whole indicates that Congress intended to exclude from regulation the production and gathering phase of the business of a natural gas company. In support of this contention Canadian principally relies upon the "but" clause in Section 1 (b), which specifies that the provisions of the Act "shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or *to the production or gathering of natural gas*" (emphasis supplied).

At the outset, it may be conceded that Section 1 (b) withholds from the regulatory power of the Commission the *activity* of producing or gathering natural gas, and that accordingly the Commission has no authority over such matters, as, for example, the determination of the drilling or spacing of wells in the field, the number of wells to be drilled in a common reservoir, proration of the production of oil or gas, or cycling or other recovery operations. However broad

may be the catalogue of activities thus excluded from the Commission's jurisdiction, we submit that there is no warrant for assuming that Congress, by excluding such activities, intended to preclude the Commission from reflecting the production and gathering facilities of a natural gas company in the rate base and considering the expenses incident thereto for the purpose of determining the reasonableness of interstate wholesale rates under the Act.

The legislative history confirms the fact that the "but" clause in Section 1 (b) does not remove from the Commission's jurisdiction what would otherwise be subject thereto by reason of its authority over the transportation and sale of natural gas in interstate commerce for resale under the first part of Section 1 (b). Thus, the House Committee on Interstate and Foreign Commerce in reporting the bill (H. R. 6586, 75th Cong., 1st Sess.) which became the Natural Gas Act, quoted the "but" clause in its report (H. Rep. No. 709, 75th Cong., 1st Sess., p. 3) and then stated:

> "*The quoted words are not actually necessary*, as the matters specified therein could not be said fairly to be covered by the language affirmatively stating the jurisdiction of the Commission, but similar language was in previous bills, and, rather than invite the contention, however unfounded, that the elimination of the nega-

> tive language would broaden the scope of the act, the committee has included it in this bill. That part of the negative declaration stating that the act shall not apply to 'the local distribution of natural gas' *is surplusage* by reason of the fact that distribution is made only to consumers in connection with sales, and since no jurisdiction is given to the Commission to regulate sales to consumers the Commission would have no authority over distribution, whether or not local in character." [Emphasis supplied.]

Section 5 (a) of the Act places the duty upon the Commission to determine "the just and reasonable rate, charge * * * to be thereafter observed and in force, and * * * fix the same by order." In both *Federal Power Commission* v. *Natural Gas Pipeline Co.*, 315 U. S. 575, and *Federal Power Commission* v. *Hope Natural Gas Co.*, 320 U. S. 591, the Commission, without challenge by either the natural gas companies or this Court, included the production and gathering facilities in the rate base on which a return was allowed. Indeed, in the *Hope* case, this Court observed (320 U. S. at 616) that the Natural Gas Act contemplated "regulation along recognized and more or less standardized lines", citing H. Rep. 709, *supra*, p. 3. The valuation of production and gathering facilities historically has been

an integral part of the regulatory procedure in fixing rates for natural gas. *Dayton Power & Light Co.* v. *Commission*, 292 U. S. 290; *Lone Star Gas Co.* v. *Texas*, 304 U. S. 224.

There are numerous provisions in the Natural Gas Act which clearly indicate that the Commission has jurisdiction over the production and gathering properties of a natural gas company to the extent necessary to carry out its functions under the Act, and particularly its principal function of determining the reasonableness of the company's interstate wholesale rates. Thus, Section 6 (a) authorizes the Commission to "investigate and ascertain the actual legitimate cost of the property of every natural-gas company, the depreciation therein, and, when found necessary for rate-making purposes, other facts which bear on the determination of such cost or depreciation and the fair value of such property." Section 6 (b) requires every natural gas company, upon request, to file with the Commission "an inventory of all or any part of its property and a statement of the original cost thereof." It will be noted that Section 6, which is directly related to the Commission's rate-making powers, extends to all the property of a natural gas company. Similarly, Section 8 (a), in authorizing the Commission to prescribe uniform and correct accounting for natural gas companies, extends to all the property of such

companies.[5] And under Section 9 (a), the Commission is authorized to determine and to fix by order the proper and adequate rates of depreciation and amortization "of the several classes of property of each natural-gas company used or useful in the production, transportation, or sale of natural gas." That the Commission's authority under this section is directly related to its rate-making powers is indicated by the proviso that nothing in that section shall limit the power of a state commission to determine the rates of depreciation or amortization to be allowed for the purpose of determining rates or charges subject to state regulation. Under Section 10 (a) the Commission is authorized to require natural gas companies to file reports giving full information as to assets and liabilities as well as the cost of maintenance and operation "of facilities for the production, transportation, or sale of natural gas."[6]

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[5] Section 8 (a) of the Natural Gas Act is identical with and was taken from Section 301 (a) of the Federal Power Act. In reporting out the latter, the Senate Committee on Interstate Commerce stated (S. Rep. No. 621, 74th Cong., 1st Sess., p. 53) that "the authority of the Commission over the accounts of companies under its jurisdiction extends to the entire business of such companies."

[6] Section 5 (b) further provides that the Commission "may investigate and determine the cost of the production or transportation of natural gas by a natural-gas company in cases where the Commission has no authority to establish a rate governing the transportation or sale of such natural gas."

The conclusion that Congress contemplated that the Commission would consider the production and gathering properties of a natural gas company in determining interstate wholesale rates, is reinforced by the provisions and legislative history of Section 14 (b) of the Act. That section authorizes the Commission, after hearing, to determine the adequacy or inadequacy of the gas reserves of natural gas companies and, also after hearing, to "determine the propriety and reasonableness of the inclusion in operating expenses, capital, or surplus of all delay rentals or other forms of rental or compensation for unoperated lands and leases." The section further provides that the Commission, for purposes of such determinations, may require each natural gas company to file copies of "all its lease and royalty agreements with respect to such gas reserves."

The direct relation of Section 14 (b) to the Commission's rate making authority is clearly indicated by its legislative history. As introduced, the bill (H. R. 4008, 75th Cong., 1st Sess.) which, as amended (H. R. 6586, 75th Cong., 1st Sess.), became the Natural Gas Act, did not contain the provisions of Section 14 (b).[7] In the hearings before the House Committee the National Secretary of the Cities Alliance urged that

[7] The provisions of Section 14 (b) were contained in another bill (H. R. 5711, 75th Cong., 1st Sess.) which the Committee then had before it in addition to H. R. 4008.

the provisions of Section 14 (b) be added to the bill, "to prevent great pipe line corporations from acquiring more acreage than is necessary to supply the consuming public which it serves, and so far as the proposed amendment is concerned, would keep them from passing on the charge of carrying that property to the consuming public." He recognized that he could not ask the Committee "to go so far as to prevent them from making the purchase, if they want to, but we can ask that provision can be made whereby the Commission can see that the cost of carrying those excess acres, that are not necessary in the public interest, shall not be taken into consideration in passing upon the question of what are proper rates to be charged the consuming public." (Hearings on H. R. 4008, 75th Cong., 1st Sess., pp. 60, 67, 84).

The purpose of Section 14 (b) is further apparent from the testimony of Mr. William A. Dougherty before the Committee. Mr. Dougherty, who identified himself as a New York attorney connected with the management of certain natural gas pipe-line companies, including Colorado Interstate Gas Company, which he named (Hearings, p. 123), objected to the proposed amendment because of the additional expense which would be involved in filing copies of all leases and royalty agreements. He contended that such a requirement was "not necessary" since the

"only purpose of having information on lease and royalty agreements is when you are determining a rate and when you are going to determine a rate you can have those things brought in" (Hearings, p. 131). Mr. Dougherty further stated that careful consideration should be given to the provisions of the proposed amendment authorizing the Commission to determine the adequacy or inadequacy of gas reserves, and pointed out that "the Commission can exclude carrying charges of vast amounts of reserves as charges that have no immediate bearing on the immediate rate" (Hearings, p. 132). He added that "the law already gives the Commission the right to exclude delay rentals if the Commission feels that the reserve for which the delay rentals are included are too extensive, and I think the Commission would have that right even without this wording with respect to determining the adequacy or the inadequacy of gas reserves" (Hearings, pp. 132–133).

The hearings which the House Committee on Interstate and Foreign Commerce held on the first predecessor bill (H. R. 11662, 74th Cong., 2nd Sess.) which was reported out (H. Rep. 2651, 74th Cong., 2nd Sess.) also confirm the Commission's view. There the then Solicitor of the Federal Power Commission, Dozier A. DeVane, agreed with a member of the committee that the Commission "would go into all the great natural gas

fields of this country to determine costs" and "ascertain the cost of generating plant, and all the facilities, and, of course, build up a proper foundation for your rate finally to be sustained" as was done under Title II of the Federal Power Act (Hearings, pp. 31–32).

In addition, the Commission's administrative interpretation of the Act in this connection is of particular significance since it has been impliedly approved by Congress. The Commission in determining the reasonableness of interstate wholesale rates has consistently reflected the company's production and gathering facilities in the rate base.[*] This administrative interpretation of the Act was brought to the attention of Congress in the Commission's Twentieth Annual Report for the year 1940, which summarized the Commission's work in connection with major rate cases and in so doing, stated (p. 77):

> "*Gas reserves.*—As the natural-gas industry is an extractive industry, *one of the important elements of cost which must be determined pertains to the exhaustion of the service life of the properties due to the*

[*] *Illinois Commerce Comm.* v. *Natural Gas Pipeline Co.*, 25 P. U. R. (N. S.) 41, affirmed 315 U. S. 575; *Re Lone Star Gas Co.*, Order of May 4, 1942, in Docket No. G–209; *Cleveland* v. *Hope Natural Gas Co.*, 44 P. U. R. (N. S.) 1, affirmed 320 U. S. 591; *Re El Paso Natural Gas Co.*, Order of October 29, 1942, in Docket No. G–257; *Re Northern Natural Gas Co.*, 47 P. U. R. (N. S.) 74.

depletion of the natural-gas reserves which the properties were constructed to produce or transport. The Commission's geologists have been engaged in estimating the volume of gas reserves in a number of important fields, among them the Panhandle field in Texas, the Hugoton field in Kansas and a major portion of the fields located in West Virginia, Pennsylvania, and New York. A few years' difference in the estimated life of available gas reserves supplying a given market may *make a large difference in the rates* which can be justified for that area."[9] [Emphasis supplied.]

Soon after this report was submitted, the House Committee on Interstate and Foreign Commerce held hearings on a bill (H. R. 5249, 77th Cong., 1st Sess.) to amend Section 7 of the Natural Gas Act to broaden the Commission's jurisdiction with respect to certificates of public convenience and necessity. Following extensive hearings, during which the Commission's administration of the Act was fully explored (see Hearings, pp. 34–35, 40–46, 60–61), the bill was favorably reported and enacted on February 7, 1942.

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[9] The report also pointed out that the Commission's staff, in connection with the organization of natural gas rate cases "along the lines indicated", had made four comprehensive field investigations, including the "Canadian River Gas Co., Colorado Interstate Gas Co., and Colorado-Wyoming Gas Co. in the Mid-West," the proceedings now under review in Nos. 370, 380 and 575, this Term.

We accordingly submit that the Commission had jurisdiction to reflect Canadian's producing and gathering facilities in its rate base, and to consider the expenses incident thereto in determining the reasonableness of its interstate wholesale rates.

II

THE COMMISSION PROPERLY DECLINED TO ALLOW CANADIAN THE ALLEGED MARKET VALUE OF ITS LEASEHOLDS OR A "COMMODITY" OR FIELD PRICE FOR ITS GAS

Assuming *arguendo* that the Commission did not exceed its jurisdiction in reflecting Canadian's production and gathering facilities in the rate base, Canadian nevertheless contends (Can. Br. 19–21) that it was deprived of its property without due process of law by reason of the Commission's refusal to be guided by evidence in the record as to the value of its leaseholds as of the time of the hearing. The alleged market value of the leaseholds was the subject of evidence presented by one of Canadian's witnesses, Wallace (Ex. 181; R. VI, 3181–3254). Although it is not entirely clear from Canadian's brief, it would seem (Can. Br. 20–21) that Canadian's position is that its rights would have been satisfied if the Commission had either accepted Wallace's conclusions as to the market value of the leaseholds, or, as an alternative, accepted as a measure of such market value the evidence of Canadian's witness

Ford (R. VI, 3255–3281) as to the market value of gas at the wellhead. We are unable to perceive the force of Canadian's contention in this respect. If the Commission has no jurisdiction over production and gathering facilities, the inclusion of such facilities at some particular value, however computed, could not avail to confer such jurisdiction. And if the Commission has jurisdiction, the selection of the appropriate method for determining the rate base and costs, as between several methods equally available in the particular case, is clearly a question for the expert judgment of the Commission, which is not to be overruled merely because it failed to select a method which would have produced a result more advantageous to the natural gas company involved. In this case both the alternative methods proposed by Canadian contain inherent defects and qualities of unreliability which fully justified the Commission in rejecting them, and in reflecting Canadian's production and gathering facilities in the rate base at their actual legitimate cost.

The evidence as to market value sought to establish a current value in excess of $15,000,000 for "the bare gas leaseholds themselves" (Can. Br. 20).[20] This evidence, however, was no more

[20] It is not the fact, as Canadian states (Can. Br. 20), that the Commission included "Canadian's bare leaseholds * * * at a value of something less than $1,000,000." $2,194,841 was included for lease costs. After deducting $252,006 for accrued depletion, the Commission allowed $1,942,835 as net invest-

than opinion evidence of a single witness who endeavored to reflect the assumed "value" from the demand for gas by Canadian's customers and the construction of pipeline facilities to serve them. Such "value" was also enhanced by the benefits of conservation legislation. Just such testimony was condemned, in the words of Mr. Justice Cardozo, in *Dayton Power & Light Co. v. Commission*, 292 U. S. 290, at 299:

> "* * * But plainly opinions thus offered, even if entitled to some weight, have no such conclusive force that there is error of law in refusing to follow them. This is true of opinion evidence generally, whether addressed to a jury [cases cited] or to a judge [cases cited] or to a statutory board [cases cited]. There are reasons why the principle has special application here. In the first place, the intrinsic value of the leases is dependent upon the capacity of the lands to yield productive wells, a capacity seldom to be judged with even a fair approach to certainty until tested by experience. *Natural Gas Co. of W. Va. v. Public Service Comm.*, 95 W. Va. 557, 569, 121 S. E. 716. In the second place, the profits

ment. In addition, $40,453 of the amount allowed in the rate base for interest during construction related to the lease investment. Moreover, the Commission allowed $29,294 in the expenses of the test year for the cost of a dry hole, which would be the equivalent of increasing the rate base $450,677 when the return is 6½%. See generally R. V, 2657-61, 2667-71, 2723, 2737, 2741, 2769; R. VI, 3404; Appendix D, *infra*.

> to be earned in a regulated business must vary with the rates established by the supervising agencies of government, with the result that prophecies, however radiant, may be upset over night by the publication of a lower schedule."

Obviously, such testimony was not of such compelling merit as to require the Commission to disregard the actual legitimate cost of the properties involved.

As indicated by Canadian in its brief (Can. Br. 20–21), the so-called "field" or commodity price of gas is advanced as an alternative "measure of the value" of its leaseholds. Such evidence is clearly subject to the same infirmity as was attributed in the *Dayton* case to evidence of market value. But the vice of the "field price" test lies even deeper. In the Panhandle field the actual and potential production of gas is greatly in excess of needs (R. I, 159). The only markets which are available are located at distant points, and in order to transport gas to these markets it is necessary to construct expensive pipelines.[11] Before embarking on such an undertaking, it is essential that the company constructing the line be assured of an adequate supply of gas. This is accomplished either by acquiring sufficient producing and

[11] E. g., Panhandle Eastern's pipeline represented an investment in excess of $70,000,000. No. 296, this Term. Natural Gas Pipeline Co. had a book cost in excess of $60,000,000 (315 U. S. at 579).

proved gas acreage to insure future supplies, or by entering into long-term contracts with producers of gas under which the parties are bound to the sale and purchase of the gas as long as it shall be produced in paying quantities. Federal Trade Commission Report pursuant to Senate Resolution No. 83, 70th Cong., 1st Sess., Vol. 84 a, pp. 70 *et seq.* In a sense the cost which the pipeline company will be required to pay for the natural gas is determined at the inception of the enterprise. In a setting such as this the concept of a "field" or commodity price is unrealistic.

This Court had occasion to review the situation which obtains in the Panhandle field in *Thompson* v. *Consolidated Gas Co.*, 300 U. S. 55. Without access to pipelines and their distant markets, natural gas produced in the fields had no commercial value other than the extraction of natural gasoline or the production of carbon black (id., pp. 59, 70). In the *Thompson* case, this Court held unconstitutional a Texas statute which sought to compel large pipeline companies to purchase a part of their gas requirements from private producers. There the question of commodity price was not even reached—the pipeline companies did not want the gas at any price.

The value which gas obtains in a market such as the Panhandle or Hugoton field depends exclusively upon the price which the few large pipeline companies are willing to pay. Cf. *United*

Fuel Gas Co. v. *Railroad Commission*, 278 U. S. 300; *Dayton Power & Light Co.* v. *Commission*, 292 U. S. 290, 301. Whatever might be the situation where the demand equals or exceeds the supply of natural gas, it is apparent that where the market can absorb only a small fraction of the gas produced the purchaser is in a superior bargaining position. In such circumstances the commodity price, if the law of supply and demand is permitted to operate, will necessarily tend to reflect cost alone. And should competition be sufficiently keen, that cost would probably not carry a 6½% profit.[12] Were Canadian deprived of its markets outside the state, its gas would have little if any value. It would find itself in the same position that its predecessor Amarillo was in—the owner of a vast supply of gas which it could not sell.

Prevailing prices accordingly do not establish a commodity value. When the sales contracts extend for the life of the wells, and vary among themselves, the rates fixed therein merely reflect what the parties to the contract at one time considered to be a fair price. It could currently be either more or less. There is no such thing as a true commodity price unless there are frequent adjustments in price to reflect the changing supply and demand. Moreover, the adoption of a com-

[12] The Commission, in fixing costs in the instant case, included therein a return of 6½ on the rate base.

modity price would open the door for the establishment of fictitious prices. Over 80% of the total area of the Panhandle fields is controlled by major pipeline companies (300 U. S. at 60). It would be possible for these companies to buy small amounts of gas from independent producers at a high Mcf price and accordingly claim that the price so paid represented the commodity value to which they were entitled in calculating the value of the gas which they produced themselves. "When the pipe-line interests control the only outlets to markets, an arbitrary setting of field prices seems inevitable" (Federal Trade Commission Report No. 84–a, p. 133).

On the other hand, the cost system adopted by the Commission is fair alike to consumers and natural-gas companies. It is readily apparent that if a field such as Panhandle or Hugoton should be discovered near Chicago or Detroit, cost of delivering gas from such field to those cities would be low and gas companies which were incurring higher transportation costs in delivering gas from distant points would be faced with bankruptcy if they were held to the commodity prices.[13] On the other hand the Commission allows the acquisition costs of leaseholds, the delay rentals thereon while they are being held in reserve, well drilling and exploratory costs and all expenses incident to the

[13] It is significant to note that Hope Natural Gas Company purchased gas at prices lower than the cost of producing its own gas. See record in No. 34, Oct. Term 1943, II, 309, 342.

operation of the gas leaseholds, including royalty payments. Thus, the pipeline companies, whose business in the final analysis consists of the interstate sale of gas at wholesale, are assured of the cost of producing the commodity which they sell. Certainly, it may not be said that the action of the Commission in electing to use the cost rather than the commodity value of the gas lacks a rational basis. See *Federal Power Commission* v. *Hope Natural Gas Co.*, 320 U. S. 591, 615–616. Indeed, since the Commission has established its policy of allowing cost of production, investors have been lending money at progressively lower rates (see Exhibit 253, Charts Nos. 33 and 34, in No. 296, this Term, R. XIV, 6031, 6033). The average yield on bonds, debentures and notes issued by natural-gas companies has declined from 4.59% in 1936 to 3.11% in 1941 (ibid.).

Finally, if the commodity price rather than cost were adopted by the Commission there would no longer be any necessity for treating the gas business as presenting any peculiar hazards. As a result, the transmission facilities, which constitute the larger portion of the pipe lines investment, would be entitled to a lower rate of return than 6½%.

We accordingly submit that there was no requirement that the Commission, in fixing Canadian's rates for the interstate sale for resale of natural gas, should fix the cost of the gas so sold on a commodity rather than a cost of production basis.

III

IN DETERMINING THE ACTUAL LEGITIMATE COST OF CANADIAN'S PROPERTIES, THE COMMISSION PROPERLY DISALLOWED AMOUNTS CLAIMED BY CANADIAN FOR LEASEHOLDS IN EXCESS OF THE COST OF SUCH LEASEHOLDS TO AMARILLO AND ITS AFFILIATES

Assuming that the Commission was entitled to include Canadian's producing and gathering properties at their actual legitimate cost, Canadian nevertheless contends (Can. Br. 21–26) that it was deprived of its constitutional rights by the Commission's failure to include in such cost the full amount of $5,000,000 allegedly paid for such properties as an arm's length "purchase price" therefor. We submit that there was no actual purchase or sale of these properties, but that Southwestern merely transferred them, without any additional investment, from one wholly owned subsidiary (Amarillo) to another (Canadian), in accordance with the intercompany agreement between Southwestern, Standard and Cities Service (see Statement, *supra*, pp. 8–10). Moreover, if, as Canadian urges (Br. 56), the transaction is considered to be the substantial equivalent of a "sale" of the properties by Southwestern to Standard and Cities Service, the other participants in the project, the $5,000,000 represented an advance of a portion of Southwestern's share of the profits of the joint enterprise.

A. THE PROPERTIES WERE TRANSFERRED BETWEEN WHOLLY OWNED SUBSIDIARIES OF SOUTHWESTERN WITHOUT ANY ADDITIONAL INVESTMENT

Southwestern, through Amarillo, its wholly owned subsidiary, controlled certain gas leases and producing properties in the Texas Panhandle Field, but was unable to obtain an adequate market for the gas (R. I, 402, 459). Southwestern, which was in a poor financial condition, approached Standard and Cities Service with respect to the feasibility of constructing a pipeline from the Panhandle Field to the Denver and Pueblo markets in Colorado (R. I, 520, 559; R. I, 403). Standard was in a position, through the Rockefeller interests, to obtain the Colorado Fuel & Iron Company plant at Pueblo as a large industrial consumer for the pipeline (R. I, 509). Standard also had adequate funds at its disposal, as well as a trained personnel familiar with the construction and operation of natural gas pipelines (R. I, 403). Cities Service, a third party, controlled the retail markets in Denver and Pueblo (R. I, 403) which likewise had to be obtained if the project was to be sufficiently profitable (R. I, 437, 508).

By the intercompany agreement of April 5, 1927, Southwestern, Standard and Cities Service pooled their interests and made arrangements to bring natural gas from the Panhandle Field to the Denver and Pueblo markets. The substance

of the agreement was that (a) Southwestern would furnish gas to the pipeline from its producing properties at "cost"; (b) Standard would invest $2,000,000 of cash as equity capital and purchase the bonds to be issued to finance the balance of the project, as well as obtain Colorado Fuel & Iron Company as an industrial customer; and (c) Cities Service would have its operating subsidiaries in Denver and Pueblo obtain the requisite natural gas franchises and purchase their entire requirements from the pipeline (R. I, 381–401).[14]

The corporate arrangements under which this pooling of interests was effected may be briefly summarized. Pursuant to the intercompany agreement, Southwestern organized a new wholly owned subsidiary, Canadian,[15] to which were transferred the gas leaseholds and producing properties held by Southwestern's wholly owned subsidiary, Amarillo (R. I, 405). Standard organized a second corporation, Colorado Interstate, to construct and operate the pipeline facilities which would connect with and transport gas from Canadian's facilities to the Denver market and intermediate points, including Pueblo (R. I, 385).

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[14] The agreement was not to become effective unless franchises were obtained in Denver and Pueblo which prescribed rates which would make the project "profitably feasible in the judgment" of the three participants, and a schedule of rates which would be satisfactory was specified in the agreement (R. I, 393–394).

[15] All of Canadian's stock was issued to Southwestern, and is carried on Canadian's books at $1.00 (R. VI, 3523).

Canadian, in order to finance its portion of the project, issued $11,000,000 of 6% twenty-year sinking fund bonds. These bonds were purchased by Colorado Interstate from the proceeds of $19,200,000 of its own 6% twenty-year sinking fund bonds which Standard in turn purchased at par (R. I, 496).

As had been agreed, Southwestern caused Canadian to enter into a so-called "cost contract" with Colorado Interstate under which Canadian obligated itself to produce and sell gas for the project at "cost" for a period of twenty years and such further time as Colorado Interstate deemed it profitable to purchase such gas (R. II, 710–797). Under the contract such "cost" included Canadian's operating expenses, as well as interest at 6% and amortization of the principal of all of Canadian's indebtedness over the twenty-year period, such amortization being in lieu of depreciation, depletion and retirements.[16] The contract

[16] An amortization period of twenty years appears to have been specified for the reason that that was the term of the distribution franchises in Denver and Pueblo (R. I, 338). At the end of the test year, 1939, Canadian's "cost" of gas under the contract had included amortization of debt totalling $9,073,565 (R. VI, 3581). The Commission deducted $2,134,629 for depreciation and depletion in finding Canadian's rate base (R. I, 161). The interest rate of 6% on Canadian's bonds has not been reduced although the interest on Colorado's bonds was reduced to 2¾% in 1940 (R. II, 632).

further provided that Canadian's "costs" should be decreased by any profits which it might obtain from other sources, including local sales permitted by Colorado (R. I, 393; R. II, 719–732).

Since Canadian, under the "cost" contract, would not have any profits available for dividends (R. III, 1436), it was implicit in the intercompany agreement that the three participants, Southwestern, Standard, and Cities Service, would receive their profits from the joint enterprise in the form of dividends on their stock holdings in Colorado Interstate. Pursuant to the agreement, Colorado Interstate issued $2,000,000 par value of 6% preferred stock and 1,250,000 shares of no par common stock (R. I, 395–396). 15% of the common stock was allotted to Cities Service as its share of the profits of the joint enterprise (R. I, 396). The remaining 85% of the common stock and all of the preferred stock was divided equally between Southwestern and Standard. For its share (50%) of the preferred stock and its share (42½%) of the common stock, Standard paid $2,000,000 in cash (R. II, 626).[17] In addition to 50% of Colorado Interstate's preferred stock and 42½% of its common stock, Southwestern received $5,000,000 in cash from the proceeds of the $11,000,000 of bonds issued by Canadian, which bonds were to be amortized over twenty years as

[17] This was the only equity capital actually invested in the entire enterprise.

part of the "cost" of gas to Colorado Interstate. This $5,000,000 is the alleged "purchase price" of the gas leases and producing properties of Southwestern's subsidiary (Amarillo) which Canadian contends the Commission should have allowed in determining its rate base.

Upon the foregoing facts, we submit that the Commission was entirely justified in concluding that, from the standpoint of Southwestern and its wholly owned subsidiaries, no true purchase and sale occurred, and the $5,000,000 represented no additional investment in the properties. We discuss below our view that the $5,000,000 in actuality represented an advance of a portion of Southwestern's profits in the joint enterprise; but however that may be from the standpoint of the relationship between Southwestern and its partners, it seems obvious that as between Southwestern and its subsidiaries there was no more than a paper intercompany profit.[18] Had Canadian never been

[18] The $5,000,000, although reflected on Amarillo's books largely in the form of credits, was not in fact even paid to Amarillo by Canadian. Prior to Canadian's organization, Standard advanced $5,000,000 in cash to Prairie Oil & Gas Company, a holding company affiliated with Southwestern, and Prairie used the sum in discharging certain obligations of Southwestern and Amarillo, in advancing $1,000,000 to West Texas Gas Company, another Southwestern subsidiary, and in furnishing $310,000 to Amarillo (R. V, 2937, 2932–35). Canadian, upon its organization, repaid the $5,000,000 to Standard with 6% interest, out of the proceeds of its bonds sold to Colorado Interstate.

organized, and instead Amarillo had placed the bond issue on the properties and either turned over $5,000,000 of the proceeds to its parent or repaid Standard the same sum in satisfaction of a loan, there would be no possible basis for contending that the payment represented an investment by Amarillo which should be allowed as part of the rate base. Cf. *Northwestern Electric Company* v. *Federal Power Commission*, 321 U. S. 119. The circumstance that for convenience in segregating the properties which were to be devoted to the project it was decided to place them in a new company—Canadian—likewise a wholly owned subsidiary of Southwestern, can have no effect upon the reality of the transaction.[19] In either event, Southwestern would merely have received $5,000,000 as part of the proceeds of a bond issue secured by a mortgage on properties owned by one of its wholly-owned subsidiaries. No part of this $5,000,000 was, or could be, turned into an investment in the properties by the device of shifting them over to a new wholly owned company before having the mortgage and bond issue executed.

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[19] Testimony of one of Canadian's witnesses (R. I, 521) shows that the decision not to place the properties in the new pipeline company (Colorado Interstate) was due to Standard's reluctance to be known as having an interest in a company owning land in Texas. The decision having thus been made to leave the ownership of the properties in Southwestern, it is obvious that mere considerations of corporate convenience must have determined in which of Southwestern's pockets they should be kept.

The unreality of the so-called "payment" is emphasized by the treatment accorded to the transaction on the books of the companies involved. The difference between the $5,000,000 "payment" and the cost of the properties—a difference of more than $3,000,000—was recorded by Amarillo on its books[20] as "paid in surplus" (R. V, 3046) and by Canadian, until 1939, as "appreciation" (R. V, 2630–2632), thus establishing that at the time the excess was regarded by the participants as too lacking in substance to be treated as a valid cost to Canadian or as a *bona fide* profit to Amarillo. In fact, in 1935 one of the principal executives of the Southwestern holding company group described the excess as "purely an inter-company profit" (R. I, 559). The "profit" disappeared in the consolidated tax return of Southwestern and its subsidiaries, including Amarillo and Canadian, and none of the companies paid any income tax as a result of the so-called "sale" (R. V, 2638).[21]

[20] This in spite of the fact that the "payment" was not actually made to Amarillo. See footnote 18, *supra*.

[21] While Canadian intimates (Can. Br. 60) that the effect of the elimination of taxable profit upon its depreciation and depletion base may in the long run result in its being required to pay "more, rather than less, Federal income taxes," it is to be noted that the Commission, in determining Canadian's income available for a fair and reasonable return, allowed all of Canadian's 1939 tax expense, finding it to be ample (R. I, 297).

Contrary to Canadian's contention (Br. 67), there is nothing in *A. T. & T. Co.* v. *United States*, 299 U. S. 232, inconsistent with the treatment here accorded to the intercompany profit. Because of the stipulation filed by the Federal Communications Commission in that case, the Court had no need to, and did not, decide the question whether the price paid in an acquisition of property may be disregarded merely because the parties to the transaction were affiliated. Here, the issue is whether any portion of the $5,000,000 advance did in fact, and "after a fair consideration of all the circumstances, * * * represent an investment" (299 U. S. at 241). The *A. T. & T.* case, however it may control the treament of the investment once its existence is determined, is of no aid in determining whether in fact it did exist.[22]

Here, the Commission has found that the "payment" did not in reality represent any increase in investment in the properties. The true character of the transaction is discussed in detail under the following heading.

[22] The decision of the three-judge statutory court in *New York Telephone Co.* v. *United States*, 56 F. Supp. 932, is likewise of no aid to Canadian's argument. Apart from the question whether that case was correctly decided, it involved an entirely different factual and statutory situation, including the significance of the company's contention that its accounting had been in accord with, if not required by, the regulations of the Interstate Commerce Commission applicable to it at the time.

B. FROM THE STANDPOINT OF STANDARD AND CITIES SERVICE THE $5,000,000 WAS AN ADVANCE TO SOUTHWESTERN OF A PORTION OF ITS SHARE IN THE PROFITS OF THE JOINT ENTERPRISE

In its statement of the questions presented, upon which the writ of certiorari was granted in No. 380, Canadian has chosen to treat the $5,000,000 "payment" as "the amount actually invested by Canadian in its original acquisition of production properties" (Question 3; see Can. Br. 3). So regarded, the excess disallowed by the Commission was, as we have seen, merely a paper profit in a transaction between wholly owned subsidiaries of the same parent. Doubtless recognizing the weakness of its position as thus originally presented to the Court, Canadian insists that the proper treatment of the "payment" is not as an investment by Canadian at all, but as the proceeds of an arm's length purchase of the properties by Cities Service and Standard from Southwestern. It states (Can. Br. 64) "that the real transaction was between non-affiliated parties [Southwestern on the one side and Standard and Cities Service on the other; see Can. Br. 56] and that the purchase price was agreed upon only after prolonged arm's length bargaining between non-affiliated parties." It emphasizes that there were no negotiations between Canadian and Amarillo, and that the $5,000,000 was paid before Canadian was even organized (Can. Br. 11, 59).

It may be conceded for purposes of our argument that Southwestern bargained at arm's length with Standard and Cities Service. But this does not make of the transaction a sale of producing properties by Southwestern. Southwestern owned the properties before the intercompany agreement, and it continued to own them afterwards, subject only to Canadian's obligation to furnish gas to the project at "cost." Subject to that obligation it still owns them. Title to the properties was merely transferred from one of its wholly owned subsidiaries to another.

True, under the intercompany agreement Southwestern's properties held by Canadian were subject to a "servitude" in favor of the joint project in which Southwestern was a participant. But this did not convert the transaction into a "sale" of the properties. Rather, Southwestern, as its contribution to the project, agreed to commit its properties to the furnishing of gas to the project at "cost". This was Southwestern's contribution to the enterprise, and its only contribution. In consideration for this contribution Southwestern received its share of Colorado Interstate's stock—50% of the preferred and 42½% of the common—and a cash advance of $5,000,000 (R. I, 392). Standard, on the other hand, as its contribution, put up $2,000,000 in cash as equity capital, and

purchased the bonds which were issued to finance the balance of the project (R. I, 496).[23]

Accordingly, if the transaction is to be viewed, as Canadian urges (Can. Br. 56, 64), from the standpoint of the three participants in the joint enterprise, the $5,000,000 clearly represents, not the purchase price paid by the project for Southwestern's properties, but rather a portion of Southwestern's share of the profits of the project—a share of the profits to exactly the same extent as its anticipated dividends on its allotment of Colorado Interstate's preferred and common stock. It is not, and could not reasonably be, suggested that the dividends obtained by the participants on their Colorado Interstate stock should be included in the rate base for the purpose of determining the reasonableness of the rates to be borne by the consuming public; and we submit that no greater basis exists for including a cash advance of such profits by one of the participants to another. That Southwestern and Standard may have been at arm's length in bargaining as to

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[23] The advance to Southwestern first took the form of a short-term loan at 6%. This was repaid by Canadian upon its organization out of the proceeds of its 20-year 6% bonds which it sold to Colorado Interstate. Standard, in turn, by buying Colorado Interstate's 20-year 6% bonds, furnished Colorado Interstate with the funds with which to buy Canadian's bonds (R. I, 496). In the last analysis, therefore, Standard advanced the $5,000,000 to Southwestern on a 20-year sinking-fund basis, at 6% interest.

how much Standard would advance can have no effect upon the nature of the transaction between them.

Regarded from the standpoint of the three participants, as Canadian urges, the case is in essential respects similar to that presented in *Niagara Falls Power Company* v. *Federal Power Commission*, 137 F. (2d) 787 (C. C. A. 2), certiorari denied, 320 U. S. 792. There, two unaffiliated groups, the Schoellkopfs and the Stetsons, owned and operated hydro-electric projects at Niagara Falls, New York. In order to utilize all the water being diverted by the two projects through the higher head and more efficient Schoellkopf plant and thus produce more power during World War I, the New York State Legislature, at the urgent request of the Federal Government, passed a special act authorizing the Schoellkopf companies to consolidate with the Stetson company to form a single "new" corporation.[24] The special act further provided that the new corporation could issue stock in exchange for the stock of the underlying companies in amounts not exceeding the aggregate of the book value of the latter. The consolidated corporation subsequently obtained a

[24] Diversions from the Niagara River for power purposes on the United States side were limited to 20,000 c. f. s. under the International Boundary Water Treaty of 1910 (36 Stat. 2448, 2450) and this amount of water was being diverted by the Schoellkopf and Stetson projects under special permits issued by the Secretary of War.

license from the Federal Power Commission under the Federal Water Power Act of 1920, and in determining the actual legitimate cost of the combined properties the Commission found substantial "write-ups" on the books of the predecessor companies which had been transferred to the books of the new company in the consolidation. The Commission "went behind" the consolidation and disallowed such "write-ups". Upon review of the Commission's order, the company, relying upon the absence of any affiliation between the original Schoellkopf and Stetson companies, contended that its stock issued in exchange for the stock of the predecessor companies had been issued in an arm's length transaction, and that since the amounts transferred to the consolidated company's books were fully supported by the then "value" of the underlying properties, such amounts should have been allowed as part of the cost of the properties.

In rejecting this contention and sustaining the Commission's order, the court, in an opinion by Judge Learned Hand, held (137 F. (2d) at 793-794):

> "* * * The three companies did not sell their properties to the petitioner, and the petitioner did not buy of them. We do not mean merely that the form of the transaction was not a sale—we should not stand on that—the substance also was not a sale. The properties had been held by two groups of persons: 'Stetson' and 'Schoellkopf' who

> combined their interests into one company which thereafter they owned jointly. The allotment of the shares as between the two groups was doubtless the result of genuine competition; presumably it followed the relative values of the properties. But all competition, all 'arms-length' bargaining, stopped there; neither party had any interest to reduce the nominal capitalization. * * * In short, while it may be tolerable to allow a buyer to capitalize the purchase price he may have paid, even though that has been computed upon the assumed continuity of rates which were higher than they should have been, there is surely nothing to be said in favor of allowing two companies mutually to pool their interests, and from that time forward to treat as vested the values they happened then to have."

Canadian contends (Br. 68) that the *Niagara Falls* case is not in point because there no money changed hands and in the end "each of the so-called sellers owned a portion of the combined assets". It is true that here Colorado Interstate, which was jointly owned by the three participants in the enterprise, did not acquire title to the properties as in the *Niagara* case, such title being vested in Canadian, the wholly owned subsidiary of one of the participants, Southwestern. However, this merely points up the fact that, as we

have seen, the actual transfer of the properties in this case was from one subsidiary of Southwestern (Amarillo) to another (Canadian), without any additional investment. The weakness of Canadian's position is emphasized by the fact that to avoid treatment of the excess as a properly disallowable intercompany profit, it must argue that the properties were "sold" not to Canadian but to the project, and that it must deny the very same conclusion to escape the authority of the *Niagara* case. If the transaction was in reality a sale to the project, the technical retention of title in Canadian should not be permitted to divert attention from the substance of the situation.

Nor does the "payment" of $5,000,000 to one of the participants serve to distinguish the cases. As we have seen, in spite of its form, this "payment" was in reality no more than a loan, received through the issuance of Canadian's bonds, which would be amortized over a twenty-year period as a "cost" in Canadian's sale of gas to Colorado Interstate. To the extent of this amortization, Colorado Interstate's "cost" of gas under the contract would be increased, and its profits available for dividends on its stock correspondingly decreased. From the standpoint of the other two participants, the loan was no more than an advance payment of Southwestern's share of the

anticipated profits. The amount of the advance has no greater bearing on the extent of Canadian's or Southwestern's investment in the properties than if Southwestern had bargained, equally at arm's length, with its banker for a loan on the strength of its prospects of profit from the venture.

Finally, we respectfully submit that in such an area as this, where proper treatment of an item of alleged "cost" depends upon the factual significance to be given to a large mass of related details in a complex intercorporate arrangement, the judgment of the Commission as the agency charged by Congress with the responsibility for making the essential factual determinations underlying the fixing of just and reasonable rates should be given peculiar weight by the courts. As this Court has many times held in comparable fields, on such a question the administrative judgment should be left undisturbed if only it has warrant in the record and a rational basis in law. Cf. *National Labor Relations Board* v. *Hearst Publications*, 322 U. S. 111, 131; *Dobson* v. *Commissioner*, 320 U. S. 489. We submit that in this instance there is at the very least no such infirmity in the Commission's determination of the true nature of the transaction as would justify substitution of the judgment of the courts for that of the Commission.

IV

THE COMMISSION PROPERLY DETERMINED THE AMOUNT OF THE REDUCTIONS IN PETITIONERS' REGULATED RATES BY AN ALLOCATION OF COSTS BETWEEN REGULABLE AND NONREGULABLE SALES

In objecting to the Commission's allocation of cost of service between the regulable and nonregulable sales, Canadian and Colorado Interstate contend that the Commission was required, as a matter of "jurisdiction", to make an allocation of their physical properties (Can. Br. 26–30; and Col. Br. 27–41). Petitioners further contend that the Commission should have adopted the allocation proposed by their witnesses instead of that presented by the Commission's engineer (Can. Br. 76–83; Col. Br. 41–56). We submit that there is no merit in these contentions. The Act vests the Commission with administrative discretion in the matter of allocation, and since the allocation of cost of service which the Commission here adopted was "a working one suitably adapted to the particular circumstances," it was properly affirmed by the court below (R. VIII, 5087).

A. THE COMMISSION HAS ADMINISTRATIVE DISCRETION TO ADOPT ANY METHOD OF ALLOCATION WHICH IS REASONABLE AND APPROPRIATE

There is no basis for petitioners' contention that the Commission was required to make an allocation of their physical properties, and, there-

fore, erred in determining the reasonableness of their interstate wholesale rates upon the basis of an allocation of the cost of service. The Natural Gas Act does not prescribe any method of allocation which the Commission must follow in determining the reasonableness of the interstate wholesale rates of a natural gas company.[25] Congress thus left the matter of allocation to the expert judgment of the Commission, subject to judicial review in the event of an abuse of its administrative discretion in this regard.

The sole purpose of an allocation between the regulable and nonregulable sales of a natural-gas company is to aid the Commission in its determination of the reasonableness of the return which the company is receiving from its regulated rates and to enable the court on review to determine whether a prescribed reduction in such rates violates any constitutional standards. In reviewing such orders this Court has not undertaken to prescribe any particular formula or method of allocation. As Mr. Justice Brandeis observed in *Groesbeck* v. *Duluth, S. S. & A. Ry. Co.*, 250 U. S. 607, 614, "it is much easier to reject formulas presented as being misleading than to find one apparently adequate." He also noted that the determination of the formula to be adopted in a

[25] Nor does the Act by its terms require that a formal allocation be made. This question is discussed in greater detail in our brief in No. 296, this Term.

particular case "presents a question, not of law, but of fact," and as Mr. Justice Douglas said in the recent case of *Butler Brothers* v. *McColgan*, 315 U. S. 501, 507, "one who attacks a formula of apportionment carries a distinct burden of showing by 'clear and cogent evidence' that it results in extra-territorial values being taxed."

The decisions of this court in the *Minnesota Rate Cases*, 230 U. S. 352, and in *Smith* v. *Illinois Bell Telephone Company*, 282 U. S. 133, do not support petitioners' contention that the Commission, as a matter of jurisdiction, had to make an allocation of their physical properties. In those cases, State agencies were undertaking to regulate the intrastate rates of utilities which were also engaged in interstate operations, the latter being constitutionally immune from State regulation. The regulation of the interstate wholesale rates of natural gas companies under the Natural Gas Act does not present such a constitutional problem, since Congress, if it so desired, could regulate the intrastate rates of such companies which "affect" their interstate rates and operations. In any event, an allocation of properties is merely a step in the determination of the costs (including return) properly allocable to the several classes of service of a company. As the Commission here observed, "all that can be accomplished by an allocation of physical properties can be attained by allocating costs including return" (R. I, 175).

It is thus apparent that the Commission is not precluded by the Constitution, the Act, or the prior decisions of this Court, from making a proper allocation of costs, including return, without first taking the preliminary step of allocating the physical property.

B. THE COMMISSION'S ALLOCATION OF COST OF SERVICE WAS REASONABLE AND APPROPRIATE

In arriving at the amount of the ordered reductions in petitioners' interstate wholesale rates, the Commission made an allocation of the cost of service of each petitioner, including in such cost the fair return on the rate base, and determined the excess of revenues over costs for intrastate sales, interstate direct industrial sales, and interstate sales for resale (R. I, 176–177). In making such allocation of costs, the Commission adopted the so-called "demand and commodity" method,[26] which had been presented by its staff witness Lyon, a gas engineer of wide experience (R. IV, 2375–80). We submit that the Commission's action in this regard was an appropriate and reasonable exercise of its administrative discretion in the circumstances.

The amount of gross revenues which petitioners derived from each of their customers was definitely known and undisputed. Accordingly, the

[26] See *Arkansas-Louisiana Gas Company* v. *City of Texarkana*, 17 F. Supp. 447, affirmed, 96 F. (2d) 179 (C. C. A. 8), certiorari denied, 305 U. S. 606.

only problem involved in a determination of the reasonableness of petitioners' interstate wholesale rates was to arrive at the portion of petitioners' operating expenses, including depreciation, depletion, taxes, exploration and development costs, which was properly allocable to each customer. Inclusion of the fair return of 6½% in the costs being allocated, gave the amount of revenue, in excess of costs and a fair return, being derived from each of petitioners' customers. Having thus determined the amount of excess revenues being derived from the interstate wholesale customers, petitioners were ordered to reduce their rates to such customers accordingly.

The method of allocation of costs, including return, which was thus presented by the staff engineer and adopted by the Commission may be briefly summarized.

The total cost of service includes all costs allowed by the Commission, i. e., all operating expenses, exploration and development costs, taxes, depreciation, and a return of 6½% on the rate base.[2] Such total cost was separated into

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[2] The total cost of service found by the Commission was $3,776,203, or $369,345 more than that used by witness Lyon, due principally to the Commission's allowance of a 6½% instead of a 6% return, and the Commission's increased allowances for depreciation, depletion and rate case expenses. These adjustments are tabulated in Schedules 1 and 2 of Appendix B, *infra*.

three classes, viz., "volumetric", "capacity" and "distribution" costs (R. I, 175; R. IV, 2317).[28] The volumetric costs were allocated to the customers on an annual Mcf basis, i. e., in the ratio that the sales to each customer in the test year 1939 bore to the total sales to all customers in that year. The total capacity costs were allocated to the customers in the ratio that the Mcf sales to each customer on the system peak day of February 9, 1939, bore to the total sales to all customers on that day (R. I, 175–176; R. IV, 2317–2319, 2381–2384).[29] The distribution costs, totaling $98,137, consist of two general classes: (1) depreciation, taxes, and return on investment in metering and regulating equipment

[28] The Commission characterized the "volumetric" or "commodity" costs as "variable costs * * * that vary proportionally to the output or volume of sale." It characterized the "capacity" or "demand" costs as "fixed costs * * * which do not vary with volume of sales" (R. I, 175–176).

[29] In allocating the capacity costs, domestic and commercial gas was treated as a class, and industrial gas, both direct and resale, as a separate class. It was then necessary for the expert to allocate the costs between direct and resale industrial sales. The capacity costs allocable to the industrials as a class were distributed to the individual industrial customers on a non-coincidental peak basis, i. e., in the ratio that each industrial customer's maximum 24-hour deliveries on any day in 1939 bore to the total of the maximum 24-hour deliveries of all industrials. This method produced substantially the same result as would have been obtained by using the ratio of sales on the single peak day of February 9, 1939, for allocating the costs as between direct industrials as a class and resale customers as a class (R. IV, 2438).

through which gas is delivered at individual stations to each customer, and (2) operating, maintenance and general expenses incurred in operation of such metering and regulating stations. The first group was allocated to each customer in the ratio which the investment for each customer bore to the total investment in such facilities to serve all customers. The second group was allocated on the basis of the number of stations (R. IV, 2335–2337, 2384; R. V, 2442–2443).

All costs related to the production system (including return, depreciation and depletion on leases and wells) were treated as volumetric, and a well-head unit cost developed per Mcf. These costs were allocated to customers in proportion to the number of Mcf's delivered to each customer in the year 1939. Similarly, a unit cost per Mcf was developed for gathering-system costs, which was apportioned to customers on an annual Mcf sales basis (R. IV, 2329; 2382; See Schedule F of Appendix B, *infra*). The residual refining credit was separately determined for each market, because residual refining operations are carried on in three separate gasoline plants, each of which processes gas transmitted to one of the three markets, viz., (1) the market served intrastate within Texas, (2) the markets served from the Denver pipeline, and (3) markets served by Natural Gas

Pipeline Company (R. IV, 2331, 2382–2383; see Schedule 1 of Appendix B, *infra*).

The transmission costs of the Denver line, totaling $2,241,432, were separated between volumetric costs ($727,908) and capacity costs ($1,513,524) (R. IV, 2333, 2383–2384; see Schedules 1 and 4 of Appendix B, *infra*). Briefly, all Denver line transmission costs were classified as capacity costs except that (1) all compressing system supplies and expenses, maintenance of compressing system equipment and accruals for depreciation of compressing station equipment were classed as volumetric, and (2) 50% of the return and income taxes on the Denver line, and operating labor on the compressing system, were classed as volumetric and 50% as capacity (R. IV, 2333). The rental of $230,507 paid by Canadian to Texoma Natural Gas Company for the use of the latter's line to transport gas to Gray, Oklahoma, for delivery to Colorado for resale to Natural Gas Pipeline Company, was allocated entirely to such sale (R. IV, 2317, 2384).

The propriety of the Commission's action in adopting the foregoing method of allocation presented by its staff engineer is further apparent from a brief consideration of the inherent defects in the two methods of allocation which petitioners submitted.

Under petitioners' first method the cost of service to the wholesale customers was determined on

the basis of what it would have cost to construct and operate a hypothetical substitute pipeline to serve only such customers.[39] Under this method all the gas sold to industrial customers during off-peak periods would be given free transportation through the pipeline. Yet, as petitioners' witness admitted, a pipeline to serve only the wholesale customers would never have been built (R. II, 1089–90; 1098–1101; R. III, 1743–1744).

Petitioners' second method was equally unsound. Under this method the total cost of service would be allocated between the wholesale customers and the direct industrial customers on the basis of the ratio between (a) the cost of constructing and operating a pipeline of sufficient diameter to serve only the wholesale customers and (b) the cost of constructing and operating a larger pipeline having sufficient diameter to meet the requirements of all customers including direct industrials (R. IV, 2268–2273) (Exh. 316, pp. 14–22; Tr. 24,264–24,272). This method thus assumes, for purposes of allocation, that only the wholesale gas flows through the diameter nearest the center of the pipe and only the direct industrial gas flows through the balance of the pipe. Since the unit cost of constructing pipeline capacity decreases as the diameter of the pipe increases, it is clear that this method would assess

[39] R. II, 1086; R. III, 1469, 1734; R. VI, 3565; R. III, 1742; R. IV, 2144; R. VIII, 4860–4861; R. IV, 2192.

against the resale customers the initial and more costly portion of the installed capacity.[1] Thus, petitioners' witness Rhodes admitted that under this method, when 61.8% of the gas flowing through the pipeline is taken by the wholesale customers, there should be allocated to them not 61.8% of the transmission costs, but 83.5%.[2] Petitioners' second plan of allocation also assumes that the first compressor engine installed at each compressor station is entirely used to pump resale gas and therefore that all of its cost should be allocated to such resale business, the cost of only the additional units at each station being allocated between the resale and direct sale business (R. IV, 2272). Combining these assumptions with some reproduction cost estimates, petitioners' witness charged the wholesale business with 70% to 95% of the cost of compressor stations (R. IV, 2273–2275), although exhibits introduced by the same witness show that at least three of the five compressor stations on the Denver pipeline were

[1] Petitioners' witness, Rhodes, testified: "The cost of a pipe line does not vary in direct proportion to its capacity, but the cost does vary substantially in direct proportion to the diameter" (R. IV, 2270).

[2] Witness Rhodes testified: "A line of 61.8 percent capacity has, as shown on Chart II attached, a diameter of 83.5 per cent of full diameter, referred to as the diameter ratio. Accordingly, the resale gas should bear 83.5 per cent of the full cost of that part of the trunk line in which its quota is 61.8 per cent of capacity" (R. IV, 2270).

installed to enable petitioners to deliver gas to direct industrial customers on peak days.[33] Under this method, none of the cost of these three compressor stations should be charged to the resale business. Finally, it is to be noted that petitioners' second method would result in a cost of only 7.58¢ per Mcf being assigned to gas sold to direct industrials, for which Colorado receives average revenues of 13.39¢ (Ex. 140, sum of lines 8 and 11, column 7 divided by sum of lines 8 and 11, column 11; Tr. 13284), or a profit margin of 76% over such purported cost.

We accordingly submit that the Commission did not abuse its administrative discretion in adopting the method of allocation presented by its staff engineer and rejecting the methods urged by petitioners.

C. PETITIONERS' OBJECTIONS TO THE COMMISSION'S METHOD OF ALLOCATION OF COST OF SERVICE ARE WITHOUT MERIT

In addition to those mentioned above, Colorado Interstate advances several objections to the Commission's allocation (Col. Br. 41–53), in which

[33] For example, in Exhibit 316 witness Rhodes states that the peak day demand of the resale business on January 24, 1940, was 67,783 Mcf (R. IV, 2268), while in Exhibit 66 (R. II, 1169) he shows that the capacity of the line as it existed in 1929, with only the Bivins and Canyon Stations in operation, was 80,000 Mcf, or more than enough to take care of the peak demands of the resale business in 1940. Since the present rated capacity of the Denver line is now 105,000 Mcf, it is clear that the additional compressor stations were constructed since 1929 to take care of the direct industrial business.

Canadian joins (Can. Br. 73). We submit that these objections lack substance.

1. *Priority of Service.*—Contrary to Colorado's contention (Col. Br. 42–45), it is clear that the Commission gave full effect to contractual priority of resale gas over direct industrial sales to the extent it was actually exercised during the test year. Under the Commission's method, volumetric costs were apportioned on the basis of the total volume of gas taken by each customer during the test year and capacity costs were apportioned on the basis of each customer's actual receipts on the system peak day. Thus, the method fully reflected all actual curtailments of load to each customer throughout the year and on the peak day.

Moreover, the record shows that interruptions and curtailments of direct industrial customers are so slight that the Commission might well have allocated to the direct industrial customers their full volumetric share of all costs of the Denver line amounting to 46.4% of the gas delivered from such line in 1939, instead of allocating only 40.5% of such costs (R. IV, 2319). The Commission's engineer testified that sufficient capacity has been installed to provide uninterruptible service to the industrial customers (R. V, 2439–2440), and that practically all of petitioners' customers have received almost continuous service as a result of petitioners' policy of increasing the capacity of

the system as the anticipated demands of all customers increased (R. V, 2439–2440).[34]

Petitioner's statement (Col. Br. 8, 9, 42) that priority and preference provisions in contracts had operated in favor of the domestic customers on 40 different occasions, is inaccurate. The record shows (R. II, 1025–1028) that during the 12½-year period from the commencement of operations on June 19, 1928, to December 31, 1940, natural-gas deliveries from the Denver pipeline were reduced or completely interrupted only 15 times. The Company calculates its "forty occasions" by multiplying each date of interruption by the number of customers who were interrupted (R. II, 1025–1028).[35] The record shows that de-

[34] For example, Colorado Portland Cement Company, a direct industrial customer, is served under an agreement (R. II, 955) which provides that service will be supplied during the months of November to February, inclusive, only when the Colorado Company "has gas and capacity available." Yet, deliveries to this customer have been reduced only 117 hours during the entire ten-year period of service, and service has been completely interrupted only 36 hours, due to a break in the branch line to such customer's plant. At all other times, the Cement Company has received full and complete service (see Appendix C, *infra*).

[35] For example, R. II, 1027 shows that service to Colorado Wyoming Gas Company and Atchison, Topeka and Santa Fe R. R. Co. was interrupted on June 1, 1937, and June 2, 1937, for 32 and 49 hours, respectively. This was one consecutive period of interruption. Petitioners call this "two occasions." Again, R. II, 1027–1028 shows that service to Arkansas Valley Natural Gas Company, Citizens Utilities Company, American Crystal Sugar Company, Atchison, Topeka and

spite physical failure of facilities and high demands, full and complete service has been rendered to customers from 99.79% to 99.99% of the time they were connected to the Denver pipeline. (See Appendix C, *infra.*)

It is clear from the testimony of Company engineer Rhodes, who participated in designing the Denver line, that such line was originally designed for carrying the loads of both the domestic and industrial customers (R. IV, 2260). As additional capacity was required to meet the peak loads of both classes of customers, additional compressor facilities have been installed. The daily capacity of the Denver pipline was 80,000 Mcf in 1929 and 1930 (R. II, 1109). The actual peak-day deliveries to resale customers 10 years later, in January 1940, from that line were 67,783 Mcf (R. IV, 2269) and would have been only 79,835 Mcf at an assumed mean temperature of 15 degrees below zero, according to petitioners' estimates (R. II, 2269). Thus, in 1940 the peak-day load of all resale customers was less than the capacity of the line as it existed in 1930. During the ten-year period 1930–1940 two of the original compressor stations on the pipeline were enlarged

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Santa Fe R. R. Co., and Veterans Administration Facility were interrupted for periods varying from 8 to 13 hours on September 9, 1937, due to a washout on the Arkansas Valley lateral which serves all these customers. In their brief, petitioners designate this single interruption of service to five customers as "five occasions."

and three more compressor stations were added,[36] thereby enabling petitioners, on the peak-day in January 1940, to deliver not only 67,783 Mcf to resale customers, but in addition 47,343 Mcf to direct industrial customers, or a total of 115,126 Mcf (Exh. 316, p. 12; R. IV, 2269). It is apparent, therefore, that if petitioners had not intended to deliver gas to direct industrial customers on peak days, they would not have installed such additional compressor facilities between 1930 and 1940.

2. *Transmission Line as a Unit.*—There is also no merit in petitioners' contention that the Commission erred in treating the Denver line and its laterals (branch lines) as a unit, because certain laterals, metering stations and associated equipment are used exclusively for making either regulable or nonregulable sales and the balance of the property is used in common in varying degrees by both classes of business (Col. Br. 45–47; Can. Br. 76–83).

With respect to metering stations and associated equipment used exclusively in the service of individual customers, the return, depreciation, and taxes on the investment in such equipment, as

[36] Allowance was made by the Commission in petitioners' rate bases for future capital additions, including an additional compressor station to be installed on the Denver pipeline, making a total of six stations, and thereby allowing for the cost of further increases in capacity of the line (R. I, 162–164).

above stated, were allocated in the ratio that the investment for each customer bore to the total investment in such facilities. Thus, such costs were assessed on the basis of use by each customer.

While the laterals were not segregated, it is apparent from petitioners' own evidence that if the Commission had made such a segregation more costs would have been assigned to the direct industrial customers, since the laterals are used more extensively by the direct industrial customers than by the resale customers.[37]

Moreover, the Commission's treatment of the Denver line as a unit was reasonable and is supported by substantial evidence. In *Wabash Valley Electric Co.* v. *Young*, 287 U. S. 488, 497, this Court held that "normally" the unit for rate-making purposes is "the entire interconnected operating property of a utility used and useful for the convenience of the public in the territory served, without regard to particular groups of consumers or local subdivisions." That case approved an allocation apportioning the average generating

[37] According to company witness Rhodes' Exhibit 316, Statement No. 10-B (Tr. 24,308), 67% of the gas delivered through the laterals on the peak day of 1939-1940 winter was sold to direct industrials. Mr. Rhodes apportioned 50% of such laterals to Colorado Interstate's regulable sales and 50% to its nonregulable sales, thereby demonstrating that the most the Company has claimed is that such laterals are used 50-50 by both classes. The Commission allocated only 40.5% of the transmission costs (including laterals) to the direct industrial or nonregulable sales (see Appendix B, *infra*).

and transmission costs of a large interconnected electric system which operated in a territory comprising thirteen counties and sold electric current to approximately fifty cities and towns and to affiliated utilities for subsequent distribution in many other towns and cities. Under such method, there was allocated to the city of Martinsville a proportionate part of the total value of the general generating and transmission system "on the basis of the ratio of actual sales of Kw. H. to Martinsville and its consumers to the total sales of Kw. H. by plaintiff during the year 1929" (Id., 499).

The Denver line is 340 miles in length, having its most important and one of its indispensable markets in Denver at the very end of the line. The pipeline admittedly (Col. Br. 44) would not have been built and the various communities and customers along the route of the line would not be receiving natural-gas service from the project, were it not for the Denver resale market and the Colorado Fuel & Iron Company's direct industrial market (R. I, 142, 437).

Some 20,904,344 Mcf, or 98% of the total 21,364,223 Mcf delivered from the Denver line in 1939, was delivered in the State of Colorado after the gas had been transported along the main pipeline 200 miles, and after passing through at least three of the four compressor stations at such time (R. II, 1079, 693; R. IV,

2319). Moreover, the volumetric load center of the Canadian-Colorado Interstate pipeline system is at a point approximately half way between Denver and Pueblo (R. V, 2427). Accordingly, it was reasonable to determine the transmission costs for the pipeline as a whole and not on a mileage demand basis. Cf. *Columbus Gas & Fuel Company* v. *Public Utilities Commission*, 292 U. S. 398, 408–409. Significantly, Colorado Interstate's existing rate structure gives recognition to the propriety of this procedure, because its basic rates for gas sold at the Pueblo, Colorado Springs, and Denver "city gates", are identical (Exh. 262, Table R–9, Sheet 1; Tr. 23,514), although gas delivered to Denver is transported 110 miles farther and through one more compressor station than gas delivered to Pueblo (R. II, 693). As the Commission engineer testified, the various parts of the Denver transmission system are "so interwoven that it is not reasonable to segregate" them (R. IV, 2399).

Certain incidental contentions which petitioners advance in this connection may be briefly noted. Canadian's contention that the Commission made an erroneous allocation of costs in determining the cost of service for intrastate gas sold by it from the Denver line to Amarillo Oil Company for resale to the towns of Dalhart, Hartley and Texline, Texas (Can. Br. 80–81) also lacks substance. Only 378,912 Mcf of gas was sold for

FILE COPY

IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

No. 379

COLORADO INTERSTATE GAS COMPANY,
a corporation, Petitioner,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and CANADIAN RIVER GAS COMPANY, Respondents.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE TENTH CIRCUIT, AND BRIEF IN SUPPORT THEREOF.

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July, 1944

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1. The order of the Commission, sustained by the Circuit Court of Appeals, which was based upon a purported finding of the Commission as to the original cost of petitioner's property, or its prudent investment therein, cannot possibly result in just and reasonable rates when a portion of such cost (in this case $1,000,000) was eliminated, and the decision of the Circuit Court of Appeals is in conflict with the decisions of this Court, and particularly is in conflict with Federal Power Commission v. Hope Natural Gas Co., 320 U. S. 591. (No. 1 of Questions Presented, p. 2; Statement pp. 4 to 9.)	17

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2. The Commission in the companion case, as shown in Canadian's petition for certiorari, reduced the cost of gas sold to petitioner by Canadian under the contract in the amount of $551,000 per year. Any modification of this reduction must result in a corresponding reduction in the $2,065,000 annual reduction ordered in petitioner's rates. (No. 2 of Questions Presented, p. 2. Statement, pp. 9 and 10.) 21

3. The order of the Commission, sustained by the Court, does not allow sufficient annual depreciation to enable petitioner to recover its investment within the life of the project. (Nos. 3 and 4 of Questions Presented, pp. 2 and 3. Statement, pp. 10 and 11.) 22

4. The Commission could not possibly determine reasonable rates, consistently with the Fifth Amendment to the Constitution of the United States, for gas sold for resale in interstate commerce without making a separation or allocation of the property, some of which is used solely for the sale of gas not subject to the Commission's jurisdiction, and the remaining amount is used jointly for making intrastate sales in Texas and interstate sales for both resale and direct sale gas. It made no such allocation or separation, and its "allocation of cost of service" is not a valid substitute, and even if valid in principle, reasonable rates could not be determined because of the various errors in its application. (Nos. 5 and 6 of Questions Presented, p. 3. Statement, pp. 11 to 15.) 23

(a) The decisions of this Court require a separation of property, which the Commission admitted it did not make, and the approval of its action by the Circuit Court of Appeals was erroneous 24

(b) Even if the Commission's "allocation of cost of service" is a valid substitute for the separation of the property itself and could be approved, which we deny, no end result formula, such as approved in the Hope Case, can possibly cloak the flagrant errors in its application to our case 28

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IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

No.

COLORADO INTERSTATE GAS COMPANY, a corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE TENTH CIRCUIT, AND BRIEF IN SUPPORT THEREOF.

To the Honorable the Chief Justice and the Associate Justices of the Supreme Court of the United States:

The petitioner herein respectfully prays for a writ of certiorari to review the judgment of the United States Circuit Court of Appeals for the Tenth Circuit entered July 8, 1944, (R. V. 8, p. 5094) affirming an order of the Federal Power Commission under the Natural Gas Act of 1938 (52 Stat. 821; Title 15, U.S.C.A., Sec. 717) which order reduced by $2,065,000 per annum the rates or charges for natural gas charged by petitioner to distributing companies for wholesale deliveries of gas at various city gates in Colorado.

OPINIONS BELOW.

The opinion of the Federal Power Commission will be found in R. V. 1, p. 140, and is reported in 43 P.U.R. (N. S.) 205. The opinion of the Circuit Court of Appeals will be found in R. V. 8, pp. 5066-5094 and is reported in 142 Fed. (2nd) 943.

JURISDICTION.

The jurisdiction of this Court is invoked under Section 19(b) of the Natural Gas Act (52 Stat. 821; Title 15, U.S.C.A., Sec. 717(r)) and Section 240a of the Judicial Code as amended by the Act of February 13, 1925, (Title 28, U.S.C.A., Sections 346 and 347).

STATUTE INVOLVED.

The pertinent provisions of the Natural Gas Act of 1938 (52 Stat. 821; 15 U.S.C.A., Sec. 717) are set forth in Appendix A *infra*, pp. 33 to 35.

QUESTIONS PRESENTED.

1. Whether the Commission consistently with the requirements of the Fifth Amendment to the Constitution of the United States and the Natural Gas Act in fixing rates purporting to yield no more than a fair return on the cost of petitioner's property as adjusted by Commission accountants can eliminate from such cost rate base the actual cost to petitioner of certain contracts used and useful and necessary in petitioner's business, and did the Commission's action in so doing create an arbitrary and unreasonable result?

2. Whether the Fifth Amendment to the Constitution of the United States and the Natural Gas Act require a decrease in the ordered reduction of $2,065,000 in the event that Canadian River Gas Company (hereinafter called "Canadian"), in a companion case, which is filing a petition for certiorari simultaneously with the filing of this petition, obtains a reversal or modification of the Commission's order reducing its rates.

3. Whether the finding of the Commission as to the life of Canadian's reserves which form the basis for the

determination of annual depreciation expense is arbitrary, unreasonable and unsupported by substantial evidence.

4. Whether the Commission's action in fixing the annual depreciation expense on the basis of service lives proposed by the Commission's staff which prevents petitioner from recovering its investment during the economic life of the business in view of the over-all life of the whole Panhandle Field of 27 years from 1939 is an end result which confiscates petitioner's investment in violation of the Fifth Amendment to the Constitution of the United States and the Natural Gas Act.

5. Whether consistently with the requirements of the Fifth Amendment to the Constitution of the United States and the Natural Gas Act the Commission could determine reasonable rates for gas sold for resale in interstate commerce without making a separation or allocation of the property of Canadian and petitioner which, in this case, is used in making intrastate sales in Texas and interstate sale of both resale and direct sale gas, the Commission having no jurisdiction over intrastate sales or over direct sales in interstate commerce to industrial consumers.

6. Whether the Commission's substitute method of allocation of cost of service which results in burdening non-regulable gas with costs actually chargeable against regulable gas violates the Fifth Amendment to the Constitution of the United States and the Natural Gas Act.

STATEMENT.

This petition for certiorari is being filed simultaneously with a like petition by Canadian, and the two petitions are made on a joint printed record in the Circuit Court of Appeals. Accordingly, they may be said to be companion cases, and, furthermore, the Commission treated the properties of the two Companies as a unit.

The Commission's opinion and order, using what it termed a prudent investment rate base and an annual rate of 6½ per cent, found petitioner's rates unreasonable by $2,065,000 and ordered a reduction in rates by that amount. In order to arrive at this result it was necessary to:

(1) Eliminate from consideration in the rate base the actual unamortized cost of certain contracts paid for by petitioner in stock and deprive petitioner of any annual allowance for the amortization thereof,

(2) Deny to petitioner an adequate annual accrual for depreciation, thereby making it impossible for petitioner to recover its investment by the end of the economic life of the business,

(3) Refuse to make a fair and proper allocation of petitioner's property used in the regulable part of its business which is necessary to avoid encroachment upon the non-regulable business, and

(4) Adopt a scheme of cost allocation that deprives petitioner of earnings upon its non-regulable business contrary to the expressed mandate of the Natural Gas Act and to the Fifth Amendment to the Constitution of the United States.

Historical Statement.

Canadian owns a large natural gas producing property in the Panahandle Field in Texas. It is engaged in the production of gas and transports gas through its own 22" pipe line from Bivins Station in the Field to a point near Clayton, New Mexico, a distance of some eighty-six miles. There its pipe line connects with the 22" Denver pipe line of petitioner and there the gas is delivered to petitioner. Petitioner then transmits the gas through its pipe line to points in Colorado, with the terminus near Denver, a distance of approximately 254 miles. Sales of gas are made in Colorado both to privately and publicly owned distribution systems for resale, and directly to industrial customers for consumption. All of Canadian's production, except for a relatively small quantity sold for distribution in Texas and New Mexico, is purchased by petitioner.[1]

The history of the gas field, which is of great importance

[1]Petitioner also sells to Natural Gas Pipeline Company of America 25 per cent. of that company's requirements for its pipe line serving the Chicago area. Delivery of this gas is made in Oklahoma through leased capacity in a pipe line of Texoma Natural Gas Company, which furnishes the other 75 per cent.

in connection with the questions raised in this petition, as well as that of Canadian, will be quite fully stated in Canadian's petition. We ask the Court to consider these two petitions together, and we refer to and rely upon certain portions of Canadian's petition and brief rather than indulge in repetition.

In 1918, in the never-ending search for oil, a local Texas company, Amarillo Oil Company (hereinafter called "Amarillo Oil"), drilled a wildcat well in the Texas Panhandle Field. As happens frequently, the well came in as a gas well, and thus there was discovered what has subsequently been developed into one of the largest producing natural gas fields in the United States. The acquisition of acreage in the search for oil continued, and by 1924 Amarillo Oil owned in excess of 300,000 acres of natural gas leaseholds in the Texas Panhandle Field, which had been acquired in the first instance in the search for oil.

As would be expected, the original prices paid for these wildcat leases were nominal, reflecting the unproven character of the area. The purpose of the investment was to develop an oil field. It was not made as a project to serve the public with natural gas.[2] But since the wells drilled proved up a large gas reserve, the problem of marketing the gas had to be solved. Local markets were exceedingly small, and could have been served with one well.

Through certain corporate reorganizations Amarillo Oil had become a subsidiary of Southwestern Development Company (herein called "Southwestern"), all of the stock of which was owned by the interests which had acquired and developed the original leases and wells held by Amarillo Oil. It then undertook to find some method of marketing the gas. It had no means of its own with which to finance any long pipe line projects, and, furthermore, had had no experience with such projects, so it approached Standard Oil Company (N. J.) (hereinafter called "Standard") which had financial resources and had had considerable experience in long pipe line projects. Cities Service Company (hereinafter called "Cities Serv-

[2]This fact is important, in view of the action of the Federal Power Commission in throwing out the cost to Canadian of these leaseholds and wells and the cost to petitioner of its gas purchase contract.

ice") was also called in on the negotiations, because it owned the Public Service Company, which was then distributing manufactured gas in Denver, and controlled the Pueblo Gas and Fuel Company, then distributing manufactured gas in Pueblo. A franchise to distribute natural gas had to be obtained in Denver to make the project feasible, and, furthermore, the two distributing plants, in Denver and Pueblo, had to be converted into plants capable of distributing natural gas at higher uniform pressures than had been required for the manufactured gas. Neither of these three parties had any interest in either of the others. (R. V. 1, pp. 613, 622.) *They dealt at arm's length.* Southwestern was perfectly free to put its gas leaseholds and wells into the project and sell gas at cost or not, and, if it did, to insist upon its price being paid. Standard was free to finance the project or not, depending upon whether satisfactory terms could be agreed upon. Cities Service was free to say that its subsidiary distributing companies would go to the expense of converting their distribution systems to natural gas, and to enlarge these systems to take care of the contemplated increased use of natural gas for house heating, or to continue to distribute manufactured gas. These three parties finally, and after long negotiations as to the means of carrying out the project, entered into an agreement entitled "Memorandum of stipulations agreed upon between Southwestern Development Company, Cities Service Company and Standard Oil Company (New Jersey)". (Exhibit 1, R. V. 1, p. 381), which was signed April 5, 1927, conditioned upon the granting of a natural gas franchise to the Public Service Company in Denver, and the fixing of rates to be charged by Public Service Company on such basis as would make the project feasible. (R. V. 1, p. 394.)

Cost to Petitioner of Certain Contracts.

It was agreed that in order to carry out the project Southwestern would form and own what they then referred to as the "Texas Producing Company" (Canadian), and would cause its wholly owned subsidiary, Amarillo Oil, which then had the title to the leaseholds, gas wells and equipment, (R. V. 1, p. 381) to convey these properties to Canadian for a consideration of $5,000,000 (R. V. 8, p. 5069). Southwestern

was to form what they called the "Texas Connecting Company" for the purpose of making deliveries of gas for the project (R. V. 1, p. 383); however, one company to perform the functions of both the producing company and the connecting company could be formed (R. V. 1, p. 401), and that is what actually happened in the formation of Canadian. This project Agreement provided that these gas leaseholds and wells, except for certain intrastate sales in Texas, would be reserved for the Denver line project and that no contract for the sale of natural gas would be made nor anything done that might impair the capacity to fulfill the deliveries of natural gas thereunder for the full term of the Gas Purchase Agreement to be made. (R. V. 1, p. 384).

It was agreed that Standard, in order to carry out the project, was to form a company, designated in the agreement the Colorado Company, which later became your petitioner, Colorado Interstate Gas Company (R. V. 1, p. 385; V. 2, pp. 625-641), and your petitioner was to construct a pipe line from the point of connection with Canadian's line, at a point near Clayton, New Mexico, to Denver via the city gates of Pueblo and Colorado Springs. It was agreed that Canadian, under a contract for the full term of the project, would sell gas to petitioner on a cost basis in consideration for which petitioner was to issue part of its preferred and common stock. Petitioner was to sell such gas to Public Service Company under a definitive contract to be made in accordance with the terms already agreed upon. Similar sales contracts were to be made by petitioner with Pueblo Gas and Fuel Company and with Colorado Springs, if the Public Service Company could buy the distributing system at that place. (R. V. 1, p. 387.) In addition, it was agreed that petitioner was to sell gas directly to Colorado Fuel and Iron Company, which was a necessary prerequisite to make the project economically feasible (R. V. 1, pp. 493, 519), and a few other industrial customers under interruptible contracts, for industrial use, subject to the prior demands of the domestic consumers. (R. V. 1, pp. 390, 391.)

Cities Service was to cause its subsidiary distributing companies to convert the systems used to distribute manufactured gas into systems to distribute natural gas, and to make such additions and changes in the distribution plants

which would be required for the contemplated increased use of gas for house heating as well as for domestic purposes. (R. V. 1, p. 390.) It also agreed to furnish engineering and commercial advice in connection with the project.

Standard agreed to purchase a portion of the common and preferred stock of petitioner, and also to advance to petitioner cash with which it in turn could purchase for cash the bonds of Canadian.[3] (R. V. 1, pp. 394-398.) Standard organized the Colorado Company and purchased for cash 531,250 shares (42½% of the total) of its common stock for $1,000,000, and 10,000 shares (50%) of its $100 par value 6% preferred stock, for which it paid $1,000,000 in cash (R. V. 2, pp. 626-630). As agreed upon in the project Agreement, there was issued simultaneously by petitioner to Southwestern, as the nominee of Canadian in consideration of Canadian's execution and delivery of its contract to produce, gather, transport and sell gas to the project at cost, 531,250 shares (42½%) of petitioner's common, and 10,000 shares (50%) of its preferred stock (R. V. 2, pp. 627-629), which was recorded and charged on the books of petitioner in the total amount of Two Million Dollars, being exactly the amount simultaneously received by petitioner for the sale of a like amount of stock to Standard for cash. (R. V. 2, p. 627; V. 3, pp. 1439-1440.)

Also as agreed there was issued simultaneously to Cities Service for causing its subsidiaries to change over to the distribution of natural gas, and for the other considerations stated above, 187,500 shares (15%) of petitioner's common stock (R. V. 2, pp. 628, 629; V. 3, pp. 1439, 1440), which was likewise recorded on petitioner's books at $352,941.17, being on the same basis as the stock sold for cash to Standard (R. V. 2, p. 628).

Petitioner contended that in any determination of original cost the unamortized portion of the cost of these contracts paid for in stock issued to Southwestern and Cities Service should be included, but the Commission denied such contention and refused to include in original cost or prudent investment any of such costs. At the time of the hearing,

[3]As finally financed, Standard bought substantially all of petitioner's bonds, as well as the portion of common and preferred stock referred to next. (R. V. 1, p. 496.)

the unamortized portion of such cost (and that was all the petitioner contended should be included) was $1,000,000. (R. V. 3, p. 1749.)

There was no disagreement in the evidence that the costs charged on the books for the stock payments to Southwestern and Cities Service were on the same basis as the cash simultaneously paid by Standard for a like amount of stock. (R. V. 3, p. 1440.) The Commission witness agreed that this was the best evidence as to the value of the stock at that time. (R. V. 3, p. 1437.) He also agreed that the transaction was the same as if cash in these amounts had been paid for the contracts and then stock had been purchased with that cash.[4] (R. V. 3, pp. 1443-1444.)

There was no evidence whatsoever that the payments for these contracts were excessive, or that the consideration received was inadequate. Neither was there any evidence, nor could there be any evidence, that the agreement for Canadian to sell the gas at cost, was of any less value than the payment made therefor. Neither was there any evidence that the undertakings on the part of Cities Service for its part in the launching of the project was of less value than the stock paid therefor. Notwithstanding these facts which were not disputed by the Commission (R. V. 1, pp. 152-154) and which the Court stated in substance (R. V. 8, p. 5082), the Commission and the Court wholly disallowed these items as an "unjustified and fictitious increase of book cost of plant" (R. V. 1, p. 153; V. 8, p. 5082).

Reduction in Cost of Gas.

A part of the reduction of $2,065,000 per year ordered by the Commission as against your petitioner is based upon a reduction ordered in the Canadian case in the price of gas sold by Canadian to petitioner in the amount of $551,000 per annum. In the companion case involving Canadian, it is contended that the Commission and the Court erred in ordering and approving this reduction in the cost of gas, and should Canadian be sustained in its contention that this

[4]The Commission did allow as part of original cost or prudent investment the unamortized portion of the cost of a contract for the sale of gas at the city gate at Colorado Springs in the amount of $118,061 paid in cash. (R. V. 2, p. 1127.)

reduction of $551,000 should not have been ordered, in whole or in part, then it would necessarily follow that the $2,065,000 reduction should be reduced accordingly, and this is a very special reason why, as already indicated, the two petitions for certiorari should be considered together.

Annual Depreciation Expense.

Annual depreciation expense was determined on the service life formula. (R. V. 1, p. 160.) The Commission's engineer testified as to the service lives of the various items of property. He assigned a 50 year life to the main pipe line; a 48 year life for most of the structures; a 36 year life for the compressors, and shorter lives for the other items of property entering into the plant. In determining the service lives he stated it was necessary to take into account the life of the field, or the economic life of the project, and he testified that it was necessary to indulge the assumption that the company could continue in business and use the plant not only up to the end of the 50 year life which he had assigned to the main line, but also for a period of six to ten years beyond. The 50 year life would expire in 1978, and accordingly his assumption was that the economic life of the field will extend until 1984 or until 1988. This was based upon the testimony of Commission staff witnesses which the Commission actually did not accept. The reason for assuming that the economic life of the field would be six to ten years longer than the 50 year period assigned as the life of the main pipe line was, as he stated, in order that necessary additions to the plant and property made in the latter part of the service lives could be recovered by depreciation allowance over such additional period of time. (R. V. 3, p. 1760.)

In the companion case Canadian makes the contention that the finding of the Commission as to the remaining life of its recoverable reserves is not supported by any substantial evidence, and that the true life of its recoverable reserves is much shorter than that found by the Commission, and must be based on the economic life of the Panhandle Field as a whole, not on Canadian acreage solely. The life of the entire Panhandle Field, on the basis of the Commission witness's estimate of recoverable reserves adjusted to a fifty

pound abandonment pressure and divided by the estimated annual production from the field as a whole, does not exceed twenty-seven years from December 31, 1939, (R. V. 1, p. 157; V. 7, p. 3701; V. 8, pp. 4638-46). Petitioner makes the same contention and if it be sustained then the necessary result is that the petitioner will be unable to recover its investment during the true economic life of petitioner's business. The Commission recognized that the life of the enterprise must be longer than the service life of any major unit of property. Thirty-eight years from 1939 was assigned to main line pipe so that a twenty-seven year life under the Commission's own theory will not permit a recovery of petitioner's investment (R. V. 1, pp. 159-161).

Allocation of Property Between Regulable and Non-regulable Business.

Only a portion of the gas sold by petitioner is subject to the jurisdiction of the Commission. All gas sold direct to industrial customers is free from price regulation. Gas sold in intrastate commerce by Canadian is also free from regulation. This situation requires a determination of costs properly chargeable against the regulable sales. The Commission acknowledged this duty (R. V. 1, pp. 174-177).

The Commission witness and the Commission itself admitted that no separation or allocation of the property was made as between interstate and intrastate business, nor as between resale gas subject to the Commission's jurisdiction and direct sale industrial gas not subject to the Commission's jurisdiction (R. V. 1, p. 175). The Commission found that this was not necessary, and substituted what it called allocation of cost of service, which took into account the cost of operation, as determined by it, plus a return, as determined by it.

The Commission's Allocation of Costs.

Where, as here, all sales are not subject to Commission jurisdiction, if the method of allocation used unfairly burdens the gas unregulated, sold to industrial customers for consumption, then the result of the Commission's action is to take from petitioner the earnings of its unregulated

business, contrary to the intent of the Natural Gas Act, and give them to the customers who purchase gas for resale. This results in confiscation and, in fact, follows from the so-called allocation used by the Commission in this case. The Commission did not discuss the details of its allocation and we must examine the testimony for enlightenment as to the basis of the allocation followed by the Commission (R. V. 1, pp. 175-176).

In making the allocation the Commission treated the properties of Canadian and petitioner as a unit, combining costs and operations. The accounting witnesses for the Commission made adjustments by way of deduction in the original cost and adjusted downward each company's operating expenses. Then another accounting witness consolidated all of the revised accounts of the two companies, as if the two companies were one, reflecting in such consolidated figures all of the adjustments theretofore made with respect to each company separately. (R. V. 4, pp. 2215-2259.) This was set up as Exhibit 185. (R. V. 4, pp. 2215-2244.)

The engineering witness then took this Exhibit 185 which showed the combined gross income of the two companies, with the amount paid by petitioner to Canadian for gas under the contract eliminated. (R. V. 4, p. 2246.) This combined gross income included the income received by Canadian from its intrastate sales in Texas (R. V. 4, p. 2249), and it included the income from all direct sale industrial or unregulated business of both companies. (R. V. 4, p. 2229.)

This engineering witness admittedly made no separation either as between the property devoted to intrastate and that devoted to interstate business, or as between that used in selling gas for resale and that used for direct sales not subject to regulation. (R. V. 4, pp. 2317-2373.) He gave no consideration to the fact that resale gas had priority over direct sales to industrial customers, and that the system had been built and maintained on that basis. (R. V. 4, pp. 2390-2397.) He admitted that the load factor of gas delivered into the Denver line and into the Chicago line of Natural Gas Pipeline Company of America was of conse-

quence in determining cost, and that the load factor on the Chicago line was 95%, whereas it was somewhere between 60% and 70% on the Denver line. Nevertheless, he gave no consideration whatever to the load factor. (R. V. 4, pp. 2390, 2391; V. 5, pp. 2414, 2415.)

In allocating his transmission costs the witness treated as a unit, and as if it were one common conduit used by all gas, all the transmission system, beginning with and including:

(1) Canadian's Bivins Compressor Station in the field and its transmission line from that point in Texas,

(2) All laterals used in making intrastate deliveries in Texas, whether direct sale industrial gas or sales of gas to Texas distributing companies, and

(3) All of petitioner's transmission line to Denver with all of its laterals, even though some laterals were used exclusively in delivering direct sales gas to industrial customers. This complete transmission system, consisting of four compressor stations and 340 miles of pipe lines, was treated as a unit or one conduit.

The witness discussed the Commission's flow map reproduced as Appendix B (R. V. 2, p. 1079), in reference to which it appeared that of the 21,594,112 Mcf of gas which passed through the Bivins station in 1939, 7,257,379 Mcf were sold directly to Colorado Fuel and Iron Company at Pueblo as a direct sale, not subject to regulation, and that this gas made no use whatever of his assumed unit or common transmission system from Pueblo to Denver, a distance of 105 miles. It also appeared from the flow map that 1,676,091 Mcf for the same year constituted direct sales to the Colorado Portland Cement Company, slightly north of Pueblo, and that the 20-inch pipe line from Pueblo to Denver, in contrast to the 22-inch pipe line south of Pueblo, was used almost exclusively by the resale or regulated gas. The witness admitted that in computing his "volumetric cost" component of his total transmission cost he gave no consideration to such facts, and admitted, of course, that consideration of such facts would produce a different result. In transmission costs, a large factor is

the number of times the gas is compressed at the several compressor stations. In deriving his cost he gave no consideration to the number of times the gas had to be compressed before it was delivered to the respective customers. (R. V. 4, pp. 2396-2399.) He admitted that for every thousand cubic feet taken from the line the volumetric factor of three cents plus was applied, whether the gas left the line at Dalhart, Texas, only a few miles from the field, or whether it was transmitted all the way to Denver (R. V. 5, p. 2425). He also admitted that although gas going to Denver is compressed four times he did not allow any greater expense than for the gas leaving the line after one compression only. (R. V. 5, p. 2448.) He gave no consideration to the fact that the industrial customers had a shut off provision in each of those contracts, nor did he give any consideration to the numerous shut offs that had been made in the course of the company's experience. (R. V. 5, p. 2439.) He gave no consideration to the relative or prior use of the line which the regulated business might demand over the unregulated on the coldest day expected, but merely took deliveries of regulated and unregulated gas as they happened to occur on February 9, 1939, which he called the system's peak delivery day for that particular winter. (R. V. 5, pp. 2434-2436; V. 4, p. 2319.) In making his division of all costs he treated all of the gas as if it entered the transmission system or common conduit at Bivins, and as if such gas used or was transmitted through every part of such unit transmission system, and all came out at one common vent at Denver. (R. V. 5, pp. 2422-2448; V. 4, pp. 2317-2373.)

After deriving such allocated cost in the manner indicated, he then compared these allocated costs with the actual revenues received in 1939 from each customer, including both regulated and unregulated sales, substracted one from the other, and thus derived the amount of the recommended reduction.

This, in brief, was the testimony, and the only testimony, upon which the Commission attempted any allocation at all, and by this method the Commission arrived at the ordered reduction in rates. This method departed from

the requirements of the decisions of this Court, saying emphatically that there is a jurisdictional necessity for an allocation or separation of *property* which is jointly used in interstate and intrastate commerce, and this jurisdictional necessity is just as apparent where property is jointly used for resale gas (subject to regulation) and direct sale gas (not subject to regulation).

Petitioner put in full and complete testimony showing the correct allocation of petitioner's property between that used in carrying on the regulated business and that used in selling gas to industries for consumption. This was completely disregarded by the Commission (R. V. 1, p. 175).

REASONS FOR GRANTING THE WRIT.

1. The Circuit Court of Appeals has decided Federal questions under the Natural Gas Act in a way probably in conflict with applicable decisions of this Court.

2. The Circuit Court of Appeals has decided important questions of Federal law arising under the Natural Gas Act which have not but should be settled by this Court.

3. The Circuit Court of Appeals has so far departed from the accepted and usual course of judicial procedure as to call for an exercise of this Court's power of supervision.

CONCLUSION.

For these reasons, stated more fully in the attached brief, it is respectfully submitted that the writ should be granted.

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BRIEF IN SUPPORT OF PETITION FOR WRIT OF CERTIORARI.

I.

THE OPINIONS BELOW.

Reference to the opinion of the Commission and of the Circuit Court of Appeals is made in the petition, page 2.

II.

JURISDICTION.

The statutory provisions under which the jurisdiction of this Court is invoked are shown in the petition, page 2.

III.

STATEMENT OF THE CASE.

This appears in the petition, pages 3 to 15.

IV.

SPECIFICATION OF ERRORS TO BE URGED.

Errors to be urged are those specified in the petition, pages 2 and 3, under the heading "Questions Presented".

V.

ARGUMENT.

1. The order of the Commission, sustained by the Circuit Court of Appeals, which was based upon a purported finding of the Commission as to the original cost of petitioner's property, or its prudent investment therein, cannot possibly result in just and reasonable rates when a portion of such cost (in this case $1,000,000) was eliminated, and the decision of the Circuit Court of Appeals is in conflict with the decisions of this Court, and particularly is in conflict with Federal Power Commission v. Hope Natural Gas Co., 320 U. S. 591. (No. 1 of Questions Presented, p. 2, Statement pp. 4 to 9.)

The evidence relating to the project agreement of April 5, 1927, between Southwestern, Standard and Cities Service will be found in Volume 1 of the Record at pages 381 to 596.

The evidence as to the performance under said agreement will be found in Volume 2 at pages 626 to 641, and in Volume 3 at pages 1439 and 1440, and the evidence as to the elimination of the $1,000,000 from original cost will be found in Volume 2 at page 1140 and Volume 3 at pages 1429 to 1451.

The facts are sufficiently set forth in the Statement in the petition.

The value of the contracts in question seems evident. It requires no argument to demonstrate the enormous value to petitioner of having these gas leaseholds, wells and other facilities of Canadian, obligated to produce, gather, transport and sell gas to petitioner on a preferred basis at cost for a period of twenty years and thereafter so long as petitioner shall elect. The issuance of stock by the petitioner to Southwestern was pursuant to the April 5, 1927, agreement and was the consideration expressly provided for Southwestern's agreement that it or its subsidiary (1) would hold in reserve and drill and develop the natural gas acreage in the Panhandle Field of Texas then held by Southwestern's subsidiary (Amarillo Oil) under leases or in fee; (2) to supply such gas to petitioner for the Denver project with priority over all other demands except certain intrastate sales in Texas, for which Southwestern or its subsidiary (Amarillo Oil) was already committed; and (3) to sell gas to petitioner during the whole project period at cost. (R. V. 1, p. 384.)

Neither does it require any argument to show the great value to petitioner of the rights obtained from the contract with Cities Service for the common stock issued to it. Cities Service agreed (1) to contribute its engineering and commercial experience, advice and aid to the project; (2) to cause its subsidiary distributing companies at Denver and Pueblo, respectively, to execute firm gate rate contracts for the full project term; (3) to cause such distributing companies without expense to petitioner to make the necessary changes and extensions in their distribution systems to take care of the anticipated increased sales of natural gas, particularly for house heating purposes; and (4) to convert, also without expense to petitioner, such distribution systems into systems tight enough to distribute the drier natural gas

at higher uniform pressures. (R. V. 1, pp. 387-392, 541-542, 590, 594-596.)

Why, then, did the Commission disallow the unamortized portion of the cost of these contracts, which the evidence showed was, at the time of the hearing, $1,000,000? The Commission, after referring to the tripartite agreement of the project parties, said:

> "Very strangely, it is now represented that Canadian Company refused to negotiate an agreement for the sale of gas by it to Colorado Company unless Colorado Company turned over to it 10,000 shares of preferred stock, having a total par value of $1,000,000, and 531,250 shares of no par common stock having a recorded value of $1,000,000."
>
> R. V. 1, p. 153.

Then the Commission observed that this transaction "resulted in an unjustified and fictitious increase of book cost of plant." (R. V. 1, p. 153.)

Of course Canadian, after being organized to carry out the obligations assumed by Southwestern in the project agreement, *would refuse to proceed except upon the basis specified in the tripartite agreement.* It was bound to see to it that the common and preferred stock was issued to its parent company, Southwestern, contemporaneously with its execution of the gas purchase agreement with petitioner. What has that to do with the failure of the Commission to include this item in original cost? Why did the Commission use the words, "Very strangely", just as if this transaction between petitioner and Canadian was the original and only transaction involving the issuance of such stock? That confusion found its way also into the opinion of the Court. The Court did not question the value of these contracts or that they were essential to and used and useful in the enterprise, and did not find that the amount paid was excessive. The Court misses the point and avoids the issue, just as did the Commission with this statement:

> "• • • But, according to the records of Colorado, Canadian refused to enter into the contract for the sale of gas to Colorado, and Cities Service refused to direct or permit its subsidiaries to enter into the

> contracts for the purchase of gas from Colorado; and thereupon Colorado issued to Southwestern as the nominee of Canadian 10,000 shares of preferred and 531,250 shares of common stock, and issued to Cities Service 187,500 shares of common stock. * * *." (R. V. 8, p. 5082.)

The Court thus characterized this transaction involving the issuance of this stock:

> "* * * The record offers little or no explanation of the refusal to enter into the contracts as provided with binding effect in the Memorandum of Stipulation, or of the failure of Colorado to exact that they be entered into *without additional consideration or inducement.* * * *." (R. V. 8, p. 5082.)

It is utterly inconceivable how the Court could make this statement. The Court refers to *additional* consideration. This was not additional consideration; it was *the* consideration specified in the original contract before petitioner or Canadian had been born. Undoubtedly the Court was under the impression that petitioner issued the required amount of stock to Southwestern and Cities Service as provided in the original agreement, and then later issued additional stock, in like amounts, because Canadian, although obligated by the contract of its parent, became recalcitrant and demanded that it be paid again what had already been paid pursuant to the agreement made with its parent on April 5, 1927. The same observations might be made with respect to Cities Service.

There has never been any question as to the propriety, and, indeed, as to the necessity, when the determination of the cost of the property was undertaken, of including the cost of contracts which are used and useful in the business. *Central Kentucky Natural Gas Co. v. Railroad Commission,* 290 U. S. 264; *Duluth Street Ry. Co. v. Railroad & Warehouse Commission,* 4 Fed. (2d) 543 (affirmed 273 U. S. 625); *Bonbright v. Geary,* 210 Fed. 44; *Valparaiso Lighting Co. v. Public Service Commission,* 129 N. E. 13; *Pacific Gas & Electric Co. v. City and County of San Francisco,* 265 U. S. 403.

This well settled rule of law is recognized by the Com-

mission itself by including in original cost the cost of the Colorado Springs contract (R. V. 1, p. 152), the contract purchased by petitioner from Arthur K. Lee, which provided for the sale of gas to Colorado Springs. The unamortized portion of that contract which the Commission allowed in the rate base was $118,061. That contract was not different in kind from the contracts with Southwestern and Cities Service.

This elimination from the purported original cost or prudent investment, without any reason whatsoever, does not square with the doctrine of *Federal Power Commission v. Hope Natural Gas Co., supra.* A rate cannot possibly be just and reasonable in its consequences, or, to put it another way, it is inevitable that it must be unjust and unreasonable in its consequences when it is based upon a purported finding of original cost, and a Commission fixed return thereon, if any portion of that cost is eliminated. One million dollars cannot be eliminated under such circumstances any more than one-half or two-thirds of such cost should be eliminated. This elimination from original cost actually deprives petitioner of the right to recover through amortization the sum of $1,000,000, which represents a valid cost incurred by it in setting up the project. Likewise it deprives petitioner of a 6½% return on the sum of $1,000,000 during the first year, and on the remaining unamortized amount year by year. This result cannot be said to be an inconsequential rate impact.

This sort of thing does not involve "a formula," but the impact of the rate order. The total effect of such a rate order cannot be said to be just or reasonable, but must be said to be unjust and unreasonable under such circumstances. Accordingly, we contend that the Circuit Court of Appeals has decided questions of Federal law in a way probably in conflict with applicable decisions of this Court, particularly *Federal Power Commission v. Hope Natural Gas Co., supra.*

2. The Commission in the companion case, as shown in Canadian's petition for certiorari, reduced the cost of gas sold to petitioner by Canadian under the contract in the amount of $551,000 per year. Any modification of this reduction must result in a corresponding reduction in the $2,065,000 annual

reduction ordered in petitioner's rates. (No. 2 of Questions Presented, page 2. Statement, pages 9 and 10.)

This petitioner merely refers to this situation as a reason why the two petitions should be considered together, and in order to protect itself in the event Canadian's petition should be granted and the decision of the Circuit Court of Appeals reversed in whole or in part because of the erroneous reduction in the cost of gas.

3. The order of the Commission, sustained by the Court, does not allow sufficient annual depreciation to enable petitioner to recover its investment within the life of the project. (Nos. 3 and 4 of Questions Presented, pages 2 and 3, Statement, pages 10 and 11.)

Here the situation is disclosed in our Statement contained in the petition, and the order in this regard is contrary to clear implications of *Federal Power Commission v. Natural Gas Pipeline Company of America,* 315 U. S. 575, to the effect that there is no constitutional requirement "that the owner who embarks in a wasting-asset business of limited life shall receive at the end more than he has put into it." This clearly implies, and other decisions of this Court hold, that in such situation petitioner should have the right, so far as regulation is concerned, to receive at the end of the life what it did actually put into it.

In the companion case Canadian makes the contention that there was no substantial evidence to support the finding of the Commission that the remaining life of its gas reserves would be 53 years from 1939, and that the true life is much shorter. Canadian's petition shows that the life of the whole Panhandle Field is the limiting factor, which is no more than twenty-seven years from 1939. (R. V. 7, p. 3701; V. 8, pp. 4638-46.) Reference to that part of Canadian's petition hereby is made and upon the reasons therein stated petitioner relies in order to avoid repetition. If that contention be sustained, it necessarily follows that petitioner will not be able to recover its investment, since the Commission based its findings on an assumed life of fifty-three years which gave a margin of fifteen years beyond the service life of pipe. (R. V. 1, p. 159.)

The annual depreciation, as fixed by the Commission on such basis, is not sufficient in any event to cover the cost of replacements which will have to be made in the interim. For example: While the service life of the main pipe line was determined to be 50 years, replacements of important items of plant, such as compressors, with a service life of 36 years, are clearly not taken care of. The compressor that is replaced at the end of 36 years would be used and useful only for 14 more years, and the company would be able to get a return of that investment of only 14/36ths of its cost. This is perfectly obvious. The same is true of all other short lived items of plant which have to be replaced in the 50-year period.

Considering the hazardous character of any natural gas production and the uncertainty as to the life of gas reserves for a period of fifty-three more years, the Commission's action in postponing the possibility of recovery by petitioner of its investment for such a long time in the future is unreasonable and arbitrary. If an adequate annual allowance for depreciation is not now allowed petitioner, it may turn out that it will be impossible to recover its full investment.

4. The Commission could not possibly determine reasonable rates, consistently with the Fifth Amendment to the Constitution of the United States, for gas sold for resale in interstate commerce without making a separation or allocation of the property, some of which is used solely for the sale of gas not subject to the Commission's jurisdiction, and the remaining amount is used jointly for making intrastate sales in Texas and interstate sales for both resale and direct sale gas. It made no such allocation or separation, and its "allocation of cost of service" is not a valid substitute, and even if valid in principle, reasonable rates could not be determined because of the various errors in its application. (Nos. 5 and 6 of Questions Presented, page 3: Statement, pages 11 to 15.)

Petitioner is engaged in the sale of gas to utility companies for resale, which is subject to the Commission's jurisdiction and which is referred to as "resale gas". It also sells natural gas directly to industries for consumption, which sales are not subject to the Commission's jurisdiction,

and which are referred to as "direct sale gas". The Commission and the Court recognized in this case the necessity of making some sort of allocation as between resale gas and direct sale gas, and, of course, not to do so would arbitrarily extend the Commission's jurisdiction to transactions completely exempted by Congress. The Commission has recognized this duty in other cases. In *Re Interstate Natural Gas Co., Inc.*, 48 P.U.R. (N.S.) 267, at page 279, the Commission said:

> "Interstate's properties are used in transactions over which we have jurisdiction, as well as those beyond our jurisdiction, and they are also used to render service to customers with varying load and other characteristics. Its operating expenses likewise relate to these several phases of the company's operations. This gives rise to joint costs. It, therefore, becomes necessary to resort to allocations for the purpose of determining just and reasonable rates of the business subject to regulation under the Natural Gas Act and also for the purpose of determining the proper disposition of any rate reduction which we may order."

The Commission took the same position in *Re Cities Service Gas Co.*, 50 P.U.R. (N.S.) 65, 89.

(a) The decisions of this Court require a separation of property, which the Commission admitted it did not make, and the approval of its action by the Circuit Court of Appeals was erroneous.

The Commission itself admitted that it made no separation of property. It said:

> "The Commission is aware that in an investigation such as this it is incumbent on it to determine the reasonableness or unreasonableness of the rates and charges subject to its jurisdiction. * * *.
>
> "It does not follow, from this obligation of the Commission, that an allocation of physical property or portions thereon, must be made, before any excessive returns are determined, as seems to be the contention of the companies. * * *."
>
> (R. V. 1, pp. 174, 175.)

The Commission treated the properties of Petitioner and Canadian as a composite system.

As pointed out in the Statement of the Case contained in the petition, gas is produced by Canadian in the Panhandle Field of Texas, and it transports and sells off of its main line gas in intrastate commerce in Texas. The gas transported in interstate commerce to Colorado is of two classes: (1) gas transported as far as Pueblo, Colorado, and sold directly to industrial consumers, and (2) gas transported and sold for resale to distributing companies; one in the Arkansas Valley, one at Pueblo, one at Colorado Springs and one at Denver. Some of the "composite system" facilities are used in part for the transportation and sale of (1) intrastate sales in Texas; (2) interstate sales for resale, and (3) interstate direct sales. Other facilities are used exclusively for direct sale gas and for resale gas. This being the case, it necessarily follows from a simple application of common sense that a separation of the property, based upon the use which is made of it, is necessary in order to determine the reasonable rates for the sale of gas for resale in interstate commerce, which is the extent and limit of the Commission's jurisdiction. Such necessity is a matter of jurisdictional limitation imposed both by the Constitution and the statute. It was incumbent upon the Commission, in order not to transcend its jurisdiction, to draw and observe two jurisdictional boundaries: First, the boundary line between intrastate and interstate commerce, and, second, the boundary between sales for resale and direct sales. The Commission is circumscribed by each of these boundaries, and so it has been expressly held by this Court. In *Smith v. Illinois Bell Telephone Co.*, 282 U. S. 133, where intrastate rates were involved in a state commission order, and where some of the property was used in common for intrastate and interstate business, this Court said (pp. 147, 149):

> "At the threshold of the discussion, we are met with the fact that, in these findings, the commission and the court made no distinction between the intrastate and the interstate property and business of the company. It appears that the property of the company in Chicago is used to render (1) what is called exchange service, all of which is intrastate, (2) intra-

state toll service over its own lines and under arrangements with companies other than the American Company, and (3) interstate toll service, which includes all the toll service rendered under arrangements with the American Company. The company introduced evidence separating the intrastate and interstate business and also the intrastate exchange business. While the court regarded these computations as correct, and approved the method in which they had been made, still the court made no specific findings based on a separation of the intrastate and interstate property, revenues and expenses, but determined the issue on the basis of the total Chicago property of the company.

* * * * *

"The separation of the intrastate and interstate property, revenues and expenses of the company is important not simply as a theoretical allocation to two branches of the business. It is essential to the appropriate recognition of the competent governmental authority in each field of regulation. * * * The proper regulation of rates can be had only by maintaining the limits of state and federal jurisdiction, and this can not be accomplished unless there are findings of fact underlying the conclusions reached with respect to the exercise of each authority. In view of the questions presented in this case, *the validity of the order of the state commission can be suitably tested only by an appropriate determination of the value of the property employed in the intrastate business* and of the compensation receivable for the intrastate service under the rates prescribed. * * * As to the value of that property, and as to the revenue and expenses incident to that business, *separately considered;* there should be specific findings. Railroad Commission v. Maxcy, 281 U. S. 82, 83, 74 L. Ed. 717, 718, 50 S. Ct. 228." (Emphasis supplied)

The same rule was announced in the *Minnesota Rate Cases,* 230 U. S. 352, 435, 57 L. Ed. 1151, 1556, in the following language:

"Where the business of the carrier is both inter-

state and intrastate, the question whether a scheme of maximum rates fixed by the state for intrastate transportation affords a fair return *must be determined by considering separately the value of the property employed in the intrastate business* and the compensation allowed in that business under the rates prescribed. This was also ruled in the Smyth Case (id. p. 541). The reason, as there stated, is that the state cannot justify unreasonably low rates for domestic transportation, considered alone, upon the ground that the carrier is earning large profits on its interstate business, and, on the other hand, the carrier cannot justify unreasonably high rates on domestic business because only in that way is it able to meet losses on its interstate business." (Emphasis supplied)

This opinion also most emphatically rejects the notion that this required separation of property or separation of capital items can be substituted for by any formula based merely on revenue and expenses, or cost accounting, or particularly, as in that case, revenue; a thing akin to what the Commission attempted to employ in this case. The fallacy of this attempted substitute, of course, lies in the fact that such a process involves circuitous and inconclusive reasoning or argument, or is just another illustration of the dog chasing his tail. The Supreme Court in this Minnesota Rate Case continued by saying with respect to this method:

"When rates are in controversy, it would seem to be necessary to find a *basis for a division of the total value of the property* independently of revenue, and this must be found in the use that is made of the property. That is, there should be assigned to each business that *proportion of the total value of the property* which will correspond to the extent of its employment in that business. * * *." (Emphasis supplied)

See also:

Wabash Valley Electric Company v. Ralph M. Young, et al., 287 U. S. 488, 493, 77 L. Ed. 447, 451.

Accordingly, we have here as a ground for invoking this Court by certiorari, that the decision of the Circuit Court of Appeals approving what the Commission did, and sustaining its order based thereon, is probably in conflict with applicable decisions of this Court.

Incidentally, neither the Commission nor the Court in adopting this "allocation of cost of service" as a substitute for the separation or allocation of property, undertook to distinguish the decisions of this Court above cited, nor did either cite a single authority in support of the position taken.

(b) Even if the Commission's "allocation of cost of service" is a valid substitute for the separation of the property itself and could be approved, which we deny, no end result formula, such as approved in the Hope Case, can possibly cloak the flagrant errors in its application to our case.

The Commission's testimony respecting its so-called "allocation of cost" will be found in Volume 4 of the Record at pages 2215-2259, 2317-2399, and in Volume 5 at pages 2400-2448.

The method used by the Commission's witness has been explained in the Statement in the petition, pages 11 to 15. Such method clearly results in unfairly and arbitrarily assessing costs against non-regulable gas which should be borne by regulable gas.

To approve the result arrived at by such method completely ignores the restriction against fixing rates for sales of gas to industrial customers for consumption.

He admitted that in determining his "capacity cost", a component of his total transmission cost, he ignored peak load demands for domestic gas that would occur on the coldest expected days in Denver (for which the plant was designed), and that he arbitrarily took the deliveries

of regulated and unregulated gas as they happened to occur on February 9, 1939, which he called the "system peak day" for that particular year. The costs so determined he finally compared with the revenue derived from each of petitioner's customers.

It does not take any argument to show that there is something wrong about charging to the intrastate deliveries at Dalhart, Texas, a distance of 45 miles from the end of the gathering system, the same volumetric cost as is charged at Denver, a distance of 340 miles from such point. Neither does it take any argument to show that when the line from Pueblo to Denver is thrown into a common pot, the cost exclusively attributable to that line immediately becomes, in large part, attributed to the Colorado Fuel and Iron Company at Pueblo and other direct sale customers, and in part attributed to intrastate customers in Texas. This method decreases the cost which should be charged against the resale gas in Colorado, and makes it appear that the company is earning from its resale customers in Colorado more than it really is. It frees the resale gas from its proper share of the costs and thus burdens the direct sale gas.

No reasonable rate can be determined on the basis of an allocation of the cost of service, even if that be a valid substitute for the separation or allocation of the property itself, when priority of service as between resale domestic and direct sale industrial gas is ignored, when the system was designed and built to take care of the domestic customers on the coldest day to be expected, and when each of the contracts for direct sales expressly provided that the supply of gas might be interrupted at any time in order to take care of the domestic demand, and when, as the evidence shows, there had been many interruptions of the direct sale gas over a 10-year period of petitioner's experience.

The Company's evidence on the allocation of its property as between the direct sale gas and the resale gas is found in the record as follows: R. V. 2, pp. 1108-1118; V. 4, pp. 2264-2307. All of this testimony was completely disregarded by the Commission. (R. V. 1, p. 175.) The Court

passed over the point by stating as follows: "It may be conceded, without deciding, that the method is not free from defects or imperfections in all its aspects. But even so it cannot be said that as the consequence the impact of the orders of reduction, each in its totality, produces arbitrary results or oversteps the bounds of due process." (R. V. 8, p. 5088.) The action of the Court has resulted in no judicial inquiry into the action of the Commission in overstepping its statutory jurisdiction. Unless that inquiry is made, there is no manner in which the Commission can be held within the ambit of its statutory authority.

In addition to our contention above stated, that as a matter of jurisdictional necessity there should have been a separation or allocation of the property, and that the order of the Commission in this connection as approved by the Circuit Court of Appeals is probably in conflict with the decisions of this Court above cited, we have also, in connection with this point, the proposition that here is an important Federal question which has not yet been, but should be, settled by this Court. There have been several investigations and orders under the Natural Gas Act. At least one other case is now pending in the Circuit Court of Appeals in this Circuit. One has recently been decided in the Eighth Circuit, entitled *Panhandle Eastern Pipeline Co., et al., v. Federal Power Commission.* The opinion was handed down June 6, 1944, (not yet officially reported, but may be found in 54 P.U.R. (N.S.) 26) and we are advised that petition for certiorari has been or will be filed in this Court in due course. In that case, the Commission made no allocation of any kind as between "resale gas" and "direct sale gas" saying that it was not necessary because the direct sale gas was inconsequential. The Court affirmed, but there was a dissenting opinion by Circuit Judge Riddick, saying: "Here the Commission has admittedly refused to observe the limit upon its jurisdiction fixed by Congress."

The only two rate cases under the Natural Gas Act heretofore before this Court, the *Natural Gas Pipeline Case* and the *Hope Case, supra,* did not involve this question of allocation at all. Undoubtedly there will be other cases under the Natural Gas Act before the Federal Power Com-

mission involving this principle of allocation, and it is important that this novel allocation of costs of service should be explored and the question properly decided for future guidance. Not to have this question properly decided will permit the Federal Power Commission indirectly to draw to itself full control over the rates of gas sold to direct industrial customers in competition with other fuels, and permit siphoning off profits from direct sale gas to the credit of resale gas. If this is permitted, then any limitation imposed by Congress becomes a farcical and useless endeavor. The Court, in merely stating what the Commission had to say on this subject of allocation, and then approving it, notwithstanding the decisions of this Court above cited and notwithstanding the gross and flagrant errors in the application of the Commission's substitute method, has, in effect, denied to petitioner its right of judicial review expressly conferred by the Natural Gas Act, giving rise to the third reason stated in the petition why the writ of certiorari should be granted.

For the foregoing reasons it is respectfully submitted that the petition for writ of certiorari should be granted.

Respectfully submitted,

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APPENDIX A.

The pertinent provisions of the Natural Gas Act of 1938 (52 Stat. 821, et seq.; Title 15, U.S.C.A., Sec. 717) are as follows:

Sec 1 (b). "The provisions of this Act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas."

Section 4 (a). "All rates and charges made, demanded, or received by any natural-gas company for or in connection with the transportation or sale of natural gas subject to the jurisdiction of the Commission, and all rules and regulations affecting or pertaining to such rates or charges, shall be just and reasonable, and any such rate or charge that is not just and reasonable is hereby declared to be unlawful.

(b). "No natural-gas company shall, with respect to any transportation or sale of natural gas subject to the jurisdiction of the Commission, (1) make or grant any undue preference or advantage to any person or subject any person to any undue prejudice or disadvantage, or (2) maintain any unreasonable difference in rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service.

(c). "Under such rules and regulations as the Commission may prescribe, every natural-gas company shall file with the Commission, within such time (not less than sixty days from the date this Act takes effect) and in such form as the Commission may designate, and shall keep open in convenient form and place for public inspection, schedules showing all rates and charges for any transportation or sale subject to the jurisdiction of the Commission, and the classifications, practices, and regulations affecting such rates and

charges, together with all contracts which in any manner affect or relate to such rates, charges, classifications, and services."

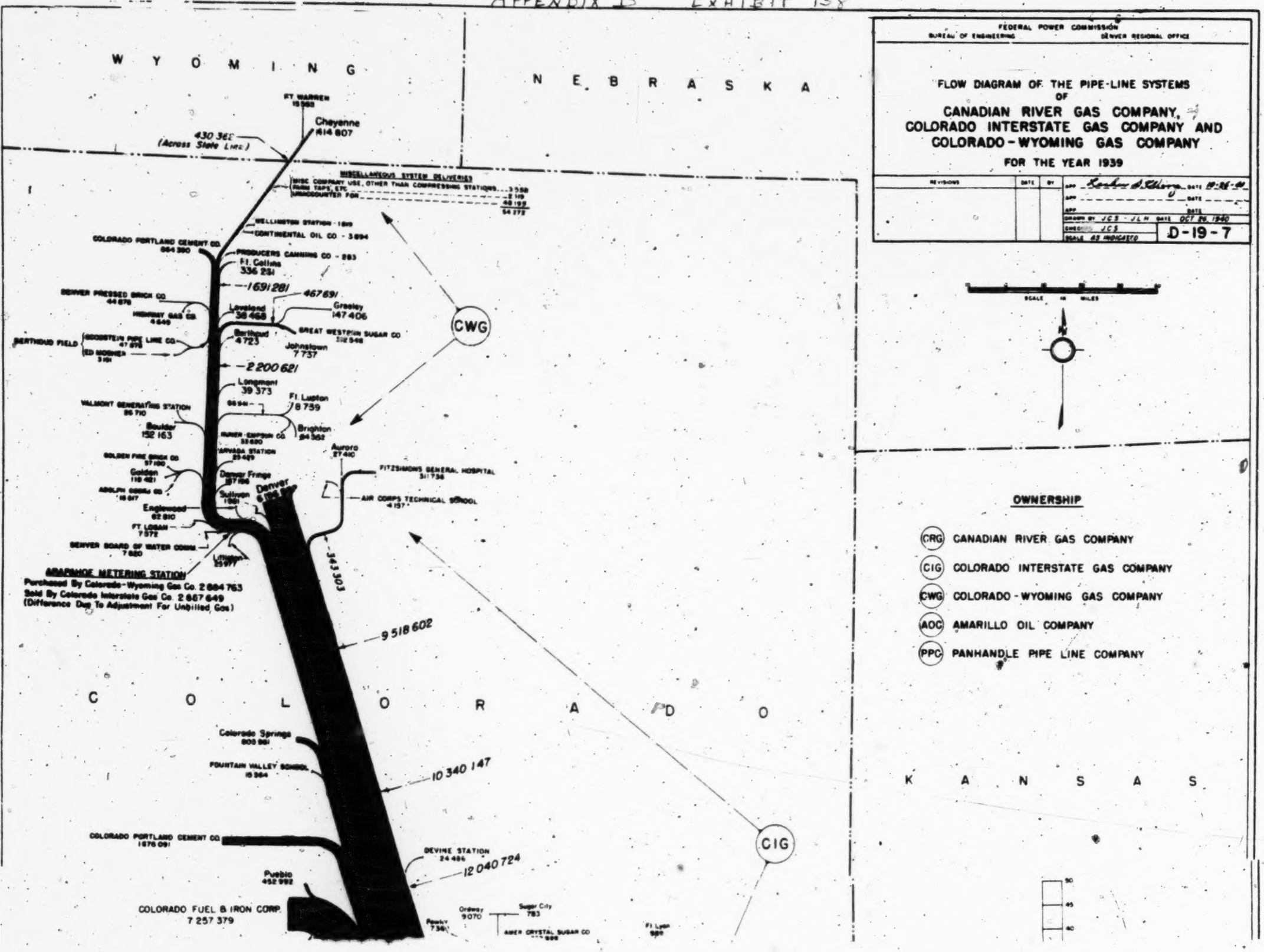
Section 5 (a). "Whenever the Commission, after a hearing had upon its own motion or upon complaint of any State, municipality, State commission, or gas distributing company, shall find that any rate, charge, or classification demanded, observed, charged, or collected by any natural-gas company in connection with any transportation or sale of natural gas, subject to the jurisdiction of the Commission, or that any rule, regulation, practice, or contract affecting such rate, charge, or classification is unjust, unreasonable, unduly discriminatory, or preferential, the Commission shall determine the just and reasonable rate, charge, classification, rule, regulation, practice, or contract to be thereafter observed and in force, and shall fix the same by order: *Provided, however*, That the Commission shall have no power to order any increase in any rate contained in the currently effective schedule of such natural gas company on file with the Commission, unless such increase is in accordance with a new schedule filed by such natural gas company; but the Commission may order a decrease where existing rates are unjust, unduly discriminatory, preferential, otherwise unlawful, or are not the lowest reasonable rates."

Section 6 (a). "The Commission may investigate and ascertain the actual legitimate cost of the property of every natural-gas company, the depreciation therein, and, when found necessary for rate-making purposes, other facts which bear on the determination of such cost or depreciation and the fair value of such property."

Section 19 (b). "Any party to a proceeding under this Act aggrieved by an order issued by the Commission in such proceeding may obtain a review of such order in the circuit court of appeals of the United States for any circuit wherein the natural-gas company to which the order relates is located or has its principal place of business, or in the United States Court of Appeals for the District of Columbia, by filing in such court, within sixty days after the order of the Commission upon the application for rehearing, a written petition praying that the order of the Commission be

modified or set aside in whole or in part. A copy of such petition shall forthwith be served upon any member of the Commission and thereupon the Commission shall certify and file with the court a transcript of the record upon which the order complained of was entered. Upon the filing of such transcript such court shall have exclusive jurisdiction to affirm, modify, or set aside such order in whole or in part. No objection to the order of the Commission shall be considered by the court unless such objection shall have been urged before the Commission in the application for rehearing unless there is reasonable ground for failure so to do. The finding of the Commission as to the facts, if supported by substantial evidence, shall be conclusive. If any party shall apply to the court for leave to adduce additional evidence, and shall show to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for failure to adduce such evidence in the proceedings before the Commission, the court may order such additional evidence to be taken before the Commission and to be adduced upon the hearing in such manner and upon such terms and conditions as to the court may seem proper. The Commission may modify its findings as to the facts by reason of the additional evidence so taken, and it shall file with the court such modified or new findings, which if supported by substantial evidence, shall be conclusive, and its recommendation, if any, for the modification or setting aside of the original order. The judgment and decree of the court, affirming, modifying, or setting aside, in whole or in part, any such order of the Commission, shall be final, subject to review by the Supreme Court of the United States upon certiorari or certification as provided in sections 239 and 240 of the Judicial Code, as amended (U.S.C., title 28, secs. 346 and 347)."

APPENDIX B EXHIBIT 138



FEDERAL POWER COMMISSION
BUREAU OF ENGINEERING — DENVER REGIONAL OFFICE

FLOW DIAGRAM OF THE PIPE-LINE SYSTEMS OF CANADIAN RIVER GAS COMPANY, COLORADO INTERSTATE GAS COMPANY AND COLORADO-WYOMING GAS COMPANY

FOR THE YEAR 1939

REVISIONS	DATE	BY

APP. Reuben A. Ellsworth DATE 12-26-40
APP. DATE
APP. DATE
DRAWN BY JCS - JLH DATE OCT 26, 1940
CHECKED JCS
SCALE AS INDICATED
D-19-7

SCALE IN MILES

OWNERSHIP

- (CRG) CANADIAN RIVER GAS COMPANY
- (CIG) COLORADO INTERSTATE GAS COMPANY
- (CWG) COLORADO-WYOMING GAS COMPANY
- (AOC) AMARILLO OIL COMPANY
- (PPC) PANHANDLE PIPE LINE COMPANY

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CLERK

IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944

Nos. 379 and 380

COLORADO INTERSTATE GAS COMPANY, a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

CANADIAN RIVER GAS COMPANY, a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

ON PETITIONS FOR WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE TENTH CIRCUIT

REPLY BRIEF OF COLORADO INTERSTATE GAS COMPANY AND CANADIAN RIVER GAS COMPANY, PETITIONERS, IN SUPPORT OF PETITIONS FOR WRITS OF CERTIORARI

EASTWOOD PRINTING CO., 2031 CURTIS STREET, DENVER

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IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944

Nos. 379 and 380

COLORADO INTERSTATE GAS COMPANY, a Corporation, Petitioner,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and CANADIAN RIVER GAS COMPANY, Respondents.

CANADIAN RIVER GAS COMPANY, a Corporation, Petitioner,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and COLORADO INTERSTATE GAS COMPANY, Respondents.

ON PETITIONS FOR WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE TENTH CIRCUIT

REPLY BRIEF OF COLORADO INTERSTATE GAS COMPANY AND CANADIAN RIVER GAS COMPANY, PETITIONERS, IN SUPPORT OF PETITIONS FOR WRITS OF CERTIORARI

The belated brief filed by the Respondents in opposition to the petitions of Colorado Interstate Gas Company and Canadian River Gas Company for writs of certiorari in their respective cases is apparently tendered and filed as a common brief for both cases, although as far as Petitioners have been informed, no order of consolidation has been entered. Following, however, the procedure of the Respondents, Petitioners will join and make this one reply to the common brief of the Respondents captioned in the two cases.

In this reply we shall use the same abbreviations used in the petitions for the writs and the briefs filed in support thereof.

Colorado Interstate's petition for writ sets forth and presents four separate and independent questions. Canadian's petition for writ sets forth and presents nine separate and independent questions.

Respondents in their brief state to this Court that there are only four questions presented in these two applications for writs, which they set forth in their brief. We respectfully submit that there are thirteen separate and independent questions presented by the two petitions, and these are the thirteen questions set forth in the two petitions, and Respondents cannot dispose of the questions presented by the petitions by ignoring them or indicating, as they have, that such questions are not before this Court.

This reply brief is rendered necessary only because the Respondents have thought it proper either to entirely ignore or avoid the questions presented by Petitioners, or, where they have purported to answer any of our questions, they have, in many instances, based their answer upon inaccurate or misleading references to the record.

We will not in this reply re-argue our questions presented, but will limit the reply to calling the Court's attention to the points which have been ignored and avoided by counsel for the Respondents and to the portion of counsel's argument which is based upon the inaccurate and misleading references to the record.

Exercise of Prohibited Rate Regulatory Jurisdiction Over Production and Gathering

This is Question No. 1 presented by Canadian in its petition (page 3), with the reasons in support thereof set forth at pages 27, et seq. It is entirely ignored and avoided by the Respondents; it is not listed in Respondent's brief as being among the "questions presented." The Congress of the United States, in Section 1(b) of the Act, has expressly provided that the Commission should not have jurisdiction over production or gathering. In the Hope case this Court said, not once, but twice, that the Commission has no jurisdiction over production and gathering. (Pages 287,

289, Vol. 88, L. Ed., Advance Opinion.) The Circuit Court in its opinion in this case expressly holds that the Commission does not have rate regulatory jurisdiction over production and gathering. (R., V. 8, 5075) The law of this case is, therefore, that the Commission does not have jurisdiction over production and gathering. The Respondents have not applied for any writ directed to the holding of the Circuit Court that the Commission does not have such jurisdiction, and, of course, are bound by the law of the case as established by the Circuit Court. The question presented by Canadian's Question No. 1 is not whether the Commission has jurisdiction over production and gathering because the law of the case is that it has not, but the question is whether what the Commission did, and which the Circuit Court approved, does not constitute an exercise of jurisdiction over production and gathering, which the Act, the Circuit Court, and this Court have held is prohibited. This question is absolutely ignored and avoided in Respondents' brief. For reasons pointed out in Canadian's petition, the question is of such great importance as to justify the granting of the writ directed thereto. We do find a short footnote at pages 18 and 19 of Respondents' brief, possibly intended to be a passing casual recognition that this point is included in the case, although obviously the footnote has no bearing upon the text to which it is a footnote. In this footnote the Respondents contend that if the Commission does not have jurisdiction over production and gathering, it could not fix reasonable rates for interstate transportation and sales, as required by the Act. Support is sought to be found for this statement in the opinion of this Court in the Hope case. Clearly no such support can be found in that case. Where this Court discussed production and gathering in the Hope case, it stated, not once but twice, that the Commission did not have jurisdiction over production and gathering. No question of such jurisdiction was raised by the Hope Company, such as raised in this case, and the discussion there had was with reference only to the position taken by the State of West Virginia and clearly has no bearing at all upon the question here presented.

Moreover, as we have pointed out in the reasons in support of this point, it is not impossible for the Commission to exercise its delegated jurisdiction over interstate trans-

portation and sales without exercising a prohibited jurisdiction over production and gathering. The evidence established a commodity value of Canadian's gas at the wellhead in the field and at its gathering system termini. The Commission could have used this commodity value of Canadian's gas as the starting point for the exercise of its delegated jurisdiction over interstate transportation and sale and avoided any usurpation of prohibited jurisdiction over production and gathering.

The Commission held that it does have jurisdiction over production and gathering. The Circuit Court ruled that it does not, but further held that what the Commission did does not constitute an exercise of jurisdiction over production and gathering. The Respondents make no attempt here to support the Circuit Court in the Court's ruling that what the Commission has done does not constitute regulation of production and gathering. The Respondents still insist, however, (without having applied for any writ to reverse the Circuit Court), that the Commission does have jurisdiction over production and gathering.

We submit the determination of the question presented, so completely ignored and avoided by Respondents, should be assumed by this Court.

Valuation of Canadian's Leasehold Properties

In Question No. 2 presented by Canadian it is pointed out that, even assuming arguendo that the Commission has rate regulatory jurisdiction over production and gathering, it is improper in determining a production and gathering rate base, to limit the value of gas leaseholds to their original cost of acquisition, generally speaking on a "wildcat" value basis while in the hands of predecessor companies to the exclusion of all discovery, market or other values. The result of such procedure adopted by the Commission is to limit Canadian's return, as far as its gas leaseholds are concerned, generally to 6½% per annum, on a nominal value and, in many instances, on a zero value, as some of Canadian's now most valuable leases were acquired without cash consideration, and in consideration of drilling obligation only. Canadian contends (even assuming rate regulatory jurisdiction) that original cost is not the proper basis

for the inclusion of gas producing leaseholds in a rate base, and that the Commission has erred in blindly following its original cost and prudent investment theories with respect to Canadian's gas leaseholds and in wholly disregarding uncontroverted evidence of value.

Respondents, in their brief, have absolutely ignored and entirely avoided this question. They do not even make a casual reference to its existence as one of the questions presented. We submit that Respondents' silence recognizes the merit to this question.

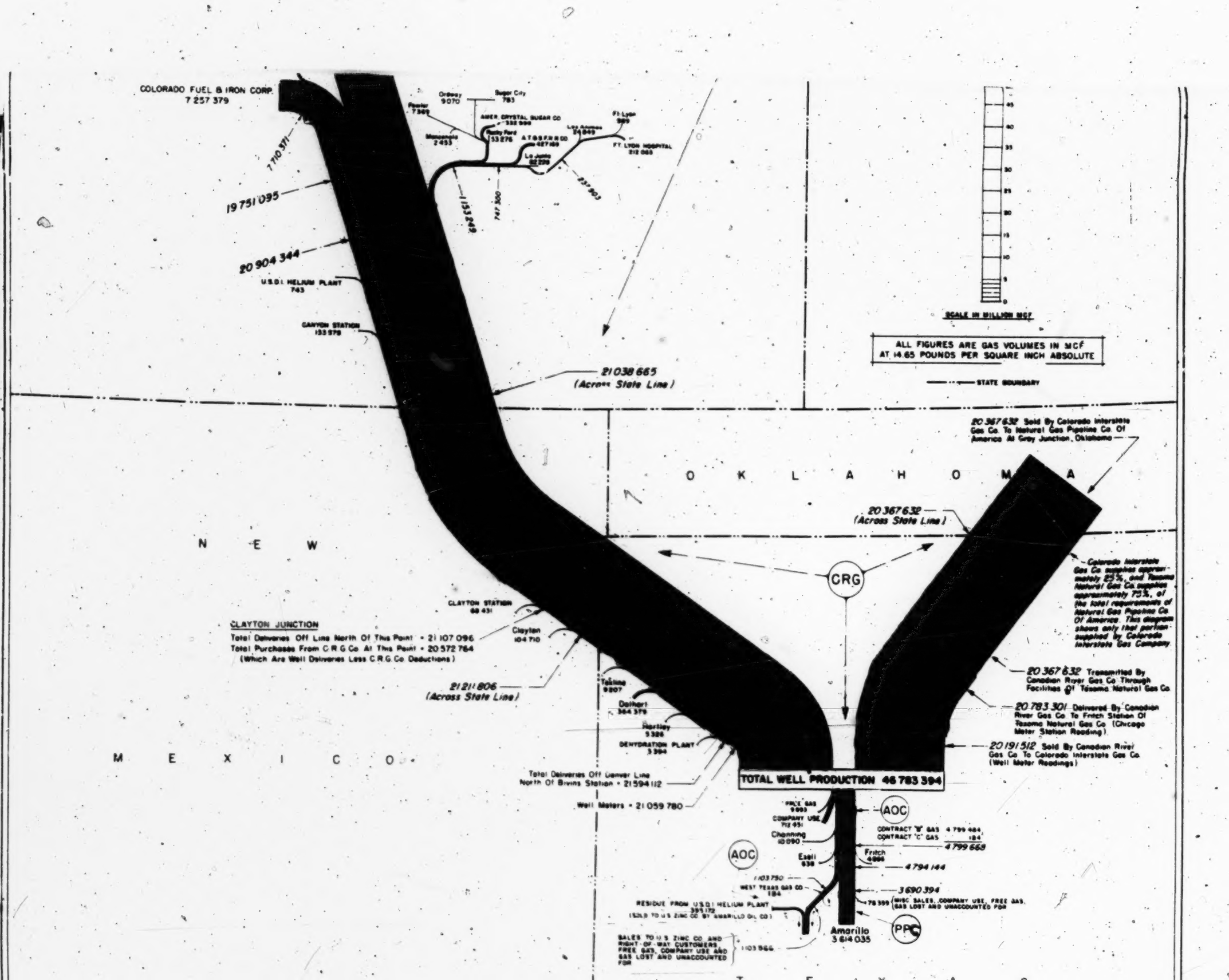
Abrogation of the Cost Reimbursement Provisions of the Cost Contract

The error in the Commission's action in abrogating the cost reimbursement provisions of Canadian's cost contract is presented in Question No. 4 in Canadian's petition, with reasons in support thereof set forth on pages 19 and 20. This again is ignored in Respondents' statement of questions proposed to be presented, although on page 20 of their brief they ask this Court to affirm the death penalty against Canadian in reliance upon Chicago B. & Q. R. R. Co. v. Iowa, 94 U. S. 155, 162-163. This case, we submit, is entirely inapplicable, and, if it could be construed as supporting Respondents' contention and thus requiring Canadian to do the impossible (as Respondents' brief impliedly admits), it is certainly contrary to and inconsistent with the "rate impact" and "end result" principles announced by this Court in the Hope case.

Original Cost of Properties

This question is discussed in Canadian's petition (pages 8-10, 17-19, 31-33) and in Colorado Interstate's petition. (Pages 6-9, 17-21.)

Respondents, in their answer brief, (pages 10-14) attempt to answer Canadian's contentions on the theory that the transaction whereby Canadian acquired certain properties from Amarillo Oil Company was between affiliates and, as a matter of fact, constituted no sale at all. This argument is fallacious. The record clearly shows there was a sale which resulted from prolonged, arm's-length bargaining between


COLORADO FUEL & IRON CORP.
7 257 379
7 710 371
19 751 095
20 904 344
U.S.D.I. HELIUM PLANT
743
CANYON STATION
133 978
Ordway
9070
Sugar City
783
Olney
7 349
AMER. CRYSTAL SUGAR CO
332 696
Rocky Ford
53 276
Manzanola
2 455
A T & S F R R CO
427 189
La Junta
82 298
Las Animas
24 849
Ft. Lyon
889
FT. LYON HOSPITAL
212 068
1 153 269
737 300
237 903
21 038 665
(Across State Line)
SCALE IN BILLION MCF
ALL FIGURES ARE GAS VOLUMES IN MCF
AT 14.65 POUNDS PER SQUARE INCH ABSOLUTE
STATE BOUNDARY
20 367 632 Sold By Colorado Interstate Gas Co. To Natural Gas Pipeline Co. Of America At Gray Junction, Oklahoma
O K L A H O M A
20 367 632
(Across State Line)
N E W
M E X I C O
CRG
Colorado Interstate Gas Co. supplies approximately 25%, and Texoma Natural Gas Co. supplies approximately 75%, of the total requirements of Natural Gas Pipeline Co. Of America. This diagram shows only that portion supplied by Colorado Interstate Gas Company
CLAYTON STATION
68 431
Clayton
104 710
CLAYTON JUNCTION
Total Deliveries Off Line North Of This Point • 21 107 096
Total Purchases From C R G Co At This Point • 20 572 764
(Which Are Well Deliveries Less C R G Co Deductions)
21 211 806
(Across State Line)
Texoma
9 807
Dalhart
364 379
Hartley
5 328
DEHYDRATION PLANT
3 394
Total Deliveries Off Denver Line
North Of Bivins Station • 21 594 112
Well Meters • 21 059 780
20 367 632 Transmitted By Canadian River Gas Co. Through Facilities Of Texoma Natural Gas Co.
20 783 301 Delivered By Canadian River Gas Co. To Fritch Station Of Texoma Natural Gas Co. (Chicago Meter Station Reading)
20 191 512 Sold By Canadian River Gas Co. To Colorado Interstate Gas Co. (Well Meter Readings)
TOTAL WELL PRODUCTION 46 783 394
PRICE GAS
9 993
COMPANY USE
792 451
Channing
10 090
AOC
CONTRACT "B" GAS 4 799 484
CONTRACT "C" GAS 184
4 799 668
AOC
Esell
838
Fritch
4 656
4 794 144
1 103 750
WEST TEXAS GAS CO
184
3 690 394
RESIDUE FROM U.S.D.I. HELIUM PLANT
395 172
(SOLD TO U.S. ZINC CO. BY AMARILLO OIL CO.)
78 599 (MISC. SALES, COMPANY USE, FREE GAS, GAS LOST AND UNACCOUNTED FOR)
Amarillo
3 614 035
PPG
SALES TO U.S. ZINC CO. AND RIGHT-OF-WAY CUSTOMERS, FREE GAS, COMPANY USE AND GAS LOST AND UNACCOUNTED FOR
1 103 866

non-affiliated companies and that Five Million Dollars in cash was paid for such properties.

The purchase of the wells, gas rights, and leaseholds from Amarillo Oil Company was a condition precedent to the launching of the enterprise. It did not constitute, in any sense, a pooling of assets as suggested by Respondents. The money, when paid, belonged to Amarillo Oil Company to use as it desired without let or hindrance so far as the other parties were concerned. The project might have failed completely, but even so, Amarillo Oil Company would have retained as its own, the full Five Million Dollars received for the property it sold. This being true, neither the case of Niagara Falls Power Co. v. Federal Power Commission, 137 F.2d, 787, nor the other cases cited by the Respondents have any bearing whatsoever upon the question submitted.

Respondents also intimate (pages 12-13) that Amarillo Oil Company received only $310,000.00 of the purchase price. This statement is erroneous. Commission staff witness Luttring testified unequivocally as follows:

> "Ultimately the Amarillo Oil Company received by way of credits, or otherwise, the full amount of the purchase price of Five Million Dollars." (R., V. 5, p. 2938).

He also stated that the bulk of the Five Million Dollars was distributed by Amarillo Oil Company to Southwestern as a dividend. (R., V. 5, 2938)

The fact that Canadian carried the alleged profit made by Amarillo Oil Company on its books as "Appreciation" and that no income taxes were paid at that time has no significance whatsoever. Certainly this method of handling the matter does not change the actual *fact* as reflected by the uncontradicted evidence in this Record. Southwestern filed a consolidated income tax return for the period covered by the sale, which return reflected all of the operations of all of its subsidiaries, including Amarillo Oil Company and Canadian. (R., V. 5, 2638, 2639, 2905, 2906). This necessarily resulted in the elimination of any profit as well as any loss from an income tax standpoint, but it also resulted in a lower depreciation base for Canadian, and, in the long run, will probably result in the payment of more income taxes rather than less.

The "Appreciation" so called was carried on the books of Canadian purely for income tax purposes and merely as a matter of bookkeeping convenience. Its only purpose was to show the correct depreciation base that resulted from the consolidated income tax return. It was not a writeup, as intimated by Respondents, in any sense of the word. It resulted in no entry whatsoever in the surplus account. (R., V. 5, 2637) Had it been a writeup, it necessarily would have been reflected in that account.

The primary reason and perhaps the only reason that Commission staff and Commission ignored this arm's length sale was the fact that an alleged profit was made by Amarillo Oil Company and the further fact that the Commission considered the transaction as a purchase and sale between affiliated companies. (R., V. 8, 2908)

If we should assume, for the purpose of the argument, that the transaction did constitute a sale between affiliated companies, even this would not justify the action taken by the Commission and its staff. This very principle has been decided by the Supreme Court in the case of American Telephone and Telegraph Company vs. United States, 299 U. S. 232, 240; 81 L. Ed. 142. Mr. Justice Cardozo, speaking for a unanimous court, held definitely and positively that even where properties were purchased from an affiliated company, that if the difference between the purchase price and the cost to the selling company represented *a true increment of value*, such profit could not be written off or ignored. This rule has been followed and applied in the recent case of New York Telephone Company v. United States of America, et al., decided by a three judge court, Southern District of New York on August 24, 1944. (This case not yet reported.)

There is not the slightest intimation in the Record in this case that the properties purchased by Canadian were not worth every dime paid for them. In fact, the Record clearly shows that the property was worth far more than the purchase price paid.

We shall not here re-argue Colorado Interstate's contention that the Commission and the Court erred in eliminating from original cost or prudent investment the cost of certain

contracts. The respondents merely answer this contention by asserting that they were transactions between affiliates, which is entirely incorrect, and Colorado Interstate's petition and brief show conclusively that this was an arm's length transaction between companies, neither of which had any interest in the other.

Life of Canadian's Reserves

This question was discussed in Canadian's petition, pages 6, 7, 20-22, 36-38.

The respondents, in their answer, pages 14-16, contend that there was an issue of fact as to the life of Canadian's reserves, and further, that it doesn't make any difference anyway whether such reserves last fifty-three years or twenty-seven years or any other period.

Respondents cite testimony of Commission Witness Hammer to the effect that such reserves had a life of 73.7 years. This reference is misleading. Respondents did not refer to all of the testimony of such witness. The witness made it very clear on cross examination that this figure (73.7 years) "was used only in an illustrative manner and it was not his conclusion as to the life of Canadian's reserves." He testified further that he had arrived at no definite conclusion with respect to the life of such reserves, and had merely attempted to arrive "at a reserve beneath the Canadian River acreage * * * as of August 1, 1939." And whether Canadian would recover the entire amount of reserves as estimated "is a question that isn't * * * directly associated with an estimate of reserves." (R., V. 7, 3999) This testimony completely and directly refutes Respondents' contention.

It is true that the Commission stated in its opinion that theoretically, migration of gas is automatically accounted for under the "pressure decline method" and is actually accounted for if the isobaric maps are properly drawn. It is perfectly apparent from the Commission's opinion that it was referring, in this connection, to the *estimate of reserves* made by Commission staff. (R., V. 1, 158-159) This finding, therefore, has no relevancy whatsoever with respect to the *life* of Canadian's reserves. The Record clearly shows, without contradiction, that the life of a portion of an intercon-

nected reservoir where drainage exists, cannot be determined by estimating the reserves under the portion in question, and then dividing this by the estimated future annual production from that portion only. Even if there were any evidence in the Record that the *life* of such reserves could be determined in such manner, and there is not, such evidence would be so completely contrary to fundamental natural laws that no court or commission could logically accept such testimony.

What the Commission witness did say was that *he had made no study of drainage at all*, and that his isobaric map took into consideration only *certain drainage factors* and that "it does not adjust itself completely to the drainage question." (R., V. 6, 3641) *The witness was also speaking of his reserve estimate only, and not with respect to the life of Canadian's reserves.*

We state unequivocally that there is not a single line of testimony in this record that would support a finding that the life of Canadian's reserves can be determined in the manner in which the Commission attempted to determine such life. On the other hand the Record positively, affirmatively, and without contradiction, establishes the fact that such life cannot be determined by the method followed by the Commission. If we resolve all disputed questions of fact with respect to the life of Canadian's reserves in favor of the Commission's determination, such life does not exceed twenty-seven years from December 31, 1939.[1]

The Respondents, however, take the position that the Circuit Court has found that the Record does not disclose that the Commission failed appropriately to weigh the "existing volume, pressure differentials and consequent drainage and other recovery factors." We again direct the attention of the court to the fact that the Circuit Court there was speaking

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[1] This Court, in the case of Thompson, et al. v. Consolidated Gas Utilities Corporation, et al., 300 U.S. 55, 71; 81 L. Ed. 510, 519, recognizes the drainage situation existing in the Texas Panhandle Field and that gas in such field migrates or drains throughout the field from areas of high pressure to areas of low pressure. There is nothing in this Record that would, in any manner, cause this Court to make a different finding as to drainage at this time.

only of reserve estimates and was not referring in any sense of the word to the life of such reserves. (R., V. 8, 5091)

Moreover, the very fact that the Commission determined Canadian's recoverable reserves to be 2,800,000,000 Mcf, and then determined the life thereof simply by dividing into this figure, an estimated future annual production of fifty-five million Mcf., shows conclusively upon its face that the Commission did not take drainage into account, but necessarily assumed that Canadian would produce every cubic foot of recoverable reserves under its acreage. (R., V. 1, 159)

The Respondents then say, (Pages 15-16) referring to the Commission's opinion that it makes little difference whether the life of Canadian's reserves was properly determined or not if consistency is maintained in computing the annual expenses and the accrued depreciation and depletion. We submit that it does make a difference even though the Commission's theory of "consistency" is followed and that this difference amounts, so far as both Canadian and Colorado Interstate are concerned, to a very substantial sum per year for each company in net earnings.

Canadian's Revenues Available for Return

This question was discussed in Canadian's petition, Pages 22-24, 38.

The Respondents, in their answer, Footnote, Page 21, state, contrary to Canadian's contention, that Commission's Accountant did actually restate Canadian's revenues as well as its expenses on an accrual basis for the test year. This statement is very misleading. The Accountant did restate Canadian's income on an accrual basis *in some particulars*. He did not adjust Canadian's income with respect to that portion of rate case expense and income taxes actually paid in cash in 1939, but allocated to other years on an accrual basis.

The adjustments made in income are clearly reflected in Exhibit 168. (R., V. 6, 3419, 3421) It will be noted that three items only were included in this adjustment, two of them being debits and one a credit; but none of such adjustments included the items here in question. This resulted

in a net deduction of income in the sum of $54,708.28. The total income as shown by Canadian's books was $2,448,095.27. (R., V. 6, 3415) This income, as adjusted by the Commission Accountant, was $2,393,386.99, (R., V. 6; 3417), or a total deduction of exactly $54,708.28. It will be noted also that the Commission, in its opinion, found Canadian's income as adjusted to be $2,393,387.00 (R., V. 1, 171) being the exact amount determined by the Commission's Accountant. It is perfectly apparent, therefore, that neither the Commission nor its Accountant made any adjustments whatsoever in the income account by reason of the elimination of the items complained of in the expenses for the year 1939. The court will bear in mind that under the "Cost Contract," income always balanced precisely with cash expenditures and, therefore, both income accounts and expense accounts were necessarily kept on a cash basis. Assuming the Commission was correct in eliminating some of the cash expense items, then it became absolutely necessary to make the same adjustments in income for the reason that the income was determined absolutely by the expenses and had such expenses not been incurred in that year, the income would have been less by that precise amount.

Respondents also contend that rates were not affected by reason of the Commission's treatment of the $15,056.24 adjustment made by reason of the alleged profits of Amarillo Oil Company in the extraction of gasoline. This is also a misleading statement. The record shows clearly that the Commission Accountant credited the production expense of Canadian with the amount of the alleged profit made by Amarillo Oil Company and thus reduced Canadian's production expenses in 1939 by this exact amount. This necessarily resulted in increasing Canadian's revenues available for return in this same amount. (R., V. 6, 3425, 3461, 3462, 3466, 3472) Respondents strangely refer to the allocation study made by a Commission witness. (R., V. 4, 2317, 2382) This witness merely deducted the amount of Amarillo Oil Company's alleged profit from the cost of gas it had purchased from Canadian, and thus showed a smaller figure for gas purchased. This allocation study, by the wildest stretch of the imagination, can have absolutely no relevancy to the question here presented. It dealt with an entirely different

subject and its only purpose was to develop a formula with respect to the allocation of cost as between regulated and nonregulated business. The fact that the Commission did actually reduce Canadian's operating expenses by the amount of this alleged profit, did result in the regulation by it of Amarillo Oil Company's purely intrastate transactions over which the Commission had no jurisdiction and which had absolutely no relationship to Canadian's operations.

Respondents also contend that the question with respect to Texas gross production taxes paid by Canadian was raised for the first time in the Circuit Court. This question was raised in the Motion for Rehearing filed with the Commission.[2] (R., V. 1, 265) Respondents' statement that an excessive allowance for income taxes would more than offset this has no relevancy whatsoever. It is absurd to say that Canadian would have no taxable income if, as a matter of fact, it will have a net income in excess of $600,000. (R., V. 1, 173)

Depreciation as an Annual Operating Expense

This question was discussed in Canadian's petition, pages 24, 25, 38-40.

Respondents on page 16 of their answer brief, make the contention that Canadian is seeking to place in the rate base, and amortize, future replacements, and they say that this was condemned by this Court in the Natural Gas Pipe Line Case. We make no such contention.

We simply contend that the Commission's testimony reflects clearly and without question that it will be necessary for Canadian to make replacements of property now in use at a cost of $6,500,000 during the service life of the enterprise as determined by the Commission.

Colorado Interstate's contention with respect to the allowance for annual depreciation and amortization not being sufficient to take care of interim replacements that will have

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[2]The footnote on page 24 of Canadian's petition states that the Act of the Texas Legislature which increased gross production taxes became effective May 1, 1944. This was a typographical error. The Act became effective May 1, 1941.

to be made, fully presented in its petition and brief, has been ignored and avoided by Respondents, and accordingly we do not undertake to re-argue this matter here.

An unbroken line of authorities which have been approved in principle by this Court hold that in a limited life project such as this one, the company must accrue over the life of the project (1) a fund sufficient to enable it to replace physical properties that will be worn out prior to the termination of the project, and in addition thereto (2) a fund sufficient to return to it the value of its properties upon the termination of the project.

The depreciation and depletion allowances made by the Commission are wholly inadequate to accomplish this. Such allowances should be increased sufficiently to enable Canadian and Colorado Interstate to make these necessary replacements.[3]

Allocation

The Respondents make no answer to our contentions in this respect. They impliedly concede, and the Record clearly shows, that they considered both Canadian and Colorado Interstate as one composite system in the development of the allocation formula. This being true, there was no basis to make any reduction whatsoever in the price of that portion of the gas sold by Canadian to Colorado Interstate for direct pipe line industrial sale.

We might also add that Section 1 (b) of the Natural Gas Act must necessarily be read in connection with Section

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[3]The opinion in the Natural Gas Pipe Line Case (315 U.S. 575) does not condemn Canadian's contentions with respect to this issue. The Court stated on page 592 that an item for future capital additions through 1954, *including replacements* amounting to $12,159,380 was included in the amortization base. Footnote 9 on the same page discloses that of this amount, $9,146,683 constituted the cost of additional properties or future capital additions. It is apparent, therefore, that the cost of replacements totaled approximately three million dollars. The cost of these replacements was actually included in the amortization base and this action was not condemned by the Court. We are not here asking that replacements be placed in the rate base or, in any sense, amortized. We merely say that the Commission committed error in failing to allow sufficient annual depreciation and amortization allowances, considering only the property presently in service, to enable Canadian and Colorado Interstate to make such necessary replacements. As a matter of fact, the opinion in the Natural Gas Pipe Line Case may be cited to support our contention.

1 (a) of the Act which empowers the Commission to regulate gas sales that are made for ultimate distribution to the public and not otherwise. Clearly the sales of gas to direct pipe line and industrial consumers is not governed by the terms of the Act.

In Colorado Interstate's petition and brief decisions of this Court are cited to the proposition that in a case of this kind there must be an allocation of property, which the Commission admittedly did not make. These cases are disposed of by the assertion that they do not prevent the use of such a formula as the Commission adopted. We shall not attempt here to re-argue that question.

Also, in Colorado Interstate's petition and brief numerous glaring imperfections were pointed out in the application of the formula which the Commission did use. All of this, however, is utterly ignored and avoided by Respondents, and we shall not re-argue that matter here.

Financial History

On page 20 of the reply brief it is stated:

> "Nor does the financial history of the enterprise sustain the validity of a 'confiscation' argument on the part of Colorado and Canadian."

They then cite certain figures showing, with respect to Colorado Interstate, the dividends paid, the reserves accumulated for depreciation and amortization of contracts, surplus, and reduction of debt, up to December 31, 1939, and as to Canadian they show how much of its total cash investment had been recovered in cost of gas up to December 31, 1941. Respondents fail to advise the Court, however, that Canadian has never paid a dividend. The Commission has found that Canadian is entitled to a net return of $609,375 annually, which is at the rate of 6½% on the rate base found by the Commission. This sum of $609,375, multiplied by the 13½ years between the time of Canadian's organization and December 31, 1941, would total $8,226,562 of net return to which the Commission concedes Canadian was entitled, but which was not paid out by way of dividends, but

is reflected in the debt reduction commented upon by Respondents in their answer brief.

The obvious purpose of such a recitation was, of course, to persuade the Court to deny the petitions for certiorari, regardless of the many reasons assigned therefor, most of which are wholly unanswered and many of which are not so much as mentioned.

Among the reasons why the figures set forth have no bearing on the question of the legality of the Commission's order, and accordingly have no proper place in the brief, we will discuss only three:

1. These earnings of Colorado Interstate, and the alleged earnings of Canadian, are from their entire operations. No attempt has been made by counsel, nor has any attempt been made by any of the witnesses, to show what part of these earnings resulted from sales for resale, and what part thereof resulted from direct industrial sales over which the Commission has no jurisdiction whatsoever. As to Colorado Interstate, we invite the Commission's attention to the very large volume of direct industrial sales, as shown on the Commission's own flow map attached to Colorado Interstate's petition as an appendix. The evidence showed that Canadian also had received substantial revenue from direct sale industrial gas, and, in addition, that Canadian received substantial revenue from its intrastate sales in Texas, over which, of course, the Commission had no jurisdiction.

We submit that it is worthless to bring in figures of this kind from the total operations without attempting to advise the Court, as they could not, what portion of the total revenue was derived from sales for resale in interstate commerce, which is the limit of the Commission's jurisdiction.

2. The earnings so shown for Colorado Interstate and the alleged earnings of Canadian covered the period from the beginning of their operations in June, 1928, to December 31, 1939 for Colorado Interstate and to December 31, 1941 for Canadian. For ten years of these respective $11\frac{1}{2}$-year and $13\frac{1}{2}$-year periods neither Colorado Interstate nor Canadian was subject to regulation. Is the Commission to

be permitted, when in 1939 it launches upon a consideration of reasonable rates pursuant to the Natural Gas Act passed in June, 1938, to go back and take into consideration the earnings of the companies for the ten-year period when the companies were subject to no regulation whatsoever? We submit that the question answers itself. We submit also that consideration of such earnings for the ten-year period cannot properly be invoked as a cloak to cover other imperfections in the Commission's Findings and Order.

3. Even if the companies had been under regulation throughout the period of their operations, still their past earnings could no more be used to justify confiscatory rates for the future than past losses, (if they had had them), could be used to justify increased rates for the future; and so this Court has expressly held. In *Board of Public Utility Commrs. v. New York Teleph. Co.*, 271 U. S. 23, the Court in a unanimous opinion (Mr. Justice Stone not participating) on page 32 said:

> "* * * Past losses cannot be used to enhance the value of the property or to support a claim that rates for the future are confiscatory. (Citing cases from this and other courts.) And the law does not require the company to give up for the benefit of future subscribers any part of its accumulations from past operations. Profits of the past cannot be used to sustain confiscatory rates for the future. (Citing cases from this and other courts.)"

This doctrine, even then so well established, was reaffirmed in *Los Angeles G. & E. Corp. v. Railroad Comm.*, 289 U. S. 287. On page 313 the Court said:

> "* * * Deficits in the past do not afford a legal basis for invalidating rates otherwise compensatory any more than past profits can be used to sustain confiscatory rates for the future. Public Utility Comrs. v. New York Teleph. Co., 271 U. S. 23."

The "End Result" and "Rate Impact" Principles Announced in the Natural Gas Pipeline and Hope Cases

In Question No. 9 presented in Canadian's petition we have analyzed the "end result" or "rate impact" effect of the Commission's order on Canadian. Respondents, in their brief, in so far as they have attempted to make any answer to the questions presented, have directed their argument (with inaccurate and misleading references to the Record, as hereinabove pointed out) to certain specific matters selected by them, but they have again totally ignored and avoided the question presented as to whether the Commission's order can be sustained under the "end result" and "rate impact" principles announced by this Court in the Natural Gas Pipeline and Hope cases. On pages 40-42 in Canadian's petition we have sumarized our position as to why the order cannot be sustained under these principles so announced by this Court. We submit that the author of Respondents' brief was fully convinced as to the merit of our position, and, being unable to suggest an answer which could be justified, decided to ignore and avoid the point entirely. Canadian earnestly contends that the basic reasoning behind the "end result" and "rate impact" principles announced by this Court in the Natural Gas Pipeline and Hope cases requires the Commission's order as to Canadian to be set aside and the Circuit court's affirmance thereof reversed.

Other Points Presented

As we have pointed out, Canadian's petition contains nine questions presented and Colorado Interstate's petition contains four questions presented. Respondents' brief avoids some of the most important questions entirely, and bases its answer to other questions upon inaccurate and misleading references to the Record. It is not our intention here fully to present all of the reasons advanced by Colorado Interstate and Canadian in support of all of the questions presented, as this would be an unnecessary repetition of the reasons and arguments set forth in the petitions and briefs filed in support thereof. As to any question presented in either of the petitions which is not specifically referred to in this reply, it should, of course, be understood that we are not waiving any such questions, but we consider that our position is fully set

forth in the reasons and arguments advanced in connection with the petitions and that nothing is set forth in Respondents' brief with reference thereto requiring further argument or reply.

Respectfully Submitted,

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IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

No. 379

COLORADO INTERSTATE GAS COMPANY,
a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

BRIEF OF PETITIONER.

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BRIEF OF PETITIONER.

OPINION BELOW.

The opinion of the Circuit Court of Appeals, Tenth Circuit, is reported in 142 Fed. (2d) 943.

GROUNDS UPON WHICH JURISDICTION OF THIS COURT IS INVOKED.

The jurisdiction of this Court is invoked under Section 19 (b) of the Natural Gas Act (52 Stat. 821; Title 15, U. S. C. A., Sec. 717r) and Section 240a of the Judicial Code as amended by the Act of February 13, 1925 (Title 28, U. S. C. A., Sec. 347). A copy of the sections of the Natural Gas

Act pertinent to this review is attached hereto as Appendix A. Certiorari was granted on November 13, 1944.

STATEMENT OF THE CASE.

1. The Case for Review.

This is a rate case involving an order of the Federal Power Commission (hereinafter referred to as the "Commission") under the Natural Gas Act, reducing the rates charged by petitioner, Colorado Interstate Gas Company (hereinafter sometimes called "Colorado Interstate"). In the same case the Commission entered similar orders reducing rates of Canadian River Gas Company (hereinafter sometimes called "Canadian") and Colorado-Wyoming Gas Company (hereinafter sometimes called "Colorado-Wyoming"), petitioners in Cases Nos. 380 and 575, respectively. The Circuit Court of Appeals affirmed the Commission's order in all respects.

The Court in granting certiorari, limited its review to Questions 5 and 6 stated in the Company's petition. These are:

> "5. Whether consistently with the requirements of the Fifth Amendment to the Constitution of the United States and the Natural Gas Act the Commission could determine reasonable rates for gas sold for resale in interstate commerce without making a separation or allocation of the property of Canadian and petitioner which, in this case, is used in making intrastate sales in Texas and interstate sale of both resale and direct sale gas, the Commission having no jurisdiction over intrastate sales or over direct sales in interstate commerce to industrial consumers.
>
> "6. Whether the Commission's substitute method of allocation of cost of service which results in burdening non-regulable gas with costs actually chargeable against regulable gas violates the Fifth Amendment to the Constitution of the United States and the Natural Gas Act."

2. THE PETITIONER'S OPERATIONS.

Canadian owns a natural gas producing property in the Panhandle Field in Texas. Of the gas produced by it, a part is sold in the producing field in intrastate commerce; a part is delivered in the field to the compressor stations of Texoma Natural Gas Company for eventual sale and delivery to the Natural Gas Pipeline Company of America, which extends to the Chicago area; and a part is transported through Canadian's pipe line, which extends 86 miles to a point near Clayton, New Mexico, where it connects with the pipe line of Colorado Interstate. Canadian sells gas from its pipe line to its intrastate customers in Texas, to the Clayton Gas Company in New Mexico and to Colorado Interstate at the point of connection of the two pipe lines.

Colorado Interstate transports such gas through its pipe line, which extends to Denver, and sells gas in part to various distributing companies in Colorado for resale by them. Gas is transported and sold near Denver to Colorado-Wyoming, which that company transports and sells at points in northern Colorado and at Cheyenne, Wyoming.

In addition to the gas so produced, gathered and transported for a distance by Canadian, and transported for a greater distance by Colorado Interstate, and sold by the last named company for resale, gas is also transported by means of the same facilities in part and sold directly to industrial customers in Colorado for their consumption. It is to be remembered that such direct sales to industrial customers, even though made in interstate commerce, are by the terms of the Natural Gas Act excluded from regulation. See Section 1 (b) of the Natural Gas Act contained in Appendix A hereto. A flow diagram map of the pipe line systems of Colorado Interstate, Canadian and Colorado-Wyoming showing the quantities of gas produced, gathered, transported and delivered to the several classes of customers, which was prepared and introduced by engineers of the Commission (R. V. 2, p. 1079), is hereto attached as Appendix B. From this flow diagram, and from the undisputed evidence more specifically referred to hereinafter, it is established that (1) gas transported solely in intrastate

commerce, and (2) gas transported in interstate commerce make common use of Canadian's pipe line. It is also established that of the gas transported by Canadian and Colorado Interstate in interstate commerce (1) gas sold directly to industrial customers and excluded from regulation by the terms of the Act, and (2) gas sold for resale and now subject to regulation, likewise make common use of the greater part of the two pipe lines. Such evidence also establishes that certain parts of Colorado Interstate's pipe line are used exclusively by one or the other classes of gas.

In its determination of rates to take the place of contract prices agreed upon prior to the Natural Gas Act, the Commission made no separation or allocation of the property used in common in the intrastate and interstate business, nor of that likewise used in common in the sale of the regulable and unregulable portions of gas in interstate commerce. It did not even separate out property used exclusively in intrastate commerce, nor that used exclusively by the unregulated business in interstate commerce. In lieu of such a separation and allocation of property, it employed what it termed an "allocation of cost," and, upon that basis, Canadian was ordered to reduce its charges for gas sold to Colorado Interstate by the amount of $551,000 annually, and Colorado Interstate was ordered to put into effect rates as of May 20, 1942, which would effect an annual reduction of $2,065,000. (R. V. 1, pp. 140-195, 295.)

Admitting that it had no jurisdiction over the rates charged by petitioner for gas sold directly to industries, nevertheless, the Commission used methods legally applicable only in cases where full rate regulatory jurisdiction exists. In so doing it failed to stay within the jurisdictional boundaries established by Congress. The Circuit Court of Appeals based its affirmance on the impact of the order "in its totality," and thus failed to recognize the jurisdictional importance of the method employed by the Commission. It is only in situations where complete jurisdiction exists that the principles announced in the cases of *Federal Power Commission v. Natural Gas Pipeline Company of America*, 315 U. S. 575, and *Federal Power Commission v. Hope Natural Gas Company*, 320 U. S. 591, can apply. The Commission

went beyond the ambit of its statutory authority and in order to demonstrate that fact it is necessary to present a detailed analysis of the method of allocation proposed by petitioner and the method followed by the Commission.

3. The Company's Evidence.

The jurisdictional requirements can be met only by determining the basic features affecting the property used and held available for use by the regulable gas. These are:

1. The property used exclusively for regulable gas and that used exclusively for unregulable gas.
2. The property used in common by regulable and unregulable gas, and an allocation thereof to the regulable gas of the portion used and held available for use by it, based upon:
   a. The priority rights to line capacity by regulable gas,
   b. The actual use of line capacity in the past by regulable gas and unregulable gas and the volume sold and peak loads experienced during such period, and
   c. The translation of this use into terms of net investment of the property so allocated to regulable gas.
3. The determination of all costs involved in operating the property so allocated to regulable gas and in selling such gas to the customers.

Upon all these points the petitioner presented evidence. The petitioner's witnesses not only separated the property according to its use, but assigned to the several parts the original cost and the present fair value thereof, and the operating expenses with respect thereto, which were summarized in appropriate operating or rate statements. (R. V. 5, pp. 2453-2494.) However, under the limited review now granted, we assume that the dollar amounts assigned to the several classes of property are not material. Only the evidence disclosing the method and principle of separation em-

ployed by the Company, and the failure of the Commission to make any separation at all is here dealt with.

Colorado Interstate's witnesses first separated out the property used exclusively in servicing or supplying the non-regulable gas and that used exclusively in the sale of regulable gas.

The evidence shows that certain lateral lines are used exclusively for delivering gas to customers for resale, and that certain other laterals are used only for delivering gas to direct sale customers. By reference to Appendix B, Commission's flow diagram map, it will be seen that the relatively extensive lateral line branching off from the main line south of Pueblo, Colorado, is used exclusively in the direct sales of gas to Colorado Fuel and Iron Corporation. Similarly, the laterals to the Colorado Portland Cement Company, American Crystal Sugar Company, Atchison, Topeka & Santa Fe Railroad Company, the United States Helium Plant and the Fort Lyon Hospital are all used exclusively in the unregulated business. Other laterals are used exclusively in the regulated business. Such lateral lines were by the petitioner's witnesses assigned to the two classes of business in accordance with their use. (R. V. 4, pp. 2265, 2271.)

Metering stations were likewise divided by the Company's witnesses on the basis of the exclusive use to which they were put. Since each class of business necessarily had its own meters, this separation of property was easily made. (R. V. 4, pp. 2265, 2276-2278.)

After separating the property used exclusively in the regulable or unregulable business, it was then necessary to separate that used in common by both classes of business. The main pipe line from its junction with the Canadian Company's line at Clayton Station, New Mexico, to a point just east of Pueblo, Colorado, a distance of approximately 200 miles, is so jointly used. The remainder of the pipe line from that point north to Denver, a distance of 105 miles, is almost, but not quite, entirely used by the resale or regulable gas, and thus has to be separated on a use basis. This separation necessarily had to take into consideration prior

right to the use of the line by the resale or regulated business over the unregulated business, evidence of which is now summarized:

Evidence as to Prior Right to the Use of the Line by the Regulated Over the Unregulated Business.

The allocation of property used in common by regulable and unregulable gas reflected the priority right to line capacity of gas sold for resale to domestic consumers over all other gas. This preference was a condition precedent to the whole project, was included in all of the contracts between petitioner and its customers, and has been observed in practice. Necessarily these rights are reflected in the actual peak loads and volumes used as data in the allocation of the commonly used property.

The original agreement of April 5, 1927, between the parties who financed and incorporated Colorado Interstate and those who established the Canadian Company contained a provision that the domestic customers (sales for resale to such customers being later subjected to regulation by the Natural Gas Act of June 21, 1938) should have preference and priority over industrial customers in case of shortage of gas for any reason. (R. V, 1, pp. 281-394.)* The carrying out of the project as provided in said original agreement was conditioned upon the acquiring by the distributing companies in Denver and Pueblo of franchises for the distribution of natural gas in lieu of manufactured gas which they were then serving. Such franchises were obtained. The Denver franchise contained this provision in Section 4:

"It is further determined that the rates to be charged by said Company for natural gas service to industrial users for heating, manufacturing and power purposes in the City and County of Denver for the term of said Fran-

*Included in the category of domestic customers are customers frequently classed as commercial, such as laundries, bakeries, restaurants and similar establishments. Gas sold to distributing companies and municipalities for resale to industrial customers, while subject to regulation, has no priority over industrial gas sold direct to consumers. The quantity of such gas sold is relatively small in comparison with direct industrial sales, and sales for resale to domestic and commercial customers. Appropriate treatment is given to this fact in petitioner's evidence.

chise may be lower and different from those charged for domestic purposes and the Company shall have the right to contract with industrial users for the sale of such natural gas, provided that all such contracts contain a 'cut-off' clause which recognizes the preferred right of the domestic users over the industrial users." (R. V. 1, pp. 338, 339.)

The Pueblo franchise in Section 8 contained substantially the same sort of provision, and in the contract between Colorado Interstate and the City of Colorado Springs, which owned and operated its own distribution system, such provisions were also contained.

Provision for such priority was included in all of the contracts of the petitioner with the distributing companies at Denver and Pueblo, and with the company distributing gas to La Junta and a few small villages in southeastern Colorado. (R. V. 2, p. 1024.)

All of petitioner's contracts with its industrial customers were negotiated on the basis of this priority to the resale customers, and of this provision for interruption to their service, and the gas was taken and the price agreed upon on this off-peak load basis (R. V. 2, pp. 801-956), and all such industrial customers acknowledged and conceded such priority or preference in favor of the sales to the distributing companies for resale to domestic customers. (R. V. 2, p. 1024.) Accordingly, it was incumbent upon every industrial customer to make his own arrangements for standby fuel and equipment to take care of such interruptions. (R. V. 2, p. 956.)

Evidence was introduced showing that within the period July 29, 1932, to December 31, 1940, this priority and preferential provision in the contracts had operated *in favor of the domestic customers* on forty different occasions. A table of these interruptions, showing the name of the industrial customer, the date of the beginning of the interruption, the duration of the interruption, and cause of the interruption, is set out in full in the Record. (R. V. 2, pp. 1026-1028.) Interruptions to the industrial customers of the distributing companies are shown under the name of the distributing

company. These forty interruptions ranged in duration from 5 hours to 66 hours. The causes of the interruption in service to such industrial customers were due to high domestic peak load or "freeze-ups" on the main line, or washouts on the main line. (R. V. 2, pp. 1026-1028.) The main pipe line in its course between Clayton, New Mexico, and Denver traverses many creeks, rivers and dry arroyos, and no matter how deep the line was laid and securely anchored, floods, and particularly "flash" floods, were able to cause washouts. (R. V. 2, p. 1030.) Despite these washouts, "freeze-ups" and high domestic peak loads, service was continued without interruption to the preferred domestic customers, even in case of total breaks of the line, because of the ability to use gas stored in the line, or the "line pack," for their service.

> "Beardsley explained that because of gas stored in the line or the 'line pack' the cutting off or cutting back of service to the industrial or commercial consumers always permitted service to the domestic users." (R. V. 2, p. 1028.)

Such use of the gas stored in the line or the "line pack" was explained by the witness Rhodes, who designed the line, as follows:

> "Furthermore, gas can be drawn from the line in excess of its true or continuous capacity through the skillful use of the storage capacity of the line. In long pipe lines a considerable amount of gas is stored in the line on account of the high pressure at which it operates. This stored gas under proper control may be used to supplement the flow capacity of the line to an extent of about 10 per cent for a single day." (R. V. 2, p. 1025.)

The Commission's witness, Kenneth L. Smith, testifying as to studies made by the Commission's Bureau of Engineering, stated:

> "According to information received from the Bureau of Engineering, the average line pack during the year 1939 was 55,362 Mcf., at a pressure base of 16.4 pounds per square inch absolute." (R. V. 2, p. 1025.)

It was by cutting off completely the industrial customers, when that was necessary, and by cutting back or reducing

the supply of gas to such industrial customers when that would suffice, and by the use of the gas stored in the line or the so-called "line pack," that service to the domestic consumers was continued without interruption in all cases despite washouts, freeze-ups, and high domestic peak loads. (R. V. 2, p. 1028.)

Evidence as to the Relative Use of Property for the Regulated and Unregulated Business, and Separation and Allocation of the Property and Expenses with Respect Thereto.

The Company's line was designed and built with a capacity calculated to take care of the maximum demands of the domestic consumers during the coldest weather. (R. V. 2, pp. 1108, 1118.) George I. Rhodes, chief engineer of Ford, Bacon & Davis, which firm was the designer and builder of the line, testified that prior to construction it was necessary to estimate volumes, peak loads and line capacity, and that the preconstruction estimates had been closely borne out. (R. V. 2, p. 1108.) The expense of building a line with capacity sufficient to deliver the maximum requirements of the domestic customers alone for house heating, cooking and other such purposes, that is, for the regulated business, on the coldest expected day in winter, would be prohibitive. (R. V. 4, p. 2298.) Nevertheless, it was necessary to have such capacity available for such domestic customers on the coldest days in order to make the project feasible, because domestic consumers would not buy the gas at all unless it was available on such days. (R. V. 4, pp. 2298, 2315; R. V. 2, pp. 1108, 1110.) He testified that the only solution was to find industrial customers willing to buy gas on an off-peak load or interruptible basis, sales to whom would thus contribute to the cost and operating expense of a line that would have sufficient capacity to take care of the maximum demands of the domestic customers in the coldest weather. (R. V. 4, pp. 2283-2307.) His firm actually designed and built the line with "the least capacity that could be provided to take care of the domestic obligations in the future years, the smallest line that you could reasonably expect to build." (R. V. 4, p. 2297.) Such line had ample capacity to take care of the Colorado Fuel & Iron (C. F. & I.) and the other industrial cus-

tomers on an off-peak load basis at practically no additional cost. (R. V. 4, pp. 2297, 2285.) He added that the line was so built, and that the direct sale industrial customers so acquired on the off-peak load or interruptible basis "must get off the line to the extent required to assure deliveries of domestic gas on the resale contracts." (R. V. 4, p. 2283.)

This witness Rhodes then testified as to the proper separation or allocation of the plant and expense of the whole Denver Line, as between direct sales not subject to regulation, and sales for resale now subject to regulation under the Act. (R. V. 4, pp. 2264-2355.)

The customers of Colorado Interstate to whom sales are made for resale off the Denver Line are: Public Service Company of Colorado, Pueblo Gas & Fuel Company, Citizens Utilities Company, Arkansas Valley Natural Gas Company (whose business has now been taken over by Citizens Utilities Company), City of Colorado Springs, and Colorado-Wyoming Gas Company. (R. V. 4, p. 2265.) (This business is by this witness, and other witnesses in the record, variously referred to as "sales for resale," which is the language of the Act, or as "resale" business, "regulated" business, and "jurisdictional" sales or business.)

The industrial customers to whom direct sales were made, and which sales are not now subject to regulation, are: American Crystal Sugar Company, Atchison, Topeka and Santa Fe Railway Company, City of Colorado Springs, for its power plant, C. F. & I., Colorado Portland Cement Company, and United States Government, for its Fort Lyon Hospital and for its helium plant at Thatcher, Colorado. (R. V. 2, pp. 1108, 1109; R. V. 4, p. 2265.) (This business is referred to by this witness, and other witnesses in the record, variously as sales "not for resale," "direct" sales, "unregulated" sales, "non-jurisdictional" sales or business.)

In making this separation, this witness Rhodes, in compliance with the terms of the Act, counted as "sales for resale" or as "regulated" business, the relatively minor amount of gas sold by Colorado Interstate to the several distributing companies for resale to industrial users. (R. V. 4, pp. 2265, 2268, 2269.)

The Commission's witness O'Connor also studied the deliveries of gas to the regulated and unregulated business in the year 1939, and charted the deliveries on the flow diagram map (R. V. 2, p. 1079), which is contained as Appendix B to this brief. O'Connor shows that except for the delivery to Colorado Portland Cement Company, all of the gas transported through the 20-inch pipe line from the Devine Station near Pueblo to Denver, a distance of 105 miles, is for resale, or is regulated business. This Commission's witness O'Connor on his flow diagram shows graphically that of the 21,407,096 Mcf which passes through the Clayton Compressor Station, 7,257,379 Mcf is delivered to the direct sale customer C. F. & I., at Pueblo, off the 22-inch main line extending between those points. (R. V. 2, p. 1079.) He also shows the other deliveries off this 22-inch portion of the line to the other industrial customers, all of which occur south of the Devine Compressor Station near Pueblo. (R. V. 2, p. 1079.)

Since, as testified to by Rhodes, the greater part of petitioner's property is used in the delivery of gas to both classes, he developed a method properly apportioning to the resale gas that part of the property used and held for use in meeting the obligations of petitioner to those customers having priority rights to line capacity.

As summarized hereinafter, Rhodes' testimony was that, based on the winter of 1939-1940, there should be assigned to the regulated business, because of its relative priority and consequent use, 84 per cent of the cost of the 22-inch main line between Clayton and the Devine Station (Pueblo), 99.48 per cent of the 20-inch main line from Devine Station to Denver, 58.2 per cent of the cost of the Arkansas Valley line, and 42.32 per cent of the cost of other laterals. The weighted average of the cost of all pipe lines assigned to the regulated business is 82.43 per cent.

Rhodes, describing his method, said:

"Certain facilities are devoted exclusively to the sale of resale gas, and certain facilities exclusively to the sale of direct sale gas. By far the greater part of the property is used in the delivery of gas to both classes. This

exhibit develops a method by which there can be allocated to each class of business that part of the total costs fairly representing the share which each class of business should bear.

"Resale gas is the primary business of the Denver line. During peak loads this gas is supplied principally for resale to domestic and small industrial consumers, which constitutes the firm resale load of the line. They have the first call on all the gas in the line. Direct sale gas is the secondary business of the Denver line. This gas is for large industrial consumers served directly by Colorado Interstate. A large part of their requirements can be supplied by other fuels on short notice. The direct sale gas uses available spare capacity of the line when, as and if it is not needed by the resale gas. The same applies to resale gas for large industrial customers. It is appropriate that the firm resale gas with its dominant priority in the line should bear the base of underlying costs and that the direct sale gas and resale special industrial gas should bear the added or increment costs necessary to its supply.

* * * * *

"When two or more classes of business have equal rights at all times to a full and uninterrupted supply of gas from the pipe line then they have equal priority rights. If the available supply of gas from the pipe line is deficient for any cause then the supply to each of the classes of gas is curtailed in like proportion. Each class of gas having equal priority should share costs pro rata.

"When one class of business, however, has the first call on the available supply of gas from the pipe line, and the other class of gas can take only that which is left, then that class of gas with the first call has a primary right or priority. In the event of shortage of gas, those classes of gas with inferior rights must, if necessary, suffer a complete interruption of service in assuring a full supply of gas to that class with the primary right. * * *" (R. V. 4, pp. 2265, 2266, 2267.)

This witness then refers back to his studies of, and testimony with respect to, the "Peak Load Obligations and Line

Capacity of the Denver Line" from 1928 through the winter 1939-1940. (R. V. 2, pp. 1108, 1118.) For each year of that history, he took the peak loads for two summer months, and the peak loads for two winter months, and from those actual operating results ascertained the relation between the decrease in temperature and the increase in the resale load or regulated gas load. (R. V. 2, pp. 1109, 1112, 1113.) This increase in the load of regulated business, he stated was due primarily to the house heating load. We quote the following from the record:

> "The use of gas for house heating begins in some form when the mean temperature falls below 65 deg. F., and such use increases practically in direct proportion as the mean temperature falls below 65 deg. F. The amount by which the mean temperature in any day falls below 65 deg. F. is called the 'degree day deficiency' for that day. For instance, if the mean temperature in any day is 55 deg. F., there are 10 degree days deficiency, and when the mean temperature is 45 deg. F. there are 20 degree days deficiency. The sum of the daily degree days deficiency during any period is known as the 'total degree days deficiency' for that period. In the Exhibit 'degree days deficiency' is abbreviated to 'Ddd'." (R. V. 2, p. 1110.)

From these studies of actual operating results, he determined that for every degree day deficiency in temperature the resale load increased 660,000 cu. ft. per day. (R. V. 2, p. 1110). These studies of actual operations during the history of the project confirmed the preconstruction estimates (R. V. 2, p. 1108) that the line should be built to take care of the domestic load at a mean temperature of 15 deg. F. below zero. (R. V. 2, p. 1111.)

The maximum demands which the Denver pipe line had to be prepared to meet in the event of extreme weather in the several areas are shown as follows:

	Mean Temperature On Coldest Day (Deg. F.)	Estimated Domestic Load On Such a Day (Cu. Ft.)
(a) Denver Area	—14 deg.	42,157,000
(b) Colorado-Wyoming Area	—20	10,775,000
(c) Colorado Springs Area	—16	3,251,000
(d) Pueblo Area	—10	2,230,000
(e) Arkansas Valley Area	—10	1,304,000
(f) New Mexico Area	—6	531,000
(g) Texas Area	—6	1,483,000
Total	—14.5 deg.	61,731,000

(R. V. 2, p. 1111.)

Having thus determined the increase in domestic load per day for each degree day of deficiency in temperature, based on operating results during the history of the line, he then simply calculated the maximum demands of the regulated gas which Colorado Interstate must be prepared to meet for each portion of the line. (R. V. 4, pp. 2268, 2269, 2270.) This demand he ascertained first in terms of percentage of the total flow capacity, and next in percentage of pipe diameter of the different segments of the line (R. V. 4, p. 2269), and, finally, in terms of cost (R. V. 4, p. 2271), which he stated as follows for the winter of 1939-1940:

	To Resale Gas Per Cent
22-Inch Main Line, Clayton Compressor Station to Devine (Pueblo) Compressor Station	84.00%
20-Inch Main Line Devine Station (Pueblo) to Denver	99.48
Arkansas Valley Lines	58.20
Other Laterals	42.32

(R. V. 4, p. 2271.)

As to the Compressor Stations, Rhodes stated:

"The first unit installed at each station is dedicated to and used practically continuously by the primary business on the line and therefore its cost should be borne entirely by the resale business. The costs of additional units of

the stations are chargeable both to resale gas and direct sale gas in proportions reflecting its use for the two services." (R. V. 4, p. 2272.)

He then analyzed the units at each station, and allocated to the regulated business 71.4% of the cost at Clayton Station, and also at the Canyon Station, and 94.5% of the cost at the Devine Station. (R. V. 4, p. 2275.) He then made a study of the telephone system and other general property, and arrived at percentage allocations for each class of such property. (R. V. 4, pp. 2276, 2278.) He likewise made similar allocations of all Colorado Interstate's expense incurred in delivering the gas. (R. V. 4, pp. 2275-2278.) These percentages of allocation or separation of cost and operating expenses were then applied to the Company's property and business. Property used exclusively in the regulated and unregulated business, respectively, and expenses incident to each class, were directly assigned. There was then presented by the Company complete statements of the cost of the property and the expenses applicable to the regulated business. Contrary to the statement in the Commission's Order (R. V. 1, p. 175), the petitioner did present such statements as to the cost of the property and expenses applicable to the regulated business. (R. V. 4, pp. 2263-2316; R. V. 5, pp. 2463-2494.)

Except for the evidence of the Commission's engineer O'Connor, above referred to, no Commission witness offered any testimony as to a separation of the Company's plant or physical properties, as between that used in the regulated and unregulated business respectively. (The absence of such testimony on the part of the Commission's witnesses at the hearing may be explained by the Commission's declaration in its Opinion that "It does not follow, from this obligation of the Commission, that an allocation of physical property or portions thereof, must be made, before any excessive returns are determined, as seems to be the contention of the companies." (R. V. 1, p. 175.))

4. The Commission's Evidence as to Allocation of Costs of Service.

The accounting witness for the Commission made adjustments by way of deduction in the original cost and in the operating expenses. This was done for Colorado Interstate and Canadian separately. Then another accounting witness consolidated all of these revised accounts of the two companies as if they were one, reflecting in such consolidated figures all of such adjustments, and in this consolidated showing the transaction between the two companies, involving the sale and purchase of gas at Clayton, New Mexico, was washed out. (R. V. 4, pp. 2215-2259.)

The Commission's witness Lyon then took these consolidated "adjusted" accounts for the combined companies and made his allocation of costs of service (R. V. 4, p. 2317; R. V. 5, p. 2450), allowing as part of the cost a 6 per cent rate of return on all of the property used in the business, regulated and unregulated. (R. V. 5, p. 2409.) He made no separation or allocation of the property itself, either as between that used in intrastate commerce and that used in interstate business, nor as between that used for resale gas and that used for direct sale gas. (R. V. 4, pp. 2317-2373.) He stated:

> "I have made no allocation, segregation of the property specifically devoted to the service of either of those markets." (R. V. 5, p. 2422.)

On the basis of such combined adjusted costs furnished him by other Commission accountants and examiners, Lyon sought to derive an average or unit "Production Cost." This cost he showed under the heads (1) "Cost of Gas at Wellhead," (2) "Cost of Gathering," and (3) "Residuals—Refining." This third classification is in fact not a "cost," but a credit against the other two classes of costs, and represents the revenue derived from extracting the lighter vapors from the raw natural gas so as to lessen the possibility of "line freezes" during transportation. He admitted that his production costs were average costs derived without any regard as to whom or under what circumstances the gas produced was sold—whether sold to the Denver Line, the Chicago Line, or whether it was intrastate or interstate commerce,

or whether it was the subject of direct sales not subject to regulation, or sales for resale subject to such regulation.

"A. It is an average cost of the gas at the wellhead and is an average cost of the gathering—

"Q. If the word 'system' means the production system or gathering system, that is the system cost?

"A. That is correct." (R. V. 4, p. 2397.)

His attention was called to the fact that the sales for resale had priority over direct sales to industrial customers, and that the "system" had been built and maintained for the preferential and priority service to the sales for resale to the domestic consumers, that is, regulated business. He was asked if in view of those facts it was not improper to use the same average costs for gas for both businesses, that is, the preferred or priority regulated business, and the subordinate and unregulated business, and whether or not it would not be more appropriate to assign a lower or mere incremental cost to such unregulated business. (R. V. 4, pp. 2390-2397.) He replied:

"A. I think the incremental cost feature should be forgotten." (R. V. 4, p. 2397.)

He was also asked whether his "average cost" did not ignore the load factor obtaining and operating in variable favorable or unfavorable degrees with respect to the several classes of business. He admitted that the load factor was of consequence in determining cost, but also admitted that he had ignored it. (R. V. 4, pp. 2390, 2391; R. V. 5, pp. 2414, 2415.)

"Q. What is the significance of the load factor?

* * * * *

"A. Load factor is the ratio of the average load over a designated period to the peak load occurring in that period.

* * * * *

"A. The load factor of gas deliveries is a matter of consequence in determining the cost of rendering the service. (R. V. 4, p. 2390.)

* * * * *

"Q. Now, having gotten this average cost of gas at the wellhead, you applied that to the volume which various customers, shown on Table 1 of your exhibit, took during the year 1939?

"A. Yes.

"Q. Now, I take it that you gave no consideration to the question of load factor of the various deliveries of gas which Canadian River Gas Company makes; that is, as between deliveries made to Bivins for the Denver Line, as we call it, and deliveries that are taken at the wellhead for the Amarillo Oil Company and deliveries that are made to the Fritch Compressor station of Texoma Natural Gas Company?

"A. No, no effect was given to load factor in this allocation." (R. V. 5, p. 2414.)

He agreed that the load factor on the Chicago Line was 95 per cent, or perhaps a little under that, whereas the factor on the Denver Line was only somewhere "between 60 and 70 per cent." (R. V. 5, p. 2415.) Although admitting that the Chicago Line had the better or cheaper operating load factor, he gave that fact no effect.

"Q. And given no effect to the fact that there is a different load factor between the Denver line and the Chicago line?

"A. No effect." (R. V. 5, pp. 2421, 2422.)

Neither did he give any effect to the difference in the maximum monthly demands.

"Q. Now, again, you have given no effect to the difference in maximum monthly demand which is made by the Denver line on the gathering system as compared with the maximum monthly demand which the Chicago gas line demands.

"A. That is again on a uniform volumetric base." (R. V. 5, p. 2421.)

After thus allocating his "Production Cost" on a straight volume or average basis, he then allocated Transmission Costs. (R. V. 4, p. 2317, columns 6, 7 and 8.) These "Transmission Costs" he divided into two parts (1) "volumetric

costs" and (2) "capacity costs." (R. V. 4, p. 2317, Table 1; R. V. 5, p. 2423.)

In allocating his Transmission Costs he treated as a unit, and as if it were one common conduit used by *all* gas, all the transmission system beginning with and including Canadian's Bivins Compressor Station in the field, its transmission line from that point in Texas, with all laterals used in making intrastate deliveries in Texas, and all of Colorado Interstate's transmission line to Denver, with all of its laterals, even though some laterals were used exclusively in delivering direct sales of gas to industrial customers not now subject to regulation. (R. V. 5, pp. 2427-2431.) This transmission system which he treated as a unit or a common conduit he discussed by reference to the Commission's Engineer O'Connor's map, reproduced as Appendix B hereto. (R. V. 5, pp. 2425, 2427.) His attention was directed to the fact that on this flow diagram map of the Commission's Engineer O'Connor, it appeared that of the 21,594,112 Mcf of gas which passed through the Bivins Station in 1939, 7,257,379 Mcf were sold directly to C. F. & I. at Pueblo as a direct sale not subject to regulation, and that this gas made no use whatever of his assumed unit or common transmission system *north of Pueblo*. (See Exhibit 138, Appendix B hereto.)

His attention was likewise directed to the fact that this same Commission's flow map showed for the same year, 1,676,091 Mcf deliveries of direct sale or unregulated gas to Colorado Portland Cement, slightly north of Pueblo, and that north of the Devine Station, the 20-inch line (compared to the 22-inch line south of Pueblo) was used almost exclusively by the resale or regulated gas. (R. V. 5, pp. 2426-2429.) However, he admitted that in computing his "volumetric cost" component of his total Transmission Cost, he gave no consideration to such facts, and he admitted the consideration of such facts would produce a different "volumetric cost" for the regulated and unregulated gas.

"Q. If instead of using this as one system if we blocked it out and took this 22-inch portion of the line and determined the volumetric portion there and prescribed that to every thousand cubic feet of gas that flows through

it, and if we came on up the line, and when we got to the 20-inch line we made that same determination and applied those volumetric costs only to that portion of the gas which flows to that portion of the line, we come out with a different volume unit cost applied to these different customers, don't we?

"A. If you applied costs in a manner different than what I have in this exhibit—

"Q. I mean if we applied it in the manner I stated by allocating the cost of the line to the gas that flows through that line.

"A. That is correct, you would.

"Q. We have a higher volume cost to apply for the Denver gas than we would have for the Colorado Fuel and Iron Corporation or that we would have for the gas that goes into the laterals in the Arkansas Valley?

"A. Your cost would be cumulative, that is correct.

"Q. So that the result of your system of doing this is in effect to build up the cost of service of this direct sale gas which the company sells, isn't it, and reduce the cost of serving the gas that goes all through the line clear to the end of it and is sold for resale purposes only?

"A. I don't follow your direct sales and resales.

• • • • • •

"Q. Will you for the purpose of this discussion—when I say 'direct sale gas,' I mean gas the pipe line company sells for consumption, and when I say "resale gas," I mean gas that it sells to distributing companies, for example, the City of Colorado Springs for resale or distribution.

"You are familiar with the fact that all of the direct sale gas the pipe line company sells for consumption, the main part of it is delivered at Pueblo or south of Pueblo, and then to the Colorado Portland Cement Company just north of Pueblo.

• • • • • •

"Q. So that as I say; the result of your method is to tend to increase your computed cost of gas that this pipe line sells to these industries for consumption and to cor-

respondingly reduce that that goes all the way through the line and comes out at Denver?

"A. I give no consideration as to whether the delivery is made to an industry or to a distribution plant or if it is resale gas or direct consumption. It is a factor, of course, under the method you have outlined that the farther the gas flows the more costs there are to accumulate. Under the method I have followed the geographical distribution of the load within that common cost zone is of no consequence." (R. V. 5, pp. 2429, 2430, 2431.)

In substance, he stated that his Transmission Costs were computed as if all the gas went into a common conduit at Bivins, and came out a common vent at Denver. (R. V. 5, pp. 2428-2431.)

Included in his Transmission Costs were costs due to compression of the gas at the several compressor stations, but in deriving this cost he gave no consideration to the number of times the gas had to be compressed before it was delivered to the respective customers, such as the delivery of the unregulated gas to C. F. & I. at Pueblo, and such as the delivery of the "regulated" gas 105 miles farther on to Public Service Company at Denver, and with respect to which additional compression had to be made. (R. V. 4, pp. 2396-2399.)

"Q. * * * Isn't it true you have considered the Colorado Interstate Gas Company as one common zone? You have not divided it into more than one common cost zone?

"A. The transmission system, that is correct. * * *.

"A. I have treated the transmission system as a single enterprise and have applied the common costs as the basis of determination to all points of delivery in that system. (R. V. 4, p. 2399.)

* * * * *

"Q. I want to ask you with reference to this Exhibit No. 138 which was prepared by Mr. O'Connor, the flow chart showing where the gas comes in where it goes out—you are familiar with that?

"A. Yes, that is Mr. O'Connor's map.

"Q. Here is the delivery, say at Dalhart, Texas, which is a few miles away from Bivins. For every thousand

cubic feet which is taken out of the line at Dalhart you apply that volumetric factor of three cents plus?

"A. Yes, I have.

"Q. So that for every thousand cubic feet of gas taken out at Denver you would again apply that three cents?

"A. That is correct. (R. V. 5, p. 2425.)

* * * * *

"Q. The fact that the gas going to Denver is compressed four times doesn't result in any greater charge against the gas delivered at Denver under your method than the gas that is compressed only once?

"A. That is correct." (R. V. 5, p. 2448.)

His allocation of costs as between the regulated and unregulated business, that is, the direct sales to industrial customers taking gas under the shut-off provisions, gives no consideration to any such curtailments or shut-offs. (R. V. 5, p. 2439.) His allocation of costs is based on operations during the year 1939; and he stated:

"During the year 1939 I have given no effect to any curtailment of service by reason of insufficient pipe line facilities. * * *." (R. V. 5, p. 2439.)

And again:

"A. * * * A dormant clause in a contract which is not exercised and may not be exercised for the life of the contract is a speculative matter." (R. V. 5, p. 2439.)

In this respect, he did not consider or give effect to the fact that these contract clauses had in fact operated on 40 different occasions, because of high domestic peak load or "freeze-ups" on the main line, or washouts on the main line, each resulting in gas deliveries to the direct sale customers, or in the unregulated business, being cut off or cut back for periods ranging from five hours to sixty-six hours. (R. V. 2, pp. 1026-1028; R. V. 5, p. 2439.)

In computing the "capacity cost" component of his "Transmission Costs," he did not give effect to the priority and preferential service rendered in the regulated business just described, and he did not give consideration to the relative use of the line which the regulated business might de-

mand *on the coldest expected day*, but merely took deliveries of regulated and unregulated gas as they happened to occur on February 9, 1939, which he called "the system's peak delivery day," for that particular year. (R. V. 5, pp. 2434-2436; R. V. 4, p. 2319.) He did not testify as to the temperature on that day, but he did state that the total delivery of regulated gas at the Denver gate on that particular day was only 36,104 Mcf. (R. V. 5, p. 2434.) On the basis of the delivery to the regulated and unregulated business on that particular day of that year, he made all of his divisions of "capacity cost" as between the regulated and unregulated business (R. V. 5, pp. 2434-2436; R. V. 4, p. 2319); and in making such division of his capacity costs he treated *all* of the gas as if it entered the transmission system or common conduit at Bivins, and as if such gas used or was transmitted through every part of such unit transmission system, and all came out at one common vent at Denver. (R. V. 5, pp. 2422-2448; R. V. 4, pp. 2317-2373.)

The witness Lyon in his treatment of capacity costs placed all industrial gas in one category, irrespective of whether it was sold directly by Colorado Interstate or sold to the distributing companies for resale. Using his peak day demand as of February 9, 1939, when, as the United States weather reports hereinafter referred to show, the mean temperature was 8 deg. above zero, and much warmer than the coldest temperature experienced and to be expected in the area, he stated (R. V. 4, p. 2319, line 51, columns 7 and 8) that the total industrial sales, both regulated and unregulated (column 8) were 52,328 Mcf, and the regulated domestic and commercial gas sales (column 7) were 42,670 Mcf. The industrial gas, both regulated and unregulated, is shown as 55.083 percent of the total sales on that day, and the domestic and commercial gas, being all regulated, is 44.917 percent of the load. These percentages are used by Lyon in computing his "capacity cost" component of his "transmission cost" as between the industrial gas, both regulated and unregulated, and the domestic and commercial regulated gas. He made no attempt to classify the industrial gas between resale gas and direct sale gas, treating all gas on the basis of the character of consumption rather than whether it was subject to regulation or not. (R. V. 5, pp. 2441-2442.) His

determinations evidently were adopted by the Commission, although the Commission's Opinion does not disclose the manner in which it actually separated the direct industrial sales from sales made for resale to industrial customers.

Petitioner's evidence (and it was undisputed) contradicting the Commission's evidence, showed the actual peak demands on January 24, 1940 (R. V. 4, p. 2269), when the mean temperature was 1.5 deg. below zero, and far above the lowest temperature experienced and to be expected in the area (R. V. 4, p. 2268). It was there shown that on that actual peak day in January, 1940, sales of the regulated gas amounted to 67,783 Mcf as against the direct sales of gas in the amount of 47,343 Mcf. These figures cannot be compared with those of Lyon referred to above, since petitioner's evidence states the volumes in terms of regulated and unregulated gas. Petitioner's witness then translated such actual peak day demand into what would have been the peak day demand had the mean temperature been 15 deg. below zero, and showed that the load would have been 79,385 Mcf for the regulated and 47,343 Mcf for the unregulated gas. This is to be compared with the ratios used by Lyon on his selected day when the mean temperature was 8 degrees above zero.

The allowed return of 6 per cent on petitioner's property was divided by the witness Lyon equally between volumetric costs and capacity costs. Income taxes were allocated as was return.

Thus the witness Lyon, beginning with the adjusted cost furnished him by the other Commission accountants and examiners, which reflected all of the adjustments and deductions made by these witnesses, then made the foregoing allocations and derived what he called "allocated cost." He then compared these allocated costs with the actual revenue received in 1939 from each customer, regulated and unregulated. (R. V. 4, p. 2317.) (Although this evidence of its witness Lyon was the only evidence presented by the Commission at the hearing on this subject of allocated cost, and from which it derived its so-called "excess revenue" over "costs," we are not able to identify or reconcile this evidence as to his "allocated costs" with the costs used by the Commission in its Order. (R. V. 1, p. 181.))

SPECIFICATION OF ERRORS.

1. The Commission, in purporting to fix reasonable rates for gas sold by the petitioner for resale in interstate commerce, and now subject to its regulation, violated the requirements of the Fifth Amendment to the Constitution of the United States and of the Natural Gas Act when it treated petitioner's property and that of Canadian as a unit, and failed to make any separation of the property and expenses as between that applicable to interstate commerce and that applicable to the intrastate sales in Texas, or between that applicable to the sales for resale and that incident to the direct sales to industrial customers over which it has no jurisdiction; and the Circuit Court of Appeals erred in affirming the Order.

2. The Commission's "allocation of cost of service" is not a valid substitute for the required separation of property and expenses, in that it results in burdening non-regulable gas with costs actually incurred in the sale of the regulable gas, and in the regulation of business over which it has no jurisdiction, contrary to the limitations of the Fifth Amendment and of the Natural Gas Act; and the Circuit Court of Appeals erred in affirming the Order.

ARGUMENT.

The basic question presented to this Court is one of jurisdiction. Admittedly, the jurisdiction of the Commission extends only to sales of natural gas made in interstate commerce for resale. Sales made by natural gas companies in intrastate commerce and those made in interstate commerce directly for consumption are not subject to the jurisdiction of the Commission. (Section 1, Natural Gas Act, Appendix A.) The Commission so recognized this lack of jurisdiction in principle (R. V. 1, pp. 174-177), as did the Circuit Court of Appeals. (R. V. 8, p. 5087; 142 Fed. (2d) 943, 958.) However, in arriving at its conclusions as to petitioner's rates, this jurisdictional principle was forgotten by the Commission, and completely disregarded by the reviewing court.

The gas sold directly to industrial customers for consumption amounted in 1939 to 11,663,832 Mcf at contract pressure base. Gas sold for resale from the Denver Line amounted to 11,598,073 Mcf at contract pressure base, of which 6,818,497 Mcf was for domestic and commercial consumption, and 4,779,576 Mcf for industrial consumers of the distributing companies. (R. V. 2, p. 1105.) We are dealing with a substantial part of petitioner's business in our consideration of the action of the Commission in the assignment of costs to the unregulated business.

We are not now concerned with the correctness of the Commission's action within the ambit of its statutory authority. The rules for testing the validity of a commission order stated in the cases of *Federal Power Commission v. Natural Gas Pipeline Co.*, 315 U.S. 575, and *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, can have no application here. In those cases this Court dealt with action taken by the Commission on matters over which Congress had conferred jurisdiction upon the Commission. In declining to go into the methods employed by the Commission in fixing rates in those cases, and in looking only to the result of the rate orders in their totality, this Court limited such rules to jurisdictional action. As said by this Court in the *Natural Gas Pipeline* case:

"* * * Agencies to whom this legislative power has been delegated are free, within the ambit of their statutory authority, to make the pragmatic adjustments which may be called for by particular circumstances. Once a fair hearing has been given proper findings made and other statutory requirements satisfied, the courts cannot intervene in the absence of a clear showing that the limits of due process have been overstepped. If the Commission's order, as applied to the facts before it and viewed in its entirety, produces no arbitrary result, our inquiry is at an end."

In the *Hope Natural Gas* case this Court reaffirmed the position previously stated, and added that

"* * * Under the statutory standard of 'just and reasonable' it is the result reached not the method employed which is controlling. * * * It is not theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unjust and unreasonable, judicial inquiry under the Act is at an end. The fact that the method employed to reach that result may contain infirmities is not then important."

The Circuit Court of Appeals in its consideration of the Commission's order failed to observe the distinction between action by the Commission within and action without the ambit of its statutory authority. After reciting the illegalities in the Commission's method of cost allocation, as contended for by petitioner, the Court said:

" * * * It may be conceded, without deciding, that the method is not free from defects or imperfections in all its aspects. But even so it cannot be said that as the consequence, the impact of the orders of reduction, each in its totality, produces arbitrary results or oversteps the bounds of due process. Therefore the orders are not open to further judicial inquiry on these grounds. Federal Power Commission v. Natural Gas Pipeline Co., supra; Federal Power Commission v. Hope Natural Gas Co., supra." (R. V. 8, p. 5088; 142 Fed. (2d) 959.)

The judicial inquiry by this Court must be directed to the methods employed by the Commission in order to determine

if the Commission transgressed the jurisdictional limits imposed by Congress.

As the evidence indisputedly shows, the Commission accountants, after dealing with Colorado and Canadian Companies separately, and after rejecting from the rate base of each the original cost of considerable items of property, and after computing for each company large depreciation book reserves which it treated as representing accrued depreciation in the property which they deducted in each case from the "original cost" and "rate base" of each company, and after adjusting downward the annual expenses of each company, they then, very strangely, consolidated these accounts, so adjusted by them, into one account, or "pot," if it may please the Court. This conglomerate included the revenues and expenses of Canadian Company in respect to its intrastate sales in Texas, and it, likewise, included the revenues and expenses of both companies in respect to direct sales of gas to industries not now subjected to regulation under the Act. This conglomerate included as part of the "cost of service," a so-called "fair return" upon the property which the Commission witness Lyon, in his testimony, fixed arbitrarily, as he admitted, at 6 per cent. (R. V. 5, p. 2408), but which the Commission in its Opinion raised to 6½ per cent (R. V. 1, p. 173). This return, so limited, was used for the unregulated as well as the regulated business in determining the cost of service. From this conglomerate, the Commission witness Lyon attempted, without any separation of the property as between the intrastate and interstate, or between the resale and direct sale, or the regulated and the unregulated business, to allocate the cost of service in respect to the regulated business. It is to be remembered that this conglomerate, which Lyon thus sought to allocate was based upon the consolidated accounts of the two companies, but very strangely, the Commission in its Opinion, for some reason, departed from the testimony of its own accountants, and sought to derive an allocated cost for each company separately. We, ourselves, have never been able to ferret out just what the Commission did, because of its failure to make appropriate findings with respect to this matter. We do know that the Commission took the cost of service, in some

manner derived by it, and which, as above stated, we cannot identify with the cost testified to by its witnesses, and then compared those costs to the Company's actual revenues in 1939, and finally derived what the Commission called "excess revenues," upon which the ordered rate reductions were based.

With this preliminary statement, we now deal with our two questions and Specification of Errors.

1. *The Commission, in purporting to fix reasonable rates for gas sold by the petitioner for resale in interstate commerce; and now subject to its regulation, violated the requirements of the Fifth Amendment to the Constitution of the United States and of the Natural Gas Act when it treated petitioner's property and that of Canadian as a unit, and failed to make any separation of the property and expenses as between that applicable to interstate commerce and that applicable to the intrastate sales in Texas, or between that applicable to the sales for resale and that incident to the direct sales to industrial customers over which it has no jurisdiction; and the Circuit Court of Appeals erred in affirming the Order.*

That the Commission failed to make such a separation or allocation is, of course, candidly admitted in its Opinion:

> "The Commission is aware that in an investigation such as this it is incumbent on it to determine the reasonableness or unreasonableness of the rates and charges subject to its jurisdiction. * * *
>
> "It does not follow, from this obligation of the Commission, that an allocation of physical property or portions thereon, must be made, before any excessive returns are determined, as seems to be the contention of the companies." (R. V. 1, pp. 174, 175.)

Now where property is used in public service, it is universally acknowledged that the owner must be paid for that use. Where the owner uses such property only part time, or uses only a part of the whole property in such service, he is only entitled to be paid to the extent of that use. Where he devotes the same property during a part of the time, or

a part of the whole property, to some purely private venture, he can demand for such use in such private venture simultaneously carried on, whatever compensation may be agreed upon between him and the other parties in interest. The owner is not limited to any specific rate of return on his investment, as is done where a public service is rendered. This being the case, it would seem to follow, from a simple application of common sense, and without any elaborate argument, and without any citation of authority, that a separation of the property, based upon use, must be made in order to determine the payment that is due for such use in the public service. This proposition is so not only as a matter of plain common sense, but it exists in this case as a matter of jurisdictional limitation, imposed both by the constitution and the statute. It was incumbent upon the Commission, as an administrative body, in order not to transcend its jurisdiction, to draw and observe two jurisdictional boundaries: first, the boundary line between intrastate and interstate commerce, and, second, the boundary between sales for resale and direct sales not subject to regulation under the Act. It is circumscribed by each of these boundaries.

This Court has laid down these axiomatic limitations on administrative boards and commissions in emphatic language. In *Smith v. Illinois Bell Telephone Co.*, 282 U.S. 133, 146, where intrastate rates were involved in a state commission order, and where some of the property was used in common for intrastate and interstate business, Chief Justice Hughes said:

> "At the threshold of the discussion, we are met with the fact that, in these findings, the commission and the court made no distinction between the intrastate and the interstate property and business of the company. It appears that the property of the company in Chicago is used to render (1) what is called exchange service, all of which is intrastate, (2) intrastate toll service over its own lines and under arrangements with companies other than the American Company, and (3) interstate toll service, which includes all the toll service rendered under arrangements with the American Company. The company introduced evidence separating the intrastate and interstate business

and also the intrastate exchange business. While the court regarded these computations as correct, and approved the method in which they had been made, still the court made no specific findings based on a separation of the intrastate and interstate property, revenues and expenses, but determined the issue on the basis of the total Chicago property of the company.

* * * * *

"The separation of the intrastate and interstate property, revenues and expenses of the company is important not simply as a theoretical allocation to two branches of the business. It is essential to the appropriate recognition of the competent governmental authority in each field of regulation. * * * The proper regulation of rates can be had only by maintaining the limits of state and federal jurisdiction, and this can not be accomplished unless there are findings of fact underlying the conclusions reached with respect to the exercise of each authority. In view of the questions presented in this case, *the validity of the order of the state commission can be suitably tested only by an appropriate determination of the value of the property employed in the intrastate business* and of the compensation receivable for the intrastate service under the rates prescribed. * * * As to the value of that property, and as to the revenue and expenses incident to that business, *separately considered*, there should be specific findings, Railroad Commission v. Maxcy, 281 U.S. 82, 83, 74 L. Ed. 717, 718, 50 S. Ct. 228." (Emphasis supplied.)

The same rule was announced in the *Minnesota Rate Cases*, 230 U.S. 352, 435, in the following language:

"Where the business of the carrier is both interstate and intrastate, the question whether a scheme of maximum rates fixed by the state for intrastate transportation affords a fair return *must be determined by considering separately the value of the property employed in the intrastate business* and the compensation allowed in that business under the rates prescribed. This was also ruled in the Smyth Case (id. p. 541). The reason as there stated, is that the state cannot justify unreasonably low rates for domestic transportation, considered alone, upon the ground

that the carrier is earning large profits on its interstate business, and, on the other hand, the carrier cannot justify unreasonably high rates on domestic business because only in that way is it able to meet losses on its interstate business." (Emphasis supplied.)

This opinion also most emphatically rejects the notion that this required separation of property or separation of capital items and expenses incident thereto can be substituted for by any formula based merely on revenue and expenses, or cost accounting, or particularly, as in that case, revenue; a thing akin to what the Commission attempted to employ in this case. The fallacy of this attempted substitute, of course, lies in the fact that such a process involves circuitous and inconclusive reasoning or argument, or is just another illustration of the dog chasing his tail. The Court in this *Minnesota Rate Case* continued by saying with respect to this method:

"When rates are in controversy, it would seem to be necessary to find a *basis for a division of the total value of the property* independently of revenue, and this must be found in the use that is made of the property. That is, there should be assigned to each business that *proportion of the total value of the property* which will correspond to the extent of its employment in that business. * * *." (Emphasis supplied.)

In the cases we have cited, the jurisdictional boundary line being considered was that between intrastate and interstate business, which directly concerns us here, but the principle of the foregoing decisions, as is specifically indicated in *Smith v. Illinois Bell Telephone Co.*, supra, also applies with equal force to cases where the jurisdictional boundary is that line between regulated and unregulated business, with which we are also here concerned.

See also:

Wabash Valley Electric Co. v. Ralph M. Young, et al., 287 U.S. 488, 493, 77 L. Ed. 447, 451.

Illinois Bell Telephone Co. v. Mounihan, et al., 38 Fed. (2d) 77, 83.

United Fuel Gas Co. v. Public Service Commission of West Virginia, 14 Fed. (2d) 209, 224.

Our case is to be distinguished from those cases where here are no jurisdictional questions and no combinations of egulated and unregulated business. Such, for example, as *Columbus Gas & Fuel Co. v. Public Utilities Commission of Ohio*, 292 U.S. 398, 408. This case was cited y the Court below as authority to sustain the Commission's ailure to make a separation of property in the instant case. pparently the Court below failed to realize that in that ase the Commission had complete jurisdiction over all of the perations of the Company in Ohio, and there was no combiation of regulated and unregulated business, and the only llocation there involved or necessary was as between the unicipality of Columbus and other municipalities in Ohio. ther cases involving a like situation may be found and cited y respondent, but, obviously, they are inapplicable.

The Commission witnesses, and the Commission itself in its pinion, all concede that the direct sales to industries are not ubject to regulation under the Act. They could not take any ther position, in view of the plain language of the Act itself, nd in view of the discussions in Congress preceding its enactent (Vol. 81, No. 124, Congressional Record, July 1, 1937, p. 675, et seq). Congressman Lea, the author of the Bill, stated the Committee hearings, and on the floor, that direct sales industrial companies (such as C. F. & I. in this case) for eir own private consumption were not intended to be regu-ted, and would not be affected by the Act.

This Court in the cases above cited has recognized the fficulties that are sometimes encountered in making a sepration of property or capital employed in the business subct to the jurisdiction of the regulatory board from that not bject to its jurisdiction. But, as it also points out, such fficulty affords no excuse for failing to make such a sepration. *Simpson v. Shepard* (Minnesota Rate Cases), 230 .S., at page 432. Furthermore, there is no great difficulty making a separation, as demonstrated by the separations ade by the Company in this very case. That evidence was at the witness Rhodes, who checked the design of the line, d whose firm constructed the line and operated it for some ars under a management contract, with his engineering astants, made a separation of the property and the capital

items with respect thereto, based upon the actual use of the property in the two businesses. The Commission witnesses did not challenge the accuracy of that separation. The Commission, in its Opinion, does not challenge the accuracy of that separation, but simply ignores it. In this connection, we want to point out that we were under no burden or obligation to make any such separation. The Commission was challenging our *contract prices* agreed upon by our Company and its contract customers in 1927, or thereabouts, in contracts that were to continue for 20 years. (R. V. 2, pp. 801-846.) The Commission, in its Opinion, admits that it was incumbent upon it to establish the unreasonableness of those prices as a condition precedent to any reduction, and this, of course, is elementary law. *Wichita Railroad and Light Co. v. Public Utilities Commission*, 260 U.S. 48. If the case were different, and we were involved in a proceeding where the Company was before the Commission petitioning for an increase in rates *which had been originally fixed through the regulatory process*, which had been in effect for some time, and which, therefore, were presumably reasonable, then it might be incumbent upon petitioner to separate out its regulated business from the unregulated business, in order to sustain the general burden imposed upon petitioner in that assumed situation of demonstrating that the rates for the regulated business were unreasonably low. But that, as the Commission itself admits in its Opinion, is not our case. (R. V. 1, p. 174.)

The Commission has not contended, and it could not contend, that the Natural Gas Act itself furnishes any basis for its failure to make a separation of the property and expenses, as required by the decisions of this Court above discussed. This Court, in *Federal Power Commission v. Hope Natural Gas Co.*, supra, thus characterized the Natural Gas Act:

> "The Committee Report stated that the Act provided 'for regulation along recognized and more or less standardized lines' and that there was 'nothing novel in its provisions.' H. Rep. No. 709, supra, page 3."

Furthermore, when the Federal Power Commission through its solicitor, Mr. Dozier De Vane, appeared before the Com-

mittee on Interstate and Foreign Commerce of the House, to explain the provisions of Section 211 (a), which later became Section 208 of the Federal Power Act, the principle of separation of property was acknowledged as follows:

"Mr. De Vane. Yes sir; that is one of the sections that I referred to in connection with section 201.

"You will find that subsection (a) of section 211 provides that the Commission shall have power to ascertain for the purpose of this bill, actual legitimate prudent cost of the property of every public utility and every fact which, in its judgment, may or does have any bearing on the determination of such cost.

"Now, that fits right into the picture of the *separation of this property* between State and Interstate use.

"In this separation, we know of no way of dividing it other than that specified by the Supreme Court of the United States in the Minnesota rate case. Where you can ascertain the cost of the *property*, you can readily determine what percentage of the *property* is used in interstate commerce, and what percentage is used in intrastate commerce, and you can divide for the benefit of the Federal Commission and the State commissions that part of the *property* that is used in interstate commerce, which will determine rates, and that part that is used in intrastate service, upon which intrastate rates will rest." (Emphasis supplied.)

Hearings Before the Committee on Interstate and Foreign Commerce, House of Representatives, 74th Congress, First Session, on H. R. 5423, page 505.

Section 6 (a) of the Natural Gas Act was based upon Section 208 of the Federal Power Act, and the comments of Mr. De Vane are pertinent thereto.

The separation of *physical properties*, which the Commission's spokesman there conceded would have to be made between the interstate and the intrastate business excluded by the Constitution, would, of course, be equally necessary as

between the resale business and the direct sales to industrial customers excluded by the terms of the Act.

The Commission in its Order having candidly admitted that it made no separation of the property (R. V. 1, pp. 174-175), it not only follows that its conclusions as to reasonable rates for the regulated business are based on mere guesswork and speculation, but more importantly, it also follows that the Commission has failed to observe and has transgressed two jurisdictional boundary lines. The first jurisdictional boundary line between interstate and intrastate business is laid down both by the Constitution and the Natural Gas Act; and the second, the boundary dividing interstate sales into those for resale and those made directly to industrial customers, is laid down by the Natural Gas Act. This error is jurisdictional and vitiates the entire Order. No appraisal by this Court of the "end result," or of the rates fixed as being reasonable, can possibly excuse these demonstrated transgressions of constitutional and statutory limitations on jurisdiction.

2. *The Commission's "allocation of cost of service" is not a valid substitute for the required separation of property and expenses, in that it results in burdening non-regulable gas with costs actually incurred in the sale of the regulable gas, and in the regulation of business over which it has no jurisdiction, contrary to the limitations of the Fifth Amendment and of the Natural Gas Act; and the Circuit Court of Appeals erred in affirming the Order.*

It is inconceivable to us that this Court can approve this Order in the face of the Commission's admission that it made no separation of the property, and in view of this Court's repeated direction that in all such cases where jurisdictional limitations are involved and there is a combination of regulated and unregulated business, a separation must be made in order that there may be determined for the regulated part of the business proper operating expenses, annual depreciation of property, and an appropriate return upon the property used in the regulated business. But, in any event, the Commission's attempted substitute or "allocation of costs," since it fails to include at any stage a separa-

tion of property based on use, not only operates to regulate business over which the Commission has no jurisdiction, but in fact siphons costs from the regulated sales to the detriment of the unregulated business, and appropriates earnings from the unregulated business in order to effect a reduction in rates for the regulated; all of which deprives petitioner of its property without due process of law. The Commission's method produces these unconstitutional results.

Some of the errors in the method are easily demonstrated because they arise from a disregard of material facts which, as will be hereinafter pointed out, the Commission itself in its Opinion admits it disregarded. Other errors may not be so easily displayed, for the reason that the Commission failed to make appropriate findings on this matter. Except for announcing the final figures as to cost and comparing them to the Company's revenues for the year 1939, in order to direct a reduction for the future in such revenues, the Commission resorts to generalities. It says:

"All that can be accomplished by an allocation of physical properties can be attained by allocating costs including the return. The latter method is by far the most practical and business-like.

. . . . . .

"Commission staff exhibits on cost allocation followed principles that have long been recognized as reasonable in the public utility field and are widely accepted. Therein costs are divided essentially into two groups, fixed and variable. Fixed costs are largely joint costs which do not vary with volume of sales. The total amount of such costs are largely proportional to the maximum demand on the system or system capacity. Accordingly, these costs have been allocated basically in proportion to each customer's responsibility for the peak day demand. Variable costs are largely those that vary proportional to output or volume of sale. Accordingly, these costs have been allocated in proportion to volume of gas purchased by each customer.

"The principles and methods of cost allocation presented by Commission staff are obviously the most appropriate and reasonable for Canadian and Colorado Com-

panies. Applying the physical and operating data submitted in evidence by Commission staff to total costs for each company results in the allocations shown in the following table. * * *." (R. V. 1, p. 175.)

The Commission gave no references to court or commission decisions, text book citations, or articles in trade journals in support of its contention that its method of cost allocation was a recognized one in the public utility field, was the most practical and businesslike, and widely accepted. The legal authorities are decidedly to the contrary, as we have shown.

The Commission then announced its final "allocated costs." These announced costs in the Commission's Opinion cannot be identified with the costs derived by Lyon, its only witness on this subject. For example: Lyon never did derive or announce any cost to Colorado Interstate for gas sold to it by Canadian at Clayton Junction; but he and the accounting witness who preceded him dealt with the two companies together, and "washed out" the cost between them at Clayton Junction. Furthermore, at no place in the Commission's Opinion are there any findings as to "fixed" costs, "variable" costs, "joint" costs, or any basic findings which disclose just what the Commission has done.

This failure to make appropriate findings in itself constitutes reversible error, *U.S. v. Carolina Freight Carriers Corporation*, 315 U.S. 475, 488-489, 86 L. Ed. 971. There this Court said:

"* * * It is impossible to say that the standards which we have set forthwere applied to the facts in this record. Hence, as in Florida v. United States, 282 U.S. 194, 215, 75 L. Ed. 291, 304, 51 S. Ct. 119, the defect is not merely one of the absence of a 'suitably complete statement' of the reasons for the decision; it is the 'lack of the basic or essential findings required to support the Commission's order.' And see United States v. Baltimore & O. R. Co., 293 U.S. 454, 464, 79 L. Ed. 587, 594, 55 S. Ct. 268; United States v. Chicago, M. St. P. & P. R. Co. 294 U.S. 499, 510, 511, 79 L. Ed. 1023. * * * Congress has prescribed statutory standards pursuant to which those rights are to be determined. Neither the Court nor the Commission is war-

ranted in departing from those standards because of any doubts which may exist as to the wisdom of following the course which Congress has chosen. Congress has also provided for judicial review as an additional assurance that its policies be executed. That review certainly entails an inquiry as to whether the Commission has employed those statutory standards. If that inquiry is halted at the threshold by reason of the fact that it is impossible to say whether or not those standards have been applied, then that review has indeed become a perfunctory process. * * * An insistence upon the findings which Congress has made basic and essential to the Commission's action is no intrusion into the administrative domain. It is no more and no less an insistence upon the observance of those standards which Congress has made 'prerequisite to the operation of its statutory command.' Opp Cotton Mills v. Administrator of Wage & Hour Division, 312 U.S. 126, 144, 85 L. Ed. 624, 635, 61 S. Ct. 524. Hence that requirement is not a mere formal one. Only when the statutory standards have been applied can the question be reached as to whether the findings are supported by evidence. * * *."

More recently, in *Interstate Commerce Commission, et al. v. Columbus and Greenville Railway Company*, 319 U.S. 551, 87 L. Ed. 1580, Mr. Justice Douglas in a concurring opinion referred to *United States v. Chicago, M. St. P. & P. R. Co.*, 294 U. S. 499, and stated:

"Mr. Justice Cardozo speaking for the Court stated in the latter case, 'We must know what a decision means before the duty becomes ours to say whether it is right or wrong.' 294 U.S. p. 511. That was said about another obscure and vague report of the Interstate Commerce Commission. We should say the same thing about the present report. The questions left unanswered by this report may be simple ones to experts. But we should have those answers before we put the imprimature of this Court on the Commission's order."

Such lack of findings, or such vague findings, are especially injurious to the petitioner in a case like the present. Here, the Commission is already exercising all of the functions, except that of judicial review. Once it was thought that

no one could be a judge in his own case. Under the currently prevailing system of administrative law, one and the same governmental entity, such as the Commission in this very case, frequently occupies and exercises the function of complainant, witness for the complainant, counsel for the complainant, and then decides the issues of fact, and, to the extent that such is necessary, the issues of law. Now, conceding to the Commissioners the very highest motives and integrity, such a system is inherently dangerous to parties whose rights are being so determined. The only function in the whole process that is not entrusted, in the final analysis, to the Commission is that of judicial review. If, in a case like the present, where the Printed Record is enormous, the making of basic findings is excused, or vague findings are tolerated, it will result in the nullification of any real judicial review, with the necessary result that from the beginning to the end, that is, from the filing of the complaint to the compulsion of the new rate, everything will be determined, in effect, by the same mind and the same functionary.

The rights of parties can only be protected by according to them full constitutional guaranties, and by an insistence upon a clear and explicit application of the statutory standards.

Despite the lack of appropriate findings we are, nevertheless, able to demonstrate at least the following errors in the Commission's method:

First, we know, as already demonstrated in the first part of our argument, that this method makes no separation, allocation or segregation of the plant and property of either company, separately or combined, (1) as between that devoted to intrastate and that devoted to interstate business, or (2) as between that used in selling gas for resale and that used for direct sales not subject to regulation. (R. V. 4, pp. 2317-2373.) When Lyon was asked about the intrastate market of Canadian in Texas, and the direct sales by Colorado Company to industries, which sales are not now subject to regulation, he stated:

"A. I have made no allocation, segregation of the property specifically devoted to the service of either of those markets." (R. V. 5, p. 2422.)

The failure of this Commission engineer to make any such separation of property was in obedience to the Commission's established practice to the effect that, as announced in its Opinion (R. V. 1, p. 175), no "allocation of physical property or portions thereon (sic)" need be made.

Secondly, we know beyond any doubt that the Commission's witness Lyon, in deriving these "costs," and in allocating them, ignored the priority and preferential use of the property which is granted to the regulated domestic and commercial gas as against the industrial business, both regulated and unregulated. The undisputed evidence shows that such priority and preference was made a matter of contract between all parties in interest, and was approved by the municipalities involved. Furthermore, the equally undisputed evidence is that this contractual provision has been scrupulously observed and carried out in practice. This evidence showed that within the period between July, 1932, and December 31, 1940, there had been forty interruptions in the service to direct sale industrial customers, due to high domestic peak loads or "freeze-ups" or washouts on the main line, and that these interruptions ranged in duration from five to 66 hours each. (R. V. 2, pp. 1026-1028.) Over this seven and one-half year period of time, records of which were introduced, the interruptions to the unregulated business averaged a little more than five occasions per annum; and, of course, it will be recognized that as the field pressures decline, the frequency and duration of such interruptions is bound to increase.

Despite this undisputed evidence, Lyon, in making his allocation, stated:

"During the year 1939 I have given no effect to any curtailment of service by reason of insufficient pipe line facilities. * * *." (R. V. 5, p. 2439.)

And again:

"A. * * * A dormant clause in a contract which is not exercised and may not be exercised for the life of the contract is a speculative matter." (R. V. 5, p. 2439.)

The exhibits of this Commission witness were prepared

and introduced, and his testimony given, in the face of the plain provision in all of the contracts and municipal franchises providing for preferential service to the regulated business, all of which had theretofore been introduced in evidence. Accordingly, there can be no excuse for the ignoring of these specific provisions. It is true that these exhibits, and this testimony on the part of the Commission, preceded the Company's testimony (undisputed) contained in Exhibit 290 (R. V. 2, pp. 1024-1030), showing the actual interruptions or curtailment of service to the unregulated business, because of priority and preferential service to the regulated business, resulting from various causes over the seven and one-half year period. The Commission's witness thereafter had full opportunity to amend his testimony and exhibits, but did not do so, and the Commission has accepted his testimony, and thus itself ignores these undisputed and vital facts.

As to this ignoring of the priority in the use of the plant and property accorded to the regulated business by contract and in practice as against the unregulated business, we quote the very excellent statement of the late Judge McDermott contained in his opinion in *Wichita Gas Co. v. Public Service Commission*, 3 Fed. Supp. 722. There, as Circuit Judge, he was sitting in the District Court for the District of Kansas in a suit by the Gas Company to enjoin the order of the Public Service Commission of the State of Kansas. One of the issues was the reasonableness of the 40-cent gate rate which the Gas Company was paying to another company. The Commission challenged the reasonableness of that rate by citing the fact that the same pipe line company sold gas to industrial consumers in and near Wichita for 20 cents. At page 725 Judge McDermott said:

> "The defendants' principal argument is that the supply company sells to industrial consumers and other purchasers, in and near Wichita, for 20 cents. The argument is faulty because it overlooks the load factor. The whole difficulty with domestic gas is that domestic users consume more gas in winter than in summer. The average domestic consumption in Wichita is 4,800 M per day. Yet on certain days, the domestic consumption runs to 40,000 M per

day. The domestic user needs his gas more on the cold days than the warm ones. The result is that enough gas must be produced or contracted for, and big enough lines built, to furnish 40,000 M per day. On 364 days, there is a surplus of gas and equipment. The plant is eight times too large for the average load; but it must be, or the people be short of gas when they need it most. Now the problem is, what is to be done with the surplus gas and surplus equipment? Is it better for all to make use of it, or let it lie idle? If it lies idle 360 days in the year, the loss is terrific; if surplus equipment and surplus gas is used in competition with coal, at a competitive price, whatever comes in from that source would look like clear gain. It appears to me that the net result of selling the surplus gas at 20 cents is to reduce the cost of gas to the domestic consumer. Some return is accruing from the otherwise idle equipment. I can see no fair comparison between selling surplus gas to an industry with an ordinarily constant load factor, reserving the right to shut off its gas at any moment, and the service of standing by ready to serve a domestic user with whatever he wants, from 30 feet a day in summer to 1,000 feet a day in winter. The situation is not unlike an ocean liner: it is built to carry 1,000 passengers; to carry them, it is necessary to build a ship that will carry ten times the weight of the passengers; the surplus capacity may be used for either ballast or freight. The passengers should not complain if freight is carried, although the rate per pound is much less than the rate per pound charged the passenger."

The evidence which we have already summarized and adverted to in this argument shows that in our case the line could not have been built had there not been both the direct sale and resale business available. The Commission in its Order, referring particularly to the contract with C. F. & I., states that its procurement was one of "the essential prerequisites of the construction of the * * * line." (R. V. 1, p. 142.) The willingness of these industrial customers to take the gas at a cheaper rate because of their inferior position, and their willingness to be "cut back" or "cut off" in cold weather, when the priority rights of the domestic customers

demanded the use of the line, made the building of the line possible. All parties in interest agreed to this. All customers understand it. The City of Denver approved it in its franchises and ordinances, as did Pueblo, and Colorado Springs recognized it in the contract it made with the Company for the supply of gas to its municipally-owned distribution system. Now the Commission chooses to ignore the inferior position of the non-regulable business by reason of these contract provisions, and enters an order that operates to shift costs from the regulable business to such non-regulable sales.

In the third place, we know that in the allocation of "transmission cost" the witness Lyon treated the entire transmission system as a unit, and as if it were one common conduit used by *all* the gas, and that he ignored the fact (1) that some laterals and metering stations and associated equipment are used exclusively in making direct sales to industrial customers, or the unregulated business; (2) that some laterals, metering stations and associated equipment are used exclusively in resale or regulated business; and (3) that the balance of the property is used in common *in varying degrees* by the regulated and unregulated business. Even in respect to the commonly used property he wholly ignored that the 20-inch diameter line north of Pueblo (as compared to the 22-inch diameter line south of Pueblo) is used almost exclusively by the regulated business. (R. V. 5, pp. 2427-2431.) These facts so ignored are also graphically represented on the Commission's own exhibit, 138, included as Appendix B to this brief.

Lyon's attention was directed to the fact that on this flow diagram map of the Commission it appeared that of the 21,594,112 Mcf of gas that was passed through the Bivins Station in 1939, 7,257,379 Mcf was sold directly to the C. F. & I. at Pueblo, and 1,676,091 Mcf was sold directly to Colorado Portland Cement, slightly north of Pueblo, and neither sale made any use whatever of the 105 miles of the 20-inch line north of those direct sale laterals.* Despite

*On the basis of use, the Company's engineer Rhodes assigned 99.48 per cent of this 20-inch line north of the Devine Station (Pueblo) to the resale or regulated business. (R. V. 4, p. 2271.)

these facts, Lyon went ahead and treated all of the transmission system, beginning with and including Canadian's Bivins compressor station in the field, and its transmission lines from that point in Texas, *together with all laterals used in making intrastate deliveries in Texas,* all of Colorado Interstate's transmission line to Denver, with all of its laterals, some of which, as just stated, were used exclusively in delivering direct sale gas, as a unit or common conduit and as if all the gas went in at the Bivins compressor, traversed the whole system, and came out at one common vent at the Denver city gate. (R. V. 5, pp. 2427-2431.) He admitted that in computing his "volumetric cost," a component of his total transmission cost, he so considered the system, and he gave no consideration to different segments of the line or the varying uses of the line in the regulated and unregulated business.

"Q. So that as I say, the result of your method is to tend to increase your computed cost of gas that this pipe line sells to these industries for consumption and to correspondingly reduce that that goes all the way through the line and comes out at Denver?

"A. I give no consideration as to whether the delivery is made to an industry or to a distribution plant or if it is resale gas or direct consumption. It is a factor, of course, under the method you have outlined that the farther the gas flows the more costs there are to accumulate. Under the method I have followed the geographical distribution of the load within that common cost zone is of no consequence." (R. V. 5; pp. 2429-2431.)

Under cross examination, he admitted that his method treats the 7,257,379 Mcf delivered to C. F. & I., the 1,676,091 Mcf delivered to Colorado Portland Cement, the 427,169 Mcf delivered to the Atchison, T. & S. F. Ry. Co., the 332,998 Mcf delivered to the American Crystal Sugar Company, and the other smaller deliveries to direct sale industrial customers in the Arkansas Valley, as if it used the Devine compressor station, and as if it used the 105-mile 20-inch diameter line northward to Denver, when in fact none of this direct sale gas ever used any part of that system. The necessary result of his treating the whole transmission system as a unit is wholly to

disregard the actual use of the property as between the regulated and unregulated business, and to "pile on" to this unregulated business large costs (included in his average cost), which the Company never incurred in the delivery of this unregulated gas. This method misstates the true cost which actually was incurred in delivering the regulated gas, particularly to Denver. (R. V. 5, pp. 2425, 2431, 2448.) See also the Commission's flow map, Appendix B to this brief. This fantastic ignoring of facts, of course, produced apparent, but not real, excess revenues from the regulated business, which the Commission used as an excuse for reducing the rates being charged for such sales.

In the fourth place, we know that as a part of such "costs" Lyon allowed and included a 6 per cent return (R. V. 5, p. 2409), which the Commission, however, in its Opinion increased to 6½ per cent (R. V. 1, p. 173) upon *all* of the property, including that used in the unregulated business as well as that in the regulated business. The effect of this was, of course, to derive a total cost, including such allowance for a "fair return" upon all the business, regulated *and unregulated,* which they then compared to the total revenues of the Company from all its business, regulated and unregulated, and thereby derived an "excess revenue" for the entire business. Whenever, in fact, a company is making a higher return on its unregulated business than is prescribed for the regulated, then this method of the Commission, whereby the limited return is first applied to *all of the property* in order to derive excess revenue from the whole business, operates to appropriate to the entire business the "excess" earnings from the unregulated part. Such method produces apparent "excess" earnings for the combined regulated and unregulated business. The Commission, in the instant case, purports to find that of such total earnings in excess of 6½ per cent on the *combined* business and property, $131,000 of such "excess" (R. V. 1, p. 172) is allocable to the unregulated business. The Commission disclaims any right to order any reduction in prices for the unregulated business that would reflect a reduction of this $131,000; *but the Commission overlooks the fact that there still lies concealed in the amount of reduction ordered for the regulated business "excess" earn-*

ings due to the imposition of this limitation of 6½ per cent on the whole business, regulated and unregulated. In another case, if the unregulated business was in fact being operated at less than 6½ per cent return on the property devoted to that business, or at a deficit, the Commission's method would in that case operate to appropriate excess earnings to the unregulated business, and thus obscure and conceal the true excess earnings on the regulated business.

The only way to assure that the regulated and unregulated business each "pays its own way" is to make a division of the property and expenses, as this Court has directed, and allow to the regulated business a fair return on the property so separated and allocated to it.

Lyon not only thus erroneously limited the return to petitioner upon property *exclusively* employed in unregulated business, but he imposed the same erroneous limitation of return upon an improper part or allocable portion of the jointly used property. This error will become more apparent hereinafter when we discuss the other errors committed by him in the allocation of "transmission costs." (R. V. 4, pp. 2333, line 25.) For the moment it is sufficient to point out that he divided his "transmission costs" into "volumetric costs" and "capacity costs." His "volumetric costs" have no relation to the property required for meeting the *maximum demands of the regulated business.* He included as a part of his total "transmission costs" a 6 per cent return on the property (which the Commission later increased to 6½ per cent), but he included only 50 per cent of such return in the "capacity cost" component of his "transmission costs." (R. V. 4, p. 2333, line 25.) In thus ignoring the true maximum demands of the regulated business, he departed completely from the requirements of a fair return on the *property* devoted to the public service. As a result of this device, costs that are truly assignable to the regulated business are shifted to the unregulated.

Even in those cases where the regulatory body has jurisdiction over all sales, and there is no combination of regulated and unregulated business, but only the problem of assigning costs as between several communities or regulated customers, the method used by Lyon has to hold that all

the return should be assigned to the capacity or demand costs. In *Arkansas-Louisiana Gas Company v. The City of Texarkana*, 96 Fed. (2d) 179, where the term "demand costs" is used synonymously with "capacity costs," the Circuit Court states:

> "The demand costs include the operation and maintenance and general expense of the transmission pipe lines and compressor stations, depreciation on same, taxes, *the return on the value of the transmission system, together with the Federal and State income taxes on such return,* and the return on such part of working capital and going value as is properly apportioned to the value of the Transmission property." (Emphasis supplied.)

This arbitrary assignment of only 50 per cent of the return to the "capacity cost" component of the "transmission costs" magnifies the error inherent in the failure to separate the property devoted to the public service, and the computation of a proper return thereon separately considered.

In the fifth place, we know that in figuring hi transmission costs he gave no consideration to the fact that gas delivered to some customers had to be compressed more times and at greater expense than that delivered to other customers. His attention was again directed to the flow map (Appendix B to this brief), and the following colloquy took place:

> "Q. I want to ask you with reference to this Exhibit No. 138 which was prepared by Mr. O'Connor, the flow chart showing where the gas comes in where it goes out—you are familiar with that?
>
> "A. Yes, that is Mr. O'Connor's map.
>
> "Q. Here is the delivery, say at Dalhart, Texas, which is a few miles away from Bivins. For every thousand cubic feet which is taken out of the line at Dalhart you apply that volumetric factor of three cents plus?
>
> "A. Yes, I have.
>
> "Q. So that for every thousand cubic feet of gas taken out at Denver you would again apply that three cents?

"'A. That is correct.'' (R. V. 5, p. 2425.)

• • • • •

"Q. The fact that the gas going to Denver is compressed four times doesn't result in any greater charge against the gas delivered at Denver under your method than the gas that is compressed only once?

"A. That is correct.'' (R. V. 5, p. 2448.)

In the sixth place, we know that Lyon, in figuring his "capacity cost" component of his total transmission cost, ignored the obligation of petitioner to meet the peak load demands for the domestic gas that will occur on the coldest expected days, and that he arbitrarily took the deliveries of regulated and unregulated gas as they happened to occur on February 9, 1939, which he called the "system peak day" for that particular year. (R. V. 5, pp. 2434-2436; R. V. 4, p. 2319.)

The transmission cost, as allocated by him, was in part on a volumetric or average basis, which he called the "volumetric cost" component of his "transmission costs," and, as he candidly stated, he gave no effect to priority. In respect to his "capacity cost" component of his total transmission cost, he did depart from average or volume costs to the extent of separating such costs, *not upon the basis of a property separation, nor upon the basis of priority, demand during the coldest weather to be expected,* but on the basis of deliveries to the regulated and unregulated business which happened to occur on his selected day. On the day selected by him the minimum temperature as shown by the Bulletin "U. S. Department of Commerce Weather Bureau, Monthly Meteorological Summary, Denver, Colorado, February, 1939" was minus 2, and the mean temperature for the day was 8° Fahrenheit above zero. Out of all the years of operation from 1928 to 1939, inclusive, he took the warmest winter, 1939, save one, 1934, in the whole history of operations. He ignored, for example, that on February 8, 1936, the temperature in the Denver area was 25° below zero, and that in 1930 it was minus 20, and that the lowest *mean temperature* has reached minus 10 in 1933 and 1937, according to "U. S. Department of Commerce Weather Bureau, Annual Meteorological Summary, with Comparative Data, 1941, Denver, Colorado."

Rhodes, in his separation exhibit, studied the weather conditions during the whole history of the line, and, from actual conditions which had obtained during that period, showed that a 1 degree drop for one day in the temperature below 65° Fahrenheit, that is, a 1 degree day deficiency in temperature, increased the load of resale domestic gas by 660,000 cubic feet per day. (R. V. 2, pp. 1110, 1111.) He then showed that on the basis of the following temperatures that *had occurred*, the domestic load would be as follows:

	Mean Temperature On Coldest Day (Deg. F.)	Estimated Domestic Load On Such a Day (Cu. Ft.)
(a) Denver Area	−14 deg.	42,157,000
(b) Colorado-Wyoming Area	−20	10,775,000
(c) Colorado Springs Area	−16	3,251,000
(d) Pueblo Area	−10	2,230,000
(e) Arkansas Valley Area	−10	1,304,000
(f) New Mexico Area	− 6	531,000
(g) Texas Area	− 6	1,483,000
Total	−14.5 deg.	61,731,000

(R. V. 2, p. 1111.)

Lyon in his testimony stated that on his selected day of February 9, 1939, deliveries of resale gas at the Denver gate were 36,104 Mcf. This is to be compared with deliveries of 42,157 Mcf required when the mean temperature reaches 14° below zero. (R. V. 2, p. 1111.)

In his treatment of "capacity costs," the witness Lyon treated all industrial gas in one group, making no separation between that sold directly (unregulated) and that sold for resale (regulated). Then in spreading the "capacity costs" among the industrial gas deliveries, he used the individual maximum delivery whenever it occurred (R. V. 4, pp. 2319, col. 10; 2384), rather than the quantity delivered on the system's maximum day. R. V. 4, p. 2319, col. 9.) This also served to reduce the costs assigned to the resale industrial gas.

On the day selected, i.e., February 9, 1939, for the pur-

pose of allocating "capacity costs," the mean temperature was 8 degrees above zero, far above the temperatures commonly experienced in the area, and to be expected in the future. The use of such day, therefore, was not representative. The undisputed testimony of petitioner already summarized showed that on January 24, 1940, when the mean temperature was only 1.5 degrees below zero, the regulated or resale gas amounted to 67,783 Mcf, and the unregulated gas was 47,343 Mcf. (R. V. 4, p. 2268.) This undisputed evidence also showed that by employing the factor derived from a study of the actual operation of the line during its whole history such actual peak day demands on any day could be translated into the relative demands that would exist on colder days. For example: when the mean temperature is 15 degrees below zero, then the regulated gas load would be 79,385 Mcf and the unregulated gas load 47,343 Mcf (R. V. 4, p. 2269), which represent the obligation of petitioner toward the respective classes of gas.

An exact comparison between the maximum obligation of petitioner with the testimony of Lyon is not possible because of the failure of Lyon to separate the resale gas from the direct sale gas. (R. V. 4, p. 2319, col. 8.) However, had Lyon apportioned his "capacity costs" on the basis of the relative load of regulated and unregulated gas on low temperature days actually experienced in the past operation of the line, a much larger percentage of such "capacity cost" component of the transmission cost would be assigned to the regulated business. We submit that the testimony of this Commission witness, Lyon, indicates that he set out deliberately to find one day in the seven and one-half year history of the Company's operation, which was far from the coldest day, but which, because of the relative low domestic load, would assign costs to the unregulated business. Such calculated testimony not only ignores the facts of nature and the evidence established in this record, but is palpably unfair.

The resale domestic customers, under the priority provisions of all contracts, are entitled to gas on the coldest expected day, and not on a day when the mean temperature is 8° above zero. The colder it is the more imperative is their demand, and their right to be served first. Yet Lyon

and the Commission would, in figuring this capacity cost component of transmission cost, make an allocation of cost as between the regulated and the unregulated business based on mere coincident deliveries on a day when the mean temperature was plus 8. Such action not only ignores realities, but is purely arbitrary and inexcusable.

Finally, we know that the Commission's method in its over-all effect produces results which are on their face arbitrary, unreasonable and inconsistent. In its announced costs for Colorado Interstate's customers (R. V. 1, p. 181), we find, for example, such cost to Citizens Utilities Company, at the city gate of La Junta, to be 24.3 cents per Mcf, whereas, the cost of delivering gas to Public Service Company at the city gate of Denver is only 15.4 cents per Mcf, despite the fact that such Denver gas has to be compressed once more than La Junta gas, and is transported approximately 145 miles farther than such La Junta gas. In arriving at such preposterous results, can it be said that the Commission is carrying out the statutory mandate and fixing a reasonable rate at each point? Their method wholly ignores the great disparity in the expense involved and the property devoted to the two services. Apparently the Commission, since deciding our case in March, 1942, has itself entertained some misgivings about the correctness of any such method, for in its decision No. 90, in Dockets Nos. G-133, 148, 157, 193 and 462, involving the rates of the *In Re United Gas Pipe Line Company*, handed down April 20, 1943, 48 PUR (NS) 91, 95, the Commission pointed out that there was considerable difference in the rates at the several city gates, and said:

> "This lower rate is due solely to the very close proximity of each of these areas to the sources of natural gas."

Each and all of the above specified errors in the Commission's allocation of costs directly operate to violate the jurisdictional limitations of the Natural Gas Act and to shift the cost from the regulated to the unregulated business, and, correspondingly, to inflate the apparent earnings from the regulated business. In *Smith v. Illinois Bell Telephone Co.*, supra, this Court stated:

resale to these communities in 1939, such sales constituting about eight-tenths of 1% of Canadian's 1939 sales (R. IV, 2319). Although petitioners allege that the Commission discriminated against these communities, they did not present any allocation showing the cost of rendering this service.[*] Therefore, the Commission staff's allocation is the only evidence in the record separating the cost of service for such intrastate sales. As the Commission commented in its opinion, "Nowhere in the entire evidence submitted by Canadian and Colorado Companies is there a complete presentation of the entire operations of the company broken down between jurisdictional and non-jurisdictional operations" (R. I, 175).

There is therefore no support in the record for petitioners' contention that the method employed by the Commission in allocating average transmission line costs to Dalhart, Hartley and Texline was improper or unfair. As above stated, the Denver pipe line would not have been built and the various communities along the route of the line would not be receiving the benefits of natural-gas service from the project were it not for the existence of the large markets at the end of the line in the vicinity of Denver. As the Commission engi-

[*] Petitioners' exhibits do not show the separate cost of these intrastate sales (Exh. 317; Tr. 24,332–38; Exh. 318, Tr. 24,351–58).

neer testified, it is not unreasonable to require all customers within a common "cost zone" to share equally in the cost of service from an integrated transmission line (R. IV, 2398). Cf. *Banton* v. *Belt Line Ry.*, 268 U. S. 413. Use of average costs in allocating transmission costs to customers served from a large integrated electric system has received the sanction of this Court. *Wabash Valley Electric Co.* v. *Young*, 287 U. S. 488, 499.

Canadian's contention that the Commission unfairly burdened its intrastate business by using the "average cost" method (Can. Br. 77–81) is refuted by the record. All of Canadian's intrastate sales are made to Amarillo Oil Company, principally at the wellhead in Texas, such sales constituting approximately 11% of Canadian's total annual sales volume (R. IV, 2319).[39] The revenues from these intrastate sales amounted to $205,000. The Commission assigned only $152,000 of costs to such sales, including a 6½% return, and found that Canadian is earning $53,000 in excess of a 6½% return on its intrastate business (R. I, 176). The Commission of course did not undertake to regulate such intrastate sales, and accordingly Canadian can retain the entire $53,000 of excess profit derived therefrom. There-

[39] Canadian's total intrastate sales to Amarillo Oil Company in 1939 amounted to 5,188,486 Mcf, of which 4,809,758 Mcf were sold at the wellhead and 378,912 Mcf were sold off the Denver line for resale to the towns of Dalhart, Hartley and Texline, Texas (R. IV, 2319).

fore the impact of the Commission's order could hardly be said to constitute an undue burden on Canadian's intrastate business.

Colorado Interstate further contends that the Commission's action was arbitrary in assigning 50% of the return to the "capacity cost" component of the "transmission costs" and 50% to the "volumetric cost" component (Col. Br. 48–49). The method used by the Commission is supported by substantial evidence and was reasonable (R. V, 2424–2425). If, as the Company contends, the entire return on the transmission facilities should be apportioned to "capacity costs" and none to "volumetric costs" absurd results would follow. Under such method, a direct industrial customer taking substantial quantities of gas every day throughout the year except on the single peak day would not be charged with any of the return on the transmission line facilities. Thus, such industrial customer would to that extent obtain free transportation from the line for an entire year, although he makes substantial use of the line 364 days of the year.

3. *System Peak Day.*—Colorado Interstate also contends that the Commission "arbitrarily" allocated the "capacity cost" component of the transmission costs on the basis of deliveries on February 9, 1939, the system peak day for that particular year when the mean temperature was 8° Fahrenheit; that this was the warmest winter in

the whole history of operations, except for the winter of 1934; and that the Commission engineer "set out deliberately to find one day in the seven and one-half year history of the Company's operation, which was far from the coldest day, but which, because of the relatively low domestic load, would assign costs to the unregulated business" (Col. Br. 50–53). The Company urges that the Commission should have used either January 24, 1940, when the mean temperature was 1.5° below zero, or a hypothetical peak day which assumes deliveries on the basis of a mean temperature of 15° below zero (Col. Br. 51–52). However, the adoption of either contention would result in assessing more costs to the direct industrial customers than were assigned by the Commission.

The Commission used the deliveries on February 9, 1939, as the basis of allocating capacity costs because it was admittedly the day of system peak deliveries in the test year 1939 (R. V, 2434). Obviously, it was appropriate to stay within the test year in allocating 1939 costs. The total deliveries on February 9, 1939, were 94,998 Mcf, of which 35,425 Mcf, or 37%, was sold to direct industrial customers and 59,573 Mcf, or 63%, was sold to wholesale customers. Accordingly, the Commission allocated 37% of the capacity costs to the direct industrial customers and 63% to the wholesale customers (R. IV, 2319, 2317). On January 24, 1940, when the mean temperature was

1.5° below zero, the sales to direct industrial customers amounted to 47,343 Mcf, or 41%, and the sales to wholesale customers amounted to 67,783 Mcf, or 59% (Col. Br. 52). If, as the company urges, the Commission had used the deliveries on January 24, 1940, 41% instead of 37% of the capacity costs would have been assigned to the direct industrial customers. Similarly, the use of petitioners' calculated deliveries on their proposed hypothetical peak day, which assumes a 15° below zero mean temperature, would produce a more harmful result to petitioners than the use of the actual peak-day deliveries in 1939 adopted by the Commission. Petitioners' witness, Rhodes, testified that the "maximum day obligation ratio based on total peak-load obligations" for such hypothetical peak day would be 38.2% for the direct industrial customers and 61.8% for the wholesale customers (R. IV, 2269). Thus, the use of the hypothetical peak day would result in assigning 38.2% of the capacity costs to the direct industrial customers instead of the 37% assigned by the Commission.

Colorado Interstate's contention that the Commission's allocation results in discrimination between gas sold to Citizens Utilities Company for resale at La Junta, Colorado, and gas sold to Public Service Company for sale in the city of Denver (Col. Br. 53), is not well taken. The Commission did not prescribe specific rate schedules for these

sales nor for any other sales, but ordered a reduction in Colorado's interstate wholesale rates in the aggregate amount of $2,065,000 (R. I, 191). The further rate-making step of prescribing specific rate schedules for sales at the various delivery points is yet to be taken. See *Federal Power Commission* v. *Natural Gas Pipeline Co.*, 315 U. S. 575, 584–585.[40]

4. *Adequacy of Findings.*—Petitioners also contend (Col. Br. 38–41; Can. Br. 76) that the Com-

[40] It may be noted that the difference in the cost to serve Public Service Company of Colorado (Denver and environs) and Citizens Utilities Company (La Junta and seven other small communities) is not due to any erroneous determination of transmission costs, nor to a fallacious allocation method, as implied by Colorado, but is caused primarily by the difference in distribution costs. Sales to Public Service Company by Colorado were 49 times as great as to Citizens Utilities Company in 1939 (R. IV, 2319), and hence average distribution costs per Mcf incurred by Colorado Company in delivering gas to Denver and environs was only a fraction of the average distribution cost per Mcf incurred in delivering gas to Citizens Utilities Company for resale at La Junta and seven other small communities. Reference to the staff engineer's exhibit (R. IV, 2317) and to Appendix B, Schedule 4, of this brief shows that the Commission found that distribution costs incurred in serving Public Service Company of Colorado were $38,412 or 0.6¢ per Mcf sold to that company. Distribution costs in serving Citizens Utilities Company were $16,861 or 9.3¢ per Mcf. Therefore, excluding distribution costs, the cost of serving Public Service Company of Colorado averaged 14.8¢ per Mcf and the cost to serve Citizens Utilities Company was 15.0¢ per Mcf, or the two costs were the same for practical purposes.

mission failed to make appropriate findings with respect to its allocation. However, Canadian admits (Can. Br. 81) that "it is clear from the Commission's opinion that it had adopted the allocation methods and principles of Commission witnesses and * * * base[d] its rate reduction order thereon." As appears from its opinion (R. I, 174–177) the Commission adopted the method presented by its staff engineer but used its revised and higher total cost of service in the allocation (R. I, 176). The application of the staff's allocation to such total cost of service was merely a mathematical calculation (See Appendix B, *infra*).[41]

We accordingly submit that the allocation made by the Commission is based upon competent evidence and has a rational basis. Neither the Act nor the Constitution requires more.

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[41] That petitioners clearly understand how the final figures were derived is apparent from Canadian's brief (pp. 81–82) where it states that the source of the cost-of-service figure of $1,575,000 for gas sold by Canadian to Colorado in the Commission's opinion is "self-evident." As stated in Canadian's brief (p. 82), the method followed by the Commission in arriving at the separate cost of service for gas sold by Canadian to Colorado was to deduct from Canadian's total actual costs ($1,770,000) the allocated cost of service to all Canadian's customers except Colorado ($195,000), thereby securing the cost of service of gas to Colorado ($1,575,000) (R. I, 176).

V

ALL OF CANADIAN'S SALES TO COLORADO INTERSTATE, BEING SALES FOR RESALE IN INTERSTATE COMMERCE, ARE SUBJECT TO REGULATION BY THE COMMISSION

Canadian contends (Br. 83–87) that the Commission, in regulating the rate charged by Canadian for *all* the gas sold to Colorado Interstate, exceeded its jurisdiction under the Act, adverting to the fact that approximately one-half of such gas is sold by Colorado Interstate directly to industrial customers. Since the Commission cannot prescribe the rates which Colorado Interstate charges such direct industrial customers, Canadian contends that the Commission has no jurisdiction to regulate Canadian's charges to Colorado Interstate for such gas and that the ordered reduction in Canadian's rate to Colorado Interstate, to that extent, constituted "a foolish and vain exercise of rate regulatory jurisdiction" (Can. Br. 87). We submit that these contentions lack merit.

As the provisions of the Act and its legislative history make clear, all of the gas which Canadian sells to Colorado Interstate is sold to Colorado Interstate for resale by the latter and is therefore subject to the Commission's jurisdiction under the Act. Section 1 (b) of the Act specifically provides that the provisions of the Act "shall apply

to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use * * *." Accordingly, by the express terms of the statute, all of the gas sold by Canadian to Colorado, including that sold for resale "for industrial" use, is subject to rate regulation by the Commission.

Any ambiguity by reason of the reference in Section 1 (b) to resale "for ultimate public consumption" is resolved by an examination of the legislative history. As originally introduced, the bill (H. R. 4008, 75th Cong., 1st Sess.) which as amended (H. R. 6586, 75th Cong., 1st Sess.) became the Natural Gas Act, contained the following language in Section 1 (b):

> "(b) The provisions of this Act shall apply to the transportation of natural gas in interstate commerce, to the sale of such natural gas for resale *to the public*, and to natural-gas companies engaged in such transportation or sale, but shall not apply to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas: *Provided*, That nothing in this Act shall be construed to authorize the Commission to fix the rates or charges to the public

> for the sale of natural gas distributed locally or for the sale of natural gas for industrial use only." [Emphasis supplied.]

In the hearings before the House Committee on Interstate and Foreign Commerce with respect to H. R. 4008, Mr. John E. Benton, the General Solicitor of the National Association of Railroad and Utility Commissioners, suggested among other amendments that the phrase "to the public" be deleted from Section 1 (b). He explained that the purpose of this amendment was (Hearings, pp. 21–22):

> "* * * to make certain that the bill will apply to all intercompany sales of natural gas at wholesale, even though the sale be from one company to another company which will resell to another corporation before the gas is finally sold to the public."

Later in the hearings, Mr. William A. Dougherty (see pp. 25–26, *supra*) proposed an amendment to Section 1 (b), to add at the end of the section: "or for resale for industrial use only" (Hearings, pp. 123–124). The obvious purpose of this suggestion, as explained by Mr. Dougherty (Hearings, p. 125), was to exclude "the gas that the pipe line sells to the distributing company for resale for industrial purposes," and "to make clear that all gas that ultimately goes to industrial customers, purchased under the separate rate or a separate contract, for that pur-

pose is not within the provisions of this legislation."[42]

With reference to Mr. Benton's proposal to delete the words "to the public" from Section 1 (b), Mr. Dougherty stated that while he realized the reasons for Mr. Benton's amendment, he felt that the Committee should consider inserting the words "for ultimate public consumption" in lieu of the words "to the public". Mr. Dougherty stated that the reason for his suggestion in this regard was (Hearings, p. 130):

> "So that it is clear even though there *your* [are] successive sales of gas, all of which are subject to the Commission's jurisdiction, that the gas ultimately must be distributed for general public consumption before there is any right to fix the rates, so that we get no problem of indirect industrial sales that might perchance on their face be under this Commission's jurisdiction."

In objecting to this amendment suggested by Mr. Dougherty, Mr. Benton by letter to the Committee of March 29, 1937, suggested the lan-

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[42] In response to an inquiry from Representative Martin, Mr. Dougherty stated that there was "a considerable volume of that character of resale" and that "most of it" is sold in that way. By way of example, Mr. Dougherty stated that Colorado Interstate Gas Company sells direct to Colorado Fuel & Iron Company, "a tremendously large consumer," but in Denver "all of the industries are sold gas by the local company, the gas being purchased from the pipe line company."

guage which was substantially adopted by the Committee, and in so doing Mr. Benton stated (Hearings, pp. 142–143):

> "Sales for industrial use ought not to be exempt from all regulation, for the result may very well be that unjustifiable discrimination will result, and there will be no commission to which complaint may be made. Sales for industrial uses plainly ought to be subject to regulation by the same Commission which regulates sales to other classes of consumers, so that just and reasonable rates, for the several classes of service, properly related to each other, may be established. Under the bill as drawn, all consumer sales are exempt from Federal regulation, and left to State regulation. The language of the suggested amendment just proposed leaves this purpose unaffected, and makes clear that the regulation of intercompany sales is designed for the protection of the consuming public, as a part of the complete regulation of the entire utility service."

It is thus clear from the legislative history that under Section 1 (b) all the gas which Canadian sells to Colorado Interstate, including that which Colorado Interstate sells directly to industrial customers, is subject to regulation by the Commission.

In its brief (p. 86) Canadian contends that since under the proviso in Section 4 (e) of the Act the Commission has no authority to suspend

the rates charged for the sale of natural gas "for resale for industrial use only," such rates are not subject to regulation by the Commission. However, if the Commission had no authority to regulate the rates charged for gas sold for resale for industrial use, the proviso in Section 4 (e) exempting such rates from the suspension power of the Commission would be meaningless, since the Commission's authority to suspend rates is limited to those rates which are subject to its jurisdiction. Moreover, all the gas which Canadian sells to Colorado Interstate is sold under a single rate without distinction between the gas which Colorado Interstate may sell directly to industrial customers and that which it sells to various distributing companies for resale. Accordingly there is only one rate between Canadian and Colorado Interstate, and it is not a rate covering the sale of gas for resale "for industrial use only."

Canadian also contends that since the Commission for purposes of allocation treated Canadian and Colorado Interstate as an integrated system, it should have limited its rate reduction to those rates over which it would have jurisdiction if Canadian and Colorado Interstate were in fact one company, in which event there would not be any sale or rate between Canadian and Colorado Interstate and the sales which the latter makes directly to industrial consumers, not being for resale, would not be subject to the Commission's

jurisdiction. While, as above stated, the Commission properly treated Canadian and Colorado Interstate as a unit for purposes of its allocation of cost of service, it does not follow that the Commission's rate order in respect of Canadian is invalid.

In considering the rationale and purposes of these proceedings, the matter should be approached from the standpoint of the ultimate consumer in the various cities, including Denver and Pueblo, which receive their supply of gas from this pipe line. The rates charged such consumers by the local distributing companies in those cities are subject to State regulation, but the reasonableness of such "burner tip" rates is principally dependent upon the price which the distributing company pays to Colorado Interstate for the gas at the city gates. The purchase price of the gas is claimed by the distributing company as an operating expense in any State proceeding involving the reasonableness of the retail rates and that price, being an interstate wholesale rate, cannot be regulated by the state commission (*Missouri* v. *Kansas Gas Co.*, 265 U. S. 298).

The instant proceedings were commenced when the City and County of Denver filed complaints with the Federal Power Commission alleging that the "gate" rates being charged the distributing company in that city by Colorado Interstate were unreasonable, and requesting the Commis-

sion to determine and fix the reasonable rate. Since the reasonableness of Colorado Interstate's city gate rates was in large part dependent upon the reasonableness and propriety of the price which Colorado Interstate pays to Canadian River for gas, the principal operating expense of Colorado Interstate, the Commission had to determine the reasonableness of the rate between Canadian and Colorado Interstate. The Commission, after hearing, determined that such rate was unreasonable to the extent of $551,000 and that therefore the amount claimed by Colorado Interstate as an operating expense for cost of purchased gas should be reduced to that extent in determining the reasonableness of Colorado Interstate's city gate rates.

The Commission under the statute accordingly required Canadian to reduce its charges to Colorado Interstate. It might be urged in this connection that the Commission could have merely disregarded the corporate entities and in fixing Colorado Interstate's rates reduced its claim for the cost of purchased gas to the extent of $551,000, without making any change in the rate being charged to Colorado Interstate by Canadian. However, this rate, being for the sale of gas in interstate commerce for resale, was embodied in a rate schedule filed by Canadian with the Commission as required by Section 4 of the Act, which prohibits a natural-gas company from charging

any rate for a sale subject to the Commission's jurisdiction except in accordance with a filed rate schedule.[43] Accordingly, unless and until the filed rate between Canadian and Colorado Interstate has been changed by order of the Commission or by the filing of a new rate schedule, Canadian would have to charge Colorado and Colorado would have to pay the original rate, including the excess of $551,000 which the Commission found to be unreasonable. To have limited the allowance in Colorado Interstate's operating expenses to what the Commission had determined to be a reasonable charge by Canadian for the gas sold to Colorado Interstate, without complying with the statutory requirements necessary to relieve Colorado Interstate from the obligation of paying the excess of $551,000 to Canadian, would probably have resulted in a direct confiscation in the case of Colorado Interstate to that extent. Moreover, under the Act it is the Commission's duty when it has found an existing rate to be unreasonable to require a reduction in such rate.

We therefore submit that the Commission did not exceed its jurisdiction when it required a reduction in the interstate wholesale rate being charged Colorado Interstate by Canadian to the extent found unreasonable.

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[43] A violation of this section would carry the possibility of criminal and civil penalties.

CONCLUSION

For the reasons stated, it is respectfully submitted that the decision below should be affirmed.

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APPENDIX A

The pertinent provisions of the Natural Gas Act of 1938, c. 556, 52 Stat. 821 (15 U. S. C. § 717 *et seq.*), as amended by the Act of February 7, 1942 (56 Stat. 83), are as follows:

SECTION 1. (a) As disclosed in reports of the Federal Trade Commission made pursuant to Senate Resolution 83 (Seventieth Congress, first session) and other reports made pursuant to the authority of Congress, it is hereby declared that the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest, and that Federal regulation in matters relating to the transportation of natural gas and the sale thereof in interstate and foreign commerce is necessary in the public interest.

(b) The provisions of this act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas.

SEC. 4. (a) All rates and charges made, demanded, or received by any natural-gas company for or in connection with the transportation or sale of natural gas subject to the jurisdiction of the Commission, and all rules and regulations affecting or pertaining to such rates or charges, shall be just and reasonable, and any such rate or charge that is not just and reasonable is hereby declared to be unlawful.

(b) No natural-gas company shall, with respect to any transportation or sale of natural gas subject to the jurisdiction of the Commission, (1) make or grant any undue preference or advantage to any person or subject any person to any undue prejudice or disadvantage, or (2) maintain any unreasonable difference in rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service.

(c) Under such rules and regulations as the Commission may prescribe, every natural-gas company shall file with the Commission, within such time (not less than sixty days from the date this Act takes effect) and in such form as the Commission may designate, and shall keep open in convenient form and place for public inspection, schedules showing all rates and charges for any transportation or sale subject to the jurisdiction of the Commission, and the classifications, practices, and regulations affecting such rates and charges, together with all contracts which in any manner affect or relate to such rates, charges, classifications, and services.

(d) Unless the Commission otherwise orders, no change shall be made by any natural-gas company in any such rate,

charge, classification, or service, or in any rule, regulation, or contract relating thereto, except after thirty days' notice to the Commission and to the public. Such notice shall be given by filing with the Commission and keeping open for public inspection new schedules stating plainly the change or changes to be made in the schedule or schedules then in force and the time when the change or changes will go into effect. The Commission, for good cause shown, may allow changes to take effect without requiring the thirty days' notice herein provided for by an order specifying the changes so to be made and the time when they shall take effect and the manner in which they shall be filed and published.

(e) Whenever any such new schedule is filed the Commission shall have authority, either upon complaint of any State, municipality, or State commission, or upon its own initiative without complaint, at once, and if it so orders, without answer or formal pleading by the natural-gas company, but upon reasonable notice, to enter upon a hearing concerning the lawfulness of such rate, charge, classification, or service; and, pending such hearing and the decision thereon, the Commission, upon filing with such schedules and delivering to the natural-gas company affected thereby a statement in writing of its reasons for such suspension, may suspend the operation of such schedule and defer the use of such rate, charge, classification, or service, but not for a longer period than five months beyond the time when it would otherwise go into effect: *Provided*, That the Commission shall not have authority to suspend the rate, charge, classification, or service for the

sale of natural gas for resale for industrial use only; and after full hearings, either completed before or after the rate, charge, classification, or service goes into effect, the Commission may make such orders with reference thereto as would be proper in a proceeding initiated after it had become effective. If the proceeding has not been concluded and an order made at the expiration of the suspension period, on motion of the natural-gas company making the filing, the proposed change of rate, charge, classification, or service shall go into effect. Where increased rates or charges are thus made effective, the Commission may, by order, require the natural-gas company to furnish a bond, to be approved by the Commission, to refund any amounts ordered by the Commission, to keep accurate accounts in detail of all amounts received by reason of such increase, specifying by whom and in whose behalf such amounts were paid, and, upon completion of the hearing and decision, to order such natural-gas company to refund, with interest, the portion of such increased rates or charges by its decision found not justified. At any hearing involving a rate or charge sought to be increased, the burden of proof to show that the increased rate or charge is just and reasonable shall be upon the natural-gas company, and the Commission shall give to the hearing and decision of such questions preference over other questions pending before it and decide the same as speedily as possible.

SEC. 5. (a) Whenever the Commission, after a hearing had upon its own motion or upon complaint of any State, municipality, State commission, or gas distributing

company, shall find that any rate, charge, or classification demanded, observed, charged, or collected by any natural-gas company in connection with any transportation or sale of natural gas, subject to the jurisdiction of the Commission, or that any rule, regulation, practice, or contract affecting such rate, charge, or classification is unjust, unreasonable, unduly discriminatory, or preferential, the Commission shall determine the just and reasonable rate, charge, classification, rule, regulation, practice, or contract to be thereafter observed and in force, and shall fix the same by order: *Provided, however,* That the Commission shall have no power to order any increase in any rate contained in the currently effective schedule of such natural gas company on file with the Commission, unless such increase is in accordance with a new schedule filed by such natural gas company; but the Commission may order a decrease where existing rates are unjust, unduly discriminatory, preferential, otherwise unlawful, or are not the lowest reasonable rates.

(b) The Commission upon its own motion, or upon the request of any State commission, whenever it can do so without prejudice to the efficient and proper conduct of its affairs, may investigate and determine the cost of the production or transportation of natural gas by a natural-gas company in cases where the Commission has no authority to establish a rate governing the transportation or sale of such natural gas.

SEC. 6. (a) The Commission may investigate and ascertain the actual legitimate cost of the property of every natural-gas company, the depreciation therein, and, when found necessary for rate-making pur-

poses, other facts which bear on the determination of such cost or depreciation and the fair value of such property.

(b) Every natural-gas company upon request shall file with the Commission an inventory of all or any part of its property and a statement of the original cost thereof, and shall keep the Commission informed regarding the cost of all additions, betterments, extensions, and new construction.

SEC. 7. (c) No natural-gas company or person which will be a natural-gas company upon completion of any proposed construction or extension shall engage in the transportation or sale of natural gas, subject to the jurisdiction of the Commission, or undertake the construction or extension of any facilities therefor, or acquire or operate any such facilities or extensions thereof, unless there is in force with respect to such natural-gas company a certificate of public convenience and necessity issued by the Commission authorizing such acts or operations: *Provided, however,* That if any such natural-gas company or predecessor in interest was bona fide engaged in transportation or sale of natural gas, subject to the jurisdiction of the Commission, on the effective date of this amendatory Act, over the route or routes or within the area for which application is made, and has so operated since that time, the Commission shall issue such certificate without requiring further proof that public convenience and necessity will be served by such operation, and without further proceedings, if application for such certificate is made to the Commission within ninety days after the effective date of this amendatory Act. Pending the determination of

any such application, the continuance of such operation shall be lawful.

In all other cases the Commission shall set the matter for hearing and shall give such reasonable notice of the hearing thereon to all interested persons as in its judgment may be necessary under rules and regulations to be prescribed by the Commission; and the application shall be decided in accordance with the procedure provided in subsection (e) of this section and such certificate shall be issued or denied accordingly: *Provided, however,* That the Commission may issue a temporary certificate in cases of emergency, to assure maintenance of adequate service or to serve particular customers, without notice or hearing, pending the determination of an application for a certificate, and may by regulation exempt from the requirements of this section temporary acts or operations for which the issuance of a certificate will not be required in the public interest.

(e) Except in the cases governed by the provisos contained in subsection (c) of this section, a certificate shall be issued to any qualified applicant therefor, authorizing the whole or any part of the operation, sale, service, construction, extension, or acquisition covered by the application, if it is found that the applicant is able and willing properly to do the acts and to perform the service proposed and to conform to the provisions of the Act and the requirements, rules, and regulations of the Commission thereunder, and that the proposed service, sale, operation, construction, extension, or acquisition, to the extent authorized by the certificate, is or will be required by the present or future public con-

venience and necessity; otherwise such application shall be denied. The Commission shall have the power to attach to the issuance of the certificate and to the exercise of the rights granted thereunder such reasonable terms and conditions as the public convenience and necessity may require.

(f) The Commission, after a hearing had upon its own motion or upon application, may determine the service area to which each authorization under this section is to be limited. Within such service area as determined by the Commission a natural-gas company may enlarge or extend its facilities for the purpose of supplying increased market demands in such service area without further authorization.

(g) Nothing contained in this section shall be construed as a limitation upon the power of the Commission to grant certificates of public convenience and necessity for service of an area already being served by another natural-gas company.

SEC. 8. (a) Every natural-gas company shall make, keep, and preserve for such periods, such accounts, records of cost-accounting procedures, correspondence, memoranda, papers, books, and other records as the Commission may by rules and regulations prescribe as necessary or appropriate for purposes of the administration of this act: *Provided, however,* That nothing in this act shall relieve any such natural-gas company from keeping any accounts, memoranda, or records which such natural-gas company may be required to keep by or under authority of the laws of any State. The Commission may prescribe a system of accounts to be kept by such natural-gas companies, and may classify

such natural-gas companies and prescribe a system of accounts for each class. The Commission, after notice and opportunity for hearing, may determine by order the accounts in which particular outlays or receipts shall be entered, charged, or credited. The burden of proof to justify every accounting entry questioned by the Commission shall be on the person making, authorizing, or requiring such entry, and the Commission may suspend a charge or credit pending submission of satisfactory proof in support thereof.

(b) The Commission shall at all times have access to and the right to inspect and examine all accounts, records, and memoranda of natural-gas companies; and it shall be the duty of such natural-gas companies to furnish to the Commission, within such reasonable time as the Commission may order, any information with respect thereto which the Commission may by order require, including copies of maps, contracts, reports of engineers, and other data, records, and papers, and to grant to all agents of the Commission free access to its property and its accounts, records, and memoranda when requested so to do. No member, officer, or employee of the Commission shall divulge any fact or information which may come to his knowledge during the course of examination of books, records, data, or accounts, except insofar as he may be directed by the Commission or by a court.

(c) The books, accounts, memoranda, and records of any person who controls directly or indirectly a natural-gas company subject to the jurisdiction of the Commission and of any other company controlled

by such person, insofar as they relate to transactions with or the business of such natural-gas company, shall be subject to examination on the order of the Commission.

SEC. 9. (a) The Commission may, after hearing, require natural-gas companies to carry proper and adequate depreciation and amortization accounts in accordance with such rules, regulations, and forms of account as the Commission may prescribe. The Commission may from time to time ascertain and determine, and by order fix, the proper and adequate rates of depreciation and amortization of the several classes of property of each natural-gas company used or useful in the production, transportation, or sale of natural gas. Each natural-gas company shall conform its depreciation and amortization accounts to the rates so ascertained, determined, and fixed. No natural-gas company subject to the jurisdiction of the Commission shall charge to operating expenses any depreciation or amortization charges on classes of property other than those prescribed by the Commission, or charge with respect to any class of property a percentage of depreciation or amortization other than that prescribed therefor by the Commission. No such natural-gas company shall in any case include in any form under its operating or other expenses and depreciation, amortization, or other charge or expenditure included elsewhere as a depreciation or amortization charge or otherwise under its operating or other expenses. Nothing in this section shall limit the power of a State commission to determine in the exercise of its jurisdiction, with respect to any natural-gas company, the percentage rates of de-

preciation or amortization to be allowed, as to any class of property of such natural-gas company, or the composite depreciation or amortization rate, for the purpose of determining rates or charges.

(b) The Commission, before prescribing any rules or requirements as to accounts, records, or memoranda, or as to depreciation or amortization rates, shall notify each State commission having jurisdiction with respect to any natural-gas company involved and shall give reasonable opportunity to each such commission to present its views and shall receive and consider such views and recommendations.

SEC. 10. (a) Every natural-gas company shall file with the Commission such annual and other periodic or special reports as the Commission may by rules and regulations or order prescribe as necessary or appropriate to assist the Commission in the proper administration of this act. The Commission may prescribe the manner and form in which such reports shall be made, and require from such natural-gas companies specific answers to all questions upon which the Commission may need information. The Commission may require that such reports shall include, among other things, full information as to assets and liabilities, capitalization, investment and reduction thereof, gross receipts, interest due and paid, depreciation, amortization, and other reserves, cost of facilities, cost of maintenance and operation of facilities for the production, transportation, or sale of natural gas, cost of renewal and replacement of such facilities, transportation, delivery, use, and sale of natural gas. The Commission may require any such natural-gas company to make adequate provision

for currently determining such costs and other facts. Such reports shall be made under oath unless the Commission otherwise specifies.

(b) It shall be unlawful for any natural-gas company wilfully to hinder, delay, or obstruct the making, filing, or keeping of any information, document, report, memorandum, record, or account required to be made, filed, or kept under this act or any rule, regulation, or order thereunder.

SEC. 11. (a) In case two or more States propose to the Congress compacts dealing with the conservation, production, transportation, or distribution of natural gas it shall be the duty of the Commission to assemble pertinent information relative to the matters covered in any such proposed compact, to make public and to report to the Congress information so obtained, together with such recommendations for further legislation as may appear to be appropriate or necessary to carry out the purposes of such proposed compact and to aid in the conservation of natural-gas resources within the United States and in the orderly, equitable, and economic production, transportation, and distribution of natural gas.

(b) It shall be the duty of the Commission to assemble and keep current pertinent information relative to the effect and operation of any compact between two or more States heretofore or hereafter approved by the Congress, to make such information public, and to report to the Congress, from time to time, the information so obtained, together with such recommendations as may appear to be appropriate or necessary to promote the purposes of such compact.

SEC. 14. (b) The Commission may, after hearing, determine the adequacy or inadequacy of the gas reserves held or controlled by any natural-gas company, or by anyone on its behalf, including its owned or leased properties or royalty contracts; and may also, after hearing, determine the propriety and reasonableness of the inclusion in operating expenses, capital, or surplus of all delay rentals or other forms of rental or compensation for unoperated lands and leases. For the purpose of such determinations, the Commission may require any natural-gas company to file with the Commission true copies of all its lease and royalty agreements with respect to such gas reserves.

SEC. 16. The Commission shall have power to perform any and all acts, and to prescribe, issue, make, amend, and rescind such orders, rules, and regulations as it may find necessary or appropriate to carry out the provisions of this act. Among other things, such rules and regulations may define accounting, technical, and trade terms used in this act; and may prescribe the form or forms of all statements, declarations, applications, and reports to be filed with the Commission, the information which they shall contain, and the time within which they shall be filed. Unless a different date is specified therein, rules and regulations of the Commission shall be effective thirty days after publication in the manner which the Commission shall prescribe. Orders of the Commission shall be effective on the date and in the manner which the Commission shall prescribe. For the purposes of its rules and regulations, the Commission may classify persons and matters within its

jurisdiction and prescribe different requirements for different classes of persons or matters. All rules and regulations of the Commission shall be filed with its secretary and shall be kept open in convenient form for public inspection and examination during reasonable business hours.

SEC. 19. (a) Any person, State, municipality, or State commission aggrieved by an order issued by the Commission in a proceeding under this act to which such person, State, municipality, or State commission is a party may apply for a rehearing within thirty days after the issuance of such order. The application for rehearing shall set forth specifically the ground or grounds upon which such application is based. Upon such application the Commission shall have power to grant or deny rehearing or to abrogate or modify its order without further hearing. Unless the Commission acts upon the application for rehearing within thirty days after it is filed, such application may be deemed to have been denied. No proceeding to review any order of the Commission shall be brought by any person unless such person shall have made application to the Commission for a rehearing thereon.

(b) Any party to a proceeding under this act aggrieved by an order issued by the Commission in such proceeding may obtain a review of such order in the circuit court of appeals of the United States for any circuit wherein the natural-gas company to which the order relates is located or has its principal place of business, or in the United States Court of Appeals for the District of Columbia, by filing in such court, within sixty days after the order of the Commission upon the application for rehearing, a writ-

ten petition praying that the order of the Commission be modified or set aside in whole or in part. A copy of such petition shall forthwith be served upon any member of the Commission and thereupon the Commission shall certify and file with the court a transcript of the record upon which the order complained of was entered. Upon the filing of such transcript such court shall have exclusive jurisdiction to affirm, modify, or set aside such order in whole or in part. No objection to the order of the Commission shall be considered by the court unless such objection shall have been urged before the Commission in the application for rehearing unless there is reasonable ground for failure so to do. The finding of the Commission as to the facts, if supported by substantial evidence, shall be conclusive. If any party shall apply to the court for leave to adduce additional evidence, and shall show to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for failure to adduce such evidence in the proceedings before the Commission, the court may order such additional evidence to be taken before the Commission and to be adduced upon the hearing in such manner and upon such terms and conditions as to the court may seem proper. The Commission may modify its findings as to the facts by reason of the additional evidence so taken, and it shall file with the court such modified or new findings, which if supported by substantial evidence, shall be conclusive, and its recommendation, if any, for the modification or setting aside of the original order. The judgment and decree of the court, affirming, modifying, or setting

aside, in whole or in part, any such order of the Commission, shall be final, subject to review by the Supreme Court of the United States upon certiorari or certification as provided in sections 239 and 240 of the Judicial Code, as amended (U. S. C., title 28, secs. 346 and 347).

(c) The filing of an application for rehearing under subsection (a) shall not, unless specifically ordered by the Commission, operate as a stay of the Commission's order. The commencement of proceedings under subsection (b) of this section shall not, unless specifically ordered by the court, operate as a stay of the Commission's order.

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APPENDIX B

SCHEDULE 1

Canadian River Gas Company
Adjustments Made by Commission in Staff's Cost of Service (Exh. 226)
and Allocation Thereof to Functional Divisions

Line	Description (1)	Amount (2)	Classification (3)	Adjustments Allocated to Functional Divisions: Cost of Gas At Well-head (4)	Gathering (5)	Residuals Refining Cost (6)	Transmission Cost Volumetric (7)	Transmission Cost Capacity (8)
1	Additional Expenses Allowed							
2	Production Expense	$ 11,722	Residuals	$ -	$	$ 11,722	$ -	$ -
3	General Expense (Rate Case Expense)	1/ 41,000	General	19,569	1,410	4,174	-	15,847
4	Depreciation of General Plant	2/ 3,787	"	2,034	471	108	-	1,174
5	Depletion	36,104	Well-head	36,104		-	-	-
6	Federal Capital Stock Tax	2/ 2,021	General	1,086	251	57	-	627
7	Delay Rentals	(6,614)	Well-head	(6,614)		-	-	-
8	Total Additional Expenses	$ 88,020		$ 52,179	$	$ 16,061	-	$17,648
9	Additional Return on Rate Base Allowed							
10	Leaseholds and Well Facilities	$ 67,473	Well-head	$ 67,473	$	$ -	$ -	$ -
11	Gathering Facilities	6,496	Gathering	-		-	-	-
12	Gasoline Plant	1,481	Residuals	-		1,481	-	-
13	Transmission Plant	33,065	Transmission	-		-	16,532	16,533
14	General and Undistributed Plant	2/ 10,289	General	5,527		292	1,595	1,595
15	Total Additional Return	$118,804		$ 73,000	$	$ 1,773	$18,127	$18,128
16	Total Additional Cost of Service Allowed	$206,824		$125,179	$	$ 17,834	$18,127	$35,776

1/ Allocation of Administrative and General Expenses

First Allocation: Between Production and Transmission on basis of total direct expenses.

	Direct Expenses	%
Production (exclud. residuals credit)	$510,984.60	61.35
Transmission	321,869.98	38.65
Total	$832,854.58	100.00

Second Allocation: Allocation of Production Portion to Well-head, Gathering and Residuals on basis of operation and maintenance expenses, Tables 5, 6 and 7 of Exh. 226.

	Basis	%
Well-head	$391,153.40	77.8
Gathering	28,012.89	5.6
Residuals Refining	83,570.90	16.6
Total	$502,737.19	100.0

Composite Result of Both Allocations

Well-head	77.8 x 61.35 =	47.73%
Gathering	5.6 x 61.35 =	3.44
Residuals	16.6 x 61.35 =	10.18
Subtotal		61.35
Transmission		38.65
Total		100.00%

Administrative & General Expense So Allocated
Rate Case Expense $41,000

Well-head	$19,569
Gathering	1,410
Residuals	4,174
Subtotal	$25,153
Transmission	15,847
Total	$41,000

2/ Allocation of General and Undistributed Plant Expenses

Basis: Net Book Cost of Plant in Service 12/31/59

	Basis	%	Depreciation of Gen. and Undistr. Plant	Federal Capital Stock Tax	Return on General and Undistr. Plant
Well-head(Leases,Wells,etc.)	$4,496,351	55.72	$ 2,034	$ 1,086	$ 5,367
Gathering	1,041,004	12.44	471	251	1,230
Residuals	237,224	2.84	108	57	282
Subtotal	$5,774,579	69.00	$ 2,613	$ 1,394	$ 6,879
Transmission	2,595,027	31.00	1,174	627	3,190
Total	$8,369,606	100.00	$ 3,787	$ 2,021	$10,289

APPENDIX B (CONTINUED)

SCHEDULE 2

Colorado Interstate Gas Company
Adjustments Made by Commission in Staff's Cost of Service (Exh.226)
Allocation Thereof to Functional Divisions

Line	Description (1)	Amount (2)	Classification (3)	Adjustments as Allocated to Functional Divisions: Transmission Costs Volumetric (4)	Transmission Costs Capacity (5)	Distribution Costs (6)
1	Additional Expenses:					
2	Rate Case Expense	1/ 43,000	General		$ 36,249	$ 6,751
3	Other General Expense	1/ 887	General		748	139
4	Transmission Maintenance	7,360	Transmission		7,360	
5	Transmission Maintenance	(668)	Transmission		(668)	
6	Depreciation of Trans.Plant	368	Transmission		368	
7	Depreciation of General Plant	2/ 1,552	General		1,531	21
8	Amortization	1/ 13,890	General		11,709	2,181
9	Federal Capital Stock Tax	2/ 22,694	General		22,383	311
10	Total additional exp.	$89,083			$79,680	$9,403
11	Additional Return on Rate Base Allowed:					
12	Transmission Plant	$ 59,172	Transmission	$29,5	$29,586	
13	Distribution Plant	544	Distribution			$ 544
14	General Plant	2/ 13,722	General	6,7	6,767	188
15	Total Additional Return	$ 73,438		$36,3	$36,353	$ 732
16	Total Additional Cost of Service Allowed	$162,521		$36,3	$116,033	$10,135

1/ These additional costs are allocated between transmission and distribution on basis of Colorado's transmission and distribution expenses, as shown in Exhibit 140, p. 103, line 23, col. 5 ($277,246) and p. 104, line 37, col. 5 ($50,992).

2/ These items allocated on basis of net plant in service December 31, 1939 in accordance with method employed in Exhibit 226.

The allocations between volumetric and capacity costs follow the method used in Exhibit 226.

APPENDIX B (CONTINUED)

SCHEDULE 3

Canadian River Gas Company and Colorado Interstate Gas Company
Summary of Adjustments Made by Commission in Transmission Costs and
Allocation of Transmission Capacity Costs

Company	Transmission Costs		Allocation of Capacity Costs	
	Volumetric Costs	Capacity Costs	Domestic, Commercial and Gas Lost	Industrial
Canadian Company (Sched.1)	$18,127	$ 35,776		
Colorado Company (Sched.2)	36,353	116,033		
Total	$54,480	$151,809	$68,188	$83,621

Note: Allocation between domestic, commercial and gas lost and industrial in accordance with method employed in Exhibit 226.

APPENDIX B (CONTINUED)

SCHEDULE 4

Canadian River Gas Company and Colorado Interstate Gas Company
Adjustments Made Commission in Cost of Service Shown in Staff Exh. 226

Line	Customer	Annual Gas Volumes MCF 1/	Cost of Service Per Staff Exhibit 226	COMMISSION ADJUSTMENTS 2/ Well-Head Costs	Gathering Costs	Residuals Refining Costs	Transmission Costs: Capacity Costs: Volumetric Costs	Transmission Costs: Capacity Costs: Domestic, Commercial and Gas Lost	Transmission Costs: Capacity Costs: Industrial	Distribution Costs	Total Adjustments	Total Cost of Service As Adjusted	As Rounded Out by Commission
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Sales from Transmission System												
2	Direct Sales by Colorado Co.												
3	Sales to Direct Industrial Customers	9,693,637	$1,047,888	$25,333	$ 2,229	$ 2,714	$ 24,193	$ -	$ 55,608	$ 1,723	$111,300	$1,159,688	$1,162,000
4	Sales to Public Authorities(U.S.Govt)	212,808	29,457	556	49	60	531	1,633	-	274	3,103	32,560	33,000
5	Total	9,906,445	$1,077,345	$25,889	$ 2,278	$ 2,774	$ 24,724	$ 1,633	$ 55,608	$ 1,997	$114,403	$1,192,248	$1,195,000
6	Sales for Resale by Colorado Co.												
7	Arkansas Valley Natural Gas Co. 3/	15,564	$ 3,247	$ 41	$ 4	$ 4	$ 39	$ -	$ 16	$ 111	$ 315	$ 3,562	$ 3,000
8	Citizens Utilities Co.	181,017	39,675	473	42	51	452	1,256	335	1,439	4,048	43,723	44,000
9	City of Colorado Springs	805,981	96,822	2,106	185	226	2,012	3,450	1,738	659	10,376	107,198	107,000
10	Colorado-Wyoming Gas Co.	2,867,619	357,652	7,484	659	803	7,157	11,876	10,160	182	38,331	395,983	397,000
11	Pueblo Gas and Fuel Co.	452,992	66,197	1,184	104	127	1,130	2,546	746	1,470	7,307	73,504	74,000
12	Public Service Co. of Colorado	6,650,953	927,919	17,381	1,529	1,862	16,599	45,611	13,149	4,277	100,408	1,028,327	1,027,000
13	Total	10,974,156	$1,491,512	$28,679	$ 2,523	$ 3,073	$ 27,389	$ 64,739	$ 26,244	$ 8,138	$160,785	$1,652,297	$1,652,000
14	Sales for Resale by Canadian Co.												
15	Clayton Gas Co.	104,710	$ 13,259	$ 274	$ 24	$ 29	$ 261	$ 534	$ 301	$ -	$ 1,423	$ 14,682	$ 15,000
16	Amarillo Oil Co.(from Denver Pipe Line)	378,912	45,559	990	87	106	946	1,282	1,468	-	4,879	50,438	4/
17	Total	483,622	$ 58,818	$ 1,264	$ 111	$ 135	$ 1,207	$ 1,816	$ 1,769	-	$ 6,302	$ 65,120	$ 15,000
18	Gas Used in Company Operations												
19	Colorado Co.	226,495	$ 12,488	$ 598	$ 52	$ 63	$ 565	$ -	$ -	$ -	$ 1,272	$ 13,760	$ 14,000
20	Canadian Co.	238,221	13,135	623	55	67	595	-	-	-	1,340	14,475	14,000
21	Total	464,716	$ 25,623	$ 1,215	$ 107	$ 130	$ 1,160	$ -	$ -	$ -	$ 2,612	$ 28,235	$ 28,000
22	Total Transmission System Sales	21,828,939	$2,653,298	$57,047	$ 5,019	$ 6,112	$ 54,480	$ 68,188	$ 83,621	$10,135	$284,602	$2,937,900	-
23	Sales from Production System												
24	Sales for Resale												
25	Natural Gas Pipeline Co. of America	20,783,301	$ 650,631	$54,314	$ 4,779	$11,722	$ -	-	-	-	$ 70,815	$ 721,446	$ 721,000
26	Amarillo Oil Co. (at well-head)	4,809,758	90,551	12,570	-	-	-	-	-	-	12,570	103,121	152,000 4/
27	Total	25,593,059	$ 741,182	$66,884	$ 4,779	$11,722	-	-	-	-	$ 83,385	$ 824,567	$ 873,000
28	Gas Used in Company Operations by Canadian Co.	477,624	$ 12,378	$ 1,248	$ 110	$ -	-	-	-	-	$ 1,358	$ 13,736	$ 14,000
29	Total Production System Sales	26,070,683	753,560	68,132	4,889	11,722	-	-	-	-	84,743	838,303	-
30	TOTAL SALES	47,899,622	$3,406,858	$125,179	$ 9,908	$17,834	$ 54,480	$ 68,188	$83,621	$10,135	$369,345	$3,776,203	$3,777,000

1/ MCF in Column 2 are volumes of gas at pressure of 14.65 pounds per square inch gilute.

2/ Adjustments in Columns 4 to 9 were assigned to each customer in accordance with peedure used in preparation of staff exhibit (Exh.226). Adjustments in Column 10 were assigned in proportion to distribution plant investment as of December 31, 1939, used to serve each customer.

3/ Figures for Arkansas Val sy Natural Gas Company cover its service to Fountain Valley School only, because its remaining properties were sold to Citizens Utilities Company. Costs for the latter company include services communities formerly served by Arkansas Valley Natural Gas Company.

4/ Commission made one finding as to the combined total cost of serving Amarillo Oil company from Denver Pipe Line and at well-head. Finding is shown on line 26, col. 13.

APPENDIX C

Tabulation showing number of hs natural gas deliveries to customers of Canadian and Colorado Companies were comtely interrupted or partially reduced during the period from the beginning of sdse to each customer to December 31, 1940
(R Ex. 290; R. II, 1025-29)

Customers affected (1)	Complete interruption of all deliveries (Hours) (2)	Partial iuction in delivies for industriqurposes: Due to physical causes (Hours) (3)	Due to high Demand (Hours) (4)	Total hours (2) (3) (4) (5)	Total period of service to December 31, 1940: Years (6)	Hours (7)	Percentage of time service was interrupted or reduced from all causes (8)	Percentage of total time, full and complete service was supplied (9)
Resale customers:								
Amarillo Oil Co.	43	0	0	43	12-1/2	109,500	0.04	99.96
Arkansas Valley Natural Gas Co.	12*	0	0	12	11	96,400	0.01	99.99
Citizens Utilities Co.	10*	0	0	10	11-3/4	102,900	0.01	99.99
Pueblo Gas and Fuel Co.	4-1/2*	15	0	19-1/2	12-1/2	109,500	0.02	99.98
City of Colorado Springs	9*	54	29	92	9-1/4	81,000	0.11	99.89
Public Service Company of Colorado	49	170	8	227	12-1/2	109,500	0.21	99.79
Colorado-Wyoming Gas Co.	38	109	30	177	11-1/4	98,600	0.18	99.82
Direct customers:								
American Crystal Sugar Co.	10*	0	0	10	11-1/4	98,600	0.01	99.99
Atchison, Topeka and Santa Fe R.R.	12*	30	5	47	11	96,400	0.05	99.95
Veteran's Administration Facility	13*	36	5	54	10	87,600	0.06	99.94
Colorado Fuel and Iron Corp.	4-1/2*	80	60	144-1/2	12-1/2	109,500	0.13	99.87
Colorado Portland Cement Co.	36*	93	24	153	9-3/4	85,400	0.18	99.82

Note: Percentages in column 8 are ratios of hours in column 5 to hurs in column 7.

* Entire interruption due to break in lateral line serving thi customer.

APPENDIX D

SUMMARY OF LEASE COSTS OF
CANADIAN RIVER GAS COMPANY
DECEMBER 31, 1939

Lease Costs, Per Books	
Bonuses	$2,997,496.91
Renewal costs	127,503.50
Delay rentals	109,100.84
Costs of obtaining leases (legal services, abstracting and recording fees and expenses)	67,163.88
Consideration paid for consolidation of leases	335,791.46
Total cost per books, excluding "appreciation" (R. V, 2737, 2741)	$3,737,006.49
Adjustments Made by the Commission:	
Add: Legal fees and expenses (R. V, 2722)	51,812.14
Deduct:	
Well construction costs erroneously included in lease account which were reclassified and allowed as well costs (R. V, 2667-71)	(343,656.79)
Intercompany profits on leases acquired from affiliates (R. V, 2657-61; 2667-71)	(250,320.54)
Lease Costs Included in Rate Base	$3,[illegible],821.32*

* Includes $109,175.29 for unoperated leases (R. V, 2741). Interest during construction related to lease costs was included in a separate allowance (R. V, 2769) in the amount of $40,453.

DEPRECIATED BASE AND PLANT COSTS
ALLOWED IN RATE BASE

	Leases	Other Plant	Total
Undepreciated Plant Cost at December 31, 1939 (R. I, 149)	$2,194,841	$8,589,622	$10,784,463
Less:			
Accrued Depletion (leases & wells)	252,006	401,675	653,681
Accrued Depreciation		1,480,948	1,480,948
Total Depreciation and Depletion (R. I, 162)	252,006	1,882,623	2,134,629
Depreciated Plant Cost at December 31, 1939 (R. I, 164)	$1,942,835	$6,706,999	$ 8,649,834

** Canadian's rate base was found to be $9,375,000 (R. I, 173) after adding working capital and plant additions through December 32, 1941.

FILE COPY

APR 10 1945

CHARLES ELMORE CROPLEY
CLERK

IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944

Nos. 379 and 380

COLORADO INTERSTATE GAS COMPANY
a Corporation, PETITIONER

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND CANADIAN RIVER GAS COMPANY, RESPONDENTS.

CANADIAN RIVER GAS COMPANY,
a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

BRIEF OF THE CITY AND COUNTY OF DENVER, SUGGESTING THAT THE COURT BELOW WAS WITHOUT JURISDICTION OVER THE SUBJECT MATTER

MALCOLM LINDSEY,
353 City and County Building,
Denver 2, Colorado

THOMAS H. GIBSON,
353 City and County Building,
Denver 2, Colorado

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IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944

Nos. 379 and 380

COLORADO INTERSTATE GAS COMPANY
a Corporation, PETITIONER

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND CANADIAN RIVER GAS COMPANY, RESPONDENTS.

CANADIAN RIVER GAS COMPANY,
a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

BRIEF OF THE CITY AND COUNTY OF DENVER

INTRODUCTORY STATEMENT

There is now impounded under the order of the Circuit Court of Appeals between five and six millions of dollars which, as we contend, have been wrongfully and illegally taken under compulsion from ultimate gas consumers, the majority of whom are inhabitant gas consumers of this respondent. Each month there is being and will continue to be impounded,

during the pendency of these proceedings, similar large sums which, in equity and good conscience, belong to said gas consumers.

Our contentions are that: (1) although said order was entered without authority, it is binding upon the depositor, upon whose petition it was made, and expressly provides that the moneys so to be impounded shall be

> "Subject, however, to the further order or orders of this Court, to be returned to such ultimate consumers of gas or persons to whom the Court shall find the same should be returned as contemplated by the provisions of the Natural Gas Act," and

(2) For the reason that said Court never at any time had jurisdiction over the subject matter of these proceedings, all moneys that have been collected from said inhabitant gas consumers and voluntarily deposited by said petitioner should forthwith be returned to said gas consumers or to this respondent, as their representative, for distribution to them at the costs of said petitioners.

The City and County of Denver, respondent, is a "Home Rule" City and County that is invested with full power and authority to regulate the local charges for service by public utility corporations under Article XX of the Colorado Constitution and Section 280 of its charter as amended in 1927. It is now confronted with the following facts and circumstances which it feels bound to call to the attention of this Court in fulfillment of its duties as Trustee for its said inhabitant gas consumers.

Said impounding order was entered by said Circuit Court of Appeals upon a petition for stay pending review of an order of the Federal Power Commission that was filed with said Court by the Colorado Interstate Gas Company on April 20th, 1942.

According to the averments shown on the face of said petition for "stay pending review," there was at that time a petition to "rehear and re-open" the same order that was complained of pending before the Federal Power Commission which had not been determined.

After the entry of said impounding order the petitioners herein filed with said Circuit Court of Appeals their petition

for a review of the final order of said Commission. The jurisdictional averments of said petitions were, respectively, as follows:

> (Case No. 379) "Colorado Interstate Gas Co., a Delaware Corporation * * *, petitioner is a private corporation organized and existing under the laws of the State of Delaware, which owns and operates a main transmission natural gas pipeline extending from Clayton Junction, New Mexico, to a point just outside the city limits of the City and County of Denver, State of Colorado. Its general manager and other representatives have their offices at Colorado Springs, Colorado. All of its physical properties are located, and all of its sales take place, within territory comprising the Tenth Circuit." (R.V.1, Page 1-10.)

> (Case No. 380) "Canadian River Gas Co., a Delaware Corporation * * * is engaged in the production and gathering of natural gas in what is known as the Amarillo Texas, or Texas Panhandle Gas Field, and the transportation thereof to certain points for sale, as follows: Substantially all such gas so produced is sold to the Colorado Interstate Gas Co. at a point near Clayton, New Mexico and at Grey, Oklahoma * * *." (R.V.1., Pages 37-42.)

This respondent filed its motion to dismiss said petitions on the ground that said Circuit Court of Appeals was without jurisdiction over the subject matter thereof for the reason, among others, that said petitioners were not "located and did not have their principal places of business" within the territorial limits of said Tenth Circuit. (R.V.1., Pages 122-123.)

Said motion was denied (R.V.1, Page 124), and, thereupon, permission of Court being first had and obtained, said petitioners filed an amendment to their original jurisdictional averments, by adding thereto the matters shown on Pages 125-133(R.V.1.), all of which, from the viewpoint of this respondent, is not only immaterial but emphasizes the invalidity of the original averments which, as we respectfully contend, show that the petitioners are for all purposes of

jurisdiction, for litigation, taxation and regulation, citizens of, that are domiciled or located, and, for all such purposes have their principal places of business in the State of Delaware that is comprised within the Third Circuit of the United States.

In his closing argument before this Court, the Attorney for the Colorado Interstate Gas Company called attention to the terms of said impounding order, and in response to a question propounded by the Chief Justice, indicated an intention on his part to make the contention that said gas consumers would not be entitled to said moneys on final distribution in the event of a decision adverse to said company.

Since said causes were submitted on their merits, this Court has decided the case of Central States Electrical Co. vs. City of Muscatine, Iowa, et al., (now reported in the March 1, 1945, advance sheets of the Supreme Court Reporter at Pages 565-572) and in the determination of the law as applied to the facts of that case it was held that:

> "The Circuit Court of Appeals had no power, at least in the absence of Federal legislation purporting to confer such power upon it, to adjust the gas rates of the Company selling gas to consumers in Iowa, that being a legislative function of the State of Iowa, notwithstanding the proceeding was one to enjoin collection of a rate for interstate service." (Syl.)

While that decision was based upon a statement of facts that are dissimilar to the facts appearing in the record herein, nevertheless, it may be, and as the statements of said attorney would indicate it would seem certain to be, used as a basis of argument whereby to support a general contention that, because the City and County of Denver is vested with full authority to regulate the charges for service by public utility corporations, the Tenth Circuit Court of Appeals would be without power to order the distribution of said impounded moneys to the inhabitant consumers of gas in said City and County of Denver, and thereby cause a further long drawn out delay and costly second appeal to your Honorable Court before final determination of said proceedings could be had

It is in view of the foregoing facts and circumstances that, at this time, this respondent makes this effort to see that, without unnecessary delay, its inhabitant gas consumers shall have returned to them all moneys that have been, are being and will be so illegally taken from them under compulsion under the provisions of said impounding order, and that said Colorado Interstate Gas Company shall not in any respect profit from its own wrong.

OPINIONS BELOW

The opinion of the United States Circuit Court of Appeals for the Tenth Circuit will be found in R.V.B., Pp. 5066-5094, and is reported in 142 Fed. (2d) 943. The opinion of the Federal Power Commission will be found in R. V. 1, P. 140, and is reported in 43 P. U. R. (N. S.) 205.

JURISDICTION

Jurisdiction of this court is invoked by the petitioners under Section 240(a) of the Jurisdictional Code, as amended by the Act of February 13, 1925, and Section 19(b) of the Natural Gas Act (52 Stat. 821; Title 15, U. S. C. A., Sec. 717(r)):

STATUTE INVOLVED

The statute involved is the Natural Gas Act (52 Stat. 824, 15 U. S. C. A. 717-(r)), and particularly Section 19(b) thereof, which, insofar as material for the consideration of the issue herein presented, provides:

> Sec. 19(b) "Any party to a proceeding under this chapter aggrieved by an order issued by the Commission in such proceeding, may obtain a review of such order in the Circuit Court of Appeals of the United States for any circuit wherein the natural gas company to which the order relates is located or has its principal place of business, or in the United States Court of Appeals for the District of Columbia • • • "

QUESTION PRESENTED

The primary questions presented are (1) whether the United States Circuit Court of Appeals for the Tenth Circuit

had jurisdiction over the subject matter of the Petitions for Review, (2) whether said impounding order should be at this time construed and the distribution of moneys impounded thereunder ordered in accordance with the terms thereof as contemplated by the Natural Gas Act.

SUBJECTS OF DISCUSSION

In view of arguments that heretofore have been made and the statements made in the opinion of said Circuit Court of Appeals, the propositions that we have to submit in support of our motion will be presented under the following headings.

I.

THE DESIGNATION OF THE CIRCUIT WHEREIN "THE COMPANY IS LOCATED OR HAS ITS PRINCIPAL PLACE OF BUSINESS" MADE BY SECTION 19(b) OF THE NATURAL GAS ACT IS A MATTER OF JURISDICTION AND NOT OF VENUE.

II.

SECTION 19(b) OF THE NATURAL GAS ACT DOES NOT CONFER GENERAL JURISDICTION FOR SUCH REVIEWS UPON "ANY" CIRCUIT COURT OF APPEALS OF THE UNITED STATES.

III.

WHEN THE PETITIONS FOR REVIEW WERE FILED WITH THE TENTH CIRCUIT COURT OF APPEALS, PETITIONERS WERE LOCATED AND HAD THEIR PRINCIPAL PLACES OF BUSINESS WITHIN THE THIRD CIRCUIT OF THE UNITED STATES.

IV.

THE PARTICLE "OR" WITH WHICH CONGRESS CONNECTED THE TERMS "LOCATED" AND "PRINCIPLE PLACE OF BUSINESS" IN SAID SECTION 19(b) WAS USED AS A CONJUNCTIVE "TO EXPRESS AN ALTERNATIVE OF TERMS, DEFINITIONS OR EXPLANATIONS OF THE SAME THING IN DIFFERET WORDS."

V.

A NATURAL GAS COMPANY WHICH, OR PERSON WHO, IS ENGAGED EXCLUSIVELY IN THE TRANSPORTATION OF NATURAL GAS IN INTERSTATE COMMERCE FOR RESALE, LEGALLY CANNOT "BE LOCATED OR HAVE ITS PRINCIPAL PLACE OF BUSINESS" ELSEWHERE THAN IN THE STATE OF ITS OR HIS DOMICILE FOR THE PURPOSE OF SUING OR DEFENDING PROCEEDINGS *IN PERSONAM* IN RELATION TO THE REGULATION OF SUCH BUSINESS.

VI.

THE IMPOUNDING ORDER OF THE CIRCUIT COURT OF APPEALS SHOULD AT THIS TIME BE CONSTRUED AND THE DISTRIBUTION OF THE MONIES IMPOUNDED THEREUNDER ORDERED IN ACCORDANCE WITH THE TERMS THEREOF AS CONTEMPLATED BY THE NATURAL GAS ACT.

SUMMARY OF ARGUMENT

The major points proposed for consideration in connection with the language of said Section 19(b) of the Natural Gas Act and of the jurisdictional averments of said petitions for review are:

(1) By Paragraph 3 of Section 8, Article I, of the United States Constitution, exclusive authority is conferred upon the Congress "to regulate commerce * * * among the several states, * * *."

(2) By the Natural Gas Act, administrative authority is conferred upon the Federal Power Commission for the regulation only of business of natural gas companies that is exclusively in interstate commerce (Sec. 1(a) and (b) of the act (15 U. S. C. 717)); and a "natural gas company" is defined by section 2, Paragraph 6, of said Act as, "A person engaged in the transportation of natural gas in interstate commerce or the sale in interstate commerce of such gas for resale."

(3) The transportation or sale of natural gas in interstate commerce by a natural gas company for resale, is a business exclusively in interstate commerce and consists in the exercise of a franchise right to engage in such business which is the principal thing from which all other rights in furtherance thereof spring; in relation to which they are incidents, and the franchise to engage in which is a grant in gross of an incorporeal hereditament that is not appertinent to any particular land or property, but is itself intangible personal property that follows the law of the person of its owner under the common law maxim *mobilia sequuntur personam*, and which for all purposes of jurisdiction, administration, regulation, and taxation, can have no other business situs than that of the domicile of its owner.

(4) A natural gas company under whose certificate of incorporation a franchise right to engage in such a business has been granted by a sovereign state of the United States, cannot be "located or have its principal place of business" elsewhere than in the state of its creation, wherein, of necessity, it must be located and have its principal place of business in order to have any legal existence for the purpose of suing or defending at all.

(5) The particle *or*, as used in said Section 19(b), legally could not have been made use of by the Congress as a disjunctive in the sense of having been intended to answer to an implied preceding "either," but only as a conjunctive "to express an alternative of terms, definitions, or explanations of the same thing in different words," because a corporation legally cannot be located or have its principle place of business elsewhere than in the state by which it was created, and, as a matter of law, that place is the place in that state wherein its "principal office" is located, under the laws thereof, and the terms of its charter or certificate of incorporation upon which its franchise right to be a corporation and to exercise such franchise rights thereby granted were made to depend.

(6) The major and minor premises and conclusions that are embraced within the foregoing generalized statement are:

(a) "Where Congress has not expressly declared a word to have a particular meaning, it will

be presumed to have used the word in its well understood public and judicial meaning," (Toxaway Hotel Co. v. Smathers and Co., 246 U.S. 439), for the reason that it:

"must be presumed also to have had in mind the law as long and uniformly declared by the courts of this country" (Shaw vs. Quincy Mining Co., 145 U.S. 444, p. 449).

(b) Ever since the decision of Covington Drawbridge Co. vs. Shepard et al., infra, wherein Chief Justice Taney said:

"The Covington Drawbridge Company, being chartered by the State of Indiana, it *necessarily* has *its home and place of business* in that state."

this Court and the courts in general of this country have uniformly held and declared that a domestic corporation cannot have ITS "legal existence, home, residence, habitat, domicile, citizenship, location, 'principal office OR place of business'" for purposes of jurisdiction, for litigation, taxation, regulation and other purposes elsewhere than in the state by which it was created; and that, even for such purposes, it is only because the "members of a local 'corporation' are conclusively presumed to be citizens of the State by whose laws it was created, and in which alone the corporate body has a legal existence" that such a corporation can sue or be sued in a Federal Court at all. (Bank of Augusta vs. Earle, 13 Peters 519; Thomas vs. Board of Trustees, 195 U. S. 207, 210, 211).

(c) Section 19(b) of the Natural Gas Act vests jurisdiction only in "any Circuit Court of Appeals of the United States for the circuit wherein the Natural Gas Company to which the order relates is located or has *its* principal place of business," and it is fundamental that:

"Legislative enactments where the language is unambiguous cannot be changed by construction, nor divested of its plain and obvious meaning (State Tonnage Tax Cases, 12 Wall. 204, 217).

(d) It is as thoroughly established by the decisions of this and other courts of this country that the incidental

"means and instruments" by which a business in interstate commerce is carried on or conducted are a part of that business, that have no legal existence apart from the business itself, which is the principal, intangible thing to which such "means and instruments" are incidents, and that such "means and instruments" do not and cannot have an independent "location or place of business" of their own apart from that of their owner for purposes of litigation, jurisdiction, regulation, taxation and other purposes, as it is self evident that Congress has no authority under the Commerce clause of the Federal Constitution to regulate anything else than "commerce with foreign nations, and among the several States, and with the Indian Tribes"; that such "means and instruments," are, for all such purposes, only

> "means and instruments which are employed by Congress to carry into execution the powers given by the people to the Federal Government, whose laws, made in pursuance of the Constitution are supreme," and that,

for all such purposes, the only place of business that is or can exist is the place of the domicile of the owner of the business which, of necessity, follows the law of his or its person, for the simple reason that, because of its intangibility, such a business can have no legal existence, location or place of business apart from that of its owner.

In view of the conditions under which this brief and argument now has to be presented, the foregoing propositions will be discussed and supported by the authorities upon which we rely as if they were in reply to the theories that heretofore have been advanced in arguments and in statements contained in the opinion of said Circuit Court of Appeals.

ARGUMENT

I.

THE DESIGNATION OF THE CIRCUIT WHEREIN "THE COMPANY IS LOCATED OR HAS ITS PRINCIPAL PLACE OF BUSINESS" MADE BY SECTION 19(b) OF THE NATURAL GAS ACT IS A MATTER OF JURISDICTION AND NOT VENUE.

It has been argued that:

> "The designation of the circuit wherein 'the company is located or has its principal place of business' is a matter of venue and not jurisdiction."

As a matter of course (as this statement impliedly concedes), if the question raised is one respecting the jurisdiction of the subject matter, it is one that cannot be waived, and we respectfully suggest that it is such a matter because of the following reasons:

1. The ordinary jurisdiction of all circuit courts of appeals is purely appellate.

2. Such a review is an original proceeding that calls for the exercise of original jurisdiction which, except for the special statutory provisions of Section 19(b) of the Natural Gas Act, would not and could not exist in any circuit court of appeals.

3. Therefore, the purpose of that section necessarily was, according to the literal meaning of its words, to create a right, provide a remedy, and confer jurisdiction for a direct review of administrative orders of the Federal Power Commission. It particularly conditions and limits such jurisdiction in each particular case to the facts thereof which, in each instance, are made the measure by which the right, the remedy, and the jurisdiction are to be determined (18 C.J.S., Sec. 177).

This proceeding is, therefore, a strictly special statutory proceeding that calls for strict construction by the court and for similar adherence thereto by a petitioner thereunder, who, seeking such a review, "must allege exactly those facts the statute names as the basis for the right conferred" (49 C.J., P. 151, Sec. 167).

> "Such jurisdiction as the court of appeals had to review directly the action of administrative agencies is especially conferred by legislation relating specifically to the determinations of such agencies made subject to review and perscribing the manner and extent of such review." *A. F. of L. v. National Labor Board*, 308 U. S. 401, 402, 60 S. Ct. 300, 84 L. Ed. 347; *Federal Trade Commission v. Balme*, 23 Fed. (2d) 615, cert. den., 277 U. S. 598; *Chamber of Commerce v. Federal Trade Commission*, 280 Fed. 45.

By the Natural Gas Act the existence of jurisdiction is conditioned upon the existence of the jurisdictional fact that the natural gas company to which the order relates "is located or has *its* principal place of business" within the circuit wherein the proceeding is instituted. Therefore, that fact is a jurisdictional fact without the existence of which there can be no jurisdiction over the subject matter for such a review, and any attempted review by the court would be a nullity. *Noble v. Union River Logging Company*, 147 U. S. 167; *In re First National Bank of Belle Fourche*, 152 Fed. 64; *McClain v. Kansas City Bridge Co.*, (Missouri) 88 S.W. (2d) 1019.

For these reasons we respectfully suggest:

> "Jurisdiction as the term is to be applied in this instance is the power to hear and determine the controversy persented, in a given set of circumstances. If the court finds the power is not granted, it lacks jurisdiction of the subject matter and must refrain from any adjudication of rights in connection therewith." *In the Matter of the Petition of National Labor Board*, 304 U.S. 486, 58 S. Ct. 1001, 83 L. Ed. 1482; *Spring Coal Co. v. Commissioner of Internal Revenue*, 38 F. (2d) 764; *State ex rel. v. Nixon*, 232 Mo. 496, 134 S. W. 538.

Because the statute does not purport to confer general jurisdiction upon all circuit courts of appeals as a class to hear and determine every such review of the class of reviews for which it confers such a conditioned right and remedy; but fixes the condition under which the jurisdiction may be exercised in each particular instance, both the jurisdiction and the remedy are exclusive (1 C. J. 989, 990), and, if this be a correct statement, we respectfully suggest that in this pro-

ceeding the Tenth Circuit Court of Appeals was without jurisdiction over the subject matter under the rules as stated above and in *Galpin v. Page*, 18 Wall. 350, 31 L. Ed. 959, P. 964, wherein it is said that,

> "Where the general powers of the court are exercised over a class not within its ordinary jurisdiction upon the performance of prescribed conditions, no such presumption (of jurisdiction) will attend the judgment of the court. The facts essential to the exercise of the special jurisdiction must appear in such cases upon the record. The extent of the special jurisdiction and the condition of its exercise over subjects or persons necessarily depend upon the terms upon which the jurisdiction is granted and not upon the rank of the court upon which it is conferred. Such jurisdiction is not therefore the less to be strictly pursued because the same court may posses over other subjects or persons a more extended and general jurisdiction."

For these reasons we respectfully suggest that the question here involved is peculiarly one respecting jurisdiction of the subject matter, and that it is, therefore, one over which the parties to the proceeding can neither by consent confer jurisdiction nor by agreement or conduct waive or estop themselves from questioning. 15 C. J. 802, 806, 844: *Utah-Nevada Co. v. LeLamar*, 113 Fed. 112.

Even if the matter were one of *venue* that might be a subject of waiver, no such waiver can be attributed to this respondent, because it appeared specially for the purpose and moved the lower court to dismiss the petitions on the ground of its lack of jurisdiction (*Leonardi v. Chase National Bank*, 81 Fed. (2d) 19-22).

II.

SECTION 19(b) OF THE NATURAL GAS ACT DOES NOT CONFER GENERAL JURISDICTION FOR SUCH REVIEWS UPON "ANY" CIRCUIT COURT OF APPEALS OF THE UNITED STATES.

Heretofore the argument has been made to the effect that:

> "The use of the comprehensive term 'any circuit' plus the unqualified availability of the Court of Appeals for the District of Columbia, show a congressional intention to vest all intermediate federal appelate courts with the power to review orders of the Commission, leaving the selection of the particular tribunal to the petitioner for review, subject only to objection by the respondent if the circuit selected possesses none of the qualifications specified in Section 19(b), since there is thus a general grant of power to all the Courts of Appeals. The question of which one should exercise that power in a particular case is a question of venue."

If this construction of said section were correct, it would confer jurisdiction upon any Circuit Court of Appeals of the United States, regardless of the circuit for which any such court might have general appelate jurisdiction. But according to its plain words the jurisdiction conferred thereby is a territorial jurisdiction limited to "any Circuit Court of Appeals for the circuit wherein the natural gas company to which the order relates is located or has its principal place of business"; consequently, any other Circuit Court of Appeals than the Circuit Court of Appeals for that particular circuit would not, according to the unambiguous words of the statute, be a court of competent jurisdiction. In Robertson v. Railroad Labor Board, 268 U. S. 619, 45 S. Ct. 621 it is said that: "We are of opinion that by the phrase 'any District Court of the United States' Congress meant any such court 'of competent jurisdiction.' The phrase 'any court' is frequently used in the federal statutes and has been interpreted under similar circumstances as meaning 'any court of competent jurisdiction.'"

III.

WHEN THE PETITIONS FOR REVIEW WERE FILED WITH THE TENTH CIRCUIT COURT OF APPEALS, PETITIONERS WERE LOCATED AND HAD THEIR PRINCIPAL PLACES OF BUSINESS WITHIN THE THIRD CIRCUIT OF THE UNITED STATES.

Heretofore an argument has been made to the effect that:

> "At the time the petition for review was filed • • • the integrated system was *conducted* in all its business and operating phases from the offices maintained by petitioners" that were purely administrative offices in charge of subordinate agents. (142 Fed. (2d) Page 951 par. [4]).

This theory is based upon the false assumptions that offices, agents, agencies, and properties that are mere incidental "means and instruments" that are devoted by the owner thereof to, and constitute a part of, a public utility business that is exclusively in interstate commerce, and that are "managed, supervised, and directed" by its subordinate agents from a central office in a state of its own selection other than the state wherein such owner itself is "located or has its principal office," constitute the place where its business in interstate commerce is conducted, and that the place where such offices, agents, agencies, "means, and instruments" happen to be so located by such owner for the more convenient operation of such incidental "means and instrumentalities," is the place where such public utility company itself is located and has its principal place of business.

But this theory substitutes the location of mere incidental "means and instrumentalities" that are in charge of subordinate agents and are themselves a part of a business that is exclusively in interstate commerce and in no proper sense constitute or contribute to the doing of a local business of any kind, for the location of the owner of the national business of which such "means and instrumentalities" are but incidents, and asserts that the states wherein such "means and instrumentalities" are managed, supervised, and directed by such subordinate agents is the "principal place of business" of the owner of the business which is national in character and extent, both within and without the states wherein such "means and instrumentalities" are located, managed, supervised, and directed, all in disregard of the fact that the "operation" of such incidental "means and instrumentalities" does not constitute or contribute to the "doing" of a local business within those states, and, for that reason, their location does not constitute a place of business of the owner of the national business of which such "means and instrumentalities" are mere incidents; and the further fact that such a corporate entity cannot, for such purposes,

legally be "located or have its principal place of business" or legal existence elsewhere than in the state by which it was created.

Furthermore, said theory ignores the fact that said agents, agencies, "means and instrumentalities" are subordinates of, and are subject to the superior control and direction of, the stockholders and directors who are the governing powers who control the corporate affairs and prescribe the policies of such corporate entities in their exercise of such franchise rights from which such businesses in interstate commerce spring and of which they are themselves but incidents.

Said petitions for review show on their faces that said petitioners are Delaware corporations whose "principal offices" are located in the City of Wilmington, County of Newcastle, in that state (R. V. 2, P. 633, 647); therefore, instead of the offices that are located at Colorado Springs for the more convenient "management, supervision, and direction" of the "operation" of such "means and instrumentalities" that constitute a part of said national business, being the "principal offices" or places where said natural gas companies are "located or have their principal places of business," they are but subordinate administrative offices, agencies, "means and instrumentalities" that are entirely devoted to and a part of said business in interstate commerce, that is itself an incident of the franchise right to engage in it and that is national in its character and extent both within and without the states wherein such offices, agents, agencies, "means and instrumentalities" are located.

For these reasons, we respectfully submit that it affirmatively apears on the faces of said petitions for review that said natural gas companies are not "located" and that they do not "have their principal places of business," within the Tenth Circuit; and that said petitions fail to even mention any place where the stockholders and directors of said companies actually meet to determine their policies and transact their corporate affairs; and that for such reasons the Tenth Circuit Court of Appeals was without jurisdiction over the subject matter of said controversies, because:

> "The business actually engaged in by the appellant (petitioners) was exclusively in interstate

commerce. The maintenance of an office, the purchase of supplies, employment of labor, maintenance and operation of telephone and telegraph lines and automobiles, and appellant's other acts within the Sate, were all exclusively in furtherance of its interstate business; and the property itself, however extensive or of whatever character, was likewise devoted only to that end. They were means and instrumentalities by which that business was done and in no proper sense constituted, or contributed to, the doing of a local business." Ozark Pipe Line Corporation v. Monier, 266 U. S. 555, 45 S. Ct. 184, 186.

"The transportation from wells outside of Ohio by the lines of the producing companies to the state lines and thence by means of appellant's high pressure transmission lines to their connection with its local systems is essentially national—not local—in character and in interstate commerce within as well as without that state."

"It is elementary that a state can neither impose a tax on the act of engaging in interstate commerce nor on gross receipts therefrom." East Ohio Gas Company v. Tax Commission, 283 U. S. 465, 51 S. Ct. 499, p. 500; Norfolk, etc., R. Co. v. Pennsylvania, 136 U. S. 114, 10 S. Ct. 958, 34 L. Ed. 394; Missouri v. Kansas Gas Co., 265 U. S. 298, 44 S. Ct. 544; United Fuel Co. v. Hallanan, 42 S. Ct. 105, 66 L. Ed. 234, 257 U. S. 277; Eureka Pipe Line Co. v. Hallanan, 257 U. S. 265, 42 S. Ct. 101, 105; State Tax Commission v. Interstate Gas Co. 284 U. S. 41, 52 S. Ct. 62, 76 L. Ed. 156; Heyman v. Hays, 236 U. S. 178, 35 S. Ct. 403, 59 L. Ed. 527; Illinois Gas Co. v. Central Illinois P. S. Co., 314 U. S. 498, 62 S. Ct. 384; Pennsylvania Gas Co. v. Public Service Commission, 252 U. S. 23; Haskell v. Kansas Natural Gas Co., 224, U. S. 217; Public Util. Commission v. Attleboro, 273 U. S. 83, 47 S. Ct. 294; Peoples Natural Gas Co. v. Public Util. Commission, 270 U. S. 550, 46 S. Ct. 371; Public Utilities Commission v. United Fuel Gas Co., 317 U. S. 456, 63 S. Ct. 369, 375; Smith v. United Fuel Gas Co. (West Virginia); 112 S. E.

205; Miller v. United Fuel Gas Co. (West Virginia), 106 S. E. 419; Minnesota Rate Cases, 230 U. S. 352; Southern Pacific Co. v. Kentucky, 222 U. S. 63; Gloucester Ferry Co. v. Pennsylvania, 114 U. S. 196; West v. Kansas Natural Gas Co., 221 U. S. 229.

While it is, as a matter of course, conceded that the power to tax as property, and the power to regulate, as a public utility, the business of a natural gas company that is engaged in public service, are distinct powers, the exercise of the former being done under the taxing power, and of the latter, under the police power, of government, it would seem to be certain that the question whether, in a given instance, power exists in a particular government for the exercise of either or both of such powers, is purely a question of authority or jurisdiction. In truth, by its taxation, such a business would be indirectly regulated, and, in that sense the power to tax may be said to be a power to regulate. Consequently, whether the jurisdiction sought to be sustained in any given case be for the regulation of such a business in interstate commerce or the franchise right to engage in it by the taxation thereof under the power to tax or by the regulation thereof under the power to regulate, the question is purely one of jurisdiction over the subject matter, because:

> "The exclusive power is, by the Constitution of the United States, delegated to Congress to regulate interstate commerce, and the power to tax is a power to interfere with, or *regulate* * * * "; and
>
> "Commerce is business * * *. It relates to the commercial transaction more than to the calling or occupation; and *any* burden placed upon the income of *commerce* between the states by local authority or *any* impediment to its freedom is an entrenchment upon the power of Congress." City of Topeka v. Jones, 86 P. 162; McCall v. California, 136 U. S. 108; Lyng v. State, 135 U. S. 161, 166.

Our contentions are that the principles set forth in the foregoing cases apply with equal force to both the taxation and the regulation of such business; that states have no more authority to impose burdens upon such a business in interstate commerce by the exercise of one of said powers than by the

exercise of the other; that a business exclusively in interstate commerce is not within the jurisdiction of a state for the exercise of one of said powers any more than for the exercise of the other, for the reason that such business is not local in character or extent; and that, *because* all "means and instrumentalities" that are exclusively in furtherance of, and devoted to, and by which such a business is "*done*," are parts thereof and "in no proper sense constitute or contribute to, the *doing* of a *local* business," for all purposes of jurisdiction for the regulation and/or taxation of such *business*, "such means and instrumentalities" are exactly as foreign to states other than the state of the business domicile of the owner of the business, as is the business exclusively in interstate commerce itself. Consequently, our contention is that, for such purposes, the fact that such "means and instrumentalities" might be located within states other than the state of the business domicile of the owner of such a business (notwithstanding the fact that they might, to the extent that they might consist of *tangible* personal or real property, acquire an actual situs for the purpose of local taxation and sanitary regulation) cannot make of the location of such "means and instrumentalities" in such other states, the place where, or "circuit within which the natural gas company to which the order relates is located or has its principal place of business."

From this viewpoint, we respectfully suggest that the decisions of this court hereinbefore cited, bring the theory that "the integrated system was conducted in all its business and operating phases from the offices maintained by the petitioners," into direct conflict with every authority upon the issue here presented, not only because the maintenance of such offices by the petitioners at the places of their own selection constitutes nothing more or less than the maintenance of agencies or means or instruments for the conduct of "integrated systems" that are in themselves nothing more or less than "means or instrumentalities" designed by petitioners for their own convenience in the conduct of public utility businesses exclusively in interstate commerce, to which both said offices and systems are devoted and of which they constitute a part, but because of the following further reasons:

The franchise right to engage in such an interstate business is the principal thing from which all other rights, prop-

erty, means, and instruments, that are used in connection therewith, spring, and of which they are all but incidents. Such a franchise is a grant in gross of an incorporeal hereditament, that is not appertinent to any specific land or property, and together with the business in which it is engaged and that is incident to its use by its owner, is intangible personal property (Chapman Valve, etc., Co. v. Oconto Water Co., 89 Wisconsin 264; Consolidated Gas Co. v. Baltimore, 101 Maryland 532, 109 A. S. R. 584, 586; Trust Co. of America v. City, 182 Fed. 64, 68).

Such a franchise is a part of the capital of the company that owns it and such capital is intangible property (C. M. & St. Paul R. Co. v. Harmon, 89 Mont. 1, 295 P. 762-769; State Tonnage Tax Case, 12 Wallace 220; National Paper Co. v. Mass., 246 U. S., 135, 142).

Such personal property, by reason of its intangibility, not only consists in its ownership and use, (Dawson v. Ky. Dis. & Warehouse Co., 255 U. S. 288), but it follows the law of the person of such owner under the common law doctrine *mobilia sequuntur personam* (Blodgett v. Silberman, 277 U. S. 1, 48 S. Ct. 410). Therefore, for all jurisdictional purposes for the regulation of the exercise of such franchise rights, all "means and instruments" that are devoted thereto, are but "means which are employed by Congress to carry into execution the powers given by the people to the Federal Government, whose laws, made in pursuance of the Constitution, are supreme." (Transportation Co. v. Wheeling (99 U.S. 273, 277; State Tonnage Tax Cases, 12 Wall. 204).

As shown hereinbefore, said petitioners are citizens of, that are domiciled in, the State of Delaware, wherein their principal offices are located. They are, therefore, "located and have their principal places of business" in that state wherein alone they have or can have any legal existence, be located or have their principal offices or places of business for the exercise of such primary franchise rights or the conduct of their corporate affairs. While ordinary private corporations may conduct or transact ordinary, private industrial business, when so authorized by their charters, elsewhere than in the states by which they are created, a public utility corporation whose business consists only in its exercise of

such a right to engage exclusively in interstate commerce cannot, for such a purpose, be located or have its principal place of business other than in the state of its creation, because, in its exercise of such a primary corporate right in the conduct of such a national business, it does not "do business" within any other state than that of it own creation, however numerous or extensive may be the "means and instrumentalities" that it may own or employ in the furtherance of such business elsewhere than within the state by which it was created (West v. Kansas Natural Gas Co., 221 U. S. 229; Sioux Remedy Co. v. Cope, 235 U. S. 197, 203; Western Union Telegraph Co. v. Kansas, 216 U. S. 1, 27; Davis v. Cooper, 262 U. S. 318; International Textile Co. v. Pigg, 217 U. S. 91).

> "The fact that certain acts or transactions require an office and employees to perform and transact them, is not important in determining whether they constitute interstate commerce, and it is not essential to interstate commerce that persons engaged in it have established places of business in the several states or in more than a single state" (15 C. J. S. 281).

The petitions for review herein and the certificates of incorporation of the petitioners show that they were incorporated and have their "principal offices" in the State of Delaware, with authority from that state to conduct such a business in interstate commerce, but they make no pretense of showing any authority from any other state for the conduct of that or any other kind of business. Said petitioners, therefore, have the absolute right to own, occupy, maintain, and operate whatever property, offices, facilities, "means, or instrumentalities" that may be necessary or incidental to the conduct of that business anywhere within the United States; and that business, being national in character and local in its territorial limits to no state or judicial circuit of the United States, petitioner cannot be located or have its principal place of business elsewhere than in the State of Delaware, to which such business in intertate commerce can be referred, because such principal places of business can only be:

> "Where the governing power of the corporation is exercised, where those who meet in counsel have

a right to control its affairs * * *, and not where the labor is performed in executing the requirements of a corporation in transacting *its* business." (Carter v. Spring Branch, 113 Connecticut 636.)

Chapter 65 of the Revised Code of Delaware, under which petitioners were incorporated and by which they are bound (R. V. 2, P. 640) expressly provides that:

(Sec. 5) "The certificate of incorporation shall set forth * * * (2) the name of the county and the city, town or place within the county in which its principal office or place of business is located in this state."

(Sec. 29) "The original or duplicate stock ledger * * * shall, at all times during usual hours of business be open to the examination of every stockholder at its principal office or place of business in this state."

(Sec. 32) "Every corporation shall maintain a principal office or place of business in this state."

The certificates of incorporation of each of the said petitioners, as shown hereinbefore, say:

"Its principal office in the State of Delaware is located at 7 West 10th Street in the City of Wilmington, County of New Castle" (R. V. P. 633, 647).

And Section 19(b) of the Natural Gas Act says as plainly as words can say that jurisdiction for such a review can be obtained only:

"In the Circuit Court of Appeals of the United States for any circuit wherein the natural gas company to which the order relates is located or has its principal place of business."

Consequently, petitioners are domestic corporations of the State of Delaware, wherein they do some business that is not exclusively in interstate commerce; and because the only business they do elsewhere in the United States is, as shown on the face of said petitions, exclusively in interstate commerce, and what they do through their subordinate agencies, and instrumentalities that are devoted to said interstate business within the Tenth Circuit thereof, does not "constitute or contribute to the doing of a local business" of any

kind, as hereinbefore shown, it follows as a necessary consequence that, as natural gas companies to which said order of the Federal Power Commission relates, they have no place of business of any kind within any other than the Third Circuit of the United States, wherein the State of Delaware is comprised, to which the plain words of said Section 19(b) could possibly refer, for the simple reason that:

Carlos Ruggles Lumber Co. v. Commonwealth, 261 Massachusetts 450; 158 Northeastern 899, 900:

> "It is manifest that the petitioner during the year in question was 'carrying on' and 'doing business' in this commonwealth which was *not interstate* in its nature. Its main office and principal place of business were here. Its 'corporate functions' were carried on here. This descriptive phrase must include as matter of fair interpretation the holding of meetings of directors and of stockholders, the declaration of dividends, the maintenance of essential corporate offices such as those of the president, treasurer and secretary, the making of corporate records, the keeping of the books of the treasurer and whatever else may be necessary for the continuance of corporate existence."

Mullen v. Northwestern Accident Insurance Co., 26 S. D. 402; 128 N. W. 483:

> "By its 'principal place of business' is meant the place where its president, secretary, and board of directors meet to transact the governing business of the corporation proper, where the books of the corporation are kept; that is, where the governing power of the corporation is exercised and controlled by the board of directors and officers of such corporation, and does *not* mean every place where such corporation may happen to transact business. 6 Words & Phrases, Sec. 5559; Standard Oil Co. v. Commonwealth, 110 Kentucky 821, 62 S. W. 897; Middletown Ferry Co. v. City of Middletown, 40 Connecticutt 65; Milwaukee Steamship Co. v. City of Milwaukee, 83 Wis. 590, 53 N. W. 839, 18 L. R. A. 353."

Galveston, etc., Railway Co. v. Gonzales, 151 U. S. 496, P. 504:

"In the case of a corporation, the question of inhabitancy must be determined not by the residence of any particular officer but by the principal offices of the corporation where its books are kept and its *corporate* business is transacted, even though it may transact its most important business in another place."

State ex rel. v. Ditrict Court, 191 Iowa 244, 182 Northwestern 211:

"The presumption exists that the officers and offices of a corporation are to be found at its principal place of business as defined in its recorded articles. At common law, corporations were created to exist in some particular place. They were not permitted to have two domiciles * * *.

"The residence of a corporation, so far as it has a residence, may be considered as the place where its business is done or its franchises are exercised."

"A corporation cannot acquire a *de facto* residence for the purpose of venue, as in the instant case. It cannot confer jurisdiction or create venue. This is a legislative power."

"A corporation, unlike a natural person, has a stationary legal domicile in the state and county of its creation, which may not be changed at will, but only as authorized by statute. It is not migratory. It is a legal entity, and, as such, its existence, its name, and its residence are born of the law. It can act only through its officers and agents, and through them alone may any business be done by or with the corporation; but its officers, agents, directors, and stockholders, viewed collectively or otherwise, are not the corporation."

"Domestic corporations, being entities created by the law, can only be sued and jurisdiction obtained over them in the manner provided by statute.

"If our statute was silent in the matter, it would not be essential for a corporation upon its organization to designate its principal place of business, or that it should have an office or place of business. Such provisions are written into the statute in order to secure service of process, determine venue, and for the purpose of general jurisdiction and taxation."

IV.

THE PARTICLE "OR" WITH WHICH CONGRESS CONNECTED THE TERMS "LOCATED" AND "PRINCIPAL PLACE OF BUSINESS" IN SAID SECTION 19(b) WAS USED AS A CONJUNCTIVE "TO EXPRESS AN ALTERNATIVE OF TERMS, DEFINITIONS, or EXPLANATIONS OF THE SAME THING IN DIFFERENT WORDS."

We respectfully submit that the uniform decisions of this court and of the courts in general in this country support the proposition that said terms, wherever and whenever they have been so associated, are the equivalents of, or synonymous with, each other and refer to one and the same place. Heretofore, we have challenged the petitioners, and now repeat the challenge, to submit a single decided case or text that has construed a statute in which said terms have been used without modification, for the purposes of jurisdiction, venue of action, taxation, or other purposes, as in said statute, that has not held them to be equivalents that give expression to the same idea. To support this challenge we submit the following from among the many cases and texts upon the subject:

Galveston, etc., Railway v. Gonzales, 151 U. S. 496.
Southern Pacific Co. v. Denton, 146 U. S. 202.
Shaw v. Quincy Mining Co., 145 U. S. 444.
B. & O. Railroad Co. v. Koontz, 104 U. S. 5, Pp. 11-12.
Ex parte Schollenberger, 96 U. S. 369, Pp. 377, 378.
Pennsylvania v. Quicksilver Mining Co., 10 Wall 553.
Insurance Co. v. Frances, 11 Wall. 210-216.
Fairbanks Steam Shovel Co. v. Wills, 240 U. S. 642.
In re: Federal Contracting Co., 212 Fed. 688.
Gorman v. Leach, 11 Fed. (2d) 454, 456.

National City Bank v. Domenech, 71 Fed. (2d) 13.
Leonardi v. Chase Nat'l Bank, 81 Fed. (2d) 19-22.
Firestone & Co. v. Vehicle, etc., Co., 155 Fed. 676.
Manufacturers' National Bank v. Baack, 16 Fed. Co. No. 9052, p. 67.
American Sugar Refining Co. v. Johnson, 60 Fed. 503
A. B. Oil Co., 95 Fed. (2d) 946.
Land Grant R. & T. Co. v. Coffey County, 6 Kan. 149, pp. 154, 155.
Sangamon, etc., R. v. County of Morgan, 14 Ill. 163; 56 A. D. 497.
Aspinwall v. O. & M. R. Co., 20 Ind. 492; 93 A. D. 329.
Jenkins v. Stage Co., 22 Cal. 538.
Union Steamboat v. City of Buffalo, 82 N. Y. 351.
Western Trans. Co. v. Schey, 19 N. Y. 408.
People ex rel. v. Barker, 34 N. Y. S. 269, 270.
Hurley v. Tucker, 112 N. Y. S. 980, 985.
Foreman & Clark v. Bartle, 211 N. Y. S. 602, 604.
Raiola v. Los Angeles First National Bank, 233 N. Y. S. 301.
Southern Express Co. v. Patterson, 122 Tenn. 279; 123 S. W. 353.
State v. Mobile & G. R. Co., 108 Ala. 9; 18 So. 801.
Roberson v. Greenleaf Lum. Co., 153 N. C. 120; 68 S. E. 1064.
Pelton v. Transfer Co., 37 Ohio St. 450.
First National Bank of Everett v. Wilcox, 72 Wash. 473; 130 Pac. 756.
Gallup v. Sacramento Dist., 171 Cal. 71; 151 Pac. 1142.
Bernstein v. Kaplan, 150 Ala. 222; 43 So. 581.
Plummer-Lewis v. Francher, (Miss.) 71 So. 907.
United States v. S. P. Shotter Co., 110 Fed 1.
State ex rel. Harrington v. Vincent, 144 Wash. 246; 257 Pac. 849.
Central Bank of Ga. v. Gibson, 11 Ga. 543.
A. L. Wolff & Co. v. Choctaw, etc., R. Co., 133 Fed. 601.
Frick v. Norfolk & O. V. R. Co., 86 Fed. 725.
West Travel Acc. Assn. v. Taylor, (Neb.) 87 N. W. 950.
Holgate v. Ore. Pac. R. R. Co., 16 Ore. 123;

Crookston v. Centennial Co., 133 Utah 117; 44 Pac. 714,

Mullen v. Northwestern Acc. Co., 128 N. W. 483, 484; 25 S. D. 402.

Nevertheless, in arriving at its conclusion that it had jurisdiction of the subject matter of said petitions for review, and notwithstanding the fact that the foregoing authorities were accessible to it, the Tenth Circuit Court of Appeals held, in substance, that, while said petitioners were not located within said circuit, their "principal places of business" are within it. In so doing, said court said:

> "Congress in the exercise of its discretion authorized a review in the circuit wherein the *principal business* of the corporation is *conducted* (Colorado Interstate Gas Co. v. Federal Power Commission, et al., 142 Fed. (2d) 943, 950-951)."

Plainly, said Section 19(b) of the Natural Gas Act uses no such language, and said court could have done so only upon the theory that such business in interstate commerce is actually "conducted or transacted" by subordinate agents of the company who "manage, supervise, and direct" the maintenance of an office, the purchase of supplies, the employment of labor, maintenance and operation of telephone and telegraph lines and automobiles, and other acts" within and from an administrative office at Colorado Springs, Colorado—all of which were exclusively in furtherance of said company's interstate business and devoted entirely thereto, and none of which "in any proper sense constitute or contribute to the doing of a local busines."

Not only does such a theory substitute subordinate administrative agencies for the stockholders and directors of said companies, and the place where such "means and instrumentalities" that are exclusively in interstate commerce are managed, supervised, and directed by such subordinate agents for the place "where the governing power of a corporation is exercised," but said opinion actually classified the place "where the labor is performed in executing the requirements of the corporation in transacting *its* business" as the "situs of *its* operations," and, with that statement for its premise, reached the conclusion that, "we think it clear that

the principal place of business of each company is in this circuit within the purview of the statute." (142 Fed. (2d) at page 951.)

Thereupon, said court cited, in support of said conclusion, three cases that construed the *National Bankruptcy Act*, the language of which bears no analogy to said Section 19(b) of the Natural Gas Act and the issues in which, we respectfully submit, were as foreign to the issue here involved as the East is to the West. In this manner, said Circuit Court of Appeals has reduced the issue herein to the question, "Where does each of these natural gas companies to which the order relates" have *its* principal place of business."

We respectfully submit that neither of said petitioners has its principal place of business in said circuit, and that the conclusion stated in said opinion is manifestly erroneous for the further reasons:

It is especially to be noted, and particular attention is called to the facts that (1) the theory so advanced makes no distinction whatever between the business of a public utility company that is engaged exclusively in an interstate business of such general public concern and the business of a private corporation that consists only of ordinary industrial business; and (2) it makes no distinction between the principal place of business of a corporation for the conduct of its corporate affairs in the exercise of its primary franchise rights, and the principal place or places of business or businesses for the conduct or transaction of ordinary private industrial business, the conduct of which might constitute some of the objects or purposes for which a private corporation might be created, as stated in its articles of incorporation, pursuant to the statutes of the state by which it is created, and which legally might be conducted in any state or county where permitted.

Said opinion fails to give consideration to the principles that the place where a corporation "is located or has its principal place of business" is one of contractual relationship with the state of its creation, upon which its legal existence depends, and that is determined and governed by the law of that state, while the place or places where it might conduct or carry on its ordinary private industrial business is purely a matter of fact that is determined and governed by, and di-

pendent only upon its own selection, and the comity of any states or countries wherein it might desire to conduct or transact such business. It fails to give consideration to the facts that, in relation to the public from which it derives its corporate being and business domicile for the conduct of its corporate affairs, it is bound by the law of its creation to have and maintain its principal office and place of business within the state of its creation, especially when so required, as by the statute of Delaware and its contract so to do; and because as a matter of common law, it cannot be located or even have a legal existence elsewhere for the conduct of its corporate affairs. (State ex rel. District Court, 191 Iowa 244, 182 Northwestern 211, P. 212; Gorman v. Leach, 11 Fed. (2d) 454, P. 456; Ex Parte Shaw, 145 U. S. 444).

On the other hand, said opinion fails to give consideration to the fact that, in its relations with private individuals in conducting or transacting ordinary industrial business, the conduct or transaction of which might have constituted some of the objects or purposes it proposed in its certificate or articles of incorporation, such a private corporation may have and maintain as many principal places of business as it may from time to time see fit to establish anywhere in any state or country that does not refuse it permission so to do (Standard Oil Co. v. Commonwealth, 110 Kentucky 821, 822; 62 Southwestern 897; Frick v. Norfolk & Co., 86 Fed. 725, 729, 730; Jossey v. Railway Co., (Georgia) 28 Southeastern 273, Georgia 95 Fed. (2d) 946; U. S. v. Shotter, 110 Fed. 867; Stanton v. State Tax Commission, 117 Ohio 436, 159 Northeastern 823).

The Natural Gas Act says nothing whatever concerning any place or places of business or businesses for the conduct, transaction, or carrying on of any private industrial business which might have been stated in the petitioners certificate or articles of incorporation as the purposes of such incorporation. And the business here involved, being of a public nature and, exclusively in interstate commerce, ordinary private industrial business, is beside the question at issue herein and wholly immaterial because even Congress has no jurisdiction for the regulation of such business.

The consequence is that the Tenth Circuit Court of Appeals illegally assumed jurisdiction over the subject matter of these controversies by substituting the place where "means

and instruments" of interstate commerce are physically located for the place where the natural gas companies that own them have their principal places of business, and thereby endowed such companies with "the faculty of arbitrarily selecting" a place for the review of the orders of the Federal Power Commission "in defiance of the law of domicile" (So. Pac. Co. v. Ky., 222 U. S. 63, P. 68).

This was simply a ratification of the theory advanced by the petitioners herein, to the effect that the integrated system was conducted in all its business and operating phases from the offices maintained by petitioners at Colorado Springs. But, we respectfully submit, this does violence to the unambiguous words of said Section 19(b), which has relation solely to the "location or principal place of business of the natural gas company," and, according to the uniform decisions of this court and courts of the country in general, that language refers and can refer only to one and the same place, because the particle "or" that connects said terms is a conjunctive, and said terms are but alternative expressions for the same thing.

We furthermore respectfully submit that this construction of such language is so interrelated with other fundamental principles of corporation law that, of necessity, from the time the first statute that required certificates of incorporation to state the location of the "principal office or place of business" in the state of its creation, was first construed, it became an elementary principle of corporation law in this country, because:

At common law the legal existence, the home, the domicile, the habitat, the residence, the citizenship of a domestic corporation can only be in the state by which it was created (Ex parte Shaw, 145 U. S. 444, P. 449).

A corporation at common law cannot be established or located elsewhere than in the state of its creation by or under the authority of its charter; it must dwell in the place of its creation and cannot migrate to another sovereignty. It cannot change its residence or citizenship and must live and have its being in the state by which it is created. (Bank of Augusta v. Earle, 13 Peters 519 Ex Parte Schollenberger, 96 U. S. 369, 377, 378).

In the case of a corporation the question of habitation must be determined not by the residence of any particular officer but by the principal offices of the corporation where its books are kept and its *corporate* business is transacted, even though it may transact its most important business in another place (Galveston, etc., Railway v. Gonzales, 151 U.S. 496, P. 504).

At common law the place of location of its principal office must be the point at which the corporation as a corporate entity, resides; and, although it may establish subordinate offices of a purely administrative character elsewhere, a distinction must be taken between the principal office of a corporation and such administrative offices as may from time to time be created by it for the more convenient transaction of the business for the conduct of which it was created. It must have a place at which its corporate functions may be performed (Frick v. Norfolk & Ovr. Co., 86 Fed. 725, 729, 730).

For all purposes of suing and being sued within or without the state of its creation, that state is the only place where a corporation can be located, domiciled, reside, inhabit, have a legal existence, home, citizenship, principal office or place of business, because a corporation that is chartered by a state,

> "Necessarily has its home and place of business in that state" (Covington v. Drawbridge Co., 20 How. 227, P. 233).
>
> "It must have a home, a legal existence, a domicile, a principal place of business within the boundaries of the state which creates it. It may send agents into other states to do business, but it cannot migrate in a body to go beyond the jurisdiction of the laws which bind and hold it together. It dissolves into its original elements, and the persons who compose it become only individuals." (State ex rel. v. Milwaukee, etc., Co., 45 Wisc. 579; Land Grant R. & T. Co. v. Commissioner of Coffey County, 6 Kan. 243; Illinois v. Beach, 1 Beas. 31).

Even the ability of a domestic corporation to sue or defend in a Federa lcourt at all has its foundation established in the soil of a "conclusive presumption that the members

thereof are citizens of the state by whose laws it was created and in which alone the corporate body has a legal existence" (Thomas v. Board of Trustees, 195 U. S. 207, 210, 211; Bank of Augusta v. Earle, 13 Peters 519).

On the other hand, it would seem to be equally elementary and academic that at common law the particular place or point within the state of its creation at which its principal office and place of business was to be located was not required to be set forth in the certificate or articles of incorporation of such corporations, and it was the serious difficulties and embarrassments that were caused to litigants in instituting suits, sheriffs and other officers in executing process, and revenue officials in assessing taxes that necessitated resort to oral proof for the establishment of that place, and that were the impelling causes for the enactment in almost all the states of the Union of statutes for the purpose of definitely locating every corporation incorporated thereunder, and its principal place of business, in the state of its creation; and that such statements in certificates or articles of incorporation, in conformity with such statutes, are conclusive (Lloyd's Executorial Trustees v. City of Lynchburg, 112 Va. 627; 75 S. E. 233; 1 Clark & Marsh, Private Corporations, Sec. 122).

1 Machen, Modern Law Corporations, Section 114, says that: "General corporation laws usually require that the incorporation papers shall contain certain particulars regarding the company's office or place of business."

After stating that the original on which such statutes were modeled is the English law, Mr. Machen says, in the same section, "The statutes of almost all states of the Union require that the location of the chief office or place of business in the state shall be specified in the incorporation papers (14 C. J. 338-340; 9 Fletcher Cyc. Corp., P. 661, Sec. 4373).

For the support of the proposition that the particle "or" as used in said Section 19(b) has the established judicial meaning that we suggest, we respectfully call attention to the following:

Said terms as used in such statutes have been construed by the courts as follows:

The place where the principal office is to be located is to be regarded as the residence of the corporation. Fairbanks

Shovel Co. v. Wills, 240 U. S. 648; Pelton v. Transportation Co., 37 O. S. 450; Harrison Bristol v. C. & A. R. R. Co., 15 Ill. 463; First National Bank of Everett v. Wilcox, 72 Wash. 473, 130 Pac. 756; Creditors v. Consumers Lumber Co., 98 Cal. 318; 319, 33 Pac. 196, 197; Gallup v. Drainage District, 107 Cal. 171, 74; 151 Pac. 1142; Sangamon etc., R. R. Co. v. County of Morgan, 14 Ill. 163; Jenkins v. Stage Co., 22 Cal. 538; In re A. B. Oil Co., 95 F. (2d) 946.

"The term 'principal office' was intended to include principal place of business." Bernstein v. Kaplin, 150 Ala. 22, 48 So. 581; Trans. Co. v. Wheeling, 99 U. S. 273.

For the purpose of jurisdiction the phrase "principal place of business" is synonymous with "domicile." Plummer and Lewis Co. v. Francher; (Ala.) 71 So. 907.

The terms "principal office" and "principal place of business" are synonymous. In re Federal Contracting Co., 212 Fed. 688, 692; State v. Mobile, etc., R. Co., 108 Ala. 29, 18 So. 801; Roberson v. Greenleaf Lumber Co., 153 N. Car. 120, 68 S. E. 1064; Hurley v. Tucker, 142 N. Y. S. 980, 985; Foreman Clark Mfg. Co. v. Bartler, 211 N. Y. S. 602, 604; People, ex rel. Barker, 34 N. Y. S. 269, 270.

The "principal office or place of business" means the domicile of the corporation. Southern Express Co. v. Patterson, 122 Tenn. 279, 123 S. W. 353, 359.

The terms "the principal office or principal place of business" of a corporation are but alternative expressions for the same thing and mean one and the same place. State ex rel. Harrington v. Vincent, 144 Wash. 246, 257 Pac. 849; Spratley v. L. & A. R. Ry Co., 77 Ark. 412, 95 S. W. 776.

"The "principal office" of a corporation as designated in its organic certificate fixes the location of the company. Union Steamboat Co. v. City of Buffalo, 82 N. Y. 351; The Oswego Starch Co. v. Dolloway, 21 N. Y. 449; Western Transportation Co. v. Scheu, 19 N. Y. 408; State v. Mobile and O. R. Co., 108 Ala. 9, 18 So. 801; Ex Parte Schollenberger, 96 U. S. 369, Pp. 377, 38; Firestone Tire Co. v. Vehicle Equipment Co., 155 Fed. 676.

The terms "located," "location," and "principal place of business" refer to the place "where the governing power

of the corporation is exercised, where those who meet in council have a right to control its affairs * * * and not where the labor is performed in executing the requirements of a corporation in *transacting* its business.' Carter v. Spring Perch Co., 113 Conn. 636; 155 A. 832; Mullen v. N. W. Accident Ins. Co., 25 S. D. 402; 128 N. W. 483; Standard Oil Co. v. Kentucky, 110 Ky. 821; 62 S. W. 897; Middletown Ferry Co. v. City of Middletown, 40 Conn. 65; Milwaukee Steamship Co. v. City of Milwaukee, 83 Wisc. 590; 53 N. W. 839; Leonardi v. Chase Nat'l Bank, 81 Fed. (2d) 1922.

A corporation cannot be a *resident* of a state where it has its *usual* place of business if it is other than the state of its creation. A. Wolff & Co. v. Choctaw, O. & G. R. Co., 133 Fed. 601.

It is submitted that there are no cases or texts to be found that construe the words "principal office" or "principal place of business" otherwise than as hereinbefore set forth except Mason Co. v. Sharon, 231 Fed. 861, and bankruptcy cases wherein the statutes construed used said terms with modifications and in a qualified sense that set them apart in a class by themselves that is clearly distinguishable; and that distinction has been given thorough consideration and clearly stated in Gorman v. Leach, 11 F. (2d) 454, and in State ex rel. Harrington v. Vincent, 144 Wash. 246; 257 P. 849, and in Roszelle Bros. v. Continental Coal Corp., 235 Fed. 343.

V.

A NATURAL GAS COMPANY WHICH, OR PERSON WHO, IS ENGAGED EXCLUSIVELY IN THE TRANSPORTATION OR SALE OF NATURAL GAS IN INTERSTATE COMMERCE FOR RESALE, LEGALLY CANNOT "BE LOCATED OR HAVE ITS PRINCIPAL PLACE OF BUSINESS" ELSEWHERE THAN IN THE STATE OF ITS OR HIS DOMICILE FOR THE PURPOSE OF SUING OR DEFENDING PROCEEDINGS *IN PERSONAM* IN RELATION TO THE REGULATION OF SUCH BUSINESS.

It has been argued that:

> "The principal place of business of a corporation is the place where its business is actually conducted, from which its operations are directed, and

at which it holds itself out to do business with the public.'

However coreret this statement may be with respect to the ordinary industrial business of private corporations, it has no application here, for the reasons hereinbefore stated.

This definition does violence to the plain words of said Section 19(b), which limits jurisdiction to the "principal place of business" of the natural gas company, and makes no mention or intimation of any "principal place of business" of private industrial corporations where the principal place of business for the conduct of which such companies are created is conducted, transacted, or carried on, or of any place from which industrial operations are directed or at which such a company might hold itself out to do any such business with the public.

State Tonnage Tax Cases, 12 Wall. 204, 217:

> "Legislative enactments where the language is unambiguous cannot be changed by construction, nor can the language be divested of its plain and obvious meaning."

Said definition is derived from the language of the Bankruptcy Act, which has relation to an altogether different statutory provision, that has a history of its own, and the phraseology of which not only differs most radically from that of said Section 19(b), but has required and received the application of rules of construction that were necessitated by facts and circumstances and a subject matter none of which bear any analogy to a proceeding for review such as this. We suggest that reference to the cases cited to support such a proposition except Colorado Interstate Gas Co. v. Federal Power Commission, 142 Fed. (2d) 943, are all bankruptcy cases and that in this case the Tenth Circuit Court of Appeals not only based its decision on such bankruptcy cases, but wholly failed to give any consideration to any of the points to which attention is directed hereinbefore, and, in so doing, actually gave credit to said Section 19(b) for saying the exact opposite of what it actually says and cited said bankruptcy cases as authority for the direct opposite of what those cases that construe that act actually hold as follows:

As respects the language of said Section 19(b), said opinion says that:

> "Congress in the exercise of its discretion authorized a review in the circuit wherein the *principal business* of the corporation is *conducted*, and the Principal *place* of business is where the actual business of the corporation is *conducted* or *transacted*. Cf. In re Guanacevi Tunnel Co., 201 Fed. 216; In re Hudson River Navigation Co., supra; Chicago Bank of Commerce v. Carter, 61 Fed. (2d) 986." * * *
>
> "We think it is clear that the principal place of business of each company is in this circuit within the purview of the statute. Continental Coal Corporation v. Roszelle Bros., supra (242 Fed. 243); Dryden v. Ranger Refining and Pipe Line Co., 280 Fed. 257; In re Lone Star Shipbuilding Co., 6 Fed. (2d) 192."

Here it is especially noticeable not only that said Section 19(b) does not say what this opinion states, and Congress did not thereby so much as indicate an intention to authorize a review in the circuit wherein the *principal business* in which the company is engaged is *conducted*, but that the cases cited in the opinion are all cases under the Bankruptcy Act, all of which follow the construction placed upon that act by Judge Cochran of the Eastern District of Kentucky in Roszelle Bros. v. Continental Coal Corporation, 235 Fed. 342, which was approved and affirmed in Continental Coal Corporation v. Roszelle Bros., 242 Fed. 243, and both of which courts applied to the facts of that case a rule that is the very opposite of that for which said bankruptcy cases are cited, and that is applied in the Colorado Interstate Gas case, supra, as being applicable to the issue presented therein for determination.

We respectfully suggest that the opinion of Judge Cochran, which is followed by all of the other bankruptcy cases that are cited in the Colorado Interstate Gas case, casts an unbroken light upon and altogether dissipates the very broken light that is cast by the opinion in the Colorado Interstate Gas Company case in the following, among other, respects:

As originally enacted, the Bankruptcy Act of 1898 made no provision for bankrupt proceedings by or against corporations. It provided that the district courts shall have power

"to adjudge persons bankrupt who have had their principal place of business, resided, or had their domicile within their territorial jurisdiction for the preceding six months or the greater portion thereof," etc. (Section 2 of the Bankruptcy Act (Title 11, U. S. C. A. Section 11.)) Later the act was amended by provision that the word "persons" shall include corporation *except* where otherwise provided. (Subdivision 19 of Section 1 of the same act.). And general jurisdiction was vested in all Federal District Courts over the subject matter of bankruptcy proceedings.

A corporation was a party to the proceeding before Judge Cochran. The head office of the corporation was in Tennessee, where its main stockholders and most of its officers and directors, who had general direction and supervision of the business, resided, and where its financial business was conducted. The business of the corporation was private industrial business that consisted in coal mining and shipping operations, and nearly all of its coal lands were in the Eastern District of Kentucky. The question to be decided was whether the *venue* of the proceedings was in Tennessee or Kentucky, and called for a contruction of the provisions of the Bankruptcy Act and a decision of the question whether the "principal place of business" of the corporation had been in Tennessee or Kentucky for the preceding six months or greater part thereof. In view of the ambiguity of the venue provision of the amended Bankruptcy Act in its application to corporations, Judge Cochran considered the old Bankruptcy Act of 1867 as being in *pari materia*, and after having stated the facts of the case in hand, quoted at length from Judge Woodruff's opinion In re Alabama and C. R. R. Co., Fed. Cas. No. 124, that construed that act which fixed the district in which the *debtor* "*had* resided or *carried on* business" as that in which bankruptcy proceedings could be instituted thereunder. Plainly that act contemplated the place where the principal industrial business of the bankrupt debtors had been "carried on" during the preceding time required by the act, and had relation to the place or places where such business or businesses had been carried on or actually transacted or conducted during the time specified, as distinguished from the permanent principal place of business in the states of their creation which quasi-public corporations that are engaged in interstate commerce must have and maintain therein

in order to have any legal or valid existence at all for all purposes or suing and being sued, as shown hereinbefore. Moreover, no question respecting the regulation of interstate commerce was involved in that or any other of said bankruptcy cases. So, construing said bankruptcy acts together, Judge Cochran said:

> "There is no reason to think that the word 'business' in the present act has any different meaning from what it had in the Act of 1867. The change in provision was brought about no doubt by the consideration that a person may *carry on* business in several districts in the meaning thus given to that word, and it was desired to limit the jurisdiction of *bankruptcy* proceedings to the district which was the principal place of *so* doing. * * * If this restricted meaning is to be given to the word 'business' in the present act, then all that is to be considered in determining its principal place of business is where did it mine and sell its coal; and if it mined and sold in different places, which of these was the *principal*. All the rest of the business transacted by it was merely incidental thereto as the referee in the case of In re Elmira Steel Company, supra, expressed it, that is the 'principal place of the *principal* business' that determines jurisdiction."

Judge Cochran held upon the facts of that case that the *venue* was in Kentucky, where the coal was produced and shipped, and not in Tennessee, where the *head* office of the company was located and from whence the business was directed and supervised, and the matter was one over which all Federal District Courts had general jurisdiction. For these reasons we respectfully suggest that it will not only be seen from the opinion in the Colorado Interstate Gas Company case and the record herein that the actual operation, transaction, or conduct of the business of producing and transporting natural gas in interstate commerce by said companies, respectively, was not within the circuit wherein the proceedings for review were instituted in either case, but that the bankruptcy cases that were relied on by the Tenth Circuit Court of Appeals and that are cited to support jurisdiction by the petitioners herein actually refute in the most emphatic manner the very proposition to support which

they have been cited. In truth and fact it actually appears in the most affirmative manner by the purported jurisdictional averments of the petitions for review herein that all the gas that is transported in interstate commerce by the petitioners is produced, gathered in and transported from the State of Texas, without the Tenth Circuit of the United States. For such reasons we respectfully suggest that the bankruptcy cases cited in support of the decision in these cases demonstrate in the most affirmative manner that in matter of both fact and law the Circuit Court of Appeals for the Tenth Circuit was clearly without a semblance of jurisdiction to hear and determine the proceedings for review over which it so assumed jurisdiction.

We, therefore, respectfully submit that the assumption of jurisdiction over the subject matter of the petitions for review herein was manifest error that resulted from acceptance of the definition of the term "principal place of business" that is contained in the National Bankruptcy Act for the determination of the *venue* in such proceedings in said district courts, all of which are vested with general jurisdiction over the subject matter of all such proceedings *in rem* and which are governed in each particular instance by the particular facts of the case, when the "principal place of business" that is defined by said Section 19(b) has relation only to proceedings *in personam*, jurisdiction over the subject matter of which is expressly limited to the territorial jurisdiction of Circuit Courts of Appeals for the particular circuit of the United States "wherein the natural gas company to which the order relates is located or has its principal place of business;" and because both the location and the principal place of business of such a company, as a matter of law, can "only be in the state by which it was created," upon which such companies depend for, and wherein alone they can have, any legal existence, home, residence, domicile, citizenship, habitation, location, principal office, or principal place of business, for all of the reasons hereinbefore set forth, said Tenth Circuit Court of Appeals violated the commerce clause of Section 8, of Article I and the due process clause of the Fifth Amendment of the Constitution of the United States (Pennoyer v. Neff, 95 U. S. 714; 12 C. J. 1225, Section 1001; Robertson v. Railroad Labor Board, 268 U. S. 619 45 S. Ct. 621), the unambitious language of Sec 19(b) of the Natural

Gas Act, and the uniform interpretation that has been given to that language by this Court and the courts of this country in general.

VI.

THE IMPOUNDING ORDER OF THE CIRCUIT COURT OF APPEALS SHOULD AT THIS TIME BE CONSTRUED AND THE DISTRIBUTION OF THE MONIES IMPOUNDED THEREUNDER ORDERED IN ACCORDANCE WITH THE TERMS THEREOF AS CONTEMPLATED BY THE NATURAL GAS ACT.

It appears upon the face of the stay order pending review, under which said moneys are impounded, that the same was entered on May 16, 1942, upon the prayer of a petition filed by the Colorado Interstate Gas Company with said Court on April 20, 1942, when there was then pending before the Federal Power Commission a petition for rehearing which had not been determined (R. V. 1, P. 118). The terms of said stay order are in substance that as surety, and solely in lieu of bond, said moneys were to be deposited under an escrow agreement to be approved by the court, or any Judge thereof upon the following conditions:

1. The petitioner, Colorado Interstate Gas Company, shall pay or cause to be paid to the purchasers of Natural Gas under its rate schedules FPC 1-9, inclusive, referred to in said order of the Commission, as their several interests may appear, the amounts representing the reduction required by said Commission's order; and

2. The amounts so deposited shall * * * remain on deposit as provided in said order and in said escrow agreement, "subject, however, to the further order or orders of this court, to be returned to such ultimate gas consumers or persons to whom the court shall find the same should be returned as contemplated by the provisions of the Natural Gas Act." (R. V. 1, P. 118.)

It also appears on the face of the order entered in said cause on July 8, 1944; (R. V. 8, P. 5095) that said original stay order under which said moneys were to be deposited was continued on the terms and conditions therein set forth until the final disposition of said cause in this Court.

Notwithstanding said original stay order was improvidently entered without authority before the administrative remedy prescribed by the Natural Gas Act was exhausted, (Leebern vs. U. S., 124 Fed. 505; Myers vs. Bethlehem Ship Building Corporation, 303 U. S. 41; 58 Sup. Ct. Rep. 958), it was entered and continued upon the voluntary request of the Colorado Interstate Gas Company who is presumed to have invoked the entry and continuance thereof with full knowledge of the law of the subject. And, we respectfully submit, that the law applicable to the facts shown by this record is as follows:

1. The primary purpose of Congress in passing the Natural Gas Act was to protect ultimate consumers of gas from excessive prices, (Federal Power Commission v. Hope Natural Gas Company, 320 U. S. 591, 510, 512).

2. As stated in the opinion of the Tenth Circuit Court of Appeals, (142 Fed. 2(d) 947, 948, 949) and as shown by the original Memorandum of Stipulations of the joint adventurers who were the prime movers by whom this so-called "integrated system" was initiated and who are primarily interested in the petitioners herein:

> "The primary objectives of the contracting parties, as expressed in their agreement, were the acquisition of natural gas properties in the gas field, the construction of a pipe line from the field to the City of Denver via Pueblo and Colorado Springs, the sale and delivery of natural gas at the city gate of Denver and other cities, and supplying of natural gas to Colorado Fuel and Iron Company at Pueblo * * * Under the terms of the contract * * * Cities Service, through its subsidiaries, was to obtain a franchise and rate ordinance in Denver and Pueblo, respectively, for the sale of natural gas, and convert the artificial distribution plants then in use in such cities into natural gas distribution plants * * * Franchises and rate ordinances were obtained in Denver and Pueblo."

In pursuance of Section 265 (277 of 1927 Edition) and Section 268 (280 of 1927 Edition) of its charter, a franchise and rate ordinance were granted to the Public Service Com-

pany of Colorado (the subsidiary of Cities Service) by this respondent, which, as a party thereto, is the real party in interest therein. International Ry. Co. v. Mann, 224 N. Y. 83; 120 N. E. 153:

> "The city is the real party in intetrest to the agreement. The individual inhabitants are not, nor can they become parties thereto. They merely have the benefit of it while it remains in force * * *
> "If we look to the substance of things we must conclude that the common rights of the inhabitants of the city, secured through the agency of the city officials, are rights of the city."

The City and County of Denver is both a municipality and a "State Commission" within the meaning of the Natural Gas Act, being authorized by Article XX of the Constitution of Colorado, and its charter to regulate the charges for service by public utility corporations.

The monies that are on special deposit in the banks of Denver were deposited and are being deposited by the petitioner under its agreement as aforesaid, and are now being held in trust "subject to the further order or orders of the Court, to be returned to the ultimate consumers of gas or such persons as the Court shall find should receive the same in contemplation of the provisions of the Natural Gas Act."

And the rights of the city in respect of such a fund are stated by this Court, as follows:

In re Engelhard, 231 U. S. 646, 651:

> "It was in consequence of the motion of the city that the telephone company agreed to keep account of charges in excess of the ordinance rates, and, if they should finally be decided to be illegal, to pay into court the excess sums for distribution among its subscribers. It was the representative of all interests to provide for the creation of the fund; it is properly the representative of all interests to see to its proper distribution. This is a necessary deduction from the cases."

WHEREFORE, in consideration of all the foregoing, this respondent contends:

1. That the provisions of the Natural Gas Act and said stay order and escrow agreement contemplate the return of said impounded moneys to said ultimate gas consumers. (R.V.I. pp 115-119).

2. That they are of right entitled thereto, in equity and good conscience, as moneys had and received by the Colorado Interstate Gas Company for their benefit; and are the equitable owners of a primary right thereto.

3. That this respondent, as their legal representative, instituted these proceedings for the benefit of its said inhabitant gas consumers as well as in its own behalf, and is the real party in interest, legally authorized and entitled to receive said moneys for distribution under the further order or orders of said Circuit Court of Appeals at the costs of said petitioners, without diminution or loss of any part of the principal or interest thereon, in accordance with the conditions of said stay order wherein it is expressly provided that said Company shall pay or cause to be paid "all costs which may be adjudged against it should said order of the Commission, as amended, be sustained." (R.V.I. p. 118).

4. That, although said Circuit Court of Appeals had no jurisdiction over the subject matter of said proceedings,

> "Still, this court has full jurisdiction * * * to reverse the action of that court and * * * to remand the cause and give directions to that effect, and also, to direct that a writ of restitution issue to the proper parties."

Morris v. Coton, 8 Wall. 510, 512;

Northwestern Fuel Co. v. Brock, 139 U.S. 216;

U.S. v. Morgan, 309 U.S. 183, 197, 198;

Doggett v. Johnson, 79 Mont. 499; 257 Pac. 267, 268;

Am. Con. Tire Co. v. O'Malley, 342 Mo. 139; 113 S.W. (2d) 795, 804;

Masser v. London, 106 Fla. 474; 145 So. 72, 78, 79;

So. Railway Co. v. Tift, 206 U.S. 434; 51 L. Ed. 1124.

Ex parte Morris and Johnson, 9 Wall. 605.

5. Under the terms of said stay order and escrow agreement said petitioner is bound for the repayment of said moneys, with interest from the dates of all payments to it of overcharges.

Arkadelphia Milling Co. v. St. Louis Southwestern Railway Company et al., 249 U. S. 134,

Ex parte in the Matter of Lincoln Gas and Electric Company, Petitioner, 256 U. S. 512.

Respectfully submitted,

CITY AND COUNTY OF DENVER,

By MALCOLM LINDSEY,
THOMAS H. GIBSON,

Its Attorneys of Record.

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IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

No. 380

CANADIAN RIVER GAS COMPANY, a Corporation,
PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE TENTH CIRCUIT.

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August, 1944.

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IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

No.

CANADIAN RIVER GAS COMPANY, a Corporation,
PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE TENTH CIRCUIT.

The petitioner herein respectfully prays for a writ of certiorari to review the judgment of the United States Circuit Court of Appeals for the Tenth Circuit, affirming an order of the Federal Power Commission under the Natural Gas Act of 1938, which order reduced the rates or charges for natural gas charged by petitioner in the amount of $551,000 annually for natural gas sold to Colorado Interstate Gas Company, and the amount of $10,000 annually for natural gas sold to Clayton Gas Company.[1]

[1] This petition is being filed simultaneously with a like petition by Colorado Interstate Gas Company, and the two petitions are made on a joint printed record in the Circuit Court of Appeals.

OPINIONS BELOW.

The opinion of the Circuit Court of Appeals (R., V. 8, 5066-5094) is reported in 142 Fed. (2) (Adv. Op.) p. 943. The opinion and order of the Federal Power Commission can be found at R., V. 1, 140-195; 43 P.U.R. 205. (n. s.)

JURISDICTION.

The judgment of the Circuit Court of Appeals was entered on July 8, 1944. (R., V. 8, 5094) The jurisdiction of this Court is invoked under Section 240(a) of the Judicial Code, as amended by the Act of February 13, 1925, and Section 19(b) of the Natural Gas Act.

STATUTE INVOLVED.

The pertinent provisions of the Natural Gas Act of 1938 (52 Stat. 821; 15 U.S.C. Sec. 717) are set forth in Appendix A, *infra*. (pp. 45-48)

ABBREVIATIONS USED.

For the sake of brevity the following abbreviations will be used in this petition:

"R." for the printed Record filed herein, and "V" for the "Volume" of the Record, followed by the page number in the Record to which reference is made.

"Circuit Court" for "United States Circuit Court of Appeals for the Tenth Circuit."

"Commission" for "Federal Power Commission."

"Act" for "Natural Gas Act of 1938."

"Canadian" for the petitioner, "Canadian River Gas Company."

"Colorado Interstate" for "Colorado Interstate Gas Company."

"Southwestern" for "Southwestern Development Company."

"Standard" for "Standard Oil Company (New Jersey)."

"Cities Service" for "Cities Service Company."

"Cost Contract" for the Agreement dated as of January

3, 1928, between Canadian and Colorado Interstate covering the purchase and sale of gas at cost under the terms of which petitioner has been ordered by the Commission to reduce its rates or charges in the amount of $551,000 annually.

"Natural Gas Pipeline case" for *"Federal Power Commission v. Natural Gas Pipeline Company,"* 315 U. S. 575.

"Hope case" for *"Federal Power Commission v. Hope Natural Gas Company,"* 320 U. S. 591.

QUESTIONS PRESENTED.

As will be shown more fully in the Statement of the matters involved in this petition, which follows hereinafter, the questions presented are:

1. Whether the Circuit Court, after correctly holding that the Commission has no rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, erroneously concluded and ruled that the Commission in this case did not exercise such prohibited jurisdiction.

2. Whether, even assuming, *arguendo,* that the Commission has rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, the Commission can, consistently with the Fifth Amendment to the Constitution of the United States, the requirements of the Act, and the decisions of this Court in the Natural Gas Pipeline, Hope and other cases, limit Canadian generally to a return only on the "wildcat" or original cost of its gas leaseholds to predecessor companies prior to discovery and development over 20 years ago, to the exclusion of all evidence of value, market or otherwise, the result of this procedure being, among other things, the inclusion in the Commission's rate base of a substantial block of Canadian's most valuable leaseholds at zero valuation and a still larger block of valuable leaseholds at only 10¢ per acre valuation.

3. Whether, even assuming, *arguendo,* that the Commission has rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business,

and further assuming, *arguendo,* that it is proper in this case to include Canadian's leaseholds and wells in the rate base on the basis of original cost, the Commission can, consistently with the Fifth Amendment to the Constitution of the United States, the requirements of the Act, and the principles announced by this Court in the Natural Gas Pipeline, Hope and other cases, disallow and eliminate more than $3,000,000, plus interest during construction paid thereon, from the amount actually invested by Canadian in its original acquisition of production properties in about 1928 solely upon the ground that the sum so eliminated allegedly represented a profit between affiliated companies, and, therefore, formed no proper part of the cost of said properties, where the Record clearly demonstrates that the transaction resulting in the acquisition of said properties was not between affiliates and that the price paid therefor was not excessive.

4. Whether the Commission has the power, consistently with the Fifth Amendment to the Constitution of the United States and the provisions of the Act, to abrogate and nullify the cost reimbursement provisions of Canadian's Cost Contract covering the sale of gas to Colorado Interstate, in view of the fact that said Contract had been entered into long prior to, and had been substantially performed at the time of, the adoption of the Act; and if it be held that the Commission has such power, then whether the Commission has exercised such power in an arbitrary and capricious manner by abrogating and nullifying the cost reimbursement provisions of said Contract, while at the same time leaving Canadian with the impossible task of performing all obligations of that Contract which give rise to the necessity for full cost reimbursement, including obligations over which the Commission has no jurisdiction.

5. Whether the Commission acted erroneously, arbitrarily and capriciously, and without support of substantial evidence, in determining the life of Canadian's gas reserves to be 53 years from December 31, 1939, and in computing Canadian's depreciation and depletion allowances on said assumed life, where the uncontradicted evidence will support a finding of not more than 27 years from said date.

6. Whether the Commission erroneously, arbitrarily and capriciously, overstated Canadian's annual income available for return in an amount of not less than $114,000, which sum constitutes a part of the reduction made by the Commission in its rate reduction order, and therefore deprives Canadian of this sum annually, in violation of the Fifth Amendment to the Constitution of the United States, the provisions of the Act, and the decisions of this Court.

7. Whether the Commission can, consistently with the Fifth Amendment to the Constitution of the United States and the requirements of the Act, refuse to allow Canadian a sum over and above normal depreciation on properties in place, which will be sufficient to enable Canadian to make necessary interim replacements of property which will be required long before the end of the 50-year service life period adopted by the Commission.

8. Whether the Commission can, consistently with the Fifth Amendment to the Constitution of the United States and the provisions of the Act, reduce the rates and charges of Canadian on that part of its natural gas sales to Colorado Interstate which is not sold by the latter for ultimate distribution to the public but is sold by it directly to its industrial customers; furthermore, independent of the above question, whether the Commission erred in making no separation or allocation as between Canadian's properties devoted to intrastate sales in Texas and its properties devoted to interstate sales, or as between the properties of Canadian and the properties of Colorado Interstate, and in using in lieu thereof a substitute method of allocation of cost of service which results in burdening non-regulable gas with costs actually chargeable against regulable gas, in violation of the Fifth Amendment to the Constitution of the United States and the Act.

9. Whether the Commission's rate reduction order, when viewed as a whole, can be sustained as being just and reasonable, or in the public interest, in the light of the requirements of the Act and the "end result" and "rate impact" principles announced by this Court in the Natural Gas Pipeline and Hope cases.

STATEMENT.

Among other things, it is contended in this petition that the Commission's order, when viewed as a whole, cannot be sustained as being just and reasonable, or in the public interest, in the light of the requirements of the Act or the "end result" and "rate impact" principles announced by this Court in the Natural Gas Pipeline and Hope cases. Hence, a brief statement of the pertinent historical facts involved, taken from a printed record containing over 5,000 pages, is deemed imperative. For convenient reference purposes, appropriate headings have been incorporated from time to time throughout this Statement.

The Petitioner.

Canadian produces and gathers natural gas in the Texas Panhandle Field, which it subsequently transports and sells to Colorado Interstate at two points, i.e., (1) near Clayton, New Mexico, for resale to customers of Colorado Interstate in Colorado, and (2) near Gray, Oklahoma, for resale to Natural Gas Pipeline Company of America. Canadian also sells smaller quantities of gas to Amarillo Oil Company at the wellhead and along its pipe line system for resale in the State of Texas and to Clayton Gas Company for resale in the State of New Mexico. Canadian produces all gas which it sells from a block of gas leaseholds embracing approximately 300,000 acres in the Texas Panhandle Field, substantially all of which was acquired from Amarillo Oil Company in 1928 under circumstances hereinafter related. (R., V. 1, 143, 402) All of the issued and outstanding capital stock of Canadian has been at all times owned by Southwestern.

General History of Canadian's Gas Leasehold Properties.

Over 27 years ago (1917), a few ranchers and small businessmen residing in and about Amarillo, Texas, incorporated and organized a small corporation, called "Amarillo Oil Company," for the purpose of drilling a "wildcat" well for oil in what has now become the great Texas Panhandle Field in the State of Texas. (R., V. 5, 2837, 3040) At that time there had been no discovery of oil or gas within 200 miles of the proposed well location. (R., V. 7, 3673)

Consequently, the cost to Amarillo Oil Company of assembling the block of leases to be tested was purely nominal, except for drilling obligations.

After many unfortunate experiences, financial and otherwise, the "wildcat" test well was finally completed in the fall of 1918 as a gas well—the first commercial producer of either oil or gas in the Texas Panhandle Field. From that successful "wildcat" beginning, the field has been subsequently developed by the drilling of successive test wells until it now contains 1,500,000 proven acres on which there are located approximately 1,650 wells producing gas only, and approximately 4,200 wells producing both oil and gas. (R., V. 1, 409) Canadian's acreage produces no oil.

In 1924 Southwestern became the owner of all the capital stock of Amarillo Oil Company. In the meantime, Amarillo Oil Company had acquired additional blocks of leaseholds in the field, and its total holdings were then approximately 300,000 acres. Substantialy all of such leaseholds were likewise granted for oil exploration at a time when the acreage embraced therein was classified as "unproven" and valued accordingly. Additional test wells were drilled on this acreage most of which proved to be substantial gas producers, although some resulted in dry holes.

Amarillo Oil Company had no market at that time for its gas production, except for relatively small sales *at the wellhead* for the City of Amarillo, Texas, and vicinity, and one industrial sale at a plant near Amarillo. It had one well with a capacity substantially in excess of the quantity required to supply its entire available market. (R., V. 1, 459)

Added to the lack of adequate markets, the gas properties and investments of Amarillo Oil Company were threatened at that time with still another menace. Tremendous volumes of gas in the field were being blown and wasted in the air, to the extent that it became a national scandal. (R., V. 7, 3673) Enormous quantities of gas were being consumed by carbon black plants and natural gasoline plants. The seriousness of the situation was ultimately recognized by the Texas Legislature, which enacted new legislation to

control the wastage of gas, as well as its use for carbon black purposes. (R., V. 7, 3675-3676)[2]

It became obvious that the Company could not realize upon its extensive gas properties unless new markets of a substantial character were developed promptly. There were then no long-distance pipe lines connected to the field. Pipe line markets in the immediate vicinity of the field were either occupied or too small to be attractive, and it seemed advisable to look for markets at greater distances. (R., V. 1, 402)

Origin of Denver Project.

The transportation of gas by pipe line over long distances was in its infancy. Neither Southwestern nor any of its affiliated companies had had any previous experience in transporting gas over long distances; moreover, Southwestern and its subsidiaries lacked the necessary capital with which to construct such a pipe line. (R., V. 1, 402, 403) The City of Denver, located a distance of approximately 350 miles from the Texas Panhandle Field, and intervening territory, seemed to be the closest available market for natural gas in substantial quantities. (R., V. 1, 402) In 1926 Southwestern approached Standard Oil Company (New Jersey) regarding the construction of a pipe line project to Denver and intervening territory, because the latter had had a long and successful experience in operating natural gas projects in other areas, and was fully able to finance such a project. (R., V. 1, 403) Standard investigated the feasibility of the project with favorable results. Cities Service Company was then brought into the negotiations because its subsidiary, Public Service Company of Colorado, held a manufactured gas franchise in Denver, and another subsidiary company held a similar gas franchise in Pueblo, Colorado. (R., V. 1, 403)

The three parties, to-wit: Standard, which was experienced in operating long-distance pipe lines and had the ability to finance the same; Cities Service, which controlled important market outlets in Colorado through its subsidiaries; and Southwestern, which controlled substantial gas reserves.

[2]Thompson v. Consolidated Gas Utilities Corp., 300 U. S. 55.

in the Texas Panhandle Field through its subsidiary, Amarillo Oil Company, began negotiations which continued for almost a year and finally culminated in an agreement between the parties on April 5, 1927, for the construction of a pipe line to Denver and intervening points and the acquisition of gas leaseholds and wells owned by Amarillo Oil Company for the project. (R., V. 1, 403-416.)

Neither Standard nor Cities Service had any interest whatsoever in either Amarillo Oil Company or Southwestern on that date (April 5, 1927), prior thereto, or subsequent thereto. There was no corporate affiliation between any of the three participating companies which executed the contract of April 5, 1927. (R., V. 1, 460, 613-622) *As stated above, the contract was entered into only after long and continued arm's-length negotiations between the parties* (R., V. 1, 493-526)

The Denver Project agreement of April 5, 1927, between Standard, Cities Service and Southwestern (Ex. 1; R. V. 1, 381-400), known as the "Memorandum of Stipulations," sets out in considerable detail the terms and conditions under which the parties agreed to develop and participate in the project, but it is important here to point out briefly two of the principal obligations assumed thereunder by Southwestern.

Under this three-party agreement Southwestern obligated itself (1) to organize and incorporate a company (now Canadian), *separate and apart from its other companies and projects*, to which it would cause Amarillo Oil Company to convey, free of all debts, liens and encumbrances, all of Amarillo Oil Company's gas leaseholds, rights and wells in the Texas Panhandle Field at an agreed price of $5,000,000; and (2) to cause the company receiving such gas leaseholds, rights and wells to enter into a long-term contract to dedicate its gas reserves to the project and to sell gas to the principal project company (now Colorado Interstate) on a cost basis in consideration of the issuance by Colorado Interstate to Southwestern, as the nominee of Canadian, of 42½% of its authorized common stock with no par value and $1,000,000 par value of its authorized 6% preferred stock. (R., V. 1, 381-400)

Canadian's Purchase of Gas Leaseholds, Rights and Wells for $5,000,000.

The purchase price of $5,000,000, as negotiated and agreed to by Standard, Cities Service and Southwestern, for the gas leaseholds, rights and wells of Amarillo Oil Company, which was to form the foundation for the project, was advanced and paid to Amarillo Oil Company by Standard in two equal payments made in December, 1927, and January, 1928, which was prior to the incorporation of Canadian. (R., V. 2936) Pursuant to its obligation under the original three-party project agreement, Southwestern organized Canadian in February, 1928, *separate and apart from its other companies and projects,* and subsequently caused Amarillo Oil Company to formally transfer and convey its gas leaseholds, rights and wells to Canadian. There were no negotiations whatsoever between Canadian and Amarillo Oil Company. (R., V. 1, 455-456)

To finance the several obligations imposed upon Canadian under the three-party agreement of April 5, 1927, i.e., to acquire gas-producing properties, to drill wells, to construct gathering facilities and transmission facilities, and to pay the agreed purchase price of $5,000,000 for the gas leaseholds, rights and wells of Amarillo Oil Company, Canadian issued and sold to Colorado Interstate $11,000,000 principal amount of its 6% First Mortgage Bonds maturing in annual installments of approximately $600,000 through 1947. Out of the proceeds derived from the sale of its bonds to Colorado Interstate, Canadian repaid the $5,000,000 advance made by Standard to finance Canadian's purchase of gas leaseholds, rights and wells from Amarillo Oil Company. (R., V. 1, 406, 462; R., V. 2, 656-685)

Canadian's Cost Contract with Colorado Interstate:

Acting again in pursuance of the obligations imposed upon it under the terms of the three-party project agreement of April 5, 1927, Canadian, for the consideration hereinabove described, entered into a contract with Colorado Interstate as of January 3, 1928, to furnish Colorado Interstate with its natural gas requirements at cost over a period of years. (Ex. 16; R., V. 2, 711-780)

This particular contract is unusual and unique in many

respects. It is not the ordinary contract for the current purchase and sale of natural gas as a commodity, and it is not the ordinary contract that courts or regulatory bodies are called upon to consider when confronted with a challenge to the right of abrogation. Briefly, the Cost Contract, and Canadian's related Trust Indenture (R., V. 2, 656-685) securing its bonds held by Colorado Interstate, require Canadian:

(a) to maintain and renew all its gas leasehold interests, to drill necessary wells, and to construct and maintain necessary pipe line and other facilities in order to supply Colorado Interstate's market at all times with its gas requirements;

(b) to produce, gather, transport and *sell* its gas to Colorado Interstate *at absolute cost* for a fixed period of 20 years, and so long thereafter as Colorado Interstate elects to buy;

(c) to dedicate its gas reserves and facilities to the service of Colorado Interstate's market, with no right to sell or otherwise dispose of its gas or gas properties to others for carbon black, industrial or any other purpose without the consent of Colorado Interstate (except for outstanding commitments to sell gas to Amarillo Oil Company to supply the Amarillo market)[3]; and

(d) to credit Colorado Interstate's cost of gas with any and all revenues, income or profits which it may receive from *any* source, and to continue to operate strictly as a non-profit company for the full term of the Cost Contract.

The cost of gas delivered by Canadian to Colorado Interstate under the Cost Contract is computed by deducting all outside revenues[4] received by Canadian (including sales of

[3] Canadian has two outstanding contract obligations to sell gas *at cost*, i.e., (1) to supply all markets of Colorado Interstate, as above described, and (2) to supply the Amarillo market of Amarillo Oil Company, which commitment was in existence long prior to the organization of Canadian and has certain preferential rights over all other markets of Canadian. (R., V. 1, 102; V. 2, 714, 715, 748)

[4] For example, in 1929 Canadian received in excess of $500,000 from the United States Government in final payment of the purchase price for certain helium-bearing leaseholds and wells of Canadian. Since the sum so paid represented revenues received by Canadian, it was likewise credited as a deduction against Colorado Interstate's current cost of gas under the Cost Contract. (R., V. 5, 2723; R., V. 1, 381-401)

gas to others) from the aggregate cost of producing and delivering all gas sold to all purchasers. Such cost includes interest on and amortization of Canadian's funded and other indebtedness, but does not include depreciation and depletion; or retirements.

Thus, it will be seen that for the services to be rendered to it by Canadian under the Cost Contract, Colorado Interstate agreed to underwrite and guarantee Canadian's net cost of operations after crediting profits or income from all other sources, but no more. Moreover, Colorado Interstate was granted direct and complete control over Canadian's costs which it is obligated to reimburse. Obviously, Canadian has not paid, and cannot pay so long as the Cost Contract is in effect, any dividends, earnings or profits in any manner to the owners and holders of its capital stock. This Contract, as above indicated, covers not only Canadian's transmission system, but also its production and gathering properties, facilities and business. Under the Cost Contract Canadian's receipts in any given year can never exceed its actual costs.

Canadian's Trust Indenture provides that in case of default thereunder, in addition to the usual remedies of foreclosure, etc., the Trustee may forthwith take possession, of, operate, manage and control the trust estate and, at its discretion, may sell the trust estate to the highest and best bidder "who will assume and perform the obligations of the company" under its Cost Contract with Colorado Interstate. The trust estate *must* be sold in one parcel and as an entity, and the purchaser or purchasers at any sale *must* be required to assume the performance of Canadian's obligations under its Cost Contract with Colorado Interstate.

The Commission's Findings and Order.

As indicated in the statement of questions presented, the Commission's "Order Reducing Rates" in this case, its opinion supporting such order, and the opinion of the Circuit Court affirming such order, raise several important questions which form the basis of this petition. Canadian contends that on a rate regulatory theory or any other theory the

Commission in its various findings and ultimately in its rate reduction order, committed numerous errors of law, constituting violations of the Act itself and which necessarily deprive Canadian of its property without due process in violation of the Fifth Amendment, and that viewed as a whole, the rate reduction order cannot be sustained under the "end result" or "rate impact" principles announced by this Court in the Natural Gas Pipeline and Hope cases. In so far as deemed pertinent at this time, the following additional statements are submitted with respect to the questions involved:

1. *Jurisdiction Over Production and Gathering.*

The Commission avowedly exercised rate regulatory jurisdiction over Canadian's production and gathering properties, business and facilities, notwithstanding the prohibitory provisions of the Act (Sec. 1, Appendix), contending that such action was proper because it was essential to its rate regulatory jurisdiction over interstate transportation and sale. (R., V. 1, 147) The Circuit Court, while ruling against the Commission on this contention, held that what the Commission had done in this case, in so far as production and gathering are concerned, did not constitute the prohibited rate regulation over production and gathering. (R., V. 8, 5073-5075) In this connection Canadian points out:

(a) that the Commission wholly disregarded substantial and uncontradicted evidence with respect to the prevailing market value of Canadian's gas at the wellhead in the field, as well as the prevailing market value of Canadian's gas at the termini of gathering operations in the field (R., V. 1, 140-195); and consequently there was no sound basis for the Commission's contention that rate regulation of production and gathering is necessary to accomplish rate regulation over interstate transportation and sale of natural gas as contemplated by the Act;

(b) that in arriving at its rate reduction order, the Commission determined a rate base which includes not only Canadian's interstate transmission system, but also its production and gathering properties (R., V. 1, 144-195; V. 5, 2717-2721); that in determining its rate base for Canadian's producing and gathering properties, the Com-

mission applied its so-called original cost or prudent investment theories, and in so doing totally ignored both the true value of such properties as well as the actual cost thereof to Canadian; that in its rate base for production and gathering properties, the Commission determined and included an allowance for working capital which it deemed sufficient to enable Canadian to carry on its production and gathering operations, and that likewise the Commission has purported to determine in its rate base for production and gathering properties what additional wells should be drilled and what additional gathering facilities should be installed in the future;[3]

(c) that after finding Canadian's total rate base to be $9,375,000 (R., V. 1, 187), of which approximately two-thirds represents production and gathering properties, (R., V. 5, 2717-2721), (even on the Commission's basis of determining a rate base), the Commission then found that Canadian was entitled to a return of 6½% per annum upon its total rate base (R., V. 1, 187), more than two-thirds of which, as above stated, is attributable to the hazardous business of discovering, exploring, developing and operating natural gas production properties;

(d) that the Commission has determined and made an allowance for Canadian's total annual operating expenses (including depreciation and depletion), the greater portion of which represents the cost of producing and gathering natural gas; (R., V. 1, 171; V. 4, 2341-2345)

(e) that after determining the total annual income of Canadian from all sources, the greater portion of which represents the cost of producing and gathering natural gas under its Cost Contract with Colorado Interstate, the Commission has deducted its determined annual operating expenses (mostly production and gathering) from such total income, and then, after making a return allowance of 6½% upon its determined rate base (mostly production and gathering), it has found an alleged excess income

[3]The Commission deducted $3,864,357 from Canadian's original cost, practically all of which is applicable to leaseholds. (R., V. 1, 149-151) The Commission, through a member of its staff, also offered detailed testimony with respect to the requirements for additional wells and gathering lines. (R., V. 5, 2530-2556)

being received by Canadian, which forms the basis for its rate reduction order; (R., V. 1, 187)

(f) that the Commission's order changes and abrogates the amount of compensation which Canadian is entitled to receive from Colorado Interstate under its Cost Contract, which compensation represents cost reimbursement to Canadian not only for the cost of current deliveries of gas to Colorado Interstate, but for the cost of performing various other services under the Cost Contract relating to Canadian's production and gathering properties and operations, such as the maintenance of leaseholds, the drilling of wells and the construction of gathering facilities as directed by Colorado Interstate; and finally,

(g). that the Commission has treated every element of Canadian's production and gathering properties, facilities and business in precisely the same manner as its interstate transmission properties, facilities and business, and has subjected every element of Canadian's production and gathering facilities to the same rate regulatory measures and procedures as Canadian's interstate transmission properties, facilities and business for the purpose of arriving at its ultimate conclusions with respect to rates and charges; and that if the Commission had sought directly and openly to assume and exercise full and complete rate regulatory jurisdiction over Canadian's producing and gathering properties, facilities and business, it could have done no more than it did do.

2. *Valuation of Canadian's Leasehold Properties.*

In considering Canadian's gas leasehold properties for rate base purposes, the Commission has limited its consideration to the original cost of acquisition, commencing with the leases upon which the first discovery well of Amarillo Oil Company was drilled in 1918. This practice of the Commission purports to limit Canadian generally to a return of 6½% per annum on only the "wildcat" value of its leaseholds while in the hands of predecessor companies, to the exclusion of all discovery, market or other values, notwithstanding the fact that prior to the acquisition by Canadian none of such gas leaseholds had produced gas for interstate transportation, and none of such gas leaseholds had been

devoted to a public use. (R., V. 1, 459; R., V. 5, 2861-2929) Canadian contends (even assuming rate regulatory jurisdiction) that original cost is not the proper basis for the inclusion of gas-producing leaseholds in a rate base, and that the Commission has erred in blindly following its original cost and prudent investment theories with respect to Canadian's gas leaseholds and in wholly disregarding uncontroverted evidence of value.

An analysis of the testimony of Commission witnesses, which the Commission adopted substantially (Ex. 146, Sheets 62-64; R., V. 5, 2717, 2721), shows that the Commission used the sum of $1,604,020.61 as the starting point for its findings as to original cost of or investment in Canadian's leaseholds as of December 31, 1939. Then, as appears from Paragraph 8 of the Commission's formal findings (R., V. 1, 186), a deduction of $653,681 was made for depletion. This means that Canadian's bare leaseholds have been included in the Commission's original cost rate base at a value of something less than $1,000,000.

In adopting this valuation for rate base purposes, the Commission has wholly ignored substantial and uncontradicted evidence that "the present market value of Canadian's leaseholds" (excluding wells) is the sum of $15,646,787.64. This evidence is the testimony of Canadian's witness Wallace. (Ex. 181; R., V. 6, 3181-3254)

The Commission has found that Canadian's recoverable gas reserves are 2,800,000,000 Mcf. (R., 1, 159) Reducing these figures so found by the Commission to its *value of the gas in place*, it appears that the Commission, in effect, has found the present value of the gas in place to be only 34/1000ths of one cent per Mcf. On a comparative basis, and using Wallace's $15,646,787.64 valuation, as applied to the Commission's finding of 2,800,000,000 Mcf. recoverable reserve, the value of the gas in place is approximately ½c per Mcf.

The original "wildcat" cost to Canadian's predecessors in interest of five important leaseholds, containing approximately 47,000 acres, allowed by the Commission is $4,244.24, which is less than 10c per acre. (R., V. 5, 2735, 2736, 3051) Three of these leases are included *at zero valuation*. The

present fair value of these same five leaseholds (exclusive of wells), as testified to by Wallace with supporting evidence as to such value, was $3,345,923. (R., V. 5, 3237, 3243) A similar situation exists in respect to the Commission's valuation of the remainder of Canadian's leaseholds. (R., V. 5, 3051)

The Commission has wholly ignored all evidence of the market value of gas at the wellhead in the Texas Panhandle Field as a measure of the value of said leaseholds. Canadian's General Superintendent Ford testified that the market value of gas at the wellhead in the Texas Panhandle Field is not less than 4c per Mcf. on a 16.4-pound pressure base, or not less than 3.6c per Mcf. on a 14.65-pound pressure base. (R., V. 6, 3255-3281) This testimony was corroborated by Wallace, and by Commission's Exhibit 168, Sheets 13 and 127. (R., V. 6, 3281.)*

3. *Canadian's Original Cost of Leasehold Properties.*

The Commission did not question the fact that Canadian had actually invested in its gas properties the sum of $14,648,821 as of December 31, 1939. It deducted from such actual investment, however, the sum of $3,370,817 on the ground that it represented "affiliated company profits," and in addition thereto the sum of approximately $245,000 interest during construction on such alleged profits. (R., V. 1, 149-151) Virtually the full amount of such deduction arises from the transaction heretofore related, in which Canadian acquired from Amarillo Oil Company all of the latter's gas leaseholds, rights and wells for the sum of $5,000,000 for the purpose of inaugurating the Denver Project in 1928. (See pp. 6-10, supra.) The Circuit Court,

*The Commission has found that Canadian's remaining recoverable reserves as of December 31, 1939, are not less than 2,800,000,000 Mcf.; that Canadian's future rate of production will be approximately 55,000,000 Mcf. (14.65-pound pressure base) per year; (R., V. 1, 159); and that on that basis Canadian's recoverable reserves will last for 53 years. The gross value of the 55,000,000 Mcf. to be so produced annually at 3.6c per Mcf. is $1,980,000. The Commission has found (R., V. 1, 171) Canadian's annual operating expenses to be $1,169,096, which includes gathering expense and transmission expense, as well as producing expense. Even if all of this expense, however, be attributed to the production of gas at the wellhead and be deducted from the gross annual value of $1,980,000, there remains a net income of $810,904 for Canadian's gas production in one year, which is almost as much as the Commission has allowed in the rate base for the total of Canadian's leaseholds for all time.

in upholding the Commission in this deduction, stated that the purchase price paid constituted a "synthetic inflation." (R., V. 8, 5082)

The Commission found that Amarillo Oil Company, commencing with its "wildcat" discovery well in 1918, had invested in the properties sold only the sum of $1,879,504, and that this sum should be further reduced by $128,534 by reason of an alleged profit of another predecessor company in a sale of property by it to Amarillo Oil Company (R., V. 1, 150), all of which resulted in a so-called original cost to Amarillo Oil Company of approximately $1,750,000, or $3,250,000 less than the sum actually paid by Canadian in cash for such properties.

Based upon the facts heretofore and hereinafter summarized, Canadian contends that the Record in this case establishes beyond question with respect to this transaction:

(a) that the amount of the purchase price to be paid for such properties, and other terms and conditions of sale, as well as the agreement to buy and sell, were determined and agreed to by the three non-affiliated organizers of the project after prolonged arm's-length bargaining, long before formal consummation of the transaction and even prior to the incorporation of Canadian itself;

(b) that the affiliation between Amarillo Oil Company and Canadian is only nominal, and does not exist in fact or in practice, and in any event did not arise until after the contract to buy and sell was consummated and the entire consideration paid;

(c) that the transaction was not a mere matter of intercompany book entries with no cash changing hands, as is ordinarily the case in a "write-up"; that the $5,000,000 in cash was actually paid by Canadian for its properties, and that such sum represented outside funds advanced by outside interests for that specific purpose;

(d) that the record does not even create an intimation that Canadian paid an excessive price for such properties, but that as a matter of fact the record demonstrates that such property is worth substantially more than the amount paid;

(e) that prior to acquisition by Canadian such properties had not been devoted to a public use or to the transportation or sale of gas in interstate commerce; and

(f) that the application of the Commission's original cost theories to production properties in this instance results in relegating Canadian to the provable cost of its predecessor companies, and denies Canadian any return on over $3,000,000 of its actual cash investment in production properties, as well as the right to recover such sum through the sale of its gas.

4. *Abrogation of the Cost Reimbursement Provisions of the Cost Contract.*

The Commission's purported rate reduction order in this case directs that Canadian's rates and charges "for the transportation and sale of natural gas for resale to Colorado Interstate Gas Company under its FPC Rate Schedule No. 1 shall be reduced by not less than $551,000 per year." (R., V. 1, 188) Canadian's FPC Rate Schedule No. 1, which was filed with the Commission by Canadian with a full reservation of its legal rights, consists of nothing but a copy of the Cost Contract. (R., V. 2, 709) Hence, the Commission's order on its face directs that Colorado Interstate's obligation to reimburse Canadian for its costs under the Cost Contract shall be reduced by the sum of $551,000 per year.

Cost reimbursement received from time to time by Canadian from Colorado Interstate, against which the Commission has aimed its reduction order, represents cost reimbursement to Canadian not only for the gas being currently delivered to Colorado Interstate as a commodity, but for the cost of performing various other obligations and services under the Cost Contract for the benefit of Colorado Interstate and its customers, some of which are clearly beyond the jurisdiction of the Commission, i. e., to acquire, maintain and develop a substantial block of gas leaseholds; to drill and operate wells; to construct and operate gathering facilities; to pay off funded debt in fixed amounts at fixed times; to sell gas to others only as permitted by Colorado Interstate, etc.

Under the operation of its Cost Contract, Canadian receives no revenue from Colorado Interstate except for the purpose of reimbursing it for actual costs incurred under the terms thereof. Its annual revenue is always in exact balance with its annual expenses. If Canadian is to retain its properties and remain solvent, it must receive currently sufficient funds to meet the cost of performing its obligations under the Cost Contract. The Commission by its rate reduction order has reduced the amount of revenue which Canadian is entitled to receive under its Cost Contract by the sum of $551,000 annually, but it did not change or abrogate any other provisions of said Contract or relieve Canadian of any of its obligations which give rise to the necessity for cost reimbursement.

The Cost Contract was made in 1928, long prior to the adoption of the Act, and was substantially performed at the time of the enactment of the Act. Canadian contends that the Commission's rate reduction order as applied to the Cost Contract is unworkable, and that it requires Canadian to do the impossible.

5. *Life of Canadian's Gas Reserves.*

The Texas Panhandle Field in which Canadian's gas reserves are located contains approximately 1,500,000 acres, of which approximately 500,000 acres produce sour gas that is not suitable in its natural state for pipe line use, and approximately 1,000,000 acres produce sweet gas (R., V. 1, 409; V. 7, 3672) Commission witnesses testified that Canadian owned gas leaseholds and gas rights on approximately 222,515 acres in the area of proven gas production (Table R., V. 6, 3669), or approximately one-seventh of the entire Texas Panhandle Field area.

Through the year 1940, pipe lines had utilized but little more than 20% of total field production. Canadian in 1939 produced approximately 41,000,000 Mcf. (R., V. 8, 4703), or about one-fourteenth of the total production for that year, and from the beginning of the field through 1939 Canadian produced approximately 340,000,000 Mcf. (R., V. 8, 4703), or about one-twenty-fourth of total field production, all

from approximately one-seventh of the productive acreage in the entire field.[7]

The record is uncontradicted that the Texas Panhandle Field is definitely a completely interconnected porous reservoir. (R., V. 8, 4753)

"Porous spaces throughout the Field are interconnected." (R., V. 7, 3741)

"It is theoretically possible that a single gas well could eventually drain substantially all of the gas out of the Texas Panhandle Reservoir." (R., V. 8, 4751)

"Drainage inevitably takes place in a gas reservoir comprising an interconnected porous system." (R., V. 8, 4752; also R., V. 8, 4753, 4754, 4755, 4756, 4758, 4760)

Every single witness who made a study of drainage in this case testified unequivocally that Canadian was suffering from drainage and that the life of its reserves for long-distance pipe line purposes could be measured only by the life of the Texas Panhandle Field as a whole. (R., V. 8, 4752, 4760, 4766, 4767) The Commission, however, totally ignored this uncontradicted evidence and computed the life of Canadian's reserves simply by estimating the recoverable reserves in place under Canadian's acreage *as of December 31, 1939*, and then dividing this figure by the estimated annual future production of Canadian. The Commission found from this calculation that Canadian's reserves had a life of 53 years from December 31, 1939. (R., V. 1, 159)

The life of Canadian's reserves for long-distance pipe

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[7] The total production for the entire Texas Panhandle Field for the year 1939 and the cumulative field production from the beginning (16.4 pressure base) are as follows:

	Production in Mcf. 1939	Cumulative Field Production in Mcf. From Beginning
Gas used by gas pipe lines	222,299,905	1,887,199,782
Gas used by gasoline and carbon black plants	329,653,273	5,189,824,088
Casinghead gas not treated—blown in air	7,300,000	722,580,000
Gas blown in air and used in drilling wells, etc.	13,026,239	526,391,496
Total	572,279,417	8,325,995,366

(R., V. 7, 8, 4342, 4343, 4345, 4354)

line purposes based upon the highest estimate for recoverable reserves in the Texas Panhandle Field as a whole,* adjusted to a 50-pound abandonment pressure and divided by the future estimated annual production from the field as a whole, does not exceed 27 years from December 31, 1939. (R., V. 1, 157; V. 7, 3701; V. 8, 4638, 4646)

Canadian contends that in view of the uncontradicted drainage evidence in this case the Commission's determination of the life of Canadian's reserves was arbitrary and capricious and is wholly unsupported by the record, and therefore that such a determination is a nullity as a matter of law, as has been held in a long line of decisions by this Court. This erroneous and arbitrary action of the Commission necessarily resulted in an insufficient annual allowance for depreciation and depletion expense for Canadian as well as Colorado Interstate.

6. *Canadian's Revenues Available for Return.*

The Commission's order requiring Canadian to reduce its rates and charges by not less than $551,000 per year is based upon an alleged excessive return realized by the Company in the test year of 1939. In computing such alleged excessive return, Canadian contends that the Commission has erroneously, arbitrarily and capriciously, overstated Canadian's annual income available for return in an amount of not less than $114,000, which sum constitutes a part of the reduction ordered by the Commission, as is shown by the following:

(a) Under its Cost Contract, Canadian receives revenue only for its actual out-of-pocket cash expenditures, and therefore its accounts have been kept on a cash basis—not on an accrual basis. In computing Canadian's allowable costs, the Commission determined and restated Canadian's cash expenditures for the test year of 1939 on an *accrual* basis, and in so doing eliminated therefrom actual cash expenditures in the amount of $72,600, on the ground that such expenditures, although made in 1939, were applicable to the business of prior years. This sum is made up of two adjustments made by the Commission.

*This is the estimate of the Commission's Witness Hammer, which the Commission has said is too high. (R., V. 1, 157, 158)

Canadian actually paid federal income taxes during the year 1939 in the sum of $125,441. The Commission adjusted such taxes downward on an accrual basis to the sum of $66,403. (R., V. 1, 167; V. 6, 3432, 3457) This "adjustment" necessarily eliminated from Canadian's actual cash expenditures for that year the sum of $59,038 and understated Canadian's expense by that amount. Again, Canadian actually paid as rate case expense during the year 1939 the sum of $54,600. (R., V. 6, 3407, 3447) The Commission adjusted this cash expenditure downward on an accrual basis to $41,000 (R., V. 1, 166-167), and in so doing reduced Canadian's actual expenses for that year by $13,600. Assuming that this all was proper accounting on an accrual basis, the Commission, to be consistent, should also have determined and restated Canadian's revenues for the year 1939 on an *accrual* basis, which would have resulted in an offsetting deduction of $72,600 from such revenues, if revenues and expenses had been stated on a comparable basis, for the reason that Canadian's revenues are measured entirely in terms of cash required to meet current expenses. The Commission's failure to do so overstated Canadian's operating revenues by the amount of $72,600, and as a consequence thereof its net revenue available for return was overstated by a like amount.

(b) The Commission further overstated Canadian's income available for return by deducting from Canadian's 1939 operating expenses the sum of $15,056.24 because such sum was alleged to be a profit made by an affiliate (Amarillo Oil Company) through the extraction of gasoline from gas purchased by it from Canadian. (R., V. 6, 3425) Amarillo Oil Company purchases gas from Canadian for the Amarillo, Texas, market under a contract dated January 3, 1928, which provides expressly that Amarillo Oil Company shall receive title to and possession of such gas *in its natural state* as produced at Canadian's wells. As a part of Amarillo Oil Company's operation of transporting such gas from the wellhead to the City of Amarillo, the gas is processed for gasoline extraction by a non-affiliated company pursuant to the terms of a contract entered into by Amarillo Oil Company

over 20 years ago. The gas in question is produced, sold, transported, processed for gasoline extraction and consumed entirely within the State of Texas by parties which have nothing whatever to do with the operations of Canadian. The Commission's action in this respect resulted in an understatement of Canadian's actual operating expenses for the test year of 1939 in the amount of $15,056.24, and as a consequence thereof overstated Canadian's income available for return for that year in a like amount.

(c) The Commission failed to take into account increases in gross production taxes levied by the State of Texas subsequent to the termination date of the hearing, but long prior to the date of the rate reduction order, and in so doing failed to allow a minimum of $26,350 as a necessary operating expense. As a consequence thereof, the Commission has overstated Canadian's income available for return in this amount.*

7. *Depreciation as an Annual Operating Expense.*

The Commission allowed Canadian as an annual operating expense the sum of $80,969 for depletion and $157,774 for depreciation. (R., V. 1, 171). It allowed nothing for amortization as such. On this basis Canadian will accrue in its depreciation and depletion reserve during the remaining physical service life of its properties (38 years, as found by the Commission) the total sum of $9,072,234, plus accrued depreciation and depletion of $2,134,629 from 1928 to 1939, inclusive, (as determined by the Commission, R., V. 1, 164), or a total sum of $11,206,863, which is less than Canadian's original cost as of December 31, 1939, and capital additions to December 31, 1941, in the amount of

*Canadian in the year 1939 paid a gross receipts tax or gas production tax on the natural gas it produced in the sum of $34,220.09, (R., V. 6, 3457), which tax was computed on the basis of 3% of the value of the gas at the well, less 2% for gas loss, being net tax of 2.96%. (Chap. 495, Art. 4, Sec. 8, 3rd Called Session of the 44th Texas Legislature.) This tax act was amended, effective May 1, 1944, after the close of this hearing, but long before the Commission handed down its opinion on March 18, 1942. The new Act provided for a tax of 5.2%. (H. B. 8, Chap. 184, Acts of 47th Texas Legislature, Regular Session, 1941, p. 269.) The Commission allowed as an operating expense the gross receipts tax paid for 1939 and gave no effect to the increase in such taxes. The amended act increased Canadian's taxes, measured by the 1939 volume of production, approximately $26,350.

$11,356,387 (as allowed by the Commission, R., V. 1, 164). The salvage value will be negligible. (R., V. 3, 1757)

Based upon the most favorable testimony in the Record in support of the Commission's theory of depreciation (R., V. 8, 4944-4946), Canadian will be required to expend a minimum of $6,500,000 to make replacements of physical equipment which will have been worn out and retired prior to the end of the service life period adopted by the Commission.[10]

The average service life of virtually all of Canadian's physical property shown in footnote 10 below will have expired long before the termination of the 50-year average service life period which has been assigned by the Commission to the transmission system comprised mostly of main pipe line. It is reasonable to assume that one-half of the main pipe line will require replacement prior to the end of the assigned service life of 50 years, but if only approximately one-fourth of it is replaced, the total replacements for all types of physical property will aggregate approximately $6,500,000.

There has been no allowance made to accrue a fund for such replacements. They can only be made out of the depreciation reserve, which will leave such reserve inadequate by approximately $6,500,000 if Canadian's original cost as determined by the Commission (which is substantially less than its actual investment) is to be returned at the end of the life of the enterprise.

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[10] The testimony given by a Commission witness which formed the predicate for the Commission's depreciation allowance, excluding non-depreciable items such as leaseholds, rights of way and other real estate, with adjusted book costs as determined by the witness, is briefly summarized as follows: (R., V. 8, 4944-4946)

Character of Property	Adjusted Book Cost 12/31/39	Service Life Years
Well Construction Costs and Equipment	$3,029,610.61	39
Field Lines	1,229,760.29	40
Other Field Facilities	78,225.47	Approx. 24
Gasoline Investment	350,239.94	" 30
Main Line Compressor Station	632,258.38	" 36
Bivens Camp	185,425.85	" 35
Transmission System	2,444,754.50	50
Dehydration Plant	41,332.45	" 26
Measuring Stations	18,923.32	" 32
General Property	175,677.93	4 to 35
Total	$8,186,208.74	

Canadian contends that under an unbroken line of decisions by the state and federal courts a gas company of limited life is entitled to a depreciation and amortization charge sufficient to keep its plant at 100% operating efficiency, as nearly as it is possible to do so, and in addition thereto, a sum that will refund the capital investment, including replacements, within the life of the business.

8. *Allocation Errors.*

The Commission made no allocation of Canadian's property with respect to gas sold by Canadian to Colorado Interstate for "direct sale" and gas sold by Canadian to Colorado Interstate for "resale"; and likewise it made no allocation between interstate and intrastate sales by Canadian. The Commission in determining the cost of service from a rate regulatory viewpoint considered all of the properties and operating expenses of Colorado Interstate, as well as all of the properties and operating expenses of Canadian, and applied its allocation formula to the combined properties and operating expenses of both companies, thus treating both companies as one composite system. (R., V. 4, 2317-2363)

In 1939, Canadian sold to Colorado Interstate at Clayton Junction for resale, 10,974,156 Mcf. and for direct sale and for Colorado Interstate's own use, which was not subject to rate regulatory jurisdiction of the Commission, 10,158,353 Mcf. Canadian also sold to Colorado Interstate for resale at Gray, Oklahoma, 20,783,301 Mcf. (R., V. 4, 2319), (all on a 14.65 pressure base). Approximately one-fourth of the gas sold to Colorado Interstate, therefore, was sold by it directly to industrial consumers. The Commission, however, made a blanket reduction of $551,000 with respect to all gas sold by Canadian to Colorado Interstate. In doing so the Commission completely ignored the fact that one-fourth of such gas was sold for direct sale to industrial consumers over which it had no jurisdiction, under the terms of the Act and completely ignored the fact that in determining the cost of service from a rate regulatory viewpoint it considered all of Canadian's and Colorado Interstate's properties as constituting one composite system.

Canadian contends that in view of the express provisions

of the Act, as applied to the facts in this case, the Commission has no rate regulatory jurisdiction over that portion of the gas sold by Canadian to Colorado Interstate which was, in turn, sold by the latter company to direct industrial consumers and not for resale. Canadian contends also, that since the Commission, in applying its rate making allocation formula made no allocation of properties as between Canadian and Colorado Interstate, but considered the two companies as constituting one system, it necessarily follows, in any event, that no reduction in rates should have been made as to the gas sold to Colorado Interstate for direct sale to industrial consumers. Such sales comprised approximately one-fourth of all the gas sold to Colorado Interstate. Canadian further contends that the failure to make any allocation of properties at all is contrary to the decisions of this Court, and unlawfully burdens non-regulable sales.

REASONS FOR GRANTING THE WRIT.

Question 1. Exercise of Prohibited Rate Regulatory Jurisdiction Over Canadian's Production and Gathering. Section 1 (a) of the Act declares "that the business of *transporting and selling* natural gas for ultimate distribution to the public is affected with a public interest, and that Federal regulation in matters relating to the *transportation* of natural gas and the *sale* thereof in interstate and foreign commerce is necessary in the public interest."

Section 1 (b) of the Act then provides that its provisions shall apply to such interstate transportation and sale "*but shall not apply to* any other transportation or sale of natural gas or to the local distribution of natural gas, or to the facilities used for such distribution or to *the production or gathering of natural gas.*" (Appendix, p. 45) (Italics supplied)

In both the Natural Gas Pipe Line case and the Hope case, this Court approved the actions of the Commission only because the Commission was found to have acted within the "ambit of its authority."

In the Hope case this Court stated:

"As we have said, the Act does not intrude on the domain traditionally reserved for control by state commis-

sions; and the Federal Power Commission was given no authority over 'the production or gathering of natural gas.'"

The Commission held, notwithstanding the prohibitory provisions of the Act, that it did have rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, and that such jurisdiction was essential to its rate regulatory jurisdiction over interstate transportation and sale of natual gas, and avowedly the Commission exercised such assumed jurisdiction. (R., V. 1, 147) The uncontradicted evidence in this case establishes a commodity market value for Canadian's natural gas at the wellhead in the field and at its gathering system termini. (R., V. 6, 3255-3281) *The Commission could have used this commodity value of Canadian's gas as the starting point for the exercise of its delegated jurisdiction over interstate transportation and sale and avoided any usurpation of prohibited jurisdiction over production and gathering.*

The Circuit Court in the present case overruled the Commission in its contention that it does have rate regulatory jurisdiction over production and gathering but then ruled that what the Commission had done in this case did not constitute prohibited rate regulation of Canadian's production and gathering properties, facilities and business. (R., V. 8, 5075)

In view of the facts set forth in the Statement, it is submitted that the opinion and ruling of the Circuit Court to the effect that the various steps taken by the Commission in arriving at its rate reduction order, and the rate reduction order itself, do not constitute an exercise of prohibited rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, are not consistent with, or supported by, the Record, and serve only as a convenient whitewash for a direct violation of the express provisions of the Act; that in holding that the action of the Commission in this case does not constitute an exercise of rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, the Circuit Court has decided a federal question in a way not only in conflict with the facts and the Act, but also probably in conflict with the Hope and Natural Gas Pipe Line decisions

of this Court; that in so ruling the Circuit Court has decided an important question of federal law which has not been, but should be, settled by this Court; and likewise in so ruling, the Circuit Court has so far departed from the accepted and usual course of procedure, and has so far sanctioned such departure by the Commission, as to call for an exercise of this Court's power of supervision.

The question presented here is whether the Commission in the exercise of its rate regulatory powers can, without violating the prohibitory provisions of the Act, include production and gathering properties in its rate base; apply its original cost or prudent investment theories to such production and gathering properties for rate base purposes; determine operating expenses, depreciation and depletion for such production and gathering properties; abrogate the cost reimbursement provisions of a contract relating to such production and gathering properties; include such production and gathering operations in its cost of service allocation; determine what is a fair rate of return on its rate base which is primarily composed of such production and gathering properties, and, in fact, exercise every rate regulatory function which can be possibly exercised by a rate regulatory commission under an express grant of jurisdictional authority. It is submitted that the question thus presented is of great importance, not only to the natural gas industry as a whole and the Commission, but to the public as well. It is also a question which must necessarily arise in numerous cases in the future. A similar or related question concerning jurisdiction over production and gathering is presented to this Court in the petition for certiorari filed herein (October Term, 1944) in the case of *Panhandle Eastern Pipe Line Co., et al. v. Federal Power Commission, et al.*

Question 2. The Commission's Valuation of Canadian's Leasehold Properties. In avowedly exercising rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business in this case, the Commission has included Canadian's gas leaseholds in its rate base at original cost of acquisition, which results generally in limiting Canadian to a return of 6½% per annum on only the "wildcat" value of such leaseholds while in the hands of predecessor companies prior to discovery and development

over 20 years ago. In adopting this procedure, the Commission has wholly disregarded and excluded all evidence as to Canadian's actual original cost of such leaseholds, as well as all evidence as to the true value thereof, such as their fair market value, as established by uncontradicted evidence, and their value, as measured by the market value of Canadian's natural gas at the wellhead in the field, likewise established by uncontradicted evidence.

Neither the Commission nor the Circuit Court in their respective opinions gave any consideration or made any reference to the uncontradicted evidence in the Record establishing the value of Canadian's leaseholds. The Circuit Court in its opinion impliedly treated gas leaseholds as falling in the same category as ordinary physical property for rate base valuation purposes. It is Canadian's contention that even though original cost may be held to be the proper basis for inclusion of the ordinary classes of property in the rate base of a regulated utility, original cost (and particularly original "wildcat" cost to predecessor companies) is entirely inappropriate for rate base purposes when applied to gas leaseholds and cannot result in a fair valuation and return, either from the viewpoint of the owner of the leaseholds or of the public, and must necessarily deprive the owner of his property without due process in violation of the Fifth Amendment. The natural gas produced from a leasehold costing $1,000,000 has the same commodity value (and is of the same value to the consuming public) as natural gas produced from an adjacent leasehold costing $100,000, and the difference in the cost of the leaseholds cannot justify a return to the million dollar investor ten times larger than that granted to the $100,000 investor.

The Circuit Court, without discussing this question relating to gas leaseholds, stated that it felt bound to approve the Commission's original cost rate base because of the opinions of this Court in the Natural Gas Pipe Line and Hope cases. (R., V. 8, 5079-5081) It is submitted that, even assuming, *arguendo*, the Commission has rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, the action of the Commission in including Canadian's leaseholds in its rate base at original cost of acquisition (in most instances to predecessor

companies), and the opinion of the Circuit Court affirming such action, are not justified by, but are in conflict with, the provisions of the Act; that the Circuit Court has decided a federal question in a way probably in conflict with the Hope and Natural Gas Pipe Line decisions of this Court, as well as a long line of earlier decisions of this Court, ending with the case of *Los Angeles Gas & Electric Corp. v. Railroad Commission*, 289 U. S. 287; that the action of the Commission in this respect, and the affirmance by the Circuit Court, deprive Canadian of its property in violation of the Fifth Amendment; that the Circuit Court has decided an important question of federal law which has not been, but should be, settled by this Court, and likewise has so far departed from the accepted and usual course of procedure, and has so far sanctioned such departure by the Commission, as to call for an exercise of this Court's power of supervision. It is of great importance, not only to Canadian and the natural gas industry as a whole, but also to the public, that the scope of the administrative powers of the Commission in this respect be finally determined. The "rate impact" or "end result" effect of the actions of the Commission and the Circuit Court in this matter is further referred to in connection with Question 9.

Question 3.. Canadian's Actual Original Cost of Leasehold Properties. It has been pointed out in Question 2, supra, that original cost is not the proper basis for inclusion of gas producing leaseholds in a rate base, even though it be assumed, *arguendo*, that the Commission has rate regulatory jurisdiction over such leaseholds. If it be further assumed, *arguendo*, that this contention is invalid and that original cost is the proper basis for inclusion of such leaseholds in a rate base, then the Commission in this case, with the affirmance of the Circuit Court, has arbitrarily and erroneously deprived Canadian of more than $3,000,000 of its *actual and legitimate original cost* of such leaseholds for the reasons set forth in the Statement, pp. 6 to 19, supra. This elimination of more than $3,000,000 of Canadian's actual cash cost and investment in gas-producing properties is arbitrary and therefore is condemned by an unbroken line of decisions of this Court.[11]

[11] Northern Pacific Ry. Co. v. Department of Public Works, 268 U. S. 39, 44-45.

There is no finding by either the Commission or the Circuit Court that Amarillo Oil Company had ever devoted the properties sold to a public use,[12] and a finding to this effect could not be sustained on the Record; but even if this were not true, still there is no basis in the Act, or in this Court's opinions in the Hope and Natural Gas Pipe Line cases, for the elimination from the so-called prudent investment rate base of any portion of the $5,000,000 actually paid by Canadian in cash for the gas producing properties purchased from Amarillo Oil Company. It is not even intimated that the consideration was excessive. The record supports a much higher figure as to its actual value.

This Court has said in the Natural Gas Pipe Line and Hope cases that the Commission is not restricted to any particular formula or combination of formulas in arriving at a rate base. These opinions, however, clearly contemplate that the formula or combination of formulas adopted by the Commission shall bear some reasonable relationship to value and to the admitted facts in any given case. This is clearly demonstrated in the concurring opinion in the Natural Gas Pipe Line case wherein it is stated: "The Commission has a broad area of discretion for selection of an appropriate rate base. * * * Various routes to that end may be worked out by the expert administrators charged with the duty of regulation. * * * *The decision in each case must turn on considerations of justness and fairness which cannot be cast into a legalistic formula.*" (pp. 606-607) (Italics supplied.)

The "legalistic formula" adopted by the Commission for inclusion of Canadian's leaseholds in its rate base has re-

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Interstate Commerce Commission v. Union Pacific RR. Co., 222 U. S. 541, 547.
U. S. v. B. & O.S.W. RR. Co., 226 U. S. 14, 20.
Interstate Commerce Commission v. L. & N. RR. Co., 227 U. S. 88, 91.
Florida E. Coast Ry. Co. v. U. S., 234 U. S. 167, 185.
United States v. Abilene and S. Ry. Co., 265 U. S. 274, 288.

[12]The Commission does make an offhand reference, which hardly reaches the dignity of a finding, that Master Oil and Gas Company and Mission Oil Company (both predecessor companies of Canadian) had devoted their properties to a public use prior to the acquisition by Canadian. (Commission Opinion R., V. 1, 150.) This offhand statement, however, is not even supported by the record. Master Oil and Gas Company had never sold any gas from its properties prior to the acquisition thereof by Canadian (R., V. 5, 2801, 2802), and the record is entirely silent with respect to any sales by Mission Oil Company.

sulted in the assignment of a zero valuation to some of Canadian's most valuable leaseholds and a value of only 10 cents per acre to a still greater block of important leaseholds. The undisputed testimony in the Record demonstrates that these leaseholds were worth many millions of dollars, exclusive of the wells. Clearly the Commission's "legalistic formula" in this case does not meet any test of "justness and fairness."

It is submitted that the action of the Commission, and the affirmance of such action by the Circuit Court, in eliminating more than $3,000,000 of Canadian's actual cash investment in its gas producing properties from its rate base, and denying Canadian any return on such sum, as well as the right to recover such sum through the sale of gas, violates the provisions of the Fifth Amendment and the Act and is probably contrary to the decisions of this Court in the Hope, Natural Gas Pipe Line and other applicable cases hereinabove referred to. It is also submitted that the question here involved presents a federal question of great and far-reaching importance which has not been, but should be, settled by this Court; that the Commission in its action, and the Circuit Court by its affirmance of such action, have so far departed from accepted procedures as to call for an exercise of this Court's power of supervision.

Question 4. Abrogation of Cost Reimbursement Provisions of Canadian's Cost Contract. The pertinent provisions of this Cost Contract are summarized and the action of the Commission in abrogating the cost reimbursement provisions thereof are analyzed in the Statement supra, (pp. 10-12 and 19-20). While under the Contract Canadian's total revenues, can never exceed, but must always be in exact balance with, its costs, the Commission has purported to reduce the amount which Canadian shall be entitled to receive under the Contract by $551,000 annually, without relieving Canadian from any of its obligations under the Contract which render full cost reimbursement imperative. The effect of the Commission's order is that Canadian will be short $551,000 annually in the amount necessary to defray the cost of performing its obligations under the Contract.

The Circuit Court's affirmance of the Commission's action (R., V. 8, 5075-5078) is erroneous, deprives Canadian of its

properties without due process in violation of the Fifth Amendment, violates the provisions of the Act and is probably in conflict with the Hope and Natural Gas Pipe Line and other applicable decisions of this Court in that:

(a) The Circuit Court misconstrues the statement of this Court in the Natural Gas Pipeline case (p. 590), "but regulation does not insure that the business shall produce net revenues, * * *," as meaning that a rate reduction order can be sustained where it absolutely forecloses the possibility of net revenues;

(b) Any general power to abrogate contracts made prior to the adoption of the Act must be exercised in a manner consistent with the due process clause of the Fifth Amendment. *Monongahela Navigation Co. v. United States*, 148 U. S. 312; *United States v. Chicago, Milwaukee, St. Paul & Pacific R. R. Co.*, 282 U. S. 311; *Dubuque & Sioux City R. R. Co. v. Richmond*, 19 Wall. 173; *Great Northern Utility Co. v. Public Service Comm.*, 52 Fed. (2d) 802; *United States v. Seven Oaks Dairy Co.*, 10 Fed. Supp. 995;

(c) Passage of the Act did not automatically overthrow Canadian's Cost Contract and the rates and charges under that Contract could be changed only after an express finding of unreasonableness supported by substantial evidence. *Wichita Railroad & Light Co. v. Public Utilities Comm.*, 260 U. S. 48; *Allen W. Hinkle Dry Goods Co. v. Wichtson Industrial Gas Co.*, 64 Fed. (2d) 881. In this case the Commission's finding of unreasonableness of the rates under the Cost Contract is not supported by substantial evidence.

(d) The Circuit Court has misconstrued its judicial functions in this review under Section 19(b) of the Act and has affirmed the Commission without any analysis of the Cost Contract or the ultimate and inevitable effect of the Commission's action thereon.

(e) The action of the Commission, particularly in abrogating only the cost reimbursement provisions of the Cost Contract and leaving Canadian obligated to perform all the obligations of the Contract, but depriving it of the revenues necessary to such performance, is an arbitrary

and capricious exercise of any general power to abrogate contracts, in violation of the Fifth Amendment. *Nashville, Chattanooga & St. Louis Ry. v. Walters*, 294 U. S. 405; *Nebbia v. New York*, 291 U. S. 502; *Yick Wo v. Hopkins*, 118 U. S. 356.

The only attempted answer of the Circuit Court to Canadian's contentions is that Canadian received $5,000,000 initially in cash from Standard and that Southwestern acquired a portion of Colorado Interstate's common and preferred stock, and is entitled to participate in Colorado Interstate's net earnings. The Circuit Court then states: "Taking these and other factors into account, there is no basis for challenging the order on the ground that it exacts the impossible and is confiscatory." (R., V. 8, 5078) What the "other factors" are which the Circuit Court took "into account" cannot be ascertained from the Court's opinion. In any event, the Circuit Court's reasoning is definitely specious and its conclusions are clearly erroneous in that:

(a) Canadian, as a wholly-owned subsidiary of Southwestern which is kept separate and apart from the latter's other companies and projects in accordance with the original project agreement, did receive temporarily the benefit of a $5,000,000 cash advance by Standard to pay the purchase price for its gas leaseholds, rights and wells with which to commence the Denver Project, but that sum was paid to Amarillo Oil Company for such properties before Canadian was incorporated and the advance was subsequently repaid in cash by Canadian to Standard through Colorado Interstate out of the purchase price for Canadian's First Mortgage Bonds, which were issued and sold, in part, for that purpose; and

(b) The $5,000,000 purchase price can have no pertinency whatsoever to this question except upon the questionable theory that a portion thereof constituted a profit between affiliated companies, which contention is answered elsewhere. Even on such theory "profits of the past cannot be used to sustain confiscatory rates for the future." *Board of Public Utilities Commissioners v. New York Telephone Co.*, 271 U. S. 23, 30.

(c) In any event there can be no justification for a

theory that Southwestern, as the owner of less than one-half of Colorado Interstate's outstanding capital stock, should bear 100% of the burden of meeting deficits created by the Commission under Canadian's Cost Contract in connection with the production, gathering, transportation and delivery of gas for the benefit of Colorado Interstate.

The affirmance by the Circuit Court of the Commission's abrogation of the cost reimbursement provisions of Canadian's Cost Contract deprives Canadian of its property in violation of the Fifth Amendment and is in violation of the provisions of the Act. The Circuit Court, in affirming the Commission, has decided an important question of federal law which has not been, but should be, settled by this Court, and has so far departed from the accepted and usual course of procedure, and has so far sanctioned such departure by the Commission, as to call for an exercise of this Court's power of supervision. The opinion of the Circuit Court is in conflict with the applicable decisions of this Court and with the decisions of other Circuit Courts of Appeal hereinabove referred to.

Question 5. Life of Canadian's Reserves. This question presents a proposition of law. For the purposes of this petition, the accuracy of the various estimates of gas reserves and the methods employed as the basis of such estimates, are not attacked. Moreover, for the purpose of the argument, the very highest applicable reserve estimate is accepted.

Five witnesses in this case testified unequivocally and *without contradiction* that due to the effects of drainage the life of Canadian's gas reserves for long distance pipe lines could be measured only by a determination of the life of the field as a whole. Witnesses for the Commission made no definite study of drainage (R., V. 6, 3640-3641; R., V. 7, 3738-3739, 4002, 4042, 4045, 4072, 4074), and made no effort to refute such testimony.

The Commission ignored this uncontradicted testimony and computed the life of Canadian's reserves not by considering the life of the field as a whole, but by considering only estimated reserves in place under Canadian's acreage

and the estimated future production therefrom. It gave no consideration to the question of drainage from Canadian's acreage or to production from other portions of the interconnected reservoir. Had the Commission considered Canadian's recoverable reserves in connection with the field as a whole, its finding for the life thereof would have been not more than 27 years from December 31, 1939, instead of 53 years from such date, as found by the Commission. Twenty-seven years is the maximum life of Canadian's reserves based upon the estimate of total field reserves submitted by a Commission witness, which is the highest in the Record.

It is true that both the Commission and the Circuit Court agreed generally that drainage should be taken into account in making reserve estimates. This statement of principle, however, does not answer the question here presented. This question does not concern estimates of gas reserves in place, but is directed to the determination of the life of such reserves, which involves many additional factors. The method utilized by the Commission in computing the life of only one segment (Canadian's acreage) of an interconnected reservoir, where all of the gas can be produced by one well and where drainage is definitely present, finds no support in the Record but is affirmatively condemned by the Record.

Mr. Justice Brandeis has said:

> "An order based upon a finding made without evidence, or *a finding made upon evidence which clearly does not support it*, is an arbitrary act against which courts afford relief * * *." (Italics supplied.) *Northern Pacific Ry. Co. v. Dep't Public Works*, 268 U. S. 39, 44-45.

This same principle is also announced by other decisions of this Court.[13]

The finding of the Commission with respect to the life of Canadian's reserves, which finding resulted in an insuf-

[13] Interstate Commerce Comm. v. Union Pac. R. R. Co., 222 U. S. 541-547.
U. S. v. B. & O. S. W. R. R. Co., 226 U. S. 14, 20.
Interstate Commerce Comm. v. L. & N. R. R. Co., 227 U. S. 88, 91.
U. S. v. Abilene & S. Ry. Co., 265 U. S. 274, 288.
Florida E. Coast Ry. Co. v. U. S., 234 U. S. 167, 185.

ficient allowance for depreciation and depletion, and the failure of the Circuit Court to set aside such finding, is in conflict with the decisions of this Court hereinabove referred to.

Question 6. Canadian's Revenues Available for Return. It requires nothing but a few simple arithmetical computations to demonstrate conclusively that the Commission has overstated Canadian's annual revenues available for return by not less than $114,000, as is shown in the Statement. (pp. 22 to 24 supra) This overstatement is reflected in, and becomes a part of, the rate reduction ordered in exactly the same sum. Along with many other questions, the Circuit Court apparently dissolved this glaring error in its over-all conception of the "end result" and "rate impact" principles announced by this Court in the Hope and Natural Gas Pipeline cases. We submit that this is no answer to the question presented. Since there is no basis in the Record for the Commission's action in this respect such action was wholly arbitrary and, therefore, is condemned by, and is in conflict with, the applicable decisions of this Court,[14] including the Hope and Natural Gas Pipeline cases.

Question 7. Depreciation as an Annual Operating Expense. This question raises one of the fundamental distinctions between a regulated natural gas business of limited life and other regulated businesses having an unlimited life.

Various Circuit Courts of Appeal and other courts have recognized this distinction, and have held that a natural gas company is entitled to an annual allowance for amortization over and above the allowance for depreciation as such. This allowance must be sufficient not only to make necessary replacements and to keep the physical properties in 100% operating efficiency as nearly as it is possible to do so, but also to return to the company its total investment at

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[14] Northern Pacific Ry. Co. v. Department of Public Works, 268 U. S. 39, 44-45.
Interstate Commerce Comm. v. Union Pac. R. R. Co., 222 U. S. 541-547.
U. S. v. B. & O. S. W. R. R. Co., 226 U. S. 14, 20.
Interstate Commerce Comm. v. L. & N. R. R. Co., 227 U. S. 88, 91.
U. S. v. Abilene & S. Ry. Co., 265 U. S. 274, 288.
Florida E. Coast Ry. Co. v. U. S., 234 U. S. 167, 185.

the end of the life of the enterprise.[15] These decisions have been approved in principle by this Court.

The Commission completely ignored this principle and has allowed a sum that will not be sufficient to return the invested capital, even on the basis of the Commission's determination, at the end of the service life period fixed by it. It has made no allowance whatsoever to cover replacements in the amount of aproximately $6,500,000, which will be required during the life of the enterprise, as is shown in the Statement. (pp. 24 to 26 supra)

This question was likewise not discussed by the Circuit Court. The action of the Commission, and the Circuit Court's silent affirmance of the same are in conflict with the applicable decisions of other Circuit Courts of Appeal and of this Court, hereinabove referred to.

Question 8. Allocation Errors. Sections 1(a) and 1(b) of the Act provide only for the regulation of rates with respect to the transportation and sale of gas in interstate commerce "for ultimate public consumption." Approximately one-fourth of the gas sold by Canadian to Colorado Interstate is not sold for "ultimate public consumption," but for resale to direct pipe line industrial consumers. These sales are not now subject to regulation by the Commission or any other rate regulatory body. Such reduction, therefore, does not enable the Commission to reduce the rates of Colorado Interstate to such customers by a single penny. It is thus apparent that the reduction in the rates for such gas sold by Canadian to Colorado Interstate, which reduction is in excess of $137,500 per annum, not only serves no useful purpose whatsoever, but represents an attempt by the Commission to regulate transactions over which it has no jurisdiction.

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[15] United Fuel Gas Co. v. Public Service Comm. of W. Virginia, 14 Fed. (2d) 209-11. (Affirmed without discussion of this point, 278 U. S. 322.)

United Fuel Gas Co. v. Railroad Comm., 13 Fed. (2d) 510, 518. (Affirmed without discussion of this point, 278 U. S. 300.)

Oklahoma Natural Gas Co. v. Corporation Comm., 90 Okla. 84; 216 Pac. 917, 923-924.

People ex Rel. Pennsylvania Gas Co. v. Public Service Comm., 204 App. Div., 73 (N. Y.)

Landon v. Public Utilities Comm., 242 Fed. 658. (Reversed on other grounds, 249 U. S. 236.)

This purported rate reduction is also erroneous, as well as inconsistent and contradictory, because the Commission in the development of its "allocation of cost of service" formula considered Canadian and Colorado Interstate as one composite system. The Commission made no effort to segregate transportation costs and determine such costs for each company as a separate entity. This being true, there is no basis in any event for the reduction in rates for gas sold to direct industrial consumers from a single composite system.

The Circuit Court overruled this contention without discussion. The action of the Commission and affirmance of such action by the Circuit Court are erroneous under the facts of this case, as shown in the Statement. (pp. 26-27, supra) The question presented raises an important question of federal law in determining the scope of the Commission's administrative powers under the Act, which will likely arise in other cases and which has not been, but should be, settled by this Court.

In the companion case Colorado Interstate elaborates on the additional contentions that the decisions of this Court require a separation of property, which the Commission and the Circuit Court admit was not done in this case; and that even if the Commission's "allocation of cost of service" is a valid substitute for the separation of the property itself and could be approved (which is denied), no "end result" formula such as was approved in the Hope case can possibly excuse the flagrant errors in its application in this case. In order to avoid repetition, reference is hereby made to the petition and brief of Colorado Interstate upon this subject and your petitioner relies upon the facts stated and the argument made therein.

Question 9. The "End Result" and "Rate Impact" Principles Announced in the Natural Gas Pipe Line and Hope Cases. In affirming the Commission's rate reduction order, the Circuit Court relies almost entirely upon the Hope and Natural Gas Pipeline decisions of this Court. Canadian submits that the Circuit Court's opinion is in conflict with such decisions, and that, when viewed as a whole, the Commission's order cannot be sustained as being

just and reasonable or in the public interest in the light of the requirements of the Act and the "end result" and "rate impact" principles announced by this Court in the Natural Gas Pipeline and Hope cases, where it appears from the Record that such order of the Commission, among other things, results in the following:

(a) The assumption of full and complete rate regulatory jurisdiction over production and gathering properties, facilities and business which has been expressly withheld by Congress;

(b) The absolute denial of actual cost, discovery, market and all other values of gas leaseholds for rate base purposes, except provable capital expenditures of predecessor companies commencing with the first "wildcat" or discovery well drilled over 25 years ago;

(c) The nullification of the cost reimbursement provisions of a Cost Contract entered into over 15 years ago for the purpose of dedicating and perpetuating substantial gas reserves and properties to the service of the Denver pipe line market *at cost* for a period of years, thereby leaving Canadian in an impossible situation to perform its contract obligations;

(d) The enforced default of Canadian not only in its Cost Contract obligations, but its funded debt obligations, notwithstanding the fact that Canadian is operated as a non-profit company and has not had, and will not have, any earnings or profits for distribution to its owners, so long as the Cost Contract remains in effect;

(e) An allowance for annual depreciation and depletion based upon a 53-year assumed life of Canadian's gas reserves, whereas the evidence will not support a finding of a life of Canadian's recoverable reserves in excess of 27 years;

(f) An erroneous, arbitrary and capricious overstatement of Canadian's annual income available for return in the amount of $114,000, which is reflected in the rate reduction order and deprives Canadian of that amount annually;

(g) A failure to grant depreciation allowances sufficient to permit Canadian to recover approximately $6,500,000 for replacements which will necessarily have to be made long prior to the 50-year service life period adopted by the Commission; and

(h) A reduction in Canadian's annual income by not less than $137,500 annually through the Commission's application of its cost of service allocation theories which, among other things, assumes jurisdiction over that portion of Canadian's gas sold by Canadian to Colorado Interstate which Colorado Interstate sells for other than resale purposes and over which the Commission has no jurisdiction.

It is submitted that a rate reduction order which is grounded upon an unwarranted assumption of prohibited jurisdiction expressly withheld from the Commission by the Congress, over production and gathering and over gas not sold for resale for ultimate public consumption cannot be in the public interest, and that a rate reduction order which must of necessity leave Canadian with an annual cash deficit of $551,000 and thus foreshadow its early financial ruin cannot be squared with the provisions of the Act, the Fifth Amendment, or the "end result" and "rate impact" principles announced by this Court in the Natural Gas Pipeline and Hope cases.

It is further submitted that the Circuit Court has misconstrued and misinterpreted the pronouncements of this Court in the Hope and Natural Gas Pipeline cases with respect to "end result" and "rate impact" principles and has adopted a view of such pronouncements which would reduce judicial review of the actions of the Commission under the Act to merely a perfunctory burial service over the grievances of the petitioner. It is further submitted that such a view is not justified by, but is in conflict with, said decisions and that this Court should exercise its supervisory power to clarify the same in the interest of the public and the natural gas industry, as well as your petitioner and the Commission.

CONCLUSION.

For the foregoing reasons it is respectfully submitted that the petition for writ of certiorari should be granted.

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APPENDIX

The pertinent provisions of the Natural Gas Act of 1938 (52 Stat. 821, et seq.; Title 15, U.S.C.A., Sec. 717) are as follows:

Sec. 1 (a). "As disclosed in reports of the Federal Trade Commission made pursuant to S. Res. 83 (Seventieth Congress, first session) and other reports made pursuant to the authority of Congress, it is hereby declared that the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest, and that Federal regulation in matters relating to the transportation of natural gas and the sale thereof in interstate and foreign commerce is necessary in the public interest."

Sec 1 (b). "The provisions of this Act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas."

Section 4 (a). "All rates and charges made, demanded, or received by any natural-gas company for or in connection with the transportation or sale of natural gas subject to the jurisdiction of the Commission, and all rules and regulations affecting or pertaining to such rates or charges, shall be just and reasonable, and any such rate or charge that is not just and reasonable is hereby declared to be unlawful.

(b). "No natural-gas company shall, with respect to any transportation or sale of natural gas subject to the jurisdiction of the Commission, (1) make or grant any undue preference or advantage to any person or subject any person to any undue prejudice or disadvantage, or (2) maintain any unreasonable difference in rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service.

(c). "Under such rules and regulations as the Commission may prescribe, every natural-gas company shall file with the Commission, within such time (not less than sixty days from the date this Act takes effect) and in such form as the Commission may designate, and shall keep open in convenient form and place for public inspection, schedules showing all rates and charges for any transportation or sale subject to the jurisdiction of the Commission, and the classifications, practices, and regulations affecting such rates and charges, together with all contracts which in any manner affect or relate to such rates, charges, classifications, and services."

Section 5 (a). "Whenever the Commission, after a hearing had upon its own motion or upon complaint of any State, municipality, State commission, or gas distributing company, shall find that any rate, charge, or classification demanded, observed, charged, or collected by any natural-gas company in connection with any transportation or sale of natural gas, subject to the jurisdiction of the Commission, or that any rule, regulation, practice, or contract affecting such rate, charge, or classification is unjust, unreasonable, unduly discriminatory, or preferential, the Commission shall determine the just and reasonable rate, charge, classification, rule, regulation, practice, or contract to be thereafter observed and in force, and shall fix the same by order: *Provided, however,* That the Commission shall have no power to order any increase in any rate contained in the currently effective schedule of such natural gas company on file with the Commission, unless such increase is in accordance with a new schedule filed by such natural gas company; but the Commission may order a decrease where existing rates are unjust, unduly discriminatory, preferential, otherwise unlawful, or are not the lowest reasonable rates."

Sec. 5 (b). "The Commission upon its own motion, or upon the request of any State commission, whenever it can do so without prejudice to the efficient and proper conduct of its affairs, may investigate and determine the cost of the production or transportation of natural gas by a natural-gas company in cases where the Commission has no authority to establish a rate governing the transportation or sale of such natural gas."

Section 6 (a). "The Commission may investigate and ascertain the actual legitimate cost of the property of every natural-gas company, the depreciation therein, and, when found necessary for rate-making purposes, other facts which bear on the determination of such cost or depreciation and the fair value of such property."

Section 19 (b). "Any party to a proceeding under this Act aggrieved by an order issued by the Commission in such proceeding may obtain a review of such order in the circuit court of appeals of the United States for any circuit wherein the natural-gas company to which the order relates is located or has its principal place of business, or in the United States Court of Appeals for the District of Columbia, by filing in such court, within sixty days after the order of the Commission upon the application for rehearing, a written petition praying that the order of the Commission be modified or set aside in whole or in part. A copy of such petition shall forthwith be served upon any member of the Commission and thereupon the Commission shall certify and file with the court a transcript of the record upon which the order complained of was entered. Upon the filing of such transcript such court shall have exclusive jurisdiction to affirm, modify, or set aside such order in whole or in part. No objection to the order of the Commission shall be considered by the court unless such objection shall have been urged before the Commission in the application for rehearing unless there is reasonable ground for failure so to do. The finding of the Commission as to the facts, if supported by substantial evidence, shall be conclusive. If any party shall apply to the court for leave to adduce additional evidence, and shall show to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for failure to adduce such evidence in the proceedings before the Commission, the court may order such additional evidence to be taken before the Commission and to be adduced upon the hearing in such manner and upon such terms and conditions as to the court may seem proper. The Commission may modify its findings as to the facts by reason of the additional evidence so taken, and it shall file with the court such modified or new findings, which if supported by substantial evidence, shall be conclu-

sive, and its recommendation, if any, for the modificati
or setting aside of the original order. The judgment a
decree of the court, affirming, modifying, or setting asi
in whole or in part, any such order of the Commissi
shall be final, subject to review by the Supreme Court
the United States upon certiorari or certification as p
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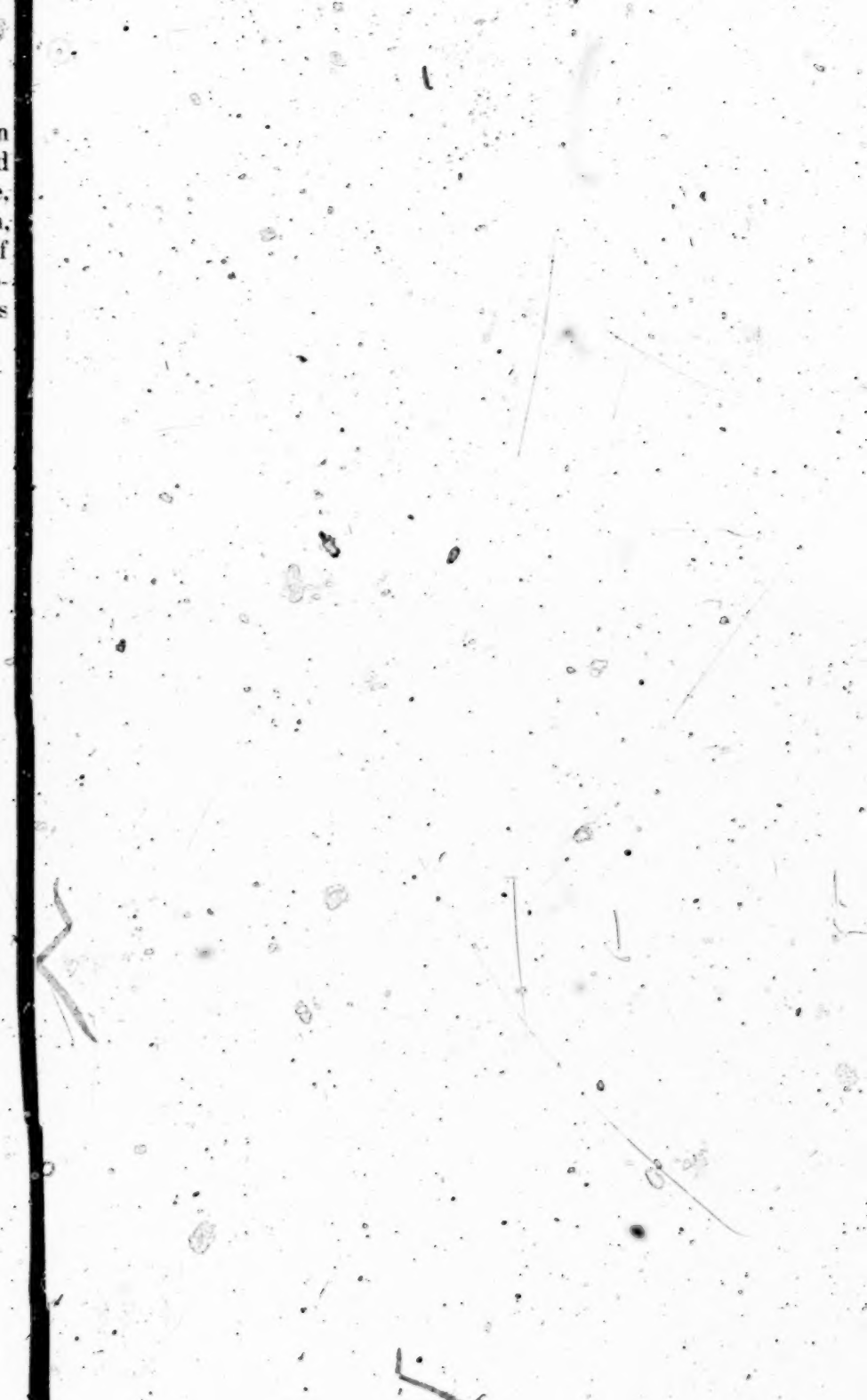
amended (U.S.C., title 28, secs. 346 and 347)."



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IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

No. 380

CANADIAN RIVER GAS COMPANY, a Corporation,
PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

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January 8, 1945.

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IN THE

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October Term, 1944.

No. 380

CANADIAN RIVER GAS COMPANY, a Corporation,
PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

BRIEF OF PETITIONER.

OPINION BELOW.

The Opinion of the Circuit Court of Appeals, Tenth Circuit, is reported in 142 Fed. (2d) 943. (R., V. 8, 5066-5094.) The Opinion and Order of the Federal Power Commission is reported in 43 P.U.R. (N.S.) 205. (R., V. 1, 140-195.)

GROUNDS UPON WHICH JURISDICTION OF THIS COURT IS INVOKED.

The jurisdiction of this Court is invoked under Section 19(b) of the Natural Gas Act (52 Stat. 821; Title 15, USCA, Sec. 717r) and Section 240a of the Judicial Code, as amended by the Act of February 13, 1925 (Title 28, USCA, Section

347). The sections of the Natural Gas Act pertinent to this review are set forth in Appendix A hereto.

THE QUESTIONS PRESENTED.

The Court, by its Order of November 13, 1944, granted certiorari limited to Question No. 8 presented in the Petition for Certiorari filed herein by Canadian River Gas Company, and by its Order of January 2, 1945, enlarged the scope of review so as to include Questions 1, 2 and 3 stated in the Petition for Certiorari. The four questions now presented for the consideration of the Court in the numerical sequence set forth in the Petition for Certiorari are as follows:

Question 1.

"Whether the Circuit Court, after correctly holding that the Commission has no rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, erroneously concluded and ruled that the Commission in this case did not exercise such prohibited jurisdiction."

Question 2.

"Whether, even assuming, *arguendo*, that the Commission has rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, the Commission can, consistently with the Fifth Amendment to the Constitution of the United States, the requirements of the Act, and the decisions of this Court in the Natural Gas Pipeline, Hope and other cases, limit Canadian generally to a return only on the 'wildcat' or original cost of its gas leaseholds to predecessor companies prior to discovery and development over 20 years ago, to the exclusion of all evidence of value, market or otherwise, the result of this procedure being, among other things, the inclusion in the Commission's rate base of a substantial block of Canadian's most valuable leaseholds at zero valuation and a still larger block of valuable leaseholds at only 10¢ per acre valuation."

Question 3.

"Whether, even assuming, *arguendo,* that the Commission has rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, and further assuming, *arguendo,* that it is proper in this case to include Canadian's leaseholds and wells in the rate base on the basis of original cost, the Commission can, consistently with the Fifth Amendment to the Constitution of the United States, the requirements of the Act, and the principles announced by this Court in the Natural Gas Pipeline, Hope and other cases, disallow and eliminate more than $3,000,000, plus interest during construction paid thereon, from the amount actually invested by Canadian in its original acquisition of production properties in about 1928 solely upon the ground that the sum so eliminated allegedly represented a profit between affiliated companies, and, therefore, formed no proper part of the cost of said properties, where the Record clearly demonstrates that the transaction resulting in the acquisition of said properties was not between affiliates and that the price paid therefor was not excessive."

Question 8.

"Whether the Commission can, consistently with the Fifth Amendment to the Constitution of the United States and the provisions of the Act, reduce the rates and charges of Canadian on that part of its natural gas sales to Colorado Interstate which is not sold by the latter for ultimate distribution to the public but is sold by it directly to its industrial customers; furthermore, independent of the above question, whether the Commission erred in making no separation or allocation as between Canadian's properties devoted to intrastate sales in Texas and its properties devoted to interstate sales, or as between the properties of Canadian and the properties of Colorado Interstate, and in using in lieu thereof a substitute method of allocation of cost of service which results in burdening non-regulable gas with costs actually chargeable against regulable gas, in violation of the Fifth Amendment to the Constitution of the United States and the Act."

ABBREVIATIONS USED.

For the sake of brevity the following abbreviations will be used herein:

"R." for the printed Record filed herein, and "V" for the "Volume" of the Record, followed by the page number in the Record to which reference is made.

"Circuit Court" for "United States Circuit Court of Appeals for the Tenth Circuit."

"Commission" for "Federal Power Commission."

"Act" for "Natural Gas Act of 1938."

"Amarillo" for "Amarillo Oil Company."

"Canadian" for the petitioner, "Canadian River Gas Company."

"Colorado Interstate" for "Colorado Interstate Gas Company."

"Southwestern" for "Southwestern Development Company."

"Standard" for "Standard Oil Company (New Jersey)."

"Cities Service" for "Cities Service Company."

"Cost Contract" for the Agreement dated as of January 3, 1928, between Canadian and Colorado Interstate covering the purchase and sale of gas at cost under the terms of which petitioner has been ordered by the Commission to reduce its rates or charges in the amount of $551,000 annually.

"Natural Gas Pipeline case" for "*Federal Power Commission v. Natural Gas Pipeline Company,*" 315 U. S. 575.

"Hope case" for "*Federal Power Commission v. Hope Natural Gas Company,*" 320 U. S. 591.

STATEMENT OF THE CASE.

The Commission entered an order following a hearing, affirmed by the Circuit Court, reducing the purchase price for natural gas and compensation for the performance of other contract obligations, which Canadian is entitled to

receive, in the aggregate sum of $561,000 annually. Such total reduction is in the amount of $10,000 annually for natural gas sold by Canadian to Clayton Gas Company for resale in the Town of Clayton, New Mexico, and in the amount of $551,000 annually for the compensation (including the sale price of gas) which Canadian is entitled to receive under the Cost Contract between Canadian and Colorado Interstate. An investigation of the rates charged by Colorado Interstate for the sale of its gas was also had by the Commission, and the Canadian and Colorado Interstate cases were consolidated for the purpose of the hearing, and the Commission likewise entered its separate order requiring a reduction in the rates charged by Colorado Interstate. Limited review has been granted by this Court to Colorado Interstate in Case No. 379 to the action of the Circuit Court in affirming the Commission's rate reduction order as against Colorado Interstate.

As Canadian's case and Colorado Interstate's case were consolidated for the hearing before the Commission, a joint printed Record in their respective cases was filed in the Circuit Court and a joint printed Record has been filed here, although the two cases are entirely separate and independent cases.

The printed Record is approximately 5100 pages in length, but we shall do our best to summarize in as brief a space as possible the portions of this lengthy Record deemed pertinent to a consideration of the four questions presented herein.

While almost all of the record facts hereinafter set forth or summarized are pertinent to all four questions presented, some have particular pertinency to specific points. For the convenience of the Court, therefore, we shall first submit a brief statement of general historical facts pertinent to all questions presented, and then summarize under separate headings additional facts which are particularly pertinent to the separate questions indicated, with the understanding that such facts may likewise be pertinent to one or more of the other questions.

The Petitioner.

As stated by the Commission in its Opinion (R., V. 1, 143), Canadian is engaged in several different and distinct business operations or functions; viz., (a) production; (b) gathering; (c) transportation, and (d) sales of natural gas. Its producing and gathering operations are conducted wholly within the Texas Panhandle Field in the State of Texas. It owns and operates in that field approximately 300,000 acres of natural gas leaseholds, and, as of December 31, 1939, was operating 94 gas wells thereon, and its gathering system consisted of approximately 144 miles of various sizes of pipe. Canadian produces from its own properties *all* gas which it sells.

Canadian owns and operates one transmission line commencing at Bivins Station, being one terminus of its gathering system in the Texas Panhandle Field, Texas, and ending at a point near the Town of Clayton, New Mexico. It leases other transmission facilities commencing at another terminus of its gathering system in the Texas Panhandle Field known as Fritch Station and ending at a point near Gray, Oklahoma.

Canadian sells substantial quantities of gas *at the well head* in the Texas Panhandle Field to Amarillo Oil Company for the City of Amarillo and the Town of Channing, Texas, and along its transmission line for the Dalhart, Hartley and Texline, Texas, markets, all of which are purchased and consumed wholly within the State of Texas. It transports gas through its transmission line to a point near Clayton, New Mexico, which is about 85 miles from the field. Some of the gas so transported by Canadian is there sold and delivered to the Clayton Gas Company for distribution in the Town of Clayton, New Mexico. The greater portion of the gas so transported by Canadian is there sold and delivered to Colorado Interstate, and then transported, sold and delivered by Colorado Interstate through its own transmission facilities which start at Clayton Junction, New Mexico, and continue northward about 300 miles to the Denver, Colorado, city limits. Part of the gas so purchased and transported by Colorado Interstate is sold by it for resale for ultimate public consumption, and

part is sold by it directly to its own industrial consumers. Canadian also sells a quantity of gas to Colorado Interstate for resale to Natural Gas Pipeline Company of America, which is delivered through the leased facilities mentioned above to Colorado Interstate at Gray Junction, Oklahoma (R., V. 2, 708).

The gas sold by Canadian to Colorado Interstate at Clayton Junction, New Mexico, is sold and delivered pursuant to a contract between Canadian and Colorado Interstate, dated as of January 3, 1928, (Ex. 16, R., V. 2, 711-780), known as the "Cost Contract" under which Canadian is required to perform numerous obligations, such as maintaining and renewing its gas leasehold interests, drilling wells, constructing and maintaining necessary pipe line and other facilities in order to supply Colorado Interstate's markets and to produce, gather, transport and sell its gas to Colorado Interstate at Canadian's cost for a fixed period of 20 years and so long thereafter as Colorado Interstate elects to buy. It is the over-all compensation which Canadian is entitled to receive under this Cost Contract which the Commission's rate reduction order requires to be reduced to the extent of $551,000 annually.

The location of Canadian's production and gathering properties in the Texas Panhandle Field, Texas, its transmission system, and the connecting transmission system of Colorado Interstate and other related matters are shown on a Flow Map, Commission's Exhibit 138, reproduced copy of which is attached hereto as Appendix B. (R., V. 2, 1079.)

General History of Canadian's Gas Leasehold Properties.

Over 27 years ago (1917), a few ranchers and small businessmen residing in and about Amarillo, Texas, incorporated and organized a small corporation called "Amarillo Oil Company," for the purpose of drilling a "wildcat" well for oil in what has now become the great Texas Panhandle Field in the State of Texas. (R., V. 5, 2837, 3040.) At that time there had been no discovery of oil or gas within 200 miles of the proposed well location. (R., V. 7, 3673.) Consequently, the cost to Amarillo of assembling the block of leases to be tested was purely nominal, except for drilling obligations.

After many unfortunate experiences, financial and otherwise, the "wildcat" test well was finally completed in the fall of 1918 as a gas well—the first commercial producer of either oil or gas in the Texas Panhandle Field. From that successful "wildcat" beginning, the field has been subsequently developed by the drilling of successive test wells until it now contains 1,500,000 proven acres on which there are located approximately 1,650 wells producing gas only, and approximately 4,200 wells producing both oil and gas. (R., V. 1, 469.) Canadian's acreage produces no oil.

In 1924 Southwestern became the owner of all the capital stock of Amarillo. In the meantime, Amarillo had acquired additional blocks of leaseholds in the field, and its total holdings were then approximately 300,000 acres. Substantially all of such leaseholds were likewise granted for oil exploration at a time when the acreage embraced therein was classified as "unproven" and valued accordingly. Additional test wells were drilled on this acreage, most of which proved to be substantial gas producers, although some resulted in dry holes.

Amarillo Oil Company had no market at that time for its gas production, except for relatively small sales *at the well head* for the City of Amarillo, Texas, and vicinity, and one industrial sale at a plant near Amarillo. It had one well with a capacity substantially in excess of the quantity required to supply its entire available market. (R., V. 1, 459.)

Added to the lack of adequate markets, the gas properties and investments of Amarillo were threatened at that time with still another menace. Tremendous volumes of gas in the field were being blown and wasted in the air, to the extent that it became a national scandal.[1] (R., V. 7, 3673-3675.) Enormous quantities of gas were being consumed by carbon black plants and natural gasoline plants. The seriousness of the situation was ultimately recognized by the Texas Legislature, which enacted new legislation to control the wastage of gas, as well as its use for carbon black purposes. (R., V. 7, 3675-3676.)

It became obvious that the Company could not realize upon

[1] Thompson v. Consolidated Gas Utilities Corp., 300 U. S. 55.

its extensive gas properties unless new markets of a substantial character were developed promptly. There were then no long-distance pipe lines connected to the field. Pipe line markets in the immediate vicinity of the field were either occupied or too small to be attractive, and it seemed advisable to look for markets at greater distances. (R., V. 1, 402.)

Origin of Denver Project.

The transportation of gas by pipe line over long distances was in its infancy. Neither Southwestern nor any of its affiliated companies had had any previous experience in transporting gas over long distances; moreover, Southwestern and its subsidiaries lacked the necessary capital with which to construct such a pipe line. (R., V. 1, 402, 403.) The City of Denver, located a distance of approximately 350 miles from the Texas Panhandle Field, and intervening territory, seemed to be the closest available market for natural gas in substantial quantities. (R., V. 1, 402.) In 1926 Southwestern approached Standard Oil Company (New Jersey) regarding the construction of a pipe line project to Denver and intervening territory, because the latter had had a long and successful experience in operating natural gas projects in other areas, and was fully able to finance such a project. (R., V. 1, 403.) Standard investigated the feasibility of the project with favorable results. Cities Service Company was then brought into the negotiations because its subsidiary, Public Service Company of Colorado, held a manufactured gas franchise in Denver, and another subsidiary company held a similar gas franchise in Pueblo, Colorado. (R., V. 1, 403.)

The three parties, to wit: Standard, which was experienced in operating long-distance pipe lines and had the ability to finance the same; Cities Service, which controlled important market outlets in Colorado through its subsidiaries; and Southwestern, which controlled substantial gas reserves in the Texas Panhandle Field through its subsidiary, Amarillo, began negotiations which continued for almost a year and finally culminated in an agreement between the parties on April 5, 1927, for the construction of a pipe line to Denver and intervening points and the acquisition

of gas leaseholds and wells owned by Amarillo for the project. (R., V. 1, 403-411.)

Neither Standard nor Cities' Service had any interest whatsoever in either Amarillo or Southwestern on that date (April 5, 1927), prior thereto, or subsequent thereto. There was no corporate affiliation between any of the three participating companies which executed the contract of April 5, 1927. (R., V. 1, 460, 613-622.) *As stated above, the contract was entered into only after long and continued arm's-length negotiations between the parties.* (R., V. 1, 493-495; 518-526.)

The Denver Project agreement of April 5, 1927, between Standard, Cities Service and Southwestern (Ex. 1; R., V. 1, 381-400), known as the "Memorandum of Stipulations," sets out in considerable detail the terms and conditions under which the parties agreed to develop and participate in the project, but it is important here to point out briefly two of the principal obligations assumed thereunder by Southwestern.

Under this three-party agreement Southwestern obligated itself (1) to organize and incorporate a company (now Canadian), *separate and apart from its other companies and projects*, to which it would cause Amarillo to convey, free of all debts, liens and encumbrances, all of Amarillo's gas leaseholds, rights and wells in the Texas Panhandle Field at an agreed price of $5,000,000; and (2) to cause the company (Canadian) receiving such gas leaseholds, rights and wells to enter into a long-term contract to dedicate its gas reserves to the project and to sell gas to the principal project company (now Colorado Interstate) on a cost basis in consideration of the issuance by Colorado Interstate to Southwestern, as the nominee of Canadian, of 42½% of its authorized common stock with no par value and $1,000,000 par value of its authorized 6% preferred stock. (R., V. 1, 381-400.)

Canadian's Purchase of Gas Leaseholds, Rights and Wells for $5,000,000.

The purchase price of $5,000,000, as negotiated and agreed to by Standard, Cities Service and Southwestern, for the gas

leaseholds, rights and wells of Amarillo, which was to form the foundation for the project, was advanced and paid to Amarillo by Standard in two equal payments made in December, 1927, and January, 1928, which was prior to the incorporation of Canadian (R., V. 5, 2936). Pursuant to its obligation under the original three-party project agreement, Southwestern organized Canadian in February, 1928, *separate and apart from its other companies and projects*, and subsequently caused Amarillo to formally transfer and convey its gas leaseholds, rights and wells to Canadian. There were no negotiations whatsoever between Canadian and Amarillo (R., V. 1, 455-456).

To finance the several obligations imposed upon Canadian under the three-party agreement of April 5, 1927, i. e., to acquire gas-producing properties, to drill wells, to construct gathering facilities and transmission facilities, and to pay the agreed purchase price of $5,000,000 for the gas leaseholds, rights and wells of Amarillo, Canadian issued and sold to Colorado Interstate $11,000,000 principal amount of its 6% First Mortgage Bonds maturing in annual installments of approximately $600,000 through 1947. Out of the proceeds derived from the sale of its bonds to Colorado Interstate, Canadian repaid the $5,000,000 advance made by Standard to finance Canadian's purchase of gas leaseholds, rights and wells from Amarillo (R., V. 1, 406, 462; R., V. 2, 656-685).

Canadian's Cost Contract With Colorado Interstate.

Acting again in pursuance of the obligations imposed upon it under the terms of the three-party project agreement of April 5, 1927, Canadian, for the consideration hereinabove described, entered into a contract with Colorado Interstate as of January 3, 1928, to furnish Colorado Interstate with its natural gas requirements at cost over a period of years (Ex. 16; R., V. 2, 744-780).

This particular contract is unusual and unique in many respects. It is not the ordinary contract for the current purchase and sale of natural gas as a commodity, and it is not the ordinary contract that courts or regulatory bodies are called upon to consider when confronted with a challenge

to the right of abrogation. Briefly, the Cost Contract, and Canadian's related Trust Indenture (R., V. 2, 656-685) securing its bonds held by Colorado Interstate, require Canadian:

(a) to maintain and renew all its gas leasehold interests, to drill necessary wells, and to construct and maintain necessary pipe line and other facilities in order to supply Colorado Interstate's market at all times with its gas requirements;

(b) to produce, gather, transport and *sell* its gas to Colorado Interstate *at absolute cost* for a fixed period of 20 years, and so long thereafter as Colorado Interstate elects to buy;

(c) to dedicate its gas reserves and facilities to the service of Colorado Interstate's market, with no right to sell or otherwise dispose of its gas or gas properties to others for carbon black, industrial or any other purpose without the consent of Colorado Interstate (except for outstanding commitments to sell gas to Amarillo Oil Company to supply the Amarillo market)[2]; and

(d) to credit Colorado Interstate's cost of gas with any and all revenue, income or profits which it may receive from *any* source, and to continue to operate strictly as a non-profit company for the full term of the Cost Contract.

[2]The cost of gas delivered by Canadian to Colorado Interstate under the Cost Contract is computed by deducting all outside revenues[3] received by Canadian (including sales of gas to others) from the aggregate cost of producing and delivering all gas sold to all purchasers. Such cost includes interest on and amortization of Canadian's funded and other

[2]Canadian has two outstanding contract obligations to sell gas *at cost* i.e.: (1) to supply all markets of Colorado Interstate, as above described and (2) to supply the Amarillo market of Amarillo Oil Company, which commitment was in existence long prior to the organization of Canadian and has certain preferential rights over all other markets of Canadian. (R., V. 1, 402; V. 2, 714, 715, 748)

[3]For example, in 1929 Canadian received in excess of $500,000 from the United States Government in final payment of the purchase price for certain helium-bearing leaseholds and wells of Canadian. Since the sum so paid represented revenues received by Canadian, it was likewise credited as a deduction against Colorado Interstate's current cost of gas under the Cost Contract. (R., V. 5, 2723; R., V. 1, 381-401)

indebtedness, but does not include depreciation and depletion, or retirements.

Thus, it will be seen that for the services to be rendered to it by Canadian under the Cost Contract, Colorado Interstate agreed to underwrite and guarantee Canadian's net cost of operations after crediting profits or income from all other sources, but no more. Moreover, Colorado Interstate was granted direct and complete control over Canadian's costs which it is obligated to reimburse. Obviously, Canadian has not paid, and cannot pay so long as the Cost Contract is in effect, any dividends, earnings or profits in any manner to the owners and holders of its capital stock. This Contract, as above indicated, covers not only Canadian's transmission system, but also its production and gathering properties, facilities and business. Under the Cost Contract Canadian's receipts in any given year can never exceed its actual costs.

Canadian's Trust Indenture provides that in case of default thereunder, in addition to the usual remedies of foreclosure, etc., the Trustee may forthwith take possession of, operate, manage and control the trust estate and, at its discretion, may sell the trust estate to the highest and best bidder "who will assume and perform the obligations of the company" under its Cost Contract with Colorado Interstate. The trust estate *must* be sold in one parcel and as an entity, and the purchaser or purchasers at any sale *must* be required to assume the performance of Canadian's obligations under its Cost Contract with Colorado Interstate.

The Commission's Findings and Order and the Circuit Court's Affirmance Thereof.

The Commission's "Order Reducing Rates," its Opinion supporting such order, and the Opinion of the Circuit Court affirming such order, raise several important questions which form the basis of the petition in this case. Canadian contends that on a rate regulatory theory or any other theory the Commission in its various findings and ultimately in its rate reduction order, committed numerous errors of law, constituting violations of the Act itself and which necessarily deprive Canadian of its property without due process

in violation of the Fifth Amendment, and that viewed as a whole, the rate reduction order cannot be sustained under the "end result" or "rate impact" principles announced by this Court in the Natural Gas Pipeline and Hope cases. In so far as deemed pertinent at this time, the following additional statements are submitted with respect to the questions involved:

1. *Jurisdiction Over Production and Gathering (Question 1).*

In its Opinion (R., V. 1, 147), the Commission has sought to justify its exercise of rate regulatory jurisdiction over Canadian's producing and gathering properties by stating that "Canadian's production and gathering operations are an integral part of its total operations, including transportation in interstate commerce and the sale of natural gas for resale in interstate commerce" and that "Canadian's operations are an integral part of Colorado's operations and the two comprise a single operating system."

In their Answer Brief (pp. 19-25) before the Circuit Court, counsel for the Commission were even more positive and expansive with respect to the alleged rate regulatory powers of the Commission over Canadian's producing and gathering properties and operations. After stating that Canadian's claims of the lack of such jurisdiction were without merit even though "the determination of the rates, through rate base, etc., touches incidentally on production and gathering", because "such a construction would frustrate and nullify the very purpose of Congress", they conclude that "the Commission has jurisdiction of production and gathering so far as production and gathering is in aid of sales of natural gas in interstate commerce for resale subject to the rate jurisdiction of the Commission".

During the course of the hearing, the Commission overruled Canadian's objections to the introduction of *rate regulatory* evidence relating to production and gathering, notwithstanding that Section 1(a) of the Act declares only that the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public in-

terest and that the regulation of such business is necessary in the public interest, and notwithstanding that Section 1 (b) of the Act delegates only to the Commission rate regulatory jurisdiction over the interstate transportation and sale of natural gas for resale for ultimate public consumption and expressly provides that the Act "shall not apply * * * to the production or gathering of natural gas" (R., V. 5, 2639, 2640).

The Circuit Court did not agree with the Commission's contentions in this respect. It ruled as a matter of law that the Commission does not have rate regulatory jurisdiction over production and gathering, but then farther ruled and held that what the Commission did in this case does not constitute the exercise of rate regulatory jurisdiction over production and gathering (R., V. 8, 5073-5075). There has been no appeal by the Respondents from such rulings or any part thereof. Thus, there is presented here for consideration the specific question as to whether the Commission has, in this case, as a matter of fact or in legal effect, exercised rate regulatory jurisdiction over Canadian's producing and gathering properties and operations, which is expressly prohibited by the Act.

In support of its contention that the Commission, with the Circuit Court's affirmance, has in fact and legal effect exercised prohibited rate regulatory jurisdiction over Canadian's producing and gathering properties and operations, Canadian maintains that the Commission has treated every element of Canadian's production and gathering properties, facilities and business in precisely the same manner as its interstate transmission properties, facilities and business and has subjected every element of Canadian's production and gathering facilities to the same rate regulatory measures and procedures as Canadian's Interstate transmission properties, facilities and business for the purpose of arriving at its ultimate conclusions with respect to rates and charges, and that if the Act had expressly delegated full and complete rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, the Commission could have done no more than it has done in this case.

In this connection, the following facts from the Record are now summarized:

(a) The Record contains uncontradicted evidence as to the fair market value of Canadian's gas as a commodity at the wellhead in the field and at the end of Canadian's gathering system, which is the beginning point of interstate transportation (R., V. 6, 3256, 3280; Exhibit 168, Sheets Nos. 113, 114 and 127; R., V. 6, 3281). This evidence consisted of the testimony of Canadian's witnesses, R. A. Ford and R. J. Wallace, corroborated by the testimony of Commission witness, Lester B. McKinstry. It was not contradicted and established a 4¢ per Mcf commodity market value for Canadian's gas at the wellhead in the field (16.4# pressure base) and at least a 7¢ per Mcf commodity market value for the gas at Bivins Station, Texas, which is one terminus of the gathering system and the beginning of the interstate transportation. Canadian contends that this commodity value of Canadian's gas should be used as the Commission's jurisdictional starting point, but the Commission in its Opinion completely ignored such commodity value (R., V. 1, 140-195).

(b) In assuming and exercising full rate regulatory jurisdiction over Canadian's production and gathering properties and operations, the Commission included in its rate base for Canadian not only Canadian's interstate transmission properties, but also its production and gathering properties (R., V. 1, 144-195; V. 5, 2717-2721). Approximately two-thirds of Canadian's total rate base as found by the Commission in the amount of $9,375,000 (R., V. 1, 187) represents production and gathering properties of Canadian (R., V. 5, 2717-2721). The Commission expressly found (R., V. 1, 187) that it is such a rate base, including production and gathering properties, upon which Canadian is entitled to earn a fair rate of return as fixed by the Commission.

(c) In its rate base for production and gathering properties, the Commission determined and included an allowance for working capital which it deemed sufficient to enable Canadian to carry on its production and gathering operations and, likewise, the Commission has purported to determine in its rate base for production and gathering properties

what additional wells should be drilled and what additional gathering facilities should be installed in the future (R., V. 5, 2530-2556).

(d) After finding Canadian's total rate base to be $9,375,000 (R., V. 1, 187), of which approximately two-thirds represents production and gathering properties (R., V. 5, 2717-2721) (even on the Commission's basis of determining a rate base), the Commission then found that Canadian was entitled to a return of 6½% per annum upon its total rate base (R., V. 1, 187), more than two-thirds of which, as above stated, is attributable to the hazardous business of discovering, exploring, developing and operating natural gas production properties.

(e) The Commission has determined and made an allowance for Canadian's total annual operating expenses (including depreciation and depletion), the greater portion of which represents the cost of producing and gathering natural gas (R., V. 1, 171; V. 4, 2341-2345).

(f) After determining the total annual income of Canadian from all sources, the greater portion of which represents the cost of producing and gathering natural gas under its Cost Contract with Colorado Interstate, the Commission has deducted its determined annual operating expenses (mostly production and gathering) from such total income, and then, after making a return allowance of 6½% upon its determined rate base (mostly production and gathering), it has found an alleged excess income being received by Canadian, which forms the basis for its rate reduction order (R., V. 1, 187).

(g) As appears from the Commission's Opinion (R., V. 1, 173-176), the Commission, following its application of its cost allocation formula, hereinafter under Question 8 more fully detailed, has found that Canadian has an excess revenue over costs in the total amount of $615,000. This finding is based upon its conclusions from the Record as above outlined and as above shown includes its various and sundry determinations with respect to all of Canadian's business and properties, including production and gathering, intrastate sales in Texas and interstate direct gas sales, as well as interstate resale gas sales. Through the application of such

allocation formula hereinafter detailed, the Commission's rate reduction order requires Canadian to reduce the compensation which it is entitled to receive from Colorado Interstate by the sum of $551,000 annually (R., V. 1, 176, 187, 188).

(h) As hereinbefore explained, Canadian sells gas to Colorado Interstate under a Cost Contract (R., V. 2, 711-780). The Commission has designated this contract as "FPC Rate Schedule No. 1." Under this Cost Contract, Canadian is obligated to perform various obligations and services, in addition to selling and delivering gas to Colorado Interstate as a commodity, some of which are clearly beyond the jurisdiction of the Commission, namely, to acquire, maintain and develop a substantial block of gas leaseholds, to drill and operate wells, to construct and operate gathering facilities, to pay off Canadain's funded debt in fixed amounts at fixed times, to sell gas to others only as permitted by Colorado Interstate, and finally to receive from Colorado Interstate as compensation for the rendering of all of these services (and including the purchase price of the gas actually purchased) only Canadian's actual net cost[1] incurred in connection therewith. Since Canadian sells its gas to Colorado Interstate at its actual net cost, Canadian's annual revenue must always be in exact balance with its annual expenses, and it can never make a profit. The Commission's rate reduction order, following the application of its cost allocation formula, abrogates the compensation provision of this Cost Contract by reducing the cost reimbursement Canadian is entitled to receive thereunder by $551,000 annually which means $551,000 below Canadian's actual expense. The Commission's order, however, does not purport to relieve Canadian from the obligation to perform all obligations and render all the services required of it under the Cost Contract, all of which means that Canadian will have an expense of $551,000 annually more than it will be entitled to receive under the Commission's rate reduction order. This is done notwithstanding the fact that the Cost Contract, in addition to covering the sale of resale gas subject to the Commission's jurisdiction, also covers direct sale gas not subject to its

[1] The cost paid by Colorado Interstate is Canadian's total cost less all revenues received by Canadian from all other sources.

jurisdiction and gas sold intrastate in the State of Texas over which the Commission has no jurisdiction, and likewise covers production and gathering operations and expenses over which the Commission has no jurisdiction.

2. *Valuation of Canadian's Leasehold Properties (Question 2):*

It is further Canadian's contention that, even assuming, *arguendo*, that the Commission does have rate regulatory jurisdiction over its production and gathering properties, facilities and business, it is entirely improper to include Canadian's leaseholds in a rate regulatory rate base on the Commission's original cost or prudent investment theory, ignoring all evidence of value which appears from the uncontradicted evidence in the case, and that original cost or prudent investment is entirely inappropriate for determining the basis of inclusion of gas leaseholds in a rate base, and the use of such an exclusive test or basis cannot result in just and reasonable rates either to Canadian or the public and must necessarily deprive Canadian of its property without due process in violation of the Fifth Amendment.

In considering Canadian's gas leasehold properties for rate base purposes, the Commission has limited its consideration to the original cost of acquisition, commencing with the leases upon which the first discovery well of Amarillo Oil Company was drilled in 1918. This practice of the Commission purports to limit Canadian generally to a return of 6½% per annum on only the "wildcat" value of its leaseholds while in the hands of predecessor companies, to the exclusion of all discovery, market or other values, notwithstanding the fact that prior to the acquisition by Canadian none of such gas leaseholds had produced gas for interstate transportation, and none of such gas leaseholds had been devoted to a public use (R., V. 1, 459; V. 5, 2861-2927-2929). Canadian contends (even assuming rate regulatory jurisdiction) that original cost is not the proper basis for the inclusion of gas-producing leaseholds in a rate base, and that the Commission has erred in blindly following its original cost and prudent investment theories with respect to Canadian's

gas leaseholds and in wholly disregarding uncontroverted evidence of value.

An analysis of the testimony of Commission witnesses, which the Commission adopted substantially (Ex. 146, Sheets 62-64; R., V. 5, 2717, 2721), shows that the Commission used the sum of $1,604,020.61 as the starting point for its findings as to original cost of or investment in Canadian's leaseholds as of December 31, 1939. Then, as appears from Paragraph 8 of the Commission's formal findings (R., V. 1, 186), a deduction of $653,681 was made for depletion. This means that Canadian's bare leaseholds have been included in the Commission's original cost rate base at a value of something less than $1,000,000.

In adopting this valuation for rate base purposes, the Commission has wholly ignored substantial and uncontradicted evidence that "the present market value of Canadian's leaseholds" (excluding wells) is the sum of $15,646,787.64. This evidence is the testimony of Canadian's witness Wallace (Ex. 181; R., V. 6, 3181-3254). This Exhibit 181 was introduced through Canadian's witness R. J. Wallace, supported by lengthy and detailed testimony. His knowledge of the subject and qualifications are unchallenged. The Exhibit covers in detail each particular lease of Canadian, data concerning the wells drilled thereon, the initial open flow and rock pressure, present open flow and rock pressure, the production to date, etc., and the present market value aggregating over $15,000,000 for Canadian's leaseholds themselves, exclusive of oil rights, and without giving any consideration to sales contracts, or producing wells, or equipment, and as if the wells were not connected to pipe lines. In other words, Wallace's valuation is for the bare gas leaseholds themselves.

The Commission has found that Canadian's recoverable gas reserves are 2,800,000,000 Mcf (R., V. 1, 159). Reducing these figures so found by the Commission to its *value of the gas in place*, it appears that the Commission, in effect, has found the present value of the gas in place to be only 34/1000ths of one cent per Mcf. On a comparative basis, and using Wallace's $15,646,787.64 valuation, as applied to the Commission's finding of 2,800,000,000 Mcf recoverable re-

serve, the value of the gas in place is approximately ½¢ per Mcf.

The original "wildcat" cost to Canadian's predecessors in interest of five important leaseholds, containing approximately 47,000 acres, allowed by the Commission is $4,244.24, which is less than 10¢ per acre (R., V. 5, 3051). Three of these leases are included *at zero valuation*. The present fair value of these same five leaseholds (exclusive of wells), as testified to by Wallace with supporting evidence as to such value, was $3,345,923 (R., V. 6, 3235, 3237, 3238, 3242, 3243). A similar situation exists in respect to the Commission's valuation of the remainder of Canadian's leaseholds (R., V. 5, 3051).

The Commission has wholly ignored all evidence of the market value of gas at the wellhead in the Texas Panhandle Field as a measure of the value of said leaseholds. Canadian's General Superintendent Ford testified that the market value of gas at the wellhead in the Texas Panhandle Field is not less than 4¢ per Mcf on a 16.4-pound pressure base, or not less than 3.8¢ per Mcf on a 14.65-pound pressure base (R., V. 6, 3255-3281). This testimony was corroborated by Wallace, and by Commission's Exhibit 168, Sheets 13 and 127 (R., V. 6, 3281).

In arriving at its rate base for Canadian, the Commission used its original cost or prudent investment theory not only for Canadian's interstate transportation properties, but also for its production and gathering properties, and completely ignored the fact that the latter properties are used for wellhead and intrastate sales in Texas and for direct interstate sales, over which the Commission has no jurisdiction. Moreover, as will hereinafter be more fully detailed, the Commission, in arriving at its original cost of prudent investment rate base actually deducted over $3,000,000 from Canadian's actual original cost of leaseholds and wells.

3. *Canadian's Actual Cost of Leasehold Properties (Question 3).*

Much of the evidence relating to the acquisition and actual cost of Canadian's leasehold properties is summarized at

pages 7-11, supra. In order to avoid repetition, reference is here made thereto.

The Commission did not question the fact that Canadian had actually invested in its gas properties the sum of $14,648,821 in cash as of December 31, 1939. It deducted from such actual cash investment for its rate base purposes, however, the sum of $3,370,817 on the ground that it represented "affiliated company profits," and in addition thereto the sum of approximately $245,000 representing interest during construction on such alleged profits (R., V. 1, 149-151). Virtually the full amount of such deduction arises out of the transaction heretofore related, in which Canadian acquired from Amarillo Oil Company all of the latter's gas leaseholds, rights and wells for the sum of $5,000,00 for the purpose of inaugurating the Denver Project in 1928.

In making this deduction from Canadian's actual investment in gas leaseholds, the Commission, for rate base purposes, relegated Canadian to the bare provable costs of such leaseholds incurred by Amarillo and its predecessors in title, which was the cost of such leaseholds prior to the time that any wells had been drilled thereon and prior to the time that it was definitely known whether any gas would ever be produced therefrom. At the time that many of said leaseholds were acquired the nearest oil and gas production was 200 miles distant. The Commission gave no consideration whatsoever to the fact that such leaseholds when acquired were unproven and had little or no value and that, therefore, only a nominal sum was paid for the same and it wholly ignored the fact that said leaseholds possessed great value after the discovery of gas thereon and that such discovery and the increase in value necessarily preceded any use of the same for any character of public service. The Commission further ignored the fact that said leaseholds were acquired by Canadian approximately 10 years after the original discovery of gas under such leaseholds and at a time when such leaseholds had a value far in excess of the original acquistion cost in their then "wildcat" and undeveloped state. The Commission also ignored the fact that the purchase of said leaseholds by Canadian resulted from an arm's length transaction as heretofore explained, and that there

was not even an intimation in the Record that Canadian paid an excessive or imprudent price for such leaseholds. The actions and theories of the Commission in this case, if carried to a logical conclusion, would deny the prospector, or "wildcat" oil and gas operator, all the fruits of his discovery, and would necessarily limit him to the actual outlay of cash, *without profit*, in an extremely hazardous and speculative enterprise.

As of August 1, 1924, Amarillo owned approximately 46,803 acres of developed leaseholds in which it had a total provable cost for the leaseholds as such, exclusive of the wells that had been drilled thereon, of approximately $4,244, or less than 10c per acre (R., V. 5, 3038, 3051, 3040). As of that date it acquired 244,114 acres of leaseholds from Mountain States Gas Company, upon which wells had been drilled or were then drilling, and from that date to May 1, 1927, it acquired 3,998 acres from various other persons (R., V. 5, 3051). It also acquired 30,235 acres from Mountain States which were classed as unoperated leaseholds, being leaseholds upon which no wells had then been drilled (R., V. 5, 3063).

The leaseholds acquired from Mountain States Gas Company were paid for by Amarillo through the issuance of its common stock. Such leaseholds had been acquired by Mountain States in an undeveloped "wildcat" state. No gas had been sold from said leaseholds prior to that date. The total cost to Mountain States and its predecessors in title for the acreage acquired by Amarillo in exchange for its capital stock was $273,095.88 for the 244,114 acres of operated gas leaseholds, which included, however, approximately $76,318, being the drilling cost of two wells (R., V. 5, 3041, 3042). When this latter sum is eliminated, the original acquisition cost of said Mountain States leaseholds approximated $200,000, or less than $1.00 per acre. In fact, on this basis, the largest leasehold involved, being the Bivins A 30, comprising 200,000 acres, had a provable cost to Mountain States of only $105,000 for the leasehold as such. This provable cost of approximately 50c per acre was the entire amount included in the rate base by the Commission for this very valuable leasehold, exclusive of development costs.

The leaseholds above referred to that were included in the rate base for only a very nominal sum, and on the basis of their original "wildcat" provable costs, plus a very small amount of additional acreage, had an actual value of approximately $15,646,787.64 for the leaseholds as such, exclusive of all well costs, according to the uncontradicted testimony of Wallace (R., V. 6, 3181-3254). Excluding the additional acreage, such leaseholds had a minimum value of approximately $15,000,000 and were included in the rate base at a figure but little, if any, in excess of $300,000.

It is frankly admitted by the Commission and Commission witnesses that Canadian actually paid Amarillo $5,000,000 in cash for the latter's gas leaseholds, rights and wells. (R., V. 1, 150). The Commission, however, ignored the entire transaction and found, for Canadian's rate base purposes, that Amarillo, commencing at a date prior to the drilling of its "wildcat" discovery well in 1918, had invested in the properties sold only the sum of $1,879,504, and that this sum should be further reduced by $128,534 by reason of an alleged profit of another predecessor company in a sale of property by it to Amarillo (R., V. 1, 150), all of which resulted in a so-called original cost to Amarillo of approximately $1,750,000, or $3,250,000 less than the sum actually paid by Canadian in cash for such properties. Most of such provable costs, however, resulted from the drilling of gas wells and other costs incidental to the development of such leases. The provable cost of leases as such was very nominal as hereinabove pointed out.

In arriving at such provable costs, the Commission ignored, among other things, the following:

1. A sum in excess of $50,000 expended in drilling a dry hole which was one of the early exploratory wells (R., V. 5, 2870; V. 6, 3111, 3112). This well was as much a part of the development cost as the producing wells, but its cost was eliminated apparently because no one should be so foolish or imprudent as to drill non-producing wells.

2. $35,000 for interest on idle investment prior to October, 1920, when the first small volume of gas was sold (R., V. 6, 3110-3111).

3. General overhead and administrative costs estimated at $68,000 (R., V. 6, 3108-3110).

4. Delay rentals paid on undeveloped leaseholds in a sum in excess of $488,000 (R., V. 6, 3106-3108).

The Commission, in refusing to recognize the actual cash consideration which Canadian paid for its leaseholds and in applying its "prudent investment" theory to a mining enterprise such as the acquisition of "wildcat" oil and gas leases in an area more than 200 miles from known oil or gas production, denied *in toto* the value created by the "wildcatter" or prospector as the result of his discovery. It eliminated many costs actually incurred, and which costs, such as delay rentals, must be recognized, in any event, if the "wildcatter" is to be reimbursed for his actual expenditures in cash. In this case the Commission adopts and applies a theory which, if followed consistently, would prevent the "wildcatter" not only from realizing any profit upon his extremely hazardous venture, but would actually deny him the right to recover his entire out-of-pocket expense.

In addition to the original purchase from Amarillo, Canadian from time to time made other smaller purchases of gas leaseholds, one of these being the purchase of the properties of Master Oil and Gas Company consisting of 5404.2 acres of leaseholds and two gas wells for the sum of $235,054.20 (R., V. 5, 2659-2661, 2815-2816). The Commission deducted from this purchase price the sum of $12,787 (R., V. 1, 150). This deduction was made on the ground that Prairie Oil and Gas Company owned 51% of the common stock of Master Oil and Gas Company and that N. K. Moody was a Director of both the purchaser and the seller (R., V. 5, 2659-2661). No contention was made that the price was excessive. The Record is clear that in determining this so-called provable original cost of Master that Luttring, Commission witness, only went back to June 1, 1926, although the leaseholds were first acquired prior to 1920 (R., V. 5, 2659-2823). Not a dime was allowed for the original acquisition cost of the leasehold. There is nothing in the Record that would indicate that this was anything other than an arm's-length transaction. There is no showing that the indirect relationship between Prairie

and Canadian had anything whatsoever to do with the determination of the purchase price. Certainly, it cannot be said from the Record that Moody was in a position to dominate, in any sense, the action of the majority of the Board of Directors.

The Commission also deducted $244,853.26, being interest during construction on the alleged excess over provable costs paid by Canadian to Amarillo (R., V. 1, 149, Entry 249; V. 5, 2769). Obviously, if the entire $5,000,000 purchase price is allowed, the interest during construction actually paid upon this amount should also be allowed.

The Commission also deducted an additional sum of $128,000, being an alleged profit made by Mission Oil Company over and above actual provable costs (Mission is one of the predecessors in title of Amarillo) (R., V. 1, 150; V. 5, 3043-3051). Obviously, this deduction should not have been made if the full $5,000,000 purchase price is allowed.

The sum of the above deductions or eliminations by the Commission aggregates the sum of $3,615,670, which is approximately 36% of the entire investment of Canadian in all of its properties (R., V. 1, 149) and almost 40% of the rate base determined by the Commission for Canadian in this case (R., V. 1, 164).

4. *Allocation.*
(Question 8).

As indicated on the Flow Map, Appendix B, Canadian has two general types of sales and businesses, i. e., (a) intrastate sales and business wholly within the State of Texas over which the Commission has no jurisdiction, and (b) interstate sales and business over which the Commission has limited jurisdiction. Canadian's interstate sales, substantially all of which are to Colorado Interstate, are again divided into two types of sales and businesses, i. e., (a) gas sold to Colorado Interstate for resale directly to its own pipe line consumers, such as Colorado Fuel and Iron Corporation and Colorado Portland Cement Company, over which the Commission has no jurisdiction (hereinafter sometimes referred to as "direct sales" or "direct sale gas"), and

(b) gas sold to Colorado Interstate for resale to distributing companies and others, such as Public Service Company of Colorado and City of Colorado Springs, for ultimate public consumption, over which the Commission does have jurisdiction (hereinafter sometimes referred to as "resale gas").

In arriving at its ultimate rate reduction order in this case, the Commission admits that it made no separation of Canadian's properties as between those used for its intrastate business and sales and those used for its interstate business and sales; likewise, it made no separation of Canadian's properties as between those utilized for direct sale gas and those utilized for resale gas. In lieu of such separation of properties, the Commission arrived at its ultimate rate reduction order through the application of a so-called cost of service allocation or formula submitted at the hearing by Commission witness Lyon and subsequently adopted by the Commission (Ex. 226; R., V. 4, 2317-2337, 2381-2384; Com. Op., R., V. 1, 175).

Both Canadian in its case and Colorado Interstate in its case (No. 379) introduced evidence before the Commission segregating and showing the portion of their respective properties, revenues, expenses and earnings subject to the Commission's jurisdiction and the portion not subject to the Commission's jurisdiction (R., V. 4, 2264-2355; V. 8, 5039-5044), all of which was ignored by the Commission. It is Canadian's contention that such a separation of properties was indispensable for the purpose of keeping the Commission within its jurisdictional limitations in accordance with the mandates of this Court.

In the application of the cost of service formula, Lyon, as well as the Commission, treated the properties of Canadian and Colorado Interstate as a unit, combining all their investments, costs and operations into one composite system (R., V. 4, 2317-2363-2399). The Commission's rate reduction orders, however, were entered against the separate properties and businesses of Canadian and Colorado Interstate and not against the composite pipe line system (R., V. 1, 176, 185-188).

Again, in the application of the cost of service formula

Lyon, as well as the Commission, assumed jurisdiction in the Commission over Canadian's production and gathering properties, facilities and business, as well as its transmission properties, facilities and business.

Canadian contends that the Commission's so-called allocation of cost of service is not a valid substitute for a proper separation of properties, revenues and expenses as between regulable and non-regulable business. It further contends that even if such a cost of service formula should be held to be a valid substitute in principle for a proper separation of such properties it is fallacious and invalid as applied in this case, as will be shown in the argument to follow on this question.

A portion of Canadian's intrastate sales consists of sales from its transmission line in Texas for distribution in the towns of Hartley, Dalhart and Texline, Texas. The cost of service for such sales, as determined by the application of Lyon's formula, completely ignored the fact that these towns were located in close proximity to the gas field and applied to them the same transmission cost factors as were applied for determining the cost of gas at Denver, Colorado. When effect is given to all adjustments made by the Commission, this resulted in a "cost" allocation for these Texas communities which was in excess of the amount actually received by Canadian for such gas (R., V. 4, 2317; V. 5, 2425).

In the application of their cost of service formula, both Lyon and the Commission have assumed that every foot of gas sold by Canadian is produced and gathered at precisely the same cost. In other words, they have given no consideration whatsoever to the load factors involved in serving direct sale customers or resale gas customers (R., V. 5, 2414-2415-2421).

All gas sold by Canadian to Colorado Interstate for the latter's direct sale customers is utilized for industrial fuel purposes, the demand for which is not greatly affected by weather or temperature conditions. Colorado Interstate's peak monthly demand at Clayton Junction for resale gas for ultimate public consumption during the winter of 1939-1940 was approximately 50% greater in volume than direct sale

gas (R., V. 8, 5045). Since the peak monthly demand for resale gas was approximately 50% greater in volume than direct sale gas, it follows, obviously, that the utilization of producing and gathering facilities by resale gas was likewise approximately 50% greater than by direct sale gas.

Canadian's total sales to Colorado Interstate at Clayton Junction during the year 1939 are divided as follows: Resale gas 10,974,156 Mcf (14.65-pound pressure base); direct sale gas and gas used by Colorado Interstate in its own operations 10,158,353 Mcf (14.65-pound pressure base). Canadian's sales to Colorado Interstate at Gray, Oklahoma, during the same period were 20,783,301 Mcf (R., V. 4, 2319). Gas sold by Canadian to Colorado Interstate at Gray, Oklahoma, was resold by the latter to Natural Gas Pipeline Company of America and the Record does not indicate what amount of such sales represents direct sale gas to pipe line consumers. It is clear, however, that approximately one-fourth of Canadian's total sales to Colorado Interstate are sold by the latter directly to its own pipe line consumers. Notwithstanding the fact that the Commission has no jurisdiction over such sales made by Colorado Interstate, the Commission's rate reduction order, nevertheless, purports to reduce the price of *all* gas sold by Canadian to Colorado Interstate, including direct sale gas.

As above stated, Lyon in his Exhibit 226, which was adopted and applied by the Commission, combined all properties of Colorado Interstate and Canadian and treated them as one composite system. This being true, in the consolidation, Lyon eliminated Colorado Interstate as a purchaser from Canadian and Canadian as a seller to Colorado Interstate. His exhibit contained no basis within itself for the determination of the cost of service of Canadian with respect to the gas sold by it to Colorado Interstate. The Commission, nevertheless, ordered a total over-all reduction with respect to all gas sold by Canadian to Colorado Interstate in the amount of $551,000 annually (R., V. 1, 176). It is the contention of Canadian that, in any event, there is no support in the Record for the Commission's action in this respect.

Reference is here made to the Statement of the Case in

the Brief of Colorado Interstate (No. 379) which Statement explains in detail the method followed by Lyon and the Commission in allocating "cost of service".

SPECIFICATION OF ERRORS.

1. The Commission erred in assuming and exercising rate regulatory jurisdiction in this case over Canadian's production and gathering properties, facilities and business, and the Circuit Court, after correctly ruling that the Commission did not have such jurisdiction, erred in concluding and ruling that the Commission in this case did not exercise prohibited rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business.

2. The Circuit Court erred in approving the action of the Commission in ignoring the market value of Canadian's natural gas as a commodity at the wellhead in the field and at the end of its gathering system, which is the beginning of the interstate transportation of said gas, and is not holding that the Commission should use such commodity value of said gas at the end of the gathering system as the Commission's jurisdictional starting point for rate regulatory purposes in this case.

3. Even assuming, *arguendo*, that the Commission does have rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, the inclusion in the rate base of Canadian's natural gas leaseholds on the Commission's original cost or prudent investment theory or formula, to the exclusion of all evidence of value, market or otherwise, was improper, illegal, and in violation of the Natural Gas Act, and deprived Canadian of its property without due process of law, in violation of the Fifth Amendment to the Constitution of the United States.

4. Assuming, *arguendo*, that the Commission has rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, and further assuming, *arguendo*, that it is proper in this case to include Canadian's leaseholds and wells in the rate base on the basis of original cost or prudent investment, the Commission and the Circuit Court nevertheless erred, contrary to the Fifth Amendment

to the Constitution of the United States and to the Natural Gas Act, in not finding that the full $5,000,000 paid in cash by Canadian to Amarillo for Amarillo's gas leaseholds, wells and rights constituted a prudent investment and part of Canadian's original cost.

5. Assuming, *arguendo*, that the Commission has rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, and further assuming, *arguendo*, that it is proper in this case to include Canadian's leaseholds and wells in the rate base on the basis of original cost or prudent investment, the Commission and the Circuit Court nevertheless erred in disallowing and eliminating from the rate base $3,615,670.26, or any part thereof, of Canadian's actual original cost and prudent investment, contrary to the Fifth Amendment to the Constitution of the United States and the Natural Gas Act.

6. The Commission, in purporting to fix reasonable rates for gas sold by Canadian for resale in interstate commerce, and now subject to regulation by the Commission, violated the requirements of the Fifth Amendment to the Constitution of the United States and the Natural Gas Act when it treated Canadian's property and that of Colorado Interstate as a unit, and failed to make any separation of the property and expenses as between that applicable to interstate commerce and that applicable to the intrastate sale in Texas, or between that applicable to the sales for resale and that incident to the direct sales to Colorado Interstate's industrial customers over which the Commission has no jurisdiction; and the Circuit Court of Appeals erred in affirming the Order.

7. The Commission's "allocation of cost of service" is not a valid substitute for the required separation of property and expenses, in that it results in burdening non-regulable gas with costs actually incurred in the sale of the regulable gas, and in the regulation of business over which the Commission has no jurisdiction, contrary to the limitations of the Fifth Amendment and of the Natural Gas Act; and the Circuit Court of Appeals erred in affirming the Order.

8. The Commission erred in ordering a blanket reduction

in the rates of Canadian applicable to gas sold for resale in interstate commerce, as well as to gas sold in interstate commerce for direct sale in so far as the sales to Colorado Interstate are concerned, notwithstanding the fact that the Commission under the Natural Gas Act has no rate regulatory jurisdiction over gas sold in interstate commerce for direct sale to the ultimate consumer, and the Circuit Court of Appeals erred in affirming the Commission's Order.

9. For each and all of the reasons set forth in the foregoing specification the Circuit Court erred in affirming the Commission's Rate Reduction Order, and in not reversing, vacating, setting aside and holding said Order for naught.

ARGUMENT.

We shall present our argument in the numerical order of the "Questions Presented."

Question 1.

Exercise of Prohibited Rate Regulatory Jurisdiction Over Canadian's Production and Gathering.

It is submitted that all of the facts set forth in the Statement and its several subheadings are pertinent to this question.

We state here at the very beginning that we are not here questioning the inquisitorial powers granted to the Commission under Sections 5(b), 9(a), 10(a), 11(a), and 14(b) of the Act. It is, however, Canadian's contention that, notwithstanding the Circuit Court's ruling to the contrary, the Commission has exercised prohibited rate regulation over Canadian's production and gathering properties, facilities and business. In support of this contention the following is submitted:

(a) Section 1(a) of the Natural Gas Act declares the Congressional intent and sets forth the purposes of the Act "that the business of *transporting and selling* natural gas for ultimate distribution to the public is affected with a public interest, and that Federal *regulation* in matters relating to the *transportation* of natural gas and the *sale* thereof in interstate and foreign commerce is necessary in

the public interest." (Appendix A, infra, p. 89.) (Italics supplied.)

(b) Not only does the Act by Section 1(a) limit its scope and coverage to interstate transportation and sale of natural gas, but to foreclose all possibility of misconstruction or an unwarranted assumption of non-granted jurisdiction, Section 1(b) of the Act expressly provides that it "shall not apply to * * * the production or gathering of natural gas." (Appendix A, infra, p. 89.) Clearly the English language contains no words which could more positively express the Congressional intent than are found in these two subdivisions of the very first section of the Act.

(c) If aid to interpretation of the clear, positive and unambiguous language contained in Sections 1(a) and 1(b) of the Act is for any reason thought necessary or desired, it can be abundantly found in the legislative history of the Act where its sponsors, including the representatives of the Federal Power Commission, stated time and time again that the Act was not designed to and did not cover production and gathering. See statements of Mr. Dozier A. DeVane and Mr. Thomas J. Tingley, Solicitor and Assistant Solicitor, respectively, of the Federal Power Commission contained in the official report of "Hearing Before a Sub-Committee of the Committee on Interstate and Foreign Commerce, House of Representatives" in connection with the original H. R. 11662, pages 17, 28, 34, 35, 42, 43; statements of Chairman Lea, Congressional Record, Volume 81, Part 6, page 6721; and Senator Wheeler Congressional Record, Volume 81, No. 162, page 11981.

(d) This Court, in the Natural Gas Pipeline Company and Hope Cases, has approved actions of the Commission only because the Commission was found to have acted within the "ambit of its authority," and in the Hope Case (p. 287, Vol. 88 L. Ed., Advance Opinions) this Court stated:

> "* * * And the Federal Power Commission was given no authority over the 'production or gathering of natural gas.'"

Again, on page 289:

> "As we have said, the Act does not intrude on the

domain traditionally reserved for control by state commissions; and the Federal Power Commission was given no authority over 'the production or gathering of natural gas.'"

(e) The Circuit Court in its Opinion in this case (142 Fed. (2d), p. 952; R., V. 8, 5074, 5075), following the mandate of the Act and the ruling of this Court, correctly stated that "under Section 1(b) the Commission does not have express or implied rate regulatory jurisdiction of the production and gathering of gas," and that under Section 1 of the Act the production and gathering properties and facilities of petitioner, while part of its integrated operations, "lie beyond the range of the rate-regulatory jurisdiction of the Commission."

(f) We submit there is no room for interpretation contrary to the express language of the Act. Jurisdiction will not be implied. Before jurisdiction in any administrative commission is decreed, it must be clearly granted. If any conceivable ambiguity could be found in the Act, that ambiguity must be resolved against jurisdiction.

The above statements are so uniformly sustained by the authorities, both Court and Commission, that mere citation of a few of them should suffice without quotation.

Interstate Commerce Commission v. Cincinnati, N. O. & T. P. R. Co., 167 U. S. 479, 42 L. ed. 243;

Siler v. Louisville & N. R. Co., 213 U. S. 175, 53 L. ed. 753;

Interstate Commerce Commission v. Goodrich Transit Co., 224 U. S. 194, 56 L. ed. 729;

Backus-Brooks Co. v. Northern Pacific Ry. Co. (C. C. A. 8), 21 Fed. (2d) 4 (certiorari denied, 275 U. S. 562; 72 L. ed. 427);

Commercial Standard Ins. Co. v. Board of Ins. Comm'rs of Texas (Court of Civil Appeals of Texas), 34 S. W. (2d) 343;

Humble Oil & Refining Co. v. Railroad Commission of Texas, 128 S. W. (2d) 9;

51 Corpus Juris, page 36, Section 78;

Express Companies, 1 I. C. C. 349;
Nickel Plate Case, 79 I. C. C. 581;
Acme Fast Freight, Inc., 2 M. C. C. 415.

(g) Inasmuch as the Circuit Court has definitely ruled, as a matter of law, that the Commission does not have express or implied rate regulatory jurisdiction of the production and gathering of natural gas, and the Respondents, or any of them, have not, by petition for writ of certiorari, attacked that ruling, such ruling is the law of this case, and we start with such adjudicated law that under the Act the Commission does not have rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business.

(h) In view of the express and positive provisions of the Act, the legislative history thereof, the ruling of this Court in the Hope Case quoted above, and the quoted language from the Circuit Court's Opinion, we are absolutely unable by recourse either to reasoning or imagination, to justify the lower court's ruling that what the Commission did in this case does not constitute a usurpation of rate regulatory jurisdiction over production and gathering so universally recognized as being expressly withheld from the Commission. The Commission itself makes no contention that it has not exercised rate regulatory jurisdiction over Canadian's production and gathering, but attempts to justify its action on the theory that an exercise of such jurisdiction is indispensable, although not granted by Congress, to a proper exercise of its delegated rate regulatory jurisdiction over interstate transportation and sale of natural gas. That this contention is without merit and that the Commission did in this case exercise prohibited rate regulatory jurisdiction over production and gathering are demonstrated by the following paragraphs:

(i) Mining operations, which include production of natural gas, have been uniformly held by this Court to be local in nature and not to constitute interstate commerce even though the product mined is destined to be shipped in interstate commerce.

Corporation Commission of Oklahoma v. Champlin Refining Co., 286 U. S. 210, 76 L. Ed. 1063;

Thompson v. Consolidated Gas Utilities Corp., 300 U. S. 55; 81 L. Ed. 510;

Heisler v. Thomas Colliery Co., 260 U. S. 245, 67 L. Ed. 237;

Oliver Iron Mining Co. v. Lord, 262 U. S. 172, 67 L. Ed. 929;

Carter v. Carter, Coal Co., 298 U. S. 238, 80 L. Ed. 1160;

Hope Natural Gas Co. v. Hall, State Tax Commissioner of West Virginia; 274 U. S. 284, 71 L. Ed. 1049;

Jersey Central Power & L. Co. v. Federal Power Commission, 319 U. S. 61, 87 L. Ed. 1258.

(j) The fact that the production and gathering may affect interstate commerce does not vest rate regulatory jurisdiction in the Commission over production and gathering as the Natural Gas Act is different from other acts adopted in recent years which vested jurisdiction in commissions where the subject-matter of the act "affected" or "burdened" or "obstructed" interstate commerce.

National Labor Relations Board v. Jones & Laughlin Steel Corp., 301 U.S. 1, 81 L. Ed. 893. (National Labor Relations Act);

Sunshine Anthracite Coal Co. v. Adkins, 310 U.S. 381, 84 L. Ed. 1263. (Bituminous Coal Conservation Act);

United States v. F. W. Darby Lumber Co., 312 U.S. 100, 85 L. Ed. 609. (Fair Labor Standards Act.);

Federal Trade Commission v. Bunte Bros., Inc., 312 U.S. 349; 85 L. Ed. 881. (Federal Trade Commission Act);

California Rice Industry v. Federal Trade Commission, (C.C.A. 9, 102 Fed. (2d) 716), (Federal Trade Commission Act);

A. B. Kirschbaum v. Walling, 316 U.S. 517, 86 L. Ed. 1638, 1646. (Fair Labor Standards Act);

Walling v. Jacksonville Paper Co., 317 U.S. 564, 87 L. Ed. 460. (Fair Labor Standards Act);

Public Utilities Commission of Ohio v. United Fuel Gas Co., 317 U.S. 456, 87 L. Ed. 1162. (Federal Power Commission.)

While Congress may have the power to regulate matters *affecting interstate* commerce as well as matters in *interstate commerce*, all the above cases make it absolutely clear that Congress does not have to exercise its full power, and that where it only delegates jurisdiction over matters *in interstate commerce*, such jurisdiction cannot be extended so as to include matters which may be said to *affect interstate commerce*. It is for Congress, and not for the created commissions or the courts, to decide what jurisdiction should be delegated, and, as stated by the lower court in its Opinion in this very case, "the Commission does not have *express or implied* rate regulatory jurisdiction of the production and gathering of gas." (Italics supplied.)

In view of the exclusive language of the Act, it is clear that Congress did not leave, or intend to leave, any discretionary power with the Commission to determine in what cases it should or should not exercise rate regulatory jurisdiction over production and gathering. As we shall hereinafter point out, there is no merit from a factual standpoint in the Commission's contention that an exercise of rate regulatory jurisdiction over production and gathering is indispensable to an exercise of delegated rate regulatory jurisdiction over interstate transportation and sale. Furthermore, it is legally immaterial that the Commission thinks that rate regulatory jurisdiction over production and gathering is indispensable to an exercise of its delegated rate regulatory jurisdiction over interstate transportation and sales because Congress has decided that question by withholding such jurisdiction from the Commission, and it is not for the Commission to override the express Congressional declaration of intent. A similar contention that an exercise of an undelegated power was necesary in order successfully to carry out a delegated power was refuted in the following clear language by the Supreme Court of Texas in *Humble Oil & Refining Co., et al. v. Railroad Commission of Texas*, 133 Texas 354, 128 S.W. (2d) 9, 15:

"It seems to be argued that our gas utility statutes, by

necessary implication, confer the power on the Commission to fix the price of gas where it is sold by the producer on the premises of production to a public gas utility. We think that the power to fix prices and make rates by a board or commission is not to be taken as conferred by implication. Such power must be conferred under statutory or constitutional language that is free from doubt, and that admits of no other reasonable construction. Commercial Standard Ins. Co. v. Board of Ins. Com., Tex. Civ. App., 34 S. W. 2d 343, writ refused; Siler v. Louisville & N. R. Co., 213 U. S. 175, 193, 29 S. Ct. 451, 53 L. Ed. 753. These authorities could be multiplied many times, but they are sufficient. Certainly, it cannot be said that our gas utility statutes, in clear and unmistakable language, confer the power on the Commission to fix prices or rates which private gas producers shall charge public gas utilities.

"It is contended by counsel for the Commission that the power of the Commission to fix the price at which a mere producer of gas must sell his product to a public gas utility, even though such gas is sold at the point of origin, should be upheld because the Commission will be greatly hampered and circumscribed in regulating gas utility rates or prices if it cannot also fix the rates or prices that producers charge such utilities for the gas sold thereto. A full answer to this contention is to point to the fact that no statute has conferred such power on the Commission. Furthermore, the same argument could be used to sustain the power of the Commission to fix prices for all articles, things, and services sold to public gas utilities. Everything that the utility may lawfully purchase must be taken into consideration in fixing the ultimate gas utility rate. We grant that gas utility rates might more effectively be controlled if private gas producers could be compelled to sell gas to such concerns at prices determined and fixed by the Commission; but, as already indicated, that fact does not justify a court in upholding such a power in the absence of any sort of statutory authority. • • •"

(k) As stated at the very beginning of this argument, we are not questioning the inquisitorial powers granted by the Act to the Commission in the only sections of the Act in

which production or gathering are mentioned, which inquisitorial or investigation power, however, clearly has no connection with any rate regulatory power. Thus, Section 5(b) only empowers the Commission, either upon its own motion or upon the request of any state commission, to "investigate and determine the cost of production and transportation of natural gas by a natural-gas company in cases where the Commission has no authority to establish a rate governing the transportation or the sale of such natural gas." Section 9(a) relates to methods of keeping accounts, and particularly to depreciation and amortization accounts. Section 10(a) merely requires the filing of reports. Section 11(a) is in aid of legislation and state compacts. Section 14(b) gives the Commission power to investigate or determine the adequacy or inadequacy of gas reserves. This subsection is a part of the entire Section 14, headed, "Investigations by Commission; Attendance of Witnesses; Depositions," thus showing that the purpose of the section is to authorize investigations in order to aid the Commission in exercising its delegated powers. These sundry inquisitorial powers, as stated by the Circuit Court in its Opinion in this case, vest in the Commission no express or implied rate regulatory jurisdiction over production and gathering.

(1) As shown in the Statement and as found by the Commission, (R., V. 1, p. 143), as of December 31, 1939, Canadian held gas leaseholds on approximately 300,000 acres of land located in the Texas Panhandle Field in the State of Texas, on which it had in operation a total of 94 gas wells. Its gathering system consisted of 144 miles of various size of pipe, all located in the State of Texas. The gathering system has two termini. One terminus is located at what is known as the Bivins Station in the State of Texas. At this point the gas there gathered is compressed and then transported by Canadian through its own transmission pipe line to Clayton Junction, near Clayton, New Mexico, at which point it sells the gas so transported to Colorado Interstate, and the latter company then transports such gas through its "Denver Line" and sells the same at various points in the State of Colorado. The other terminus of Canadian's gathering system is located at what is known as Fritch Station,

also in Texas. At this point the gas there gathered is compressed and then transported by Canadian through facilities leased from Texoma Natural Gas Company to a point in Oklahoma known as Gray Junction where the gas so transported is also sold to Colorado Interstate. This general picture is disclosed on the Flow Map attached hereto as Appendix B.

As shown from the above and as stated by the Commission in its Opinion (R., V. 1, p. 143), it thus appears that Canadian is engaged in several different and distinct business operations or functions: (a) Production, (b) gathering, (c) transportation, and (d) sale of natural gas. In addition to the sale of natural gas to Colorado Interstate at Clayton Junction, New Mexico, and at Gray, Oklahoma, Canadian also sells natural gas to Amarillo Oil Company at the wells in the field for the City of Amarillo and the Town of Channing, Texas, and along its pipe line for the Dalhart, Hartley and Texline, Texas, markets. It also sells a small quantity of gas to Clayton Gas Company, with deliveries at the Clayton, New Mexico, town border. (R., V. 2, p. 708.)

The gas sales made by Canadian to Colorado Interstate are pursuant to a term contract between the two companies, dated January 3, 1928. (Ex. 16, R., V. 2, pp. 711-780.) It is the over-all compensation which Canadian is entitled to receive under this contract, including, among other things, the cost of current deliveries of gas as a commodity, which the Commission, by its rate reduction order, requires to be reduced in the amount of $551,000 annually. Among other things, this contract, known as the Cost Contract, for the compensation therein provided to be paid Canadian and which compensation has been reduced to the extent above stated by the Commission's order, requires Canadian to acquire, maintain and develop a substantial block of gas leaseholds, to drill and operate wells, to construct and operate gathering facilities, to pay off funded debt in fixed amounts at fixed times, and to sell gas to others only as permitted by Colorado Interstate.

(n9) An important fact in consideration of the question presented here is that there is a commodity market value for Canadian's natural gas in the field where produced and at

the end of the gathering system termini. The uncontradicted evidence in this case establishes the market value of Canadian's gas at the wellhead in the field at 4c per Mcf. (16.4-pound pressure base) and the fair market value of natural gas gathered and delivered at the Bivins Station (one terminus of the gathering system and the beginning of the transportation system) to be 7c per Mcf. (16.4-pound pressure base.)

We respectfully but earnestly submit that the Commission could keep within its delegated jurisdiction over interstate transportation and sale and not usurp an undelegated jurisdiction over production and gathering by using the commodity value of Canadian's natural gas at the end of the gathering system, which is the beginning of the interstate transportation system, as its jurisdictional starting point. The existence of a commodity value of the gas is in itself a complete answer to the Commission's contention that rate regulatory jurisdiction over the production and gathering properties, facilities and business, although withheld by Congress, is indispensable to an exercise of its delegated rate regulatory jurisdiction over interstate transportation and sale. So this case, or any similar case, need not be approached with the apprehension that if the Congressional mandate is followed and the Commission denied the right to exercise rate regulatory jurisdiction over production and gathering, the Commission will be unable properly to fulfill its delegated duties over interstate transportation and sale.

(n) As indicating the all-inclusive jurisdiction exercised by the Commission in this case over all of Canadian's properties, facilities and business, including not only its interstate transportation and sale but also its production and gathering, the following facts from the Record, summarized in the Statement, supra, are reiterated:

1. In arriving at its rate reduction order the Commission determined a rate base which includes not only Canadian's interstate transmission system but also its production and gathering properties. (R., V. 1, pp. 144-195; V. 5, pp. 2717-2721.)

2. In determining its rate base for Canadian's producing

and gathering properties the Commission applied its so-called original cost or prudent investment theories and in so doing totally ignored the true value of such properties as well as the actual cost thereof to Canadian.

3. In its rate base for production and gathering properties the Commission determined and included an allowance for working capital which it deemed sufficient to enable Canadian to carry on its production and gathering operations, and likewise the Commission has purported to determine in its rate base for production and gathering properties what additional wells should be drilled and what additional gathering facilities should be installed in the future. (R., V. 5, pp. 2530-2556.)

4. After finding Canadian's total rate base to be $9,375,000 (R., V. 1, 187), of which approximately two-thirds represents production and gathering properties, (R., V. 5, 2717-2721), (even on the Commission's basis of determining a rate base), the Commission then found that Canadian was entitled to a return of 6½% per annum upon its total rate base (R., V. 1, 187), more than two-thirds of which, as above stated, is attributable to the hazardous business of discovering, exploring, developing and operating natural gas production properties.

5. The Commission has determined and made an allowance for Canadian's total annual operating expenses (including depreciation and depletion), the greater portion of which represents the cost of producing and gathering natural gas. (R., V. 1, 171; V. 4, 2341-2345.)

6. After determining the total annual income of Canadian from all sources, the greater portion of which represents the cost of producing and gathering natural gas under its Cost Contract with Colorado Interstate, the Commission has deducted its determined annual operating ex-

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The Commission deducted $3,864,357 from Canadian's original costs, practically all of which is applicable to leaseholds. (R., V. 1, pp. 149-151) This is discussed under "Question 3" infra. The Commission included Canadian's bare leaseholds in its original cost rate base at a value of something less than $1,000,000, and in so doing totally ignored uncontradicted evidence of the present market value of such leaseholds in excess of $15,000,000. (See Statement, pages 19-21, supra. This is discussed under "Question 2" infra.)

penses (mostly production and gathering) from such total income, and then, after making a return allowance of 6½% upon its determined rate base (mostly production and gathering), it has found an alleged over-all excess income being received by Canadian, which forms the basis for its rate reduction order.

7. The Commission has applied its "allocation of cost of service" theory or formula to Canadian's production and gathering properties, facilities and business in the same manner as to its interstate transportation and sales and the properties, facilities and business connected therewith. This is discussed in detail under "Question 8," infra.

8. The Commission's Order changes and abrogates the amount of compensation which Canadian is entitled to receive from Colorado Interstate under its Cost Contract, which compensation represents cost reimbursement to Canadian not only for the cost of current deliveries of gas to Colorado Interstate, but also for the cost of performing various other services under the Cost Contract relating to Canadian's production and gathering properties and operations, such as the maintenance of leaseholds, the drilling of wells and the construction of gathering facilities as directed by Colorado Interstate.

(o) Notwithstanding all of the above and its own ruling that the Commission does not have either express or implied rate regulatory jurisdiction over production and gathering, the Circuit Court, in its Opinion, (142 Fed. (2d), p. 952—953; R., V. 8, 5074, 5075) sustained the Commission's rate reduction order upon a novel theory, therein attempted to be explained, that the action of the Commission does not constitute rate regulation of Canadian's production and gathering.

The Commission itself, either in its own Opinion or in its briefs filed in the Circuit Court or in this Court in connection with the petition for writ of certiorari, contends for no such theory, but admits that it did exercise rate regulatory jurisdiction over Canadian's production and gathering and claims to possess such jurisdiction.

We respectfully submit that while the Circuit Court in

one breath nominally purports to reject the Commission's jurisdictional contention, it does in its final and effective breath sustain the Commission's position notwithstanding the clear and positive provisions of the Act and the holding of this Court in the Hope Case. We submit it approaches absurdity to state that the Commission does not have rate regulatory jurisdiction over production and gathering and at the same time to rule that rate regulatory jurisdiction is not exercised where the Commission includes production and gathering properties in a rate base; where it applies its own formula of original cost or prudent investment to production and gathering properties; where it includes production and gathering expenses in its estimate of future expenses; where it allows working capital for the production and gathering business; and considers and determines what wells are to be drilled in the future; and finally, where, in determining an alleged excess revenue, it applies its allocation of cost of service formula or theory, including a 6½% rate of return, not only to the transmission system properties but also to the production and gathering properties which constitute approximately two-thirds of the total rate base as determined by the Commission. Obviously, the Commission has treated every element of Canadian's production and gathering properties, facilities and business in precisely the same manner as its interstate transmission properties, facilities and business, and has subjected every element of Canadian's production and gathering facilities to the same rate regulatory measures and procedures as Canadian's interstate transmission properties, facilities and business for the purpose of arriving at its ultimate conclusions with respect to rates and charges. If the Act had expressly delegated full and complete rate regulatory jurisdiction over Canadian's producing and gathering properties, facilities and business, the Commission could have done no more than it has done in this case. The Circuit Court's Opinion is inconsistent and contradictory. Its effect, not only in the instant case but also in all other cases, if allowed to stand, is to vest complete rate regulatory jurisdiction over production and gathering and thus to assume and exercise a legislative veto power over an express and unambiguous Act of Congress.

We again emphasize that natural gas is a commodity; that the market value of that gas as a commodity at the wellhead and at the end of Canadian's gathering system, which is the beginning of its interstate transmission system, was established by uncontradicted evidence. The whole theory and purpose of the Act and the express Congressional intent set forth therein can be sustained, served and followed if this established commodity value of the natural gas be used as the starting point of the Commission's rate regulatory jurisdiction. In such event by using that commodity value as its jurisdictional starting point the Commission can properly proceed with an exercise of its delegated rate regulatory jurisdiction over the interstate transportation and sale of that gas.

In conclusion, we urge that the Commission's action in this case and the Circuit Court's affirmance thereof are in direct conflict wtih the Act and with the Opinion of this Court in the Hope Case, and that the Commission's unwarranted assumption of rate regulatory jurisdiction over Canadian's production and gathering should not be allowed to stand. If the Commission's action is permitted to stand, then the provision of Section 1(b) of the Act that the Act shall not apply to production or gathering has become merely surplusage and is a nullity.

Question 2.

Impropriety and Invalidity of Including Natural Gas Leaseholds in a Rate Base on an Original Cost Formula or Prudent Investment Theory.

While some of the specific facts in the Record pertinent to a consideration of Question 2 are summarized in the Statement under that separate subheading, all of the facts set forth in the entire Statement are more or less pertinent to a consideration of the question presented by Question 2; namely, the impropriety and invalidity of including natural gas leaseholds in a rate base (even assuming Commission rate regulatory jurisdiction over such leaseholds) on an original cost formula or prudent investment theory.

It is our definite position, raised in Question 1, that the Commission does not have rate regulatory jurisdiction over

the production and gathering of natural gas and that its delegated jurisdiction over interstate transportation and sale can be fully, adequately and properly exercised by determining the commodity value of the natural gas at the end of the gathering operation, which is the beginning of the interstate transportation. This clearly was the Congressional intent in expressly withholding rate regulatory jurisdiction over production and gathering from the Commission. Such a logical and practicable procedure would render it unnecessary to rely upon the inconsistent and contradictory subterfuge found in the Circuit Court's Opinion quoted above which denies jurisdiction and upholds Congress with one hand and at the same time legislates jurisdiction and thwarts Congress with the other hand.

Even, however, if it be assumed, *arguendo*, that by whatever name it may be called, rate regulatory jurisdiction is to be exercised over production and gathering, still we submit it is entirely improper, for various reasons hereinafter mentioned, to include natural gas leaseholds in a rate base at original cost and to allow only a return based upon such original cost.

We are not arguing here the question as to whether for the ordinary class of public utility property, original cost or something else should be the foundation of the rate base. Natural gas leaseholds constitute a class of property unique in itself and what may be a permissible or logical theory of a rate base for the ordinary utility property can have no proper application to gas leaseholds. Certainly there is nothing in the Act which requires the Commission to use original cost in including natural gas leaseholds in a rate base, even assuming that the Commission has rate regulatory jurisdiction over those leaseholds. Again, when this Court in the Natural Gas Pipeline and Hope cases stated that the Commission is not bound to any single formula or combination of formulas, it certainly did not intend to limit the Commission to an original cost formula in all cases. On the contrary, the "end result" and "rate impact" principles announced by this Court in these two cases would seem to make it absolutely clear that an original cost rate base as applied to natural gas leaseholds is

not only in conflict with the basic theory of the Natural Gas Pipeline and Hope cases but condemned by the "rate impact" and "end result" principles announced therein.

We submit that, except in an isolated instance as the result of accident, an original cost rate base as applied to natural gas leaseholds can never be fair to either the owner of the leaseholds or the public, and cannot, except accidentally, result in just and reasonable rates, as required by the Act. This can be demonstrated by a few general examples before coming to the particular situation which exists in the instant case.

A gas company, with $10,000,000 capital to spend in attempting to secure production, spends $9,000,000 of it around the country in geologizing, leasing, and drilling, without success. With its last million dollars it acquires some leaseholds which prove productive. Under the Commission's original cost theory the company would be limited to a 6½% return on this last million dollars. No consideration at all is given to the fact that it actually cost the company $10,000,000 to secure this one producing field. Such a theory must necessarily retard, if not eventually entirely terminate, attempts to locate and develop new fields, to the obvious prejudice of the general public.

Again, A acquires a section of purely "wildcat" land in unproven territory at a nominal cost of $1,000. He drills and secures gas production. This success immediately makes all surrounding land more valuable. B then acquires a gas lease on an adjoining section, but, because of the increased value resulting from A's discovery, B is required to pay $100,000 for his lease. B drills and is likewise successful. The gas produced from both leases as a commodity and on a competitive basis is of the same market value per Mcf. Under the Commission's original cost theory, A will be allowed a return of 6½% on only $1,000, while B will be allowed a return of 6½% on $100,000, and thus as far as the inclusion of the leaseholds in a rate base is concerned, the consuming public will be required to pay one hundred times as much for B's gas as for A's, even though they both have the same commodity value per Mcf.

This theoretical example just given is reflected by the actual facts appearing in the Record in this case. As shown from the Statement, Canadian's leasehold acreage was included by the Commission in its rate base on a "wildcat" original cost basis representing the nominal cost paid for the leaseholds, to a large extent before discovery of gas. In some instances what have turned out to be the most valuable leases were acquired in consideration of a drilling obligation only. The result is that all of Canadian's leaseholds, aggregating some 300,000 acres, have been included by the Commission in its rate base at an aggregate of less than $1,000,000 (exclusive of drilling cost). Five of its most important leaseholds, containing approximately 47,000 acres, have been included in the rate base by the Commission for only $4244.24, which is less than 10c per acre; and three of these leases are included at *zero valuation*. (R., V. 5, 2735, 2736, 3054.) The present fair value of these same five leaseholds (exclusive of wells) was $3,345,923. A similar situation exists in respect to the Commission treatment of the remainder of Canadian's leaseholds.

As against this practically nominal "original cost" of Canadian's leaseholds acquired on a "wildcat" basis, the Record shows that along about the year 1930 or 1931 Texoma Natural Gas Company* purchased a block of acreage approximating 300,000 acres in the Texas Panhandle Field at a total purchase price in excess of $15,000,000, the consideration paid running from $40 to $45 per acre. (R., V. 6, 3215, 3216.) Obviously the commodity value of the gas of the Texoma Natural Gas Company and the gas of Canadian is the same per Mcf., and yet the Commission's theory of including natural gas leaseholds in a rate base at original cost and allowing a return on such original cost would mean that Texoma would receive a return on from $40 to $45 per acre, and Canadian, a return on from zero value per acre to a maximum of $1 to $3 per acre. It would also mean that the rates to be charged the consuming public would be proportionately increased if the Texoma gas was purchased rather than Canadian's gas, notwithstanding

*Texoma Natural Gas Company was a party to and its properties were involved in the Natural Gas Pipeline Company case.

that in the field and at the end of the gathering operations the commodity value of the gas of both companies is the same. The absurdity of this result is apparent.

A final example: A, mentioned above, with his $1,000 leasehold investment, develops a property containing a reserve of, say 50,000,000 Mcf. B, with his $100,000 investment, develops a reserve of 5,000,000 Mcf. Certainly, notwithstanding the difference in the leasehold investment or original cost, A's property is much the more valuable, and yet again, under the Commission's original cost theory, A will be limited to a 6½% return on his $1,000 as against one hundred times that much for B.

We submit that such a blind application of the Commission's original cost theory is unsound, impracticable, violative of the Fifth Amendment, must necessarily result in untold confusion, and cannot possibly result in just or reasonable rates either from the viewpoint of the owner of the leaseholds or the consuming public.

Of course, as we have urged above, this whole question can be avoided and order brought out of chaos if the Commission shall keep within its delegated jurisdiction and not attempt to include production and gathering properties in a rate base, but use the market value of the gas as a commodity as its jurisdictional starting point.

The impropriety, from legal, economic and practical standpoints, of applying ordinary public utility rate regulation principles and formulas to natural gas leaseholds and valuing such leaseholds for rate base purposes on an original cost basis, and the propriety of using the commodity market value of the gas as the jurisdictional starting point, are clearly and forcibly pointed out and emphasized in the opinion of Mr. Justice Jackson in the Hope Case.

In connection with our argument on "Question 3" infra we set forth the details of the actual original cost or prudent investment formula or theory promulgated and applied by the Commission in its valuation of Canadian's leaseholds for rate base purposes and the Commission's elimination of over $3,000,000 from Canadian's actual origi-

nal cost of those leaseholds. The argument there presented further demonstrates, we submit, the impropriety, from legal, economic and practical viewpoints, of ignoring, as a matter of law, all elements of value of natural gas leaseholds other than the original cost of those leaseholds incurred by predecessor companies on a "wildcat" acreage basis, and, in fact, emphasizes the impropriety, both from the viewpoint of the owners of the leaseholds and of the consuming public, of using original cost at all for natural gas leasehold rate base purposes.

The following additional facts summarized in the Statement, supra, further emphasize and clearly show the impropriety, if not the illegality and unconstitutionality, of including natural gas leaseholds in a rate base at original cost, even though that original cost be properly determined, which it was not in this case, as we show in our argument on "Question 3."

An analysis of the testimony of Commission witnesses, which the Commission adopted substantially (Ex. 146, Sheets 62-64; R., V. 5, 2717-2721), shows that the Commission used the sum of $1,604,020.61 as the starting point for its findings as to original cost of or investment in Canadian's leaseholds as of December 31, 1939. Then, as appears from Paragraph 8 of the Commission's formal findings (R., V. 1, 186), a deduction of $653,681 was made for depletion. This means that Canadian's bare leaseholds have been included in the Commission's original cost rate base at a value of something less than $1,000,000.

In adopting this valuation for rate base purposes, the Commission has wholly ignored substantial and uncontradicted evidence that "the present market value of Canadian's leaseholds" (excluding wells) is the sum of $15,646,787.64.

The Commission has found that Canadian's recoverable gas reserves are 2,800,000,000 Mcf. (R., V. 1, 159.) Reducing these figures so found by the Commission to its *value of the gas in place*, it appears that the Commission, in effect, has found the present value of the gas in place to be only 34/1000ths of one cent per Mcf. On a comparative basis,

and using the $15,646,787.64 valuation as applied to the Commission's finding of 2,800,000,000 Mcf. recoverable reserves the value of the gas in place is approximately 1.3¢ per Mcf.

The Commission has wholly ignored all evidence of the market value of gas at the wellhead in the Texas Panhandle field as a measure of the value of said leaseholds. The uncontradicted evidence, as shown in the Statement, established such a commodity market value of 4¢ per Mcf. on a 16.4-pound pressure base, or not less than 3.6¢ per Mcf. on a 14.65-pound pressure base. Likewise, the Commission totally ignored the uncontradicted evidence which established the market value of Canadian's gas as a commodity at the Bivins Station (end of the gathering lines and beginning of the interstate transmission line) to be 7¢ per Mcf. on a 16.4-pound pressure base, or approximately 6.3¢ per Mcf. on a 14.65-pound pressure base.

The Commission has found that Canadian's remaining recoverable reserves as of December 31, 1939, are not less than 2,800,000,000 Mcf. (14.65-pound pressure base); that Canadian's future rate of production will be approximately 55,000,000 Mcf. (14.65-pound pressure base) per year; (R., V. 1, 159); and that on that basis Canadian's recoverable reserves will last for 53 years. The gross value of the 55,000,000 Mcf. to be so produced annually at 3.6¢ per Mcf. is $1,980,000. The Commission has found (R., V. 1, 171) Canadian's total annual operating expenses to be $1,169,096, which includes gathering expense and transmission expenses, as well as producing expense. Even if all of this expense, however, be attributed to the production of gas at the well-head and be deducted from the gross annual value of $1,980,000, there remains a net income of $810,904 (based upon commodity value) for Canadian's gas production in one year, which is almost as much as the Commission has allowed in the rate base for the total of Canadian's leaseholds for all time.

It happens in this particular case that the application of the Commission's original cost theory to Canadian's gas leaseholds operates to the prejudice of Canadian. It might well be the other way in another case, in which event if

the Commission is consistent, the consuming public would be compelled to pay a higher rate because of a high original cost, notwithstanding the fact that the market value of the gas as a commodity would be the same, irrespective of the original cost of the leaseholds.

We submit that any theory which must end in such absurd results is inherently unsound, is not in the public interest, and is in conflict with the Fifth Amendment and violative of the principles announced by this Court in the Natural Gas Pipeline and Hope cases. As the Commission's rate reduction order (even assuming, *arguendo*, rate regulatory jurisdiction in the Commission over production and gathering) is based upon such an unsound theory, it should not be permitted to stand.

Question 3.

Canadian's Actual Original Cost of Leasehold Properties.

The Commission did not question the fact that Canadian had actually invested in its gas properties the sum of $14,648,821 in cash as of December 31, 1939. (R., V. 1, 149.) It deducted from such actual cash investment, for its rate base purposes, however, the sum of $3,370,817 on the ground that such sum represented "affiliated company profits." (R., V. 1, 149.) It also deducted, in addition thereto, the sum of approximately $245,000 representing interest during construction on such alleged profits.[1] (R., V. 1, 149-151.)

Virtually the full amount of such deduction arises out of the transaction heretofore related in which Canadian acquired from Amarillo all of the latter's gas leaseholds, rights and wells as of May 1, 1927, for the sum of $5,000,000 for the purpose of inaugurating the Denver Project in 1928.[2]

[1] The Commission actually deducted $366,507 for interest during construction. (R., V. 1, 149) Of this amount, however, only $244,853.26 represented interest during construction on the alleged profit in the sale of leaseholds, rights and wells to Canadian. (Entry 249, R., V. 5, 2769). The remainder of the deduction for interest during construction as determined by the Commission resulted from a finding that the construction period terminated on July 1, 1928, rather than October 31, 1928, as contended by Canadian. (R., V. 1, 151)

[2] See Statement, pp. 10, 11, 21-26, supra.

The Circuit Court, in upholding the Commission in this deduction, stated that the purchase price paid constituted a "synthetic inflation." (R., V. 8, 5082.)

Having thus denied and deprived Canadian of its actual cash investment of $5,000,000 in gas leaseholds, rights and wells, the Commission then proceeded to limit Canadian for rate base purposes to its conception of the bare provable costs incurred by Amarillo and its predecessor in title for such properties. Following this practice, the Commission found that Amarillo, commencing with its "wildcat" discovery well in 1918, had invested in the properties sold to Canadian only the sum of $1,879,504 and that this sum should be further reduced by $128,534 by reason of an alleged profit of another predecessor company (Mission Oil Company) in a sale of property by it to Amarillo (R., V. 1, 150), all of which resulted in a so-called original cost to Amarillo of approximately $1,750,000, or approximately $3,250,000 less than the sum actually paid by Canadian in cash for such properties. In order to arrive at the true amount of the deduction, there should be added, of course, interest during construction on said sum for the construction period as determined by the Commission.

Based upon the facts heretofore and hereafter summarized, Canadian contends that the Record in this case establishes beyond question the following:

1. *The consideration paid by Canadian to Amarillo for such properties, and other terms and conditions of sale, as well as the agreement to buy and sell, were determined and agreed to by the three non-affiliated organizers of the Denver Project after prolonged arm's-length bargaining, long before formal consummation of the transaction and even prior to the incorporation of Canadian itself.*

Payne, who represented Standard in the negotiations which resulted in the acquisition of the gas leaseholds, rights and wells of Amarillo by Canadian, stated:

"The terms were agreed upon (contract of April 5, 1927, Exhibit 1) only after a series of conferences at which various plans were considered and the viewpoints of all the parties were put forward and thoroughly dis-

cussed. Since Standard Oil was assuming the responsibility of putting up the money for the project, we exercised the utmost care and our best judgment in all of the matters under consideration, and the willingness of the company (Standard) to proceed with this project depended entirely upon the basis agreed to by the parties.'" (R., V. 1, 493.)

Payne further stated that this led to prolonged negotiations and at times it seemed that an agreement would never be reached. (R., V. 1, 519-522.)

The first proposition advanced by Standard for the Denver Project included the purchase of the properties of some other subsidiaries of Southwestern in Texas. This proposition was rejected by Southwestern. (R., V. 1, 519.) Standard then proposed the purchase of the gas wells and leaseholds of Amarillo for the sum of $2,000,000, being $1,250,000 in cash and stock with a par value of $750,000. This was rejected by Southwestern. The various propositions advanced by Southwestern from time to time on behalf of Amarillo for its gas leaseholds, rights and wells were $15,000,000 in cash; then $10,000,000; and finally $7,500,000. (R., V. 1, 520.) The negotiations started in July of 1926 and continued into October of that year. Standard finally increased its proposal to $4,000,000 in cash with a fifty-fifty division of the common stock in the project. This was refused by Southwestern. (R., V. 1, 520.) Standard's last proposal was to pay $5,000,000 in bonds and $1,000,000 in cash. This was rejected by Southwestern.

In October, 1926, Southwestern made a counter-proposal involving a payment of $5,000,000 in cash to Amarillo for its gas leaseholds, rights and wells. This proposition was finally accepted in principle (R., V. 1, 520-521), and incorporated in the Memorandum of Stipulations executed by Southwestern, Standard and Cities Service as of April 5, 1927. (Ex. 1, R., V. 1, 381-401.)

The intensity of the bargaining by the parties over the price to be paid for Amarillo's gas leaseholds, rights and wells is further exemplified by the following testimony of Payne:

"Q. Were you in the position of making a trade with these people (Southwestern) as to the dollars that would be paid for these leases and wells which would go into the cost of the project?

"A. Certainly. My attitude * * * was that we wanted to make the pipe line project a financial success and an honorable credit. It was our effort, therefore, *to buy those leases at the lowest possible figure* that went into the project.

"On the other hand, Mr. Fitzpatrick and Mr. Moody (representing Amarillo), * * *, *were particularly and more vitally interested in getting as much cash as possible from the sale of those properties.*" (Italics supplied.). (R., V. 1, 524.)

Spencer, Vice President of Southwestern, testified as follows:

"Q. Mr. Spencer, a number of questions have been asked concerning a figure of five million dollars. Do you know if that figure was fixed, namely, the amount that the leases which went into this project from the Amarillo Oil Company was fixed in some document prior to the time when the Canadian River actually made the purchase?

"A. A consideration of five million dollars to be paid and paid by Canadian River to Amarillo Oil Company for its gas rights and properties was fixed in the pre-organization agreement dated April 5, 1927 between Southwestern, Standard and Cities Service."

Spencer then identified Exhibit 1, Memorandum of Stipulations of April 5, 1927, as the pre-organization agreement referred to.

"Q. Was Canadian River Gas Company a party to it?

"A. Canadian River Gas Company was not in existence at that time. The agreement provided for the subsequent organization by Southwestern."

"Q. When was Canadian River organized?"

"A. February 1928."

(R., V. 1, 455.)

Spencer further stated that Canadian at the first meeting

of its Board of Directors held on March 27, 1928, adopted a resolution authorizing the purchase of Amarillo's gas leaseholds, rights and wells and that

"* * * The consideration to be paid by Canadian River to Amarillo Oil Company for such gas rights and properties had been previously negotiated and fixed by representatives of Southwestern, Standard and Cities Service in the Memorandum of Stipulations dated April 5, 1927. * * *" (R., V. 1, 405.)

He further testified as follows:

"Q. And at the time when the transaction that you referred to, namely the meeting of the Board of the Canadian River and the adoption of the resolution authorizing the payment of five million dollars for the acreage, when that took place were there any negotiations between Canadian River and the Amarillo Oil Company concerning that?

"A. None whatsoever. That was merely a part of the carrying out of the terms and conditions of the April 5, 1927 agreement."

(R., V. 1, 455-456.)

There was no affiliation of any character whatsoever between Standard, Cities Service and Southwestern at that time. Southwestern represented Amarillo in the negotiations by reason of the fact that it owned all of the common stock of Amarillo. In addition to Moody and Fitzpatrick, Southwestern was represented also by A. R. Jones, of Kansas City, who was President of Mission Oil Company, which owned approximately 49% of the common stock of Southwestern. Jones always appeared in the conferences when a proposition was being seriously considered. (R., V. 1, 519, 521.)

It is apparent from the above that in the negotiations referred to Standard for itself and Cities Service occupied the position of purchaser and Southwestern acting for Amarillo occupied the position of seller, and that the purchaser attempted to acquire the properties for the Project as cheaply as possible and the seller attempted to get as much as pos-

sible for them. It is evident, therefore, that every element of arm's length bargaining between non-affiliated parties was present and operating in the negotiations, as well as in the consummation of the transaction.

It is true that after the negotiations were finally terminated and the consideration and other terms agreed upon, the properties were actually transferred by Amarillo to Canadian. The Commission has seized upon this fact as the basis for its finding that the purchase and sale constituted a transaction between two wholly owned and affiliated subsidiaries of Southwestern. The Record clearly refutes this contention. The original negotiations and agreement could not possibly have been had between Amarillo and Canadian for the very simple reason that Canadian was not then in existence and was only created by Southwestern for the purpose of carrying out the terms and provisions of the Memorandum of Stipulations (Exhibit 1) dated April 5, 1927. Moreover, as hereinafter shown, Canadian is only a nominal subsidiary of Southwestern.

2. *The affiliation between Amarillo and Canadian is only nominal and does not exist in fact or in practice, and, in any event, did not arise until after the contract to buy and sell the properties in question was consummated and the entire consideration paid.*

The contract between the Project organizers for the purchase of the wells and leaseholds of Amarillo was executed on April 5, 1927. Canadian was not organized until February, 1928. (R., V. 1, 455.) Such contract provided that Southwestern should organize Canadian and maintain it *separate from its other companies and projects* for the purpose of acquiring, maintaining and operating such properties for the benefit of the Project. (R., V. 1, 381, 382, 518-521.) Canadian was subsequently organized by Southwestern pursuant to the contractual provisions above referred to. (R., V. 1, 405.) The contract of April 5, 1927, provided that Canadian would enter into, for the consideration therein expressed, a long term contract (known as the "Cost Contract") to sell gas to Colorado Interstate on a cost basis. (R., V. 1, 392.)[*]

[*] See Statement, pp. 11 to 13, supra, for a description of the Cost Contract.

Although the issued and outstanding capital stocks of both Amarillo and Canadian were eventually owned by the same company, i.e., Southwestern, the affiliation in the ordinary sense ended there. Through its Cost Contract with Colorado Interstate, which was provided for in the organization agreement of April 5, 1927, Canadian, its properties and its operations became so involved in contractual obligations to Colorado Interstate that during the term thereof it could not possibly function as a subsidiary of Southwestern in the ordinary or usual sense of the word. It could not declare and pay dividends to Southwestern because it could not have profits upon which to declare such dividends. It could not buy or sell property without the consent of Colorado Interstate. It could not borrow money or incur obligations without the consent of Colorado Interstate. It was for these reasons that the agreement of April 5, 1927, provided that Canadian should be organized and maintained by Southwestern separate and apart from its other subsidiaries. (R., V. 1, 361-382.) Southwestern does not, and could not realistically, include Canadian as a subsidiary in its consolidated financial statements.

As will be shown in the next subheading, the entire consideration of $5,000,000 had been paid to and received by Amarillo prior to the incorporation of Canadian. (R., V. 1, 455.)

It is apparent from the above that any affiliation between Amarillo and Canadian is purely nominal and did not arise, in any event, until after Canadian was created in February of 1928, long after the organization agreement of April 5, 1927, had been made and the $5,000,000 transaction had become fully effective, except for the formality of transfer.

"The transaction in question was not a mere matter of inter-company book entries with no cash changing hands, as is ordinarily the case in a 'write-up.'"

$5,000,000 in cash was actually paid by Canadian for its properties, which sum represented outside funds advanced by outside non-affiliated interests (Standard) for that specific purpose. We quote from the testimony of Spencer with respect to the payment of $5,000,000, as follows:

"Q. So that the cash started from Standard Oil Company then to the Colorado Interstate and then to Canadian River?

"A. That is right from a cash standpoint. * * *

"Q. So Southwestern Development Company was not taking five million dollars of its own funds and paying it to its own subsidiary?

"A. It got five million dollars of outside money."

(R., V. 1, 459.)

The Commission has found that Canadian actually paid Amarillo $5,000,000 in cash for the latter's gas leaseholds and wells in the Texas Panhandle Field. (R., V. 1, 150.)

Luttring, Commission witness, also testified that the payment of the $5,000,000 was contingent only upon two principal conditions, namely, the obtaining of a natural gas franchise in Denver and approval of the title to properties of Amarillo which it was intended would be conveyed, and that after those two conditions had been satisfied, the $5,000,000 would be paid. (R., V. 5, 2914-2915.) Luttring further testified:

"Q. * * *

"Ultimately the Amarillo Oil Company received by way of credits or otherwise the full amount of the purchase price of five million dollars?

"A. Yes."

(R., V. 5, 2938.)

It is perfectly apparent from the above that there was no element of a "write-up" in this transaction as suggested by the Commission. There could have been no "write-up" for the very simple reason that $5,000,000 was actually paid and the funds, for this purpose, were advanced for Canadian by Standard, which company had no interest whatsoever in Southwestern or any of its subsidiaries. Subsequently, Canadian repaid the advances out of its own funds. The money, therefore, came from sources entirely outside of the Southwestern holding company system.

The $5,000,000 was permanently and irretrievably paid to Amarillo as the purchase price for its gas leaseholds, rights and wells. There was no eventuality, inter-company or otherwise, which could have compelled Amarillo to return such purchase price, or any part thereof, to Canadian. Thus, we have here not only the form but the substance of a real transaction between two parties, and not merely the form which accompanies a write-up transaction.

In its answer brief to our original petition for certiorari, the Commission points out that the alleged profit made by Amarillo was carried on Canadian's books in a so-called "appreciation account" until 1939, and that no income taxes were paid on such profit by Amarillo. This has no significance whatsoever. At the time of this transaction, Southwestern had elected to file Federal income tax returns for itself and its subsidiaries on a consolidated basis. Once Southwestern had determined to file consolidated income tax returns for itself and its subsidiaries, it had no choice but to include Canadian in such consolidated income tax return after its incorporation. Consequently, any profit realized by Amarillo in the transaction was eliminated for income tax purposes in the consolidated return. (R., V. 5, 2638.) At the same time, however, it should be noted that such elimination of taxable profit resulted in a lower depreciation and depletion base for Canadian's and the consolidated group's future use for tax purposes which in the long run may well require the payment of more, rather than less, Federal income taxes. This is the whole story concerning this phase of the transaction.

Certainly, this method of handling the transaction in order to comply with income tax laws does not in any manner change the arm's length nature of the transaction as reflected by the uncontradicted evidence, or the fact that Canadian in good faith paid $5,000,000 in cash for the property and that the property was worth more than the price paid for it. As stated in the A. T. & T. and New York Telephone cases hereinafter referred to, these are the facts that really count.

Neither the transaction nor the so-called "appreciation account" resulted in any entry whatsoever in Canadian's

surplus account. (R., V. 5, 2637.) From an accounting standpoint there could have been no write-up unless it was reflected in Canadian's surplus account. Canadian had received no gifts and it was not resorting to inflation of its assets, synthetic or otherwise, because it had in fact paid $5,000,000 in cash for these properties. Consequently, it had nothing to record in its surplus account. It is apparent that no matter how Canadian may have kept its books of account for tax or other purposes, and notwithstanding any evidence of the true arm's-length character of the transaction, and of the true value of the property, the position of the Commission and its staff would have remained the same, simply because it was a transaction, so they say, between affiliated companies.

4. The Record does not contain even an intimation that Canadian paid an excessive or imprudent price for its properties acquired from Amarillo. On the other hand, the Record amply demonstrates that the property acquired was and is worth substantially more than the amount paid.

Payne testified with respect to the reasonableness of the consideration paid as follows:

"Q. * * * Now, at the time you made this final agreement of $5,000,000.00 * * *, was it your judgment then that that was a prudent business agreement to make on behalf of the business interests you represented (Standard)?

"A. I was satisfied it was a very good business deal * * *, yes.

"Q. And on the basis of the facts as they were then, is it still your judgment that that was a prudent business deal and that the leases and wells were worth what was paid for them?

* * * * *

"The Witness: That is still my judgment."

(R., V. 1, 525-526.)

Wallace testified that the leaseholds acquired, exclusive of all well costs, plus a small acreage of additional leaseholds, had a value at the time of the hearing of $15,646,787.64. (R., V. 6, 3181-3254.)

5. Prior to acquisition by Canadian, the properties in question had not been devoted to a public use or to the transportation or sale of natural gas in interstate commerce.

The Commission makes no contention or finding that Amarillo had ever devoted its properties to the public service prior to the acquisition thereof by Canadian. The Commission does intimate, however, that the properties acquired by Canadian from Master Oil and Gas Company and the properties acquired by Amarillo from Mission Oil Company had theretofore been devoted to the public service. (R., V. 1, 150.) This offhand statement, however, is not supported by the Record. Master Oil and Gas Company had never sold any gas for any purpose from its properties prior to the acquisition thereof by Canadian (R., V. 5, 2801, 2802) and the Record is entirely silent with respect to any sales by Mission Oil Company. Furthermore, the properties sold by Master Oil and Gas Company were in no sense involved in the purchase of Amarillo's gas leaseholds, rights and wells by Canadian.

The Record clearly shows that Amarillo had never devoted its properties to the public service. Its first sales of gas were made in October, 1920, to Panhandle Pipe Line Company, which was not then affiliated in any manner with Amarillo. (R., V. 5, 2861, 2927.) This gas was sold and delivered at the wellhead in the field, (R., V. 5, 2927-2928) and was ultimately consumed in Texas. It was produced from three wells, being Masterson Nos. 1, 2 and 4. (R., V. 5, 2862, 2866.) Obviously, these sales were not subject to regulation by the Commission for the very simple reason that (1) they were sales in intrastate commerce, (2) the Natural Gas Act authorizing regulation of the transportation and sale of gas in interstate commerce was not enacted until 1938 and (3) such sales, in any event, are not subject to regulation under the Act. Neither were such sales subject to regulation in the State of Texas. *Humble Oil & Refining Co. v. Railroad Commission of Texas*, 128 S.W. (2d) 9.

Commencing in 1923, Amarillo also sold gas to a zinc smelter located near the City of Amarillo, Texas. (R., V. 5, 2928.) This was an industrial sale and, therefore, no public interest or regulation attached. (R., V. 5, 2929.)

Amarillo acquired from Mountain States Gas Company in excess of 250,000 acres of leaseholds as of August 1, 1924. (R., V. 5, 3051, 3069.) There were no revenues from such properties by reason of gas sales or otherwise until after August 1, 1924. (R., V. 5, 3048.) Obviously, such properties could not have been devoted to a public service prior to August, 1924; nor thereafter, by virtue of the sales of gas by Amarillo at the wellhead produced from three wells *located on other property*. Finally, all of the leasehold properties and wells of Amarillo could not be said by any stretch of the imagination to have been devoted to a public service by virtue of local sales from three wells. Moreover, the properties involved in this case could not be said to have been devoted to a public service prior to 1938, in so far as the issues here involved are concerned, because Congress did not enact the Natural Gas Act until 1938. Prior to that date Congress had expressly excluded from regulation the transportation and sale of natural gas in interstate commerce. (34 Stat. 584; Title 49, U.S.C.A., Sec. 1 (1) (b).)

* * * * * *

There is absolutely no basis in the Record for the deduction of $121,787 from Canadian's original cost on the theory that this sum represented a profit made by Master Oil and Gas Company in the sale of its properties to Canadian. As shown by the Statement, this transaction resulted from arm's length negotiations. No gas had ever been sold from the properties prior to the acquisition thereof by Canadian. (R., V. 5, 2801-2802.)

The Commission also erroneously deducted $128,534 from Canadian's original cost, being the alleged profit made by Mission Oil Company in the sale of properties to Amarillo. The Record clearly demonstrates there was no basis for this action. Furthermore, this transaction involved production properties that were included in the sale by Amarillo to Canadian, and if the full $5,000,000 purchase price is allowed for such properties, it necessarily follows that such deduction was erroneous.

It is, of course, perfectly obvious that the Commission was in error in deducting approximately $245,000 for interest during construction on the alleged profit made by

Amarillo on the sale of its gas leaseholds, rights and wells to Canadian. This deduction was made on the theory (which is not supported by the Record) that such alleged profit was a write-up. (Com. Op., R., V. 1, 151.)

The refusal of the Commission to allow Canadian its actual cash investment in gas leaseholds, rights and wells for rate base purposes, and its application of original cost theories to production properties in this instance results in relegating Canadian to the provable cost of its predecessor companies and denies Canadian any return on $3,615,670.26 of its actual cash investment in such properties, including interest during construction, as well as the right to recover such sum through the sale of its gas.

We most earnestly contend that the undisputed facts in this case demonstrate clearly and conclusively that the Commission erred as a matter of law in holding that the transaction whereby Canadian acquired the gas leaseholds, rights and wells of Amarillo constituted a transaction between affiliated companies and that the alleged profits, therefore, constituted "affiliated company profits." The Circuit Court was also in error in holding that such alleged profits of Amarillo constituted a "synthetic inflation." The opinions of both the Commission and the Circuit Court clearly show that their conclusions were based upon the assumption that the transaction in question represented nothing more than an arrangement between two wholly owned subsidiaries of Southwestern. The Record clearly refutes this assumption and shows that the real transaction was between non-affiliated parties and that the purchase price was agreed upon only after prolonged arm's length bargaining between non-affiliated parties.

This Court has held on many occasions that a finding without evidence is beyond the power of a court or commission and likewise that a finding made upon evidence which clearly does not support it is an arbitrary act against which courts afford relief. We submit that under all of the circumstances the statement of the Commission with respect to "affiliated company profits" and the statement of the Circuit Court that such alleged profits constituted a "synthetic inflation" are arbitrary and being such cannot stand. This

principle was clearly stated by this Court in the case of *Northern Pacific Railway Co. v. Department of Public Works of Washington*, 268 U.S. 39, 44-45. Mr. Justice Brandeis, speaking for the Court, said:

> "* * * where rates found by a regulatory body to be compensatory are attacked as being confiscatory, courts may inquire into the method by which its conclusion was reached. An order based upon a finding made without evidence * * *, or upon *a finding made upon evidence which clearly does not support it* * * * is an arbitrary act against which courts afford relief. * * *." (Italics supplied.)

See also the following additional opinions by this Court:

Interstate Commerce Commission v. Union Pacific Railroad Co., 222 U.S. 541, 547;
United States v. Baltimore & Ohio, Southwestern Railroad Co., 226 U.S. 14, 20;
Interstate Commerce Commission v. Louisville & Nashville Railroad Co., 227 U.S. 88, 91;
Florida East Coast Railway Co. v. United States, 234 U.S. 167, 185;
United States v. Abilene & Southern Railway Co., 265 U.S. 274, 288.

The Circuit Court, in characterizing the difference between the purchase price actually paid by Canadian and the alleged provable original cost of Amarillo and its predecessors in title as a "synthetic inflation," held in effect that the same was properly eliminated by virtue of *Pennsylvania Power & Light Co. v. Federal Power Commission*, 139 Fed. (2d) 445 (certiorari denied). This case has absolutely no relevancy to the facts in the case at bar. It involved merely the proper method of keeping accounts by licensees under the Federal Water Power Act, which Act prescribes the manner in which such accounts should be kept. There is no such provision in the Natural Gas Act. In addition to this, however, the Pennsylvania case involved a claim for construction profits by one company against another company, both of which were puppets of the same holding company system. In fact, both parties were merely departments of one common holding company system. This does not even remotely ap-

proach the situation with respect to Amarillo. Amarillo acquired and developed the properties in question almost ten years prior to the time they were sold to Canadian for the Denver Project and in the interim it had increased the value thereof very materially as the result of discovery and exploration.

The Pennsylvania case would be more nearly applicable to the facts here if Amarillo had been employed by Canadian to go out and assemble the leaseholds in question after the Denver Project had been inaugurated and then Canadian had paid Amarillo a profit for the work performed by it. It is too clear for argument that this is not the situation confronting this Court, yet that was the very situation involved in the Pennsylvania case. In this case Amarillo acquired the leaseholds before there was any affiliation whatsoever, nominal or otherwise, with Canadian and in some instances before there was any affiliation with Southwestern. Properties originally acquired by Amarillo in 1917 were located more than 200 miles from any known oil or gas deposits. The leaseholds at the time of acquisition had little or no value and, consequently, only a nominal sum was paid therefor. Amarillo held these leaseholds for a period of approximately ten years with a very meager return. In the meantime it had developed them into properties of great value as the result of extremely hazardous "wildcat" exploratory operations. The circumstances, therefore, do not even remotely approach a situation where one department of the same parent holding company performs construction work for another and claims a profit as a result thereof. The Pennsylvania case would not be applicable here, in any event, because of the arm's length negotiations. Likewise, the various other cases cited by the Commission on this point in its answer brief to our petition for certiorari involved, for the most part, questions of accounting by licensees under the Federal Water Power Act and profits for construction work performed in reality by one department of a holding company system for another. Obviously, such cases have absolutely no relevancy to the facts in the case now before this Court.

Even if the transaction whereby Canadian acquired gas leaseholds, rights and wells from Amarillo was solely one

between affiliated companies, and even if the properties acquired had been theretofore devoted to a public service, still the profit made by Amarillo could not be condemned and eliminated on such grounds alone. This very question has been recently decided by this Court in the case of *A. T. & T. Co., et al., v. United States, et al.*, 299 U.S. 232, 240, 81 L. Ed. 142. In that case Mr. Justice Cardozo speaking for a unanimous Court held definitely and positively that where properties were purchased from an affiliated company, or from a company that prior to the purchase had devoted such properties to a public use, any profit made by the selling company could not be written off or ignored if, as a matter of fact, "*the difference between original and present cost is a true increment of value.*" (Italics supplied.)

This principle has been reaffirmed in the recent case of *New York Telephone Co. v. United States, et al.*, decided August 24, 1944, by a three Judge court for the Southern District of New York, Advance Opinions, Federal Supplement, Volume 56, No. 7, Page 932. There was involved in that case the purchase of equipment by the New York Telephone Company from its parents, the A. T. & T. Company. The latter company owned all of the common stock of the former. The cost of such equipment on the books of the A. T. & T. Company, after depreciation, aggregated $8,468,169.81, whereas the purchase price paid by the New York Telephone Company was $12,634,680.38, or an excess over A. T. & T. Company's net book cost amounting to $4,166,510.57. The Federal Communications Commission ordered the New York Telephone Company to write down the actual cost of the property in question to the net book cost of the selling company. *The Court held that the purchasing company could not be required to write down the actual cost of the property if, as a matter of fact, it was worth the sum paid,* citing the A. T. & T. decision by this Court referred to above.

While these cases involved questions of accounting, the underlying principle is even more applicable here. It is important to a regulated company that its books of account reflect actual consideration paid for properties where the true value of such properties is in keeping with the consideration paid, but it is fatal to a regulated company if it is

unable to have actual consideration paid for properties reflected in its rate base where the true value of such properties is in keeping with the consideration paid.

Certainly, on the basis of the above principle, there is no ground for eliminating more than $3,000,000 from the purchase price paid by Canadian to Amarillo for gas leaseholds, rights and wells in 1928. As heretofore stated, the entire $5,000,000 was actually paid in cash and in good faith after prolonged negotiations between adverse parties. The Record reflects clearly that the property was worth even more than the amount actually paid by Canadian and, therefore, in the language of Mr. Justice Cardozo "the difference between original and present cost is a true increment of value."

Commission counsel also rely on the case of *Niagara Falls Power Co. v. Federal Power Commission*, 137 Fed. 787, 793-794 (certiorari denied). That case involved the determination of the value of properties conveyed by the owners thereof to a common company for which each of said owners accepted common stock in the same proportion that the value of the properties conveyed by each bore to the total value. In other words, this transaction constituted simply a pooling of assets into one common operating company. No money whatsoever passed from the purchaser to the seller. It was a merging or consolidation of assets and in the end each of the so-called sellers owned a portion of the combined assets. This was not true with respect to the sale by Amarillo to Canadian. This sale did not constitute in any sense a pooling of assets as suggested by Commission counsel. The sale by Amarillo and the purchase by Canadian was a condition precedent to the establishment of the Denver Project. *The money paid belonged to Amarillo definitely and exclusively and no contingency whatsoever could arise in the future which would affect its right to keep and retain the full purchase price paid.* The project might have failed completely, but even so, Amarillo would not have been affected, and neither would its parent, Southwestern, in so far as the $5,000,000 payment is concerned.

Any pooling in this case could not have occurred until after provision had been made for the acquisition of the gas leaseholds, rights and wells in question, including payment

to Amarillo of the full $5,000,000 purchase price in cash. This sum belonged absolutely to Amarillo without regard to the future operations or fortunes of the Denver Project. The Niagara Falls case, therefore, and the principle decided therein, can have no relevancy whatsoever to this case.

This Court has said in the Natural Gas Pipeline and Hope cases that the Commission is not restricted to any particular formula, or combination of formulas, in arriving at a rate base. Notwithstanding such latitude, however, these opinions clearly require that any formula, or combination of formulas, applied by the Commission shall bear some reasonable relationship to the admitted facts in any given case. This is clearly demonstrated in the concurring opinion by Justices Black, Murphy and Douglas in the Natural Gas Pipeline case wherein it is stated: "The Commission has a broad area of discretion for selection of an appropriate rate base. * * * Various routes to that end may be worked out by the expert administrators charged with the duty of regulation. * * * *The decision in each case must turn on considerations of justness and fairness which cannot be cast into a legalistic formula.*" (pp. 606-607) (Italics supplied.)

The formula, legalistic or otherwise, applied by the Commission in this case results in the inclusion of Canadian's leaseholds in its rate base at a zero valuation for some of Canadian's most valuable leaseholds and at value of only 10¢ per acre to a still greater block of important leaseholds, and at nominal value of not to exceed $1.00 per acre on the great majority of such leaseholds. The undisputed testimony proves that the leaseholds involved in this case were worth many millions of dollars, exclusive of the wells. Clearly, the formula applied by the Commission here does not meet any test of "justness and fairness."

The Commission in this case has restricted Canadian for rate base purposes to the provable costs of the owners of its leaseholds who first engaged in an extremely hazardous "wildcat" enterprise in search of oil and gas over 25 years ago. They naturally paid little for their "wildcat" acreage at the outset because such acreage had little or no value at the time of its original acquisition—in fact, it might have

been a liability because it had drilling obligations attached to it. The value was developed by exploratory operations and discovery, which preceded by almost ten years the purchase of such leaseholds by Canadian, and which preceded by twenty years the enactment of the Act, which for the first time subjected to regulation the transportation and sale of natural gas in interstate commerce for resale for public consumption. Certainly, the public interest does not require that the consumers of natural gas produced from such properties be given the entire economic benefit resulting from the extremely hazardous undertaking involved in the discovery and subsequent production of natural gas under such circumstances. Certainly, no one will engage in the business of drilling a "wildcat" well 200 miles from any known oil or gas production, as Amarillo did, if the return upon such undertaking is to be limited literally to 6½% on the cost of the hole in the ground. We submit that neither the public interest nor the Act requires and the Fifth Amendment prohibits a rate regulatory process based upon any such theory.

The Commission has applied its prudent investment theories blindly in this case. It has not taken into account the undisputed facts and the realities developed in the Record. It has not attempted to base its conclusions "*on considerations of justness and fairness*". Mr. Justice Brandeis in his celebrated opinions defined "original cost" or "prudent investment" as the amount actually paid to establish the utility. *State of Missouri ex Rel. Southwestern Bell Telephone Co. v. Public Service Commission*, 262 U. S. 276. He developed there the theory that dollars were dedicated to the public service and not necessarily the property itself. This theory is based upon the assumption that the dollars actually invested at the time constitute the best evidence of value. This could not possibly be true in a mining operation such as this one where cost frequently has little relationship to value. The principle cannot apply also because the money invested by Amarillo and its predecessors in title in "wildcat" leaseholds was not invested in any sense of the word in a public service enterprise. The investment was made in a mining enterprise and at a time and under such circumstances that it could not be known whether the

property in question would ever produce natural gas. The great increase in value occurred by reason of the discovery of large deposits of natural gas. This necessarily preceded any sale of gas in interstate commerce or otherwise. Therefore, Amarillo and its predecessors in title did not in the first instance invest money in a public service enterprise of any character whatsoever. It is true that when Canadian acquired the properties from Amarillo that it did so for the purpose of producing natural gas, a portion of which would be ultimately transported and sold in interstate commerce. This was the first time, in any event, that any money was invested in or dedicated to a project that might be said to constitute a public service project. The money paid to Amarillo by Canadian, therefore, represents the very minimum prudent investment or original cost figure that can be applied in accordance with the principles announced by Justice Brandeis. In other words, the entire sum of $5,000,000 paid by Canadian to Amarillo for the latter's gas leaseholds, rights and wells must be recognized as a prudent investment if the undisputed facts in this Record are recognized. The Court will bear in mind that even when this investment was made the transportation and sale of gas in interstate commerce was not affected with a public interest and did not become so until the Act was passed in 1938.

We earnestly contend that the undisputed facts in this case demonstrate that the transaction whereby Canadian acquired the leaseholds, rights and wells of Amarillo was one between non-affiliated companies and that every safeguard necessary to insure a fair price and to render the transaction arm's length was present and operating here. There is nothing in the Record to indicate that the price paid was excessive or imprudent and, as a matter of fact, the uncontradicted evidence would justify a much higher consideration than that actually paid. There can be no question but that the properties were not devoted to the public service prior to the time that the sale was made. Amarillo's only sales prior thereto were at the wellhead and to an industrialist consumer, neither of which is affected with a public interest. Furthermore, the subsequent sales made by Canadian in interstate commerce for resale were not af-

fected with a public interest until the passage of the Act in 1938, almost twenty years after most of the property was acquired by Amarillo and its predecessors in title and more than ten years after the purchase of the same by Canadian. It is further contended that, in any event, the undisputed facts and circumstances in this case demonstrate clearly that the prudent investment theory as developed, construed and applied by the Commission in this case produces such absurd and unrealistic results that it cannot be applied here for the purpose of determining the rate base of Canadian with respect to the leaseholds as such. If such theory is to be applied at all, it cannot be applied to the "wildcat" cost of such leaseholds incurred by Amarillo and its predecessors in title. The very minimum prudent investment cost under any such theory must be the actual cash paid therefor by Canadian in 1928.

It is, therefore, clear that the Commission should have included in its rate base not only the full amount of the $5,000,000 paid by Canadian to Amarillo for the latter's gas leaseholds, rights and wells, but also the full amount paid by Canadian to Master Oil and Gas Company for its properties and the full amount of interest paid by Canadian on the actual cash invested in properties prior to the termination of the construction period. If the full amount of Canadian's $5,000,000 purchase price is allowed, it follows that any alleged profit made by Mission Oil Company in the sale of its properties to Amarillo becomes entirely moot and is eliminated as an issue in this case.

Question 8.

Allocation.

k. Failure of the Commission to Make Any Property Separation.

Where property is used in public service, it is universally acknowledged that the owner must be paid for that use. Where the owner uses such property only part time, or uses only a part of the whole property in such service, he is only entitled to be paid to the extent of that use. Where he devotes the same property during a part of the time or a part of the whole property to some purely private ven-

ture, he can demand for such use in such private venture simultaneously carried on whatever compensation may be agreed upon between him and the other parties in interest. This being the case, it would seem to follow from a simple application of common sense and without any elaborate argument and without any citation of authority that a separation of the property, based upon use, must be made in order to determine the payment that is due for such use in the public service. This proposition is so not only as a matter of plain common sense, but it exists in this case as a matter of law. It was incumbent upon the Commission as an administrative body in order not to transcend its jurisdiction to draw and observe two jurisdictional boundaries: First, the boundary line between interstate and intrastate commerce; and, second, the boundary line between sales for resale and direct sales not subject to regulation under the Act. The Commission is circumscribed by each of these boundaries.

The necessity of such a property separation is not only dictated by logical reasoning, but is required by the express mandate of this Court in its several previous decisions, including, among others, *Smith v. Illinois Bell Telephone Co.*, 282 U. S. 133, 146, 75 L. Ed. 255, 262, and the *Minnesota Rate Cases*, 230 U. S. 352, 435, 57 L. Ed. 1511, 1536.

This general proposition is presented at length in the Brief of Colorado Interstate in Case No. 379 and in order to avoid unnecessary duplication we shall not further elaborate herein our general argument on this point, but hereby adopt Colorado Interstate's Brief with respect thereto.

The Commission in this case has expressly ruled that a separation of property is not required. (R., V. I, 175.) In lieu of such separation, however, the Commission has invented and applied a substitute "allocation of cost of service" formula or theory, treating Canadian and Colorado Interstate as if they were one company instead of two separate companies, and treating their properties as a unit notwithstanding the fact that the Commission has entered separate and individual rate reduction orders against each of said companies.

In the following subdivisions of the argument on this question we shall point out certain specific reasons why the Commission's allocation of cost of service theory is inherently fallacious and in any event, whether sound as an abstract theory, has been misapplied in this case to the grievous prejudice of Canadian. In connection with this subdivision, however, directed particularly to the necessity of a property segregation, we call attention to the following fallacies in the Commission's cost allocation theory which in themselves show the necessity of a property segregation in order for the Commission to keep within its jurisdictional limitations.

1. In the first place, as established by the uncontradicted evidence, there is a commodity market value for Canadian's gas at the wellhead and at the end of the gathering operations which has been entirely ignored by the Commission. Admittedly, only a part of Canadian's gas sales are subject to the Commission's jurisdiction. Certainly Canadian has the right to receive the fair market value of its gas as a commodity for that portion of its business which is not subject to the Commission's jurisdiction. When the Commission ignores the commodity value of all of Canadian's gas, both jurisdictional and non-jurisdictional, and makes its so-called allocation of costs directed to all the gas, it inevitably must follow that the Commission is exercising a rate regulatory jurisdiction over the non-regulable gas. This could all be avoided if a property separation had been made.

2. As we have pointed out under "Question 1", the Commission, notwithstanding the prohibitory and limiting provisions of the Act and the ruling of this Court, has, with the Circuit Court's sanction, exercised rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business. The Commission in exercising such jurisdiction has computed a rate base for Canadian's total properties. In that rate base it has included all of Canadian's production and gathering properties on its own theories of original cost and prudent investment, which are only a fraction of their proven fair market value and of Canadian's actual cost. Admittedly, only a

portion of these production and gathering properties is devoted to the production and gathering of gas which is sold and transported in interstate commerce for resale for ultimate public consumption subject to the Commission's jurisdiction. In arriving at its allocated costs and excess of revenue over costs, the Commission has applied a 6½% rate of return to the entire properties although those properties are only used in part for regulable gas. In determining excess revenue over costs it is clearly improper for the Commission to limit Canadian to a 6½% return on the value, however determined, of its non-regulable properties. This particular question is also presented at length in the Brief of Colorado Interstate, which argument is also hereby adopted.

3. As pointed out in the Statement of the Case, Canadian sells gas to Colorado Interstate under a Cost Contract dated January 3, 1928. (Exhibit 16, R., V. 2, 711-780.) Again in its application of its cost allocation formula, the Commission has made no segregation of the properties involved in this Cost Contract as between the regulable and non-regulable gas covered thereby, but has made a blanket reduction order of $551,000 annually in the aggregate amount of cost reimbursement which Canadian is entitled to receive under the Contract, notwithstanding the fact that a part of such compensation which Canadian is entitled to receive is for non-regulable gas and is for the performance of obligations over which the Commission has no rate regulatory jurisdiction whatsoever. In thus abrogating the compensation provisions of the Cost Contract as a whole the Commission has interfered not only with the price which Canadian is entitled to receive from Colorado Interstate for regulable gas, but also the price which it is entitled to receive for non-regulable gas over which the Commission has no jurisdiction. This again could all be avoided by a proper separation or segregation of properties, revenues and expenses as between those devoted to regulable gas business and those devoted to non-regulable gas business.

2. *The Fallacies of the Commission's So-Called "Allocation of Costs of Service" as a Substitute for a Proper Separation of the Property and Expenses.*

In view of the decisions of this Court holding that a separation of properties must be made for the purpose of properly determining costs applicable to regulated business as distinguished from unregulated business, it is our contention that the Commission's so-called "allocation of cost of service" cannot be accepted in principle or otherwise because, as the Commission has admitted, it made no such separation of properties. If we should assume, *arguendo*, however, that the Commission's substitute method, when properly applied, accomplishes the same thing (which it does not), it is our further contention that the application by the Commission of its method in this case is so completely at variance with the facts and realities that the results obtained can form no useful purpose whatsoever and must be completely rejected. Some of the errors in the Commission's method are easily demonstrated because they arise from a total disregard of material facts. Other errors are not so easily displayed for the reason that the Commission has failed to make appropriate findings to support its conclusions. As is pointed out in the Brief of Colorado Interstate in Case No. 379, which is hereby adopted on this point, this failure to make appropriate findings in itself constitutes reversible error. *U. S. v. Carolina Freight Carriers Corporation*, 315 U. S. 475, 488-489, 86 L. Ed. 971; *Interstate Commerce Commission, et al., v. Columbus and Greenville Railway Company*, 319 U. S. 551, 87 L. Ed. 1580.

The Commission found that $1,778,000 represented Canadian's total cost of service (including the Commission's uniform rate of return allowed on its total properties) and that $615,000 represented Canadian's total or over-all "Excess Revenue Over Costs". (R., V. 1, 176.) These *total* findings were based upon the Commission's consideration of Canadian's separate and individual properties, revenues and expenses. In breaking down and allocating this *total* cost of service and this total or over-all "Excess Revenue Over Costs" between regulable business and customers and non-regulable business and customers of Canadian, how-

ever, the Commission did not do so on the basis of Canadian's separate and individual properties, revenues, volume of sales and expenses, but combined all such sales with similar items of Colorado Interstate. The total "Excess Revenue Over Costs" represents, therefore, neither the costs of Canadian nor the costs of Colorado Interstate, but a conglomerate of the two. (R., V. 4, 2317, 2381.) The rate reduction order was then entered against Canadian separately and individually and not against the composite pipe line system. (R., V. 1, 176, 185-188.)

No attempt was made to allocate excess earnings, if any, between Canadian's regulable and non-regulable business based solely upon its own properties, revenues, volume of sales and expenses. This approach by the Commission resulted in saddling Canadian with expenses of Colorado Interstate which Canadian never incurred and burdening Canadian's non-regulable business with costs and expenses which are not properly chargeable to such business, as will be more specifically hereinafter shown.

Wellhead Costs.

The Commission has approved and adopted the allocation method of the Commission staff (R., V. 1, 176), presented by Commission witness Lyon, which is demonstrated in his Exhibit 226. (R., V. 4, 2317-2337, 2381-2384.) In the determination of the cost of gas at the wellhead, Lyon, in his Exhibit 226, took into account many so-called elements of cost that were not incurred, and by the very nature of things could not have been incurred, by Canadian in the actual production of natural gas. It is apparent that be allocated or assigned to Canadian's cost of producing gas a substantial amount of the operating expenses of Colorado Interstate, which expenses could have absolutely no materiality in so far as the determination of Canadian's cost of production is concerned. One example should suffice to show the gravity of the errors committed in this respect. In allocating the combined Federal income taxes of both Canadian and Colorado Interstate, Lyon allocated $113,287.28 of such taxes to Canadian's cost of producing gas. (R., V. 4, 2327, Lines 13 to 17.)

In making a separate determination of allowable expenses

for Canadian, however, the Commission found that in the test year of 1939 Canadian paid only $66,403 for Federal income taxes on its entire operations. (R., V. 1, 167.) Obviously, the total amount of income taxes involved in the cost of producing gas would be less than the total amount paid, but, strange as it may seem, Lyon has allocated to Canadian's producing operations income taxes in excess of $113,000, almost $50,000 more than was actually paid by Canadian for its entire operations. Certainly, it takes no argument to demonstrate the error in this respect.

Canadian sells large volumes of gas at the wellhead to Amarillo Oil Company. (R., V. 4, 2319, Lines 56 to 58), which gas is purchased and consumed wholly within the State of Texas (R., V. 2, 708; see, also, Appendix B) and is not subject to regulation by the Commission. Lyon's erroneous computation has the effect of saddling costs amounting to several thousands of dollars upon the production of this gas which obviously were never incurred by Canadian. This erroneous shifting of costs to Canadian's non-regulable gas sales decreases the actual costs attributable to regulable gas sold for resale in interstate commerce. It follows, therefore, that the intrastate gas sales have been unfairly and unjustly burdened with a cost never incurred and, as a consequence, the regulable sales have not been assigned a fair share of the cost. It also follows that the rate reduction order is excessive by the amount of the excessive costs placed upon non-regulable intrastate gas.

Aside from the errors resulting from the use of a "composite" cost of service as applied to Canadian's non-regulable business, the method of allocation developed by Lyon and adopted and applied by the Commission is also erroneous because it does not take into account load factors and peak demands with respect to production operations and requirements. (R., V. 5, 2414-2415; V. 4, 2397.) Lyon made no distinction whatsoever in the cost of producing industrial gas, largely direct sale, and domestic gas, largely resale. He considered that it cost just as much to produce gas for one type of market as another.

The peak monthly demand of Colorado Interstate at Clayton Junction during the winter of 1939-1940 for resale gas,

which is largely for domestic and commercial uses, was 1,394,090 Mcf. (16.4-pressure base), while the demand for direct sale gas, which is for industrial uses, was 909,540 Mcf. (R., V. 8, 5045.) It follows, therefore, that the resale gas required a little over 50% more of the capacity of the wells during this peak month than did the direct sale industrial gas. The cost of providing the peak-month capacity for the resale gas, therefore, was 50% greater per Mcf. than for the direct sale gas. This being true, his failure to distinguish between the costs applicable to the two types of gas sales has the effect of burdening direct sale non-regulable gas with costs not incurred and to reduce by the same amount costs actually incurred in the production of gas sold for public consumption. Lyon recognized that the peak day demand increased the transmission cost for resale gas for public consumption. (R., V. 4, 2317, 2383.) This component of cost is just as applicable to gas wells as it is to transmission lines.

Gathering Costs.

Here again, many of the costs attributable only to the operations of Colorado Interstate were added to Canadian's gathering costs. For example, Federal income taxes in excess of $28,000 were included as a part of such costs. (R., V. 4, 2327.) This, added to the $113,000 included for Federal income taxes as a part of the cost of producing gas, aggregates in excess of $141,000 for income taxes alone, whereas $66,000 only were allowed by the Commission for all purposes. This erroneous inclusion of a cost which was never incurred by Canadian in the gathering of gas obviously placed an undue burden upon the intrastate sales of gas made from the pipe line in Texas to Amarillo for the Towns of Hartley, Dalhart and Texline.

As was true in the case of gas wells, no consideration was given to the peak demands made upon the gathering system. Lyon and the Commission merely *assumed* there was no difference in the cost of gathering direct sale gas and resale gas and as a result computed an *average* cost for gathering all gas. (R., V. 4, 2329) although this factor was given some consideration with respect to transmission costs. (R., V. 4, 2317, 2383.)

The peak monthly demands made upon the gathering system are discussed in the preceding subdivision dealing with wellhead costs. It is apparent from the figures there quoted that if a proper division of costs had been made, it would have resulted in placing more costs upon the resale gas, which is subject to regulation, and, of course, lesser costs upon direct sale gas. The Commission's action in this respect unduly burdened direct sale gas with costs that were not incurred.

Transmission Costs.

In determining the cost of service of Canadian for the intrastate sales of gas to Amarillo Oil Company that are ultimately consumed in Dalhart, Hartley and Texline, Texas, the Commission took into account not only all of the properties and operating expenses of Canadian, but also all of the properties and operating expenses of Colorado Interstate, and applied its formula or method of allocation to the combined properties and operating expenses of both companies, thus treating both companies as one composite system. (R., V. 4, 2381, 2317-2363; V. 5, 2425; see, also, Brief of Colorado Interstate.) Dalhart, Texas, for example, is located approximately 45 miles from the Bivins Compressor Station (the beginning point of the Denver line) and approximately 30 miles from the limits of the Texas Panhandle Field. (See Commission staff—O'Connor's—Flow Map, Appendix B, attached hereto.) The greater portion of all the gas sold off of Canadian's pipe line within the State of Texas is sold at and consumed in Dalhart. The Commission's method of allocation of costs developed by Lyon results in Dalhart being assigned approximately the same cost per Mcf. that is assigned to the gas sold by Colorado Interstate to Public Service Company of Colorado at Denver, which point is almost 400 miles from the beginning point of the pipe line. Stated in another way, if the City of Dalhart were located at the northern terminus of Colorado Interstate's pipe line at Denver, the cost of service developed for delivering gas to Dalhart would be identical with the cost of service developed for delivering gas at its actual location, 30 miles from the gas field. This is true because the cost of this gas was computed on the

theory that the two companies constituted one composite system (R., V. 4, 2381) and no consideration was given to the specific points of delivery from the pipeline. (R., V. 5, 2425.)

Certainly, there can be no justification for any theory in the Commission's action in this respect. The costs incurred by Colorado Interstate in transporting gas from Clayton Junction to Denver, a distance of approximately 300 miles, can have no possible bearing upon the costs incurred by Canadian in producing and gathering gas and transporting the same to Dalhart, Hartley and Texline in the State of Texas. *The value of Colorado Interstate's property for rate of return, depreciation or any other purpose and the amount of Colorado Interstate's operating expenses can have no possible relevancy to Canadian's operations wholly within the State of Texas with respect to gas which is not sold to Colorado Interstate and which is in no way handled or controlled by Colorado Interstate. The cost-loading results in Canadian's intrastate business being erroneously charged or allocated a part of Colorado Interstate's costs and so burdens the intrastate sales.*

Cost of Service to Colorado Interstate

The Commission has ordered a reduction of rates with respect to gas sold by Canadian to Colorado Interstate in the sum of $551,000 annually. (R., V. 1, 176.) There is absolutely no evidentiary basis in the Record for any reduction whatsoever as to this particular sale, as will be developed hereinafter.

It is clear from the Commission's Opinion that it has adopted the allocation methods and principles of Commission witnesses and has purported to base its rate reduction order thereon. (R., V. 1, 176.) Such allocation methods and principles are embodied in the testimony of Commission witness Lyon and his Exhibit 226. It will be recalled that for the purposes of allocation, Lyon in his Exhibit 226 combined the properties and businesses of Canadian and Colorado Interstate and treated them as a composite system which resulted in an elimination or washout of all transactions between the two companies. (R., V. 4, 2367-2387.)

Table 1 of Exhibit 226 (R., V. 4, 2317) contains a complete summary of the allocated cost of service as determined by Lyon for each customer of Colorado Interstate and also for each customer of Canadian, *except Colorado Interstate*. There may be some basis in this Exhibit for determining cost of service to Amarillo and other customers of Canadian, but there is nothing whatsoever in this Exhibit or in the Record for the purpose of determining cost of service for gas sold by Canadian to Colorado Interstate.

The Commission has cast aside all of Canadian's testimony on the subject of allocation. (R., V. 1, 175, 176.) It follows, therefore, that the Commission has no basis whatsoever in this Record that will in any manner support its findings as to the cost of service of the gas sold by Canadian to Colorado Interstate or as to the excess revenue over cost, if any, resulting from such sales and, therefore, there is no basis in the Record for any rate reduction order with respect to such sales.

It appears from the Commission's Opinion (R., V. 1, 176) that the "allocated costs" of gas sold to Colorado Interstate aggregated $1,575,000. It also appears from the Commission's Opinion in the paragraph just preceding the above finding that this "allocated costs" was based upon Lyon's Exhibit. This could not possibly be true for the very simple reason that neither Lyon nor any other Commission witness made any effort whatsoever to determine the "allocated costs" of the gas sold by Canadian to Colorado Interstate.

Since the $1,575,000 alleged cost of service of gas to Colorado Interstate is not based upon any evidence in the Record, it is reasonable to speculate upon the origin of the figure. We believe its source is self-evident. The Commission has taken Lyon's *allocated costs* in Exhibit 226 for all of Canadian's customers, *except Colorado Interstate*, and has deducted this amount from Canadian's total *actual* costs to get a synthetic cost of service for Colorado Interstate. After allowing for Commission adjustments, the figures in Lyon's Exhibit 226 fully support this conclusion.

Now this happy method of supplying missing evidence might not be so objectionable if the cost of service to Ca-

nadian's other customers had been allocated on Canadian's *actual* costs, but this was not the case. It is clear from the Record, as demonstrated in the preceding subdivisions of this argument, that in determining the "allocated costs" of Canadian with respect to its intrastate sales, Lyon included many of the "costs" of Colorado Interstate and thus inflated the true costs to Canadian of such intrastate sales, both at the wellhead and for resale to Dalhart, Texline, and Hartley. As has been shown heretofore, the "actual costs" experienced by Canadian were substantially less than the "allocated costs." This computation, of course, could not give the true cost of service experienced by Canadian with respect to the sales made to Colorado Interstate.

We reiterate that there is no basis whatsoever in the Record that will enable the Commission to determine the cost of service for gas sold by Canadian to Colorado Interstate and, therefore, its rate reduction order with respect to such gas is purely arbitrary. If we assume on the other hand that the Commission may, nevertheless, sustain its rate reduction order on the basis of "actual costs," then we earnestly insist that such "actual costs" cannot be determined simply by subtracting "allocated costs" assigned to the non-regulable sales from the total over-all "actual costs" incurred by Canadian. This cannot be done because such procedure does not give the correct "actual costs" of such sales, and neither does it give the correct "allocated costs" in accordance with Lyon's formula. The Commission has utilized inflated and excessive "allocated costs" to determine the cost of service for non-regulable gas, while it has used only a *residue* of actual costs to determine the cost of service for regulable gas. Either horn of the dilemma results in assigning an insufficient cost of service to the sales to Colorado Interstate and thus results in a greater rate reduction order against Canadian than the Record justifies.

3. *The Commission Has No Jurisdiction Over Direct Gas Sales by Canadian to Colorado Interstate for the Latter's Industrial Customers.*

The Commission ordered a blanket reduction in the sales price of all types of gas sold by Canadian to Colorado Interstate (R., V. I, 177) and denominated such gas as resale gas.

The Commission wholly ignored the fact that approximately one-half of the gas sold by Canadian to Colorado Interstate at Clayton Junction was sold to the latter for resale to direct industrial consumers. (R., V. 4, 2319.) This gas was not subject to the rate regulatory jurisdiction of the Commission for two reasons: (1) The Commission considered the properties of Canadian and Colorado Interstate as constituting one composite system, and (2) the Commission has no rate regulatory jurisdiction over gas sold by Colorado Interstate to its direct industrial consumers and, therefore, there is no basis for regulating the price of such gas sold by Canadian to Colorado Interstate.

Lyon's Exhibit 226 shows that the total sales to Colorado Interstate at Clayton Junction for resale in 1939 was 10,974,156 Mcf. (14.65 pressure base) and that the direct sales and sales to Colorado Interstate for its own use, neither of which is subject to rate regulatory jurisdiction of the Commission, amounted to 10,158,353 Mcf., and that sales to Colorado Interstate at Gray, Oklahoma, which gas was sold by the latter to Natural Gas Pipeline Company of America, were 20,783,301 Mcf. (R., V. 4, 2319.) The Record does not show what proportion of the sales to Natural Gas Pipeline Company constituted direct sale or resale gas.

It is apparent from the above, however, that as a very minimum approximately one-fourth of the total sales by Canadian to Colorado Interstate was gas that was intended to be sold and was sold directly to pipe line industrial consumers. Since the Commission had no jurisdiction over this type of sale and since it treated both lines as a unit, it follows that the contract price for this gas could not legally be changed by the Commission. Since this constituted approximately one-fourth of the total sales, it is apparent, therefore, that the rate reduction order was excessive in any event, and from this viewpoint alone by approximately $135,000 annually. As a matter of fact, the rate reduction order is excessive by a still larger amount for the reason, as hereinabove pointed out, that the cost of delivering the direct sale gas was much less per Mcf. than the cost of delivering the resale or regulable gas.

Commission counsel have heretofore taken the position that, notwithstanding the fact that the Commission has no jurisdiction over direct sales of Colorado Interstate, it, nevertheless, does have jurisdiction over all sales by Canadian to Colorado Interstate. Such construction is directly contrary to the wording and spirit of the Act.

Section 1 (a) of the Act (15 U.S.C. 717) declares that

> "* * * the business of transporting and selling natural gas *for ultimate distribution to the public is affected with a public interest*. * * *." (Italics supplied.)

Certainly, the sale of gas which is not sold, or distributed, or intended to be sold or distributed, "for ultimate distribution to the public" could not under the express language of the Act be said to be affected with a public interest. If such sales are not affected with a public interest, then it certainly follows that they are not subject to the rate regulatory jurisdiction of the Commission.

Section 1 (b) of the Act provides that the terms and provisions of the Act shall apply

> "* * * to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, * * * but shall not apply to any other transportation or sale of natural gas * * *."

It is the provision just quoted that counsel for the Commission rely upon as the basis for their contention that all sales made by Canadian to Colorado Interstate are subject to the rate regulatory jurisdiction of the Commission. Counsel say that since such gas is resold by Colorado Interstate, the sales price may be regulated, even though much of such gas is sold directly to industrial consumers and is not sold for resale "for ultimate public consumption." This very narrow construction of the Act is in conflict with the clear provisions of Section 1 (a) and is not supported by Section 1 (b) of the Act even if such Section were considered separately and independently of Section 1 (a). It is clear, in any event, when the two are read together, that they express the clear

intent of Congress to regulate the sales price of gas transported and sold in interstate commerce only where such gas is later resold "for ultimate public consumption for domestic, commercial, industrial, or any other use, * * *." The phrase "for ultimate public consumption" modifies and restricts the subsequent language of the clause quoted. Clearly, the gas sold by Colorado Interstate to Colorado Fuel and Iron Corporation, for example, for consumption by the purchaser was not sold "for ultimate public consumption." On the other hand, gas sold by Colorado Interstate to the Public Service Company of Colorado, which latter company in turn resold the gas to the general public through its local distributing facilities in the City of Denver, was subject to the rate regulatory jurisdiction of the Commission, even though the distributing company sold a portion of such gas to industrial consumers. It is that latter type of sale that is obviously referred to in Section 1 (b) of the Act.

The contention of Commission counsel is fully answered by the provisions of Section 4 (e) of the Act which provide that when a natural gas company desires to increase its rates, the Commission may suspend such increases pending a hearing. It is then provided, however,

> "That the Commission shall not have authority to suspend the rate, charge, classification, or service for the sale of natural gas *for resale for industrial use only:* * * *." (Italics supplied.)

It is apparent that Section 4 (e) provides, in effect, that if Canadian increased its rates to Colorado Interstate for that portion of the gas sold to the latter company for resale to direct industrial consumers, the Commission could not suspend such rate increase. This being true, it follows that such gas is in no sense subject to the rate regulatory jurisdiction of the Commission. Otherwise, Congress would certainly have empowered the Commission to suspend such rates pending a hearing when and if increases were made.

It is clear from the above that Congress never intended to empower the Commission, and as a matter of fact did not

empower it, to regulate the price for gas sold directly by the pipe line company to a direct industrial consumer. Such sales are not "for ultimate public consumption." On the other hand, a sale made to a customer for the purpose of resale through a local distributing agency for "domestic, commercial, industrial, or any other use" is obviously a sale "for ultimate public consumption" and, consequently, the sale to such a customer, even though at wholesale, is subject to the rate regulatory jurisdiction of the Commission.

Let us assume, for example, that Canadian sold no gas to Colorado Interstate at all, except gas that was resold by the latter to Colorado Fuel and Iron Corporation for use at its steel mills at Pueblo. The Commission has no right to regulate the rates charged by Colorado Interstate for the sale of such gas. This being true, by what authority could it be said that the Commission could, nevertheless, regulate the price paid by Colorado Interstate to Canadian for this gas. Certainly, to regulate such sales, in so far as Canadian is concerned, and not to regulate them, in so far as Colorado Interstate is concerned, would constitute a foolish and vain exercise of rate regulatory jurisdiction. Since the ultimate sale cannot be regulated, there can be no occasion for regulating the intermediate sale.

The Commission's rate reduction order against Canadian in this case is directed against *all* sales of gas by Canadian to Colorado Interstate, including gas which is resold by Colorado Interstate directly to its pipe line industrial consumers as well as gas resold for ultimate public consumption. As heretofore pointed out, the Commission's failure to make a proper and jurisdictional separation and allocation between these two types of sales has resulted in increasing the Commission's rate reduction order by a substantial amount and in penalizing Canadian accordingly.

CONCLUSION

For each and all of the reasons hereinabove set forth, the judgment of the Circuit Court of Appeals should be reversed

and the case remanded, with instructions to vacate, set aside and enjoin the Order of the Commission.

Respectfully submitted.

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January 8, 1945.

APPENDIX "A"

The pertinent provisions of the Natural Gas Act of 1938 (52 Stat. 821, et seq.; Title 15, U.S.C.A., Sec. 717) are as follows:

Sec. 1(a) "As disclosed in reports of the Federal Trade Commission made pursuant to S. Res. 83 (Seventieth Congress, first session) and other reports made pursuant to the authority of Congress, it is hereby declared that the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest, and that Federal regulation in matters relating to the transportation of natural gas and the sale thereof in interstate and foreign commerce is necessary in the public interest.

Sec. 1(b) "The provisions of this chapter shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas."

Sec. 4(a) "All rates and charges made, demanded, or received by any natural gas company for or in connection with the transportation or sale of natural gas subject to the jurisdiction of the Commission, and all rules and regulations affecting or pertaining to such rates or charges, shall be just and reasonable, and any such rate or charge that is not just and reasonable is hereby declared to be unlawful.

Sec. 4(b) "No natural-gas company shall, with respect to any transportation or sale of natural gas subject to the jurisdiction of the Commission, (1) make or grant any undue preference or advantage to any person or subject any person to any undue prejudice or disadvantage, or (2) maintain any unreasonable difference in rates, charges,

service, facilities, or in any other respect, either as between localities or as between classes of service."

Sec. 4(e) "Whenever any such new schedule is filed the Commission shall have authority, either upon complaint of any State, municipality, or State commission, or upon its own initiative without complaint, at once, and if it so orders, without answer or formal pleading by the natural-gas company, but upon reasonable notice, to enter upon a hearing concerning the lawfulness of such rate, charge, classification, or service; and, pending such hearing and the decision thereon, the Commission, upon filing with such schedules and delivering to the natural-gas company affected thereby a statement in writing of its reasons for such suspension, may suspend the operation of such schedule and defer the use of such rate, charge, classification, or service, but not for a longer period than five months beyond the time when it would otherwise go into effect: *Provided*, That the Commission shall not have authority to suspend the rate, charge, classification, or service for the sale of natural gas for resale for industrial use only; and after full hearings, either completed before or after the rate, charge, classification, or service goes into effect, the Commission may make such orders with reference thereto as would be proper in a proceeding initiated after it had become effective. If the proceeding has not been concluded and an order made at the expiration of the suspension period, on motion of the natural-gas company making the filing, the proposed change of rate, charge, classification, or service shall go into effect. Where increased rates or charges are thus made effective, the Commission may, by order, require the natural-gas company to furnish a bond, to be approved by the Commission, to refund any amounts ordered by the Commission, to keep accurate accounts in detail of all amounts received by reason of such increase, specifying by whom and in whose behalf such amounts were paid, and, upon completion of the hearing and decision, to order such natural-gas company to refund, with interest, the portion of such increased rates or charges by its decision found not justified. At any hearing involving a rate or charge sought to

be increased, the burden of proof to show that the increased rate or charge is just and reasonable shall be upon the natural-gas company, and the Commission shall give to the hearing and decision of such questions preference over other questions pending before it and decide the same as speedily as possible."

Sec. 5(a) "Whenever the Commission, after a hearing had upon its own motion or upon complaint of any State, municipality, State commission, or gas distributing company, shall find that any rate, charge or classification demanded, observed, charged, or collected by any natural-gas company in connection with any transportation or sale of natural gas, subject to the jurisdiction of the Commission, or that any rule, regulation, practice, or contract affecting such rate, charge, or classification is unjust, unreasonable, unduly discriminatory, or preferential, the Commission shall determine the just and reasonable rate, charge, classification, rule, regulation, practice, or contract to be thereafter observed and in force, and shall fix the same by order: *Provided, however*, That the Commission shall have no power to order any increase in any rate contained in the currently effective schedule of such natural gas company on file with the Commission, unless such increase is in accordance with a new schedule filed by such natural gas company; but the Commission may order a decrease where existing rates are unjust, unduly discriminatory, preferential, otherwise unlawful, or are not the lowest reasonable rates."

Sec. 5(b) "The Commission upon its own motion, or upon the request of any State commission, whenever it can do so without prejudice to the efficient and proper conduct of its affairs, may investigate and determine the cost of the production or transportation of natural gas by a natural-gas company in cases where the Commission has no authority to establish a rate governing the transportation or sale of such natural gas."

Sec. 6(a) "The Commission may investigate and ascertain the actual legitimate cost of the property of every natural-gas company, the depreciation therein, and, when

found necessary for rate-making purposes other facts which bear on the determination of such cost or depreciation and the fair value of such property."

Sec. 9(a) "The Commission may, after hearing, require natural-gas companies to carry proper and adequate depreciation and amortization accounts in accordance with such rules, regulations, and forms of account as the Commission may prescribe. The Commission may from time to time ascertain and determine, and by order fix, the proper and adequate rates of depreciation and amortization of the several classes of property of each natural-gas company used or useful in the production, transportation, or sale of natural gas. Each natural-gas company shall conform its depreciation and amortization accounts to the rates so ascertained, determined, and fixed. No natural-gas company subject to the jurisdiction of the Commission shall charge to operating expenses any depreciation or amortization charges on classes of property other than those prescribed by the Commission, or charge with respect to any class of property a percentage of depreciation or amortization other than that prescribed therefor by the Commission. No such natural-gas company shall in any case include in any form under its operating or other expenses any depreciation, amortization, or other charge or expenditure included elsewhere as a depreciation or amortization charge or otherwise under its operating or other expenses. Nothing in this section shall limit the power of a State commission to determine in the exercise of its jurisdiction, with respect to any natural-gas company, the percentage rates of depreciation or amortization to be allowed as to any class of property of such natural-gas company, or the composite depreciation or amortization rate, for the purpose of determining rates or charges."

Sec. 10(a) "Every natural-gas company shall file with the Commission such annual and other periodic or special reports as the Commission may by rules and regulations or order prescribe as necessary or appropriate to assist the Commission in the proper administration of this chapter. The Commission may prescribe the manners and form

in which such reports shall be made, and require from such natural-gas companies specific answers to all questions upon which the Commission may need information. The Commission may require that such reports shall include, among other things, full information as to assets and liabilities, capitalization, investment and reduction thereof, gross receipts, interest due and paid, depreciation, amortization, and other reserves, cost of facilities, cost of maintenance and operation of facilities for the production, transportation, or sale of natural gas, cost of renewal and replacement of such facilities, transportation, delivery, use, and sale of natural gas. The Commission may require any such natural-gas company to make adequate provision for currently determining such costs and other facts. Such reports shall be made under oath unless the Commission otherwise specifies."

Sec. 11(a) "In case two or more States propose to the Congress compacts dealing with the conservation, production, transportation, or distribution of natural gas it shall be the duty of the Commission to assemble pertinent information relative to the matters covered in any such proposed compact, to make public and to report to the Congress information so obtained, together with such recommendations for further legislation as may appear to be appropriate or necessary to carry out the purposes of such proposed compact and to aid in the conservation of natural-gas resources within the United States and in the orderly, equitable, and economic production, transportation, and distribution of natural gas."

Sec. 14(b) "The Commission may, after hearing, determine the adequacy or inadequacy of the gas reserves held or controlled by any natural-gas company, or by anyone on its behalf, including its owned or leased properties or royalty contracts; and may, also, after hearing, determine the propriety and reasonableness of the inclusion in operating expenses, capital, or surplus of all delay rentals or other forms of rental or compensation for unoperated lands and leases. For the purpose of such determinations, the Commission may require any natural-gas company to file with the Commission true copies of all its

lease and royalty agreements with respect to such gas reserves."

Sec. 19(b) "Any party to a proceeding under this chapter aggrieved by an order issued by the Commission in such proceeding may obtain a review of such order in the circuit court of appeals of the United States for any circuit wherein the natural-gas company to which the order relates is located or has its principal place of business, or in the United States Court of Appeals for the District of Columbia, by filing in such court, within sixty days after the order of the Commission upon the application for rehearing, a written petition praying that the order of the Commission be modified or set aside in whole or in part. A copy of such petition shall forthwith be served upon any member of the Commission and thereupon the Commission shall certify and file with the court a transcript of the record upon which the order complained of was entered. Upon the filing of such transcript such court shall have exclusive jurisdiction to affirm, modify, or set aside such order in whole or in part. No objection to the order of the Commission shall be considered by the court unless such objection shall have been urged before the Commission in the application for rehearing unless there is reasonable ground for failure so to do. The finding of the Commission as to the facts, if supported by substantial evidence, shall be conclusive. If any party shall apply to the court for leave to adduce additional evidence, and shall show to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for failure to adduce such evidence in the proceedings before the Commission, the court may order such additional evidence to be taken before the Commission and to be adduced upon the hearing in such manner and upon such terms and conditions as to the court may seem proper. The Commission may modify its findings as to the facts by reason of the additional evidence so taken, and it shall file with the court such modified or new findings, which if supported by substantial evidence, shall be conclusive, and its recommendation, if any, for the modification or set-

ting aside of the original order. The judgment and decree of the court, affirming, modifying, or setting aside, in whole or in part, any such order of the Commission, shall be final, subject to review by the Supreme Court of the United States upon certiorari or certification as provided in sections 346 and 347 of Title 28, as amended."

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IN THE

Supreme Court of the United States

OCTOBER TERM, 1944.

No. 380.

CANADIAN RIVER GAS COMPANY, a corporation, *Petitioner*,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND COLORADO INTERSTATE GAS COMPANY, *Respondents*.

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REPLY BRIEF OF PETITIONER.

This reply brief is filed pursuant to leave of Court granted at the oral argument of this cause. The same abbreviations used in our opening brief are here followed.

QUESTION 1.

Jurisdiction Over Production and Gathering.

This is a vital issue from the standpoint of every interest—this Petitioner, the natural gas industry, and the public represented by the several states. It affects every phase

of this industry from the pipeline down to the royalty owner in the field. If, despite the plain words of Congress, this Court should hold that the Commission possesses rate-making authority in the area of production and gathering of natural gas, no action in the gas fields will be immune to Federal control, for he who holds the purse strings controls all.

The Commission's position on this issue is that Congress did not mean what it said in Section 1(b) of the Natural Gas Act, that it used wholly nugatory language in its attempted exclusion of these operations from the purview of that statute, and that the Circuit Court was wrong when it ruled that the Commission has no rate-making jurisdiction, express or implied, in this arena.

Indeed, though it has not appealed from the judgment of the Circuit Court, the Commission now repudiates and seeks to escape from both rulings of that Court on this issue. The Circuit Court held that there is no jurisdiction vested in this administrative body to fix rates for the production and gathering elements of Petitioner's business, but that, on the facts, the Commission had not done that. The Commission now argues that it does possess that jurisdiction, and it admits—as it must—that it exercised it in this case. By adopting this position the Commission wholly abandons the Circuit Court and leaves both its ruling and its finding dangling in midair.

In brief, the argument of the Commission is to the effect that the exception of power over production and gathering in the Act relates solely to the "activity" of producing natural gas (omitting all reference to the "gathering" function); that since the Commission has been in the habit of including producing and gathering properties and expenses in its ratemaking processes, such practice has in some fashion become hallowed by usage; that other sections of the Act authorize factual ascertainment of costs in connection with these activities; that the Commission told Congress in a report that it was its habit to include

these factors when fixing rates, and that, since Congress did not re-examine that situation when it recently amended the certification provisions of the Act, it had placed its stamp of approval on this practice. We desire to comment briefly on each of these arguments.

The Argument that the Regulation of Production and Gathering Forbidden by Section 1(b) of the Natural Gas Act Relates Only to the "Activity" of Producing Natural Gas.

The Commission concedes that this statute withholds from its regulatory powers the "activity" of producing natural gas. It illustrates its conception of such "activity" by admitting that it is debarred from control over "the determination of the drilling or spacing of wells in the field, the number of wells to be drilled in a common reservoir, proration of the production of oil or gas, or cycling or other recovery operations." (Com. Br., p. 19.)

It is significant that every activity thus enumerated relates solely to the "conservation" of natural gas and the prevention of waste in its production. It is further significant that no single element thus listed has, or could have, the slightest bearing on the other prohibited area of jurisdiction,—that of the "gathering" of gas after its "production." Obviously, it is essential to bring gas produced from numerous wells (perhaps quite distant one from the other) to a common point, where it can be delivered to the main transmission pipeline. Congress forbade the Commission to exercise authority over this necessary function by language as clear as was used in respect to mere production. Yet the Commission, by silence on the point, would apparently seek to have this process and activity wholly ignored by this Court. We cannot believe that such maneuver could hope for success.

Moreover, the only "activities" with respect to production that are now admitted by the Commission to be without the ambit of its authority are "activities" relating

to the "conservation" of natural gas in the field,—a subject universally recognized to be within the sphere of state authority and not within that of the Federal Government. This is a proposition so clearly self-evident that the citation of authorities seems unnecessary. These are matters generally recognized as being reserved to the states under our Federal Constitution, and in fact this Act so recognizes (in Section 11(a)) by providing that the Commission shall aid and assist the states in matters pertaining to the conservation of natural gas.

But even under the Commission's argument, it could hardly be imagined that control of the purse strings does not, in truth and effect, control these very items of state jurisdiction over which the Commission now disclaims authority. The Commission would include in its overall rate base at original (or "ab-original") cost all properties used in production, as well as in gathering (to which the admittedly non-jurisdictional "activities" have no application in any event). The Commission would fix and enforce a straight-jacket rate of return upon those properties, so included at such original cost. The Commission would determine what allowances should be made for working capital to carry on these operations. The Commission would determine what future capital additions should be allowed for the acquisition of gas leaseholds, the drilling of wells and the construction of gathering facilities. Yet, the Commission would have this Court believe that by thus exercising the power to fix the rates, and thus the earnings applicable to such activities, it does not, from every rational and realistic viewpoint, control or seek to control each and every activity connected directly or indirectly with the production and gathering of natural gas.

If it should be argued that these activities result in "sales" in interstate commerce for resale, and that they are therefore blanketed into the ambit of the Commission's rate-making powers, despite the express exception of "production and gathering" in the statute, the result envisaged

by the Commission can only be a multiplicity of separate and individual sale prices fixed by that body for the literally thousands of producers in the nation's gas fields, whenever they make sales to interstate pipelines. Such a result would inevitably follow the announcement of any such doctrine, yet we understand it to be the Commission's position that it neither seeks jurisdiction to engage in such multitudinous rate-fixing efforts, nor believes such action to be covered by the Act. Consistency demands that either all or no such sales in the field be held so subject, and in view of the language used by Congress we submit that none is so subject.

Finally, the Commission argues that, in any event, it possesses authority to include the producing and gathering properties and expenses in the development of rates and the establishment of allowable return in instances where a "natural-gas company" produces and gathers the gas which it later transports in interstate commerce and sells for resale. In this connection, it seems pertinent to inquire to whom Congress may have directed the exclusion of production and gathering in Section 1(b), if not to this very situation.

Congress, significantly, did not choose to delegate jurisdiction over those production and gathering operations found to "affect" or "burden" or "obstruct" interstate commerce. Obviously, therefore, if Congress by its chosen language of exclusion meant somehow to include (by silence) an exception where gas eventually enters interstate commerce, it certainly did not intend to confer rate-fixing powers as to any company *not* engaged in such interstate commerce. The jurisdictional exclusion of producing and gathering must thus relate solely to such operations when conducted by a "natural-gas company," as defined in the Act (i.e., one which is engaged in the transportation of natural gas in interstate commerce, or the sale in interstate commerce of such gas for resale. Sec. 2(6)).

If this be true, and if we were to accept the Commission's view that its jurisdiction over the producing and gathering properties of a natural-gas company devolves from the fact of later interstate commerce, the words of Section 1(b) must be read out of the Act as mere surplusage.

The Argument that the Language of Exclusion in Section 1(b) is Surplusage.

As a matter of fact, the reading out of the Act of the exclusion language of Section 1(b) as largely, if not wholly, surplusage is precisely what the Commission now argues. It quotes from a Report of the House Committee which reported the Bill (H. R. 6586, 75th Cong., 1st Sess.) which became this Act, but a reading of this quotation shows that the statement about surplusage had reference to the local distribution rather than the production and gathering of natural gas (Com. Br., pp. 20-21). Contrary to the impression which the Commission seeks to leave with the Court in this regard, the entire legislative history of this statute (discussed at length in the brief of the Independent Natural Gas Association of America, *amicus curiae*) discloses how clearly Congress intended *not* to vest in the Commission *any* rate-fixing powers in *any* case over the production and gathering of natural gas. As there shown, the then Solicitor for the Commission, as well as the Chairmen of the Congressional Committees having charge of the bill, so stated in unequivocal language. This factor was unquestionably to be left to "competitive forces in the gas fields."

The Argument that the Commission's Habit in this Direction Now Has the Force of Law.

It is said that the Commission has all along habitually included producing and gathering properties and expenses in fixing the rates of natural gas companies, and that this practice has been hallowed by usage until it has been clothed with the force of law. It is said that this Court did not

strike down such action in the two rate cases which have already arisen under this Act, and that therefore the possession of this power has been judicially validated.

The cases in question are those of *Federal Power Commission* v. *Natural Gas Pipeline Company of America*, 315 U. S. 575 and *Federal Power Commission* v. *Hope Natural Gas Company*, 320 U. S. 591. Suffice it to say that in neither of those cases was this point even raised by the companies under consideration. It would be heterodox doctrine, indeed, to hold that in such a situation this Petitioner is now barred from making its contention. The acquisition of jurisdiction over one entity because of default or waiver by another could hardly be urged, since even waiver by the Petitioner itself at some stage of the proceeding could not—under universally recognized principles—be deemed to vest jurisdiction in the Commission over an element excluded by Congress from the vested powers.

The Argument that Other Sections of the Act Authorize the Commission to Ascertain the Cost of Production and Gathering Facilities.

As was stated in Petitioner's opening brief, we are not here questioning the inquisitorial powers granted to the Commission under Sections 5(b), 9(a), 10(a), 11(a) or 14(b) of the Act. Even a cursory examination of these sections would show that they grant only powers to investigate for the purpose of aiding the Commission in the exercise of its jurisdiction over facilities and operations expressly granted by Congress, or in aid of the exercise of jurisdiction reserved to state regulatory bodies, or in aid of legislation. There is nothing new or novel in the extension of necessary powers for this purpose. Their inclusion in the Act for this purpose is perfectly consistent with the production and gathering exclusion clause set forth in Section 1(b) of the Act. When read and interpreted in this manner the Act as a whole, with respect to the Commission's jurisdiction over production and gathering, makes sense, and it is not necessary to indulge in any leger-

demain which would relegate the exclusion clause in Section 1(b) to the status of mere surplusage.

Sections 6(a) and 6(b), relied upon by the Commission, authorize it to investigate and ascertain the original cost of properties of natural gas companies, and to require the filing of inventories and statements of original cost. *These subsections do not even mention production or gathering properties*, and accordingly contain no support for the Commission's claim that it may exercise rate regulatory jurisdiction over such properties or operations.

The power granted to the Commission in Section 14(b) to determine the adequacy or inadequacy of gas reserves is essential in many cases to determine the proper rates of depreciation or amortization to be allowed upon transmission facilities used in transporting natural gas in interstate commerce. The powers granted to the Commission in Section 14(b) with respect to delay-rentals as compensation for unoperated lands and leases are of importance to the Commission in the maintenance of uniform systems of accounting.

Notwithstanding the implications which the Commission attempts to draw from Section 14(b), it will be noted that the title to Section 14 as a whole and as enacted by Congress, is as follows: "*Investigations by Commission; attendance of witnesses; depositions.*"

The Commission (Com. Br., p. 38), in referring to the legislative history of Section 14(b), alludes to the fact that it was taken from H. R. 5711 (75th Cong., 1st Sess.) which was under consideration at the same time as H. R. 4008 of the same Congress and Session. The circumstances surrounding the transferral of this subsection from H. R. 5711 bear out our contention that the authority given the Commission in Section 14(b) was merely a power to investigate in connection with the determination of depreciation charges and other accounting matters. The subsection, as contained in H. R. 5711 (with the exception of the requirement for the filing of lease and royalty agreements), was in

Section 16 of that bill, entitled "Rates of Depreciation." A provision requiring the filing of lease and royalty agreements was contained in Section 12 of H. R. 5711 entitled "Rates and Charges" (Hearings on H. R. 4008, 75th Cong., 1st Sess., pp. 13, 15). However, when the House Committee reported out H. R. 6586 (the bill which became the Natural Gas Act) the provision requiring the filing of lease and royalty agreements was not included in the *rate* provisions (as contained in H. R. 5711) but was combined with the provision permitting the Commission to determine the adequacy or inadequacy of gas reserves (which had been under the "Depreciation" section of H. R. 5711) and included both provisions in what is now Section 14(b) under the general heading of "Investigations."

The Argument that the Uniform Administrative Interpretation of the Commission Consistently Has Been to Consider Production and Gathering Facilities in Fixing the Rate Base, and the Commission Has So Reported to Congress.

The purpose and value of this argument, even though sound from a factual standpoint, is not clear. However, it is readily answered in any event. The Commission quotes a portion of its Twentieth Annual Report to Congress for the year 1940, as follows:

> "4. *Gas reserves.*—As the natural-gas industry is an extractive industry, *one of the important elements of cost which must be determined pertains to the exhaustion of the service life of the properties due to the depletion of the natural-gas reserves which the properties were constructed to produce or transport.* The Commission's geologists have been engaged in estimating the volume of gas reserves in a number of important fields, among them the Panhandle field in Texas, the Hugoton field in Kansas and a major portion of the fields located in West Virginia, Pennsylvania, and New York. A few years' difference in the estimated life of available gas reserves supplying a given market may

make a large difference in the rates which can be justified for that area.' [Emphasis supplied.]" (Com. Br., pp. 27-28.)

The Commission fails to quote, however, a section of the same report immediately preceding the above, which reads as follows:

"3. *Service life.*—Because of the lack of adequate data in the industry for the determination of reasonable depreciation allowances, it has been necessary to have members of the staff make comprehensive studies of the service lives of various kinds of depreciable property." (p. 77.)

It is quite obvious that in Item 4 of its Report the Commission is talking about investigations of gas reserves for the purpose of determining depreciation or amortization rates on transmission facilities pursuant to the authority granted to it in Sections 9(a) and 14 of the Act. There is not even a hint here to Congress that the Commission was at that time claiming full rate regulatory jurisdiction over production and gathering. As a matter of fact, in the same report, under the title "*Commission recognizes limits to jurisdiction,*" the Commission has the following to say with respect to its rate regulatory powers over producing operations:

"During the year the Commission suspended a proposed increase in rates filed by the Columbian Fuel Corporation for natural gas sold to the Warfield Natural Gas Co. for resale. Following hearings regarding the suspension, the company filed a special petition requesting a hearing as to the jurisdiction of the Commission over the particular sale and over the Columbian Fuel Corporation generally.

"Widespread interest developed concerning this question of jurisdiction. The Public Service Commissions of Kentucky and West Virginia, the Mid-Continent Gas & Oil Association, the Independent Petroleum Association of America, and the National Association of Railroad and Utilities Commissioners all requested permission to intervene or to file briefs. The Commis-

sion granted opportunity for oral arguments on the question by interested parties, which it heard sitting *en banc*.

"In its opinion and order the Commission dismissed the entire proceedings, finding that the Columbian company was engaged only in the production of gas and that the Commission had no jurisdiction over the arms-length sale of natural gas at the well mouth."

If it were a matter of common knowledge to the members of Congress and in the industry and elsewhere that through administrative practices and interpretation the Commission had acquired rate regulatory jurisdiction over production and gathering by default, then certainly this fact escaped the notice of the Circuit Court, because, as heretofore stated, that Court held that the Commission does not have express or implied rate regulatory jurisdiction over the production and gathering of natural gas. Such holding found ample support in the *Natural Gas Pipeline case* and *Hope case* heretofore decided by this Court and quoted in petitioner's opening brief.

The Argument that Congressional Approval of the Administrative Interpretation of the Act May be Inferred from the Fact that Section 7 Was Amended by Congress in 1942 With No Other Legislative Change in the Act.

Reference to Section 7 of the Act will show that it has to do with the issuance of certificates of public convenience and necessity by the Commission. It has no relation whatsoever to the production or gathering of natural gas. Certainly, an amendment to an unrelated section of the Act by Congress cannot by any theory of acquiescence or otherwise serve to bind Congress to the Commission's interpretation or administrative practices with respect to other sections of the Act. If this were true neither Congress nor the Courts nor anyone else could with certainty determine the status of the law.

The argument is false in any event, because the amendment in question to Section 7 was enacted in February 1942. The decisions of this Court in the *Natural Gas Pipeline case* and the *Hope case* were handed down subsequent to that date. Likewise, the decisions of the Commission with respect to all of the natural gas pipeline cases (including that of Petitioner) now before this Court were handed down by the Commission subsequent to that date. As heretofore stated, the Circuit Court in this case has held that the Commission does not have rate regulatory jurisdiction over production and gathering, and that such holding finds ample support in the decisions of this Court in the *Natural Gas Pipeline case* and the *Hope case*.

If Congress is to lose its powers by acquiescence, or is to have its laws repealed by administrative practice, must its alertness and diligence be directed to the decisions of the courts or to the administrative practices and interpretations of the bureaus?

The Commission alludes to the circumstance that Section 7 (the certificate section) of the Act was amended by Congress in 1942, and apparently seeks to convey to the Court the impression that Congress approved its administration of the Act, including assumption of jurisdiction over production and gathering (Com. Br. 28). Neither the general reference made by the Commission, nor the specific references to pages of the hearing before the House Committee, support the Commission's contention. We have diligently examined the references given by the Commission and find no support whatever for its statements. At pages 34-35 of the hearing Mr. W. A. Dougherty, appearing for certain natural gas companies, was asked by Congressman Wadsworth whether the matter of regulation, since the passage of the Act, was still in its formative stages, and Mr. Dougherty responded to the general effect that it was, that the Commission was then in the process of considering its first major rate proceeding, and that within the next year or two certain major problems, including jurisdictional ques-

tions, would undoubtedly be determined. At pages 40-46 of the hearing, also referred to by Respondents, Mr. John E. Benton, General Solicitor for the organization of state regulatory commissions, testified and objected to a contention made by a member of the staff of the Commission that the Commission could control the intrastate operations of a Kentucky company. Mr. Benton, under interrogation by Congressman Boren, stated that the Commission had not yet taken jurisdiction over local distribution; and, in respect to the Kentucky case, was specifically interrogated by Congressman Boren as follows (Hearing, p. 42):

> "Mr. Boren. Just one interruption there. Do you mean the Federal Power Commission assumed jurisdiction over the gathering lines in the producing area?
>
> "Mr. Benton. No, I do not, Mr. Congressman."

At pages 60-61 of the hearing, also cited by the Respondents, testimony was given by Mr. J. J. Hedrick, attorney for the Natural Gas Pipeline Company of America and under interrogation on general matters by Congressman Boren, stated that there had been no appreciable expansion of pipeline facilities since the passage of the Act; that his company had been in a rate case with the Commission for two years, which was then pending in the courts and had not at that time been completed.

We have summarized the portions of the hearing on H. R. 5249, relied upon by the Commission in its brief, because we believe that it refutes the Commission's contention that at such hearings "the Commission's administration of the Act was fully explored" and apparently tacitly approved by Congress. We cannot avoid the observation that the Commission has apparently become desperate when it attempts to sustain its claim of jurisdiction over production and gathering by citing and relying upon legislative material in no way pertinent and containing not one iota of support for its contentions.

The Answer is to Use the Appropriate Field or Commodity Value of Gas as a Measure of Allowable Expense.

In its brief before the Circuit Court, the Commission took the position that the exercise of rate regulatory jurisdiction over production and gathering was "indispensable" to the exercise of its jurisdiction over interstate transportation and sales. In Petitioner's opening brief before this Court, two answers were made to this contention, first, that indispensability of jurisdiction is legally immaterial if Congress has in fact withheld rate regulatory jurisdiction from the Commission; and second, that rate regulatory jurisdiction over production and gathering is not, in any event, "indispensable" because the Commission has a perfectly logical and practical starting point for the purposes of exercising its jurisdiction over interstate transportation and sale of gas, i.e., *the field price of gas at the well-head and at the end of the gathering operation for pipeline purposes.*

The Commission does not emphasize the indispensability argument in its brief filed in this Court, but it does contend that the field or commodity price concept is unrealistic; that the only substantial markets are those of the large pipelines which fix their own prices; and that the supply exceeds the demand. (Com. Br. 15.)

There is no evidence in this record to support any such statements. The case of *Thompson* v. *Consolidated Gas Co.*, 300 U. S. 55, cited by the Commission to support its views, is based upon a factual situation existing in 1935, ten years ago, and does not in any sense represent present conditions in the field. The only evidence in this record as to the field or commodity value of gas for pipeline use in the Texas Panhandle Field was presented by Canadian through its witness Superintendent R. A. Ford, who had been connected with Canadian's field operations from their commencement in 1928. (R., V. 6, 3255-3281.) A review of his testimony discloses that he investigated every material contract for the purchase of gas by pipelines in the Texas

Panhandle Field to determine the current prices applicable to the purchase and sale of gas in arm's-length transactions; that he investigated and determined the price being paid generally to royalty owners for their portion of such gas under leases requiring royalty settlements on a current market basis; and that, based upon such investigations, he had found that the going field price for natural gas in the Texas Panhandle Field for pipeline uses was a minimum of 4¢ per MCF at the well-head and 7¢ per MCF at the end of Canadian's gathering system (both prices at 16.4 pounds pressure base).

There is now, and has been over a long period of years, a definite field or commodity price for natural gas *for pipeline use* in the Texas Panhandle Field. As a matter of fact, thirty days after the first foot of gas was produced and sold by an operator for pipeline use under a lease requiring settlement of the royalty owner's portion of such gas on a current market value basis, it became necessary to determine such current market value for that use. There are literally hundreds of such leases and literally thousands of such royalty owners in the Texas Panhandle Field who have a vital interest every month in the correct determination of such market value as a measure of the payments they are entitled to receive by reason of gas production. Determination of such field market value has been a matter of day-to-day practice in the Texas Panhandle Field for a period of over 25 years. In many cases, where the producer and the royalty owner have been unable to agree upon market value, the parties have resorted to litigation and the courts. After considering all of the circumstances and conditions, the courts have then determined such field or commodity value.

Since about 1931 the State of Texas has had a so-called Severance Tax Law which levies annually a tax upon the market value of gas produced at the mouth of the well. (H. B. 8, Chap. 184, Acts of 47th Texas Legis., Regular Session 1941, P. 269, and prior laws.) Obviously, in the

assessment of such tax, it is necessary for the State of Texas to investigate and determine annually the field price or market value for gas at the well-head, which it has done regularly.

Over a long period of years lessors and lessees, producers and royalty owners, as well as the courts and the State of Texas for tax purposes, have had no difficulty in ascertaining the current market value of gas produced in the Texas Panhandle Field. It would seem that the Commission stands alone in its perplexity and professed inability to obtain the answer to a problem which others have found relatively simple. As a matter of fact, if the Commission really entertains any special concern about the *bona fides* of the market value of gas produced in the Texas Panhandle Field and used in the pipelines which transport it in interstate commerce, we would suggest that the Commission may well calm its fears and rely upon the eternal vigilance of independent producers, royalty owners and the State of Texas to make certain that such market values are fair and reasonable at all times.

QUESTION 2.

Impropriety and Invalidity of Including Natural Gas Leaseholds in a Rate Base on an Original Cost Formula or Prudent Investment Theory.

The Commission's treatment of this question is found at pages 29 to 36 of its brief.

We shall in summary form reply to the attempted answer of the Commission to our position that even assuming that the Commission has rate regulatory jurisdiction over production and gathering, it is improper under the circumstances disclosed in this case to include Canadian's natural gas leaseholds in a rate base at the Commission's conception of original cost.

1. On pages 29-32 of its brief, the Commission intimates that it considered and rejected Wallace's testimony as to

the present fair market value of Canadian's gas leaseholds on its merits, and cites *Dayton Power & Light Co. v. Commission*, 292 U. S. 290, 299, in justification.

This is not the case, as clearly appears from the Commission's Opinion. The Commission stated in its Opinion, "Commission restricted its plant studies to original cost and offered evidence of that character." (R., V. 1, 148.)

The Commission then continued, "We find, therefore, in accordance with the provisions of Section 6 of the Natural Gas Act and under the record in this proceeding, no necessity exists to consider other factors than original cost of the properties and service." (R., V. 1, 148.)

A search of the Commission's Opinion will disclose absolutely no discussion of, or even reference to, the evidence in the Record relating to the market value of Canadian's gas leaseholds. This evidence is entirely ignored.

This treatment is entirely consistent with the announced policy of the Commission to use original cost (as defined by it) in the rate base to the exclusion of all evidence of value. This policy of the Commission has been expressly and openly stated time after time by the Commission.

In *City of Detroit, et al. v. Panhandle Eastern Pipe Line Co., et al.*, 45 P. U. R. (N.S.) 203, the Commission states:

> "We held in the Chicago District Electric Generating Case that under Section 20(a) of the Federal Power Act (the provisions of which are identical with Section 6(a) supra), that reproduction cost evidence is inherently fallacious, and should be disregarded under that statute.
>
> "It is not deemed necessary to discuss at great length the defects and vagaries of reproduction cost evidence. The manifold reasons why such evidence is fallacious, and is obstructive of the regulatory process, have been fully expounded by members of the Supreme Court and by this Commission.
>
> "Moreover, in the light of the many expressions emanating from the highest court in the land and the opinions of competent experts in the regulatory field,

> it seems evident that Congress recognized the fallacy of the reproduction cost doctrine, and sought by the enactment of Section 6(a) *to shelve that illusory concept as a requisite in rate making.*" (Italics supplied.)

Consistent with that announced policy this Court will note from the briefs in the *Panhandle Eastern Pipeline* case (No. 296, this Term), which was argued at the same time as this case, that the Commission, in the *Panhandle Eastern Pipeline* case refused to permit the introduction of evidence of the market value of the gas leaseholds there involved.

Likewise, in the *Cities Service Gas Company* case, decided by the Commission on July 28, 1943 (59 P.U.R., (N.S.) 65), which is now pending on review in the Circuit Court of Appeals for the Tenth Circuit in Case No. 2813 of that Court, the Commission again announced its adherence to this policy in the following language:

> "At the threshold we are met with the Company's contention that the trial examiner improperly excluded evidence of * * * so-called 'fair value' of the properties. Our view as to why such evidence should be excluded has been stated in earlier opinions. (Note: of the Commission.) * * * Moreover, the Company's estimates of * * * so-called 'fair value' are at best synthetic figures not taken from the books and records. They do not purport to represent actual cost or investment. Upon such record, we find that no necessity was shown to exist for the consideration of evidence of * * * 'fair value' in this proceeding."

It is absolutely clear, therefore, that the Commission did not consider and reject in this case the evidence as to the fair market value of Canadian's leaseholds on the merits, but ignored such evidence entirely in adherence to its consistently announced policy that all evidence of this nature is immaterial.

It thus follows that the opinion in the *Dayton Power & Light Company* case is inapplicable because in that case

the evidence of fair value was considered on its merits and rejected on its merits.

Finally, the evidence of fair value in the *Dayton* case which was so considered and rejected on its merits was entirely different from the evidence of fair value in the case at bar. In the *Dayton* case the opinion evidence as to value there rejected was based upon a regulated price and continued connections with regulated pipelines, and the Court's position was that the question of value of the leaseholds was so closely connected with the price that might be received from time to time under regulation that the opinion must necessarily be conjectural. In the present case, on the contrary, Wallace (R., V. 6, 3181-3254), after analyzing each of Canadian's leaseholds in detail, including the date of completion of the wells, the initial open flow and rock pressure, the present open flow and rock pressure, and the production to date, and after testifying as to actual sales of other acreage in the same Texas Panhandle Field, gave his opinion as to the market value of each of Canadian's leaseholds and as to the aggregate value of all of them. In doing this, Wallace *expressly stated that he had not considered as a value factor the fact that the wells were connected to pipelines and had not considered any contracts which Canadian had for the sale of its gas, and that if Canadian's acreage were available for a sale it could unquestionably secure an outlet for its gas, exclusive of any pipeline in the field.* (R., V. 6, 3191, 3194)

This clearly distinguishes the leasehold market value evidence in the present case from that which was introduced, considered and rejected on its merits in the *Dayton* case. We submit therefore that it was the duty of the Commission in the present case at least to consider Wallace's testimony on its merits, which it did not. If it had, we believe the difference in the character of Wallace's testimony and that considered in the *Dayton* case would have been easily recognized.

The simple fact is that the fair market value of Canadian's gas leaseholds was established in this case by un-

controverted evidence which has been entirely ignored by the Commission in blind adherence to its so-called original cost or prudent investment rate base policy.

2. In a footnote on page 30 of its brief, the Commission disputes the statement in our brief that Canadian's *bare leaseholds* have been included in the Commission's rate base at something less than $1,000,000; and the Commission has attached to its brief as Appendix D a sheet setting forth certain figures which, according to the Commission, refute our statement.

Of course, as a practical matter it does not make much difference which one of us is correct in this connection, for even if the Commission is correct, admittedly the leaseholds have been included in the Commission's rate base at much less than their actual value and at much less than Canadian's actual original cost. However, we cannot concede that the Commission is correct. This Appendix D that the Commission has attached to its brief is not a copy or reproduction of any testimony or exhibit introduced in evidence in this case. Where the Commission may have secured these figures we do not know. We do know, however, that the Commission's Opinion is in such general language, with no detailed supporting findings for the ultimate findings, that when the Opinion was handed down we requested the Commission to allow us to examine its staff's working papers or otherwise to inform us as to the nature of the underlying figures used by the Commission in arriving at its ultimate figures as set forth in its Opinion. Our request was refused.

Furthermore, it appears from the Appendix D attached to the Commission's brief that it has added a number of extraneous items to the "*bare leasehold cost*," which we are discussing in our brief. Finally, we submit that the figures used in our brief are accurate and entirely justified by the Record. In fact, the $1,604,020.61 starting point figure is taken directly from the Commission's own Exhibit 146, sheets 62-64, R., V. 5, 2717, 2721, and the $653,681.00 deduc-

tion made from this starting point figure for depletion is taken directly from the Commission's Opinion. (R., V. 1, 186).

3. The Commission makes the same criticism of the uncontradicted evidence in this case establishing the market value of Canadian's gas as a commodity at the wellhead and at the end of the gathering system as it did to Canadian's evidence covering the fair market value of its leaseholds. We make the same reply to this contention as we have made above with reference to the Commission's treatment of the uncontradicted evidence in this case which established the market value of Canadian's leaseholds. The Commission did not consider and reject on its merits the evidence in this case as to the commodity value of Canadian's gas, but ignored such evidence entirely as a matter of legal principle. The evidence in this case on the commodity value of Canadian's gas is not only evidence introduced by Canadian, but also is corroborated by evidence introduced by the Commission itself. It is based upon actual arm's-length contracts for the sale and purchase of gas in the Texas Panhandle Field and upon royalties payable on a market value basis in that field pursuant to arm's-length negotiated leases and contracts. This evidence is not limited to Canadian's gas, but is fieldwide. (R., V. 6, 3255-3281.)

4. On pages 32 *et seq.* of its brief, the Commission indicates that there can be no commodity market value of Canadian's gas. It volunteers the statement, not supported by any evidence in the Record, that the only markets which are available are located at distant points; that the major pipeline companies control these markets; and that if these particular markets were lost there would be little if any commodity value to Canadian's gas or to other gas in this field, and the Commission in its brief concludes on page 34 with the astounding statement that "prevailing prices accordingly do not establish a commodity value."

We have replied to this desperate argument at the conclusion of our reply on Question 1, *supra*, and will not repeat our reply here. In addition thereto, it is a fact that in 1939 (the test year applied by the Commission in this case) substantially less than 50 per cent of the total gas production in the Texas Panhandle Field was sold to and utilized by pipelines for light and fuel purposes. Of the gas so sold and utilized by pipelines, a substantial portion was confined to intrastate commerce; and of the gas that moved by pipeline in interstate commerce, a large portion was sold by the pipelines directly to consumers. Neither intrastate sales nor direct sales in interstate commerce are subject to the jurisdiction of the Commission. (See 1940 Annual Report of Railroad Commission of Texas, covering Panhandle Oil and Gas Field, Table VIII.)

5. On page 36 of its brief, the Commission makes the following amazing statement:

> "Finally, if the commodity price rather than cost were adopted by the Commission there would no longer be any necessity for treating the gas business as presenting any peculiar hazards. As a result, the transmission facilities, which constitute the larger portion of the pipe lines investment, would be entitled to a lower rate of return than 6½%."

In the first place, this statement carries with it the implicit admission that the production of natural gas is an extra hazardous business and that a 6½ per cent rate of return on an original cost rate base is fair only for a business involving fewer hazards. From this it logically follows that the 6½ per cent rate of return allowed by the Commission in this case is inadequate as to the admittedly hazardous portion of Canadian's business, namely its production and gathering. Two-thirds of the entire rate base allowed by the Commission in this case covers production and gathering properties. So, by the Commission's own admission, an inadequate rate of return has been allowed on over $6,000,000, which constitutes the amount at which Canadian's pro-

duction and gathering properties have been included in the rate base on the Commission's prudent investment or original cost theory.

Again in this quoted paragraph the Commission admits that the transmission business is a hazardous business where the production and gathering properties are included in a rate base on an original cost basis, but states that the transmission business would become at least less hazardous if the commodity price of natural gas should be adopted. Inasmuch as the Commission has included Canadian's production properties in the rate base on an original cost basis and thus made the transmission end of the business hazardous, it follows from the Commission's own admission that the 6½ per cent rate of return allowed on the amount included in the rate base for transmission properties is also inadequate. **Moreover, on its rate base, two-thirds of which represents production and gathering properties even on the Commission's theory of original cost, Canadian has been grossly wronged by the Commission in its allowance of an over-all rate of return of 6½ per cent, because the Commission has simultaneously allowed Colorado Interstate (No. 379, this Term), and Colorado-Wyoming Gas Company (No. 575, this Term), a 6½ per cent rate of return on their entire rate bases, and neither of such companies owns any gas producing or gathering properties whatsoever.**

6. The Commission states on page 35 of its brief that the original cost theory adopted by the Commission is "fair alike to consumers and natural-gas companies".

In our opening brief we believe we have demonstrated that the inclusion of natural gas leaseholds in a rate base at their original cost (which to the Commission in this case means the original "wild-cat" acquisition cost twenty to thirty years ago to oil-seeking predecessors) cannot possibly, except by accident, result in fair and reasonable rates either to the consumers or the natural gas companies or other owners of the production. We do not deem it necessary to repeat our demonstration of this truth here.

In the *Panhandle Eastern* case (No. 296, this Term), the Commission admits that when a transmission company purchases the gas which it transports, the Commission uniformly has allowed the purchase price of the gas so purchased as an expense item without question. No satisfactory answer is given as to why the commodity value of the gas at the well-head or at the end of the gathering system could not be used in the instances where the owner of the transmission system is also the owner of the production and gathering properties, if it is proper to use that commodity value where the gas is purchased. Obviously, there can be no rational answer to this question.

Of course, we are not contending that the Commission, whether the gas is purchased from a third person or is produced by the owner of the transmission system, should not have the right to test the price which is claimed to be the going commodity value. We think it perfectly proper for the Commission to test the claimed commodity value in any way it wants, if there is any reason to suspect that the claimed value is not the true commodity value. It can test this claimed commodity value by the use of any method which may be thought to have a legitimate bearing on the facts. But to discard commodity value entirely in favor of a value based upon the Commission's conception of original cost, as we have pointed out in our opening brief, cannot possibly result in just and reasonable rates from the viewpoint of either the consumer or the owner of the gas.

If the Commission's rate reduction order in this case is permitted to stand, based as it is upon an application of the Commission's original cost theory, Canadian will be receiving only approximately 2.1 cents per MCF for its gas at the wellhead as against not less than a 4-cent per MCF commodity market value. (R., V. 6, 3255-3281.) Surely, there can be no justification for this discrepancy. It is discriminatory as between gas which may be transported through a transmission system owned by the producer of the gas, as against gas which may be sold by the producer of the gas to

a third party owner of the transmission system. Such a plan must necessarily result in different prices to different consumers for the same gas produced from the same field and even from the same lease, depending upon whether such consumer is purchasing from one who produces the gas or from one who buys it from the producer.

The Commission seeks to find support for its use of original cost in lieu of commodity value in the opinion or opinions of this Court in the *Hope* case. No support for the Commission, we submit, can be found in the *Hope* case. We have discussed the *Hope* decision in connection with Question 1. The first answer is that this question was not involved in the *Hope* case. All that the *Hope* case does, even in the majority opinion, is to rule that the Commission is not bound to any particular formula. Moreover, when this Court said that the Commission was not bound to the use of any particular formula, it coupled that statement with the qualification that the formula to be adopted must be just and reasonable under the circumstances of the case. That is all we are asking for here. Clearly, the Act contains no mandate that the Commission shall not use commodity value instead of original cost. This is evident from the language of the Act and also from the administrative practice of the Commission in using the commodity value where the gas is purchased.

Our position is that the use of original cost in determining the value of the gas leaseholds as against the use of commodity price of the gas cannot result in just or reasonable rates, which is the very purpose of the Act, and cannot be sustained by recourse to any "end result" or "rate impact" principle, either from the viewpoint of the owner of the gas or the consuming public.

Finally, we submit that under the facts disclosed by the Record in this case, the use of original cost for the inclusion of Canadian's gas leaseholds in the rate base and on the Commission's conception of original cost was an arbitrary and capricious exercise of any general discretionary power

which the Commission may have, and for this reason, if for no other, violates the due process clause of the Fifth Amendment to the Constitution of the United States.

United States v. *Chicago, Milwaukee, St. Paul & Pacific R. R. Co.*, 282 U. S. 311; 75 L. Ed. 359, 365;
Railroad Retirement Board v. *Alton R. R. Co.*, 295 U. S. 330; 79 L. Ed. 1468, 1474;
Nashville, Chattanooga & St. Louis Ry. v. *Walters*, 294 U. S. 405; 79 L. Ed. 949, 955;
Nebbia v. *New York*, 291 U. S. 502; 78 L. Ed. 940, 950;
K. & L. Oil Co. v. *Oklahoma City, et al.*, 14 Fed. Supp. 492, 494.

QUESTION 3.

Canadian's Actual Original Cost of Leasehold Properties.

The Commission takes the position in its brief (pp. 37-53) that the full $5,000,000 paid in cash by Canadian to Amarillo for the latter's gas leaseholds, rights and wells at the inception of the Denver Project in 1927-28 should not be considered or allowed in determining Canadian's original cost for rate base purposes, because

(1) Either the transaction which resulted in the acquisition of such properties was simply an intercompany arrangement between two wholly-owned subsidiaries of Southwestern; or

(2) There was a pooling of interests as in the *Niagara* case (135 F. (2d) 787), and Southwestern was in reality merely advanced or loaned $5,000,000 on its future profits from Colorado Interstate.

The Record does not support either of the above alternative assumptions. The formal transfer of properties was ultimately between two wholly-owned subsidiaries of Southwestern, but the basis for that transfer, and the agreement to buy and sell, as well as the consideration to be paid, had its genesis in the original project agreement between three

non-affiliated parties. The terms of such sale and the consideration to be paid were agreed upon as a result of prolonged arm's-length bargaining between Southwestern, as a representative of Amarillo, on the one hand, and Cities Service and Standard, on the other. There was every incentive on the part of Standard and Cities Service to fix the consideration at the lowest possible figure, while on the other hand there was every incentive on the part of Southwestern to secure the greatest possible sum for the properties in question. Thus this transaction was something more than an intercompany arrangement between two subsidiaries of the same parent. The consideration actually paid in cash for such properties resulted from negotiations that absolutely guaranteed a fair price, from the standpoint of public and every other interest. (See Canadian's brief, pp. 52-72.) This being true, there is no occasion here to apply the "no profits between affiliates" rule. It is fundamental that where the reason for a rule fails, the rule itself will not be applied.

The Record in this case establishes without dispute the following:

1. There was an actual purchase and sale of gas leaseholds, rights and wells which was a condition precedent to the establishment of the Denver Project. There would have been no Denver Project unless such production properties had been acquired from Amarillo.

2. The $5,000,000 paid in cash to Amarillo by Canadian for such properties was not an advance or loan of a portion of Southwestern's share of future profits in any joint enterprise, because:

(a) The project agreement between the parties of April 5, 1927 (Memorandum of Stipulations, Exhibit 1, R., V. 1, 381-400) completely contradicts any such interpretation. This agreement, as well as all other evidence in the Record on the subject, clearly and indisputably proves that the parties agreed that Amarillo should sell its gas leaseholds,

rights and wells to Canadian and should receive $5,000,000 in payment therefor, *provided it was able to clear its titles to the satisfaction of the project participants.* (R., V. 5, 2914-2915).

(b) With respect to the Commission's "advance" theory (Com. Br., 42), or the "loan" theory (Com Br., 52), an advance or loan carries with it a definite offsetting liability to repay the sum advanced or loaned. This is true in any parlance,—legal, accounting, commercial, or otherwise. Neither Southwestern nor Amarillo had any such liability in this case. The money paid belonged irretrievably to Amarillo, with the unrestricted right to keep and utilize the same for any purpose or purposes it might see fit.

(c) If the Project had failed entirely, or had become hopelessly insolvent, still Amarillo would have retained as its own the full $5,000,000 paid, without any obligation whatsoever on the part of Amarillo or Southwestern to repay.

(d) If we assume *arguendo* that the $5,000,000 did constitute an advance or loan on future profits of Colorado Interstate, then only 42½ per cent of such profits could be deducted from profits accruing to Southwestern (after payment of dividends on the outstanding preferred stock), because Southwestern owned only 42½ per cent of the common stock of Colorado Interstate. If this sum was to be repaid out of profits of Colorado Interstate, then it is obvious that the remaining 57½ per cent would have to be repaid from the profits of the other non-affiliated stockholders of Colorado Interstate.

(e) The fact that Canadian paid the purchase price for the gas leaseholds, rights and wells acquired from Amarillo out of the proceeds of its first mortgage bond issue is of no material significance. Canadian financed its investment in pipelines, compressor stations, gathering lines, additional wells drilled and additional leaseholds, in exactly the same manner. The Commission has generally recognized that

rate bases are founded upon actual dollars invested in property without regard to the source of such dollars, whether it be sale of stock, issuance of bonds or a bank loan, or cash on hand from any other source.

If we take the most extreme position advanced by the Commission, and assume *arguendo* that there was a pooling of assets beginning with the acquisition of such properties by Canadian, still the fact remains that $5,000,000 was paid in cash by Canadian to Amarillo for such properties. The money went *out of*, not *into*, the Project picture. **The payment did not represent the taking of money out of one pocket of Southwestern and placing it in another, as is often true in transactions between affiliates. The money came from sources entirely outside of the Southwestern holding company system. Amarillo received and retained $5,000,000 of new, outside money for its properties.** This money was clearly invested by Canadian for the properties acquired from Amarillo, and the acquisition of such properties was a condition precedent to the establishment of the entire Denver Project. It necessarily follows, therefore, however the transaction may be viewed, that this entire $5,000,000 must be considered under the facts in this case as a part of the original cost of Canadian.

Commission's "advance" or "loan" argument implies that Southwestern, as the parent of Amarillo, received 42½ per cent of the common stock and 50 per cent of the preferred stock of Colorado Interstate as full and complete consideration for the transfer of the gas leaseholds, rights and wells by Amarillo to Canadian. The fact still remains, however, that Southwestern received not only the stock interest above referred to, but that in addition thereto its subsidiary, Amarillo, received without any strings whatsoever $5,000,000 in cash. If this $5,000,000 had not been paid to Amarillo, then, on the theory of the Commission, Southwestern's stock ownership in Colorado Interstate would have been very much greater. In other words, the $5,000,000 would be an actual cash consideration over and

above any participation which Southwestern might have in any profits made by Colorado Interstate. The Record is quite clear that Southwestern's interest in Colorado Interstate was acquired in consideration of the contract between Canadian and Colorado Interstate whereby Canadian agreed to sell gas to the latter at actual cost, not only for the primary term of twenty years, *but as long thereafter as Colorado Interstate elected to purchase gas.* Canadian obligated itself under this Cost Contract to perform many other very definite and very onerous obligations. (See Canadian's opening brief, pp. 11-13.)

If we should go all the way with the Commission in its theoretical interpretation of this transaction, and assume for the purposes of argument that the situation would have been no different had Amarillo in the first instance entered into a contract, in consideration of a cash payment of $5,000,000, to sell gas to Colorado Interstate at cost so long as Colorado Interstate elected to purchase the same on that basis, then certainly it would have been necessary in this case to have reflected the full cost of such contract in the rate base of Colorado Interstate. In that event the net result for the project as a whole would have been exactly the same, as is contended for here by Canadian. In other words, since Colorado Interstate reimburses Canadian for its actual cost of producing gas, including amortization of its indebtedness, it makes no difference to the Project as a whole whether the $5,000,000 is in the rate base of Colorado Interstate or in the rate base of Canadian. **The important thing is that the Project participants have invested $5,000,000 in gas leaseholds, rights and wells for the future use of the customers of the Denver Project, and at some point they are certainly entitled to a return on such investment.**

Commission's brief, in footnote 18, page 42, intimates that only a small proportion of the $5,000,000 was actually paid to Amarillo. This assumption is based upon only a portion of the testimony of Commission staff witness Luttring.

Luttring himself clearly refutes any such assumption. He stated in this connection that his testimony with respect to the disposition of such funds was misunderstood. He said he merely desired to show that the funds were handled in the first instance by Prairie Oil and Gas Company probably due to the fact that it was a responsible person and neither Canadian nor Colorado Interstate then had banking facilities. In fact, Canadian was not then organized. Notwithstanding the Commission's characterization of the profit realized by Amarillo on the $5,000,000 transaction as "paid-in-surplus", Commission witness Luttring testified that such profit was paid out by it as a dividend to its stockholders (Southwestern), and *that the entire sum of $5,000,000 was paid to and received by Amarillo.* (R., V. 5, 2938.) The Commission also made a finding to the same effect. (R., V. 1, 150.)

The Commission predicates its entire argument not on the Record, but on the "pooling of assets" theory advanced in a decision by the Second Circuit Court in the case of *Niagara Falls Power Company* v. *Federal Power Commission*, 135 F. (2d) 787. This case is in no sense controlling here, either in principle or otherwise, for the reasons heretofore given and in addition thereto the following:

(1) Niagara Falls Power Company was a licensee of the Government under the Federal Power Act, and as a licensee was required to keep its books in the manner prescribed by the statute. The Act provided that the Government might recapture the properties at original cost at the end of the period of the license. Section 23(a), 16 U. S. C. A., Sec. 816, of the Act further provided, however, that where a licensee had an indefeasible right to divert water from an interstate or international navigable stream at the time the license was issued by the Federal Power Commission (which in this case was in 1921), then the licensee would be entitled to set up on its books under the recapture clause the "present fair value" of its properties at that time. This was the primary issue involved in the *Niagara* case.

The Court found that Niagara did not have a vested right to divert water from the Niagara River at the time the license was issued, and therefore its accounts were governed entirely by other provisions of the Act, which stated in detail just how the original cost was to be reflected. We, of course, have no such provision in the Natural Gas Act, and no similar situation is therefore presented in the case at bar.

(2) There was also involved in the *Niagara* case the question as to whether a sale had been made. The Court held there that a sale had not been made, but that the transaction represented merely the pooling of the assets of two companies, and that each of the original companies thereafter owned a proportionate interest in the combined assets. No money whatsoever changed hands. In this case, $5,000,000 in cash changed hands, which funds went *out of* the Project, —not *into* the Project. This fact, within itself, clearly distinguishes this case from the *Niagara* case.

(3) In the *Niagara* case the new company acquired all of the assets and business of the old companies, and continued to operate the identical properties for the identical purposes that they had theretofore been operated. In this case, Canadian acquired the properties from Amarillo for the purpose of engaging primarily in an entirely new and distinct undertaking—one in which Amarillo had not theretofore engaged,—the production of gas to be ultimately transported in interstate commerce.

(4) The Court in its opinion in the *Niagara* case very frankly admitted that many of the principles announced there "may be inapplicable to unlicensed public utilities." This is necessarily true, because it was there dealing with a statutory definition of original cost as applicable to licensees under the Federal Power Act. Such statutory requirement could have no application to an unlicensed utility, and certainly could have no application to producing and gathering properties of Canadian in this case, where

the Act itself specifically withholds jurisdiction from the Commission.

(5) But above all, in the *Niagara* case no cash whatsoever changed hands. There was no sale. In this case there most certainly was a sale, or, if we take the most extreme theory advanced by the Commission, there was a definite dedication of valuable gas leasehold properties to the Denver Project for which the sum of $5,000,000 in cash was paid. Such sum, in any event, became a part of the actual and legitimate original cost of the Project, whether viewed as an outright purchase of property or whether viewed as the acquisition of certain rights in property by way of dedication, irrevocably and perpetually, for the future use of the Denver Project.

(6) The corporate consolidation in the *Niagara* case resulted from an enabling act passed by the Legislature of the State of New York, which act provided that the capitalization of the new company should not exceed the cost carried on the books of the old companies. The Court held that for this reason there could be no desire on the part of either of the original companies to reduce the capitalization below this amount, and in effect held, therefore, that the basic elements normally present in arm's-length transactions were absent in the *Niagara* case. Certainly the Record here amply proves that there was intense arm's-length bargaining for the purpose of fixing the consideration to be paid by Canadian to Amarillo for the latter's gas leaseholds, rights and wells.

The criticism by Commission counsel of the *A. T. & T.* and *New York Telephone* cases (Com. Br., 45) is without merit. It is true that those cases had reference to accounting problems, but even so, the underlying principles there announced are even more vital in cases where a rate base is being determined. It is also true that those cases do not aid in determining whether Canadian invested $5,000,000 in the properties acquired from Amarillo, *but that fact is*

undisputed on the Record. The Commission found that Canadian actually paid Amarillo $5,000,000 in cash for the latter's gas leaseholds, rights and wells (R., V. 1, 150). Luttring, Commission staff witness, also testified to this fact, as shown by the following quotation from the Record:

> "Q. * * * Ultimately the Amarillo Oil Company received by way of credits or otherwise the full amount of the purchase price of $5,000,000?
>
> "A. Yes." (R., V. 5, 2938.)

In view of the above, the only issue is whether this investment should be recognized. On this issue, the *A. T. & T.* case is directly in point. (See Canadian's brief, pp. 66-67.)

There is no justification in any event for inclusion of properties in a rate base upon a prudent investment or original cost theory, except upon the basis advanced by Mr. Justice Brandeis in the decisions of this Court. Mr. Justice Brandeis has said that prudent investment is the money invested *to establish the utility.* We submit that such theory, as developed and applied by the Commission, has no application to the properties, business and operations of Amarillo Oil Company, whose costs have been used in this case for rate base purposes of Canadian.

Amarillo's original acquisition of gas leaseholds and its drilling of exploratory wells was a mining operation in search of oil. The expenditures made in this venture did not constitute an investment in a utility, and no utility or public service status could have attached thereto. The great value of Amarillo's leasehold properties resulted from the discovery of natural gas, which discovery necessarily and inevitably preceded any character of public service operation. Since Amarillo invested no money in a utility enterprise, the prudent investment theory, as developed and expounded by Mr. Justice Brandeis, has no possible application whatsoever.

The very first time that even a semblance of a public service status could be said to have attached to the pro-

during leaseholds and property of Amarillo was when they were acquired by Canadian from Amarillo for the Denver Project. This, therefore, was likewise the very earliest date upon which the prudent investment theory of Mr. Justice Brandeis could have been applied. It follows, therefore, that since the original cost or prudent investment theory is definitely inapplicable to the costs of Amarillo, the Commission is bound to allow Canadian the full $5,000,000 in cash which it paid for and invested in its gas leaseholds, rights and wells.

QUESTION 8.

Allocation.

In its opening brief (pp. 72-88) Petitioner has set forth its position on the subject of allocation and its application to the facts in this case, and it is unnecessary here to repeat the views there expressed. We submit, however, that the Commission in its brief (pp. 54-88) has made no valid answer to Petitioner's contentions.

The Commission has entered a separate and individual rate order against Canadian. Such separate and individual order is based upon an allocation which takes into consideration not the properties, revenues and expenses of Canadian, but the properties, revenues and expenses of Canadian and Colorado Interstate combined into a hypothetical composite system. If an individual and separate rate order is to be applied against Canadian, then Canadian is entitled to have that order based upon its separate and individual properties, revenues and expenses. This the Commission admittedly did not do. The properties, revenues and expenses of Colorado Interstate, or any other company, have no relevancy, competency or materiality in determining the extent or nature of the order directed to Canadian. This fundamental proposition, which is true from every standpoint, legal or otherwise, was totally ignored by the Commission, and the Commission in its brief makes no attempt to give an effective answer thereto.

There are many patent infirmities and impossibilities which grow out of the application of a composite system allocation against an individual member of the assumed composite system. It is deemed unnecessary to mention all of them here. Canadian owns and operates that part of the assumed composite system extending from the field to Clayton Junction, and Colorado Interstate owns and operates the balance of such composite system extending from Clayton Junction to Denver. It should be obvious that to combine both companies and to allocate such cost on a uniform volume basis, without regard to the distance the gas is transported, necessarily requires Canadian's intrastate customers adjacent to the field and its other non-regulable business to bear a portion of Colorado Interstate's long haul costs. For example, a total of more than $141,000 was allocated to Canadian's producing and gathering operations for federal income tax purposes, whereas the total amount allowed by the Commission in Canadian's annual expenses for such taxes was only $66,000. **Obviously, Canadian was required to absorb about $75,000 of the federal income taxes of Colorado Interstate in this composite allocation. No "end result" can be just and reasonable when this occurs.**

As heretofore stated in Petitioner's opening brief (pp. 81-83), there is absolutely no evidence in the Record upon which to base any rate reduction order directed to the sale made by Canadian to Colorado Interstate at Clayton Junction. The Commission's witness testifying on the subject of allocation (whose theories have been adopted by the Commission) totally ignored this sale. This action necessarily followed when he decided to make his allocation on the basis of the combined properties, revenues and expenses of the two companies rather than upon their individual properties, revenues and expenses. Upon consolidation into a composite system, this sale and all other transactions between the two companies were automatically eliminated. Again, as pointed out in our opening brief, when it became necessary for the Commission to find the cost of gas to Colo-

rado Interstate for the purposes of its rate reduction order against Canadian, it used a "plugged" figure which has no basis whatsoever in the Record.

Commission counsel attempt to supply this deficiency by attaching certain exhibits to their brief which purport to show what the Commission did in arriving at its ultimate conclusions with respect to allocation of cost of service. These exhibits were never introduced in evidence, and certainly cannot be substituted at this late date to supply flagrant omissions in the Commission's Opinion and rate reduction order. But even if such exhibits were given the force and effect of evidence or findings, we submit to the Court that it is still impossible to determine therefrom what the Commission did. Finally, the exhibits do show clearly that the adjustments made by the Commission were adjustments against a composite system of allocation (not the individual properties, revenues and expenses of Canadian), and that there still is no evidence in the Record or in the Commission's brief as to the allocated cost of service for the sale made by Canadian to Colorado Interstate. Consequently there still is no foundation in the Record or in Commission's brief upon which to base a separate rate reduction order against Canadian in connection with its sale to Colorado Interstate.

The sales made by Canadian to Colorado Interstate for resale to Colorado Fuel & Iron and other such direct sales are not subject to the jurisdiction of the Commission. The legislative history referred to and quoted from in the Commission's brief (pp. 80, *et seq.*) does not support its contention, but does directly support our contention. The purpose was to cover wholesale sales even though they were sales from one company to another "before the gas is finally sold *to the public.*" (Italics ours.)

As stated by Mr. Benton, commenting on the amendment as adopted (Com. Br., 83), "The language of the suggested amendment just proposed leaves this purpose unaffected, and makes clear that the regulation of intercompany sales

is designed for the protection of the *consuming public*, as a part of the complete regulation of the entire *utility service.*" (Italics ours.) The Colorado Fuel & Iron Company and other such direct sale customers for industrial fuel purposes are not a part of the "consuming public," nor are they a part of a "utility service." Such service was not declared to be "affected with a public interest." Only the business of "transporting and selling natural gas *for ultimate distribution to the public*" was declared by the Act to be effected with a public interest, and such direct sales for consumption are by the Act expressly exempted from regulation. Why should the price of this gas sold by Petitioner to Colorado Interstate be regulated any more than the ultimate sale by Colorado Interstate to the Colorado Fuel & Iron Company? How can there be a "public interest" or a "public utility service" or "ultimate public consumption" in the one case and not in the other?

For the sake of brevity, and to avoid duplication, Petitioner adopts here what Colorado Interstate has said in its reply brief (No. 379, this Term), in so far as the principles and law therein stated are applicable to the case of Canadian.

CONCLUSION.

We respectfully submit that the brief submitted in behalf of the Respondents utterly fails to answer any of our arguments submitted in our opening brief in support of the four questions presented. No reliance may properly be placed by the Commission upon the so-called "end result" doctrine of the *Hope* case, inasmuch as it is fundamental that the jurisdiction of the Commission over the subject attempted to be regulated must be definitely established before any such "end result" principle may in any event be applied.

We therefore renew our prayer that this case be remanded, with instructions to vacate, set aside and enjoin the Order of the Commission.

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February 2, 1945.

FILE COPY

IN THE

Supreme Court of the United States

October Term, 1944.

No. 220

Canadian River Gas Company, a Corporation, *Petitioner*

v.

Federal Power Commission, City and County of Denver, Colorado, Public Service Commission of Wyoming, Cheyenne Light, Fuel & Power Company, Public Service Company of Colorado, and Colorado Interstate Gas Company, *Respondents*.

BRIEF OF THE INDEPENDENT NATURAL GAS ASSOCIATION OF AMERICA, AMICUS CURIAE.

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January 8, 1945.

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Federal Power Act, as amended by the Public Utility Act of 1935, 49 Stat. 803 (16 U. S. C. 824)
Sec. 201(a) 37
Sec. 201(b) 38
Interstate Commerce Act (41 Stat. 493) 9
Natural Gas Act of 1938, 52 Stat. 821 (15 U. S. C. 717). 4, 5
Sec. 1(a) 5, 37, 67
Sec. 1(b) 5, 19, 22, 38, 62
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Sec. 2(7) 67
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Sec. 10(a) 9, 74
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Sec. 19(a) 76
Sec. 19(b) 76
Sec. 19(c) 78

(*Note:* Unless otherwise indicated, all emphasis has been supplied by the authors of this brief.)

IN THE

Supreme Court of the United States

OCTOBER TERM, 1944.

No. 380.

CANADIAN RIVER GAS COMPANY, a Corporation, *Petitioner*

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND COLORADO INTERSTATE GAS COMPANY, *Respondents.*

BRIEF OF THE INDEPENDENT NATURAL GAS ASSOCIATION OF AMERICA, AMICUS CURIAE.

This brief of the Independent Natural Gas Association of America is presented *amicus curiae*, under Rule 27, paragraph 9, of the Rules of this court.

OPINIONS BELOW.

The opinion of the Circuit Court of Appeals for the Tenth Circuit in this proceeding is reported in 142 F. (2d) 943. The opinion and order of the Federal Power Commission is reported in 43 P.U.R. (N.S.) 205.

JURISDICTION.

Jurisdiction of this Court is invoked by the Petitioner under Section 240(a) of the Judicial Code, as amended by the Act of February 13, 1925, and Section 19(b) of the Natural Gas Act. (Pet. for Cert., p. 2).

PRELIMINARY STATEMENT.

The Independent Natural Gas Association of America is a corporation organized and existing under the laws of the state of Delaware. The membership of the Association consists of persons and corporations engaged in the production, gathering, transportation and sale of natural gas, and includes a number of royalty owners. Under the Association's charter, one of its principal purposes is to "promote and advance the welfare, progress and development of the natural gas industry in the United States of America and particularly to protect the interests of the producers of natural gas." In respect to regulation of the production and gathering of natural gas, the Board of Directors of the Association, at a meeting held in Tulsa, Oklahoma, on August 1, 1944, adopted the following resolution:

> "Resolved, That it is the definite opinion of the Independent Natural Gas Association of America that the regulation of the production, gathering and conservation of natural gas is the function of the respective producing states, and not of any Federal agency."

The Association, accordingly, has a direct and immediate interest in the instant proceeding, especially in respect to the question whether the Federal Power Commission exceeded the jurisdiction vested in it by the Natural Gas Act when it asserted and exercised authority over the production and gathering facilities of the Canadian River Gas Company. The precedent to be established in this case is of great significance and importance to the natural gas industry as a whole.

STATEMENT OF THE CASE.

This proceeding involves the validity of an order of the Federal Power Commission (hereinafter referred to as the Commission), adopted on March 18, 1942, reducing rates for the transportation and sale of natural gas by the Canadian River Gas Company (hereinafter referred to as Canadian). Canadian obtained a review of this order of the Commission by the United States Circuit Court of Appeals for the Tenth Circuit. That Court affirmed the order of the Commission in a judgment entered on July 8, 1944. A petition for Certiorari was filed with this Court by Canadian on August 22, 1944. On November 13, 1944, this Court granted said petition, but limited its review to Question No. 8, relating to the validity of the Commission's action in respect to the separation or allocation of properties. Canadian filed a petition for rehearing and enlargement of the scope of review on December 4, 1944, and this Court, by order entered on January 2, 1945, broadened the scope of review to include Questions Nos. 1, 2, and 3. Question No. 1, in which the Independent Natural Gas Association of America is particularly interested, reads as follows:

> "1. Whether the Circuit Court, after correctly holding that the Commission has no rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, erroneously concluded and ruled that the Commission in this case did not exercise such prohibited jurisdiction."

Canadian is engaged in the production, gathering, transportation and sale of natural gas. Natural gas is produced from its leaseholds in the Panhandle (Texas) Gas Field. A portion of the gas so produced goes into Canadian's gathering or field system which terminates at Bivins Station, Texas. After compression at Bivins Station, the gas is transported, for a distance of approximately 86 miles through a main 22 inch transmission line to Clayton Junction, New

Mexico, where it is sold and delivered to the Colorado Interstate Gas Company for ultimate consumption in the State of Colorado. The remainer of the gathered gas produced by Canadian in the Panhandle Gas Field goes into Canadian's gathering or field system which terminates at Fritch Station, in Texas. After compression at Fritch Station, the gas is then transported by Canadian, through facilities leased from Texoma Natural Gas Company, to Gray Junction, Oklahoma, where the gas is sold to the Colorado Interstate Gas Company. (R., V. 1, p. 143). Canadian also sells gas to the Amarillo Oil Company, at the wells in the field, for ultimate distribution in the cities of Amarillo and Channing, Texas, and along the route of its pipeline for ultimate distribution in Dellart, Hartley and Texline, Texas, and in Clayton, New Mexico (R., V. 2, p. 708).

It is an established fact, which was clearly recognized by the Commission in its opinion in this proceeding, that Canadian's operations may readily be classified as between the production, the gathering, the transportation and the sale of natural gas. Nevertheless, the Commission made no distinction between these different functions performed by Canadian. Instead, the Commission grouped all of the functions together, and, for the purpose of its rate reduction order, determined rate base, revenues, expenses and rate of return on all of Canadian's operations, on the premise that production and gathering constituted an "integral" part of Canadian's operations and therefore should be treated in the same manner as facilities used for the transportation and sale of natural gas in interstate commerce (R., Vol. 1, p. 143, 146).

STATUTE INVOLVED.

The pertinent provisions of the Natural Gas Act (52 Stat. 821; 15 U.S.C. 717) are printed in Appendix A of this brief.

QUESTION PRESENTED.

The primary question to be argued in this brief is Question No. 1 of Canadian's petition for a writ of certiorari herein, namely, whether the Circuit Court of Appeals, after correctly holding that the Commission has no rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, erroneously concluded and ruled that the Commission in this case did not exercise such prohibited jurisdiction. Incidental to this question, we will consider the adverse effect of the exercise of jurisdiction by the Commission over production and gathering upon the field operations of companies engaged in the natural gas business.

ARGUMENT.

I. Production and Gathering of Natural Gas Are Specifically Exempted from the Jurisdiction of the Commission Under the Provisions of the Natural Gas Act

When Congress enacted the Natural Gas Act of June 21, 1938 (52 Stat. 821, 15 U.S.C. 717), it did not vest the Federal Power Commission with full and complete jurisdiction over the natural gas industry. On the contrary, limitations upon the jurisdiction of the Commission were specifically set forth in the very first section of the Act, which reads as follows:

> "(a) As disclosed in reports of the Federal Trade Commission made pursuant to S. Res. 83 (Seventieth Congress, first session) and other reports made pursuant to the authority of Congress, it is hereby declared that the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest, and that Federal regulation in matters relating to the transportation of natural gas and the sale thereof in interstate and foreign commerce is necessary in the public interest.
>
> "(b) The provisions of this Act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for

resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale, *but shall not apply* to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or *to the production or gathering of natural gas.*"

It is obvious that the provisions of the Act were thus made applicable only to the *transportation* of natural gas in interstate commerce and to the *sale* in interstate commerce of natural gas for *resale* for ultimate public consumption. The provisions of the Act specifically do *not* apply (1) to any other transportation or sale of natural gas, (2) to the local distribution of natural gas or to the facilities used for such distribution or (3) to the production or gathering of natural gas. No language could possibly be plainer as to the limitations which Congress desired to place and did place, upon the Commission's authority under the Natural Gas Act.

When it enacted that statute, therefore, Congress was careful to confine and limit the jurisdiction of the Commission to the particular transportation or sale of natural gas intended to be covered by the provisions of the Act. Production and gathering were explicitly excluded.

Sec. 2(6) defines a "natural-gas company" to mean "a person engaged in the transportation of natural gas in interstate commerce, or the sale in interstate commerce of such gas for resale." Sec. 4 and 5(a), which are the rate regulatory provisions of the Act, refer to charges for the "transportation or sale of natural gas subject to the jurisdiction of the Commission." Sec. 7(a) relates to the extension or improvement of "transportation" facilities. Sec. 7(b) refers to the abondonment of "facilities subject to the jurisdiction of the Commission." Sec. 7(c)[1] covers the construction or extension of facilities for "the transporta-

[1]This section was amended by the Act of February 7, 1942, c. 49 (56 Stat. 83).

tion or sale of natural gas, subject to the jurisdiction of the Commission."

Aside from its use in the exemption provision in Sec. 1(b), the word "production" appears only in Sec. 5(b), 9(a), 10(a) and 11(a) of the Act. Sec. 5(b) provides that the Commission, upon its own motion, or upon the request of any State commission, whenever it can do so without prejudice to the efficient and proper conduct of its affairs "may investigate and determine the cost of the production or transportation of natural gas by a natural-gas company in cases where the Commission has no authority to establish a rate governing the transportation or sale of such natural gas." This provision obviously has for its sole purpose the aiding of State regulation, and vests no authority in the Commission to exercise direct jurisdiction over the production activities of a natural-gas company. As a matter of fact, the legislative history of this subsection fully corroborates the view that Congress did not intend to give the Commission any such direct jurisdiction over the production activities of a natural gas company.[1] The Commission

[1]Commenting upon this section in its report on the legislation, the House Committee stated that it "will greatly aid State commissions in their rate-making proceedings." (H. Rep. No. 709, 75th Cong., 1st Sess. on H. R. 6586). This subsection, in the form in which it appeared in H. R. 4008 (75th Cong., 1st Sess.), did not contain the limiting language "by a natural-gas company." Objection thereto was registered by Congressman Boren of Oklahoma and Chairman Maltbie of the New York Public Service Commission on the ground that the subsection constituted an extension of authority into the State field (Hearings on H. R. 4008, 75th Congress, 1st Sess., pages 46, 106-110, 147). When the bill reached the House for debate, Congressman Boren offered an amendment, which was adopted, inserting the qualifying words "by a natural-gas company." Congressman Boren stated that it was the purpose of the amendment "to keep the jurisdiction of the Federal Government as clearly defined as possible from the jurisdiction of the State government in cases arising under the provisions of the bill" and that the amendment "assures us that the Federal Government will not go into a realm where the State government already has proper authority to handle the problem." (Cong. Rec. 75th Cong., 1st Sess., Vol. 81, Part 6, page 6728).

has itself construed this provision as designed to aid State and local regulation. *Re The East Ohio Gas Company*, 28 P.U.R. (N.S.) 129; 115 F. (2d) 385.

Sec. 9(a) of the Act authorizes the Commission to determine, and by order fix, proper and adequate rates of depreciation and amortization in respect to the several classes of property of each natural-gas company used or useful in the "production, transportation, or sale of natural gas." This section, however, contains a proviso to the effect that

> "Nothing in this section shall limit the power of a State commission to determine in the exercise of its jurisdiction, with respect to any natural-gas company, the percentage rates of depreciation or amortization to be allowed, as to any class of property of such natural-gas company, or the composite depreciation or amortization rate, for the purpose of determining rates or charges."

In other words, what Congress did in sec. 9(a) of the Act was to vest the Commission with jurisdiction to determine depreciation and amortization rates of natural-gas companies, but at the same time it expressily recognized the right of State authorities to determine such depreciation and amortization rates, even in respect to a "natural-gas company" (defined in the Act to be a person engaged in the transportation of natural gas in interstate commerce, or the sale in interstate commerce of such gas for resale). This is another example of the scrupulous care which Congress exercised, when it enacted the Natural Gas Act, not in any way to interfere with the authority of the States in the respects in which they were considered authorized to act, even when interstate commerce might be involved, namely, in the fields of distribution, production, and gathering of natural gas.

In any event, the mention of "production" in Sec. 9(a) in respect to the determination of depreciation and amortization charges, may not properly be used as a predicate for

the assertion of jurisdiction by the Commission over the production of natural gas, in the manner in which it exercised such jurisdiction in the proceeding under review. Determination and prescription of depreciation and amortization charges are primarily accounting problems, and may be considered separate and apart from the fixation of just and reasonable rates to be charged for public utility or transportation services. *Northwestern Bell Telephone Company* v. *Nebraska State Railway Commission*, 297 U.S. 471; *American Telephone and Telegraph Company* v. *United States*, 299 U.S. 232. Thus, under a statutory provision analogous to Section 9(a) of the Natural Gas Act, namely, Section 20(5) of the Interstate Commerce Act (41 Stat. 493), the Interstate Commerce Commission considered the determination and prescription of depreciation charges for telephone companies without regard to the use thereof in rate proceedings. *Depreciation Charges for Telephone Companies*, 177 I.C.C. 351.

Section 10(a) of the Act authorizes the Commission to require natural-gas companies to file periodic or special reports, including, among other things, "full information as to assets and liabilities, capitalization, investment and reduction thereof, gross receipts, interest due and paid, depreciation, amortization, and other reserves, cost of facilities, cost of maintenance and operation of facilities for the *production*, transportation, or sale of natural gas, cost of renewal and replacement of such facilities, transportation, delivery, use, and sale of natural gas." The mere inclusion in this subsection of the power to require information in respect to facilities used in the "production" of natural gas (when such "production" was specifically excluded from the Commission's jurisdiction by Section 1(b), obviously cannot be deemed in any manner to vest the Commission with a jurisdiction over production activities which has already been specifically excluded. This Court has repeatedly held that a regulatory body may require information from a regulated company with respect to all of its operations, even

though a portion of such operations may not be subject to regulation by the tribunal requiring the information. *Arkansas Louisiana Gas Company* v. *Department of Public Utilities*, 304 U.S. 61; *Natural Gas Pipeline Company of America* v. *Slattery*, 302 U.S. 300; *Interstate Commerce Commission* v. *Goodrich Transit Company*, 224 U.S. 194. In the last cited case, the court declared:

> "It is a mistake to suppose that the requiring of information concerning the business methods of such corporations, as shown in its accounts, is a regulation of business not within the jurisdiction of the Commission, as seems to be argued. The object of requiring such accounts to be kept in a uniform way, and to be open to the inspection of the Commission, is *not to enable it to regulate the affairs of the corporations not within its jurisdiction*, but to be informed concerning the business methods of the corporations subject to the act, that it may properly regulate such matters as are really within its jurisdiction."

In Section 11(a) of the Natural Gas Act it is provided that in case two or more states propose to the Congress compacts dealing with the "conservation, production, transportation, or distribution of natural gas," it shall be the duty of the Commission to assemble pertinent information relative thereto, to make public and to report to the Congress information so obtained, together with such recommendations for further legislation as may appear to be appropriate or necessary to carry out the purposes of such compact and to aid in the conservation of natural gas resources within the United States and in the orderly, equitable, and economic production, transportation, and distribution of natural gas.

It is obvious that Section 11(a) vests in the Commission no jurisdiction over the production of natural gas other than the power to investigate state compacts, to report them to Congress, and to make recommendations for further legislation. By no stretch of the imagination could this subsection

be construed as vesting in the Commission any power over production of natural gas such as was essayed to be exercised in the instant proceeding. This Court, in *Federal Power Commission* v. *Hope Natural Gas Company*, 320 U.S. 591, 613, commented that, by Section 11(a) of the Act, "Congress recognized the legitimate interests of the states in the conservation of natural gas," and added that "Congress was quite aware of the interests of the producing states in their natural gas supplies."

The only other provision of the Natural Gas Act which could in any manner be relied upon to support a contention that the Commission has any authority of any nature over production is Section 14(b), wherein it is provided that the Commission may, after hearing, "determine the adequacy or inadequacy of the gas reserves held or controlled by any natural-gas company, or by anyone on its behalf, including its owned or leased properties or royalty contracts" and that it may also, after hearing, "determine the propriety and reasonableness of the inclusion in operating expenses, capital, or surplus of all delay rentals or other forms of rental or compensation for unoperated lands and leases." The subsection further provides that the Commission, for the purpose of such determination, "may require any natural-gas company to file with the Commission true copies of all its lease and royalty agreements with respect to such gas reserves."

This provision appears in the section of the Act authorizing "investigations" by the Commission, and has no direct application to rate proceedings. Although the subjects covered in this subsection of the Act relate to certain of the field operations of natural-gas companies, it does not follow that Congress, by giving the Commission the power to "investigate" and "determine" such matters intended to expand the jurisdiction of the Commission to include regulation of production and gathering, in relation to rate fixation, and thereby repudiate and nullify the specific and un-

ambiguous exemption language contained in Section 1(b). It is entirely possible for the Commission, in its administration of the Act, to give full effect to the Congressional purpose, as expressed in Section 14(b), without regulating or attempting to regulate the production and gathering of natural gas as it has done in this proceeding. Concededly, the adequacy of the gas reserves available to a natural gas company may be an important factor to be considered in determining the general question of public convenience and necessity involved in the construction, extension or abadonment of facilities or service under Section 7 of the Act. *Re Kansas Pipeline and Gas Company*, 30 P.U.R. (N.S.) 321, 332; *Re Cabot Gas Corporation*, 43 P.U.R. (N.S.) 182, 47 P.U.R. (N.S.) 65, 51 P.U.R. (N.S.) 458. The amount of gas reserves available is also pertinent to the determination of amortization rates under Sec 9(a). Also, the question whether delay rentals should be properly chargeable to operating expense or capital is entirely relevant to a determination of correct accounting pursuant to the authority vested in the Commission in Section 8(a) of the Act to prescribe a system of accounts to be kept by natural-gas companies. The Commission prescribed such a system of accounts, effective January 1, 1940, and provided therein for a special treatment of exploration and development costs, including delay rentals, in the income accounts (Accounts 510-513).

It is apparent from the foregoing review, that neither the provisions of the Act which mention the word "production," nor the provision with respect to gas reserves and delay rentals, may properly be cited or used to sustain an assertion of jurisdiction by the Commission over production and gathering operations in a rate regulatory proceeding such as the instant case. It seems evident that Congress intended to exclude entirely from the Commission's rate jurisdiction "the production and gathering of natural gas," for it excluded such operations by language contained in the same subsection of the Act wherein it specifically defined the

Commission's jurisdiction as covering only the transportation and sale for resale of natural gas in interstate commerce. The language is clear and unequivocal. And the rate regulatory provisions of the Act followed the same pattern, namely, the Commission's jurisdiction was limited to the transportation and sale for resale of natural gas in interstate commerce.

The legislative history of the Natural Gas Act[1] also bears out and fully supports the position that Congress did not intend to vest in the Commission any authority over the production or gathering of natural gas, whether in rate proceedings or otherwise. In its report on the bill which became the Natural Gas Act, the House Committee on Interstate and Foreign Commerce (H. Rep. No. 709, 75th

[1] That the Congress intended to consider the problems peculiarly and particularly incident to regulation of the transportation and sale of natural gas, as a separate and distinct proposition, from regulation of the electric industry, is apparent from the legislative history of the Natural Gas Act. The Federal Trade Commission had made reports on its investigation of electric and gas utilities pursuant to Congressional authorization (Document 92, Parts 72-A and 73-A, 70th Cong., 1st Sess.). Federal regulation of the transportation and sale of natural gas was at first provided for in Title III of the bills (S. 1725 and H. R. 5423, 74th Cong., 1st Sess.) which eventually became the Public Utility Act of 1935 (49 Stat. 803). However, after hearings before the Congressional committees, the provisions relating to the regulation of natural gas were omitted from the bills reported by the Congressional committees (S. 2796, Senate Report No. 621 and H. R. 5423, House Report No. 1318, 74th Cong., 1st Sess.) and S. 2796, which became the Public Utility Act of 1935, did not contain provisions for the regulation of the transportation and sale of natural gas. The Federal Trade Commission submitted its final report on natural gas in December 1935 (Document 92, Part 84-A, 70th Cong., 1st Sess.). Various bills were thereafter introduced to regulate natural gas (S. 4180, H. R. 11662 and H. R. 12680, 74th Cong., 2nd Sess.; S. 1919, H. R. 4008, H. R. 5711 and H. R. 6586, 75th Cong., 1st Sess.). The only bills upon which Congressional hearings were held were H. R. 11662 (74th Cong., 2nd Sess.) and H. R. 4008 (75th Cong., 1st Sess.). H. R. 6586, 75th Cong., 1st Session, became the Natural Gas Act of 1938 (52 Stat. 821).

Cong., 1st Sess.) stated the general purpose of the legislation as follows:

"If enacted, the present bill would for the first time provide for the regulation of natural-gas companies transporting and selling natural gas in interstate commerce. It confers jurisdiction upon the Federal Power Commission over the transportation of natural gas in interstate commerce, and the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use. The States have, of course, for many years regulated sales of natural gas to consumers in intrastate transactions. The States have also been able to regulate sales to consumers even though such sales are in interstate commerce, such sales being considered local in character and in the absence of congressional prohibition subject to State regulation. (See *Pennsylvania Gas Co.* v. *Public Service Commission* (1920), 252 U. S. 23.) There is no intention in enacting the present legislation to disturb the States in their exercise of such jurisdiction. However, in the case of sales for resale, or so-called wholesale sales, in interstate commerce (for example, sales by producing companies to distributing companies) the legal situation is different. Such transactions have been considered to be not local in character and, even in the absence of Congressional action, not subject to State regulation. (See *Missouri* v. *Kansas Gas Company* (1924) 265 U. S. 298, and *Public Service Commission* v. *Attleboro Steam & Electric Co.* (1927) 273 U. S. 83.) The basic purpose of the present legislation is to occupy this field in which the Supreme Court has held that the States may not act.

"The bill takes no authority from State commissions, and is so drawn as to complement and in no manner usurp State regulatory authority, and contains provisions for cooperative action with State regulatory bodies.

"Your committee believes that this legislation is highly desirable to fill the gap in regulation that now exists by reason of the lack of authority of the State Commissions."

It will be noted that the House Committee specifically stated that the legislation was intended to be confined to the transportation and sale of natural gas in interstate commerce and to regulate sales for resale, or so-called wholesale sales, in interstate commerce, which were not subject to State regulation. The cases cited in the House Committee's report, namely, *Missouri v. Kansas Natural Gas Company*, 265 U. S. 298 and *Public Service Commission v. Attleboro Steam and Electric Company*, 273 U. S. 83, demonstrate the character of transaction which the legislation intended to regulate.

In the *Missouri case*, it appeared that the Kansas Natural Gas Company was transporting natural gas from points in the State of Oklahoma into the states of Kansas and Missouri and sold the gas at wholesale to independent distributing companies. The state commissions of Kansas and Missouri attempted to prescribe the rates to be charged by the Kansas Natural Gas Company to distributing companies in various cities and towns in the two states. The Court held the attempted regulation to be beyond the power of the state authorities, saying:

> "The business of supplying, on demand, local consumers is a local business, even though the gas be brought from another State and drawn for distribution directly from interstate mains; and this is so whether the local distribution be made by the transporting company or by independent distributing companies. In such case the local interest is paramount, and the interference with interstate commerce, if any, indirect and of minor importance. But here the sale of gas is in wholesale quantities, not to consumers, but to distributing companies for resale to consumers in numerous cities and communities in different States. The transportation, sale, and delivery constitute an unbroken chain, fundamentally interstate from beginning to end, and of such continuity as to amount to an established course of business. The paramount interest is not local but national; admitting of and requiring uniformity of regulation. Such uniformity, even though it be the

uniformity of governmental nonaction, may be highly necessary to preserve equality of opportunity and treatment among the various communities and States concerned."

In the *Attleboro case*, this Court dealt with an attempt on the part of the Rhode Island regulatory commission to fix the rate to be charged for electric energy generated in Rhode Island and transmitted and sold at the state line to a Massachusetts distributing company. This Court held the sale beyond the scope of state regulation.

The Commission, in its brief below in the instant cause, laid great stress upon the circumstance that the House Committee, in its report upon the proposed legislation, used as an example "sales by *producing* companies to distributing companies." We do not believe the use of this language is in any manner persuasive or controlling, especially in view of the fact that, if it is given the significance attached to it by the Commission, the specific exemption of "the production and gathering of natural gas" in Section 1 (b) of the Act would thereby be nullified. The all-embracing, unambiguous and unequivocal language of the statute should certainly be given greater weight than any such ambiguous phrase in the Committee report. Whereas the Committee, in this one reference, referred to sales by *producing* companies to distributing companies, the context of the preceding language in the report clearly demonstrates that only the transportation and sale for resale of natural gas were intended to be covered by the Act. It would be a most unusual (if not wholly unheard of) situation for a company only *producing* natural gas to make a sale in interstate commerce directly from its production property to a *distributing* company. Some *transportation* is obviously required from the field to the point of distribution to ultimate consumers.

Thus, it is obvious that the Natural Gas Act was intended by Congress to cover only the transportation and the sale of natural gas in interstate commerce for resale, or so-

called wholesale sales. It was specifically *not* intended to include the production, gathering, or local distribution of natural gas. The Congressional purpose was reiterated by Senator Wheeler, Chairman of the Senate Committee on Interstate Commerce, who sponsored the legislation in the Senate, when he engaged in the following colloquy with Senator Austin of Vermont during debate in the Senate (Cong. Rec., Vol. 81, Part 8, p. 9312):

> "Mr. Austin. Mr. President, may I ask the Senator from Montana a question concerning this bill? Does the bill undertake to regulate the production of natural gas, or does it undertake to regulate the producers of natural gas?
>
> "Mr. Wheeler. It does not attempt to regulate the production of natural gas or the distributors of natural gas; only those who sell it wholesale in interstate commerce."

It certainly was not the intention of the sponsors of the legislation to encompass production and gathering activities of natural gas companies within the scope of the Natural Gas Act. At a hearing on an earlier bill (Hearings on H. R. 11662, House Committee on Interstate and Foreign Commerce, 74th Cong., 2nd Sess., pages 17, 28) Mr. Dozier DeVane, then Solicitor of the Federal Power Commission, stated that:

> "Mr. DeVane. The bill makes no attempt to regulate the production or gathering facilities of a natural-gas company, this function being purely local in character. . . ."
>
> "Mr. DeVane. Now, section 1 (b) also provides that the Commission shall have no jurisdiction over the gathering or gathering rates for natural gas.
>
> "Mr. Cooper. What do you mean by gathering rates?
>
> "Mr. DeVane. The rates that are paid in the gathering field, Mr. Cooper.
>
> "Mr. Cooper. All right."

Chairman Lea of the House Committee on Interstate and Foreign Commerce, who sponsored the bill which became the Natural Gas Act, stated on the floor of the House, when he presented the legislation, that the "bill does not apply to the production and gathering of gas." (Cong. Rec., Vol. 81, Part 6, p. 6721).

It is thus apparent, from the legislative history of the Natural Gas Act, that Congress clearly intended to cover only the *transportation* and *sale* of natural gas in interstate commerce, and expressly excepted the *production*, *gathering* and *distribution* of natural gas. Congress was fully aware of the differences between the functional operations of natural gas companies, and with such full and complete knowledge, it expressly and in plain language excepted production and gathering.

II. The Commission Improperly Asserted Jurisdiction Over Production and Gathering in this Proceeding.

Notwithstanding the clear and unambiguous language of the statute and the legislative history thereof, the Commission has in this proceeding assumed jurisdiction over the production and gathering of natural gas by Canadian, and over its facilities used for such production and gathering. The purported justification for this assertion of jurisdiction is the statement in the Commission's opinion that Canadian's production and gathering operations are an integral part of its total operations, and that it is therefore "indispensable" for the Commission to investigate its production and gathering operations and property and to deal with the same in establishing the rate base, in order to regulate the Company's rates and charges for the sale of natural gas in interstate commerce for resale and for the transportation of natural gas in interstate commerce. The complete discussion of the Commission on this subject follows:

> "The particular contention of Canadian, that insofar as it is engaged in the production and gathering of natural gas it is not subject to the jurisdiction of the

Commission, is unsound. Canadian's production and gathering operations are an integral part of its total operations, including transportation in interstate commerce and the sale of natural gas for resale in interstate commerce. Furthermore, Canadian's operations are an integral part of Colorado's operations and the two comprise a single operating system. The investigation of Canadian's production and gathering property and operations is indispensable in regulating Canadian's rates and charges for the sale of natural gas in interstate commerce for resale and for the transportation of natural gas in interstate commerce."

The Commission made no reference whatever, in its discussion of this jurisdictional question, to the fact that, under Sec. 1 (b), the provisions of the Act are specifically made inapplicable to "the production or gathering of natural gas." In effect, the exemption of production and gathering from its jurisdiction was cast aside by the Commission on the premise that if the Commission should determine that it is necessary or "indispensable" to exercise such jurisdiction, then it may do so, irrespective of the clear and unequivocal language of the statute to the contrary.

The Circuit Court of Appeals recognized that, under the provisions of Sec. 1 (b) of the Act, Canadian River's production and gathering properties and facilities "lie beyond the range of the rate-regulatory jurisdiction of the Commission." However, the Circuit Court upheld the Commission's action on the ground that the Commission did not really exercise jurisdiction over production and gathering "as such," because the Commission did not separately prescribe rates or charges applicable to the company's production or gathering operations. The Court stated that the Commission's inquiry into production and gathering activities was "merely in their relation to the fixing of reasonable rates to be exacted and received for the natural gas moved in interstate commerce and sold for resale," and the Court stated that it failed "to find in the Act anything which expressly or by fair implication indicates a Congres-

sional purpose to restrict or withhold from the Commission jurisdiction in a case of this kind to take into consideration the production and gatherng properties only as they have bearing upon the question of the fixing of reasonable rates for gas moved interstate and sold for public consumption." The Court also stated that the Commission "did not attempt to affect in any manner the acquiring and maintaining of gas leaseholds, gas rights, or gas wells," nor "did it undertake to affect anywise the location, construction, extension or physical connections of pipelines, or the operation of pipelines or other facilities constituting the gathering properties." (142 F. (2d) 952-953.)

We submit that both the Commission and the Circuit Court wholly disregarded the unequivocal language of the statute, which excludes from the Commission's jurisdiction, without any exception whatsoever, "the production or gathering of natural gas." There is nothing in the language of the Act itself, nor in its legislative history, which either intimates or suggests that it was the intention of Congress to vest in the Commission the discretionary power to determine that it could exercise jurisdiction over production and gathering upon a finding that the assertion of such jurisdiction is in its opinion necessary or "indispensable" in order effectively to regulate the transportation and sale of natural gas in interstate commerce. If that had been the legislative purpose, Congress most assuredly would have made that intention known. Instead, Congress, without any qualification or exception, excluded from the provisions of the Act "the production or gathering of natural gas." We most earnestly suggest that Congress meant precisely what it said when it used that language, and we urge that it is no less than a plain distortion of the legislative intent to contend that Congress meant to vest the Commission with the power to determine when and whether it should exercise jurisdiction over production and gathering operations. Yet, it is clear from the language used by the Commission in its discussion of this issue in its opinion in this case that the Commission thus interprets the provisions of the Act.

If the Commission considers the provisions of the Act inadequate effectively to enable it to perform its function to regulate rates and charges for the transportation or sale for resale of natural gas in interstate commerce, then it would seem appropriate for the Commission to seek amendatory legislation from Congress, rather than thus to attempt to stretch the provisions of the Act to include jurisdiction over a subject so obviously not in contemplation by Congress when it enacted this statute. If there is believed to be any defect in the present statute in respect to the necessity for regulation of production and gathering operations, the responsibility therefor rests with Congress, the legislative body. It is not the responsibility of the Commission or of the Courts to attempt to cure any such alleged defect by interpreting the Act to give the Commission the character of jurisdiction which Congress plainly intended it should not possess.

It is not difficult to imagine instances in which it would seem wise or unwise, necessary or unnecessary, dispensable or indispensable for the Commission to exercise jurisdiction over production and gathering operations. For example, one company may operate only gas wells, selling its natural gas at the well-head; another company may operate its gas wells in conjunction with gathering facilities and make sales either at the well-head or from the gathering facilities, while another company may operate not only gas wells, but also gathering *and* transportation facilities and may make sales at the well-head, from the gathering facilities, from the transportation facilities, or any combination thereof. Companies producing or gathering gas may or may not be affiliated with other companies engaged either in the production, gathering or transportation of natural gas, and if affiliated, the extent of the affiliation may be minor or major.

Our contention is that Congress, by the exclusion language contained in Section 1(b), did not intend to leave with the Commission the discretionary authority to deter-

mine whether or not it could or should exercise rate regulatory jurisdiction over production and gathering of natural gas in any such particular instance. Congress unqualifiedly excepted production and gathering from the Commission's authority, and effect should be given to the plain language of the statute. Of course, questions may conceivably arise as to whether a particular line is a "gathering" or a "transportation" facility, and the Commission doubtless has the primary responsibility of determining that question of fact in order to reach a conclusion on the question of jurisdiction. However, when the Commission has determined, as it did in the proceeding under review, that a portion of a company's operations are production or gathering operations, it may not, without disregarding the plain language of the statute, exercise jurisdiction over such production or gathering operations merely on the ground that in its opinion it is "indispensable" to assert such jurisdiction in order effectively to regulate the transportation and sale for resale of natural gas in interstate commerce.

In this connection, it seems pertinent and important to note that regulation by the Commission of the production and gathering of natural gas has now progressed to the point where the exclusion language contained in Section 1(b) on that subject has practically been interpreted out of the Natural Gas Act. In the first major test case involving the Commission's authority over production and gathering, namely, *Re Columbian Fuel Corporation*, 35 P.U.R. (N.S.) 3, the Commission had instituted a proceeding, on its own motion, suspending the operation of certain increases in prices for natural gas sold by the Columbian Fuel Corporation to the Warfield Natural Gas Company. The Commission found that the Columbian Fuel Corporation produced and gathered natural gas in the State of Kentucky, which it sold to the Warfield Natural Gas Company, the point of delivery of the gas being at the termini of the Columbian Company's gathering lines or from a compressor station owned and operated by it. All of the facilities

of the Columbian Company were located in the State of Kentucky, and deliveries of the gas were made within that State. Warfield Natural Gas Company owned and operated a natural gas transmission system in the State of Kentucky which connected with transmission lines of the United Fuel Gas Company at the Kentucky-West Virginia state line and with the transmission lines of the Atlantic Seaboard Corporation in the State of Kentucky. In respect to the ultimate disposition of the natural gas sold by the Columbian Company to the Warfield Company, the Commission found as follows:

> "(6) A part of the natural gas sold by respondent is resold by the latter within the state of Kentucky. A large portion of the gas sold by respondent to Warfield is resold by the latter to United and is transmitted into the state of West Virginia. The gas is then resold by United for commercial and industrial uses without the state of Kentucky. From 40 to 50 per cent of the gas sold by respondent to Warfield is delivered by the latter to the Seaboard line from which the gas is sold and delivered in large quantities to local distributing companies in West Virginia and Maryland.
>
> "(7) There is a regular unbroken and uninterrupted transmission and a continuous flow of the natural gas sold by respondent to Warfield from the areas in Kentucky to destinations in other states and in the District of Columbia. Such transportation is intended to be and is being carried on as an established course of business." (35 P.U.R. (N.S.) 3, 5-6).

The Columbian Company contended, among other things, that even on the assumption that its sales of natural gas to the Warfield Company were "sales in interstate commerce," the provisions of the Act were not applicable to it, as its function was solely that of a producer and gatherer of natural gas. It also contended that the sales to the Warfield Company were not sales in interstate commerce and that it was therefore not a natural-gas company within the meaning of the provisions of the Act.

This proceeding provoked considerable interest, not only within the industry, but also on the part of state regulatory officials. *Amici curiae* included the Public Service Commission of West Virginia, the National Association of Railroad and Utilities Commissioners, the Mid-Continent Oil and Gas Association, and the Independent Petroleum Association of America. Briefs were filed on behalf of these organizations and their counsel participated in oral argument before the Commission. Uniformly, all of the *amici curiae* supported the Columbian Company's contention that the sales of natural gas involved were not subject to the Commission's jurisdiction under the provisions of the Natural Gas Act. The opposite contention was made by counsel for the Federal Power Commission, who filed a brief and participated in the oral argument before it, and who urged the Commission to assert jurisdiction.

The Commission (with one Commissioner alone dissenting) declined to assume jurisdiction over the sales involved in the *Columbian Fuel case*, vacated the order of suspension, and dismissed the proceeding. In reaching the conclusion that the Commission lacked jurisdiction in this particular case, the majority opinion of the Commission appears definitely to indicate that there was no question in the minds of the participating Commissioners but that the sales in question were *in interstate commerce*. The negative language in Section 1(b), excluding from the provisions of the Act "the production or gathering of natural gas," however, was held to be controlling and determinative of the jurisdictional issue. Accordingly, in that case, the Commission apparently determined that the Act does not vest it with jurisdiction over sales of natural gas in interstate commerce when such sales are merely incidental to the production and gathering of natural gas.

There is language in the opinion in the *Columbian Fuel case*, however, which might be interpreted as qualifying the general statement that the Commission held that it does not have jurisdiction over sales of natural gas in interstate

commerce which are thus merely incidental to production and gathering. The Commission concluded that "it was not the intention of Congress to subject to regulation under the Natural Gas Act *all* persons whose only sales of natural gas in interstate commerce, as in that case, are made as an incident to and immediately upon completion of such person's production and gathering of said natural gas and who are not otherwise subject to the jurisdiction of this Commission." The Commission then alluded to the circumstance that further experience with the administration of the Natural Gas Act "may reveal that the initial sales of large quantities of natural gas which eventually flows in interstate commerce are by producing or gathering companies which, *through affiliation, field agreement, or dominant position in a field*, are able to maintain an unreasonable price despite the appearance of competition." Under such circumstances, the Commission stated, it "will decide whether it can assume jurisdiction over arbitrary field prices under the present act or should report the facts to Congress with recommendations for such broadening of the act and provision of additional machinery as may appear necessary to close this gap in effective regulation of the natural gas industry." Apparently it did not occur to the Commission that it could deal effectively with such unusual cases, where unreasonable prices were being charged, through the exercise of its proper authority over the allowable operating expenses of the transportation entities, rather than by doing violence to the Act through disregard of the exemption of production and gathering activities from its jurisdiction. We shall discuss this phase of the problem briefly at a later point.

Apparently adhering to its ruling in the *Columbian Fuel case*, the Commission subsequently issued various orders exempting particular companies from the provisions of the Natural Gas Act. In these orders the Commission found that the companies involved were engaged only in the production and gathering of natural gas, that sales were made

either from the well mouth or at the end of the gathering facilities, that there was no affiliation between the selling and purchasing companies, and that the applicant companies did not occupy "dominant" positions in their respective fields which enabled them to control prices of production.[1]

However, since the decision of the United States Court of Appeals for the District of Columbia in *Peoples Natural Gas Company* v. *Federal Power Commission*, 127 F. (2d) 153 (cert. denied, 316 U. S. 700), the Commission has apparently adopted the position that it has all-inclusive jurisdiction over sales from production and gathering facilities, notwithstanding the language to the contrary in Section 1(b) of the Act. For example, in an opinion in a rate proceeding, *In the Matter of Interstate Natural Gas Company*, 48 P.U.R. (N.S.) 267, 273, the Commission, apparently disregarding the position which it had taken in the *Columbian Fuel case, supra*, commented as follows:

> "The negative language in Section 1(b) upon which the Interstate Company relies for its claimed exemption involving these sales provides that the Commission shall not have jurisdiction over 'the production or gathering of natural gas.' When the distinction between *production and gathering* of natural gas, and the *sale* of such gas in interstate commerce is kept in mind, effect is given to the Congressional objective. [Footnote: For the distinction between production of a commodity and sales of such commodity in interstate commerce, see *Carter* v. *Carter Coal Co.*, 298 U. S. 238, 302-4.] The Commission is bound to obey the command of Congress to regulate these sales in interstate commerce for resale to the three pipe line Companies. Such is clearly the implication of the decision of the

[1] See orders *In the Matter of Repollo Oil Company* (Docket No. G-195, July 1, 1941); *Sinclair Prairie Oil Company* (Docket No. G-197, July 8, 1941); *Kentucky Ohio Gas Company* (Docket No. G-198, July 8, 1941); *Magnolia Petroleum Company* (Docket No. G-189, July 8, 1941); *Sinclair Wyoming Oil Company* (Docket No. G-196, July 15, 1941); *The Chartiers Oil Company* (Docket No. G-191, September 9, 1941).

Circuit Court of Appeals in *Peoples Natural Gas Co.* v. *Federal Power Commission*, 127 F. (2d) 153; cert. den. 316 U. S. 700."

In their brief in the Circuit Court of Appeals for the Tenth Circuit in this proceeding, Counsel for the Commission relied strongly upon the decision of the Court of Appeals of the District of Columbia in the *Peoples case* there cited, to support their claim that the Commission had exercised proper authority over Canadian's production and gathering operations. We believe that a fair analysis of the decision in the *Peoples case* definitely discloses that it does not support the Commission's contention.

In the *People's case*, the Commission had instituted an investigation to determine whether the Company was a "natural-gas company," as defined in the Natural Gas Act, and also whether any of its rates, subject to the Commission's jurisdiction, were unjust or unreasonable. In connection with this investigation, the Commission sought access to certain of the Company's books and records, and upon failure of the Company to comply, the Commission brought an action in the District Court to compel compliance with its subpoenas requiring production of certain books and records. The District Court held with the Commission, and the case was appealed to the Court of Appeals for the District of Columbia. It is apparent that the decision of the Court of Appeals, which upheld the right of the Commission to subpoena the books and records, was predicated almost entirely upon a factual allegation by the Commission, which was not denied by the Peoples Company, that it made a sale of natural gas for resale in interstate commerce to an affiliated company. The Court said:

"The Commission's motion, apart from annexed exhibits, does not clearly allege any facts which show that the Commission had jurisdiction to demand these books and records. But in Paragraph IX the Commission annexed to and expressly made a part of its motion, as Exhibit F, a copy of an order by which it had di-

rected its counsel to bring the present proceedings. In Paragraph (d) of Exhibit F the Commission states: 'The testimony and evidence adduced (at a certain hearing) shows, among other things, that Peoples sells natural gas at its new compressor station in Clarion County, Pennsylvania, to New York State Natural Gas Corporation, an affiliated company, and that the latter immediately transports said natural gas into the State of New York where it sells the same to others for resale for ultimate public consumption * * *.'

"The sales thus described are sales in interstate commerce [citing *Public Utilities Commission of Rhode Island* v. *Attleboro Steam and Electric Company*, 273 U. S. 83; *Missouri* v. *Kansas Natural Gas Company*, 265 U. S. 298; *Illinois Natural Gas Company* v. *Central Illinois Public Service Company*, 314 U. S. 498; *United States* v. *Rock Royal Cooperative, Inc.*, 307 U. S. 533; *Currin* v. *Wallace*, 306 U. S. 1]. Appellants urge that the Natural Gas Act does not give the Commission jurisdiction over all sales of natural gas in interstate commerce. But the Natural Gas Act does apply, among other things, to 'the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use.' That language exactly covers the sales described in Exhibit F. We cannot disregard the plain language of the statute because the Commission at one time interpreted it narrowly [citing *In the Matter of Columbian Fuel Corporation*, Opinion No. 48, Docket No. G-143, 35 P.U.R. (N.S.) 3], or because the reports of Congressional committees show an intention not to 'disturb' state regulation, or because appellants fear duplicate regulation. The Act applies to 'natural-gas companies engaged in such * * * sale', and defines 'natural-gas company' as a company 'engaged in the transportation of natural gas in interstate commerce, or the sale in interstate commerce of such gas for resale.' * * *

"Appellants have nowhere denied the statements in Paragraph (d) of Exhibit F. Their answer to the Commission's motion denies that the Company is a natural-gas company within the meaning of the Natural Gas Act, and states that it 'does not transport natural

gas in interstate commerce or sell natural gas in interstate commerce for resale for ultimate public consumption for domestic, commercial, industrial, or any other use.' But these denials are in the nature of legal conclusions, since they turn, or may turn, on the meaning of the legal terms 'natural-gas company' and 'interstate commerce.' They cannot be deemed denials of the statements of fact in Exhibit F. * * * During oral argument in the District Court counsel conceded that the Company often sells gas to the New York Company, and impliedly conceded that this gas is sold for transportation to New York and resale. On this appeal counsel again concede that the Company sells to the New York Company gas which it transports to New York. Appellants nowhere suggest that these sales are not 'for resale for ultimate public consumption.' * * *"

After the Peoples Company had filed a petition for rehearing, the Court made this additional comment:

"Appellants urge that the Company's sales to the New York company, for transportation to New York and resale, are not 'sale(s) in interstate commerce' of natural gas for resale within the meaning of the Natural Gas Act. * * * Their position is not that Congress could not, but that it did not, authorize the Commission to regulate such sales. We think the position is untenable.

"The Supreme Court has lately held that sales to distributors of natural gas which has been brought from another state are within the jurisdiction of the Federal Power Commission [citing *Illinois Natural Gas Company v. Central Illinois Public Service Co.*, 314 U. S. 498].

"Sales of gas which has just moved interstate and sales of gas which is about to move interstate have like practical effects. Neither the Committee nor Congress nor the Court appears to have distinguished between them in regard to the application of the Act; in fact the contrary appears. To illustrate the sales which the Act was designed to reach, the Committee referred to two Supreme Court cases. One of these involved sale and delivery after the state line had been crossed; but

the other involved sale and delivery at the state line. [Citing *Public Utilities Commission* v. *Attleboro Steam & Electric Company*, 273 U. S. 83]. And in the recent Illinois Natural Gas case, quoted above, the Court said: '* * * the particular point at which the title and custody of the gas passed to the purchaser without arresting its movement to the intended destination does not affect the essential interstate nature of the business.' Still more recently, in another case upholding the Federal Power Commission's authority under the Act, the Court said: 'The sale of natural gas originating in one state and its transportation and delivery to distributors in any other state constitutes interstate commerce. * * *.' [Citing *Federal Power Commission* v. *Natural Gas Pipeline Company of America*, 315 U. S. 575]. Though that case involved sales in the state of destination, the quoted language governs sales in the state of origin. * * *

"Appellants urge that 'in interstate commerce' is a narrower term than 'in or affecting interstate commerce,' and that Congress did not delegate to the Commission its entire power over natural gas. This is true. Sales which merely 'affect' interstate commerce are outside the Act. But this throws no light on the question whether the Company's sales to the New York Company are 'in' interstate commerce."

The Court of Appeals of the District of Columbia, in its decision in the *Peoples case*, made no reference whatever to the language in Section 1(b) of the Act exempting "the production and gathering of natural gas" from the jurisdiction of the Commission. There was no need for the Court to discuss that question, inasmuch as the Company had in effect admitted that it made a sale for resale of natural gas in interstate commerce[1] and therefore, in the

[1]The sale by the Peoples Company was described by the Company itself as follows: "Gas so sold to New York State Natural Gas Corporation is delivered to that Company at the outlet of the Respondent's Pew Compression Station located in Limestone Township, Clarion County, Pennsylvania, from which point the gas is transported in a northeasterly direction

absence of any detailed explanatory facts of record, there was a sufficient predicate for the Court to hold that the Commission had authority to examine the books and records of the Peoples Company.

It will be noted that the Court of Appeals for the District of Columbia, in the *Peoples case*, cited and relied upon decisions of this Court in gas and electric cases involving the question of what constitute sales in interstate commerce. The *Attleboro* and *Kansas Natural Gas Company cases* have been heretofore discussed in this brief. They were cited in the Congressional committee reports on the Natural Gas Act to illustrate the character of transaction intended to be covered by the Act, namely, the transportation and sale for resale of natural gas in interstate commerce, or so-called wholesale sales. The other cases cited by the Court in the *Peoples case* show clearly that the Court was passing only on the question whether a sale of gas *within* a state, when such gas moves in a continuous stream in interstate commerce, is subject to regulation by the Commission.

In the *Illinois Natural Gas Company case* (314 U.S. 498), this Court had before it the question whether the Illinois Commerce Commission or the Federal Power Commission had jurisdiction to require an extension of facilities by the Illinois Natural Gas Company, whose properties were located wholly within the State of Illinois. The Court held

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a distance of approximately 90 miles to a point in Hebron Township, Potter County, Pennsylvania, through a 12" pipe line owned by the Respondent but leased to and operated by the New York State Natural Gas Corporation under an agreement of lease dated January 2, 1940, at which point said 12" pipe line connects with the pipe lines owned by New York State Natural Gas Corporation. * * * Upon the delivery of the gas by Respondent to New York State Natural Gas Corporation at Respondent's Pew Compressing Station as aforesaid, the gas passes out of the possession of the respondent and thereafter Respondent has no control over the transportation, sale or disposition of said gas." (Answer to Order to Show Cause, Appendix to Appellant's Brief in Court of Appeals for the District of Columbia, p. 36).

that the natural gas purchased by Illinois Natural from its affiliate, Panhandle Eastern Pipeline Company, moved in a continuous stream in interstate commerce, and that therefore the Power Commission had jurisdiction over the extension of facilities involved, under the provisions of the Natural Gas Act. It is clear from this Court's opinion that Illinois Natural owned "transmission" lines, and there was no question involved or discussed in respect to the Federal Power Commission's jurisdiction over production and gathering facilities. As a matter of fact, the discussion of this Court in the *Illinois Natural case* fully corroborates our position that the provisions of the Natural Gas Act were *restricted* to the transportation and sale of natural gas in interstate commerce for resale. This Court said:

> "An avowed purpose of the Natural Gas Act of June 21, 1938, was to afford, through the exercise of the national power over interstate commerce, an agency for regulating the wholesale distribution to public service companies of natural gas moving interstate, which this Court had declared to be interstate commerce not subject to certain types of state regulation. H.R. No. 709, Committee on Interstate and Foreign Commerce, 75th Cong., 1st Sess., April 28, 1937. By its enactment Congress undertook to regulate a defined class of natural gas distribution without the necessity, where Congress has not acted, of drawing the precise line between state and federal power by the litigation of particular cases. *By Section 1(b), 15 U.S.C. Section 717 (b), the Act is restricted* in its *application* to 'the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale. . . .' And by Section 2(6), 15 U.S.C. Section 717a(6) 'natural-gas company' means a person [including a corporation] engaged in the transportation of natural gas in interstate commerce or the sale in interstate commerce of such gas for resale. Sections 4, 5, 6, 15 U.S.C. Section 717, c, d, e, give the Federal Power Commission extensive con-

trol over the rates at which the gas is sold for resale. Under Section 7(a), 15 U.S.C. Section 717f(a) the Commission has authority to order natural-gas companies to extend their systems to establish physical connections of their transportation facilities with those of distributors and to sell gas to them. Section 7(b) prohibits the abandonment of the facilities of natural-gas companies without approval of the Commission. Section 7(c), here involved, provides that 'No natural-gas company shall undertake the construction or extension of any facilities for the tansportation of natural gas to a market in which natural gas is already being served by another natural-gas company, or acquire or operate any such facilities or extensions thereof, or engage in any transportation by means of any new or additional facilities, or sell natural gas in any such market,' without the Federal Commission's certificate of public convenience and necessity.

"We think it plain that these provisions, read in the light of the legislative history, *were intended to bring under federal regulation wholesale distribution, like that of appellant, of gas moving interstate*. Appellant engages in interstate commerce in gas and in its interstate transportation as those terms had been defined by this Court, before the adoption of the Act. After the gas is brought into the state appellant makes the first sale to distributors for resale, to which the Act in terms applies, and which the cases last mentioned defined as a part of the commerce subject in some respects to the exclusive regulation of Congress. *Cf. Parker* v. *Motor Boat Sales, Inc.*, No. 46, decided this term. Section 7 of the Act commits to the Federal Commission the control of extensions and abandonment of the transportation facilities of natural gas companies, their physical connection with those of distributors and sales to distributors, and prohibits extensions, such as the state commission has now ordered, into an area already served by another natural gas company, unless the Commission has first granted a certificate of public convenience and necessity. Since the communities here are supplied by the Universal and Central companies, which transport the gas interstate, they constitute a

market already served by a natural gas company within Section 7(c) and Section 2(6) of the Act.

"The Federal Commission has ruled that it has jurisdiction under the Act over companies which, like appellant, sell at wholesale to local distributors gas moving interstate. *Re Billings Gas Company*, 35 P.U.R. (N.S.) 321; *Re East Ohio Gas Company*, 28 P.U.R. (N.S.) 129. The proceedings of the Commission under Section 7 (c) indicate the many important matters which it takes into consideration in determining whether an extension of facilities in a case such as this should be permitted."

In *Public Utilities Commission of Ohio* v. *United Fuel Gas Company*, 317 U.S. 456, this Court stated that:

"It is clear, as the legislative history of the [Natural Gas] Act amply demonstrates, that Congress meant to create a comprehensive scheme of regulation which would be complementary in its operation to that of the states, without any confusion of functions. The Federal Power Commission would exercise jurisdiction over matters in interstate and foreign commerce, *to the extent defined in the Act*, and local matters would be left to the state regulatory bodies."

The question of the jurisdiction of the Commission over "the production and gathering of natural gas" was not specifically involved in *Federal Power Commission et al.*, v. *Natural Gas Pipeline Company of America et al.*, 315 U.S. 575. In that case, for the purpose of entering an interim order reducing rates, the Commission accepted the companies' evidence in respect to reproduction cost new, the *value* of gas reserves, capital additions and working capital, when it determined a rate base. It also accepted substantially the companies' showing in respect to operating revenues and expenses (except as to the manner of determining annual amortization expense). Accordingly, in that case, there was no occasion for anyone to contest the authority of the Commission over production and gathering

facilities, and the question was not discussed in this Court's opinion. The issue simply was not presented. In connection with its discussion of the constitutionality of the Natural Gas Act, this Court did observe, however, that:

> "The sale of natural gas originating in one state and its *transportation* and *delivery* to distributors in any other state constitutes interstate commerce, which is subject to regulation by Congress."

In *Federal Power Commission et al.* v. *Hope Natural Gas Company*, 320 U.S. 591, the Hope Company raised no question concerning the jurisdiction of the Commission over its production and gathering operations. In respect to leaseholds, the company made its showing on a *cost* rather than a *value* basis and apparently did not desire to press any question concerning the Commission's authority over production and gathering operations. In connection with its discussion of the position of the State of West Virginia, the Court observed (320 U.S. at p. 609: 612):

> "We pointed out in *Illinois Natural Gas Co.* v. *Public Service Co.*, 314 U. S. 498, 506, that the purpose of the Natural Gas Act was to provide, 'through the exercise of the national power over interstate commerce, an agency for regulating the wholesale distribution to public service companies of natural gas moving interstate, which this Court had declared to be interstate commerce not subject to certain types of state regulation.' As stated in the House Report the 'basic purpose' of this legislation was 'to occupy' the field in which such cases as *Missouri* v. *Kansas Gas Co.*, 265 U. S. 298, and *Public Utilities Commission* v. *Attleboro Steam & Electric Co.*, 273 U. S. 83, had held the States might not act. H. Rep. No. 709, 75th Cong., 1st Sess., p. 2. In accomplishing that purpose the bill was designed to take 'no authority from State commissions' and was 'so drawn as to complement and in no manner usurp State regulatory authority.' *Id.*, p. 2. And the Federal Power Commission was given no authority over the 'production or gathering of natural gas.'
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> * * * * *

"We do not mean to suggest that Congress was unmindful of the interests of the producing states in their natural gas supplies when it drafted the Natural Gas Act. As we have said, the Act does not intrude on the domain traditionally reserved for control by state commissions; and the Federal Power Commission was given no authority over 'the production or gathering of natural gas.' Sec. 1(b). In addition, Congress recognized the legitimate interests of the States in the conservation of natural gas. By Sec. 11 Congress instructed the Commission to make reports on compacts between two or more States dealing with the conservation, production and transportation of natural gas."

It is true that the majority opinion of the Court in the *Hope case*, in a footnote (320 U. S. at p. 614), negatived a suggestion (apparently made by the State of West Virginia) that the exemption language in Section 1(b) precluded the Commission from even ascertaining the cost of the production plant, and referred to Section 14(b) of the Act giving the Commission the power to "determine the propriety and reasonableness of the inclusion in operating expenses, capital, or surplus of all delay rentals or other forms of rental or compensation for unoperated lands and leases." However, as pointed out above, the Hope Company had raised no question concerning the Commission's authority over production. In the instant cause, Canadian has from the very outset of the proceeding contested, and still does vigorously contest, the Commission's authority over its production and gathering operations. If the Court's observations in its note to the *Hope case* decision appear to be in conflict with its prior statements, heretofore quoted, definitely stating that the Commission lacks authority over "the production or gathering of natural gas," it seems evident that no such mere dictum in a note should be deemed controlling over specific rulings of the character indicated.

In the instant cause the Commission relies upon certain decisions interpreting its jurisdiction under the Federal

Power Act to support its claim that it rightfully exercised jurisdiction over Canadian's production and gathering operations. We have heretofore pointed out in this brief (footnote on p. 13) that Congress treated the Federal regulation of electric and gas companies as separate and distinct propositions, and legislated separately with respect to the peculiarities of each business. This is apparent, not only from the legislative history of the two Acts, but also from the provisions of the Acts themselves. To illustrate the difference in legislative treatment accorded by Congress to electric and gas operations, we set forth below, in parallel columns, the provisions of Sections 201(a) and (b) of the Federal Power Act (which were involved in the electric cases relied upon by the Commission) and Sections 1(a) and (b) of the Natural Gas Act, which are involved in this proceeding:

Federal Power Act	*Natural Gas Act*
"Section 201. (a) It is hereby declared that the business of transmitting and selling electric energy for ultimate distribution to the public is affected with a public interest, *and the Federal regulation of matters relating to generation to the extent provided in this Part* and the Part next following and of that part of such business which consists of the transmission of electric energy in interstate commerce and the sale of such energy at wholesale in interstate commerce is necessary in the public interest, such Federal regulation, however, to extend only to those matters which are not	"Section 1. (a) As disclosed in reports of the Federal Trade Commission made pursuant to Senate Resolution 83 (Seventieth Congress, first session) and other reports made pursuant to the authority of Congress, it is hereby declared that the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest, and that Federal regulation in matters relating to the transportation of natural gas and the sale thereof in interstate and foreign commerce is necessary in the public interest. "(b) The provisions of this act shall apply to the trans-

subject to regulation by the States.

"(b) The provisions of this Part shall apply to the transmission of electric energy in interstate commerce and to the sale of electric energy at wholesale in interstate commerce, but shall not apply to any other sale of electric energy or deprive a State or State commission of its lawful authority now exercised over the exportation of hydroelectric energy which is transmitted across a State line. The Commission shall have jurisdiction over all facilities for such transmission or sale of electric energy, but shall not have jurisdiction, *except as specifically provided in this Part and the Part next following, over facilities used for the generation of electric energy* or over facilities used in local distribution or only for the transmission of electric energy in intrastate commerce, or over facilities for the transmission of electric energy consumed wholly by the transmitter."

portation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas."

It will be readily observed, from the italicized portion of Sections 201(a) and (b) of the Federal Power Act, that Congress apparently *did not* entirely exclude generation of electric energy from the Commission's jurisdiction under the Federal Power Act. On the contrary, Congress *did* entirely exclude the production and gathering of natural gas from the jurisdiction of the Commission under the

Natural Gas Act, and the Act contains no language whatever even hinting that it was intended to be applicable in any manner to production and gathering operations. This difference in the language of the statutes should be kept definitely in mind in considering the possibility that the electric cases may constitute precedents supporting the Commission's contentions.

Jersey Central Power & Light Company v. *Federal Power Commission*, 319 U.S. 61 involved the question whether the Jersey Central Company was a "public utility" subject to the Commission's jurisdiction under the Federal Power Act. This Court held that the company owned and operated "transmission" facilities which subjected it to the jurisdiction of the Commission, even though the transmission took place wholly within one state, citing and relying upon the decisions of this Court in the *Attleboro* and *Illinois Natural cases, supra*. That acts of "transmission" were involved in the *Jersey Central case* appears beyond question from the language used by this Court, for it said:

> "Further, we think the definition in subsection (e) of 'public utility' covers Jersey Central, since that company owns and operates the *transmission* line to the Raritan and that line, as a result of the interpretation of interstate commerce in the preceding paragraph, is a facility under Commission jurisdiction by the terms of subsection (b)."

Hartford Electric Light Company v. *Federal Power Commission*, 131 F. (2d) 953 (cert. den., 319 U.S. 741) upon which great reliance is placed by the Commission in defending its position in this case, may readily be distinguished from the instant proceeding. The *Hartford case* involved the question whether the company was a "public utility" as defined in the Federal Power Act and as such required to comply with an order of the Commission prescribing a system of accounts. The opinion of the Circuit Court in the *Hartford case*, which held that the company's sales from

generating facilities subjected it to the jurisdiction of the Commission, was predicated in large measure upon the language in Sections 201(a) and (b) of the Federal Power Act vesting the Commission with authority over generation of electric energy and facilities used for such generation, when provided for in the Act. As pointed out, no similar language is contained in the Natural Gas Act, for "the production and gathering of natural gas" was excluded without any qualification whatever. It is true that the Court, in the *Hartford case*, cited and relied upon the decision of the Court of Appeals for the District of Columbia in the *Peoples case*, *supra*, but we believe a proper interpretation of that decision will demonstrate that it did not involve the issue of jurisdiction of the Commission over production and gathering of natural gas under Section 1(b) of the Natural Gas Act.

Since these electric cases did not involve the question of the exercise of rate jurisdiction by the Commission in a field not contemplated by Congress, they can hardly be relied upon to support the contention here made by the Commission.

In the instant proceeding, Canadian does not contest the fact that it is a "natural-gas company," as defined in the Natural Gas Act, for concededly it operates facilities for the transportation and sale of natural gas in interstate commerce. However, even though Canadian is a natural-gas company and, therefore, subject to the Commission's jurisdiction in certain respects, its production and gathering operations have been specifically excluded from the Commission's jurisdiction. This is the gist of its position.

The Circuit Court, in the instant proceeding, in one breath stated that, under Section 1(b) of the Act, the Commission "does not have *express or implied* rate-regulatory jurisdiction of the production and gathering of natural gas," and also that under Section 1(b) Canadian's production and gathering properties and facilities "lie beyond the range of the rate-regulatory jurisdiction of the Commission."

However, in the next breath, the Court concluded that the Commission did not exercise a prohibited jurisdiction over Canadian's production and gathering operations because it did not perform the formal function of prescribing rates and charges covering separately the production and gathering of natural gas. We respectfully submit that this conclusion of the Circuit Court is merely a play upon words, for the Commission could not possibly have exercised a more complete jurisdiction over production and gathering operations than it did in this proceeding. It treated the production and gathering properties of this company in the identical manner in which it treated the company's transportation properties, in respect to rate base, revenues, expenses, return, and all other elements considered—and it frankly said so in its opinion. The Circuit Court, in effect, states that the Commission may lawfully do *indirectly* what it may not do *directly*, without violating the language of the Act. We firmly believe that Congress obviously never intended to erect by such indirect method of avoiding the precise and unequivocal exemption language which it carefully inserted in Section 1(b) of the Act.

The Circuit Court commented further that the "Commission did not attempt to affect in any manner the acquiring and maintaining of gas leaseholds, gas rights, or gas wells." We are convinced that, in making this observation, the Circuit Court confused the meaning of the terms "conservation" and "production" of natural gas. The Commission did not, it is true, attempt to tell Canadian whether it could or should obtain permits from State authorities to drill wells, where or when the wells could be drilled, their spacing in the field, the permissible volume of gas to be taken from the wells, or matters of that nature, which are recognized to be "conservation" measures subject to control by State authorities and definitely affecting the "acquiring and maintaining of gas leaseholds, gas rights, or gas wells." Congress recognized the distinction between "conservation" and "production" of natural gas in the Natural Gas

Act, and excluded *both* from the jurisdiction of the Commission, as was clearly recognized and stated in the majority opinion of this Court in the *Hope case*, *supra* (320 U. S., at p. 613).

The observation of the Circuit Court that the Commission did not "undertake to affect anywise the location, construction and extension, or physical connections of pipelines, or the operation of pipe lines or other facilities constituting the gathering properties" was obviously *obiter dicta*, and must be deemed of no consequence here because there was no such issue involved in this rate-making proceeding. In any event, it is what the Commission did, rather than what it may have refrained from doing, which is at issue in this review.

Although the Circuit Court used language differing from that used by the Commission, it in effect upheld the contention of the Commission—stated with the utmost frankness in its brief before the Circuit Court (page 25)—to the effect that the exception language in Section 1(b) of the Act should be interpreted as follows:

> "The exception, therefore, amounts to saying that whenever necessaty for the purposes specifically provided in subsequent sections of the Act, the Commission shall have jurisdiction over production and gathering, etc.
>
> "Under this construction, the Commission has jurisdiction of production and gathering so far as production and gathering is in aid of sales of natural gas in interstate commerce for resale subject to the rate jurisdiction of the Commission."

At least the position of the Commission is stated with startling candor. In effect, it contends that the exemption language contained in Section 1(b) is *not* an exemption of production and gathering at all. Instead, it would have it that this language means just the opposite, namely, that the Commission *does* have jurisdiction over production and gathering whenever the Commission may be of the opinion

that it should exercise such jurisdiction as an aid to its regulation of sales for resale. Under this interpretation of the Act, the exemption of production and gathering from the Commission's authority becomes meaningless and of no consequence whatever, for all the Commission has to do is to determine that it is "necessary" to assume jurisdiction over production and gathering, and that is all there is to it. A more drastic departure from the express language of the Act, specifically exempting production and gathering from jurisdiction, could not possibly be imagined. Such an interpretation places Congress in the untenable position of saying one thing and really meaning just the opposite.

If the interpretation so urged by the Commission should finally be upheld, what is to prevent this body from regulating also the local distribution of natural gas? The language excluding the production and gathering of natural gas from the Commission's jurisdiction is as broad as is the language in the same subsection (Section 1(b)) excluding the distribution of natural gas from the Commission's authority. Yet the Commission, under the theory so advanced, might conclude it is "necessary" to control local distribution in order to make effective its regulation of sales for resale of natural gas. Following the logic of its contention in this proceeding, the Commission could also exercise jurisdiction over local distribution, and thereby further frustrate the clear legislative intent to the contrary.

Frankly, it is this tendency on the part of this regulatory body to attempt to extend its jurisdiction beyond the scope contemplated by Congress, whenever its philosophy renders it apparently "necessary" so to do, that gives us pause. The Independent Natural Gas Association of America is composed not alone of "natural-gas companies," subject to the Natural Gas Act because of their interstate gas transportation activities, but it has among its members many producers of natural gas who sell such gas at the well-head or at the end of their gathering operations. If jurisdiction over production and gathering—whether it be of a rate-

making character or otherwise—is to be read into this statute, it is our conviction that this should be done by the legislature, rather than by action on the part of the administrators in apparent defiance of the plain language used by Congress in enacting this statute.

This is far from an abstruse issue of mere philosophical import. It reaches into every phase of the business of these gas producers, and would place under federal control each function of that business. If it should be contended that in the instant cause the Commission was entitled to overlook the plain language of Congress because it found it convenient to consider this company's operations overall, in fixing its rates, and if as a result this particular exception should be judicially confirmed, what is to prevent the Commission from taking the next step of holding that a purely production company is a "natural-gas company" under the Act—and fully subject to its jurisdiction—because, forsooth, its gas (sold at the well-head) finds its way eventually into the stream of interstate commerce? Once the first step is taken there will be no end, and "white" will indeed become "black," regardless of the will or intent of Congress. And if this be done (as the Commission's brief hints should be done) discrimination will at once arise as between those producers who sell gas to interstate pipelines and those who do not. This unfortunate result would do great harm to this industry, for he who would preserve the value of his production properties must refrain from making any sales to interstate pipelines. Let us not blind ourselves to these implications of the Federal Power Commission's acts and arguments.

Happily, there is an easy way out of the Commission's apparent difficulty. This is by the adoption in its rate-making proceedings of the allowance in the operating expenses of the natural-gas companies that are unquestionably under its jurisdiction of the "fair field price" or fair market value, as a commodity, of the gas which finds its way into their transmission lines for interstate transportation and

subsequent sale. If the producer and the final transporter are separate companies and act wholly at arm's length, this is precisely what would happen were this Commission to operate as do other rate regulatory bodies. It is as if the gas were coal purchased by an electric generating company, or pencils bought for its office, or—indeed—labor which it employs in its operations.

So long as the transaction is fair, and the price paid for the gas, or coal, or pencils, or labor is a fair price, every aim of proper rate-making is appropriately fulfilled by such action. And the allowance of a fair amount for such gas, as a commodity, offers the simple, and, we believe, the sound solution of its problem to this agency.

In the ordinary case of a sale at arm's length by separate entities, the price fixed for the gas in question may reasonably be presumed to be its fair market value, as a commodity, in the field. Should there be any doubt or suspicion on this point, the Commission is clearly not left helpless, for it may of course examine into the situation, and if the price be found to be exorbitant, under all the circumstances, it may provide for the allowance, *in the transportation company's operating expense*, of only that sum which would be the fair market price. This is as true of gas so purchased as it is of coal or any other commodity used in the regulated business.

And where "affiliation" is involved, the sole difference is that the burden might be shifted to the contracting parties to prove that the price in question is a fair price for the gas, as a commodity, in the gas field under consideration and at the time the sale in question is being made. Here again, recognized principles of administrative operation apply, and the rights and interests of the Commission as well as of the public and of the regulated company and its vendor are fully preserved by the power to fix the reasonable operating expense to be allowed for such purchases of gas in fixing the rates of the vendee, the interstate transporter.

The instant cause is but one step removed from such a situation. Here both the producing and the transporting

facilities are owned by the same entity. Yet here, also, the reasonable price of gas, as a commodity, in the field in question, and at the time the gas is put into the transmission lines, represents the fair allowance of operating expense for this commodity. We shall discuss this subject more fully in the next subdivision of this brief, but at this point we believe the above series of illustrations is of import, since it discloses how readily the Commission's apparent difficulty can be solved without in anywise doing violence to the statute, or to the will of Congress as expressed in the exemption of production and gathering from Federal Power Commission jurisdiction.

Were any other principle to be adopted, we would inevitably witness the fixing and allowance of a multiplicity of different prices for the gas of different companies (some only producers, some "affiliated" with transporters, and some both producers and transporters), though the gas be produced in the same field and at the same time. Any course which involves a procedure other than the allowance of the "fair field price," as an operating expense of the transporter, will inevitably serve only to penalize the more efficient or those who, by early entrance into the field or otherwise, have been able to obtain leases on a less costly basis than the later comers. The considerations outlined in the next subdivision of this brief, will—we believe—disclose that such a course in respect to this particular business, is emphatically not in the public interest.

III. Assumption of Jurisdiction by the Commission over Production and Gathering Has a Direct Effect Upon the Value of Natural Gas in the Field.

The Commission seems firmly and apparently irrevocably committed to a practice and policy, in rate cases arising under the Natural Gas Act, of a determination of "cost" rather than "value," even in respect to production property such as gas leaseholds. In the case under review, the

Commission gave no consideration whatever to Canadian's uncontradicted evidence that the market value of its leaseholds (excluding wells) amounted to over $15,000,000 (Ex. 181; R., V. 6, 3181-3254). Instead, the Commission found the depreciated cost of the leaseholds to be a sum less than $1,000,000, based upon the testimony of its own staff witness (Ex. 146, p. 62-64; R. V. 5, 2717-2721; R., V. 1, 186). This was the only amount included in Canadian's rate base for gas leaseholds.

The Commission also failed to give any weight whatever to testimony concerning the fair market value of gas, as a commodity, at the well-head in the Panhandle (Texas) Gas Field, although the record contains ample evidence to the effect that such market value ranges from 3.6 cents to 4 cents per thousand cubic feet. There is also evidence in the record to the effect that the market value of Canadian's gas at the end of its gathering line is approximately 7 cents per thousand cubic feet (R., V. 6, 3255-3281).

The inevitable consequence of following the Commission's cost theory in respect to production property is to lower the field prices of natural gas to an extent which may prevent or greatly curtail exploratory operations for the discovery of new sources of gas supply.[1] As was so forcefully

[1] In the 1943 Report of the Committee on Natural Gas, Section of Mineral Law, American Bar Association, it was stated that: "The Mineral Law Section is interested primarily in problems of production. Regulation of a public utility character concerns the Public Utility Section. However, the effect on production of the Natural Gas Act deserves study. Especially worthy of attention is the attitude of the Commission toward its jurisdiction over production and gathering. The mere contemplation of Federal Power Commission regulation of the well-mouth price of gas which finds its way into interstate commerce makes thousands of individual producers shudder. The principles of cost, adopted by the Commission in its rate-fixing activities would eliminate forever discovery value, would limit the financial recovery to cost plus 6½ per cent and take away all incentives to wildcat operations. Losses incurred in unsuccessful projects could not be balanced out against the cost of other and different successful projects.

and cogently pointed out by Mr. Justice Jackson in his separate opinion (concurred in by Mr. Justice Frankfurter) in the *Hope case, supra,* the natural gas business is wholly unlike ordinary public utility services such as are involved in railroad, bus, steamship, communication, electric or manufactured gas operations. Natural gas is an exhaustible resource, the supply of which can only be replenished by a continuous process of new discoveries, and Mr. Justice Jackson aptly observed in the *Hope case* "the wealth of Midas and the wit of man cannot produce or reproduce a natural gas field" (320 U.S., at p. 629). In that case, the Company did not make any claim for the "value" of its leaseholds, but relied instead only upon their cost (320 U.S., at p. 645), and did not dispute the action of the Commission in including its production and gathering operations within the scope of the rate proceeding. On the other hand, in the instant case, Canadian has throughout the proceedings, before the Commission and the Circuit Court, earnestly contended that the Commission erred when it considered Canadian's production and gathering operations and dealt with them as it did. In addition, Canadian offered uncontradicted evidence in respect to the value of its leaseholds and the fair market value of the gas in the field. Mr. Justice Jackson's comments in the *Hope case* in respect to a correct approach to the determination of field prices for natural gas, appear particularly pertinent to the instant case, and we deem it fitting to quote from them at some length. Among other things, he said (320 U.S., at p. 647 et seq.):

> "Hope's business has two components of quite divergent character. One, while not a conventional common-carrier undertaking, is essentially a transportation enterprise consisting of conveying gas from where it is

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Two wells each costing the same but one producing twice as much as the other would result in the price of gas from one well being twice that of the other. It is not too much to say that the economic incentive for the small producer engaged in widely separated projects would be gone."

produced to a point of delivery to the buyer. This is a relatively routine operation not differing substantially from many other utility operations. The service is produced by an investment in compression and transmission facilities. Its risks are those of investing in a tested means of conveying a discovered supply of gas to a known market. A rate base calculated on the prudent investment formula would seem a reasonably satisfactory measure for fixing a return from that branch of the business whose service is roughly proportionate to the capital invested. But it has other consequences which must not be overlooked. It gives marketability and hence 'value' to gas owned by the company and gives the pipeline company a large power over the marketability and hence 'value' of the production of others.

"The other part of the business—to reduce to possession an adequate supply of natural gas—is of opposite character, being more erratic and irregular and unpredictable in relation to investment than any phase of any other utility business. A thousand feet of gas captured and severed from real estate for delivery to consumers is recognized under our law as property of much the same nature as a ton of coal, a barrel of oil, or a yard of sand. The value to be allowed for it is the real battleground between the investor and consumer. It is from this part of the business that the chief difference between the parties as to a proper rate base arises.

"Is it necessary to a 'reasonable' price for gas that it be anchored to a rate base of any kind? Why did courts in the first place begin valuing 'rate bases' in order to 'value' something else? The method came into vogue in fixing rates for transportation service which the public obtained from common carriers. The public received none of the carriers' physical property but did make some use of it. The carriage was often a monopoly so there were no open market criteria as to reasonableness. The 'value' or 'cost' of what was put to use in the service by the carrier was not a remote or irrelevant consideration in making such rates. Moreover the difficulty of appraising an intangible service was thought to be simplified if it could be related to physical property which was visible and measurable

and the items of which might have market value. The court hoped to reason from the known to the unknown. But gas fields turn this method topsy turvy. Gas itself is tangible, possessible, and does have a market and a price in the field. The value of the rate base is more elusive than that of gas. It consists of intangibles—leaseholds and freeholds—operated and unoperated—of little use in themselves except as rights to reach and capture gas. Their value lies almost wholly in predictions of discovery, and of price of gas when captured, and bears little relation to cost of tools and supplies and labor to develop it. Gas is what Hope sells and it can be directly priced more reasonably and easily and accurately than the components of a rate base can be valued. Hence the reason for resort to a roundabout way of rate base price fixing does not exist in the case of gas in the field.

"But if found, and by whatever method found, a rate base is little help in determining reasonableness of the price of gas. Appraisal of present value of these intangible rights to pursue fugitive gas depends on the value assigned to the gas when captured. The 'present fair value' rate base, generally in ill repute, is not even urged by the gas company for valuing its fields.

"The prudent investment theory has relative merits in fixing rates for a utility which creates its service merely by its investment. The amount and quality of service rendered by the usual utility will, at least roughly, be measured by the amount of capital it puts into the enterprise. But it has no rational application where there is no such relationship between investment and capacity to serve. There is no such relationship between investment and amount of gas produced. Let us assume that Doe and Roe each produces in West Virginia for delivery to Cleveland the same quantity of natural gas per day. Doe, however, through luck or foresight or whatever it takes, gets his gas from investing $50,000 in leases and drilling; Roe drilled poorer territory, got smaller wells, and has invested $250,000. Does anybody imagine that Roe can get or ought to get for his gas five times as much as Doe because he has spent five times as much? The service one renders to

society in the gas business is measured by what he gets out of the ground, not by what he puts into it, and there is little more relation between the investment and the results than in a game of poker.

"Two-thirds of the gas Hope handles it buys from about 340 independent producers. It is obvious that the principle of rate-making applied to Hope's own gas cannot be applied, and has not been applied, to the bulk of the gas Hope delivers. It is not probable that the investment of any two of these producers will bear the same ratio to their investments. The gas, however, all goes to the same use, has the same utilization value and the same ultimate price.

"To regulate such an enterprise by undiscriminatingly transplanting any body of rate doctrine conceived and adapted to the ordinary utility business can serve the 'public interest' as the Natural Gas Act requires, if at all, only by accident. Mr. Justice Brandeis, the pioneer juristic advocate of the prudent investment theory for man-made utilities, never, so far as I am able to discover, proposed its application to a natural gas case. On the other hand, dissenting in *Pennsylvania* v. *West Virginia*, he reviewed the problems of gas supply and said, 'In no other field of public service regulation is the controlling body confronted with factors so baffling as in the natural gas industry; and in none is continuous supervision and control required in so high a degree.' 262 U.S. 553, 621. If natural gas rates are intelligently to be regulated we must fit our legal principles to the economy of the industry and not try to fit the industry to our books.

"As our decisions stand the Commission was justified in believing that it was required to proceed by the rate base method even as to gas in the field. For this reason the Court may not merely wash its hands of the method and rationale of rate making. The fact is that this Court, with no discussion of its fitness, simply transferred the rate base method to the natural gas industry. It happened in *Newark Natural Gas & Fuel Co.* v. *City of Newark, Ohio*, 242 U.S. 405 (1917), in which the company wanted 25 cents per m.c.f., and

under the Fourteenth Amendment challenged the reduction to 18 cents by ordinance. This Court sustained the reduction because the court below 'gave careful consideration to the questions of the value of the property at the time of the inquiry,' and whether the rate 'would be sufficient to provide a fair return on the value of the property.' The Court said this method was 'based upon principles thoroughly established by repeated decisions of this court,' citing many cases, not one of which involved natural gas or a comparable wasting natural resource. Then came issues as to state power to regulate as affected by the commerce clause. *Public Utilities Commission* v. *Landon*, 249 U.S. 236 (1919); *Pennsylvania Gas Co.* v. *Public Service Commission*, 252 U.S. 23 (1920). These questions settled, the Court again was called upon in natural gas cases to consider state rate-making claimed to be invalid under the Fourteenth Amendment. *United Fuel Gas Co.* v. *Railroad Commission of Kentucky*, 278 U.S. 300 (1929); *United Fuel Gas Company* v. *Public Service Commission of West Virginia*, 278 U.S. 322 (1929). Then, as now, the differences were 'due chiefly to the difference in value ascribed by each to the gas rights and leaseholds.' 278 U.S. 300, 311. No one seems to have questioned that the rate base method must be pursued and the controversy was as to what rate base must be used. Later the 'value' of gas in the field was questioned in determining the amount a regulated company should be allowed to pay an affiliate therefor—a state determination also reviewed under the Fourteenth Amendment. *Dayton Power & Light Company* v. *Public Utilities Commission of Ohio*, 292 U.S. 290 (1934); *Columbus Gas & Fuel Co.* v. *Public Utilities Commission of Ohio*, 292 U. S. 398 (1934). In both cases, one of which sustained, and one of which struck down a fixed rate the Court assumed the rate base method, as the legal way of testing reasonableness of natural gas prices fixed by public authority, without examining its real relevancy to the inquiry.

"Under the weight of such precedents we cannot expect the Commission to initiate economically intelligent methods of fixing gas prices. But the Court now

faces a new plan of federal regulation based on the power to fix the price at which gas shall be allowed to move in interstate commerce. I should now consider whether these rules devised under the Fourteenth Amendment are the exclusive tests of a just and reasonable rate under the federal statute, inviting reargument directed to that point if necessary. As I see it now I would be prepared to hold that these rules do not apply to a natural gas case arising under the Natural Gas Act.

"Such a holding would leave the Commission to fix the price of gas in the field as one would fix maximum prices of oil or milk or coal, or any other commodity. Such a price is not calculated to produce a fair return on the synthetic value of a rate base of any individual producer, and would not undertake to assure a fair return to any producer. The emphasis would shift from the producer to the product, which would be regulated with an eye to average or typical producing conditions in the field.

"Such a price fixing process on economic lines would offer little temptation to the judiciary to become back seat drivers of the price fixing machine. The unfortunate effect of judicial intervention in this field is to divert the attention of those engaged in the process from what is economically unwise and self-defeating limits before they would reach constitutional ones. Any constitutional problems growing out of price fixing are quite different than those that have heretofore been considered to inhere in rate making. A producer would have difficulty showing the invalidity of such a fixed price so long as he voluntarily continued to sell his product in interstate commerce. Should he withdraw and other authority be invoked to compel him to part with his property, a different problem would be presented.

"Allowance in a rate to compensate for gas removed from gas lands, whether fixed as of point of production or as of point of delivery, probably best can be measured by a functional test applied to the whole industry. For good or ill we depend upon private enterprise to

exploit these natural resources for public consumption. The function which an allowance for gas in the field should perform for society in such circumstances is to be enough and no more than enough to induce private enterprise completely and efficiently to utilize gas resources, to acquire for public service any available gas or gas rights and to deliver gas at a rate and for uses which will be in the future as well as in the present public interest."

Several of the large natural gas producing states are today attempting to obtain an increased value for the natural gas resources in their respective states. This Court is intimately familiar with the contentions raised by the State of West Virginia in the recent *Hope case*. It appears that the Railroad Commission of Texas, the gas regulatory body in the largest gas-producing state in the nation, also advocates a larger market and a higher price for its natural gas, for counsel for that Commission, in a certificate proceeding before the Federal Power Commission (*In the Matter of Memphis Natural Gas Company*, Opinion No. 119, quoted at p. 21) recently stated that:

> "We are great marketers of natural gas in Texas and we feel that the better the market, the larger the market, the better the price, and the better the price, the easier it is to prevent physical waste of natural gas, because then you have landowners and everyone else undertaking to prevent waste and hold it down."

It is certainly logical to contend that Congress, when it exempted production and gathering from the provisions of the Act, intended to leave the price of natural gas in the field to be determined by economic and competitive factors rather than by regulation on an individual "cost" basis by the Commission. It is well known that the acquisition of leaseholds and the sale therefrom of natural gas is generally a highly competitive business. Such competition will ordinarily establish a "going" price for natural gas in the

field, as a commodity, and to that extent extraneous regulation would be rendered unnecessary. Congress, when it enacted the Natural Gas Act, had before it a full report from the Federal Trade Commission on the natural gas industry, which was referred to in Section 1(a) of the Act. In this report, the Federal Trade Commission commented that the "field price is based upon competition rather than a real cost-plus basis," and it was cogently added that there is "no positive relationship between costs of drilling wells and the selling price of gas." (Sen. Doc. No. 92 Part 84-A, p. 132, 70th Cong., 1st Sess.)

Indeed, Mr. Dozier Devane, then Solicitor of the Federal Power Commission, stated at the Congressional hearings on the legislation here in question that in this Act "there is no control of the gathering rate; the Commission would not have jurisdiction. *That price is fixed by competitive conditions that exist in the field.*" (Hearings on H.R. 11662, House Committee on Interstate and Foreign Commerce, 74th Cong., 2nd Sess., pp. 42-43).

Under the rulings which the Commission has consistently made in natural gas rate proceedings, however, "cost" testimony alone is considered to be relevant in the determination of field prices of natural gas. Such a cost theory, we submit, is entirely unsuited to the natural gas production business, as was pointed out by Mr. Justice Jackson in his separate opinion in the *Hope case*. Unless this Court should now correct the action of the Commission in this proceeding, the same erroneous "cost" theory will unquestionably continue to be applied by the Commission, to the serious detriment of producers of natural gas, to the detriment of the interests of natural gas producing states, and of the proper conservation of natural gas.

In view of the specific language used by the Congress in Section 1(b) of the Natural Gas Act, as recognized both in the majority and minority opinions of this Court in the *Hope case* where it was said that "the Federal Power Commission was given no authority over 'the production or

gathering of natural gas'" (320 U. S. at pp. 610 and 612), it would seem appropriate, and indeed necessary, for this Court to rule (now that the issue is for the first time squarely before it) that Congress meant precisely what it said in respect to production and gathering, and that the Commission has exceeded its statutory authority in this proceeding. Such a ruling would restore the Natural Gas Act, and the Commission's jurisdiction thereunder, to the proper sphere contemplated by Congress.

IV. The Curious Argument that the Commission's Action Really Does Not Constitute Regulation of Production or Gathering.

The Federal Power Commission was at least forthright. It said that it was "indispensable" for it to cover all of this company's production and gathering properties into the rate base, and all of its production and gathering operations into the operating expense allowances. And, of course, the production and gathering elements figured therefore in the allowed revenues or "return." The Commission did all this frankly and openly, with neither compunction nor dissimulation. It simply included production and gathering, along with transportation, and declared that it did this because these operations were "integrated," and because it saw no way out other than to proceed as it did, apparently regardless of the statute. Such action, it declared, was "indispensable."

The Circuit Court of Appeals, on the other hand, admitted that the Commission is without power to regulate either the operations of production and gathering or the rates therefor. But, said the Court, the Commission didn't really do that, because it didn't fix separate rates for production or for gathering, or for the gas at the conclusion of those operations and at the inception of transportation, but rather merely lumped everything together and fixed rates only for gas at the conclusion of the transportation. Therefore, said

the Court, the Commission did not exercise a jurisdiction or power prohibited by the statute.

We are confronted therefore with a case where (1) the company says "You have exercised a prohibited power. You have taken jurisdiction over our production and gathering operations, and in truth and effect you have fixed rates therefor. This is contrary to the law"; (2) the Commission says, "We had to do it—just couldn't see how we could get around it," and (3) the Circuit Court says, "The Commission can't regulate production and gathering, and it can't make rates for production and gathering. But in this case it didn't really do that,—it merely added up all the company's operations, including those of production and gathering, and fixed a rate for gas at the end of the pipeline. That wasn't prohibited."

Frankly, this situation seems to us much like the old Mexican shell game—now you see the pea, and now you don't. The Commission cannot regulate production and gathering or make rates for gas merely produced and gathered; but it may accomplish the same end, in effect and in truth and fact, by considering the production and gathering as a part of the transportation, over which it does have rate-making power, and by merely fixing the rate for the gas at the conclusion of the entire train of operations.

Let us analyze this curious situation, first under ordinary and usual regulatory and administrative principles, and then in the light of the particular nature of the natural gas business. We believe that in both instances a similar conclusion must be reached. In any event, it should not prove difficult,—certainly not impossible,—to locate the pea under the right shell, and at least we may be pardoned for trying.

First, what is it that a regulatory body does when it fixes the rates to be charged by a regulated entity? If it appropriately follows this Court's injunctions, it seeks first to determine the fair allowance by way of "return" which the company should be permitted to earn as a result of the

services rendered or the commodities sold, and then it endeavors to establish a reasonable "spread" of rates (for the different services offered to different classes of patrons) which will—overall—produce such appropriate return. The vital element is the establishment of allowable "return." If a company is engaged in two businesses, one subject to regulation and the other not, or if it is engaged in both intrastate and interstate business, only one of which is subject to regulation by the Commission in question, the regulatory body may not lump everything together and because of some supposed difficulty of segregation fix the rates for all willy-nilly. On the contrary, it must "separate" the one from the other, and then proceed to determine the proper rates for the service over which it has jurisdiction, as if that were an entirely separate and distinct business. It considers the rate base in that phase of the business, its proper operating expenses and the "return" which would be fair. If the company is losing money in the other (unregulated) phase of its business, it cannot expect to make up those losses by loading them onto the patrons of its regulated services. Nor, if it is making large returns from that other business, can the patrons of its regulated operations expect to obtain their services at otherwise unduly low rates, or possibly free. The two phases of operation must be treated separately.

These principles are universally recognized. In the complex field of telephone service, this Court brought them into play in the *Lindheimer case*,[1] in which a fair "separation" of intra from interstate property, expense and revenue was required before judging the fairness of certain intrastate rates fixed by a state commission. And in such instances as the ownership by a regulated corporation of both a hotel and a motor bus line, and an infinitude of others, the identical principle is necessarily applied. Before the primary

[1] See *Lindheimer* v. *Illinois Bell Telephone Co.*, 292 U. S. 151, and related decisions. *Smith* v. *Illinois Bell Telephone Co.*, 282 U. S. 133, and *Illinois Bell Telephone Co.* v. *Gilbert*, 3 F. (Supp.) 595.

function of determining the proper allowable "fair return" for the regulated portion of such a business can be performed, the regulatory body must fairly and reasonably separate out the properties and the expenses of the phase of the overall corporate operations over which it has jurisdiction. In no other manner can it lawfully or properly exercise its regulatory functions.

Nor could it with logic or propriety say, "We know we have no regulatory power over the charges to be made for the hotel services of this company when we fix its motor bus rates, but we just can't somehow seem to segregate the two, so we will deem it 'indispensable' to lump them together and then we will fix an overall fair return. Of course, we'll actually establish by order only the motor bus rates, but since the hotel is paying nicely we can fix the rates to bus patrons very low and still the company will earn enough overall to keep its head above water." No one would be found to support such a plan or program.

But it may be argued that natural gas is a commodity that is sold, rather than a service that is rendered, and that this fact somehow takes the case out of the general principle. Let us test this proposition. Suppose a natural gas field with ten wells, each capable of producing a million cubic feet of gas per day. The ten separate owners of these wells have each sought a market for their gas, and by the balancing operation of supply and demand a well-recognized "field price" has come into play in this field. All other things being equal, no such owner could hope to sell his gas for more—at least not much more—than this established field price. And certainly he would not sell it for a lower price, unless for some reason of lack of quality or pressure or because of his well's location he could not find a purchaser at the going rate. A pipeline company seeking a source of supply would be perfectly justified in contracting to buy gas in that field at that rate, and in the regulation of its charges to its patrons (after transportation to a distant

market) the properly allowable expense for gas so purchased would be that going rate.

And this would be true irrespective of the individual costs to the well owners of their leases and well properties, though these costs might—and doubtless would—have varied considerably, depending on when they entered the field and whether drilling costs were up or down when they sank their particular wells. A "cost plus" allowance system, if adopted by some short-sighted regulatory body, would result only in confusion, a multiplicity of different rates in the same gas field, and—in the end—in much harm to the public interest, even if if possessed jurisdiction so to do.

The situation is the same if one of the producers and gatherers is the pipeline company itself. To require that its own gas go into the pipeline on a "cost plus" basis, while gas from other producers enters the line on a market price basis could not fail, in the end, to produce confusion and harm to the public interest. Yet this is exactly what the Commission did in the instant case. And the fact that gas is a commodity, rather than a service, not only does not alter the need for a fair "separation" of functions in the fixing of rates, but particularly emphasizes the essentiality of such action, and for the taking into the transmission line of produced and gathered gas (regardless of who did the producing and gathering) at the fair commodity price of such gas in the field, plus a fair amount for the gathering of the gas.

The Commission would of course have to make this segregation if this company sold a portion of its produced and gathered gas in the state of its production, and the remainder went into the channels of interstate commerce. (As, indeed, we understand is the fact with respect to Canadian.) And we apprehend that no one would suggest this this Federal Commission could avoid such segregation upon some imagined "indispensability" of lumping all of the company's operations together when fixing the rates for its interstate business. The case is similar with respect to these operations of production and gathering, which Con-

gress has excepted from this Commission's powers as fully as the company's intrastate sales and operations are excepted by virtue of the Federal Constitution. It is no more difficult to make the one segregation than it is the other,—in fact, the segregation of production and gathering is much more simple, since the effective "short cut" of using the fair field price of the gas, as a commodity, at the inception of transportation is here available to the regulatory body. When a proper "separation" has been made, the regulated phase of the business is readily considered and dealt with by the regulatory body, whether the operation be that of a service or that of a sale of a commodity, while the laws of supply and demand are left to play their part with the remainder, just as if it were in fact operated by a distinct entity.

The case now before the Court presents just such a situation. Here Congress has vested certain rate regulatory jurisdiction in the Federal Power Commission, but in the same breath it has declared that such power shall not go to the operations of production and gathering. If this were a case of two distinct types of service, one subject to regulation and the other not, the necessity for a reasonable segregation of properties, expense and revenue in respect to the two in the fixation of rates for the regulated service would be obvious. It seems no less obvious where the two functions deal with a commodity. If the functions of transportation, on the one hand, were performed by an entity entirely separate and distinct from that which performs those of production and gathering, the going market price of gas at the inception of transportation would obviously be the proper allowance for the gas there purchased, as an operating expense. *And a different allowance where the several functions are operated by a single entity cannot possibly be other than a direct "regulation" of the functions over which jurisdiction has not been granted.*

Here, then, is the shell under which lies the pea. It is idle to say that, merely because specific, separate rates have not been fixed—as such—for production or gathering, the Commission has not effectively exercised rate-making

functions over those operations. For, in effect, the Commission by its action in this case has fixed rates at the inception of transportation as fully and as completely as if it had set them out in black and white. By not adopting the fair market price of the gas, as a commodity, at that point, it has accomplished precisely that exact effect.

Indeed, the fallacy of the Circuit Court's position seems readily demonstrable. It declared that the Commission could not fix this company's rates in respect to its production and gathering operations, but it reasoned that, since the Commission's final rate order set forth only rates to be charged at the conclusion of transportation, the production and gathering rates were not fixed, though the production and gathering properties and expenses were lumped into the figures used in developing the rates which were fixed. The test must be whether this operation established, as one of its necessary effects, the values and amounts at which the produced and gathered gas goes into the transportation system. If that gas had been separately owned and had been purchased by the transporting company at the inception of transportation, the rate base would have included only the transportation properties, and the allowable expenses would have been those of the transportation only, plus the price paid for the gas where it entered the transportation pipeline. And if, in the present case, the Commission had dealt only with the company's transportation properties in establishing the rate base, and had developed only the company's transportation costs in finding operating expenses, it would then have had to adopt—and "fix"—an amount to be allowed for the produced and gathered gas at the inception of transportation. Had this been stated by it separately, no one would doubt but that it had, in effect, "fixed rates for production and gathering."

The Commission's adopted method had this precise necessary effect. It did not state this amount separately, but it lumped everything into one pot and applied a single formula to all,—i. e., it allowed a return of 6½% on the entire rate base, plus overall operating expenses. If we now

subtract from the rate base the amounts covering transportation properties and the expenses attributable to transportation, we find that—under the formula—a certain return was allowed for such operation. The remainder is the rate base fixed for production and gathering properties, and the expenses incident to production and gathering, and—under the formula—the return allowed on such operations.

The making of rates is primarily a process of the ascertainment of reasonably allowable earnings,—the so-called "fair return" of a regulated enterprise. Once this figure is ascertained, the actual individual rates to be charged are largely developed by mere mathematical processes. Here the Commission unquestionably developed, used and promulgated a "return" applicable to the production and gathering operations. To say that production and gathering rates were not "fixed," because the schedule of rates actually set up was for charges after transportation had been performed, including production and gathering, is to blind one's eyes to solid fact. Those rates were in part rates for production and gathering as fully and completely as if they had been stated in two parts. We earnestly submit that the Circuit Court merely begged the question, and erred in fact and in law when it said that the Commission did not in this case fix rates for production and gathering.

The real question is how much shall properly be allowed, over and above the expenses of transportation, for the gas taken into the transmission pipeline. Any lumping of everything together necessarily "fixes a rate" for such gas. And if the exemption of production and gathering from the Commission's jurisdiction means anything, it must mean that such overall action is prohibited. Should fraud, undue influence, unfairly high prices or other similar factors be found to be present, where the producer and the transporter are separate entities, the Commission may deal with the situation through its power to allow, as an operating expense, only the fair market value of purchased gas,

as a commodity. And in cases where the producer and the transporter are the same entity, this same simple principle should be applied.

The Circuit Court therefore erred in its pronouncement in this case to the effect that, though the fixing of production and gathering rates was not a prerogative of the Federal Power Commission, that body had not by its action in respect to this company contravened the statute by exercising a prohibited jurisdiction.

CONCLUSION.

Finally, the Independent Natural Gas Association of America suggests that the problem which is considered in this brief is essentially a relatively simple issue. If, as we believe, jurisdiction over production and gathering has been wholly withheld from the Federal Power Commission, and if, as we further believe, such lack of jurisdiction is all-embracing, the Commission is not faced with an insoluble problem, nor is it "indispensable" for it to commit intellectual mayhem on the statute, as it seemingly did in the instant proceeding. In a case of "integrated" operations, such as this, the allowance as an operating expense of a fair field price for gas at the point of its entrance into the transmission system (i. e., after the conclusion of production and gathering), and the omission of production and gathering properties from the "rate base" and of production and gathering expense from operating expenses, would protect every legitimate interest of the company, the Commission and the public. In the case of separately owned and operated production and gathering properties, this is precisely what would occur, and in the light of the limitation on jurisdiction contained in the Act, this seems to represent a sound, overall policy for universal application.

Moreover, even were it to be held that the Commission's contention is correct to the effect that sales from the wellhead or from a gathering system, when the gas so sold is eventually transported by the vendee to and sold by it in

another state, are "sales in interstate commerce," and are therefore committed to the Commission for regulation, no alteration of the principle just mentioned would apparently be either necessary or justified. As Mr. Justice Jackson has so cogently explained, in his separate opinion in the *Hope case*, natural gas is a unique commodity, and the use of a fair field price at the commencement of transportation represents the soundest method of handling this difficult regulatory problem. Under such a program, production and gathering properties and expenses would simply not be considered, but the going rate for gas in the field would be allowed as an operating expense. On the other hand, if it should be felt that the production and gathering properties should, for any reason, be included in the rate base, then they should be included at their current field values. Only thus may the economic issues which surround the resolution of this problem be fairly and reasonably subserved. This is no mere "Smyth v. Ames" issue. It is far more fundamental than that. It relates not only to the statutory limits of this regulatory body's powers, but also to the basic economy of the entire natural gas industry.

Appropriate judicial determination of this issue of production and gathering jurisdiction, and of the scope of the Federal Power Commission's authority in respect to such operations, is particularly essential at this time. The Commission, in recent pronouncements, and in its brief before the Circuit Court in this proceeding, has apparently taken the position that, despite the express exemption of production and gathering from the purview of the Natural Gas Act, it should assume at least certain powers over such operations in all instances in which gas sold by producers or gatherers is eventually transported in interstate commerce by the vendee. Yet on December 30, 1944, the Commission wrote to Governor Andrew F. Schoeppel (of Kansas), Chairman of the Interstate Oil Compact Commission, that it "has no desire to extend its jurisdiction to cover the production of natural gas or *otherwise* invade

what are properly regarded as the functions of the conservation authorities of the several states," and that "the Commission has no desire to interfere with the several states in the full and effective exercise of their authority regarding either the production or local distribution of natural gas." (Release No. 2607 (G-700) for publication on January 3, 1945.)

Reconcilement of these apparently conflicting expressions seems impossible on any reasonable basis, since the regulation of production and gathering which was undertaken in the instant proceeding (through the allowance of "cost" only, rather than the fair field price, or value of the produced gas, as a commodity) could hardly fail to impinge on the local situation through its effect on field prices and thus upon conservation practices. The members of the Independent Natural Gas Association of America therefore believe it essential that the issue be soundly resolved at this time, and because the intent and will of Congress seems so clearly expressed in this statute, it is respectfully submitted that the judgment of the Circuit Court of Appeals in this cause should be reversed, on the ground that that Court erroneously determined that the Federal Power Commission did not exercise prohibited jurisdiction over Canadian's production and gathering operations, and on the further ground that, even if such exercise of jurisdiction was not in fact prohibited, its exercise was improper, unlawful, and in contravention of this company's rights under the Federal Constitution.

Respectfully submitted,

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APPENDIX.

The pertinent provisions of the Natural Gas Act of 1938, c. 556, 52 Stat, 821 (15 U.S.C. 717 et seq.), are as follows:

SECTION 1. (a) As disclosed in reports of the Federal Trade Commission made pursuant to Senate Resolution 83 (Seventieth Congress, first session) and other reports made pursuant to the authority of Congress, it is hereby declared that the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest, and that Federal regulation in matters relating to the transportation of natural gas and the sale thereof in interstate and foreign commerce is necessary in the public interest.

(b) The provisions of this act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas.

SECTION 2. (6) "Natural-gas company" means a person engaged in the transportation of natural gas in interstate commerce, or the sale in interstate commerce of such gas for resale.

(7) "Interstate commerce" means commerce between any point in a State and any point outside thereof, or between points within the same State but through any place outside thereof, but only insofar as such commerce takes place within the United States.

SECTION 4. (a) All rates and charges made, demanded, or received by any natural-gas company for or in connection with the trans-

portation or sale of natural gas subject to the jurisdiction of the Commission, and all rules and regulations affecting or pertaining to such rates or charges, shall be just and reasonable, and any such rate or charge that is not just and reasonable is hereby declared to be unlawful.

(b) No natural-gas company shall, with respect to any transportation or sale of natural gas subject to the jurisdiction of the Commission (1) make or grant any undue preference or advantage to any person or subject any person to any undue prejudice or disadvantage, or (2) maintain any unreasonable difference in rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service.

(c) Under such rules and regulations as the Commission may prescribe, every natural-gas company shall file with the Commission, within such time (not less than sixty days from the date this act takes effect) and in such form as the Commission may designate, and shall keep open in convenient form and place for public inspection, schedules showing all rates and charges for any transportation or sale subject to the jurisdiction of the Commission, and the classifications, practices, and regulations affecting such rates and charges, together with all contracts which in any manner affect or relate to such rates, charges, classifications, and services.

(d) Unless the Commission otherwise orders, no change shall be made by any natural-gas company in any such rate, charge, classification, or service, or in any rule, regulation, or contract relating thereto, except after thirty days' notice to the Commission and to the public. Such notice shall be given by filing with the Commission and keeping open for public inspection new schedules stating plainly the change or changes to be made in the schedule or schedules then in force and the time when the change or changes will go into effect.

The Commission, for good cause shown, may allow changes to take effect without requiring the thirty days' notice herein provided for by an order specifying the changes so to be made and the time when they shall take effect and the manner in which they shall be filed and published.

(e) Whenever any such new schedule is filed the Commission shall have authority, either upon complaint of any State, municipality, or State commission, or upon its own initiative without complaint, at once, and if it so orders, without answer or formal pleading by the natural-gas company, but upon reasonable notice, to enter upon a hearing concerning the lawfulness of such rate, charge, classification, or service; and, pending such hearing and the decision thereon, the Commission, upon filing with such schedules and delivering to the natural-gas company affected thereby a statement in writing of its reasons for such suspension, may suspend the operation of such schedule and defer the use of such rate, charge, classification, or service, but not for a longer period than five months beyond the time when it would otherwise go into effect: *Provided*, That the Commission shall not have authority to suspend the rate, charge, classification, or service for the sale of natural gas for resale for industrial use only; and after full hearings, either completed before or after the rate, charge, classification, or service goes into effect, the Commission may make such orders with reference thereto as would be proper in a proceeding initiated after it had become effective. If the proceeding has not been concluded and an order made at the expiration of the suspension period, on motion of the natural-gas company making the filing, the proposed change of rate, charge, classification, or service shall go into effect. Where increased rates or charges are thus made effective, the Commission may, by order, require the natu-

ral-gas company to furnish a bond, to be approved by the Commission, to refund any amounts ordered by the Commission, to keep accurate accounts in detail of all amounts received by reason of such increase, specifying by whom and in whose behalf such amounts were paid, and, upon completion of the hearing and decision, to order such natural-gas company to refund, with interest, the portion of such increased rates or charges by its decision found not justified. At any hearing involving a rate or charge sought to be increased, the burden of proof to show that the increased rate or charge is just and reasonable shall be upon the natural-gas company, and the Commission shall give to the hearing and decision of such questions preference over other questions pending before it and decide the same as speedily as possible.

SECTION 5. (a) Whenever the Commission, after a hearing had upon its own motion or upon complaint of any State, municipality, State commission, or gas distributing company, shall find that any rate, charge, or classification demanded, observed, charged, or collected by any natural-gas company in connection with any transportation or sale of natural gas, subject to the jurisdiction of the Commission, or that any rule, regulation, practice, or contract affecting such rate, charge, or classification is unjust, unreasonable, unduly discriminatory, or preferential, the Commission shall determine the just and reasonable rate, charge, classification, rule regulation, practice, or contract to be thereafter observed and in force, and shall fix the same by order: *Provided, however*, That the Commission shall have no power to order any increase in any rate contained in the currently effective schedule of such natural gas company on file with the Commission, unless such increase is in accordance with a new schedule filed by such natural gas company; but the Commission may

order a decrease where existing rates are unjust, unduly discriminatory, preferential, otherwise unlawful, or are not the lowest reasonable rates.

(b) The Commission upon its own motion, or upon the request of any State commission, whenever it can do so without prejudice to the efficient and proper conduct of its affairs, may investigate and determine the cost of the production or transportation of natural gas by a natural-gas company in cases where the Commission has no authority to establish a rate governing the transportation or sale of such natural gas.

SECTION 7. (a) Whenever the Commission, after notice and opportunity for hearing, finds such action necessary or desirable in the public interest, it may by order direct a natural-gas company to extend or improve its transportation facilities, to establish physical connection of its transportation facilities with the facilities of, and sell natural gas to, any person or municipality engaged or legally authorized to engage in the local distribution of natural or artificial gas to the public, and for such purpose to extend its transportation facilities to communities immediately adjacent to such facilities or to territory served by such natural-gas company, if the Commission finds that no undue burden will be placed upon such natural-gas company thereby: *Provided*, That the Commission shall have no authority to compel the enlargement of transportation facilities for such purposes, or to compel such natural-gas company to establish physical connection or sell natural gas when to do so would impair its ability to render adequate service to its customers.

(b) No natural-gas company shall abandon all or any portion of its facilities subject to the jurisdiction of the Commission, or any service rendered by means of such facilities, without the permission and approval of the Com-

mission first had and obtained, after due hearing, and a finding by the Commission that the available supply of natural gas is depleted to the extent that the continuance of service is unwarranted, or that the present or future public convenience or necessity permit such abandonment.

(c) No natural-gas company or person which will be a natural-gas company upon completion of any proposed construction or extension shall engage in the transportation or sale of natural gas, subject to the jurisdiction of the Commission, or undertake the construction or extension of any facilities therefor, or acquire or operate any such facilities or extensions thereof, unless there is in force with respect to such natural-gas company a certificate of public convenience and necessity issued by the Commission authorizing such acts or operations: *Provided, however*, That if any such natural-gas company or predecessor in interest was bona fide engaged in transportation or sale of natural gas, subject to the jurisdiction of the Commission, on the effective date of this amendatory Act, over the route or routes or within the area for which application is made and has so operated since that time, the Commission shall issue such certificate without requiring further proof that public convenience and necessity will be served by such operation, and without further proceedings, if application for such certificate is made to the Commission within ninety days after the effective date of this amendatory Act. Pending the determination of any such application, the continuance of such operation shall be lawful.

In all other cases the Commission shall set the matter for hearing and shall give such reasonable notice of the hearing thereon to all interested persons as in its judgment may be necessary under rules and regulations to be prescribed by the Commission; and the application shall be decided in accordance with the

procedure provided in subsection (e) of this section and such certificate shall be issued or denied accordingly: *Provided, However*, That the Commission may issue a temporary certificate in cases of emergency, to assure maintenance of adequate service or to serve particular customers, without notice or hearing, pending the determination of an application for a certificate, and may by regulation exempt from the requirements of this section temporary acts or operations for which the issuance of a certificate will not be required in the public interest.

SECTION 8. (a) Every natural-gas company shall make, keep, and preserve for such periods, such accounts, records of cost-accounting procedures, correspondence, memoranda, papers, books, and other records as the Commission may by rules and regulations prescribe as necessary or appropriate for purposes of the administration of this act: *Provided, however*, That nothing in this act shall relieve any such natural-gas company from keeping any accounts, memoranda, or records which such natural-gas company may be required to keep by or under authority of the laws of any State. The Commission may prescribe a system of accounts to be kept by such natural-gas companies, and may classify such natural-gas companies and prescribe a system of accounts for each class. The Commission, after notice and opportunity for hearing, may determine by order the accounts in which particular outlays or receipts shall be entered, charged, or credited. The burden of proof to justify every accounting entry questioned by the Commission shall be on the person making, authorizing, or requiring such entry, and the Commission may suspend a charge or credit pending submission of satisfactory proof in support thereof.

SECTION 9. (a) The Commission may, after hearing, require natural-gas companies to

carry proper and adequate depreciation and amortization accounts in accordance with such rules, regulations, and forms of account as the Commission may prescribe. The Commission may from time to time ascertain and determine, and by order fix, the proper and adequate rates of depreciation and amortization of the several classes of property of each natural-gas company used or useful in the production, transportation, or sale of natural gas. Each natural-gas company shall conform its depreciation and amortization accounts to the rates so ascertained, determined, and fixed. No natural-gas company subject to the jurisdiction of the Commission shall charge to operating expenses any depreciation or amortization charges on classes of property other than those prescribed by the Commission, or charge with respect to any class of property a percentage of depreciation or amortization other than that prescribed therefor by the Commission. No such natural-gas company shall in any case include in any form under its operating or other expenses any depreciation, amortization, or other charge or expenditure included elsewhere as a depreciation or amortization charge or otherwise under its operating or other expenses. Nothing in this section shall limit the power of a State commission to determine in the exercise of its jurisdiction, with respect to any natural-gas company, the percentage rates of depreciation or amortization to be allowed, as to any class of property of such natural-gas company, or the composite depreciation or amortization rate, for the purpose of determining rates or charges.

SECTION 10. (a) Every natural-gas company shall file with the Commission such annual and other periodic or special reports as the Commission may by rules and regulations or order prescribe as necessary or appropriate to assist the Commission in the proper administration of this act. The Commission may pre-

scribe the manner and form in which such reports shall be made, and require from such natural-gas companies specific answers to all questions upon which the Commission may need information. The Commission may require that such reports shall include, among other things, full information as to assets and liabilities, capitalization, investment and reduction thereof, gross receipts, interest due and paid, depreciation, amortization, and other reserves, cost of facilities, cost of maintenance and operation of facilities for the production, transportation, or sale of natural gas, cost of renewal and replacement of such facilities, transportation, delivery, use, and sale of natural gas. The Commission may require any such natural-gas company to make adequate provision for currently determining such costs and other facts. Such reports shall be made under oath unless the Commission otherwise specifies.

SECTION 11. (a) In case two or more States propose to the Congress compacts dealing with the conservation, production, transportation, or distribution of natural gas it shall be the duty of the Commission to assemble pertinent information relative to the matters covered in any such proposed compact, to make public and to report to the Congress information so obtained, together with such recommendations for further legislation as may appear to be appropriate or necessary to carry out the purposes of such proposed compact and to aid in the conservation of natural-gas resources within the United States and in the orderly, equitable, and economic production, transportation, and distribution of natural gas.

SECTION 14 (b) The Commission may, after hearing, determine the adequacy or inadequacy of the gas reserves held or controlled by any natural-gas company, or by anyone on its behalf, including its owned or leased properties or royalty contracts; and may also, after hear-

ing, determine the propriety and reasonableness of the inclusion in operating expenses, capital, or surplus of all delay rentals or other forms of rental or compensation for unoperated lands and leases. For the purpose of such determinations, the Commission may require any natural-gas company to file with the Commission true copies of all its lease and royalty agreements with respect to such gas reserves.

SECTION 19. (a) Any person, State, municipality, or State commission aggrieved by an order issued by the Commission in a proceeding under this act to which such person, State, municipality, or State commission is a party may apply for a rehearing within thirty days after the issuance of such order. The application for rehearing shall set forth specifically the ground or grounds upon which such application is based. Upon such application the Commission shall have power to grant or deny rehearing or to abrogate or modify its order without further hearing. Unless the Commission acts upon the application for rehearing within thirty days after it is filed, such application may be deemed to have been denied. No proceeding to review any order of the Commission shall be brought by any person unless such person shall have made application to the Commission for a rehearing thereon.

(b) Any party to a proceeding under this act aggrieved by an order issued by the Commission in such proceeding may obtain a review of such order in the circuit court of appeals of the United States for any circuit wherein the natural-gas company to which the order relates is located or has its principal place of business, or in the United States Court of Appeals for the District of Columbia, by filing in such court, within sixty days after the order of the Commission upon the application for rehearing, a written petition praying that the order of the Commission be modified or set

aside in whole or in part. A copy of such petition shall forthwith be served upon any member of the Commission and thereupon the Commission shall certify and file with the court a transcript of the record upon which the order complained of was entered. Upon the filing of such transcript such court shall have exclusive jurisdiction to affirm, modify, or set aside such order in whole or in part. No objection to the order of the Commission shall be considered by the court unless such objection shall have been urged before the Commission in the application for rehearing unless there is reasonable ground for failure so to do. The finding of the Commission as to the facts, if supported by substantial evidence, shall be conclusive. If any party shall apply to the court for leave to adduce additional evidence, and shall show to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for failure to adduce such evidence in the proceedings before the Commission, the court may order such additional evidence to be taken before the Commission and to be adduced upon the hearing in such manner and upon such terms and conditions as to the court may seem proper. The Commission may modify its findings as to the facts by reason of the additional evidence so taken, and it shall file with the court such modified or new findings, which if supported by substantial evidence, shall be conclusive, and its recommendation, if any, for the modification or setting aside of the original order. The judgment and decree of the court, affirming, modifying, or setting aside, in whole or in part, any such order of the Commission, shall be final, subject to review by the Supreme Court of the United States upon certiorari or certification as provided in sections 239 and 240 of the Judicial Code, as amended (U. S. C., title 28, secs. 346 and 347).

(c) The filing of an application for rehearing under subsection (a) shall not, unless specifically ordered by the Commission, operate as a stay of the Commission's order. The commencement of proceedings under subsection (b) of this section shall not, unless specifically ordered by the court, operate as a stay of the Commission's order.

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CHARLES ELMORE CROPLEY

IN THE

Supreme Court of the United States

OCTOBER TERM, 1944.

No. 380.

CANADIAN RIVER GAS COMPANY, A CORPORATION, *Petitioner*,

vs.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND COLORADO INTERSTATE GAS COMPANY, *Respondents*.

REPLY BRIEF OF THE INDEPENDENT NATURAL GAS ASSOCIATION OF AMERICA, AMICUS CURIAE

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January 29, 1945.

PRESS OF BYRON S. ADAMS, WASHINGTON, D. C.

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Respondents have advanced no new or novel arguments in their brief. However, since a sound resolution of the essential issue here presented seems so imperative from the standpoint of all concerned, and since the hazard of submergence of that primary issue in a welter of confusing detail seems in this instance to be so great, this *amicus curiae*, representing as it does many segments of the natural gas industry, deems it appropriate to make this brief reply.

The fundamental issue to be resolved in this proceeding is quite simple and may be succinctly stated. Disregarding for the moment certain collateral problems assigned by petitioner as error,[1] the essential and critical question—broadly viewed—seems to be *whether the Federal Power Commission has been vested by law with such jurisdiction over the natural gas production and gathering activities of this petitioner as to justify the particular action it took in respect to such activities in the cause now under review.*

Two distinct inquiries are involved in the resolution of this fundamental issue:

> (1) In view of the express and unconditional statutory exception of "production and gathering" from the purview of the Natural Gas Act, may the Federal Power Commission (whose authority in such matters must, of course, be discovered within the four walls of that Act) lawfully, in a rate case, comingle a natural gas pipeline company's production and gathering properties and expenses with those of its interstate transportation activities (over which the Commission has unquestioned rate regulatory power) and establish and enforce rates for gas sales at the conclusion of the act of transportation which admittedly include production and gathering factors in both rate base and expense, and which necessarily and confessedly include provision for compensation in respect to production and gathering operations in the allowed "return"?
>
> (2) If the Commission does possess such authority, did it lawfully exercise it in the proceeding under review?

It is important to recall that the Commission assumed and purported to exercise rate-making jurisdiction over "production and gathering" in this case because—as it

[1] Such, for example, as the issue of required "allocation," and the method adopted for that purported purpose by the Commission.

said—such action seemed to it "indispensable." It is equally important to recall that the Commission's counsel argued in the court below that the express statutory exception of production and gathering from the purview of the Natural Gas Act really amounts only to saying that "whenever necessary for the purposes specifically provided in subsequent sections of the Act, the Commission shall have jurisdiction over production and gathering."

The Circuit Court of Appeals found itself unable to accept this apparently topsy-turvy view of the law. It held that the Act means exactly what it says, and that the Commission possesses no authority, express or implied, dispensable or indispensable, to fix rates for petitioner's production and gathering operations. But, thought the Court, in the instant cause the Commission did not in fact do this, because the rates it actually fixed apply to petitioner's sales of gas at the conclusion of transportation. The Circuit Court so held despite the admitted comingling of petitioner's production and gathering properties, expenses and "return" in the rate-making process here followed by the Commission, and despite the significant fact that the Commission certainly thought it had acted, and did act, in such manner as to make rates which, in addition to transportation, unquestionably covered and included petitioner's production and gathering activities, and provided a factor of compensation therefor. Just how the Circuit Court managed to reach the curious conclusion that such rates were not "for production" or "for gathering," though admittedly in full compensation "for" such efforts, it left unexplained. Certainly, if the Commission's rate order should stand, petitioner could not obtain compensation for such activities in any other manner than through these rates.

In the narrow sense, therefore, if the Circuit Court's basic ruling on the law should, under well-recognized juristic principles, be deemed controlling (as "the law of the case"), and if as a result of that ruling the Commission is—without more—to be deemed not to possess power, express or im-

plied, over production and gathering rates *vis-a-vis* this petitioner, the sole issue now to be resolved is seemingly one of fact,—did the action taken by the Commission in fact constitute, in part, a fixing of rates to be charged by this petitioner, out of the proceeds of which it will secure compensation for its production and gathering efforts? There may well be no good reason why this Court should not now treat this case from this narrower viewpoint. When so viewed, we believe there exists no alternative except reversal on this issue of fact—especially since the basic ruling of the Circuit Court on the issue of law seems to be so sound and conclusive.

However, since the Commission and its counsel have taken a much broader view of the pending issues, and since their apparent position is that the exception of "production and gathering" from the purview of this statute is a wholly nugatory provision, this *amicus curiae* has deemed it appropriate to discuss the matter from its less narrow aspects. In brief we have urged:

(1) That, whether or no Congress *could* have legislated to place under federal regulation the operations of natural gas production and gathering, or the rates to be charged therefor (in instances where the gas in question eventually finds its way into the stream of interstate commerce), it is evident that *Congress did not do so*, but instead evidenced its clear intent to the contrary;

(2) That this is apparent from the unequivocal language used by Congress when it declared that the provisions of the Natural Gas Act (without exception) shall not apply to production and gathering;

(3) That the Natural Gas Act thus discloses on its face that the entire subject of production and gathering of natural gas (including, of course, the establishment of rates applicable to production and gathering operations) has been effectively excluded by Congress from the Commission's jurisdiction;

(4) That the legislative history of this statute affords ample support for this proposition, and in fact discloses that the Natural Gas Act is not reasonably susceptible of any other interpretation;

(5) *That the Circuit Court of Appeals was therefore correct in its ruling on the law in this proceeding;*

(6) That the action of the Commission in this case was in truth and fact—and, indeed, in every real respect—an act of fixing rates "for" production and gathering activities, as well as "for" gas transportation operations, and is admitted to be such by the Commission;

(7) *That the Circuit Court of Appeals was therefore wrong in its finding of fact to the effect that the Commission's action did not constitute a fixing of rates "for" production and gathering;*

(8) That the mere fact that produced and gathered gas eventually finds its way into interstate commerce cannot, of itself, form the basis of an assertion of powers which Congress, in its discretion, has specifically excluded by express statutory language;

(9) That, in particular, an assertion of such power by a regulatory body, merely because of some subjectively-assumed "necessity" or "indispensability," may not be judicially sanctioned or condoned, since to do so would be tantamount to affording to such administrative agency a free license to operate by mere whim, whenever it might declare it to be "necessary" in its sole opinion so to do,—though such action be in the very teeth of the statute which defines its powers;

(10) That if no such power here exists, its asserted exercise *vis-a-vis* this petitioner was patently unauthorized and unlawful, and must therefore be reversed, and

(11) That, in any event, even were the power to be conceded, its exercise in the cause at bar was improper

and unlawful because of the special character of the operations and of the commodity here involved.

All of which is, of course, merely to say that if—as we firmly believe—the Commission did not possess the asserted power, its action was obviously unauthorized and should be declared null and void; but further that, even if it were to be admitted that the Commission does possess the basic authority, its attempted exercise of the power in this cause was in complete disregard of "the nature of the critter" before it, and its action should therefore be reversed on that ground.

ARGUMENT.

In our opening brief we outlined the reasons which impel us to agree with the Circuit Court of Appeals' ruling that the Federal Power Commission has not been vested with power, express or implied, to fix rates for, or including, petitioner's production and gathering operations. In that connection, we examined the Natural Gas Act and its legislative history, and expressed the view that Congress not only clearly intended to except the mere physical acts of natural gas production and gathering from the purview of the Act and from the authority by that statute vested in the Commission, but that it also appears from the plain language of the Act that Congress equally clearly intended to except from the scope of the Commission's authority such rate-making functions as were attempted to be exercised in this proceeding in respect to petitioner's production and gathering activities. We also examined the action of the Commission in this proceeding, and concluded that such action was, in fact and in truth, an attempted exercise of power to fix this company's rates "for production and gathering."

We therefore urged that the Circuit Court of Appeals was right in its ruling that the Commission may not, directly or indirectly, establish petitioner's rates for production and gathering activities and services, but that the Court was obviously wrong in holding that the Commission

did not in fact essay to do that very thing in this instance. Finally, we argued that, regardless of power or jurisdiction, the nature of natural gas and of its production and gathering is such as to render unreasonable, unlawful and violative of petitioner's constitutional rights the position adopted by the Commission in this instance. We shall not repeat our opening arguments.

However, it occurs to us that it may serve a useful purpose to afford the Court with certain concrete illustrations of the results to be expected if the Commission's jurisdiction were to be sustained, and if its action *vis-a-vis* this petitioner's production and gathering activites were to be approved by this tribunal. Before doing so, we desire respectfully to reiterate our complete acceptance of the views set forth by Mr. Justice Jackson in the *Hope case*[1] (quoted at length in our opening brief) with respect to the dangers, the confusion and the topsy-turvy results to be apprehended from an acceptance of the procedure and methods adopted by the Commission in this proceeding—including the "end results" thereof. It was the view of the learned Justice that the use of "cost" of leaseholds, wells and associated facilities as a rate base cannot be justified where the production and gathering of natural gas is concerned, and we believe his discussion clearly discloses that *this is no mere Smyth* v. *Ames*[2] *issue*, but is a beast of totally different aspect.

To simplify our examples, let us assume a natural gas field whose producing area is covered by numerous gas leases, lettered A to Z, inclusive, on each of which a gas well has been drilled, and from which wells large sales of gas for divers purposes are being made, many in purely intrastate commerce. Of these leases:

---

[1] *Federal Power Commission* v. *Hope Natural Gas Company*, 320 U. S. 591. Oddly enough, respondents failed in their brief herein even to mention Mr. Justice Jackson's cogent discussion.

[2] 169 U. S. 466.

Lease A is owned by Silas Brown, whose well cost $50,000 and is capable of producing on a safe commercial basis 10,000,000 cubic feet of gas per day;

Lease B is owned by the Intrastate Drilling Company, whose well also cost $50,000 but produces only 1,000,000 cubic feet daily, and

Lease C is owned by the Interstate Commerce Gas Pipeline Company, whose well cost $50,000 and produces 5,000,000 cubic feet daily.

For simplicity let us omit "gathering" in our discussion, and assume that the Interstate Commerce company produces the gas from its own well; that it purchases the gas from Brown's and Intrastate's wells at the well-head (paying therefor the going field rate), and that it then transports the comingled gas through its trunk pipeline into another state, where it sells all of it to a distributing company which resells it to domestic, commercial and industrial consumers. Obviously, the Interstate Commerce company is by definition a "natural-gas company" under the Natural Gas Act, and the rates charged by it to the distributing company for gas sold and delivered to the latter "for resale" at the end of the interstate gas transportation operations are therefore subject to regulation by the Federal Power Commission.

Over the years a definite and well-recognized field price of gas at the well-head has come into being in this gas field, and large sales are being made at approximately such price from many wells by many leaseholders for many purposes. The basic "reasonableness" of this commercially recognized price per cubic foot of produced gas has thus been tested by the relentless operation of the law of supply and demand, and this price has necessarily been accepted by many buyers and sellers in numerous arm's-length transactions, regardless of their individual lease or well costs or relative productivity.

Under the method of production and gathering rate-making adopted by the Commission in the instant cause, the Commission would allow to the Interstate company, as expense of purchased gas, the amounts paid by it to Brown and the Intrastate company (at the going field rate) for the gas purchased from them, but would allow as expense only the cost to the Interstate company of the gas produced by it from its own well. Thus the allowance for gas entering Interstate's pipeline would be one amount for the gas from Brown's and Intrastate's wells, and another for that from Interstate's neighboring well.[1] And oddly enough the Commission would apparently apply its "cost of production" method to any gas purchased by Interstate from another "natural gas company" (say from "Lease D" in the assumed field), even though it were purchased at that concern's well-head, and even where that company's gas transportation activities (under the Commission's unquestioned jurisdiction) were wholly separate from that well and did not draw therefrom, or even

[1] This was exactly what was done on a large scale by the Commission in respect to the Panhandle Eastern Pipe Line Company (whose appeal of the Commission's order—No. 296, this term—is on argument in this Court concurrently with the instant cause). Of course, if such a natural gas company's costs per cubic foot of self-produced gas were greater (rather than less than) the fair, going field price at which it was purchasing some of its gas from others, the Commission would find it difficult, if not impossible—even if it so desired—to be consistent and to allow such higher cost for the company's self-produced gas in establishing the production factors in its rates. Many good reasons would doubtless at once occur to the Commission why it should not (and could not) do this, for to do so would be to afford a bonus to inefficiency or lack of foresight. Thus what is sauce for the goose would not for long remain sauce for the gander, and there would be left outstanding only the penalty for efficiency and foresight. The Commission's method simply cannot be anything but such a one-way road.

if they were from a totally different gas field.[1] (We shall later see why even Brown's and Intrastate's sales are in the penumbra of this process of accretion of power by the Commission.)

Moreover, if leases A, B and C were owned by three separate "natural-gas companies" under the Commission's jurisdiction, and if their respective interstate pipeline transportation expenses were precisely similar, the rates which could be charged for their gas at the end of the transportation—under the cost-of-leaseholds-and-production-facilities method adopted by the Commission in the instant cause—would obviously vary tremendously. In fact, under our cost and productivity assumptions, the production factors of such rates would necessarily vary not by five per cent or ten per cent, but by a thousand per cent for the same amount of gas, so transported for the same cost. If the cost of drilling some of the less productive wells had in fact been greater than the cost of drilling those of greater productivity—a not uncommon situation in this industry—the disparity would be even more striking. And if, as would doubtless be the case, the cost of acquiring leaseholds had varied with the time of entrance of these several companies into the field, a further disparity would result from the Commission's singular approach to this problem.

As Mr. Justice Jackson so clearly pointed out just a year ago in his separate opinion in the *Hope case*, any such extraordinary results would be as unwarranted, incongruous and unrealistic as they would be inevitable under the Commission's adopted method. Doubtless others of the Justices then deemed it unnecessary to decide this point, since the Hope company did not in that case raise it as an issue. *However, now that the point is raised and now that*

[1] This extension of the Commission's doctrine in the instant cause is exemplified in its ruling, now on appeal, in *Louisiana Public Service Commission* v. *Interstate Natural Gas Company*, Docket No. G-149, Opinion No. 91, 48 P. U. R. (N.S.) 267.

the issue is contested, it must not only be considered, but is in fact the very "meat" of the case at bar. And when this problem is viewed realistically, it becomes apparent that, however suited a method may be to the making of rates for ordinary utility services, or even for the service of transporting and selling natural gas in pipelines, no method which necessarily produces the strangely varying results just outlined can be deemed to possess either logic or validity in the establishment of appropriate charges in relation to the production of natural gas.

In the *Hope case*, Mr. Justice Jackson succinctly observed that in developing a "rate base" to apply to ordinary public utility operations the aim is "to reason from the known to the unknown." But, as he also observed, when natural gas fields are involved, this method at once becomes "topsy turvy," for:

> "Gas itself is tangible, possessible, and does have a market and a price in the field. The value of the rate base is more elusive than that of gas. It consists of intangibles—leaseholds and freeholds—operated and unoperated—of little use in themselves except as rights to reach and capture gas. Their value lies almost wholly in predictions of discovery, and of price of gas when captured, and bears little relation to cost of tools and supplies and labor to develop it. Gas is what Hope sells and it can be directly priced more reasonably and easily and accurately than the components of a rate base can be valued. Hence the reason for resort to a roundabout way of rate base price fixing does not exist in the case of gas in the field."

Therefore, he concluded,

> "To regulate such an enterprise by indiscriminately transplanting any body of rate doctrine conceived and adapted to the ordinary utility business can serve the 'public interest' as the Natural Gas Act requires, if at all, only by accident."

Although the frank allowance in all instances of the going field price for produced and gathered gas would thus seem

to be the procedure most fitted to do justice to all interests —as well as to reflect most fairly and realistically the economic problem confronting the regulatory body in such a case—it has been reiterated many times in the briefs on file in this cause that if for any reason such fair field price, or value of the gas, as a commodity, in the field under consideration should not be as readily available as it is here, or if —in the case of a transporter who is also a producer—the Commission should for any reason prefer so to do, it could, of course, reach a result quite similar to that of allowing the fair going field price as an expense by including the company's producing and gathering properties in what would be tantamount to a "rate base" at their present market value. We do not deem this a particularly "artistic" mechanism, but it is certainly preferable to the method adopted in this cause. And since the fair field value of the gas is ordinarily so readily discoverable, it seems clear that only in the very unusual instance would such regulatory circumlocution be either justified or appropriate.

The issues and illustrations which have been outlined are in no sense merely academic. For example, from the vast Panhandle Gas Field of Texas numerous great pipeline systems now transport gas to many distant markets. Yet, under the Commission's production "cost" allowance method, as here exemplified, widely differing rates will inevitably be fixed for gas transported through these several systems, since obviously no two will be found with the same lease and production costs. This situation actually exists today, and regardless of an abundance of testimony as to the effective, fair, going rates for gas, as a commodity, in that field, the Federal Power Commission has already used its curious method of production and gathering rate-making in respect to several such lines.[1] Soon it will have moved to establish rates for all the interstate pipelines from

[1] The case of *Panhandle Eastern Pipe Line Company, et al. v. Federal Power Commission, et al.*, No. 296, this term, concurrently on argument with the instant cause, is an excellent example of this procedure.

that field, as well as from the other great gas fields of the nation, and a sound and early resolution of this fundamental issue is therefore imperative.

Such a clearing of the atmosphere seems even more essential because of the tendency, already exemplified, toward an expansion of this "cost of facilities" ratemaking method into other types of factual situations. Exemplifying this trend is the recent proceeding, already noted, and now on appeal in the Circuit Court of Appeals for the Fifth Circuit, in which the Commission went beyond its attempt to fix at "cost" the allowance for gas produced by a pipeline itself (as in the instant cause), and assumed jurisdiction to fix at "cost" the rate to be charged by a "natural-gas company" for gas produced and gathered by it in a large gas field but sold by it in that very field (as a result of arm's-length bargaining) to another, wholly distinct "natural-gas company." *(Louisiana Public Service Commission* v. *Interstate Natural Gas Company, supra.)* This action was taken on the asserted ground that these production and gathering sales were "sales in interstate commerce." And logically, if this trend should continue, the next step must inevitably be for the Commission to assert the power to fix the rates of individual producers, at their divers individual "costs," an almost inconceivably complicated, expensive, time-consuming, and—as we believe—uncalled for task. Yet, under the Commission's premise, these sales might also be deemed to be "sales in interstate commerce."

We have already pointed out that the adoption of the Commission's production-facilities-cost method is wholly unnecessary in any of these situations, from either the commercial, the economic or the public interest viewpoints. Small wonder, however, that the Committee on Natural Gas, Section of Mineral Law, of the American Bar Association remarked, in its 1943 report, that "The mere contemplation of the Federal Power Commission regulation of the well-mouth price of gas which finds its way into interstate commerce makes thousands of individual producers shudder."

And it is to be noted that it was not regulation—as such—which was thus being discussed, but regulation of the type under consideration in the instant cause, for the Committee added:

> "The principles of cost adopted by the Commission in its rate-fixing activities would eliminate forever discovery value, would limit the financial recovery to cost plus 6½ per cent and take away all incentives to wildcat operations. Losses incurred in unsuccessful projects could not be balanced out against the cost of other and different successful projects. Two wells each costing the same but one producing twice as much as the other would result in the price of gas from one well being twice that of the other. It is not too much to say that the economic incentive for the small producer engaged in widely separated projects would be gone."

Acceptance of the "'fair field price" of gas (by whomsoever produced), as the reasonable and logical gas production expense allowance in all instances, will cure every difficulty which has been indicated. Such natural gas is a commodity and is bought and sold on the market, and such fair field price is ordinarily readily ascertainable—witness the unquestioned evidence on this subject in the instant cause. Because of the nature of natural gas and of its production, the principle applies with equal appropriateness both to purchased gas and to gas produced by the transporter itself. Certainly it seems incongruous for one amount to be used in rate-making for purchased gas, and another amount to be used in the same case for self-produced gas from neighboring wells in the same field.

It is as if a motor bus company also owned an oil well from whose production it refines gasoline which it uses (along with gasoline purchased from others) to operate its vehicles. No regulatory body of which we have any cognizance would go through the circumlocution of developing the gasoline expense allowance to be used in fixing such a company's rates by taking the purchase price of the gaso-

line obtained from others and then computing and adding to that sum the "cost"[1] of the company's self-produced gasoline. Rather it would of course use for such allowance

[1] Such "cost" per gallon (under the method which the Commission purported to use in this proceeding) being derived by adding the following:

(a) The operating expenses of running the gasoline refining plant and associated facilities;
(b) The expense incurred in pumping from the oil well that portion of the total pumped oil which is used for gasoline refining purposes;
(c) The taxes on the gasoline plant;
(d) A reasonably allocated portion of the taxes applicable to the oil lease, well and pumping facilities;
(e) The appropriate depreciation accruals on the various component parts of the gasoline plant;
(f) A reasonably allocated portion of the appropriate depreciation accruals applicable to the oil well and pumping facilities;
(g) A reasonably allocated portion of the depletion accruals applicable to the oil lease;
(h) The allowable "return" (i.e., 6½%, or some other selected percentage, of the sum of the following:
  (1) The investment in the gasoline refinery and associated facilities;
  (2) A reasonably allocated portion of the investment in the oil lease (unless lease payments are included as operating expenses);
  (3) A reasonably allocated portion of the investment in the oil well (i.e., its drilling cost), and
  (4) A reasonably allocated portion of the investment in any other jointly used facilities

and by divjding the total by the number of gallons of gasoline produced and used. Of course, it would not be simple to determine the proper allocations to be made in the above calculations, and there might be (and doubtless would be) other items of difficulty and other complications. But we believe the above outline affords a reasonable, even if somewhat rough, picture of the process.

Unless—perchance—part of the gasoline in question were being used in other operations (over which the Commission had no jurisdiction); or were being sold in the open market at its general market price,—in which event other allocations would be requisite and other difficulties would at once arise.

And if there were three or four bus lines, each with its own oil well and gasoline refinery, and each with its separate "costs,"—wouldn't that be a pretty kettle o' fish?

the value (at the current market price) of all of the gasoline in question. To do otherwise would only result in penalizing the bus company (for any efficiency it might show in gasoline production) or its patrons (for the company's inefficiency)—neither result being appropriate to the situation.

It is equally incongruous for numerous different (similarly derived) rates to be made applicable to similar amounts of gas produced from the same underground reservoir at the same time by different companies, as it is for one amount to be used in rate-making for purchased gas and another amount to be used in the same case for self-produced gas. Yet the Commission's adopted method necessarily results in these incongruities.

In their brief, respondents assert the difficulty of ascertaining the fair field price of gas, but the accumulation of testimony on this subject in numerous cases before the Commission belies this apprehension. Certainly the Commission is in no instance left helpless. Ordinarily, the price for gas set forth in purchase contracts in the field may fairly be used (as the Commission actually has done up to the present time in most instances of independently produced gas). If the Commission should entertain any doubt, it could call for proof, and in the case of gas purchased from an "affiliate" it might be justified in holding the burden to be on the purchasing company to prove the contract price a fair, going field price. Where the gas is self-produced the burden of proving such fair, going field price (or value) would doubtless be on the producer. Only where adequate testimony cannot be had would the Commission be forced to any sort of computation, let alone the particular one it selected in the instant cause. We venture to say that in few, if any, cases (where large pipelines are involved) would any difficulty of consequence arise in the development of a proper allowance equivalent to a fair, going field price, or value, of the gas.

Therefore, because of the nature of this commodity and of its production, as well as the dangers, the difficulties and the confusion to be apprehended from any other course of action, we urge that the regulatory forces and the courts should firmly eschew any temptation to assimilate this particular item into usual utility service regulatory categories, and that they should recognize that this is not an ordinary "rate base" problem, but rather involves "an entirely different sort of critter."

CONCLUSION.

If the Federal Power Commission's gas production "cost" method of rate-making should now be judicially approved, the road ahead for the nation's gas pipeline companies cannot be other than a one-way street. For, if such a concern's gas production costs (for leases and drilling) are low for any reason, and if it can therefore produce gas for a total cost per cubic foot less than the recognized and going field price for such gas in the field, it will patently be penalized for its foresight or efficiency; whereas, if its costs per cubic foot of produced gas are for any reason greater than such fair, going field price, neither this Commission nor any other conscientious regulatory body would (or could for long) allow it such higher costs as reasonable expenses in fixing rates for the sale of gas at the conclusion of its transportation operations, if it could purchase the same amount of gas at lesser cost in the field. Obviously, though the fair market value of such a commodity so transported and sold may from all viewpoints be deemed fairly to measure the propriety of the expense allowance, the Commission's adopted method, as here exemplified, must inevitably mean "Heads we win; tails you lose." It could not be otherwise.

We respectfully submit that the Federal Power Commission does not possess jurisdiction to fix petitioner's rates for production and gathering, and that its action in the instant cause was therefore unauthorized, since it clearly

constituted an attempt to fix such rates. On the other hand, if the Federal Power Commission should be deemed for any reason vested with jurisdiction to establish these production and gathering charges, we submit that the machinery which it here adopted was wholly unsuited to the problem before it. Under either aspect of the situation, the Commission's action—and that of the Circuit Court in approving it—should be reversed.

Respectfully submitted,

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vs

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND COLORADO INTERSTATE GAS COMPANY, *Respondents*.

BRIEF OF THE INDEPENDENT NATURAL GAS ASSOCIATION OF AMERICA, AMICUS CURIAE, IN SUPPORT OF THE PETITION OF CANADIAN RIVER GAS COMPANY FOR REHEARING AND FOR ENLARGEMENT OF SCOPE OF REVIEW.

INDEPENDENT NATURAL GAS ASSOCIATION OF AMERICA,

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PRESS OF BYRON S. ADAMS, WASHINGTON, D. C.

IN THE

Supreme Court of the United States

OCTOBER TERM, 1944.

No. 380.

CANADIAN RIVER GAS COMPANY, a Corporation, *Petitioner*

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND COLORADO INTERSTATE GAS COMPANY, *Respondents.*

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This brief of the Independent Natural Gas Association of America is presented *amicus curiae*, under Rule 27, Paragraph 9, of the Rules of this Court.

On December 4, 1944 Petitioner herein, Canadian River Gas Company, filed with the Court a petition for rehear-

ing and for enlargement of the scope of review permitted by the order of this Court of November 13, 1944.

In its said petition for rehearing, Petitioner requests this Court to include within the scope of its review; among other issues, the question whether the Circuit Court was correct in its ruling in respect to the exercise of jurisdiction by the Federal Power Commission over facilities used for the production and gathering of natural gas (Question No. 1, Pages 2-12, Petition for Rehearing).

The Independent Natural Gas Association of America is a corporation organized and existing under the laws of the State of Delaware. Its membership includes royalty owners and those engaged in the production, gathering or transmission of natural gas. One of the principal purposes of the Association, as set forth in its charter, is to assist in the protection of the interests of the natural gas industry.

The Association and its constituent members are vitally interested in any question involving the lawfulness of assertion by the Federal Power Commission of jurisdiction over the production or gathering of natural gas. Section 1(b) of the Natural Gas Act (52 Stat. 821, Title 15 U. S. C. 717) specifically exempts from the Commission's jurisdiction "the production or gathering of natural gas." The Association believes that the question raised by the Petitioner herein in respect to the validity of the jurisdiction asserted and exercised by the Federal Power Commission over facilities used for the production and gathering of natural gas in the instant proceeding is an important issue of Federal law. The appropriate resolution of this issue is a matter of large significance to the natural gas industry of the country. We believe it of the highest importance, in the public interest and in the interest of this important industry, that this issue should be specifically passed upon by this Honorable Court in its review of the instant cause. Many of the reasons for this position on the part of this Association are set forth in Petitioner's petition for rehearing and enlargement, above mentioned, and seem not to require restatement here.

The Independent Natural Gas Association of America therefore respectfully suggests and requests that this Court enlarge the scope of review permitted by its order of November 13, 1944 to include the question whether the Federal Power Commission has properly exercised jurisdiction over the production and gathering facilities of the Canadian River Gas Company which are involved in this proceeding.

Respectfully submitted,

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April 26, 1945.

PRESS OF BYRON S. ADAMS, WASHINGTON, D. C.

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PETITION OF THE INDEPENDENT NATURAL GAS ASSOCIATION OF AMERICA, AMICUS CURIAE, FOR A REHEARING.

The decision of April 2, 1945, in this proceeding has served only to render more perplexing an already confused and somewhat bewildering situation. Four only of the nine Justices of this Court would unqualifiedly sustain the Federal Power Commission in its assumption in this case of rate-making authority over the "production and gathering" of natural gas; four of the remaining five Justices would

reverse that action as clearly beyond the Commission's statutory jurisdiction, while one—the Justice whose conclusion thus became controlling—has declared, in effect, "I would like to reverse the Commission's action, *but* . . . "

It is to this formidable and here decisive little "but" that we must therefore address ourselves. What is the nature and fundament of this curious judicial paradox? What has actuated this singular resolution of the essential issue of this cause?

The Independent Natural Gas Association of America did not seek to appear as *Amicus Curiae* in this proceeding because of any special or financial interest in this particular cause or in this particular Petitioner. It appeared because of its members' conviction that a sound resolution of the issue of Federal Power Commission authority over "production and gathering" under the Natural Gas Act is a matter of paramount import to the entire natural gas industry, and particularly to the multitude of independent producers and royalty owners of the country who form the backbone of this widespread industry. The value of their wells and gas reserves is directly affected by the ruling which has here been made. Indeed, their interests, wherever they may be, are as directly affected by this decision as are those of this pipeline company. If it be the law that the value of half the gas produced from a given gas well is to be determined by costs incurred many years ago (or perchance by no cost at all) under exploratory conditions wholly at variance with those now prevailing, it is obvious that the value of the other half is at once affected, as is also the value of the royalty owner's interest. A general adoption of the cost method of valuing gas-producing properties—as here exemplified—cannot fail, therefore, to affect the value of all reserve and gas well properties. This effect is as immediate as it is certain. That is why we are here, and it is the only reason we are here. That, also,—as we believe—was the real reason why Congress at least at-

tempted to withhold the sphere of "production and gathering" from the Commission's jurisdiction.

Under these circumstances, this Petition for Rehearing is necessarily aimed with the utmost frankness at Mr. Justice Jackson's opinion and reasoning. If the situation which the learned Justice deemed controlling, contrary to his expressed desired to reverse the Commission in this case, should in some appropriate manner be disclosed not to be thus logically or properly determinative in this particular proceeding and against this particular company, then, we believe, a majority of the Justices of this Court would at least be in agreement in favor of an "end result" of reversal by this Tribunal, whether or no they might wholly agree upon the appropriate legal basis for such action. We file this Petition, therefore, not for any purpose of delay, but because we are convinced, in all good faith, that we can fairly show that Mr. Justice Jackson's concurring opinion resulted from a misapprehension of certain factors basic to this case.

We shall here advert to but two of these factors. Both are involved in Mr. Justice Jackson's reasoning under the *Hope* decision.[1] As we read his concurring opinion, the basic concept underlying his reasoning in his belief that, for judicial purposes, it is essential that the philosophy expressed in the *Hope* case shall prevail until—as we understand him—the supporters of that philosophy finally hang themselves upon the horns of an as-yet-unforeseen but inevitable dilemma. Frankly, we can read no other premise into the learned Justice's observation that he possesses "no intuitive knowledge as to whether a given price is reasonable"; his assertion that he cannot with sincerity recede from his reasoned expression in the *Hope* case, and his firm belief that the Court's decision in that proceeding provides "no workable basis for judicial review, no key by which

[1] Federal Power Commission v. Hope Natural Gas Co., 320 U. S. 591.

commissions can anticipate what rule, if any, will control our review, and no guidance to counsel as to what issues they should try or how they should try them," and—finally—his statement that "the majority which promulgated that decision, or a majority of that majority, should be permitted to continue to spell out its application to specific problems until we can see where it leads."

If, as Mr. Justice Jackson also asserts, the philosophy underlying the *Hope* case is, in fact, "fantastic," then assuredly there lurks behind his reasoning the conviction that further application of that philosophy to specific problems cannot fail to lead to fantastic results. It is the belief of your *Amicus Curiae* that such a consequence has already come to pass in this very proceeding, and that the learned Justice may, on the best of rational grounds, adopt that view in the light of:

(1) His misapprehension in respect of the rates actually here involved, and

(2) His (as we believe) misconception of the "immediacy" of impact of the Commission's action upon "production and gathering" activities.

I.

THE RATES HERE INVOLVED PRESENT NO DISPARITIES OF THE NATURE OUTLINED IN THE CONCURRING OPINION.

Mr. Justice Jackson is deeply and sincerely concerned with the proper conservation and use of natural gas as a national resource. He has noted an apparent disparity in the prices charged by the Colorado Interstate Gas Company, appellant in another and separate proceeding, for gas sold by that company to the Colorado Fuel and Iron Company for industrial purposes, on the one hand, and for gas sold by Colorado Interstate to the distributing company serving the city of Denver, on the other. We are advised that the prices mentioned by the learned Justice in respect

of such rates are not in fact correctly stated, and we are further advised that the actual disparity is much less than he has suggested. Be that as it may, the fact is that by the use of such criteria Mr. Justice Jackson has fallen into what we respectfully believe to be the error of resting his conclusion under this phase of his reasoning upon rates applicable wholly to a totally different entity from that which is the subject of this proceeding, the Canadian River Gas Company.

Colorado Interstate is not Canadian; it is a customer of Canadian, and has so been held by the Federal Power Commission, which has fixed the rates of Canadian for all sales of gas to Colorado Interstate, without distinction as to eventual use or eventual purchaser, and which has been held justified in so doing by this Court. There is not now, nor has there ever been, any disparity between the price charged by Canadian to Colorado Interstate for gas to be sold by the latter for various purposes or to various customers or types of customers. The disparity of rates which has impressed Mr. Justice Jackson (even were it of the magnitude which he supposed) has therefore no application to Canadian, whose rates were separately fixed by the Commission upon the basis of facts not pertinent to Colorado Interstate. Certainly, it should not require argument to convince the learned Justice that, in such a situation, he has fallen into a not unnatural but nonetheless determinative factual pitfall. It is like condemning a farmer because a portion of the pork products sold by him at a uniform price to a butcher were found to have been resold by the latter in the black market.

The fact is that Mr. Justice Jackson has rested his view that the "end result" of the rate order fixing Canadian's rates may be supported under the *Hope* case philosophy upon certain assumed facts which simply do not apply to the company whose rates are here at issue. Those other rates were at issue in a totally separate and distinct pro-

ceeding. They were necessarily the subject of a separate order of the administrative tribunal. The appeal of that other company from that order constitutes a totally different and necessarily distinct appellate proceeding before this Court, which was briefed and argued separately and was only joined for decision with the case of Canadian River Gas Company for purposes of convenience. These separate appeals raised wholly separate and distinct issues for determination by this Court. That other company has no production or gathering properties, and its rates simply are not at issue in this proceeding. Yet, on the basis of that other company's charges to various consumers for regulated and unregulated gas, respectively, and not otherwise—as we understand him,—has Mr. Justice Jackson rested his determinative opinion that the *Hope* case philosophy may here be applied.

We believe that a rehearing of this cause will show this to be true. And if it be true, may not an alteration in the learned Justice's decisive opinion reasonably and fairly be expected?

II.

THE IMMEDIACY OF IMPACT OF THE COMMISSION'S ACTION IN RESPECT TO PRODUCTION AND GATHERING.

The confusion of Colorado Interstate, and its rates, with Canadian, and its rates, is the more unfortunate—in the light of the curious 4-4-1 decision which has here eventuated—because it has apparently led to another quite disconcerting conclusion on the part of the concurring Justice, a conclusion which seems wholly at variance with the reality of what the Commission here did. Indeed, the very nub of this entire proceeding, as it turns out, is the declaration by Mr. Justice Jackson to the effect that the order here under consideration has no "immediate" impact upon the production or gathering of gas by the Petitioner. The implication is plain that, had the learned Justice been of

the opinion that the order did have such "immediate" impact upon production and gathering, his resolution of the issue of jurisdiction would have been different. Let us therefore briefly examine the nature and essence of that impact.

In the first place, if a man owns a house and some official tells him he may not paint it, the impact as to paint may be immediate, but he still owns the house and may sell it, if he so desires, at whatever price he can obtain. On the other hand, if, after receiving an offer of $10,000 dollars for the property, the same houseowner were to be told by some authority that he could only receive $5,000 dollars from the sale, the impact might not be "immediate," in a certain sense, but its result would doubtless be far more drastic. And if the poor fellow needed to obtain cash for any reason—perhaps to paint another house—we more than suspect that the impact of the latter ruling would be much more actual—and indeed more truly "immediate"—than would that of the former.

This is the very situation here confronted. Natural gas reserves are not bought or sold or held merely for fun. They have no value save as they may be used, through present production and sale of gas from wells drilled into them, or by reason of potential sales which will return more than the cost of holding the gas for a time in the ground. The operations of production and gathering of gas are for one purpose, and one purpose only,—to market the gas so produced. If it could not so be marketed there would be no such operations. And if the price at which it can be marketed by one producer is held to an amount less than another producer may freely charge, the production operations of the first producer are as "immediately" affected as if some of his wells were destroyed. Only for the purpose of proper conservation, and then only on an impartial basis applicable to all, would any such result be consistent with justice and reason. And in such a case the methods

used would necessarily differ in kind from those adopted here.

The Commission did not here act for conservation reasons. It did not even purport to do so, and it is doubtful whether it could have acted for such reasons in any event, since this function has been reserved to the states. But the result is that this producer, this petitioning corporation, is so immediately affected that its production and gathering operations are not merely hampered or rendered less profitable,—they are jeopardized in their entirety. And the interests of the gas consumers for whose benefit this company's gas reserves have been collected are likewise vitally and immediately affected.

In this connection, it is fundamental to remember that one of the most essential functions of a large natural gas pipeline project consists in the "blocking out," by contract, purchase or otherwise, of sufficient reserves of gas in the ground to assure the successful maintenance of the enterprise over a considerable period of years. The consuming public at the discharge end of a long transmission pipeline would hardly be protected or satisfied if the enterprise possessed only the mere hope of being able, from year to year, on some annual catch-as-catch-can basis, to continue to secure its necessary supplies of gas in the field. It is therefore sound economics for such a system to provide itself with adequate reserves of gas, not merely to make certain that the cost of its project may be returned out of earnings over the years (a *sine qua non* for the attraction of investors, and thus for the sound financing of the project), but also to insure to its patrons an adequate and continuing supply of gas. The importance of this element of natural gas pipeline operations cannot be too greatly emphasized.

The effect of the decision in the instant cause, however, cannot prove other than a deterrent to any such procedure. Already it is being said in the industry that it would be far better for producers to sell their gas in the field for unre-

gulated uses only (thereby jeopardizing the future reserves of all natural gas pipelines) than to risk being forever held to "aboriginal cost" as the basis for the pricing of gas entering an interstate pipeline.

It is, of course, the interplay of economic forces, rather than the operation of any regulatory processes—as such, which draws gas from the earth into the stream of commerce. A regulatory process wholly at variance with the economics of the problem may, however, produce seriously deleterious effects. As Mr. Justice Jackson has remarked, a price of gas in the field sufficient to draw it into the stream of commerce, but no greater price, is what is economically required. And, as the learned Justice has likewise pointed out, the "aboriginal cost" method of pricing such gas produces a result bearing no relation, logical or otherwise, to such an economic price. The forces which underly this situation rest in delicate balance, and obviously, should any large proportion of the owners of gas reserves (or of gas produced in association with oil) find it uneconomic—as they doubtless will—to allow their gas to enter interstate pipelines for regulated uses on the aboriginal cost pricing basis, the gas in question will inevitably be diverted to other ends. Here, again, is seen the true "immediacy" of impact of this decision upon the production and gathering of natural gas.

The force of this impact, and the vital relation between price and conservation, are well illustrated in certain recent statements and reports, from which we deem it appropriate to quote. For example, Commissioner Ernest O. Thompson, of the Texas Railroad Commission, aptly described the situation when he recently remarked (see *The Oil Weekly*, March 12, 1945, p. 27):

> "We have an abundant supply of gas in Texas. We are marketers of gas. . . . It is my view that as we have more competition in the purchase and sales of gas we shall get a better price for it. . . . When we get a better price we can have better waste prevention; as, the

owners will have something worth conserving and they will not allow it to be blown into the air."

In similar vein, Commissioner Beauford H. Jester, of the same Commission, is quoted in *The Oil Weekly* for December 11, 1944, as declaring that "too much gas has been wasted in the past because it had no market and consequently no sale value."

In the leading editorial in the January 1945 issue of *Gas*, Mr. Elliott Taylor spoke of the work being done by the Regulatory Practices Committee of the Interstate Oil Compact Commission (which represents states producing some 80 per cent of the total of natural gas now being marketed). Of that Commission, Mr. Taylor says:

> "Perhaps better than any single regulatory body the Commission recognizes the delicate balance that exists between the economics of natural gas disposition and that of petroleum production. It recognizes the fact, sometimes obscured to the Federal Power Commission, that pure social theories cannot be relied upon to bring oil to the surface and leave the gas behind. And it recognizes that what happens to the natural gas that comes to the surface in association with petroleum production depends almost entirely on what that gas is worth. If it commands no better price than 1½c to 2c at the wellhead it is not worth conserving and no legislative interference with the ultimate dispositon of the gas will ever change that simple economic fact. The studies of the oil compact commission's special committee have convinced its members that 'better prices seem obtainable only through an expanding competitive market.'"

We cannot fairly leave this subject of the influence of price on sound conservation practices without quoting briefly from the report of the committee of which Mr. Taylor was speaking. In December 1944 that committee stated (*Quarterly Bulletin*, Vol. I, No. 4):

> "There has been considerable discussion concerning the importance of the price paid for gas as affecting its

conservation. It is a matter of common knowledge that low prices and that existing disparity of prices have created great confusion in the natural gas industry.

"Your Committee on Regulatory Practices is of the opinion that these elements have rendered extremely difficult the duty of the enforcement of conservation statutes; and that any successful program of conservation and utilization must, in the last analysis, frankly face this issue and take it into consideration."

In an earlier report (published in the *Quarterly Bulletin* of the Oil Compact Commission, Vol. III, No. 2, July 1944), this same committee remarked that, as early as December 1942, it had pointed out "the relationship which the price of natural gas had to the problem of conservation," and it added that many projects for the expanding uses of natural gas, chemical and otherwise, in the interests of its sound utilization, "could not, and would not, be constructed if the product at the wellhead was not commanding a price commensurate with its intrinsic worth."

We have adverted to these reports and statements solely because of their important, and wholly independent, bearing on the issue here under consideration. If the fair market price of gas at the wellhead is not to be allowed to govern, but if—instead—some lower, "aboriginal cost" method of pricing such gas is to be adopted (with widely varying price levels as between different producers in the same field, and, indeed, between producers from the same well), the impact of that method (which is wholly oblivious to existing economic balances) cannot fail to be both "immediate" and certain in every gas-producing area. It is as immediate and certain upon the industry as a whole as it is with reference to this single gas producer's operations.

One further word on the "immediacy" of impact upon this single company. Even were we to accept the premise that the statutory exception of "production and gathering" applies only to the "activity" of producing and gathering gas, the impact of this order is direct and immediate upon

that activity. For example, the Commission has essayed to fix the amount of working capital which this company may be allowed for the conduct of its production and gathering operations. It has authorized no earnings at all for gas produced from some wells, and only a bare pittance for gas from others. It has purported to establish the precise amounts which will be allowed the company to cover the cost of future producing and gathering operations. It has altered the amounts already fixed by contract for the carrying on by this company of producing and gathering "activities." And the company is obviously placed in a position in which, because of this treatment of its production and gathering "activities" (which constitute some two thirds of its business), it cannot meet its actual costs incurred in those activities. If to force a corporation into probable bankruptcy, under such circumstances, or if to fix and limit by administrative mandate the precise amounts which this enterprise will be allowed to recoup as operating expenses for and in respect of such production and gathering activities, is not to exert "immediate impact" upon the activities which constitute so great a proportion of its business, then we are at a loss to understand the English language.

So far as the "impact" upon an owner of a gas lease is concerned, the result of an order that he may not charge anything for gas from a well he has already drilled is just as "immediate" as it would be if the order were that he would not be allowed to drill a well at all. His production "activities" are equally affected and circumscribed. And the "impact" of an order allowing him to charge rates covering only the operating expenses of one well halts him as "immediately" from drilling another as would a direct order not to drill the second well. To say that the "activity" of gas production is not as immediately affected by the one order as it is by the other seems only to beg the question posed here by the Congressional prohibition

against the application of this statute to production and gathering.

It affords us small consolation to recall that the Chief Justice, and his associates in this case, clearly recognized the immediacy of such impact, and also recognized the fact that, by reason of the treatment accorded these production and gathering properties by the Commission, the most direct possible form of regulation has been imposed upon such properties, despite the language of Section 1(b) of the statute. We say that this affords us small consolation because we are confronted with an assertion by the Justice who concurred in result only with another four Justices merely declaring—without more—that the impact is somehow not "immediate." We believe we have illustrated how truly immediate the impact is, and should this petition for rehearing be granted, we feel certain that we can disclose to the concurring Justice that his assertion in this regard resulted from a misapprehension of certain of the basic factors here involved.

III.

THE HOPE DECISION AND THE INSTANT CAUSE.

We are constrained to add a few words anent the *Hope* decision and its applicability to the situation here confronted. We have read and reread that decision, and, though the matter is not there made entirely clear, we fail to find in that case any suggestion that an administrative body is henceforth to be relieved of the duty to consider and act in such a matter on *some* reasonable basis. All that we discern for certain is that the administrative process is not held to any particular set course. But the course adopted must, we believe, bear some logical relation to the end which is being sought. The majority in the *Hope* case found that relation in certain record data on corporate financial background and the maintenance of financial integrity. At no point do we find support for the thought

that ratemaking is by that decision afforded the freedom of mere intuitive processes.

Certainly, neither Mr. Justice Jackson, nor (we believe) the Justices for whom Mr. Justice Douglas spoke in the instant case, would find support in the *Hope* case philosophy to sustain a rate ruling of an administrative body whose end result (i. e., the rates finally established) rested solely and wholly upon a mere count of the baldheaded men in the hearing room, without more in the record. Nor would they, or any of them, apparently sustain such an order were it based wholly upon a record and finding that on the day of hearing it was raining. Such extraneous criteria could hardly support any reasonable conclusion on the technical subject of rates, and as we read the *Hope* decision there must be some logical criterion of judgment on which the "result" of the rate-making process may be measured, even though the "mechanics" has not been frozen to any particular course.

As we understand them, Mr. Justice Douglas and his associates looked in the *Hope* case for such a criterion in the financial and credit maintenance necessities of the corporation there involved. Had it been clear in that case that, though soundly financed and efficiently managed, and though possessed of a well-balanced capital structure and a sound market, that corporation could not maintain a reasonable position of financial integrity upon the rates as fixed, the decision—as we discern its reasoning—would have been different. In other words, for the "fair value times fair rate of return" criterion, these Justices there substituted a highly positive standard, which, as to rates otherwise reasonable under value of service criteria, they felt could fairly be used as a guide.[2] The matter was therefore

[2] See "The Hope Case and the Direct Approach to 'Fair Return,'" by Carl I. Wheat, *Public Utilities Fortnightly*, April 27 and May 11, 1944 (Vol. XXXIII, Nos. 9 and 10, pp. 531 and 617). Also, "the Direct Approach to the Fair Return Ques-

not merely one of "intuition," nor could the decision to support the Commission in that case be truly termed a mere drawing of a paper out of a hat.

In the instant proceeding, however, we seek in vain for data on which to apply any such yardstick as was thus established in the *Hope* case for the reasonable measurement of the "end result" reached through the administrative process. *The only data suggested by Mr. Justice Jackson applies solely to another company in a different proceeding and has no applicability of any sort to this company or to this case.* In the absence of such data, the only support for the sole criterion even hinted at in the *Hope* case is here lacking, and even a Justice who supported that ruling (not to mention one who dissented) could, as we see it, fairly, soundly and logically rule here to reverse the administrative action. Otherwise, we would be left merely with a process of counting bald heads, and surely that cannot be the sort of means which could justify an end in rate-making, even under the broadest interpretation of the *Hope* case. Even under that decision, the end must be justifiable under facts applicable to the concern whose rates are at issue. And even under that decision, the "end result" must find support in reason, regardless of the frailties of any particular method that may have been used to reach it.

We therefore respectfully suggest that Mr. Justice Jackson concluded to allow the *Hope* case philosophy to prevail in this cause as a result of a misunderstanding of the admittedly complex record in this proceeding. We further respectfully suggest that, as a direct and immediate result of that misconception (and the erroneous consideration of

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tion," by Paul B. Coffman, *Public Utilities Fortnightly*, August 27 and Sept. 10, 1942 (Vol. XXX, Nos. 5 and 6, pp. 277 and 350), and "The Problem of the 'Rate of Return' in Public Utility Regulation," June 15, 1938, a report of the Telephone Rate and Research Department (Telephone Investigation) of the Federal Communications Commission.

another company's rates and operations as applying to this company's situation), the learned Justice has rested his concurring opinion upon a semblance of actuality which simply does not in fact exist in this case. A rehearing and reconsideration of this matter will, we verily believe, disclose this to be the situation.

CONCLUSION.

One final aspect of this situation should be noted. We have already adverted to the sincere interest of Mr. Justice Jackson in the sound conservation of natural gas resources. With this conviction we find ourselves in hearty agreement. We have also adverted to the fact that the price at which gas produced in any given field may be sold is a vital factor—indeed, the critical factor—in inducing the sound conservation of such a resource. That this factor looms especially large in the case of natural gas is amply demonstrated by the history of this very gas field, the so-called Panhandle Field of Texas. It was during the early years following the discovery of that field, but before the advent of the pipelines which now carry much of its gas to distant markets, that waste of the grossest type existed. The prime reason for such waste was the utter lack of any economic market. Only when a market was developed through the construction of pipelines, and only when the value of the gas in the field was thus raised to more economic levels, was this waste curtailed.[3]

May we respectfully yet earnestly suggest that the decision in the instant cause cannot fail to produce effects

[3] Description of the chaotic conditions and waste of gas which prevailed during the earlier years of the Panhandle Field, prior to the advent of large pipelines and the consequent provision of a distant market for gas, which would otherwise have been wasted, are to be found in *Thompson* v. *Consolidated Gas Utilities Corp.*, 300 U. S. 55, 81 L. Ed. 510, and *Final Report of the Federal Trade Commission* on economic conclusions respecting natural gas (Senate Document 92, Part 84-A, 70th Congress, 1st Session).

upon conservation in this and other gas fields of the most harmful character, through limitation of values—and therefore of the price incentives which produce truly economic conservation practices. If it be allowed to stand, the ruling of the Federal Power Commission in respect to this Petitioner cannot fail, in our opinion, to encourage inefficient uses of gas in or near gas fields; to inhibit many types of uses as to which natural gas is the technically preferred fuel, and generally to restrict development and ultimate production in the Panhandle Gas Field, with resultant social and economic loss to the nation as a whole.

WHEREFORE, The Independent Natural Gas Association of America respectfully requests that a rehearing be granted in this matter, that reconsideration of these pertinent issues be undertaken, and that the mandate of the Court be stayed until such time as the proceeding may have been concluded.

Respectfully submitted,

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April 26, 1945.

CERTIFICATE.

Carl I. Wheat, of counsel for The Natural Gas Association of America, appearing herein as *Amicus Curiae,* hereby certifies that the Petition for Rehearing filed herewith is presented in good faith and not for delay.

CARL I. WHEAT.

Washington, D. C.
April 26, 1945.

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PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

PETITION OF CANADIAN RIVER GAS COMPANY FOR REHEARING AND FOR ENLARGEMENT OF SCOPE OF REVIEW.

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IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

No. 380.

CANADIAN RIVER GAS COMPANY, a Corporation,
PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

PETITION OF CANADIAN RIVER GAS COMPANY FOR REHEARING AND FOR ENLARGEMENT OF SCOPE OF REVIEW.

Canadian River Gas Company, petitioner, heretofore filed its Petition for Writ of Certiorari herein presenting nine separate questions. By its Order of November 13, 1944, this Court granted said petition, limited to the Eighth Question presented thereby, which Eighth Question is as follows:

"8. Whether the Commission can, consistently with the Fifth Amendment to the Constitution of the United States and the provisions of the Act, reduce the rates and charges of Canadian on that part of its natural gas sales to Colorado Interstate which is not sold by the latter for ultimate distribution to the public but is sold by it directly to its industrial customers; furthermore, independent of

the above question, whether the Commission erred in making no separation or allocation as between Canadian's properties devoted to intrastate sales in Texas and its properties devoted to interstate sales, or as between the properties of Canadian and the properties of Colorado Interstate, and in using in lieu thereof a substitute method of allocation of cost of service which results in burdening non-regulable gas with costs actually chargeable against regulable gas, in violation of the Fifth Amendment to the Constitution of the United States and the Act."

Petitioner now respectfully petitions this Court to grant a rehearing herein to the extent that its Order of November 13, 1944, denies review by this Court of Questions 1, 2 and 3 set forth in its Petition for Writ of Certiorari, and to enlarge the scope of the review to be had in this Court so as to include the Questions Nos. 1, 2 and 3, as well as the Question No. 8 set forth in said Petition for Writ of Certiorari.

In support of this petition, petitioner respectfully shows:

QUESTION NO. 1.

Question No. 1 set forth in the Petition for Writ of Certiorari is as follows:

"1. Whether the Circuit Court, after correctly holding that the Commission has no rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, erroneously concluded and ruled that the Commission in this case did not exercise such prohibited jurisdiction."

Petitioner believes and submits that in failing to include this question within the scope of its granted review the Honorable Court has overlooked or misapprehended the public importance and real significance of the question presented, all of which is evidenced by the following brief summary statement of facts:

(a) Section 1(a) of the Natural Gas Act declares the Congressional intent and sets forth the purposes of the Act "that the business of *transporting and selling* natural gas for ultimate distribution to the public is affected with a pub-

lic interest, and that Federal regulation in matters relating to the *transportation* of natural gas and the *sale* thereof in interstate and foreign commerce is necessary in the public interest."

(b) Not only does the Act by Section 1(a) limit its scope and coverage to interstate transportation and sale of natural gas, but to foreclose all possibility of misconstruction or an unwarranted assumption of non-granted jurisdiction Section 1(b) of the Act expressly provides that it "shall not apply to * * * the production or gathering of natural gas." Clearly the English language contains no words which could more positively express the Congressional intent than are found in these two subdivisions of the very first section of the Act.

(c) If aid to interpretation of the clear, positive and unambiguous language contained in Sections 1(a) and 1(b) of the Act is for any reason thought necessary or desired, it can be abundantly found in the legislative history of the Act where its sponsors, including the representatives of the Federal Power Commission, stated time and time again that the Act was not designed to and did not cover production and gathering. See statements of Mr. Dozier A. DeVane and Mr. Thomas A. Tingley, Solicitor and Assistant Solicitor, respectively, of the Federal Power Commission contained in the official report of "Hearing Before a Sub-Committee of the Committee on Interstate and Foreign Commerce, House of Representatives" in connection with the original H.R. 11662, pages 17, 28, 34, 35, 42, 43; statements of Chairman Lea, Congressional Record, Volume 81, Part 6, page 6721; and Senator Wheeler, Congressional Record, Volume 81, No. 162, page 11981.

(d) This Court, in *Federal Power Commission v. Natural Gas Pipeline Co.*, 315 U. S. 575, and *Federal Power Commission v. Hope Natural Gas Co.*, 320 U. S. 591, has approved actions of the Commission only because the Commission was found to have acted within the "ambit of its authority," and in the Hope Case (p. 287, Vol. 88 L. Ed., Advance Opinions) this Court stated:

"As we have said, the Act does not intrude on the domain traditionally reserved for control by state commissions;

and the Federal Power Commission was given no authority over 'the production or gathering of natural gas.'"

(e) The Circuit Court of Appeals for the Tenth Circuit in its opinion in this case (142 Fed. (2d), p. 952), following the mandate of the Act and the ruling of this Court, correctly stated that "under Section 1(b) the Commission does not have express or implied rate regulatory jurisdiction of the production and gathering of gas," and that under Section 1 of the Act the production and gathering properties and facilities of petitioner, while part of its integrated operations, "lie beyond the range of the rate-regulatory jurisdiction of the Commission."

(f) In view of the express and positive provisions of the Act, the legislative history thereof, the ruling of this Court in the Hope Case quoted above, and the quoted language from the Circuit Court's opinion, we are absolutely unable by recourse either to reasoning or imagination, to justify the lower court's ruling that what the Commission did in this case does not constitute a usurpation of rate regulatory jurisdiction over production and gathering so universally recognized as being expressly withheld from the Commission. The Commission itself makes no contention that it has not exercised rate regulatory jurisdiction over Canadian's production and gathering, but attempts to justify its action on the theory that an exercise of such jurisdiction is essential, although not granted by Congress, to a proper exercise of its delegated rate regulatory jurisdiction over interstate transportation and sale of natural gas. That this contention is without merit and that the Commission did in this case exercise prohibited rate regulatory jurisdiction over production and gathering are demonstrated by the following:

(g) Mining operations, which would include production of natural gas, have been uniformly held by this Court to be local in nature and not to constitute interstate commerce, even though the product mined is destined to be shipped in interstate commerce.

Corporation Commission of Oklahoma v. Champlin Refining Co., 286 U. S. 210, 76 L. Ed. 1063.

Thompson v. Consolidated Gas Utilities Corp., 300 U. S. 55, 81 L. Ed. 510.

Heisler v. Thomas Colliery Co., 260 U. S. 245, 67 L. Ed. 237.

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Carter v. Carter Coal Co., 298 U. S. 238, 80 L. Ed. 1160.

Hope Natural Gas Co. v. Hall, State Tax Commissioner of West Virginia, 274 U. S. 284, 71 L. Ed. 1049.

Jersey Central Power & L. Co. v. Federal Power Commission, 319 U. S. 61, 87 L. Ed. 1258.

(h) The fact that the production and gathering may affect interstate commerce does not vest rate regulatory jurisdiction in the Commission over production and gathering as the Natural Gas Act is different from other acts adopted in recent years which vested jurisdiction in commissions where the subject-matter of the act, "affected" or "burdened" or "obstructed" interstate commerce:

National Labor Relations Board v. Jones & Laughlin Steel Corp., 301 U. S. 1, 81 L. Ed. 893. (National Labor Relations Act)

Sunshine Anthracite Coal Co. v. Adkins, 310 U. S. 381, 84 L. Ed. 1263. (Bituminous Coal Conservation Act)

United States v. F. W. Darby Lumber Co., 312 U. S. 100, 85 L. Ed. 609. (Fair Labor Standards Act)

Federal Trade Commission v. Raladam Bros., Inc., 312 U. S. 349; 85 L. Ed. 881. (Federal Trade Commission Act)

California Rice Industry v. Federal Trade Commission, (C.C.A. 9, 102 Fed. (2d) 716.) (Federal Trade Commission Act)

A. B. Kirschbaum v. Walling, 316 U. S. 517, 86 L. Ed. 1638, 1646. (Fair Labor Standards Act)

Walling v. Jacksonville Paper Co., 317 U. S. 564, 87 L. Ed. 460. (Fair Labor Standards Act)

Public Utilities Commission of Ohio v. United Fuel Gas Co., 317 U. S. 456, 87 L. Ed. 1162. (Federal Power Commission)

While Congress may have the power to regulate matters *affecting interstate commerce* as well as matters *in interstate commerce*, all the above cases make it absolutely clear that Congress does not have to exercise its full power, and that where it only delegates jurisdiction over matters *in interstate commerce*, such jurisdiction cannot be extended so as to include matters which may be said to *affect interstate commerce*. It is for Congress, and not for the created commissions or the courts, to decide what jurisdiction should be delegated, and, as stated by the lower court in its opinion in this very case, "the Commission does not have *express or implied* rate regulatory jurisdiction of the production and gathering of gas."

(i) As found by the Commission, (R., V. 1, p. 143), as of December 31, 1939, Canadian held gas leaseholds on approximately 300,000 acres of land located in the Texas Panhandle Field in the State of Texas on which it had in operation a total of 94 gas wells. Its gathering system consists of 144 miles of various size of pipe, all located in the State of Texas. The gathering system has two termini. One terminus is located in what is known as the Bivins Station in the State of Texas. At this point the gas there gathered is compressed and then transported by Canadian through its own transmission pipe line to Clayton Junction, near Clayton, New Mexico, at which point it sells the gas so transported to Colorado Interstate Gas Company, and the latter company then transports such gas through its "Denver Line" and sells the same at various points in the State of Colorado. The other terminus of Canadian's gathering system is located at what is known as Fritch Station, also in Texas. At this point the gas there gathered is compressed and then transported by Canadian through facilities leased from Texoma Natural Gas Company to a point in Oklahoma known as Gray Junction where the gas so transported is also sold to Colorado Interstate Gas Company.

As shown from the above and as stated by the Commission in its Opinion (R., V. 1, p. 143), it thus appears that

Canadian is engaged in several different and distinct business operations or functions: (a) Production, (b) gathering, (c) transportation, and (d) sale of natural gas. In addition to the sale of natural gas to Colorado Interstate at Clayton Junction, New Mexico, and at Gray, Oklahoma, Canadian also sells natural gas to Amarillo Oil Company at the wells in the field for the cities of Amarillo and Channing, Texas, and along its pipe line for the Dalhart, Hartley and Texline, Texas, markets. It also sells a quantity of gas to Clayton Gas Company, with deliveries at the Clayton, New Mexico town border. (R., V. 2, p. 708)

The gas sold by Canadian to Colorado Interstate is so sold pursuant to a term contract between the two companies, dated January 3, 1928. (Ex. 16, R., V. 2, pp. 711-780) It is the compensation which Canadian is entitled to receive under this contract which, among other things, includes the price of the gas, which the Commission, by its rate reduction order, requires to be reduced in the amount of $551,000 annually. Among other things, this contract, known as the Cost Contract, for the compensation therein provided to be paid Canadian and which compensation has been reduced to the extent above stated by the Commission's order, requires Canadian to acquire, maintain and develop a substantial block of gas leaseholds, to drill and operate wells, to construct and operate gathering facilities, to pay off funded debt in fixed amounts at fixed times, and to sell gas to others only as permitted by Colorado Interstate.

(j) An important fact in consideration of the question presented is that there is a commodity market value for Canadian's natural gas in the field where produced and at the end of the gathering system termini. The uncontradicted evidence in this case introduced by Canadian's witnesses (R., V. 6, pp. 3256, 3280) and corroborated by the Commission's own witness (Ex. 168, Sheets Nos. 113, 114, and 127; R., V. 6, p. 3281) establishes the market value of Canadian's gas at the wellhead in the field at 4¢ per Mcf. (16.4-pound pressure base) and the fair market value of natural gas gathered and delivered at the Bivins Station (one end of the gathering system termini and the beginning of the transportation system) to be 7¢ per Mcf.

We respectfully but earnestly submit that the Commission could keep within its delegated jurisdiction over interstate transportation and sale and not usurp an undelegated jurisdiction over production and gathering by using the commodity value of Canadian's natural gas at the end of the gathering system which is the beginning of the interstate transportation system as its jurisdictional starting point. The existence of a commodity value of the gas is in itself a complete answer to the Commission's contention that rate regulatory jurisdiction over the production and gathering properties, facilities and business, although withheld by Congress, is essential to an exercise of its delegated rate regulatory jurisdiction over interstate transportation and sale. So this case, or any similar case, need not be approached with the apprehension that if the Congressional mandate is followed and the Commission denied the right to exercise rate regulatory jurisdiction over production and gathering, the Commission will be unable properly to fulfil its delegated duties over interstate transportation and sale.

(k) As indicating the all-inclusive jurisdiction exercised by the Commission in this case over all of Canadian's properties, facilities and business, including not only its interstate transportation and sale but also its production and gathering, the following is noted which appears in the record in this case:

1. In arriving at its rate reduction order the Commission determined a rate base which includes not only Canadian's interstate transmission system but also its production and gathering properties. (R., V. 1, pp. 144-195; V. 5, pp. 2717-2721)

2. In determining its rate base for Canadian's producing and gathering properties the Commission applied its so-called original cost or prudent investment theories and in so doing totally ignored the true value of such properties as well as the actual cost thereof to Canadian.*

* The Commission deducted $3,864,357 from Canadian's original cost, practically all of which is applicable to leaseholds. (R., V. 1, pp. 149-151) This is discussed under "Question 3" infra. The Commission included Canadian's bare leaseholds in its original cost rate base at a value of something less than $1,000,000, and in so doing totally ignored unrefuted evidence of the present market value of such leaseholds in excess of $15,000,000. (Ex. 181, R., V. 6, pp. 3181-3254; Ex. 146, Sheets 62-64; R., V. 5, pp. 2717, 2721; R., V. 1, p. 186.)

3. In its rate base for production and gathering properties the Commission determined and included an allowance for working capital which it deemed sufficient to enable Canadian to carry on its production and gathering operations, and likewise the Commission has purported to determine in its rate base for production and gathering properties what additional wells should be drilled and what additional gathering facilities should be installed in the future. (R., V. 5, pp. 2536-2556)

4. After finding Canadian's total rate base to be $9,375,000 (R., V. 1, 187), of which approximately two-thirds represents production and gathering properties, (R., V. 5, 2717-2721), (even on the Commission's basis of determining a rate base), the Commission then found that Canadian was entitled to a return of 6½% per annum upon its total rate base (R., V. 1, 187), more than two-thirds of which, as above stated, is attributable to the hazardous business of discovering, exploring, developing and operating natural gas production properties.

5. The Commission has determined and made an allowance for Canadian's total annual operating expenses (including depreciation and depletion), the greater portion of which represents the cost of producing and gathering natural gas. (R., V. 1, 171; V. 4, 2341-2345).

6. After determining the total annual income of Canadian from all sources, the greater portion of which represents the cost of producing and gathering natural gas under its Cost Contract with Colorado Interstate, the Commission has deducted its determined annual operating expenses (mostly production and gathering) from such total income, and then, after making a return allowance of 6½% upon its determined rate base (mostly production and gathering), it has found an alleged excess income being received by Canadian, which forms the basis for its rate reduction order.

7. The Commission's order changes and abrogates the amount of compensation which Canadian is entitled to receive from Colorado Interstate under its Cost Contract, which compensation represents cost reimbursement to Canadian not only for the cost of current deliveries of gas to

Colorado Interstate, but also for the cost of performing various other services under the Cost Contract relating to Canadian's production and gathering properties and operations, such as the maintenance of leaseholds, the drilling of wells and the construction of gathering facilities as directed by Colorado Interstate.

(4) Notwithstanding all of the above and its own ruling that the Commission does not have either express or implied rate regulatory jurisdiction over production and gathering, the Circuit Court in its Opinion (142 Fed. (2d), p. 952) sustained the Commission's rate reduction order upon a novel theory stated as follows:

"Canadian is engaged in the business of producing, gathering, transporting and selling interstate natural gas for resale for ultimate public consumption. It therefore is a natural gas company, subject to the jurisdiction of the Commission in respect to its rates and charges for the gas transported and sold in such commerce. Its production and gathering properties and facilities are parts of its integrated operations. Still, under section 1 of the Act they lie beyond the range of the rate-regulatory jurisdiction of the Commission. But the Commission did not prescribe charges for the production; did not fix rates for the gathering of gas; and did not exercise other rate-regulatory jurisdiction over production or gathering as such, within the meaning of the limiting and forbidding provisions of the Act. The Commission did not attempt to affect in any manner the acquiring and maintaining of gas leaseholds, gas rights, or gas wells. Neither did it undertake to affect anywise the location, construction, extension, or physical connections of pipelines, or the operation of pipelines or other facilities constituting the gathering properties. The rate-regulatory jurisdiction of the Commission was exerted only in respect to rates and charges for natural gas transported in interstate commerce and sold in such commerce for resale for ultimate public consumption. The Commission inquired into and considered the production and gathering properties in respect to cost, depreciation, operating expenses, and revenues. But the inquiry was merely in their relation to the fixing of rea-

sonable rates to be exacted and received for the natural gas moved in interstate commerce and sold for resale. And the order of the Commission in each instance operated only upon such rates and charges. We fail to find in the act anything which expressly or by fair implication indicates a Congressional purpose to restrict or withhold from the Commission jurisdiction in a case of this kind to take into consideration the production and gathering properties only as they have bearing upon the question of the fixing of reasonable rates for gas moved interstate and sold for public consumption.'" (Pages 952, 953)

The Commission itself, either in its own Opinion or in its briefs filed in the Circuit Court or in this Court in connection with the petition for writ of certiorari, contends for no such theory, but boldly admits that it did exercise rate regulatory jurisdiction over Canadian's production and gathering and claims to possess such jurisdiction.

We respectfully submit that while the Circuit Court in one breath nominally purports to reject the Commission's jurisdictional contention, it does in its final and effective breath sustain the Commission's position notwithstanding the clear and positive provisions of the Act and the holding of this Court in the Hope Case. We submit it approaches absurdity to state that the Commission does not have rate regulatory jurisdiction over production and gathering and at the same time to rule that rate regulatory jurisdiction is not exercised where the Commission includes production and gathering properties in a rate base; where it applies its own formula of original cost or prudent investment to production and gathering properties; where it includes production and gathering expenses in its estimate of future expenses; where it allows working capital for the production and gathering business, and considers and determines what wells are to be drilled in the future; and finally, where, in determing an alleged excess revenue, it applies a 6½% rate of return not only to the transmission system properties but also to the production and gathering properties which constitutes approximately two-thirds of the total rate base as determined by the Commission. Obviously the Commission has treated every element of Canadian's production and gathering prop-

erties, facilities and business in precisely the same manner as its interstate transmission properties, facilities and business, and has subjected every element of Canadian's production and gathering facilities to the same rate regulatory measures and procedures as Canadian's interstate transmission properties, facilities and business for the purpose of arriving at its ultimate conclusions with respect to rates and charges. If the Act had expressly delegated full and complete rate regulatory jurisdiction over Canadian's producing and gathering properties, facilities and business, the Commission could have done no more than it has done in this case. The Circuit Court's opinion is inconsistent and contradictory. Its effect, not only in the instant case but also in all other cases, if allowed to stand, is to vest complete rate regulatory jurisdiction over production and gathering and thus to assume and exercise a legislative veto power over an express and unambiguous Act of Congress.

We again emphasize that natural gas is a commodity, that the market value of that gas as a commodity at the wellhead and at the end of Canadian's gathering system, which is the beginning of its interstate transmission system, was established by uncontradicted evidence. The whole theory and purpose of the Act and the express Congressional intent set forth therein can be sustained, served and followed if this established commodity value of the natural gas be used as the starting point of the Commission's jurisdiction. In such event by using that commodity value as its jurisdictional starting point the Commission can properly proceed with an exercise of its delegated rate regulatory jurisdiction over the interstate transportation and sale of that gas.

In conclusion we urge that the Commission's action in this case and the Circuit Court's affirmance thereof are in direct conflict with the Act and with the opinion of this Court in the Hope Case, and that the matter is of such great public importance not only to the natural gas industry itself but also to the public at large that this obvious unwarranted assumption of jurisdiction on the part of the Commission should not be allowed to become the law of the land without at least a consideration of the matter by this Court.

QUESTION NO. 2.

Question No. 2 set forth in the Petition for Writ of Certiorari is as follows:

> "2. Whether, even assuming, arguendo, that the Commission has rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, the Commission can, consistently with the Fifth Amendment to the Constitution of the United States, the requirements of the Act, and the decisions of this Court in the Natural Gas Pipeline, Hope and other cases, limit Canadian generally to a return only on the 'wildcat' or original cost of its gas leaseholds to predecessor companies prior to discovery and development over 20 years ago, to the exclusion of all evidence of value, market or otherwise, the result of this procedure being, among other things, the inclusion in the Commission's rate base of a substantial block of Canadian's most valuable leaseholds at zero valuation and a still larger block of valuable leaseholds at only 10¢ per acre valuation."

It is our definite position, raised in Question No. 1, that the Commission does not have rate regulatory jurisdiction over the production and gathering of natural gas and that its delegated jurisdiction over interstate transportation and sale can fully, adequately and properly be exercised by determining the commodity value of the natural gas at the end of the transmission system, which is the beginning of the interstate transportation. This clearly was the Congressional intent in expressly withholding rate regulatory jurisdiction over production and gathering from the Commission. Such a logical and practicable procedure would render it unnecessary to rely upon the inconsistent and contradictory subterfuge found in the Circuit Court's Opinion quoted above which denies jurisdiction and upholds Congress with one hand and at the same time legislates jurisdiction and thwarts Congress with the other hand.

Even, however, if it be assumed, arguendo, that by whatever name it may be called, rate regulatory jurisdiction is to be exercised over production and gathering, still we submit it is entirely improper for various reasons hereinafter men-

tioned to include natural gas leaseholds in a rate base at original cost and to allow a return based upon such original cost.

We are not arguing here the question as to whether for the ordinary class of public utility property, original cost or something else should be the foundation of the rate base. Natural gas leaseholds constitute a class of property unique in itself and what may be a permissible or logical theory of a rate base for the ordinary utility property can have no proper application to gas leaseholds. Certainly there is nothing in the Natural Gas Act which requires the Commission to use original cost in including natural gas leaseholds in a rate base, even assuming that the Commission has rate regulatory jurisdiction over those leaseholds. Again, when this Court in the Natural Gas Pipeline and Hope cases stated that the Commission is not bound to any single formula or combination of formulas, it certainly did not intend to limit the Commission to an original cost formula in all cases. On the contrary, the "end result" and "rate impact" principles announced by this Court in these two cases would seem to make it absolutely clear that an original cost rate base as applied to natural gas leaseholds is not only in conflict with the basic theory of the Natural Gas Pipeline and Hope cases, but condemned by the "rate impact" and "end result" principles announced therein.

We submit that, except in an isolated instance as the result of accident, an original cost rate base as applied to natural gas leaseholds can never be fair to either the owner of the leaseholds or the public, and cannot, except accidentally, result in just and reasonable rates, as required by the Act. This can be demonstrated by a few general examples before coming to the particular situation which exists in the instant case.

A gas company, with $10,000,000 capital to spend in attempting to secure production, spends $9,000,000 of it around the country in geologizing, leasing, drilling and related matters, without success. With its last million dollars it acquires some leaseholds which prove productive. Under the Commission's original cost theory the company would be limited to a 6½% return on this last million dollars. No

consideration at all is given to the fact that it actually cost the company $10,000,000 to secure this one producing field. Such a theory must necessarily retard, if not eventually entirely terminate, attempts to locate and develop new fields to the obvious prejudice of the general public.

Again, A and B acquire adjoining gas leasehold acreage of the same size: A, at a cost of $1,000,000; B, at a cost of $100,000. Both prove productive. The gas produced from each as a commodity and on a competitive basis is of the same market value. Under the Commission's original cost theory A will be allowed a 6½% return on $1,000,000, and B a 6½% return on $100,000, and thus as far as the inclusion of the leaseholds is concerned, the consuming public will be required to pay ten times as much for A's gas as for B's, even though they both have the same market value.

A final example: A, mentioned above, with his $1,000,000 investment, develops a property containing a reserve of, say 10,000,000 Mcf. B, with his $100,000 investment, develops a reserve of 50,000,000 Mcf. Certainly, notwithstanding the difference in the investment or original cost, B's property is much the more valuable, and yet again, under the Commission's original cost theory, B will be limited to a 6½% return on his $100,000 as against ten times that much for A.

We submit that such a blind application of the Commission's original cost theory is unsound, impracticable, violative of the Fifth Amendment, must necessarily result in untold confusion, and cannot possibly result in just or reasonable rates either from the viewpoint of the owner of the leaseholds or the consuming public.

Of course, as we have urged above, this whole question can be avoided and order brought out of chaos if the Commission shall be held to its delegated jurisdiction and not attempt to include production and gathering properties in a rate base, but use the market value of the gas as a commodity as its jurisdictional starting point.

Other facts pertinent to this question and relating to Canadian's general picture are set forth infra in connection with "Question No. 3.". Without citing or quoting the detailed evidence, we call attention to the following which ap-

pears from the record in this case clearly showing the impropriety, if not the illegality and unconstitutionality, of including natural gas leaseholds in a rate base at original cost.

An analysis of the testimony of Commission witnesses, which the Commission adopted substantially (Ex. 146, Sheets 62-64; R., V. 5, 2717-2725), shows that the Commission used the sum of $1,604,020.61 as the starting point for its findings as to original cost of or investment in Canadian's leaseholds as of December 31, 1939. Then, as appears from Paragraph 8 of the Commission's formal findings (R., V. 1, 186), a deduction of $653,681 was made for depletion. This means that Canadian's bare leaseholds have been included in the Commission's original cost rate base at a value of something less than $1,000,000.

In adopting this valuation for rate base purposes, the Commission has wholly ignored substantial and uncontradicted evidence that "the present market value of Canadian's leaseholds" (excluding wells) is the sum of $15,646,787.64. This evidence is the testimony of Canadian's witness Wallace. (Ex. 181; R., V. 6, 3181-3254).

The Commission has found that Canadian's recoverable gas reserves are 2,800,000,000 Mcf. (R., I, 159). Reducing these figures so found by the Commission to its *value of the gas in place*, it appears that the Commission, in effect, has found the present value of the gas in place, to be only 34/1000ths of one cent per Mcf. On a comparative basis, and using Wallace's $15,646,787.64 valuation as applied to the Commission's finding of 2,800,000,000 Mcf. recoverable reserve, the value of the gas in place is approximately 1½¢ per Mcf.

The original "wildcat" cost to Canadian's predecessors in interest of five important leaseholds, containing approximately 47,000 acres, allowed by the Commission is $4,244.24, which is less than 10¢ per acre. (R., V. 5, 2735, 2736, 3051) Three of these leases are included at *zero valuation*. The present fair value of these same five leaseholds (exclusive of wells), as testified to by Wallace with supporting evidence as to such value, was $3,345,923. (R., V. 5, 3237, 3243) A similar situation exists in respect to the Commission's valua-

tion of the remainder of Canadian's leaseholds. (R., V. 5, 3051)

The Commission has wholly ignored all evidence of the market value of gas at the wellhead in the Texas Panhandle Field as a measure of the value of said leaseholds. Canadian's General Superintendent Ford testified that the market value of gas at the wellhead in the Texas Panhandle Field is not less than 4¢ per Mcf. on a 16.4-pound pressure base, or not less than 3.6¢ per Mcf. on a 14.65-pound pressure base. (R., V. 6, 3255-3281) This testimony was corroborated by Wallace, and by Commission's Exhibit 168, Sheets 13 and 127. (R., V. 6, 3281)[2] Ford's uncontradicted testimony showed the market value of Canadian's gas as a commodity at the Bivins Station (end of the gathering line and beginning of the interstate transmission line) to be 7¢ per Mcf. on a 16.4-pound pressure base, or approximately 6.3¢ per Mcf. on a 14.65-pound pressure base. (R., V. 6, 3255-3281)

It happens in this particular case that the application of the Commission's original cost theory to Canadian's gas leaseholds operates to the prejudice of Canadian. It might well have been the other way, in which event because of a high original cost the consuming public would be compelled to pay a higher rate notwithstanding the fact that the market value of the gas as a commodity would be the same, irrespective of the original cost of the leaseholds.

We submit that any theory which must end in such absurd results is inherently unsound and in conflict with the Fifth Amendment and violative of the principles announced by this Court in the Natural Gas Pipeline and Hope cases

[2]The Commission has found that Canadian's remaining recoverable reserves as of December 31, 1939, are not less than 2,800,000,000 Mcf.; that Canadian's future rate of production will be approximately 55,000,000 Mcf. (14.65-pound pressure base) per year; (R., V. 1, 159); and that on that basis Canadian's recoverable reserves will last for 63 years. The gross value of the 55,000,000 Mcf. to be so produced annually at 3.6¢ per Mcf. is $1,980,000. The Commission has found (R., V. 1, 171) Canadian's annual operating expenses to be $1,169,096, which includes gathering expense and transmission expenses, as well as producing expense. Even if all of this expense, however, be attributed to the production of gas at the wellhead and be deducted from the gross annual value of $1,980,000, there remains a net income of $810,904 for Canadian's gas production in one year, which is almost as much as the Commission has allowed in the rate base for the total of Canadian's leaseholds for all time.

and the question presented is of such over-all general importance as to justify and demand an exercise of the supervisory jurisdiction of this Court.

QUESTION NO. 3.

"3. Whether, even assuming *arguendo*, that the Commission has rate regulatory jurisdiction over Canadian's production and gathering properties, facilities and business, and further assuming, *arguendo*, that it is proper in this case to include Canadian's leaseholds and wells in the rate base on the basis of original cost, the Commission can, consistently with the Fifth Amendment to the Constitution of the United States, the requirements of the Act, and the principles announced by this Court in the Natural Gas Pipeline, Hope and other cases, disallow and eliminate more than $3,000,000, plus interest during construction paid thereon, from the amount actually invested by Canadian in its original acquisition of production properties in about 1928 solely upon the ground that the sum so eliminated allegedly represented a profit between affiliated companies, and, therefore, formed no proper part of the cost of said properties, where the Record clearly demonstrates that the transaction resulting in the acquisition of said properties was not between affiliates and that the price paid therefor was not excessive."

The Commission in this case deducted from the actual investment of Canadian in gas leaseholds the sum of $3,370,817, as more fully hereinafter shown, on the ground that such sum represented "affiliated company profits" and, in addition thereto, the sum of approximately $245,000 interest during construction on such alleged profits. (R., V. 1, 149-151) In making this deduction from the actual investment in gas leaseholds, the Commission relegated Canadian to the provable costs of such leaseholds incurred by Amarillo Oil Company and its predecessors in title, which was the cost of such leaseholds prior to the time that any wells had been drilled thereon and prior to the time that it was definitely known whether any gas would ever be produced therefrom. At the time that many of said leaseholds were acquired the nearest oil and gas production was 200 miles

away. The Commission gave no consideration whatsoever to the fact that the leaseholds when acquired had little or no value and, therefore, only a nominal sum was paid for the same and wholly ignored the fact that said leaseholds possessed great value after the discovery of gas thereon and that such discovery and the increase in value necessarily preceded any use of the same for any character of public service. The Commission ignored the fact that said leaseholds were acquired by Canadian approximately 10 years after the original discovery of gas under such leaseholds and at a time when such leaseholds had a value far in excess of the original acquisition cost in their then "wildcat" and undeveloped state. The Commission also ignored the fact that the purchase of said leaseholds by Canadian resulted from an arm's length transaction, and also ignored the fact that there was no intimation whatsoever in the Record that Canadian paid an excessive price for such leaseholds. The action of the Commission, if carried to its logical conclusion, would deny the prospector or "wildcat" oil and gas operator the fruits of his discovery, whether the properties were sold or operated by him, and would necessarily limit him to the actual outlay of cash, without profit, in an extremely hazardous enterprise.

In 1917, over 27 years ago, a few ranchers and small business men residing in and about Amarillo, Texas, incorporated and organized a small corporation called "Amarillo Oil Company" (hereinafter referred to as "Amarillo") for the purpose of drilling a "wildcat" well for oil and gas in what has now become the great Texas Panhandle Field. (R., V. 5, 2837, 3040) At that time there had been no discovery of oil or gas within 200 miles of the proposed well location. (R., V. 7, 3673) Consequently the cost to Amarillo of assembling the block of leases to be tested was purely nominal, except for drilling obligations. It was this purely nominal cost and no more that was included by the Commission in Canadian's rate base for such leaseholds as such, exclusive of development costs.

After many unfortunate experiences, financial and otherwise, the "wildcat" test well was finally completed in the fall of 1918 as a gas well—the first commercial producer of either oil or gas in the Texas Panhandle Field. From

that humble and successful "wildcat" beginning, the Field has been subsequently developed by the drilling of successful test wells, until it now contains approximately 1,500,000 proven acres of gas lands on which there are located approximately 1,650 wells producing gas only and approximately 4,200 wells producing both oil and gas. (R., V. 1, 409) Canadian's acreage produces no oil.

As of August 1, 1924, Amarillo owned approximately 46,803 acres of developed leaseholds in which it had a total provable cost for the leaseholds as such, exclusive of the wells that had been drilled thereon, of approximately $4,244, or less than 10¢ per acre. (R., V. 6, 3038, 3051, 3040) As of that date it acquired 244,114 acres of leaseholds from Mountain States Gas Company, upon which wells had been drilled or were then drilling, and from that date to May 1, 1927, it acquired 3,998 acres from various other persons. (R., V. 6, 3051) It also acquired 30,235 acres from Mountain States which were classed as unoperated leaseholds, being leaseholds upon which no wells had then been drilled. (R., V. 6, 3063)

The leaseholds acquired from Mountain States Gas Company were paid for through the issuance of common stock. Such leaseholds had been acquired by Mountain States in an undeveloped "wildcat" stage and at the time of the acquisition by Amarillo there were located on such leaseholds five wells capable of producing natural gas and four wells that were then drilling which were later completed as gas wells. (R., V. 6, 3043) No gas had been sold from said leaseholds prior to that date. The total cost to Mountain States and its predecessors in title for the acreage acquired by Amarillo was $273,095.88 for the 244,114 acres of operated gas leaseholds, which included, however, approximately $76,318 for well drilling costs. (R., V. 6, 3041, 3042) When this sum is eliminated, the original acquisition cost of said leaseholds approximated $200,000, or less than $1.00 per acre. In fact, the largest leasehold involved, being the Bivins A 30, comprising 200,000 acres, had a provable cost to Mountain States of only $105,000 for the leasehold as such. This provable cost of less than $1.00 per acre was the entire amount included in the rate base for this block of very valuable leaseholds, exclusive of development costs.

The leaseholds above referred to that were included in the rate base for only a very nominal sum, and on the basis of their original "wildcat" provable costs, plus a very small amount of additional acreage, had an actual value of approximately $15,646,787.64 for the leaseholds as such, exclusive of all well costs, according to the uncontradicted testimony of Wallace. (R., V. 6, 3181-3254) Excluding the additional acreage the leaseholds above referred to had a minimum value of not less than $15,000,000 and were included in the rate base at a figure but little, if any, in excess of $300,000.

In 1924 Southwestern became the owner of all of the capital stock of Amarillo. Amarillo then owned leaseholds aggregating in excess of 300,000 acres. Additional test wells had been drilled and additional natural gas production had been developed.

It became apparent in 1927 that if Amarillo were to realize upon its extensive gas properties it must develop new markets of a substantial nature. Its only market at that time was for relatively small volumes at the wellhead for the City of Amarillo, Texas, and vicinity and one industrial sale at a plant near Amarillo. It had one well with a capacity substantially in excess of the volume required to supply its entire available market. (R., V. 1, 459)

Neither Amarillo nor its parent, Southwestern, had had any experience in the transportation of gas by pipe line over long distances and they also lacked the necessary capital with which to construct such a pipe line. (R., V. 1, 402, 403) The City of Denver, located a distance of approximately 350 miles from the Texas Panhandle Field, and intervening territory seemed to be the closest available market for natural gas in substantial quantities. (R., V. 1, 402) Southwestern approached Standard Oil Company (New Jersey) regarding the construction of a pipe line project to Denver and intervening territory. (R., V. 1, 403) Standard, after investigation, determined that the project was feasible and interested Cities Service who controlled the markets in Colorado. (R., V. 1, 403)

Negotiations were then commenced for the purchase of the gas leaseholds and wells of Amarillo, which negotiations

finally resulted in a contract dated April 5, 1927, whereby Amarillo was to receive $5,000,000 for its gas leaseholds, rights and wells. (R., V. 1, 403-416) *Neither Standard nor Cities Service had any interest whatsoever in either Amarillo Oil Company or Southwestern on that date (April 5, 1927), prior thereto or subsequent thereto. There was no corporate affiliation between any of the three participating companies which executed the contract of April 5, 1927.* (R., V. 1, 460, 613-622) *The contract was entered into only after long and continued arm's length negotiations between the parties.* (R., V. 1, 493-526) In accordance with the terms and provisions of said contract, Southwestern obligated itself to organize and incorporate a company (now Canadian), *separate and apart from its other companies and projects*, to which it would cause Amarillo Oil Company to convey, free of all debts, liens and encumbrances, all of the latter's gas leaseholds, rights and wells in the Texas Panhandle Field at the agreed price of $5,000,000. (R., V. 1, 381-400)

There were no negotiations whatsoever between Amarillo and Canadian with respect to the $5,000,000 transaction. Canadian was not actually organized until January, 1928, almost a year after the consideration had been agreed upon. (R., V. 1, 455) Amarillo, however, agreed and consented to carry out the agreement that Southwestern had made for it. (R., V. 1, 455, 456)

Southwestern, sitting on one side of the table, making the deal above referred to, had every incentive to get just as much as it could for the leaseholds, rights and wells of Amarillo and it tried to get more than $5,000,000. Likewise, Standard, on the other side of the table, which was not interested in Southwestern and which furnished all the money, had the incentive to bear down as much as it could on the price and actually tried to acquire the properties for less than $5,000,000. (R., V. 1, 460, 520) The negotiations with respect to the acquisition of the leaseholds covered a period of many months in 1926. (R., V. 1, 520-521)

The $5,000,000 paid by Canadian for the leaseholds was advanced in its entirety by Standard. (R., V. 1, 459) * * * Southwestern Development Company was not taking five million dollars of its own funds and paying it to its own

subsidiary. * * * It got five million dollars of outside money." (R., V. 1, 450) Notwithstanding the arm's length character of the transaction which resulted in the sale by Amarillo and the purchase by Canadian, the Commission, nevertheless, ignored the entire transaction and determined that the provable costs of Amarillo Oil and its predecessors in title aggregated approximately $1,850,000, or about $3,250,000 less than the sum actually paid by Canadian. (R., V. 1, 150) Most of such provable costs, however, resulted from the drilling of gas wells and other costs incidental to the development of such leases. The provable cost of leases as such was very nominal as is hereinabove pointed out.

In arriving at such provable costs, the Commission ignored, among other things, the following:

1. A sum in excess of $50,000 expended in drilling a dry hole which was one of the early exploratory wells. (R., V. 5, 2850; V. 6, 3111, 3112) This well was as much a part of the development cost as the producing wells, but its cost was eliminated apparently because no one should be so foolish or imprudent as to drill non-producing wells.

2. $35,000 for interest on idle investment prior to October, 1920, when the first small volume of gas was sold. (R., V. 6, 3110-3111)

3. General overhead and administrative costs estimated at $68,000. (R., V. 6, 3108-3110)

4. Delay rentals paid on undeveloped leaseholds in a sum in excess of $488,000. (R., V. 6, 3106-3108)

If the principle of prudent investment as construed and applied by the Commission in this case to a mining enterprise such as the acquisition of "wildcat" oil and gas leases in an area more than 200 miles from known oil or gas production is followed consistently, it would result in the "wildcatter" or prospector being denied the value created by his discovery. This is true because if he attempts to sell the gas as such in interstate commerce for resale, the Commission, as it did in this case, would allow him only the provable "wildcat" costs of such leaseholds. If on the other hand he desired to sell the leaseholds to a company such as Canadian who desired to produce the gas and sell

he same for resale in interstate commerce, such company ould not afford to pay any more than the provable costs f such leaseholds in their "wildcat" state since the earnngs would be limited to such provable costs. Certainly, it annot be said that the gas consuming public is entitled to ave rates fixed on any such basis, and, certainly, it cannot e said that rates fixed upon such basis are fair to the owner f the gas producing properties. In this case the Commission, through the application of accounting rules devised by t and which have no realistic application to a mining enterprise, actually excluded more than $600,000 as above pointed ut, most of which was excluded on the theory that they had ot been set up on the books in the first instance, notwithtanding the fact that such accounting procedure was unknown in so far at least as a mining enterprise was concerned at the time the expenditures were made. The delay entals in the sum of $488,000 were excluded by the Commission on the theory that Amarillo commenced selling some as in the Fall of 1920 and that such expenditures were ubsequent to that date. Clearly, such expenditures were bsolutely necessary for Amarillo to keep its leaseholds in oree and effect and were as much a part of the cost of such easeholds in a realistic sense as the original bonus price aid therefor. Clearly, the sum of in excess of $50,000 aid for a dry hole was also a real and definite cost incurred in the development of such properties. What incentive is there for a person to engage in the hazardous enterprise of drilling a "wildcat" well if he knows at the outet that if a well is dry he has lost the entire sum expended, ut if on the other hand he is successful and discovers gas, till he will be permitted only to earn on the actual cost ncurred in drilling the well, plus a small sum which he ight have paid for the leaseholds in their "wildcat" stage. his, of course, does not tell the entire story. He would ot even be permitted to recover the cost of drilling an exloratory dry hole. In other words, no one would be so olish to embark on such an enterprise. He could not reover his money back no matter how successful his exploraory operations might be, and even though he discovered ne of the greatest oil and gas fields that the world has ver known. Surely the Natural Gas Act does not require

and surely the Fifth Amendment prohibits any such irrational approach to the problem as this.

In addition to the original purchase from Amarillo, Canadian from time to time made other purchases of gas leaseholds, one of these being the purchase of the properties of Master Oil and Gas Company consisting of 5404.2 acres of leaseholds and two gas wells for the sum of $235,054.20. (R., V. 5, 2659-2661, 2815-2816) The Commission deducted from this purchase price the sum of $121,787. (R., V. 1, 150) This deduction was made on the ground that Prairie Oil and Gas Company owned 51% of the common stock of Master Oil and Gas Company and that N. K. Moody was a Director of both the purchaser and the seller. (R., V. 5, 2659-2661) No contention was made that the price was excessive. The Record is clear that in determining the so-called provable original cost of Master that Luttring, Commission witness, only went back to June 1, 1926, although the leaseholds were first acquired prior to 1920. (R., V. 5, 2659, 2823) There is nothing in the Record that would indicate that this was anything other than an arm's length transaction. There is no showing that the indirect relationship between Prairie and Canadian had anything whatsoever to do with the determination of the purchase price. Certainly, it cannot be said that Moody was in a position to in any sense dominate the a tion of the majority of the Board of Directors.

The Commission also deducted $244,853.26, being interest on the alleged excess over provable costs paid by Canadian to Amarillo. (R., V. 1, 149, Entry 249; V. 5, 2769) Obviously, if the entire $5,000,000 purchase price is allowed, the interest during construction actually paid upon this amount should also be allowed.

The Commission also deducted an additional sum of $128,000, being an alleged profit made by Mission Oil Company over and above actual provable costs (Mission is one of the predecessors in title of Amarillo). (R., V. 1, 150; V. 5, 3043-3051) Obviously, this deduction should not have been made if the full $5,000,000 purchase price is allowed.

The sum of the above deductions or eliminations by the Commission aggregates the sum of $3,615,670, which is ap-

proximately 36% of the entire undepreciated prudent investment rate base of Canadian as determined and allowed by the Commission (R., V. 1, 149) and almost 40% of the rate base determined by the Commission for Canadian in this case. (R., V. 1, 164)

The Circuit Court characterized the difference between the purchase price and the alleged provable original cost of predecessor companies as constituting a "synthetic inflation" and held in effect that the same was properly eliminated by virtue of *Pennsylvania Power and Light Company v. Federal Power Commission*, 139 Fed. (2d) 445, (certiorari denied). This case has absolutely no relevancy to the facts in the case at bar. It involved merely the proper method of keeping accounts by licensees under the Federal Water Power Act, which Act determines how such accounts should be kept. There is no such provision in the Natural Gas Act. In addition to this, however the *Pennsylvania* case involved a state of facts where a construction profit was being allowed to another company which was merely a puppet in the same holding company system. In fact, both parties were merely departments of one common holding company. That, of course, is not the situation with respect to Amarillo Oil Company. Amarillo acquired and developed the properties in question almost 10 years prior to the time they were sold to Canadian and in the interim increased the value thereof very materially as the result of exploratory drilling. The *Pennsylvania* case would be more nearly applicable on the facts if Amarillo had been employed by Canadian to go out and assemble the leaseholds after the Denver project had been inaugurated and then Canadian had paid Amarillo a profit for the work performed for it. It is too clear for argument that that is not the situation which now confronts this Court, yet that was the very situation involved in the *Pennsylvania* case. But even then, the case would not be applicable by virtue of the arm's length negotiations which transpired in the case at bar. Likewise, the various cases cited by the Commission in its answer brief to our petition for certiorari involved accounting principles for the most part by licensees under the Federal Water Power Act and also involve questions where a profit was made for actual construction work which was performed in reality by one department of a sys-

tem for another. Obviously, such cases have absolutely no relevancy to the facts in the case before the Court.

Even if the transaction whereby Canadian acquired the leaseholds and wells from Amarillo under the facts and circumstances existing in this case was one between affiliated companies, still the profit made by Amarillo Oil Company could not be condemned on that ground alone.

This very question has been recently decided by this Court in the case of *A. T. & T. Co., et al., v. United States, et al.*, 299 U. S. 232, 240, 81 L. Ed. 142. In that case Mr. Justice Cardoza, speaking for a unanimous Court, held definitely and positively that where properties were purchased from an affiliated company, or from a company that prior to the purchase had devoted such properties to a public use, that any profit made by the selling company could not be written off or ignored if, as a matter of fact, "*the difference between original and present cost is a true increment of value.*"

This principle has been reaffirmed in the recent case of *New York Telephone Company v. United States, et al.*, decided August 24, 1944, by a three Judge Court for the Southern District of New York. (Opinion not yet published) There was involved in that case the purchase of equipment by New York Telephone Company from its parent, the A. T. & T. Company. The latter company owned all of the common stock of the former. The book cost of the equipment involved to the A. T. & T. Company, less depreciation, aggregated $8,468,169.81 and was purchased by the New York Telephone Company for the sum of $12,634,680.38. The purchase price over the net book cost approximated $4,166,510.57. The Federal Communications Commission ordered the New York Company to write down the actual cost of the property in question to the net book cost of the selling company. The Court held that the purchasing company could not be required to write down the actual cost of the property if, as a matter of fact, it was worth the sum paid, citing the A. T. & T. decision by this Court referred to above.

It is true that these cases involve questions of accounting, but even so the underlying principle is applicable here. Cer-

tainly, there is no basis for eliminating almost $4,000,000 from the purchase price paid by Canadian to Amarillo if the principle decided by the above cases is sound. The entire $5,000,000 was actually paid and was paid in good faith and after prolonged negotiations between adverse parties. There is not even a suggestion that the property purchased was not worth every penny paid for it.

The *New York Telephone* case above referred to, being before a three Judge Court, will in all probability reach this Court by appeal. The issues in that case and in this case are so similar in principle that we earnestly contend that the scope of the review in this case should be enlarged to include this point 3 by virtue of the decision of the New York Court in the case referred to.

The Commission also relies heavily on the case of *Niagara Falls Power Company v. Federal Power Commission*, 137 Fed. 787, 793-794, (certiorari denied). That case involved the determination of the values of respective properties conveyed by the owners thereof to a common company and for which each of said owners accepted common stock in the same proportion that the value of the properties conveyed by each bore to the total value. In other words, this simply constituted a pooling of assets into one common operating company. No money whatsoever passed from the purchaser to the seller. Each of the so-called sellers still merely owned a portion of the combined assets. This was not true with respect to the sale by Amarillo to Canadian. Such sale did not constitute in any sense a pooling of assets, as suggested by the Commission. The purchase by Canadian was a condition precedent to the launching of the Denver project. The money paid belonged to Amarillo Oil Company and no contingency whatsoever could arise in the future which would affect its right to keep and retain the full purchase price. The project might have failed completely, but even so, Amarillo Oil Company would not have been affected, and neither would its parent, Southwestern, in so far as the $5,000,000 payment is concerned.

The pooling, if there were one, did not occur and could not have occurred until after provision had been made for the acquisition of the leaseholds and wells in question. If

we assume for the sake of argument that from that point on there was a pooling of assets, still this in no manner detracts from the fact that it was necessary for Canadian, as an alleged instrumentality of the project, to acquire from Amarillo the gas leaseholds and wells without which the project could not have been launched and without which no pooling of any character could have occurred. It was also necessary to pay to Amarillo the full $5,000,000 in cash, all of which was advanced by Standard and came from sources entirely outside of the Southwestern system. If we ignore the fact that the transaction at this stage was between non-affiliated concerns, still it makes no difference for the very simple reason that Southwestern had the perfect right to refrain from participating in the Denver project unless and until Canadian paid Amarillo $5,000,000 in cash for the properties acquired. The money paid was derived from sources entirely outside of the Southwestern system. The $5,000,000 belonged absolutely to Amarillo without regard to the future operations of the Denver project. The *Niagara Falls* case, therefore, and the principle decided there can have no relevancy whatsoever to this case.

As a matter of fact, the prudent investment theory, as applied by the Commission in this case, cannot be supported in any event if a rational view is taken with respect to the undisputed facts. Mr. Justice Brandies in his celebrated dissenting opinions defined original cost as the amount actually paid to establish the utility. He developed the theory that dollars were dedicated to the public service and not necessarily property. There is some reasonable and rational basis, of course, for this theory where the dollars invested actually constitute at the time the best evidence of value. That could not possibly be true in a mining operation such as this one where cost frequently has little relationship to value. The principle cannot apply also because the money invested by Amarillo and its predecessors in title in "wild-cat" leaseholds was not invested in any sense of the word in a public service enterprise. The investment was made in a mining enterprise and at a time and under such circumstances that it could not be known whether the property in question would ever produce natural gas. The great increase in value occurred by reason of the discovery of large

deposits of natural gas. This necessarily preceded any sale of gas in interstate commerce or otherwise. Therefore, Amarillo and the others did not invest money or dedicate money in a public utility or in a public enterprise of any character. It is true that when Canadian acquired the properties from Amarillo that it did so for the purpose of producing and selling gas in interstate commerce. This was the first time that any money was invested or dedicated with respect to a particular project of a public service character and is the very minimum dollar figure, therefore, that can be said to have been dedicated to a public service operation and represents the very minimum prudent investment or original cost figure that can be applied as of that date. The Court will bear in mind that even then the transportation and sale of gas in interstate commerce was not affected with a public interest and did not become so until the Natural Gas Act was passed in 1938.

If we assume, therefore, that the prudent investment theory may be applied to a natural gas production operation after discovery has already been made and where the properties were acquired for the purpose of engaging in a public service operation, still a rate base cannot be determined on such principles with respect to the producing leaseholds here involved, if a rational and realistic viewpoint is assumed.

This Court has said in the *Natural Gas Pipeline* and *Hope* cases that the Commission is not restricted to any particular formula or combination of formulas in arriving at a rate base. These opinions, however, clearly demonstrate that the formula or combination of formulas adopted by the Commission shall bear some reasonable relationship to the admitted facts in any given case. This is clearly demonstrated in the concurring opinion by Justices Black, Murphy and Douglas in the *Natural Gas Pipeline* case wherein it is stated: "The Commission has a broad area of discretion for selection of an appropriate rate base. * * * Various routes to that end may be worked out by the expert administrators charged with the duty of regulation. * * * *The decision in each case must turn on considerations of justness and fairness which cannot be cast into a legalistic formula.*" (pp. 606-607) (Italics supplied)

The "legalistic formula" adopted by the Commission for inclusion of Canadian's leaseholds in its rate base has resulted in the assignment of a zero valuation to some of Canadian's most valuable leaseholds and a value of only 10¢ per acre to a still greater block of important leaseholds, and a nominal value of not to exceed $1.00 per acre on the great majority of its leaseholds. The undisputed testimony demonstrates that these leaseholds were worth many millions of dollars, exclusive of the wells. Clearly, the Commission's "legalistic formula" in this case does not meet any test of "justness and fairness".

The fact that this Court has said that the Commission is not restricted to any particular approach for the purpose of determining a rate base does not mean that the Commission can close its eyes to the actual facts existing and produce a result entirely inconsistent with such facts and one which bears no reasonable relationship to the actual realities with respect to the problem before it. This is particularly true where the owners of leaseholds, as in this case, engaged in an extremely hazardous "wildcat" enterprise in search of oil and gas. They paid little for their leaseholds at the outset because such leaseholds had little or no value at the time of their original acquisition. The value was developed by exploratory operations and discovery, which preceded by almost 10 years the purchase of such leaseholds by Canadian, and which preceded by 20 years the enactment of the Natural Gas Act which for the first time subjected to regulation the transportation and sale of natural gas in interstate commerce for resale. Certainly, the public interest does not require that the consumers of natural gas produced from such properties be given the entire economic benefit resulting from the extremely hazardous undertaking involved in the discovery and subsequent production of natural gas under such circumstances. Certainly, no one will engage in the business of drilling a "wildcat" well 200 miles from any known oil or gas production, as Amarillo did, if the return upon such undertaking is to be limited literally to 6½% on the cost of the hole in the ground. We submit that neither the public interest nor the Natural Gas Act requires and the Fifth Amendment prohibits a rate regulatory process based upon any such theory.

The Commission, however, notwithstanding the above, suggests in its answer brief to our original petition for certiorari that the alleged profit made by Amarillo was carried on Canadian's books as "appreciation" and that no income taxes were paid on such profit. This has no significance whatsoever. At the time of this transaction, Southwestern had theretofore elected to file Federal income tax returns for itself and subsidiaries on a consolidated basis. Consequently, any profit realized by Amarillo in the transaction was eliminated for income tax purposes in the consolidated return. (R., V. 5, 2638) At the same time, however, such elimination of taxable profit resulted in a lower depreciation and depletion base for Canadian's future use for tax purposes which in the long run might require the payment of more, rather than less, Federal income taxes. This is the whole story concerning this transaction. Certainly, this method of handling the transaction for income tax purposes and for the purpose only of reflecting the depreciation base does not change the arm's length nature of the transaction as reflected by the uncontradicted evidence and, certainly, it does not in any way detract from the fact that Canadian in good faith paid $5,000,000 for the property, and neither does it detract from the fact that the property was worth every dime paid for it. This, as stated in the *A. T. & T.* and *New York Telephone* cases above referred to, is all that really counts. Neither does it indicate a write-up in any sense as intimated by Commission because, among other things, it did not result in any entry whatsoever in the surplus account. It would have been reflected there had it been a write-up. (R., V. 5, 2637) No matter how Canadian may have kept its books of account for tax or other purposes, and notwithstanding any evidence of the true arm's length character of the transaction, and of the true value of the property, it is obvious that the position of the Commission and its staff would have remained the same, simply because it was a transaction, they say, between affiliated companies.

We earnestly contend that the undisputed facts in this case demonstrate that the transaction whereby Canadian acquired the leaseholds, rights and wells of Amarillo was one between non-affiliated companies and that every safeguard necessary to insure a fair price and render the transaction invulner-

able was present and operating here. There is not an intimation in the Record that the price paid was excessive and, as a matter of fact, the evidence would justify a much higher consideration than that actually paid. There is not and could be no question with respect to devotion of such properties to a public use prior to the time that the sale was made. Amarillo's only sales were at the wellhead and to industrial consumers, neither of which is affected with a public interest. Furthermore, the sales made by Canadian in interstate commerce for resale were not affected with a public interest until the passage of the Natural Gas Act in 1938, 20 years after most of the property was acquired by Amarillo and its predecessors in title and more than 10 years after the purchase of the same by Canadian. We furthermore earnestly contend that in any event the undisputed facts and circumstances in this case demonstrate clearly that the prudent investment theory as developed, construed and applied by the Commission in this case produces such absurd and unrealistic results that it cannot be applied in this case for the purpose of determining the rate base of Canadian with respect to leaseholds as such. If such theory is to be applied at all, it cannot be applied to the "wildcat" cost of such leaseholds incurred by Amarillo and its predecessors in interest. The very minimum cost of leaseholds under such theory in any event with respect to the leaseholds acquired from Amarillo is the actual money paid therefor by Canadian in 1928. In other words, the full $5,000,000 paid for such leaseholds, rights and wells should be included in the rate base.

It is submitted that the action of the Commission and the affirmance of such action by the Circuit Court in eliminating almost $4,000,000 of Canadian's actual cash investment in its gas producing properties from its rate base and denying Canadian any return on such sum, as well as the right to recover such sum through the sale of gas, violates the provisions of the Fifth Amendment and the Act and is probably contrary to the decisions of this Court in the *Hope* and *Natural Gas Pipe Line* and other applicable cases hereinabove referred to. It is also submitted that the question here involved presents a Federal question of great and far reaching importance which has not been, but which should be, settled.

by this Court, and which question will likely arise in other cases in the administration of the Act; that the Commission in its action and the Circuit Court by its affirmance of such action have so far departed from accepted procedures as to call for an exercise of this Court's power of supervision; and that this Court, therefore, should grant this motion for re-hearing and enlarge the scope of review so as to include said Question No. 3 hereinabove quoted.

Respectfully submitted,

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CERTIFICATE OF COUNSEL.

I, John P. Akolt, of the City and County of Denver, State of Colorado, being one of counsel for Canadian River Gas Company, petitioner in the above petition named, do hereby certify that the foregoing petition for rehearing of this cause is presented in good faith and not for delay.

John P. Akolt,
Attorney for Petitioner, Canadian River Gas Company.

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CHARLES ELMORE CROPLEY
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IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

No. 380

CANADIAN RIVER GAS COMPANY, a Corporation,
PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

PETITION OF CANADIAN RIVER GAS COMPANY FOR REHEARING AND FOR ENLARGEMENT OF TIME FOR ISSUANCE OF MANDATE AND STAY OF MANDATE.

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April 27, 1945.

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PETITION OF CANADIAN RIVER GAS COMPANY FOR REHEARING AND FOR ENLARGEMENT OF TIME FOR ISSUANCE OF MANDATE AND STAY OF MANDATE.

The judgment of this Court was entered herein on April 2, 1945, such judgment being an affirmance of the judgment of the Circuit Court of Appeals for the Tenth Circuit (142 F. 2d, 943).

Petitioner now petitions this Court to grant a rehearing herein for the purpose of reconsidering the issues presented and the judgment entered and for enlargement of the time for issuance of mandate and stay of mandate until this petition for rehearing has been finally disposed of by the Court. In support of such petition, Petitioner respectfully shows as follows:

I.

The Division of the Court

The judgment of the lower court is affirmed in this case pursuant to an Opinion of the Court which was delivered by Mr. Justice Douglas on behalf of himself and three other Justices. In direct opposition to the Opinion of the Court is the dissenting opinion of Mr. Chief Justice Stone, in which he is joined by three other Justices. The affirmance of the lower court and the Commission's order, become effective only by reason of the concurring opinion of Mr. Justice Jackson.

II.

The Grounds of This Petition

Petitioner has reexamined and reviewed its argument before the Court in the light of the three opinions in the case, and has reached the conclusion that a reconsideration and reargument of the issues involved, particularly by reason of the views expressed and the position taken by Mr. Justice Jackson, might well lead the Court to arrive at a different conclusion. As shown hereinafter, this conclusion is founded upon the firm belief that Mr. Justice Jackson has unfortunately confused and intermingled the case of Petitioner with that of Colorado Interstate Gas Company, which, for convenience purposes, was included in the same Opinion of the Court; and that, as a result of such confusion, he has perforce, even though reluctantly, applied principles of law and reasoning which he would have not applied, but would have indicted, had he understood the facts correctly and considered Petitioner's case individually upon its own merits. The conclusion to file this petition is further strengthened and supported by the knowledge that the Court is dealing here with the determination and settlement of far-reaching issues which are not only of critical importance to Petitioner but of immediate and vital concern to the public.

III.

The Views and Position of Mr. Justice Jackson

It would appear from the concurring opinion of Mr. Justice Jackson (1) that he finds himself unable to join

in the dissenting opinion because, according to his view, the Commission's order has no *immediate* "impact" upon production and gathering of gas and consequently the Commission has not imposed any direct regulation upon such activities; (2) that he finds himself likewise unable to join in the Opinion of the Court because he has heretofore dissented, and still vigorously dissents, against the end result and other theories upon which it is based; and (3) that he then concludes to concur in upholding the Commission's order because in his opinion (a) "The court cannot, consistently with *Federal Power Commission v. Hope Natural Gas Co.*, 320 U. S. 591, do otherwise," and (b) notwithstanding his desire to reverse the case, he believes "a reduction in the wholesale rates for resale to the public is in order." Each of the above propositions will be discussed hereinafter in reverse order.

IV.

The Reasonableness of Petitioner's Rates

Apparently Mr. Justice Jackson was led to the finding that "a reduction in the wholesale rates for resale to the public is in order," so far as Petitioner is concerned, because of a seeming disparity between existing rates for regulated and unregulated gas. He points out that Colorado Interstate Gas Company (hereinafter called "Colorado Interstate") sells unregulated gas in large quantities to Colorado Fuel & Iron Company at Pueblo, Colorado, for various industrial uses at prices ranging from 9½¢ to 16¢ per MCF, whereas the same Company sells regulated gas at the Denver city gate for 40¢ per MCF.[1] No matter what

[1]While, as pointed out in the text, a comparison of Colorado Interstate's direct and resale rates has no pertinency to Canadian's situation and rates, it is submitted that, for reasons stated below the comparison of Colorado Interstate's rates, as made by Mr. Justice Jackson, is in itself erroneous.

During the year 1939 (the test year used by the Commission), the Commission found, as shown in Exhibit "A" to its Opinion and Order (R. V. 1, 181), that the average price for all gas delivered by Colorado Interstate to Public Service Company at Denver was 32 cents per MCF. Mr. Justice Jackson obviously overlooked reductions in the MCF price from 40 cents to 32 cents made prior to 1939.

Mr. Justice Jackson made a comparison between the rates charged the C. F. & I., which he stated to be 9½ cents per MCF for boiler gas and 16 cents per MCF for all other gas, and the rate being charged the Public Service Company at the Denver gate, which, as already pointed out, was

weight this character of evidence may be given as to the justness and reasonableness of Colorado Interstate's rates for regulated gas, however, it leads nowhere when applied to the gas sales of Petitioner, because (a) Colorado Interstate and Petitioner are two different and separately owned entities, owning and operating different and separate properties; (b) the Commission has entered a separate and distinct rate reduction order against Petitioner; (c) the Commission has held, and this Court has affirmed, that Petitioner makes no sales of gas in interstate commerce which are not subject to regulation by the Commission, and therefore Petitioner has no unregulated sales, so far as the Commission is concerned, except sales for resale at the well and from the pipeline within the State of Texas; (d) Petitioner makes no sales of gas to Colorado Fuel & Iron Company or any other sales of similar character; and (e) all sales of Petitioner's gas to Colorado Interstate for all purposes are made at one and the same uniform price, i.e., actual cost as computed under the Cost Contract between the parties.[2]

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erroneously stated to be 40 cents per MCF instead of 32 cents, as found by the Commission. But a comparison of the rate charged the C. F. & I. with any rate hitherto charged the Public Service Company at Denver does not afford any test of the reasonableness of the rate ordered for the future, even as to Colorado Interstate.

Mr. Justice Jackson concluded that despite the obvious errors in the Commission's method, he would not vote to reverse the Commission's Order because the reduction did not appear to be unreasonable. The thing to be tested is the newly imposed rate, and that according to the Commission's own findings and Order, is now 15.4 cents per MCF. (R., V. 1, 181). Moreover, Denver is farther from the field by 105 miles; its gas is predominantly domestic and enjoys the highest priority on the pipe line facilities. Mr. Justice Jackson, while giving consideration to some economic factors justifying a difference in prices, failed, however, to give due weight to the important elements of load factor and priority and preference. We also point out in this connection that the 15.4-cent Denver rate ordered by the Commission, which is called the average cost per MCF, includes 6½% return.

It is, therefore, respectfully submitted that even as to Colorado Interstate, the reason assigned by Mr. Justice Jackson for not voting in favor of a reversal is based upon a misapprehension of the facts, and that he employed a wrong test in that he tested not the new rate, but the old.

[2]This Cost Contract between Canadian and Colorado Interstate, dated January 3, 1928 (Ex. 16, R. V. 2, 711-780) has been designated by the Commission as "F.P.C. Rate Schedule No. 1," and it is the compensation under this Cost Contract which the Commission's Rate Reduction Order requires to be reduced by $551,000 annually. This particular contract is unusual and is not the ordinary contract that courts or regulatory bodies are called upon to consider in rate regulation cases. In addition to requiring Canadian to currently sell and deliver to Colorado Interstate gas at

The record shows that for the year 1939, which was used by the Commission as the test year, Petitioner received from Colorado Interstate under the Cost Contract a price of approximately 5¢ per MCF for all gas produced, gathered, transported and then delivered to Colorado Interstate in New Mexico and Oklahoma, respectively.[1] It is submitted that there is nothing in these facts or elsewhere in the record to indicate that a reduction is in order as to Petitioner's wholesale rates for resale to Colorado Interstate. The uncontroverted evidence in the record shows that the fair market value of Petitioner's gas in the Texas Panhandle Field arrived at through competitive arm's-length bargaining is 4¢ per MCF at the wellhead and 7¢ per MCF at Bivins Station, which is the end of gathering operations and the beginning of transmission operations (R., V. 6, 3256, 3280; Ex. 168, Sheets 113, 114; R., V. 6, 3281). It should be noted that whereas the reduction ordered by the Commission was $2,065,000 in the case of Colorado Interstate, it was only $561,000 in the case of Petitioner (R., V. 1, 188, 191). This Court could reverse Petitioner's case and still, on the basis of its judgment in the Colorado Interstate case, there would remain in effect a reduction in excess of $1,500,000 for the customers of Colorado Interstate. A reduction even in this amount would result in a gate rate at Denver less than the 24¢ price computed by Mr. Justice Jack-

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Canadian's cost, the Contract obligates Canadian to acquire, maintain and develop a substantial block of gas leaseholds, to drill and operate wells, to construct and operate gathering facilities, to pay off Canadian's funded debt in fixed amounts at fixed times, and to sell gas to others only as permitted by Colorado Interstate; and finally, to receive from Colorado Interstate as compensation for the rendering of all of these services (including the purchase price of the gas actually purchased) only Canadian's actual net cost incurred in connection therewith. Canadian's cost under the Contract is computed by deducting all outside revenue received by Canadian (including sales of gas to others) from the aggregate cost of producing and delivering all gas sold to purchasers. This cost includes interest and amortization of funded and other indebtedness of Canadian, but does not include depreciation and depletion. Canadian's Cost Contract and the bond indenture securing its $11,000,000 of 6% Sinking Fund Bonds, payable June 1, 1948, (Ex. 22, R. V. 2, 656-685) are interrelated documents, with the Cost Contract pledged as part of the security under the bond indenture. Sinking fund obligations are in excess of $600,000 annually which, together with interest, must be paid to prevent default.

[1] As to total revenue received see Commission finding (R., V. 1, 187), and as to total volume delivered (14.65-pound pressure base) see Flow Map, Commission Exhibit 138. (R., V. 2, 1079.) Also Commission Exhibit 226. (R., V. 4, 2319.)

son on the basis of the charges made for gas to Colorado Fuel & Iron Company.

V.

The Hope Case as a Precedent.

A careful consideration of both the Opinion of the Court and the concurring opinion of Mr. Justice Jackson demonstrates that the impact and end result rule announced in the *Hope* case has been erroneously applied to a jurisdictional question.

Petitioner desires to point out these specific illustrations:

(1) The Opinion of the Court assumes that the production and gathering jurisdictional question was advanced by the State of West Virginia in the *Hope* case and was there rejected by the Court. That portion of the *Hope* opinion which discusses the position of West Virginia does not urge this point as a jurisdictional matter but argues solely the reduced valuation of Hope's leaseholds and wells and the effect thereof on the welfare and economy of the State. The holding of this Court was that Congress did not entrust to the Commission various considerations which the State of West Virginia advanced. A brief reference only was made to the production and gathering provision of Section 1(b) of the Act in Note 25 on page 614 of the *Hope* opinion, which dealt only with the valuation of the production plant. The jurisdictional question was not urged by the Hope company, was not included in the application for rehearing before the Commission, and could not have been presented for decision to this Court.

(2) The opinion of the Court in this case further assumes that the Commission, if prevented from including production and gathering properties in the rate base, nevertheless might arrive at the same dollar result acting within its jurisdictional limitations. It is stated that the inquiry then would be whether "the end result was unjust and unreasonable." The *Hope* case is the authority for this view which attempts to impose the end result test to non-jurisdictional action. The same argument might be made if the Commission had reduced the prices charged for sales made in intrastate commerce. The Court attempts to justify

non-jurisdictional action on the theory that no confiscation has resulted and so no complaint can be made. It is Petitioner's contention that it is the duty of the Commission to investigate and find out what is the proper commodity value or field price of gas, and this proposal in no way places any minimum value or return on production properties, except such as may in fact be found to exist.

(3). Basing his concurrence on the *Hope* case, Mr. Justice Jackson states that he cannot fairly find that the Commission has exceeded its authority in obtaining the evidence which bears on matters beyond the Commission's regulatory jurisdiction. He disagrees emphatically with the use made of such evidence and the results obtained therefrom, but says that the *Hope* case has decided that point. It is the failure of the Commission to take evidence of all the economic factors stated by Mr. Justice Jackson and its exclusion of all but the rate base method that is the gravamen of Petitioner's complaint. The statute rejects the rate base method for production and gathering property just as does Mr. Justice Jackson, and the *Hope* case does not touch upon this particular point of pricing gas in the field.

In describing the Commission's method of determining a just and reasonable price for Petitioner's gas in this case, Mr. Justice Jackson, among other things, typifies the method used as being "fantastic" and "little better than to draw figures out of a hat." For this and other reasons, he would like to reverse the case; and yet in the end he reluctantly concurs in upholding the Commission's order for the stated reason that "The Court cannot, consistently with *Federal Power Commission v. Hope Natural Gas Co.*, 320 U. S. 591, do otherwise." He relates that the *Hope* case introduced into judicial review of administrative action a philosophy that the end justifies the means, to which philosophy he dissented then and still dissents. Notwithstanding such dissents, however, he concludes, "But, it is the law of this Court, and I do not understand that any majority is ready to reconsider it."

The ultimate decision of this Court in the *Hope* case was reached on a 5-to-3 vote, and the Chief Justice joined in the

opinion of the Court. In this case the Chief Justice has written what we construe to be a vigorous dissenting opinion. In this dissenting opinion, he has pointed out that there was no issue raised by the parties in the *Hope* case as to the jurisdiction of the Commission over producing and gathering properties, and that the end result principles applied in the *Hope* case are wholly inapplicable to the issue presented in this case, for reasons which he states most forcefully. It may be that a majority of the Court is not ready at this time to abandon entirely the end result philosophy promulgated through the *Hope* decision, but at least one member of the minimum majority which concurred in that decision has shown not only his willingness but his determination to impose appropriate restrictions and limitations upon the application of that philosophy and to deny the freedom of a blank check to administrative agencies by reason thereof, when presented the opportunity to do so in a proper case.

Even though it be conceded that the "end result" legal philosophy announced in the *Hope* case represents the law of the land until reversed by this Court, nevertheless, we assume that no such "end result" can be applied in any case unless it is arrived at by methods and procedures which conform to other well recognized principles of law also announced by this Court.

In the case of *Colorado-Wyoming Gas Co. v. Federal Power Commission, et al.*, also decided on April 2, 1945, Mr. Justice Douglas, speaking for a unanimous court, states as follows:

> "The review which Congress has provided for these rate orders is limited. Sec. 19(b) says that the 'finding of the Commission as to the facts, if supported by substantial evidence, shall be conclusive.' But we must first know what the 'finding' is before we can give it that conclusive weight. We have repeatedly emphasized the need for clarity and completeness in the basic or essential findings on which administrative orders rest. *Florida v. United States*, 282 U. S. 194, 215; *United States v. Baltimore & Ohio R. Co.*, 293 U. S. 454, 464; *United States v. Chicago, M. St. P. & P. R. Co.*, 294 U. S. 499, 504-505, 510-511; *United States v. Carolina Carriers Corp.*, 315 U. S. 475, 488-489. Their absence can only clog the administrative function and add to

the delays in rate-making. We cannot dispense with them for Congress has provided the standards for judicial review under this Act. Sec. 19(b). The courts cannot perform the function which Congress assigned to them in absence of adequate findings. Nor are they authorized under Section 19(b) to make findings and substitute them for those of the Commission."

Under the principles above stated, any Commission order to be tested under the "end result" theory must first pass the test of proper findings. Erroneous and improper findings would make the Commission's order just as defective as the absence of proper findings. Based upon the test year of 1939, the Commission does find or conclude in this case that the rates and charges of Petitioner subject to its jurisdiction are unjust, unreasonable and excessive to the extent of $561,000 per year. (See Commission's Findings, R., V. 1, 187) But the Commission arrives at this ultimate and critical finding or conclusion through preliminary findings and methods which Mr. Justice Jackson describes as being "fantastic," and which he says "vividly demonstrate the delirious results produced by the rate-base method" with respect to production and gathering properties. He further states that this case furnishes "another example of the capricious results of the rate-base method in this kind of case."

If, in order to be valid, an "end result" must be supported by proper findings, as it was held by this Court in the *Colorado-Wyoming Gas Company* case, then by what process of reasoning can the application of the "end result" theory in this case be upheld in any event when the ultimate finding or conclusion as to excessive rates is based upon findings, methods and results which are "fantastic," "delirious," "capricious," and "little better than to draw figures out of a hat"? Thus it would seem that a Justice might either agree or disagree with the "end result" legal philosophy of the *Hope* case and still find it wholly inapplicable or inappropriate here because of the lack of proper findings.

VI.

Where the Hope Case Leads for Petitioner

In reaffirming the views expressed by him in his dissenting opinion in the *Hope* case, Mr. Justice Jackson reiterates "that *Hope* provides no workable basis of judicial review, no key by which commissions can anticipate what rule, if any, will control our review, and no guidance to counsel as to what issues they should try or how they should try them." A more complete and devastating indictment of a rate regulatory concept would be difficult to frame. Notwithstanding his sweeping indictment and his sharp disagreement with the philosophy announced in the *Hope* case, however, he believes "that the majority which promulgated that decision, or a majority of that majority, should be permitted to spell out its application to specific problems *until we see where it leads.*" (Italics ours.) (p. 22)

This Court, or any individual member thereof, may find it desirable to bide time and to await the uncertain processes of trial and error in actual practice to appraise the results of the application of legal philosophies; both true and false; but most litigants, including this Petitioner, are not so fortunately situated. They must act today upon the judgment entered. They cannot delay until tomorrow on the premise that their own philosophies may be ultimately proven correct, and all will be well.

If the majority opinion in this case is to prevail, then it is a simple matter to spell out "where it leads" at once in so far as this Petitioner is concerned. Petitioner's properties, business and operations are covered entirely and exclusively by a Cost Contract with Colorado Interstate, wherein the cost of gas to Colorado Interstate is fixed as Petitioner's net actual cost after deducting revenues from all other sources. The Commission's order purports to change nothing in this Cost Contract, except its lifeblood, i.e., full reimbursement for costs incurred by Petitioner pursuant thereto. If Petitioner is to remain solvent then its income must at least equal its outgo. If Petitioner is to continue to drill wells and to produce, gather and transport natural gas, it must receive therefor sufficient funds to pay the cost thereof, as well as sufficient funds with which to meet installments of principal

and interest on its funded debt when due. If the Commission's rate reduction order is to stand, then Petitioner will receive less than its actual costs under the Cost Contract, and it must either seek some method of relieving itself from its obligations under the Cost Contract, or face bankruptcy or receivership forthwith.[4]

Petitioner fully appreciates the necessity for, and the value of, trial and error experimentation for the purpose of exploring the vast unknown in any process of evolution, but as to this particular proposed trial Petitioner agrees first with the four Justices who joined in the dissenting opinion that the trial should not be had because of lack of jurisdiction, and second, Petitioner agrees with the conviction so ardently expressed by Mr. Justice Jackson that the trial is foredoomed to failure and disaster in any event, because the ultimate error is even now so flagrantly apparent. Since a majority of the Court believes either that the trial is improper and should not be had or that it is foredoomed to failure in any event, then why the trial? At best, the life of a guinea pig is a precarious existence even in well-conceived and properly administered experimentation. Such a trial in this case can benefit no one, and certainly it can be only of slight consolation to Petitioner to have it subsequently recorded in future legal or scientific annals that the operation was a success but the patient died as an end result.

VII.

The Commission's Jurisdiction Over Production and Gathering

On the question of the Commission's jurisdiction over production or gathering of natural gas, Mr. Justice Jackson states that "If the Commission had imposed any direct regulation upon that activity, I would join in holding it to have exceeded its jurisdiction. But the orders in question have no immediate 'impact' upon production or gathering of gas." It would seem unnecessary here to split hairs over fine distinctions between direct and indirect, or immediate and ultimate. For the purpose of showing that what the Commission has done with respect to production and gather-

[4]See Petitioner's Brief on Petition for Certiorari, 19, 20, 40-42.

ing in this case is both immediate and ultimate, as well as direct and indirect, it should be sufficient to review the record briefly, as follows:

(a) The Commission has assumed full and complete rate regulatory jurisdiction over Petitioner's production and gathering properties, facilities and business in precisely the same manner as it has exercised such jurisdiction over Petitioner's transmission properties, facilities and business, notwithstanding Section 1(b) of the Act;

(b) The Commission has set up a total rate base of which approximately two-thirds represents production and gathering properties even at the Commission's "fantastic" conception of gas leasehold values, and in so doing it has denied Petitioner actual cost, discovery, market and every other recognized yardstick of actual value for its gas leaseholds, except provable capital expenses of Petitioner and predecessor companies, commencing with the first "wildcat" or discovery well drilled over 25 years ago; (R., V. 1, 144-195; V. 5, 2717-2721)

(c) The Commission has determined and included in its rate base an allowance for working capital which it deems sufficient to enable Petitioner to carry on its production and gathering operations; and likewise the Commission has purported to determine in its rate base for production and gathering properties what additional wells should be drilled and what additional gathering facilities should be installed in the future; (R., V. 5, 2530-2556)

(d) The Commission has allowed a rate of return of 6½% per annum upon such "fantastic" rate base, more than two-thirds of which, as above stated, is attributable to the hazardous business of discovering, exploring, developing and operating natural gas production properties; (R., V. 1, 187)

(e) The Commission has purported to determine the annual amount which should be allowed to Petitioner in the future for the purpose of defraying its cost of producing and gathering natural gas; (R., V. 5, 2530-2556)

(f) The Commission's order purports to change and abrogate the amount of compensation which Petitioner is

entitled to receive from Colorado Interstate under its Cost Contract, which compensation represents cost reimbursement to Petitioner, not only for the cost of current deliveries of gas to Colorado Interstate, but for the cost of performing various other services under the contract relating exclusively to Petitioner's production and gathering properties and operations, such as acquisition and maintenance of leaseholds, the drilling of wells, and the construction of gathering facilities; (R., V. 2, 711-780) and

(g) The Commission's order, if permitted to stand without relief of some character, would enforce default upon Petitioner not only in its Cost Contract obligations, but its funded debt obligations, notwithstanding the fact that Petitioner is operating as a non-profit company and has not had, and will not have, any earnings or profits for distribution to its owners so long as the Cost Contract remains in effect.

As Mr. Justice Jackson suggests, this case "vividly demonstrates the delirious results produced by the rate-base method," or at least the Commission's conception of such method. Again, as Mr. Justice Jackson suggests, the method is "little better than to draw figures out of a hat," but in this instance the hat seemed to be loaded with low figures. If Section 1(b) of the Act were entirely eliminated so as to leave no express statutory cloud or prohibition whatsoever upon the full and complete jurisdiction of the Commission over producing and gathering, it could not have done in this case any more than it did do.

The Opinion of the Court concedes that Section 1(b) of the Act "precludes the Commission from any control over the activity of producing or gathering natural gas. For example, it makes plain that the Commission has no control over the drilling and spacing of wells and the like." We assume this statement means that in the Opinion of the Court the Commission has no power to compel Petitioner to drill, or not to drill, gas wells. It is respectfully submitted that the Court is misled and that the Commission does and will continue to have such power just so long as this Court will sustain the power of the Commission (a) to include gas wells in a rate base at whatever valuation the Commission may determine, (b) to fix the amount of work-

ing capital which shall be allowed for the purpose of operating such wells, (c) to fix the rate of return which shall be applied against its valuation of such wells, and (d) to fix the amount of annual expense which shall be allowed for the purpose of operating such wells. The "impact" of the Commission's order upon Petitioner's producing and gathering properties, business and operations may not be "immediate," as stated by Mr. Justice Jackson, but at least it has the degree of immediacy suggested in the story of the man who fell out of the window on the thirtieth floor, and yelled that he was not hurt yet as he passed the thirteenth floor.

With respect to the Commission's rate regulatory jurisdiction over electric companies under the Federal Power Act, Mr. Justice Jackson has well said in his Opinion of the Court in the case of *The Connecticut Light & Power Co. v. Federal Power Commission*, decided March 26, 1945 (..... U. S. .....), that "whether the Act provides for such regulation depends upon whether the facilities are under the jurisdiction of the Commission; the Commission's jurisdiction does not depend on some independent application of the regulatory provisions." To reason otherwise, he states, would "get the cart before the horse." This Court appears to be of the unanimous view that Petitioner's production and gathering facilities are not subject to the jurisdiction of the Commission under the Act, and yet the independent application of the Commission's rate regulatory processes and provisions subjects them to the Commission's jurisdiction as completely and effectively as if the Section 1(b) of the Act conferred rather than denied such jurisdiction.

VIII.

Conclusion

The problems presented to Petitioner's management by the present judgment of this Court are not speculative or trivial. They are real and substantial. They gravely affect the immediate as well as the future existence of Petitioner's business. Primarily, Petitioner is engaged in the business of producing and gathering gas. From the standpoint of investment, revenues and expenses, it is only incidentally engaged in the business of transporting gas in interstate

commerce. In 1928, when Petitioner became a party to, and assumed its obligations for, the so-called Denver Project, it did so with the firm conviction that the Project should be protected and safeguarded against the vicissitudes of the future by the acquisition and maintenance of a gas reserve of sufficient size and dependability to cover all reasonable market requirements over a long period of years. This policy was believed to be in the best interests of the Project and the public which it served. If the Commission's order is to stand, this policy turns out to be an economic fallacy of serious magnitude to Petitioner.

As pointed out heretofore, the Opinion of the Court in this case concedes that Petitioner cannot be compelled by the Commission to drill wells and produce gas for pipeline purposes. Indeed, there is very little incentive so to do, when the same gas could be sold to others at the wellhead or in the field for approximately twice the price allowed therefor by the Commission. It would be far more profitable for Petitioner to dispose of its interstate transmission business, or to arrange to purchase gas from others for resale to Colorado Interstate. In the latter case, the full cost of such gas, if acquired at fair market values, would be allowed by the Commission as an operating expense to Petitioner, unless the Commission should change its past practices in this respect. It is true that the consuming public on the Denver Project might lose the benefits and advantages of a large and dependable source of gas which they have been enjoying over a period of years at very moderate prices, but Petitioner would be able at least to remain solvent.

Petitioner, the natural gas industry, and its consuming public are all faced with innumerable and inevitable economic uncertainties in the future, including reconversion after the war. Certainly they should be spared the uncertainty of waiting until it may be seen where the legal philosophy of the *Hope* case will lead, if a majority of the Court believes that the legal philosophy announced there is either erroneous or not applicable here. If the end result theory promulgated in the *Hope* case is wholly bad, as Mr. Justice Jackson has so graphically described, then surely something is gained in any event, so far as the

natural gas industry and its consuming public are concerned, if the area within which such theory may be applied is reduced and restricted, and this is true notwithstanding the fact that a majority of the Court may not be ready at this time to abandon such theory entirely.

In conclusion, may the Petitioner be permitted once more to state the paradoxical question: If, as appears on the face of the judgment record, *a majority of this Court* believes that the legal philosophy underlying the Opinion of the Court is either wholly wrong or wholly inapplicable here, then why the application of such philosophy to Petitioner's case? Why should the legal philosophy of *a minority of the Court* be inflicted upon Petitioner, the natural gas industry or the consuming public as a sacrifice upon the altar of juridical experimentation, or otherwise?

WHEREFORE, Petitioner prays that a rehearing be granted herein for the purpose of reconsidering the issues presented and the judgment entered herein, and that the time for the issuance of mandate of the Court herein be enlarged by order of this Court, and the issuance of such mandate be stayed until such time as this petition for rehearing has been finally disposed of by the Court.

Respectfully submitted,

P. C. Spencer,
Room 2759, 630 Fifth Avenue,
New York, N. Y.;

Charles H. Keffer,
903 Fisk Building,
Amarillo, Texas;

John P. Akolt,
1300 Telephone Building,
Denver, Colorado,
Attorneys for Petitioner.

CERTIFICATE OF COUNSEL.

I, John P. Akolt, of the City and County of Denver, State of Colorado, being one of counsel for Canadian River Gas Company, Petitioner in the above petition named, do hereby certify that the foregoing petition for rehearing of this cause is presented in good faith and not for delay.

JOHN P. AKOLT,
Attorney for Petitioner,
Canadian River Gas Company.

FILE COPY

FILED
APR 10 1945
CHARLES ELMORE CROPLEY
CLERK

IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944

Nos. 379 and 380

COLORADO INTERSTATE GAS COMPANY
a Corporation, PETITIONER

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND CANADIAN RIVER GAS COMPANY, RESPONDENTS.

CANADIAN RIVER GAS COMPANY,
a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

ON PETITION FOR WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE TENTH CIRCUIT

Motion of City and County of Denver to Dismiss Writs of Certiorari and for Order of Distribution of Monies together with Brief in support thereof.

MALCOLM LINDSEY, 353 Municipal Bldg., Denver 2, Colo.
THOMAS H. GIBSON, 353 Municipal Bldg., Denver 2, Colo.
Attorneys for Respondent, City and County of Denver.

IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944

Nos. 379 and 380

COLORADO INTERSTATE GAS COMPANY
a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND CANADIAN RIVER GAS COMPANY, RESPONDENTS.

CANADIAN RIVER GAS COMPANY,
a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, AND COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

BRIEF OF THE CITY AND COUNTY OF DENVER, SUGGESTING THAT THE COURT BELOW WAS WITHOUT JURISDICTION OVER THE SUBJECT MATTER.

MOTION OF THE CITY AND COUNTY OF DENVER TO DISMISS WRITS OF CERTIORARI AND FOR ORDER DIRECTING DISTRIBUTION OF MONIES.

To the Honorable Chief Justice and Associate Justices of the Supreme Court of the United States:

The City and County of Denver, respondent in the above entitled causes, by its counsel of record, moves the Court that the writs of certiorari herein be dismissed, and that the Tenth Circuit Court of Appeals be ordered to distribute the monies now on deposit and that hereafter shall be deposited under the terms of that certain stay order that was entered by said Court in said causes on May 16, 1942; and as grounds for said motion said respondent shows to the Court:

1. That the questions upon the merits which the petitioners herein seek to raise are not presented for review by the Supreme Court of the United States for the reason that the Tenth Circuit Court of Appeals for the Tenth Circuit was without jurisdiction over the subject matter of the petitions for review that appear in the record herein as more fully appears in the brief that is filed herewith.

2. That on May 16, 1942, in compliance with the prayer of a petition filed April 20, 1942, by petitioners in said Tenth Circuit Court of Appeals for an order staying the order of the Federal Power Commission in said causes, said Court entered a certain stay order in cause numbered 2550 in said Court, which is the same cause in which the writ of certiorari has been granted in the above entitled cause No. 279. (R.V.I. pp. 115-119).

That under and in accordance with the terms and conditions of said stay order there is now on deposit in the First National Bank of Denver, Colorado, between five and six millions of dollars that are subject to the "further order or orders" of said Tenth Circuit Court of Appeals as in said stay order provided, and the sums of money that are thereby required to be deposited are regularly being deposited in the amounts and at the times therein specified.

WHEREFORE, this respondent moves the Court that said writs of certiorari be dismissed; that said Tenth Circuit Court of Appeals be ordered to distribute said monies that have been and shall be deposited in said bank or elsewhere, in accordance with the terms and conditions of said order.

MALCOLM LINDSEY,
353 Municipal Building,
Denver 2, Colorado,

THOMAS H. GIBSON,
353 Municipal Building,
Denver 2, Colorado,

Attorneys for said City and County, Respondent.

I, Thomas H. Gibson, of the City and County of Denver, State of Colorado, being one of the counsel for the above named respondent, do hereby certify that the foregoing motion is, in my judgment, well founded in law, and that the same is presented in good faith and not for delay.

THOMAS H. GIBSON,
Attorney for Respondent, City and County of Denver.

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Utica - Supreme Court, U. S.
FILED
APR 17 1945
CHARLES ELMORE CROPLEY
CLERK

IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

Nos. 379 and 380.

COLORADO INTERSTATE GAS COMPANY,
a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

CANADIAN RIVER GAS COMPANY,
a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

MOTION OF PUBLIC SERVICE COMPANY OF COLORADO FOR ORDER FOR DISTRIBUTION OF IMPOUNDED MONIES.

PAUL W. LEE,
GEO. H. SHAW,
WM. A. BRYANS, III,
CHARLES J. KELLY,
1217 First National Bank Bldg.,
Denver 2, Colorado,
Attorneys for Respondent, Public Service Company of Colorado.

EASTWOOD PRINTING CO., 3031 CURTIS STREET, DENVER

IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

Nos. 379 and 380.

COLORADO INTERSTATE GAS COMPANY, a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

CANADIAN RIVER GAS COMPANY, a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

MOTION OF PUBLIC SERVICE COMPANY OF COLORADO FOR ORDER DIRECTING DISTRIBUTION OF MONIES.

To the Honorable Chief Justice and Associate Justices of the Supreme Court of the United States:

Comes now Public Service Company of Colorado, a corporation, Respondent in the above entitled causes, by its counsel, and respectfully moves the Court that the Tenth Circuit Court of Appeals be ordered to distribute the monies impounded and now on deposit under the order of said Circuit Court of May 16, 1942, to the ultimate gas consumers

served by this Respondent, and as grounds therefor said Respondent respectfully submits:

1. Respondent is a utility corporation organized and existing under and by virtue of the laws of the State of Colorado and is engaged, among other things, in the business of distributing natural gas at retail in several cities and towns in the State of Colorado, including the City of Denver, and rural territory in said state and through its subsidiary, The Pueblo Gas and Fuel Company, a corporation, serves the consumers in the City of Pueblo in said state, and said Company also through its subsidiary, Cheyenne Light, Fuel and Power Company, serves the consumers in the City of Cheyenne in the State of Wyoming.

2. That, on, to-wit, the 16th day of May, 1942, the said Circuit Court of Appeals, in compliance with the prayer of a petition filed April 20, 1942, for an order staying the order of the Federal Power Commission in said causes, said Court entered a certain stay order in said cause providing inter alia the amounts so deposited shall "* * * remain on deposit as provided in said order and in said escrow agreement, subject, however, to the further order or orders of this Court to be returned to such ultimate gas consumers or persons to whom the Court shall find the same should be returned as contemplated by the provisions of the Natural Gas Act" (R. V. I, P. 118).

3. That under the decisions and orders of the Federal Power Commission, the said Circuit Court of Appeals of the Tenth Circuit and this Court it has been found and determined that the funds so deposited in escrow, as aforesaid, represent income to the Colorado Interstate Gas Company in excess of the income to which it was lawfully entitled for the sale of natural gas to this Respondent and to other purchasers thereof.

4. That said impounded fund has not been paid or delivered to this Respondent at any time, and at no time has said fund constituted taxable income of this Respondent, and this Respondent has at no time asserted any right, title, interest, claim or demand to said fund.

5. That from and since the said 16th day of May, 1942

(the date of the entry of said order impounding said funds), this Respondent, the Respondent, the City and County of Denver, and the ultimate consumers of natural gas throughout the State of Colorado and in Cheyenne, Wyoming, have been and are now of the belief that said impounded funds are not the property of this Respondent but should be paid and delivered to said ultimate consumers.

6. That the ultimate gas consumers are of right entitled to the funds so deposited in escrow, as aforesaid, in equity and good conscience as monies had and received by the Colorado Interstate Gas Company, Respondent herein, for their benefit and are the equitable owners of a primary right thereto.

WHEREFORE, this Respondent moves the Court that said Tenth Circuit Court of Appeals be ordered to pay said monies to such person, persons or agency as this Court shall designate to the end that said funds shall be paid and delivered to the ultimate consumers of natural gas, and that the Court in making and entering such order find and determine that said impounded funds are not and have never been the property of this Respondent, and that said funds have never constituted taxable income of this Respondent, and that said Circuit Court be further ordered to continue to hold said impounded fund for a reasonable period of time within which any and all persons who may have any lawful claim, right, title or interest in and to said fund may appear therein and cause to be adjudicated their rights in the premises, and that upon the expiration of such reasonable time, to be fixed by said Circuit Court of Appeals, all claims of whatsoever kind or nature in and to said fund be forever barred.

PAUL W. LEE,
GEO. H. SHAW,
WM. A. BRYANS, III,
CHARLES J. KELLY,
1217 First National Bank Bldg.,
Denver 2, Colorado,
Attorneys for Respondent, Public Service Company of Colorado.

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Office - Supreme Court, U. S.
FILED
APR 23 1945
CHARLES ELMORE CROPLEY
CLERK

IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

No. 379

COLORADO INTERSTATE GAS COMPANY, a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

PETITION FOR REHEARING AND FOR ENLARGEMENT OF TIME FOR ISSUANCE OF MANDATE AND STAY OF MANDATE.

WM. A. DOUGHERTY,
Room No. 3020,
30 Rockefeller Plaza,
New York 20, N. Y.

ELMER L. BROCK,
E. R. CAMPBELL,
1300 Telephone Building,
Denver 2, Colorado,
Attorneys for Petitioner.

APRIL 17, 1945.

EASTWOOD PRINTING CO., 2031 CURTIS STREET, DENVER

IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

No. 379

COLORADO INTERSTATE GAS COMPANY, a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

PETITION FOR REHEARING AND FOR ENLARGEMENT OF TIME FOR ISSUANCE OF MANDATE AND STAY OF MANDATE.

Petitioner, Colorado Interstate Gas Company, files this petition for rehearing and enlargement of the time for issuance of mandate and stay of mandate for the sole reason hereinafter set forth.

Canadian River Gas Company in the companion case No. 380, October Term, 1944, is filing its petition for rehearing and enlargement of the time for stay of mandate.

A part of the reduction of $2,065,000 per annum ordered by the Commission against your petitioner was based upon a reduction ordered in Canadian's case in the price of gas sold by Canadian to petitioner in the amount of $551,000 per annum. If Canadian's petition for rehearing should be

granted and the order in Canadian's case ultimately enjoined, modified or set aside in whole or in part, then it would follow that the $2,065,000 reduction ordered in petitioner's case should be reduced accordingly.

In order to protect its right to the extent above stated petitioner prays that a rehearing herein be granted and that an order be entered enlarging the time for the issuance of mandate and for stay of mandate in the event the petition for rehearing and enlargement of the time for the issuance of mandate is granted in Canadian's case.

Respectfully submitted,

WM. A. DOUGHERTY,
Room No. 3020,
30 Rockefeller Plaza,
New York 20, N. Y.

ELMER L. BROCK,
E. R. CAMPBELL,
1300 Telephone Building,
Denver 2, Colorado,
Attorneys for Petitioner, Colorado Interstate Gas Co.

April 17, 1945.

Certificate of Counsel.

I, Elmer L. Brock, of the City and County of Denver, State of Colorado, being one of counsel for Colorado Interstate Gas Company, petitioner in the above petition named, do hereby certify that the foregoing petition for rehearing of this cause is presented in good faith and not for delay.

ELMER L. BROCK,
Attorney for Petitioner, Colorado Interstate Gas Co.

FILE COPY

Office - Supreme Court, U. S.
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APR 23 1945
CHARLES ELMORE CROPLEY
CLERK

IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

Nos. 379 and 380.

COLORADO INTERSTATE GAS COMPANY,
a Corporation, Petitioner,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and CANADIAN RIVER GAS COMPANY, Respondents.

CANADIAN RIVER GAS COMPANY,
a Corporation, Petitioner,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and COLORADO INTERSTATE GAS COMPANY, Respondents.

BRIEF OF PETITIONERS IN ANSWER TO MOTION AND BRIEF OF CITY AND COUNTY OF DENVER SUGGESTING THAT THE COURT BELOW WAS WITHOUT JURISDICTION OVER THE SUBJECT MATTER.

COLORADO INTERSTATE GAS COMPANY,
By: WM. A. DOUGHERTY,
Room 2020, 30 Rockefeller Plaza, New York 20, New York;
ELMER L. BLOCK,
E. R. CAMPBELL,
1800 Telephone Building, Denver 2, Colorado,
Its Attorneys.

CANADIAN RIVER GAS COMPANY,
By: P. C. SPENCER,
Room 2759, 630 Fifth Avenue, New York 20, New York;
CHARLES H. KEFFER,
903 Fisk Building, Amarillo, Texas;
JOHN P. AKOLT,
1300 Telephone Bldg., Denver 2, Colorado,
Its Attorneys.

EASTWOOD PRINTING CO., 2031 CURTIS STREET, DENVER

IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1944.

Nos. 379 and 380.

COLORADO INTERSTATE GAS COMPANY, a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and CANADIAN RIVER GAS COMPANY, RESPONDENTS.

CANADIAN RIVER GAS COMPANY, a Corporation, PETITIONER,

v.

FEDERAL POWER COMMISSION, CITY AND COUNTY OF DENVER, COLORADO, PUBLIC SERVICE COMMISSION OF WYOMING, COLORADO-WYOMING GAS COMPANY, PUBLIC SERVICE COMPANY OF COLORADO, and COLORADO INTERSTATE GAS COMPANY, RESPONDENTS.

BRIEF OF PETITIONERS IN ANSWER TO MOTION AND BRIEF OF CITY AND COUNTY OF DENVER SUGGESTING THAT THE COURT BELOW WAS WITHOUT JURISDICTION OVER THE SUBJECT MATTER.

Every proposition advanced by the City and County of Denver in its motion and brief recently filed has been de-

cided adversely to the City's contention since the oral argument in the above entitled cases.

Central States Electric Co. v. Muscatine, ... U. S. ....., 89 L. Ed. 540.

Panhandle Eastern Pipe Line Co. et al. v. Federal Power Commission et al., No. 296, October Term 1944, decided April 2, 1945.

It is clear from the motion filed by the City of Denver that a question of "jurisdiction" only is raised; that the City neither in this Court nor in the Circuit Court of Appeals has ever raised the question that the Tenth Circuit was not the proper court as a matter of "venue", if, in fact, that Court had jurisdiction, as distinguished from venue. As above stated, this question has been directly and positively decided against the City's contention in the Panhandle Eastern Case.

If, however, contrary to what appears to be the clear purport of the City's motion, it should be contended that a question of proper "venue" is presented, then we submit that in this case, as in the Panhandle Eastern Case, the right to raise that question has been waived by the City, as appears from the following.

In the Colorado Interstate case the petition for review shows:

Petitioner is a private corporation organized and existing under the laws of the State of Delaware. It owns and operates a main transmission natural gas pipeline extending from Clayton Junction, New Mexico, to a point just outside the city limits of the City and County of Denver, State of Colorado. Its General Manager and other representatives have their offices at Colorado Springs, Colorado. All of its physical properties are located, and all of its sales take place within territory comprising the Tenth Circuit (R. V. 1, p. 10).

Since incorporation, Colorado Interstate Gas Company and Canadian River Gas Company have jointly maintained an office in the Colorado Springs National Bank Building in Colorado Springs, Colorado, under the charge of a general manager, from where the supervision, di-

rection and management of the affairs of both of said companies have been conducted (R. V. 1, p. 125).

All of the gas purchased by Colorado Interstate Gas Company is purchased from Canadian River Gas Company, and all of said gas is delivered by said Canadian River Gas Company to Colorado Interstate Gas Company in territory included in the Tenth Circuit. (R., V. 1, p. 126).

All of the customers to whom Colorado Interstate Gas Company sells the gas so purchased by it from Canadian River Gas Company are located in the territory included in the Tenth Circuit, namely, either Colorado or Oklahoma, and all of said gas sold by Colorado Interstate Gas Company is delivered by it to the purchasers thereof, either in Colorado or Oklahoma.

All of the physical properties of Colorado Interstate Gas Company are located either in Colorado or New Mexico (R. V. 1, p. 126).

It was also shown that all of the contracts of Colorado Interstate Gas Company with its customers are made and acted upon at its Colorado Springs office and that all bills for gas sold by it are rendered out of the Colorado Springs office; that the purchasing agent for said company, as well as for Canadian River Gas Company, has his office in Colorado Springs; that all dealings between Canadian River Gas Company and Colorado Interstate Gas Company in connection with the purchase and sale of gas are handled in and through the Colorado Springs office; that all audits of gas sold and accounting are made at the Colorado Springs office; that moneys received for the sale of gas are deposited in Colorado Springs banks to the extent necessary to defray all operating expenses and taxes; and that the general books of account and property records are kept in Colorado Springs (R. V. 1, pp. 126-127).

Similar allegations are contained in the petition for review of Canadian River Gas Company (R. V. 1, pp. 42, 128-133).

None of these allegations have at any time been denied by the Federal Power Commission, or the City and County of Denver, or anyone else.

These admitted facts clearly show that the proper venue for this action was in the Tenth Circuit Court of Appeals, the Circuit is which the company "is located or has its principal place of business" (Section 19 (b), Natural Gas Act).

The City and County of Denver did, however, question the sufficiency of these allegations to give *jurisdiction* to the Tenth Circuit Court of Appeals in view of the further fact alleged in each of the petitions that the company was incorporated under the laws of the State of Delaware. This was by motion to dismiss first filed in the Circuit Court of Appeals on August 8, 1942 (R. V. 1, pp. 122-123).

Now let us see what had happened in the meantime. Under date of April 20, 1942, Colorado Interstate Gas Company and Canadian River Gas Company each filed a petition for a stay pending review of the rate order of the Federal Power Commission (R. V. 1, pp. 79-115). These petitions for a stay came on for hearing May 16, 1942, and in the stay order involving Colorado Interstate it is recited:

> "* * *. And it further appearing to the court that each of the respondents herein has been duly served with a copy of said petition filed herein, and of notice of hearing, * * *" (R. V. 1, p. 116).

And in the stay order involving Canadian River Gas Company it is recited:

> "* * *, the Respondent, Federal Power Commission, appearing by its attorney, Edw. H. Lange, the Respondent, City and County of Denver, Colorado, appearing by its attorneys, Thomas Gibson and Malcolm Lindsey, * * *" (R. V. 1, p. 120).

At this hearing City Attorney Lindsey and his assistant, Thomas H. Gibson, not only appeared representing the City and County of Denver as recited in the order aforesaid, but they participated in the discussions as to what form the stay order should take, and at the request of the Court the attorneys representing the petitioners, the attorney for the Federal Power Commission and Mr. Gibson, representing the City and County of Denver, conferred and agreed

upon the form of the order, and at the request of Mr. Gibson there was incorporated in the order a provision that the First National Bank of Denver, in addition to furnishing a certificate to the Clerk of the Court and the Federal Power Commission each month showing that the moneys required to be deposited had been deposited by Colorado Interstate Gas Company, should also furnish a copy to the City and County of Denver, Colorado (R. V. 1, p. 118).

The said order, in the case of Colorado Interstate Gas Company (R. V. 1, p. 117), showed the amount to be deposited each month by Colorado Interstate Gas Company in the First National Bank of Denver as follows:

May	$141,477.05
June	135,088.63
July	121,896.65

Each of these amounts was actually deposited by Colorado Interstate Gas Company with copy of the certificate by the First National Bank to the City and County of Denver showing such deposits, all prior to the filing of the motion to dismiss on August 8, 1942.

Thus, it is clear that the motion to dismiss, if construed as raising a question of venue, filed as it was on August 8, 1942, was not seasonably filed, and, accordingly, any such question of venue has been waived, as held by this Court in the Panhandle Eastern Pipe Line Case, supra. Furthermore, if a question of venue is thought to be presented, we submit that the City and County of Denver alone, being only one of several parties respondent, should not be permitted to control this question of venue even if it had not waived it.

Finally, even on a "venue" approach it is obvious from the facts shown in the record that the Tenth Circuit Court of Appeals was a proper court to decide the review in this case. There are no facts presented by motion or otherwise which would indicate that for "venue" reasons, either from the standpoint of the City and County of Denver or any other party to the proceeding, the Tenth Circuit was not the proper court.

As to the ultimate distribution of impounded funds, ex-

cept to the extent indicated in petitioner's petition for rehearing and enlargement of the time for issuance of mandate filed contemporaneously herewith, petitioner is not interested so long as it is fully protected by any order which may be entered relating to that subject.

Respectfully submitted,

COLORADO INTERSTATE GAS COMPANY,
By: WM. A. DOUGHERTY,
Room 3020, 30 Rockefeller Plaza, New York 20, New York;
ELMER L. BROCK,
E. R. CAMPBELL,
1300 Telephone Building, Denver 2, Colorado,
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SUPREME COURT OF THE UNITED STATES.

Nos. 379 and 380.—October Term, 1944.

Colorado Interstate Gas Company, Petitioner, vs. Federal Power Commission, City and County of Denver, Colorado, Public Service Commission of Wyoming, et al. (379)	On Writs of Certiorari to the United States Circuit Court of Appeals for the Tenth Circuit.
Canadian River Gas Company, vs. Federal Power Commission, City and County of Denver, Colorado, Public Service Commission of Wyoming, et al. (380)	

[April 2, 1945.]

Mr. Justice Douglas delivered the opinion of the Court.

The Federal Power Commission after an investigation and hearing entered orders under § 5 of the Natural Gas Act of 1938 (52 Stat. 823, 15 U. S. C. § 717d) finding the interstate wholesale rates of petitioners to be excessive by specified amounts per year and requiring petitioners to reduce the rates accordingly. 43 P. U. R. (N. S.) 205. The Circuit Court of Appeals for the Tenth Circuit affirmed the Commission's orders. 142 F. 2d 943. The cases are here on petitions for certiorari which we granted, limited to the few questions to which we will presently advert.

Petitioners (to whom we will refer as Canadian and as Colorado Interstate) had their origin in an agreement made in 1927 between Southwestern Development Co. (Southwestern), Standard Oil Co. (N. J.) (Standard) and Cities Service Co. (Cities Service). It was the purpose of the agreement to bring natural gas from the Panhandle field in Texas to the Colorado markets, including Denver and Pueblo. Southwestern agreed to transfer through a wholly owned subsidiary, Amarillo Oil Co. (Amarillo), certain gas leaseholds and producing properties to a new subsidiary (Canadian) which it would organize for that purpose. Standard agreed to form a new corporation (Colorado Interstate) and to finance its construction of pipeline facilities which

would connect with Canadian's facilities and transport gas from those points in the Panhandle field to the Colorado markets. Cities Service agreed to use its best efforts to obtain franchises through its subsidiaries under which the natural gas could be distributed in certain cities in Colorado including Denver and Pueblo. The gas was to be sold to Colorado Interstate by Canadian at cost (as defined in the contract) for at least 20 years from 1928. We will return to other details of this tripartite agreement and of the organization and financing of Canadian and Colorado Interstate. It is sufficient here to say that the companies were incorporated, the pipeline was built, and the business put into operation. Although Canadian and Colorado Interstate are separate companies, the Commission found that their properties have been operated as a single enterprise.

Canadian produces from its own properties all the gas which it sells. It has about 300,000 acres of natural gas leaseholds and on December 31, 1939, was operating 94 wells. Its gathering system consists of approximately 144 miles of pipe. It owns and operates a transmission line which connects with its gathering system in the Panhandle field and ends about 85 miles distant at a point near Clayton, New Mexico. Canadian sells some of its gas at the wellhead and along the Texas portion of its transmission line for consumption in Texas. It also sells gas for resale in Clayton, New Mexico. But the chief portion of the gas in its transmission line is sold at that point to Colorado Interstate. The pipeline of Colorado Interstate extends to Denver. It sells the gas to various distributing companies for resale by them in Colorado and in a few points in Wyoming.[1] Colorado Interstate also sells gas from this pipeline direct to industrial customers in Colorado for their own use.

It is thus apparent that the pipeline from Texas to Colorado serves three different uses: (a) intrastate transportation and sale in Texas; (b) interstate transportation and sale to industrial customers; and (c) interstate transportation to distributing companies for resale. Only some of those activities are subject to the jurisdiction of the Commission. For § 1(b) of the Act provides:

[1] The latter resales are made by Colorado-Wyoming Gas Co. which transports the gas from a point near Littleton, Colorado to Cheyenne, Wyoming. The proceedings against this company were consolidated with those against Canadian and Colorado Interstate. The Commission also ordered a reduction in the rates charged by Colorado-Wyoming Gas Co. That order is here for review on certain points in No. 575, decided today.

"The provisions of this chapter shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas."

It is around the meaning and implications of that provision that most of the present controversy turns.

Allocation of Cost of Service. The questions raised by Colorado Interstate and some of those raised by Canadian relate to the failure of the Commission (1) to separate the physical property used in common in the intrastate and interstate business; (2) to separate that used in common in the sales of gas to industrial consumers and the sales of gas for resale; and (3) to separate the property used exclusively in intrastate business or exclusively for industrial sales. The Commission thought it unnecessary to make such a separation of the properties. It noted that nowhere in the evidence presented by petitioners was there "a complete presentation of the entire operations of the company broken down between jurisdictional and nonjurisdictional operations." 43 P. U. R. (N. S.), p. 232. And it concluded, "All that can be accomplished by an allocation of physical properties can be attained by allocating costs including the return. The latter method is by far the most practical and businesslike." *Id.*, p. 232. The Commission adopted the so-called "demand and commodity" method for allocating costs. Cf. *Arkansas Louisiana Gas Co.* v. *Texarkana*, 96 F. 2d 179, 185. It took the costs and divided them into three classes—volumetric, capacity, distribution.[2] Costs relating to the production system were treated as volumetric.[3] These included rate of return and depreciation and depletion on leases and wells. These volumetric costs were allocated to the customers in proportion to the number of Mcf's delivered to each customer in 1939. The larger share of the transmission costs of the Denver pipeline were classified as capacity costs. Supplies and expenses of compressing systems, maintenance of compressing system equipment and accruals

[2] The Commission in its report characterized volumetric costs as variable costs and capacity costs as fixed costs. 43 P. U. R. (N. S.) p. 232.

[3] A residual refining credit was determined and deducted from production costs.

for its depreciation were classed as volumetric. And one-half of the return and income taxes on the Denver pipeline and one-half of operating labor on the compressing system were classed as volumetric, the other half being classed as capacity. Capacity costs were allocated to the customers in the ratio that the net sales to each customer on the system peak day of February 9, 1939, bore to the total sales to all customers on that day. Distribution costs were composed in part of depreciation, taxes, and return on investment in metering and regulating equipment through which gas is delivered at individual stations to each customer. These were allocated to each customer in the ratio which the investment for each customer bore to the total investment in such facilities which were available to serve all customers. Distribution costs also included operating and maintenance expenses incurred in operating the metering and regulating stations. These were allocated on the basis of the number of stations.

The function which an allocation of costs (including return) is designed to perform in a rate case of this character is clear. The amount of gross revenue from each class of business is known. Some of those revenues are derived from sales at rates which the Commission has no power to fix. The other part of the gross revenues comes from the interstate wholesale rates which are under the Commission's jurisdiction. The problem is to allocate to each class of the business its fair share of the costs. It is of course immaterial that the revenues from the intrastate sales or the direct industrial sales may exceed their costs, since the authority to regulate those phases of the business is lacking. To the extent, however, that the revenues from the interstate wholesale business exceed the costs allocable to that phase of the business, the interstate wholesale rates are excessive. The use of that method in these cases produced the following results:

Canadian

	Revenues	*Costs*	*Excess Revenue Over Costs*
Regulated	$2,151,000	$1,590,000	$561,000
Unregulated	242,000	188,000	54,000

Colorado Interstate

	Revenues	*Costs*	*Excess Revenue Over Costs*
Regulated	$4,438,000	$2,373,000	$2,065,000
Unregulated	1,335,000	1,204,000	131,000

The Commission did not include in the rate reductions which it ordered any of the excess revenues over costs from the unregulated business. The reductions ordered were measured solely by the excess revenues over costs in the regulated business, viz., $2,065,000 in case of Colorado Interstate and $561,000 in case of Canadian.

Colorado Interstate and Canadian make several objections to that method. They maintain in the first place that a segregation of the physical property based upon use is necessary so that the payment due for the use of that property which is in the public service may be determined. Reliance for that position is rested on the *Minnesota Rate Cases*, 230 U. S. 352, 435, and *Smith* v. *Illinois Bell Telephone Co.*, 282 U. S. 133, 146. Those were cases which involved state regulation of intrastate rates of companies doing both an intrastate and interstate business. But the rule fashioned by this Court for use in those situations was not written into the Natural Gas Act. Congress indeed prescribed no formula for determining how the interstate wholesale business, whose rates are regulated, should be segregated from the other phases of the business whose rates are not regulated. Rate-making is essentially a legislative function. *Munn* v. *Illinois*, 94 U. S. 113. Congress to be sure has provided for judicial review of the Commission's orders. § 19. But that review is limited to keeping the Commission within the bounds which Congress has created. When Congress, as here, fails to provide a formula for the Commission to follow courts are not warranted in rejecting the one which the Commission employs unless it plainly contravenes the statutory scheme of regulation. If Congress had prescribed a formula it would be the duty of the Commission to follow it. But we cannot say that under the Natural Gas Act the Commission can employ only one allocation formula and that that formula must entail a segregation of property. A separation of properties is merely a step in the determination of costs properly allocable to the various classes of services rendered by a utility. But where as here several classes of services have a common use of the same property difficulties of separation are obvious. Allocation of costs is not a matter for the slide-rule. It involves judgment on a myriad of facts. It has no claim to an exact science. Hamilton, Cost as a Standard for Price, 4 Law & Cont. Prob. 321. But neither does the separation of properties which are not in fact separable because they function as an integrated whole. Mr. Justice Brandeis, speaking for the Court in *Groesbeck*

v. *Duluth, S. S. & A. Ry. Co.*, 250 U. S. 607, 614-615, noted that "it is much easier to reject formulas presented as being misleading than to find one apparently adequate." Under this Act the appropriateness of the formula employed by the Commission in a given case raises questions of fact not of law.

Colorado Interstate claims that the Commission's formula ignored or at least failed to give full effect to the priority which the wholesale gas has over direct industrial sales—a priority recognized in the contracts with industrial users and in the municipal franchises. But over the years the interruptions or curtailments in service to direct industrial customers appear to have been slight.[4] Moreover, to the extent that the priority accorded wholesale gas was actually exercised during the test year (1939) the allocation of costs made by the Commission gave full effect to it. As we have seen, volumetric costs were allocated to the customers in proportion to the number of Mcfs delivered to each customer during the year; capacity costs were allocated in the ratio that the Mcf sales to each customer on the system peak day bore to the total sales on that day. The formula used reflected all actual curtailments of load to each customer during the year and on the system peak day.

Colorado Interstate objects because the Commission treated the transmission line as a unit. It points out that some laterals and equipment (such as metering stations) are used exclusively for making wholesale sales, some are used exclusively for making intrastate sales for direct industrial sales, and some are used in common in varying degrees by the several classes of business. It is pointed out, for example, that the line north of Pueblo is used almost exclusively by the regulated business but that under the Commission's formula the pipeline was treated as if all the gas went into the pipe in Texas and came out at the Denver city gate. These objections are partially met by the manner in which distribution costs, to which we have referred, were allocated. But that is no more than a partial answer since they pertained only to metering and regulating equipment. The laterals were not segregated. They, however, appear to be used more commonly for direct industrial rather than for wholesale sales; and we are not convinced that the direct industrial sales were saddled with greater costs than they would have been had the laterals been segregated. The gravamen of this complaint is that the industrial sales are being burdened with costs of a part of the system

[4] Fifteen times in some 12 years.

which the direct industrial gas never uses. That contention points up our earlier observation that judgment and discretion control both the separation of property and the allocation of costs when it is sought to reduce to its component parts a business which functions as an integrated whole. The Commission found that but for the direct industrial market at Pueblo, Colorado and the wholesale market at Denver, the pipeline would not have been constructed. 43 P. U. R. (N. S.) p. 210. It is therefore obviously fair to determine transmission costs for the pipeline as a whole and not to compute them on a mileage demand basis. In that way the beneficiaries of the entire project share equitably in the cost. To allow the costs to accumulate the closer the gas gets to Denver would be to assume that the extension to Denver was a separate project on which the earlier customers were in no way dependent. These circumstances illustrate that considerations of fairness, not mere mathematics, govern the allocation of costs. Cf. *Wabash Valley Electric Co.* v. *Young*, 287 U. S. 488, 499. What we have said also answers Canadian's complaint that the wholesale sales in Texas for consumption in the towns of Dalhart, Hartley, and Texline, Texas, are burdened with too large a share of transmission costs. We can see in this situation no difference between those customers and the ones located at more distant points on the pipeline.[5]

Colorado Interstate objects to that part of the Commission's treatment of transmission costs whereby it assigned 50% of the return to capacity costs and 50% to volumetric costs. The contention is that the entire return on the transmission facilities should be apportioned to capacity costs on the theory that the volumetric costs have no relation to the property required for meeting the maximum demands of the wholesale business and that the method employed departs from the requirements of a fair return on the property devoted to the public service. But as we have seen capacity costs were allocated to customers in the ratio that the Mcf sales to each customer on the system peak day bore to the total sales to all customers on that day. It is not apparent why direct industrial sales should carry a lighter share of the costs merely because their use of the pipeline may be less on the system peak day. As the Commission points out, if the method advanced by Colorado Interstate were used, the amount paid by the industrial customer for transportation of

[5] So far as appears Canadian presented no evidence showing the cost of these intrastate sales.

the gas through the pipeline would be measured not by the customer's use throughout the year, which might be substantial, but by its use on the system peak day which might be slight. In that event the industrial customer would obtain to an extent free transportation of gas.

Colorado Interstate also makes objection to the selection and use of February 9, 1939, as the system peak day and the allocation of the capacity cost component of the transmission costs on the basis of use on that day. It is argued that the mean temperature for that day was 8° Fahrenheit above zero, that much lower mean temperatures are experienced in the Colorado area, that as the temperature drops the load of resale gas rapidly increases, and that if these capacity costs were allocated on the basis of use during the coldest day the resale gas would carry a greater portion of them. We do not stop to develop the point. We have carefully considered Colorado Interstate's contention. As we read the record, if either of the days selected by Colorado Interstate were taken as the system peak days, there would be allocated to the industrial gas a larger portion of these capacity costs than the Commission allocated. On that showing we cannot say that the choice of February 9, 1939, was unfair.

Colorado Interstate and Canadian object to the Commission's use of the return. The Commission included in the total cost of service for these companies a 6½ per cent return on the rate base.[6] In other words, the 6½ per cent return was computed on the basis of all the property used by petitioners in their various classes of business—intrastate sales, direct industrial sales, and interstate wholesale sales.[7] Now it is apparent that if the reduction ordered was based on the excess of revenues from all classes of business over the aggregate costs, the result would be to reduce to a common level the profits from each class. In that case, whenever a company was making a higher return on its unregulated business than the rate of return allowed for the regulated business, the excess earnings from the unregulated part would be appropriated to the entire business. When the unregulated business was being operated at a loss or at less than

[6] As we have said, the return on leases and wells was treated as volumetric costs; 50 per cent of the return on the Denver pipeline was treated as volumetric and 50 per cent as capacity costs; and return on investment in metering and regulating equipment was treated as distribution costs.

[7] As respects the accounting for the cost of money invested in the enterprise see Schlatter, Advanced Cost Accounting (1939), ch. XII; Neuner, Cost Accounting (1942), p. 277; Lawrence, Cost Accounting (1930), ch. 22.

the return which was allowed, excess earnings from the regulated business would be appropriated to the unregulated business. A low rate might therefore be concealed by siphoning earnings from the unregulated business; a high rate might be built up by making the regulated business share the losses of the unregulated one.

It is said that that is what happened here. But that is not true. As we have seen, the Commission ordered a rate reduction based solely on the excess of revenues over costs (including return) derived from the regulated business. None of the excess revenues over costs (including return) from the unregulated business was included in that reduction. If the Commission in determining costs of the unregulated business had used a higher rate of return, it would have increased the costs of that business and reduced the excess revenues allocable to it. But since under the Commission's method of allocation the amount of that excess would not be reflected in the reduction ordered, there would be no difference in result.

The cases are presented as if the 6½ per cent allowed by the Commission on the rate base limits the earnings from the whole enterprise to 6½ per cent. That also is not true. The return merely measures the earnings allowed from the regulated business. As we have noted, the excess of earnings which Colorado Interstate makes from direct industrial sales (on the basis of 6½ per cent return) is $131,000 annually. The Commission pointed out (43 P. U. R. (N. S.) p. 230) that if Colorado Interstate "retains these earnings in excess of a 6½ per cent rate of return on its sales to these customers, its rate of return on its entire business is increased to approximately 8 per cent *after placing into effect the reductions in rates ordered herein*."

Of the other objections made by Canadian and Colorado Interstate on this phase of the case, we need mention only one.[8] It is contended that the findings of the Commission on the allocation of costs are inadequate and that the cases should be remanded to the Commission so that appropriate findings may be made. The findings of the Commission in this regard leave much to be

[8] It is objected that the allocation made by the Commission results in discrimination between purchasers of gas from Colorado Interstate as indicated by the fact that costs allocated to one customer who is distant from Denver are greater than costs allocated to another customer at Denver. But all the Commission did was to order an aggregate reduction in the wholesale rates of $2,065,000 so as to produce a fair return. The adjustment of the rate schedules for various delivery points has not yet been made. See Federal Power Commission v. Natural Gas Pipeline Co., 315 U. S. 575, 584.

desired since they are quite summary and incorporate by reference the Commission's staff's exhibits on allocation of cost. But the path which it followed can be discerned. And we do not believe its findings are so vague and obscure as to make the judicial review contemplated by the Act a perfunctory process. Cf. *United States* v. *Chicago, M. St. P. & P. R. Co.*, 294 U. S. 499; *United States* v. *Carolina Freight Carriers Corp.*, 315 U. S. 475.

Canadian's Sales to Colorado Interstate. The Commission ordered a blanket reduction of $561,000 in the sales price of all types of gas sold by Canadian to Colorado Interstate. A substantial part of that gas is sold to Colorado Interstate for resale to direct industrial customers. Canadian maintains that the Commission has no authority to fix the rate on the sale of that portion or class of gas to Colorado Interstate. Sec. 1(b) of the Act, however, provides, as we have noted, that the provisions of the Act apply "to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use". Canadian however seeks support for its position in the declaration in § 1(a) of the Act that "the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest." But we find no warrant for saying that the words "ultimate distribution to the public" imply distribution to domestic users alone. Industrial users are as much a part of the "public" as domestic users and other commercial users. And the distribution to one is as "ultimate" as the distribution to the other. Moreover, that declaration of policy may not be used to take out of § 1(b) of the Act the express provision subjecting to regulation gas sold for resale for "industrial use". Furthermore, the declaration of policy contained in § 1(a) is not as narrow as Canadian suggests. For § 1(a) goes on to say that federal regulation in matters relating to "the transportation of natural gas and the sale thereof in interstate and foreign commerce is necessary in the public interest." Sales for resale to industrial users is embraced in the broad sweep of that language. Canadian also seeks support for its position from the proviso in § 4(e) of the Act that the Commission shall not have authority to suspend the rate "for the sale of natural gas for resale for industrial use only". Canadian infers from that provision that such rates are not subject to regulation by the Commission. The short answer, however, is that the authority of the Commission to suspend rates is restricted to rates

over which it has jurisdiction. If the Commission had no authority over the rates in question, the proviso in § 4(e) would be unnecessary. Accordingly, it seems clear that all of the gas sold by Canadian to Colorado Interstate for resale, including that sold for resale for industrial use, is subject to rate regulation by the Commission.

There is the further suggestion in Canadian's argument that since the Commission treated Canadian and Colorado Interstate as an integrated system for purposes of allocation of costs, it should have limited its rate reduction to those rates over which it would have jurisdiction if the two companies were in fact one. It is argued that in such event there would be no sales between Canadian and Colorado Interstate and the latter's direct sales to industrial users would not be subject to the jurisdiction of the Commission. The difficulty is that Colorado Interstate purchases its gas from Canadian and the purchase price is the interstate wholesale rate which is an operating expense on which Colorado Interstate's resale rates are computed. Moreover, Canadian as required by § 4(c) of the Act has its rate to Colorado Interstate in a rate schedule on file with the Commission. Unless and until a new rate schedule was filed or the old schedule changed by the Commission, that rate would have to be exacted by Canadian and paid by Colorado Interstate. § 4(d). That rate therefore could hardly be maintained if Colorado Interstate were allowed as an operating expense a lesser amount for the gas it purchases from Canadian.

Producing and gathering facilities. Sec. 1(b) which we have already quoted states that the provisions of the Act "shall not apply . . . to the production or gathering of natural gas." The Commission determined a rate base which includes Canadian's production and gathering properties as well as its interstate transmission system. The return allowed by the Commission was limited to 6½ per cent of the rate base so computed. The Commission made an allowance for working capital to enable Canadian to carry on its production and gathering operations. The Commission made an allowance for Canadian's operating expenses which included the cost of producing and gathering natural gas. The Commission applied its formula for allocation of costs to Canadian's production and gathering properties as well as to its other facilities. Thus Canadian contends that contrary to the mandate of § 1(b) the Commission has undertaken to regulate

the production and gathering of natural gas. Reliance for that position is sought from other provisions of the Act. It is pointed out that § 1(a) declares that "the business of transporting and selling natural gas" for ultimate distribution to the public is affected with a public interest and that federal regulation "in matters relating to the transportation of natural gas and the sale thereof" in interstate commerce is necessary in the public interest. Transportation and sale do not include production or gathering. Other sections emphasize that distinction. Thus § 4 and § 5, the rate regulating provisions of the Act, refer to charges for the "transportation or sale of natural gas, subject to the jurisdiction of the Commission." Sec. 7(a) relates to the extension or improvement of "transportation facilities"; § 7(b) to the abandonment of "facilities subject to the jurisdiction of the Commission"; § 7(c) to the construction or extension of facilities for the "transportation or sale of natural gas, subject to the jurisdiction of the Commission." It is pointed out that apart from § 1(b) only a few sections of the Act refer to "production". Sec. 5(b) gives the Commission power to investigate "the cost of the production or transportation of natural gas by a natural-gas company in cases where the Commission has no authority to establish a rate governing the transportation or sale of such natural gas." This goes no further, it is said, than to aid state regulation. Sec. 9(a) authorizes the Commission to ascertain and determine and by order fix "the proper and adequate rates of depreciation and amortization of the several classes of property of each natural-gas company used or useful in the production, transportation, or sale of natural gas." Sec. 9(a) further provides that no natural-gas company subject to the jurisdiction of the Commission shall charge to operating expenses "any depreciation or amortization charges on classes of property other than those prescribed by the Commission, or charge with respect to any class of property a percentage of depreciation or amortization other than that prescribed therefor by the Commission." These are said, however, to be no more than accounting requirements and distinct from the fixing of rates to be charged for public utility or transportation services. That distinction is emphasized, it is said, by the proviso in § 9(a) that "Nothing in this section shall limit the power of a State Commission to determine in the exercise of its jurisdiction, with respect to any natural-gas company, the percentage rates of depreciation or amortization to be allowed, as to any class of prop-

erty of such natural-gas company, or the composite depreciation or amortization rate, for the purpose of determining rates or charges." The provisions of § 10(a) which give the Commission authority to require reports from natural-gas companies as to their assets and liabilities, the "cost of maintenance and operation of facilities for the production" of natural gas and the like are said to be mere information requirements, quite consistent with the absence of power to regulate the production and gathering of natural gas.[9] See *Interstate Commerce Commission* v. *Goodrich Transit Co.*, 224 U. S. 194. And the authority given the Commission by § 14(b) is said merely to supplement the Commission's powers under sections of the Act. Sec. 14(b) grants the Commission power to determine "the adequacy or inadequacy of the gas reserves held or controlled by any natural-gas company" and "the propriety and reasonableness of the inclusion in operating expenses, capital, or surplus of all delay rentals or other forms of rental or compensation for unoperated lands and leases." This is said to supplement the Commission's authority over the construction, extension, or abandonment of facilities or service under § 7, the determination of amortization rates under § 9(a), and the accounting requirements of § 8.

Support for Canadian's position is also sought in the legislative history of the Act. It is pointed out that the declared purpose of the legislation was to occupy the field in which this Court had held the States might not act. *See Federal Power Commission* v. *Hope Natural Gas Co.*, 320 U. S. 591, 609-610. And it is noted that Senator Wheeler, who sponsored the legislation in the Senate, said during the debate in answer to an inquiry whether the bill undertook to regulate the production of natural gas or the producers of natural gas. "It does not attempt to regulate the producers of natural gas or the distributors of natural gas; only those who sell it wholesale in interstate commerce." 81 Cong. Rec. p. 9312.

From these various materials it is argued that the Commission has no authority to include producing or gathering facilities in a rate base or to include production or gathering expenses in operating expenses. It is said that when the Commission follows that course, it regulates the production and gathering of natural

[9] Another section of the Act which refers to "production" is § 11(a). It gives the Commission certain functions to perform where two or more States propose compacts dealing with the conservation, production, transportation, or distribution of natural gas.

gas contrary to the provisions of § 1(b) of the Act. It is argued that the correct procedure is for the Commission to allow in the operating expenses of a natural-gas company, whose rates it is empowered to fix, the "fair field price" or "fair market value, as a commodity, of the gas" which finds its way into the transmission lines for interstate transportation and sale.

This is precisely the argument which West Virginia, appearing as *amicus curiae*, advanced in the *Hope Natural Gas Co.* case. We rejected the argument in that case. 320 U. S. pp. 607-615, particularly p. 614, n. 25. We have reviewed it here at this length in view of the seriousness with which it has been urged not only by Canadian but also by the Independent Natural Gas Association of America which appeared *amicus curiae*. But we adhere to our decision in the *Hope Natural Gas Co.* case and will briefly state our reasons.

A natural-gas company as defined in § 2(6) of the Act is "a person engaged in the transportation of natural gas in interstate commerce, or the sale in interstate commerce of such gas for resale." Canadian is such a company. It is plain therefore that the Commission has authority to fix its interstate wholesale rates. § 5. It is obvious that when rates of a utility are fixed the value of its property is affected. For as we stated in the *Hope Natural Gas Co.* case, value is "the end product of the process of rate-making not the starting point." 320 U. S. p. 601. When a natural-gas company which owns producing properties or a gathering system is restricted in its earnings by a rate order, the value of all of its property is affected. Congress of course might have provided that producing or gathering facilities be excluded from the rate base and that an allowance be made in operating expenses for the fair field price of the gas as a commodity. Some have thought that to be the wiser course. But we search the Act in vain for any such mandate. The Committee Report stated that the Act provided "for regulation along recognized and more or less standardized lines" and that there was "nothing novel in its provisions". H. Rep. No. 709, 75th Cong., 1st Sess., p. 3. Certainly the use of a rate base which reflects the property of the utility whose rates are being fixed has been customary. 2 Bonbright, Valuation of Property (1937) ch. XXX; Smith, The Control of Power Rates in the United States and England (1932); 159 The Annals 101. Prior to the Act that method was employed in the fixing of the rates of gas, as well as electric, utilities. See *Wilcox* v. *Consolidated Gas Co.*, 212 U. S. 19; *Cedar Rapids Gas*

Co. v. *Cedar Rapids*, 223 U. S. 655; *Newark Natural Gas & F. Co.* v. *Newark*, 242 U. S. 405; *Railroad Commission* v. *Pacific Gas & Electric Co.*, 302 U. S. 388; *Lone Star Gas Co.* v. *Texas*, 304 U. S. 224. We do not say that the Commission lacks the authority to depart from the rate-base method. We only hold that the Commission is not precluded from using it. There are ample indications throughout the Act to support that view. Sec. 6(a) empowers the Commission to investigate and ascertain the "actual legitimate cost of the property of every natural-gas company, the depreciation therein, and, when found necessary for rate-making purposes, other facts which bear on the determination of such cost or depreciation and the fair value of such property." As we have noted, § 9(a) gives the Commission authority not only to require natural gas companies to carry proper and adequate depreciation and amortization accounts but also to fix such rates for "the several classes of property of each natural-gas company used or useful in the production, transportation, or sale of natural gas". And § 14(b), as already stated, not only gives the Commission authority to determine the adequacy or inadequacy of gas reserves of a natural-gas company but also empowers it to determine the "propriety and reasonableness of the inclusion in operating expenses, capital, or surplus of all delay rentals or other forms of rental or compensation for unoperated lands and leases." Sec. 9(a) and § 14(b), though designed not to limit the power of state regulatory agencies, plainly were designed to aid the Commission in its rate-making functions. These provisions[10] all suggest that when Congress designed this Act it was thinking in terms of the ingredients of a rate base, the deductions which might be made, and the additions which were contemplated. No exclusion of property used or useful in *production* of natural gas was made. That type of property was not singled out for special treatment; it was treated the same as all other property. We must read § 1(b) in the context of the whole Act. It must be reconciled with the explicit provisions which describe the normal conventions of rate-making.

That does not mean that the part of § 1(b) which provides that the Act shall not apply "to the production or gathering of natural gas" is given no meaning. Certainly that provision precludes the Commission from any control over the activity of producing or gathering natural gas. For example, it makes plain that

[10] Secs. 5(b), 6(a), 9(a), 10(a), and 14(b).

the Commission has no control over the drilling and spacing of wells and the like. It may put other limitations on the Commission. We only decide that it does not preclude the Commission from reflecting the production and gathering facilities of a natural gas company in the rate base and determining the expenses incident thereto for the purposes of determining the reasonableness of rates subject to its jurisdiction.

That treatment of producing properties and gathering facilities has of course an indirect effect on them. As we have said, rate-making like other forms of price fixing may reduce the value of the property which is being regulated. *Federal Power Commission* v. *Hope Natural Gas Co., supra,* p. 601. But that would be true whether or not a rate-base was used. Canadian would be the first to object if the gas which it owns was given no valuation in these proceedings. Obviously it has value. The Act does not say that the Commission would have to value it at the fair field price if the Commission abandoned the rate-base method of regulation. We held in the *Hope Natural Gas Co.* case that under the Act it is "the result reached not the method employed which is controlling. . . . It is not theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unjust and unreasonable, judicial inquiry under the Act is at an end." 320 U. S. p. 602. If the Commission followed Canadian's method, excluded the producing properties and gathering facilities from the rate-base, valued the gas at a price which would reduce the earnings to the level of the present order, the effect on the producing properties and gathering facilities would be precisely the same as in the present case. Since there is no provision in the Act which would require the Commission to value the gas at the price urged by Canadian, the problem on review would be whether the end result was unjust and unreasonable. The point is that whatever method for rate-making is taken the fixing of rates affects the value of the underlying property. Hence § 1(b) could be read as petitioners read it only if Congress had put a floor under producing properties and gathering facilities and fixed a minimum return on them.

These considerations lead us to conclude that § 1(b) does not prevent the Commission from taking into account the production properties and gathering facilities of natural gas companies when it fixes their rates.

Original Cost of Production and Gathering Facilities. The Commission found the actual legitimate cost of Canadian's property, including its producing properties and gathering facilities, to be $10,784,464 as of December 31, 1939. It deducted $2,134,629 for accrued depreciation and depletion. It added $150,738 for working capital and $571,923 for gross plant additions to December 31, 1941. The result was a rate base of $9,372,496 which the Commission rounded to $9,375,000. The Commission rejected estimates of reproduction cost new less observed depreciation because they were "too conjectural to have probative value"[10] and adopted original cost as "the best and only reliable evidence as to property values." 43 P. U. R. (N. S.) pp. 213, 214. Canadian maintain that if its leaseholds are to be included in the rate-base, it was improper to value them as the Commission did. Canadian offered evidence that their present market value was much higher. It also offered evidence of a commodity market value of natural gas per Mcf which would give a much higher value to the production phase of Canadian's business. We do not stop to develop the details of these lines of evidence. We cannot say that the Commission was under a duty to put the leaseholds into the rate-base at the valuation urged by Canadian unless we revise what we said in *Federal Power Commission* v. *Natural Gas Pipeline Co.*, 315 U. S. 575, 586, and overrule *Federal Power Commission* v. *Hope Natural Gas Co.*, *supra*. We held in those cases that the Commission was not bound to the use of any single formula in determining rates. And in the *Hope Natural Gas Co.* case we sustained a rate order based on actual legitimate cost against an insistent claim that the producing properties should be given a valuation which reflected the market price of the gas. In those cases we held that the question for the courts when a rate order is challenged is whether the order viewed in its entirety and measured by its end results meets the requirements of the Act. That is not a standard so vague and devoid of meaning as to render judicial review a perfunctory process. It is a standard of finance resting on stubborn facts.[11] "From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. Cf. *Chicago & Grand Trunk Ry. Co.* v. *Wellman*, 143 U. S. 339, 345-346. By that standard the return to the equity owner should be com-

[11] Cf. the British standards described in Smith, The Control of Power Rates in the United States and England, 159 Annals, 101, 103, 104.

mensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital. See *Missouri ex rel. Southwestern Bell Tel. Co.* v. *Public Service Commission*, 262 U. S. 276, 291 (Mr. Justice Brandeis concurring)." *Federal Power Commission* v. *Hope Natural Gas Co.*, *supra*, p. 603.

Hence, we cannot say as a matter of law that the Commission erred in including the production properties in the rate base at actual legitimate cost. That could be determined only on consideration of the end result of the rate order, a question not here under the limited review granted the case.

Cost to Canadian's Affiliate. As we have seen, Canadian and Colorado Interstate had their origin in an agreement made in 1927 between Southwestern, Standard, and Cities Service. Pursuant to that agreement Southwestern organized Canadian, a wholly owned subsidiary, to which were transferred the gas leaseholds and producing property owned by Amarillo, a wholly owned subsidiary of Southwestern. The cash consideration for this transfer was $5,000,000 which was advanced by Standard at 6 per cent interest. Colorado Interstate was organized by Standard to construct and operate the pipeline to connect with Canadian's facilities and to transport the gas to the Denver market and intermediate points.

Canadian issued $11,000,000 of 6% twenty-year bonds to finance its portion of the total project. Colorado Interstate purchased those bonds with part of the proceeds of $19,200,000 of its own 6% twenty-year sinking fund bonds which Standard had purchased at par. Canadian repaid the $5,000,000 advance made by Standard out of the proceeds of the sale of its bonds to Colorado Interstate. Canadian's stock was issued to Southwestern and is carried on Canadian's books at $1.00. Canadian entered into a "cost" contract with Colorado Interstate whereby Canadian agreed to produce and sell gas to Colorado Interstate at "cost" for twenty years which might be extended by Colorado Interstate. Under the contract, "cost" included Canadian's operating expenses, interest at 6%, and amortization (in lieu of depreciation, depletion and retirements) of all of Canadian's indebtedness over the twenty-year period. It was also provided that Canadian's "cost" under the contract should be decreased by any profits which it might obtain from other sources including any local sales. Thus it was obvious that Canadian under this "cost"

contract would have no profits available for dividends on its stock.

But in accordance with the agreement Colorado Interstate issued $2,000,000 par value 6% preferred stock and 1,250,000 shares of no par common. Cities Services received 15% of the common stock. The rest of the common stock and all of the preferred was divided equally between Southwestern and Standard. The latter paid $2,000,000 in cash for its share of preferred and common. Southwestern received not only preferred and common stock, but also $5,000,000 in cash from the proceeds of the $11,000,000 of bonds which Canadian issued and which were to be amortized over twenty-years as part of the "cost" of gas sold to Colorado Interstate by Canadian.

Canadian contends that the Commission should have included $5,000,000 in the rate base for the gas leases and producing properties acquired from Amarillo. The original cost of the properties to Amarillo was $1,879,504. That is all the Commission allowed. It said, "Any treatment which would permit the capitalization of such amounts would open the door to the renewal of past practices of the utility industry when properties were traded between affiliated interests at inflated prices with the expectation that the public would foot the bill." 43 P. U. R. (N. S.) p. 215. We agree. Southwestern owned the producing properties at the beginning of the transaction through one subsidiary; it owned them at the end of the transaction through another subsidiary. As between Southwestern and its subsidiaries there was no more than an intercompany profit. If Amarillo rather than Canadian had entered the project, had sold a bond issue to Southwestern and with part of the proceeds paid off a $5,000,000 loan to Standard, certainly the amount of that payment would not be properly included in its rate base. We fail to see a difference in substance when another wholly owned subsidiary is utilized by Southwestern. The fact that the negotiations between Southwestern and Standard were at arm's length has no bearing on the present problem. The end result is that property has been transferred at a write-up from one of Southwestern's pockets to another. The impact on consumers of utility service of write-ups and inflation of capital assets through inter-company transactions or otherwise is obvious. The prevalence of the practice in the holding company field gave rise to an insistent demand for federal regulation. See S. Doc. No. 92, Pt. 84-A, 70th Cong., 1st Sess., Utility Corporations, Final Report of the Federal Trade

Commission (1936); Bonbright & Means, The Holding Company (1932), ch. VI; Barnes, The Economics of Public Utility Regulation (1942) pp. 95 *et seq.*

American T. & T. Co. v. *United States*, 299 U. S. 232, is not opposed to our position. It merely indicates a proper treatment for an intercompany transaction where in fact an additional investment is shown to exist.

Affirmed.

Mr. Justice ROBERTS and Mr. Justice REED dissent from so much of the opinion as approves the allocation by the Commission of investments and expenses to the non-regulable transmission properties. They concur in the dissent of the CHIEF JUSTICE in *Canadian River Gas Co.* v. *Federal Power Commission, et al.*

Mr. Justice JACKSON, concurring.

I concur in upholding orders of the Federal Power Commission in this and companion cases. The Court cannot, consistently with *Federal Power Commission* v. *Hope Natural Gas Co.*, 320 U. S. 591, do otherwise.

The opinion in the *Hope* case laid down fundamental principles of decision in this language: "Under the statutory standard of 'just and reasonable' it is the result reached not the method employed which is controlling. . . . It is not theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unjust and unreasonable, judicial inquiry under the Act is at an end. The fact that the method employed to reach that result may contain infirmities is not then important." *Federal Power Commission* v. *Hope Natural Gas Co., supra*, 602. This case introduced into judicial review of administrative action the philosophy that the end justifies the means. I had been taught to regard that as a questionable philosophy, so I dissented and still adhere to the dissent. But it is the law of this Court, and I do not understand that any majority is ready to reconsider it.

It is true that the Act excludes "production or gathering of natural gas" from jurisdiction of the Commission. If the Commission had imposed any direct regulation upon that activity, I would join in holding it to have exceeded its jurisdiction. But the orders in question have no immediate "impact" upon production or gathering of gas.

The statute commands the Commission to regulate the price of natural gas transported and sold at wholesale in interstate commerce

for resale. The Commission has investigated the fiscal aspects of production and gathering because of their bearing on the reasonableness of interstate rates. I suppose a commission is free to take evidence as to conditions and events quite beyond its regulatory jurisdiction where they are thought to affect the cost of that whose price it is directed to determine. This, as I see it, is all that has been done here.

Of course the Commission's order, whose primary impact is on rates in the interstate markets, has a very important secondary effect on production and on producers of gas. As the industry is organized the Commission could not fix an interstate price that would not have some such reaction. Indeed, I think the Commission cannot wisely fix a reasonable price without considering its incidental effect on production.

To let rate-base figures, compiled on any of the conventional theories of rate-making, govern a rate for natural gas seems to me little better than to draw figures out of a hat. These cases confirm and strengthen me in the view I stated in the *Hope* case that the entire rate-base method should be rejected in pricing natural gas, though it might be used to determine transportation costs. These cases vividly demonstrate the delirious results produced by the rate-base method. These orders in some instances result in three different prices for gas from the same well. The regulated company is a part owner, an unregulated company is a part owner, and the land owner has a royalty share of the production from certain wells. The regulated company buys all of the gas for its interstate business. It is allowed to pay as operating expenses an unregulated contract price for its co-owner's share and a different unregulated contract price for the royalty owner's share, but for its own share it is allowed substantially less than either. Any method of rate-making by which an identical product from a single well, going to the same consumers, has three prices depending on who owns it does not make sense to me.

These cases furnish another example of the capricious results of the rate-base method in this kind of case. The Commission has put five of the most important leaseholds, containing approximately 47,000 acres, in the rate base at $4,244.24, something under 10 cents per acre. Three such leases are put in the rate base at zero. This is because original cost was used, and these were bought before discovery of gas thereon. The Company which took the high risk of wildcat exploration is thus allowed a return of 6½ per cent on nothing for the three leases and a return of less than

$300 a year on the others. Their present market value is shown by testimony to be over 8 million dollars.

I cannot fairly say that the Commission exceeded its jurisdiction in obtaining this evidence and making these calculations, even though the evidence related to production and gathering of gas. But I do think it is a fantastic method of fixing a "just and reasonable" price for gas.[1] All of that, however, was thrashed out in the *Hope* case.

I do not recede from the views therein stated that *Hope* provides no workable basis of judicial review, no key by which commissions can anticipate what rule, if any, will control our review, and no guidance to counsel as to what issues they should try or how they should try them. I think, however, that the majority which promulgated that decision, or a majority of that majority, should be permitted to continue to spell out its application to specific problems until we see where it leads.

It is difficult for me in these cases, and in some it might be impossible, to follow the rule of *Hope* in reaching a decision. I have no intuitive knowledge as to whether a given price is reasonable, and my fundamental concept of reasonable price in this industry and how to find it has been rejected by the Court. But it happens that this case illustrates some aspects of the problem of pricing gas, as will appear from the reasons I shall state for the failure of the Company in this case to convince me that it is wronged by the reduction of prices ordered by the Commission.

Far-sighted gas-rate regulation will concern itself with the present and future, rather than with the past, as the rate-base formula does. It will take account of conditions and trends at the source of the supply being regulated. It will use price as a tool to bring goods to market—to obtain for the public service the needed amount of gas. Once a price is reached that will do that, there is no legal or economic reason to go higher; and any rate above one that will perform this function is unwarranted. If the supply comes from a region where there is such overproduction that owners are ready to sell for less than a fair return on their investment, there is no reason why the public should pay more. On the other hand, if the supply is not too plentiful and the price is

[1] It does not help me to know what is a reasonable price for gas to learn what it does to outstanding securities. Many gas companies were organized and operated in care-free days when they issued stocks and bonds without supervision. It does not prove that a gas rate is too low to show that it does not pay dividends on inflated values. Nor is a rate proved excessive by the fact that it pays a large dividend upon an exceedingly conservative capitalization. I think *Hope's* use of return on stock or bond issues, repeated in these cases, is one of the least reliable of possible tests of rates.

not a sufficient incentive to exploit it and fails to bring forth the quantity needed, the price is unwisely low, even if it does square perfectly with somebody's idea of return on a "rate base." The problem, of course, is to know what price level will be adequate to perform this economic function.

This case throws light on a subject which in *Hope* I was trying to discuss more abstractly. The evidence here shows facts from which we can learn, in the way any practical buyer would seek to learn, at which price this company is able, willing, and ready to bring gas into the interstate wholesale market. It is what might be called the most-favored-customer test, a test of course not available in a fully regulated industry but peculiarly adapted to the conditions of the natural gas industry as it has developed. This petitioner, Colorado Interstate Gas Company, sells to Colorado Fuel and Iron Company a large quantity of gas for industrial use. Its consumption approximates that of all the inhabitants of Denver. Colorado Fuel and Iron used in plants 7,257,379 m.c.f.'s, while Denver was supplied for public service 6,196,882 m.c.f.'s. The rates to the Fuel and Iron Company are not and never have been regulated by public authority. In May 1938, the Gas Company contracted to extend the Fuel and Iron supply contract for five years at 9½ cents per m.c.f. for boiler fuel and 16 cents per m.c.f. for other purposes. The same gas is sold wholesale by the same company at the Denver city gate to the local distributing company at 40 cents per m.c.f.

Of course differences in conditions of delivery must be allowed for. Gas from the field is transmitted roughly 200 miles from the field to Colorado Fuel and Iron and about another 100 miles to Denver. If 50 per cent more transportation added 50 per cent to the entire price of the Fuel and Iron Company gas, which would mean attributing a zero value to it in the field and its entire selling price to transportation, it would bring gas to the city gate of Denver at about 14 cents based on boiler gas and 24 cents based on other gas, instead of the 40 cents being charged.

Another difference must be allowed for. The Denver public service has priority over the industrial gas in time of shortage. This is an impressive, legal advantage, but one whose real worth depends on the number and duration of interruptions it causes in actual practice. From the tabulation of reductions and suspensions of service the Fuel and Iron Company appears to have suffered 5 interruptions from 1932 to December 31, 1940—the shortest for fifteen hours, the longest for fifty hours. I do not belittle these interruptions—they may be very costly to an in-

dustrial customer—but nothing indicates that they account for any such difference in price as we have here.

There is every indication that the Colorado Fuel and Iron price was really a bargained one. The Gas Company's position seems to have been the same as that stated by one of the witnesses in the Panhandle case, "It may be heresy to say so but we try to charge our nonregulated customers all the traffic will bear." This may have been candor; it is not heresy. Such is the normal spirit of the market place. But the record shows that Colorado Fuel and Iron was not at the mercy of the Gas Company, was bargaining at arm's length, had a good bargaining position. It had been using other fuels and the Gas Company had to bid for its business as against fuel competition. Under this pressure the Gas Company was able, ready, and willing to part with its gas, delivered 200 miles from the field, at 9½ to 16 cents per m.c.f.

What about the Denver rate? There the local distributing company, which was the purchaser, was a subsidiary of Cities Service, one of the three companies that owned the pipe line and gas supply and were the sellers of the gas. That local company had been distributing manufactured gas, by comparison with which 40-cent natural gas would look cheap, and is cheap. It is not necessary to draw any invidious inferences from intercorporate relationships to conclude that the 40-cent rate at the Denver gate was not a vigorously bargained one and was not much influenced by competitive considerations. The great economic advantages of natural gas to householders and the relative wastefulness of its industrial use are developed in my opinion in *Hope*.

I strongly suspect from the history of this transaction that there is an explanation of the difference in price—one which is not an uncommon argument used to justify a lower price to industrial than to household users. To supply Denver required laying a 20-inch pipe line, requires operating it, and requires most of the overhead of the business. To carry the additional Fuel and Iron business required only to lay the first 200 miles of pipe of 22-inch diameter instead of 20 and the additional revenue from industrial sales does not add the same proportion of capital investment, overhead, or operating expense. Thus, charging to Denver and other wholesale purchasers for resale to the public no more than would be charged if that service stood alone, the Company may justify its industrial sales at low rates as good business from petitioner's management point of view.

But I do not think it can be accepted as a principle of public regulation that industrial gas may have a free ride because the

pipe line and compressor have to operate anyway, any more than we can say that a big consumer should have a free ride for his coal because the trains run anyway. It is true that the Natural Gas Act forbids discrimination only as between regulated rates and does not forbid discriminations between the regulated and unregulated ones. 15 U. S. C. § 717c(b). But I do not think it precludes use of a voluntary, fairly bargained selling price as a standard of what is a "just and reasonable" price. By use of the unregulated price as a basis for comparison I think a reduction in the wholesale rates for resale to the public is in order. If this makes low price industrial business less desirable, it will be in the long-range public interest for reasons more fully stated by me in *Hope*.

I should like to reverse this case, not because I think the rate reduction is wrong, but because I think the real inwardness of the gas business as affects the future has been obscured by the Commission's preoccupation with bookkeeping and historical matter. Such considerations may be relevant to rate-base theories, but will not be very satisfying to a coming generation that will look back and judge our present regulatory method in the light of an exhausted and largely wasted gas supply. But as the matter stands I see no legal grounds for reversal.

No. 380

Mr. Chief Justice STONE, dissenting.

Mr. Justice ROBERTS, Mr. Justice REED, Mr. Justice FRANKFURTER and I are of opinion that the Federal Power Commission, in making the rate order here under attack, exceeded its jurisdiction and reached a result which must be rejected because unauthorized by the applicable statute.

In fixing rates for petitioner's interstate business of transporting and selling natural gas for resale, the Commission included petitioner's gas wells and gas gathering facilities together with all its transportation and distribution facilities in a single rate base. It valued the wells and gathering facilities at their prudent investment cost of many years ago, a valuation drastically less than their present market value. It then restricted petitioner's return to 6½% of the rate base, including the wells and production facilities, constituting approximately two-thirds of the total rate base. It thus subjected petitioner's production and gathering property to the same regulation as that which the statute imposes

upon petitioner's property used and useful in the interstate transportation and sale of gas for resale. This, we think, the Natural Gas Act in plain terms prohibits.

The Natural Gas Act of 1938, 52 Stat. 821, 15 U. S. C. § 717, *et seq.*, as amended February 7, 1942, 56 Stat. 83, declares, § 1(a): "the business of transporting and selling natural gas for ultimate distribution to the public is affected with a public interest, and . . . Federal regulation in matters relating to the transportation of natural gas and the sale thereof in interstate and foreign commerce is necessary in the public interest." In the execution of this policy §§ 4 and 5 of the Act set up a complete scheme of regulation of rates and charges for the transportation and sale of natural gas by "natural gas companies" at wholesale in interstate commerce. Section 2(6) defines a natural gas company as "a person engaged in the transportation of natural gas in interstate commerce, or the sale in interstate commerce of such gas for resale." Section 1(b) provides: "The provisions of this Act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale . . . , but shall not apply to any other transportation or sale of natural gas . . . or to the production or gathering of natural gas."

The Court rejects petitioner's contentions that these provisions preclude the Commission from including the gas wells and gathering facilities in the rate base for petitioner's regulated business; that regulation begins only with the delivery of gas into petitioner's transmission pipe line and includes, as the statute provides, only the interstate transportation and sale of the gas for resale. Petitioner insists that, since the wells and gathering facilities are not subject to Commission regulation, the cost or value of the gas upon its delivery to petitioner's transmission line must, for purposes of rate regulation of the regulated business of transportation and sale, be taken at its fair market value.

This issue is now for the first time presented to this Court for decision. No such question was raised or decided in *Power Commission* v. *Hope Natural Gas Co.*, 320 U. S. 591, 610-614. Although it was mentioned in the amicus brief of the State of West Virginia, which was not a party to the suit, no such issue was raised by the parties in the case. There the gas wells and gathering property were included in the rate base valued at its prudent investment cost, and the allowed return was restricted to 6½%. But no objection was taken to the inclusion of the production property in the rate base, either in the Circuit Court of Appeals or, so far as the record shows, in the application to the Commission for rehearing. Section 19(b) provides that no

objection to the Commission's order may be considered by the court unless raised in the application to the Commission for rehearing. The production property having been included in the rate base without objection, we could consider only the question which was raised with respect to property admitted to be properly a part of the rate base, namely, whether its valuation by the Commission and the allowed rate of return were within constitutional limits. Cf. *Cohens* v. *Virginia*, 6 Wheat. 264, 399.

The Act speaks in terms of activities which are regulated and those which are not. It subjects the interstate transportation and sale of natural gas, an activity, to the jurisdiction of the Commission, which includes the exercise of its rate making function as prescribed by §§ 4 and 5, and which concededly extends to the valuation of property used in interstate transportation and sale of natural gas and to the determination of a fair rate of return upon that value.

Even though production and gathering could be thought to be a part of the regulated transportation and sale, that possibility is precluded by the words of § 1(b) which say: "The provisions of this Act [including those of §§ 4 and 5 which prescribe rate making for the activity of transporting and selling wholesale] shall not apply" to another activity, "the production or gathering of natural gas."

It does not seem possible to say in plainer or more unmistakable language that the one activity, interstate transportation and sale, is to be subjected to, and that the other, production or gathering, is to be excluded from, the valuation and rate making powers of the Commission. To interpret the words "production or gathering" in § 1(b) in the only way which the Court or the Government is able to suggest, as referring only to the physical activities of drilling and spacing the gas wells, and thus excluding such activities alone from regulation, seems hardly plausible. It is true that "production or gathering" are activities which may include the drilling and spacing of gas wells. But the "transportation and sale" referred to in the phrase of § 1(b) "but shall not apply to any other transportation or sale of natural gas . . . or to the production or gathering of natural gas", is also an activity. Yet the Court and the Government concede that by the command of the Act that it "shall not apply" to the activity of "any other transportation or sale", petitioner's property used in the transportation and sale of gas to industrial consumers is excluded from the rate base. They thus reach the surprising conclusion that property used in one sort of activity to which the

provisions of the Act are declared not to apply, may nevertheless be included in the rate base, while holding that another sort of property, also used in an activity to which the provisions of the Act are by the same phrase declared not to apply, is nevertheless excluded from the rate base.

Nor is the plausibility of the Government's construction aided by reference to the provisions of the Act[1] giving the Commission power to make investigations, to regulate accounts, to gather information and to find values of property of natural gas companies and their depreciation. These provisions are obviously directed at aiding the Commission in the exercise of various powers which are conferred upon it but which are unrelated to the regulation of the production or gathering of natural gas. Section 5(b), for example, authorizes the Commission to procure the information of costs of production or transportation of natural gas in aid of state commissions, and such was its purpose. H. Rep. No. 709, p. 5, 75th Cong., 1st Sess., on H. R. 6586. Sections 9(a) and 10(a) give authority essential to the Commission's admitted power to regulate the interstate sale of gas at wholesale, to determine whether the cost of or charge for the gas acquired by a natural gas company, whose rates are regulated, are excessive because unrelated to fair or market value, especially where the relations between the producer and the interstate wholesale distributor are not at arm's length. *United Fuel Gas Co.* v. *Railroad Commission*, 278 U. S. 300, 320; *Smith* v. *Illinois Bell Tel. Co.*, 282 U. S. 133, 144; *Western Distributing Co.* v. *Public Service Comm'n*, 285 U. S. 119; *Dayton Power & L. Co.* v. *Public Utilities Comm'n*, 292 U. S. 290; *Natural Gas Co.* v. *Slattery*, 302 U. S. 300, 306-308; *Arkansas Gas Co.* v. *Dept.*, 304 U. S. 61; cf. *Int. Com. Comm'n* v. *Goodrich Transit Co.*, 224 U. S. 194, 211. And the determination of the Commission permitted by § 14(a) with respect to the amount of gas reserve is essential to the determination of the rate of depreciation and amortization of the

[1] Section 5(b) authorizes investigation by the Commission of the cost of production of natural gas, where the Commission has no authority to establish a rate governing the transportation or sale of such natural gas. Section 6(a) empowers the Commission to ascertain the cost of the property of every natural gas company and other facts bearing on the determination of such cost "when found necessary for rate making purposes". Section 9(a) authorizes the Commission to determine the proper "rates of depreciation and amortization" of the several classes of property of each natural gas company "used or useful in the production, transportation, or sale of natural gas". Section 10(a) gives the Commission authority to require reports from natural gas companies of their "cost of maintenance and operation of facilities for the production" of natural gas. Section 14(a) gives the Commission power to determine the "adequacy or inadequacy of the gas reserves held or controlled" by them.

gas company's regulated transmission line, since its useful life is normally limited by the available gas supply.

No reason, founded upon the language of the statute or its purpose, is advanced for disregarding the plain command of § 1(b) excluding the production or gathering of the gas from those other activities, the transporting and selling, which are subject to the regulatory provisions of §§ 4 and 5. The language was well chosen to accomplish exactly what the legislative history shows was intended to be accomplished. The report of the House Committee (H. Rep. No. 709, 75th Cong., 1st Sess.), recommending adoption of the bill which became the Natural Gas Act, shows beyond doubt that the purpose of the legislation was to bring under federal regulatory control the interstate transportation and sale of natural gas which had been held not to be subject to state regulation, in *Missouri* v. *Kansas Gas Co.*, 265 U. S. 298; cf. *Public Util. Commission* v. *Attleboro Steam & Electric Co.*, 273 U. S. 83, but to leave undisturbed all other matters which were then subject to state regulation, which included rate-making for production and gathering. See *Illinois Natural Gas Co.* v. *Central Illinois Public Service Co.*, 314 U. S. 498, 506; *Power Commission* v. *Hope Natural Gas Co.*, *supra*, 609. And upon the floor of the Senate the sponsor of the bill declared: "It does not attempt to regulate the production of natural gas or the distributors of natural gas; only those who sell it wholesale in interstate commerce." 81 Cong. Rec., p. 9312. That the exemption of the production of natural gas from regulation was thought by the regulatory authorities themselves to exclude regulation, by the Commission, of the price of gas in the producing field, appears from the hearings upon the predecessor bill,[2] which contained provisions identical with or substantially equivalent to §§ 5(b), 6(a), 9(a), and 10(a) of the Act as finally passed, and § 1(b) of which declared that the

[2] In the hearings upon the earlier bill, Mr. DeVane, Solicitor of the Federal Power Commission, stated: "§ 1(b) also provides that the Commission shall have no jurisdiction over the gathering or gathering rates for natural gas". "Gathering rates", he explained as "The rates that are paid in the gathering field". He further stated, "There is no control of the gathering rate; the Commission would not have jurisdiction. That price is fixed by competitive conditions that exist in the field". He said that the Commission does not have any power over the price "that is paid to the gatherer, the man that produces it; that is binding if the transaction is at arm's length. If the transaction is not at arm's length, of course, its reasonableness may be inquired into, under the decisions of the Supreme Court." There is nothing in the subsequent legislative history to indicate that this understanding with respect to § 1(b) in the earlier Act was changed at a later stage, and § 1(b) as finally adopted indicates no such change. Hearings on H. R. 11662, 74th Cong., 2d Sess., pp. 28, 42-3.

provisions of the bill should not apply "to the production of natural gas."

The exclusion of production and gathering of natural gas from the regulatory authority of the Commission is a command to the Commission not to regulate that which is excluded. Otherwise powers reserved to the states would be encroached upon contrary to the words and purpose of the Act, and a pretended government would be set up by Commission action, without the authority of Congress.

The Commission did not deny the command, but justified disregard of it only by saying that "Canadian's production and gathering operations are an integral part of its total operations, including transportation in interstate commerce and the sale of natural gas for resale in interstate commerce." And it added: "The investigation of Canadian's production and gathering property and operations is indispensable in regulating Canadian's rates and charges for the sale of natural gas in interstate commerce for resale." Such an investigation was undoubtedly proper and necessary in order to ascertain the fair unregulated value of the natural gas produced in an unregulated field, on its delivery into petitioner's transmission pipe line, in order to enable the Commission to regulate appropriately the sales price of the gas.

But this does not mean that in fixing rates for a regulated business which derives its distributed product from an unregulated business that the property of the latter is not to be segregated from the regulated property, or that there can rightly be applied to it standards of valuation and rate of return which are applicable only to a regulated business. *Int. Com. Comm'n* v. *Goodrich Transit Co., supra*, 211; *Smith* v. *Illinois Bell Tel. Co., supra*, 151; *Western Distributing Co.* v. *Public Service Comm'n, supra*, 123-124. Otherwise its exclusion from regulation would be meaningless. The standards to be applied in order to make certain that the regulated business is not paying too much for the product are those which currently apply in the unregulated business. This, as we have pointed out, was recognized by the Solicitor of the Commission in the hearings on proposed legislation culminating in the present Act. He said that the unregulated field price was controlling upon the Commission "if the transaction is at arm's length. If the transaction is not at arm's length, of course, its reasonableness may be inquired into, under the decisions of the Supreme Court."[3]

[3] See footnote 2, *supra*.

It is one thing to say that such investigation is necessary to ascertain the fair unregulated value of petitioner's gas when produced. But it is quite another to say, and the Commission did not say, that it is necessary or permissible for the Commission to fix the value of petitioner's production property and the gas which it produces far below their market value, and to restrict petitioner's return from its unregulated business below that which would be produced if the gas production were unregulated. Such restrictions can be justified only by authorized rate regulation. From such regulation petitioner's gas wells and production facilities have been specifically exempted by command of the statute.

Where a regulated utility procures from an unregulated source the product which it distributes, the proper cost which the regulated company should be allowed to pay for it, when the Commission is not authorized to regulate the production, presents a problem not free from difficulties. But here the Commission has made no effort to meet these difficulties, if such there be, except by the one course which the statute forbids, by subjecting the production property to regulation.

A familiar and permissable way of meeting them, as petitioner points out, is by treating the property unregulable in law as unregulable in fact, and applying to it those standards of value and return which currently prevail in an unregulated business when it is conducted at arm's length. Petitioner urges that there are other courses open to the Commission which will not violate the statute, and that there is uncontradicted evidence in the record showing that natural gas has a market value at the wellhead and at the point of delivery into petitioner's transmission line. Those conditions would indicate that gas production property in the area in question has an ascertainable market value on which, in the absence of regulation, petitioner is free to receive the return currently produced by such property.

Without an appropriate investigation we cannot know the fact, which is for the Commission and not for us to determine. If investigation discloses difficulties which only legislation can cope with, the answer is further legislation, not disregard of existing legislation. But the Commission has made no such determination or investigation and, so far as appears, has given no consideration to the evidence supporting petitioner's contentions. It is the duty of the Commission so to conduct its proceedings as to restrict its action within the jurisdiction conferred upon it. It is plain that it

has not performed that duty here, and that it should be required to do so. Whether the facilities for the production of natural gas should be regulated and, if so, whether the regulation should be left to the states, as we think Congress has left it, are matters for Congress to determine. If it be thought that petitioner's profits from production of gas are too great because they are unregulated, and if it be thought to be important that they be reduced, it is immensely more important that that be not accomplished by lawless action.

It is no answer to cite our authorities involving state regulation,[4] in order to prove that the Commission here has acted within its statutory authority. In reviewing such cases we accept the state's construction of its statutes fixing the jurisdiction of state regulatory bodies. Nor is it any justification of the Commission's action to say, applying the *Hope* case, that the end result of the Commission's action is that petitioner's unregulated property is not being confiscated. Authorized utility regulation may, of course, result in a permissible diminution of property values and income, provided the regulation does not so exceed constitutional limitations as to be "confiscatory". Hence, loss or damage caused by authorized utility regulation gives rise to no actionable wrong if the regulation is within constitutional limitations. Such was the principle laid down in the *Hope* case.

But any such diminution in value or return, caused by unauthorized regulation, is unlawful without reference to constitutional principles. In the *Hope* case there was no contention that the utility's production property was not subject to regulation. The only question was whether the return upon it, as allowed by statutory authority, was confiscatory because it went beyond the constitutional limits of the power to regulate. Here the question is only of the deprivation of petitioner's property by the Commission's action in excess of its statutory power to regulate. That power, in the case of petitioner's production property, we think does not exist. So far as the unauthorized regulation deprives petitioner of its property, the deprivation cannot be justified by saying that, if authorized, it would not violate the Constitution. Absence of confiscation by authorized Commission regulation does not prove that the Commission has legislative authority to regulate.

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[4] Wilcox *v.* Consolidated Gas Co., 212 U. S. 19; Cedar Rapids Gas Co. *v.* Cedar Rapids, 223 U. S. 655; Newark Natural Gas & F. Co. *v.* Newark, 232 U. S. 405; Public Utilities Commission *v.* Landon, 249 U. S. 236; Pennsylvania Gas Co. *v.* Public Service Commission, 252 U. S. 23; Railroad Commission *v.* Pacific Gas & Electric Co., 302 U. S. 388; Lone Star Gas Co. *v.* Texas, 304 U. S. 224.